ANNUAL FINANCIAL STABILITY REPORT

2024

National Bank of Serbia

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, 44/2018 and 19/2025) 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-2024.

The *Financial Stability Report* was adopted by the National Bank of Serbia's Executive Board in its meeting of 12 June 2025. Earlier issues of the *Report* are available on the National Bank of Serbia's website (http://www.nbs.rs).

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 Reserve
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
NMIC – National Mortgage Insurance Corporation
NPL – non-performing loan
PD – probability of default
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.

External risks	Mitigating measures
– weaker global growth prospects and potential further growth slowdown in the euro area and in Serbia’s key trading partners; – changes in tariff regimes, and fragmentation of trade and global supply chains; – global increase in investors’ risk aversion and, as a result, lower FDI inflows and reduced export capacity; – extended duration or intensification of inflationary pressures and higher volatility of global energy and food prices, as well as slower than expected easing of monetary policies of leading central banks; – access to and rising costs of funding of parent banks, potential slowing of lending activity and their impact on the reduction of interest income and profitability, as well as on the quality of assets; – change in the global demographic structure due to changes in countries’ migration policies; – accelerated implementation of high-tech solutions and frequent cyber-attacks which could undermine confidence in financial system stability; – impact of new technologies and artificial intelligence on the global labour market; – continuation of the global climate transition and a more comprehensive international implementation of ESG standards.	– strengthening regional cooperation and infrastructure connectivity in order to diversify supply sources, and adjusting tariff policies to changes in international trade; – diversification of export markets and production, and supporting export sectors to reinforce export capacities; – cautious monetary policy conduct to ensure stable movement of inflation within the target band, while preserving economic growth; – maintenance of the relative stability of the exchange rate; – coordination of fiscal and monetary policies, with support to vulnerable corporate and household sectors; – adequate pursuit of microprudential and macroprudential policy, with the application of relevant tools to maintain financial sector stability; – continuous monitoring of international financial flows and maintaining an adequate level of FX reserves to defend against potential external shocks; – preservation of banks’ domestic deposit base and continuing to ensure the coverage of loans by local deposits; – continued cooperation with international financial institutions and supervisors of parent banking groups; – development of a comprehensive migrations policy and capacity for integration; – careful implementation of innovative tools and technologies and upgrading of business processes in financial institutions; – development of information capacities and cyber-security strategies, and investment in employee training and strengthening information system protection; – development and application of green transition strategies and energy reforms and aligning legislation with the EU taxonomy and ESG standards, as well as the upgrade of the regulatory framework for moderating the impact of climate risks on the financial system.

Internal risks	**Mitigating measures**
– prolonged duration of inflationary pressures due to marked uncertainty in the global commodity and financial markets, and rising protectionism, as well as due to adverse climate factors or higher prices of energy and other primary commodities;	– cautious pursuit of a responsible monetary policy by the NBS; – preservation of the efficiency of the monetary policy transmission mechanism on interest rates in the money, lending and savings markets, as well as on inflation expectations of the financial and corporate sectors by applying appropriate measures and enhanced communication with the public; – maintenance of the relative exchange rate stability; – support to the domestic agricultural and energy production; – application of targeted fiscal measures for the most vulnerable groups and sectors, without stimulating demand;
– slowdown of economic activity and investment;	– stimulation of investment through favourable loans, tax incentives and support to SMEs; – continued implementation of government-financed capital and infrastructure projects; – strengthening the institutional framework for support to innovation and digital transformation;
– a high level of euroisation of the domestic financial system;	– preservation of the general macroeconomic and financial stability, as well as relative exchange rate stability, to strengthen confidence in the local currency; – continued implementation of the measures and activities envisaged by the Strategy of Dinarisation of the Serbian Financial System; – implementation of monetary, microprudential and macroprudential policy regulations and measures to promote greater use of dinar sources of funding; – continuous promotion of higher profitability of dinar compared to FX savings, and financial instruments in the local currency; – continuous promotion of FX hedging instruments; – continued development of the capital market and higher volume of dinar government securities issued in the domestic market, in order to reduce currency risk in public debt management, including further lengthening of the maturity of issued dinar government securities;

Internal risks	**Mitigating measures**
– more difficult access to sources of funding, lending activity slowdown and the potential impact on NPLs and banks' profitability;	– adequate implementation of prudential instruments and capital buffers to facilitate lending to corporates and households and boost loan demand; – taking appropriate measures to support the affected sectors aimed at preventing a potential rise in NPLs; – enhanced monitoring of banks' asset quality; – using bank profits to build additional capital reserves, which would enable sustainable lending amid economic slowdown or mounting uncertainties; – encouraging banks to further upgrade their risk management processes, given the new types of risks faced by the banking sector; – strengthening the framework for borrower insolvency and debt restructuring;
– uncertainty regarding residential and commercial real estate price developments;	– enhanced monitoring and analysis of real estate market trends, along with improved collection and distribution of data from the mortgaged real estate market; – continuous monitoring of collateral quality in the banking sector through adequate valuation of real estate serving as collateral; – adequate use of borrower- or capital-based macroprudential tools, aimed at increasing banks' resilience to risks from the real estate market;
– impact of climate change on the financial sector of the Republic of Serbia through the materialisation of physical and transition risks.	– integration and monitoring of climate risks in financial institutions; – encouraging financial institutions to finance ecologically sustainable projects; – development and improvement of the regulatory framework and taxonomy for climate risks in accordance with the best international practice, as well as monitoring and analysing the impact of climate change on financial stability; – further development of the institutional framework and the Serbian climate database.

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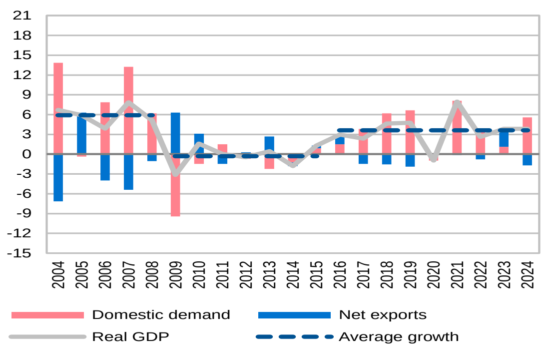
Overview

In 2024, the international environment was marked by pronounced geopolitical uncertainty, unpredictable macroeconomic developments and global market fragmentation. The global economy grew by 3.3%, slightly less than in 2023 (3.5%). The IMF's April projections forecast global growth to slow further to 2.8% in 2025 and accelerate moderately to 3% in 2026. Global inflation is expected to subside to 4.3% in 2025 and 3.6% in 2026.

The global economy proved sufficiently resilient to the consequences of the multidimensional global crisis, posting stable growth for most of 2024. Inflation fell from decades-high levels and gradually converged towards central banks' targets. Global growth measured 3.3%, slightly less than in 2023 (3.5%). Growth picked up slightly in advanced economies (from 1.7% in 2023 to 1.8% in 2024), and slowed somewhat in emerging economies (from 4.7% in 2023 to 4.3% in 2024). Trade barriers and the associated high uncertainty will affect global economic activity in this year and the next. According to the IMF's April 2025 projections, global growth will slow to 2.8% in 2025 and accelerate slightly to 3% in 2026. During 2024, the ECB trimmed its interest rates by 100 basis points. At end-2024, the interest rates on main refinancing operations, and on deposit and lending facilities, measured 3.15%, 3.00% and 3.40%, respectively. The Fed lowered the federal funds rate range by a total of 100 basis points to 4.25–4.50% at end-2024.

Serbia's real GDP growth measured 3.9% in 2024 and was among the highest in Europe, receiving positive contributions from activity growth in industry, construction and service sectors. Average annual inflation was 4.6% and y-o-y inflation in December measured 4.3%, which is within the NBS target band of 3±1.5%.

Real GDP growth – demand contributions (%)



Sources: NBS and SORS.

Serbia's GDP growth measured 3.9% in 2024. On the production side, a positive impulse came from activity in industry, construction and service sectors, while the contribution of agriculture was negative due to the drought. GDP is expected to grow by 3.5% in 2025. Average annual inflation was 4.6%, while y-o-y inflation measured 4.3% in December, which is within the NBS target band of 3±1.5%. Inflation remained on a downward path in 2024 as well, thanks primarily to lower energy price growth, slower food inflation, and reduced core inflation. In view of the established downward trajectory of inflation and its return within the target band in May 2024, the NBS started the cycle of key policy rate reductions, trimming this rate three times by 25 basis points each, to 5.75% at year end.

Financial markets stayed stable in 2024 despite marked geopolitical tensions and global fragmentation. The relative stability of the dinar exchange rate against the euro was preserved thanks to the NBS's interventions in the IFEM,

The NBS intervened by buying EUR 2,725 mn, net, in 2024. Like in previous years, this helped preserve the relative stability of the exchange rate and further build up FX reserves. In June 2024, the Republic of Serbia issued the 10Y sustainability bond in US dollars, and thus became the only

boosting FX reserves to record-high levels. In October 2024, Standard & Poor's raised Serbia's credit rating to investment-grade for the first time in history.

non-EU European country to issue a sustainability eurobond, with robust investor demand. In 2024, Serbia was awarded an investment-grade rating for the first time in its history. After upgrading its outlook from stable to positive in April 2024 (with credit rating at BB+), in October Standard & Poor's raised Serbia's credit rating to investment grade level (BBB-). Thus, a key strategic goal of the NBS and the Serbian Government was fulfilled, confirming the responsible conduct of economic policy, favourable macroeconomic indicators and the country's increased resilience to external shocks.

Fiscal discipline was maintained in 2024, along with robust investment growth. The share of the fiscal deficit and public debt in GDP was slightly lower than a year earlier. The share of external debt in GDP rose marginally, as a result of public and private sector borrowing. FDIs continued their upward trend in 2024. For the tenth year in a row, the current account deficit was covered by FDI inflows, which is an important pillar of the country's stability. The responsible fiscal policy is confirmed by the upgrade of Serbia's credit rating to investment grade and the continuation of the successful cooperation with the IMF.

The Serbian Government continued to take well-timed fiscal policy measures which, in the preceding period, helped preserve macroeconomic stability and build up adequate buffers to moderate potential shocks. Given the broad geographical and sectoral distribution of FDIs and accelerated infrastructure development, the economy was able to successfully absorb the effects of the multidimensional, five years long global crisis. The general government fiscal deficit was RSD 191.9 bn in 2024, slightly above the deficit recorded in 2023, while the share of the general government fiscal deficit in GDP dipped to 2.0% in 2024. The share of central government public debt in GDP shrank from 48.0% of GDP at end-2023 to 47.2% of GDP at end-2024. End-2024 external debt was EUR 49.8 bn, up by EUR 4.4 bn from end-2023. Measured as a share of GDP, it increased slightly from last year. The current account deficit widened to 4.7% of GDP in 2024, from a record low of 2.4% of GDP in 2023, as imports of goods and services rose faster than exports. Import growth (8.4%) exceeded export growth (8.0%), reflecting investment cycle acceleration, particularly as part of the "Serbia Expo 2027" project, and higher disposable income of households. FDIs continued up, totalling a record-high of EUR 5.2 bn (6.3% of GDP) and topping by around 14.2% the previous record set in 2023. For the tenth year in a row, the current account deficit was fully covered by FDI inflows, which is an important pillar of the country's stability. The stand-by arrangement with the IMF was successfully completed in December 2024. The IMF's Board of Directors approved a new three-year Policy Coordination Instrument, an advisory arrangement intended for countries which pursue a credible economic policy. Record-high FDI inflows, falling public debt and rising exports confirmed the domestic economy's resilience to external shocks.

Gross FX reserves reached a new record high of EUR 29.3 bn at end-2024. Application of different stress scenarios confirmed that FX reserves would provide more than adequate protection to the domestic financial system and the economy even in case of materialisation of extreme shocks from the international environment.

Gross NBS FX reserves gained EUR 4.4 bn in 2024, reaching EUR 29.3 bn gross or EUR 24.7 bn net at end-December. All scenarios of the applied adequacy model, and all traditional reserve adequacy metrics, confirmed that the end-2024 level of FX reserves was more than adequate to preserve financial system stability.

Corporate lending picked up thanks to the easing of credit standards and lower financing costs in 2024. The share of NPLs in total corporate loans declined further relative to end-2023, suggesting preserved capacity of the corporate sector to service its loans at end-2024.

Domestic corporate loans, excluding the exchange rate effect, gained 4.8% in 2024, mostly guided by an increase in investment loans. As in the prior period, liquidity and working capital loans were the most common corporate loan category at end-2024, followed by investment loans. Corporate lending growth was guided by the rise in dinar loans, pushing up the degree of dinarisation of corporate loans from 17.3% at end-2023 to 20.9% at end-2024, and further to 21.9% at end-April 2025. By maturity, long-term receivables prevailed at end-2024, accounting for 83.6% of total corporate loans, 4.6 pp down from end-2023. At end-2024, the share of NPLs in total corporate loans declined further to 1.8%.

Thanks to the maintained macroeconomic stability, key labour market indicators improved further in 2024. Dinar savings posted record-high growth during the year and reached an all-time high at end-2024, reflecting preserved household confidence in the domestic currency. Apart from that, in 2024 the NBS continued to implement numerous measures to preserve the living standard of households.

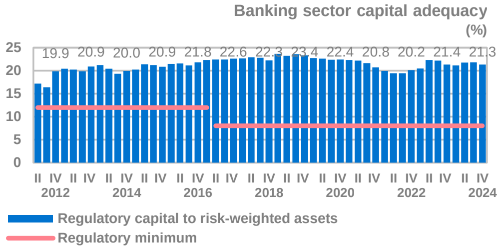
Positive trends in the labour market continued in 2024. Net wages and employment went up, and unemployment down. According to the Labour Force Survey, the average employment rate in 2024 was 51.4%, up by 1.2 pp from 2023. The average unemployment rate contracted from a year earlier, to 8.6% in 2024. The average monthly net wage paid out in the Republic of Serbia in 2024 was RSD 98,143, up by 14.1% in nominal and 9.1% in real terms compared to the net wage paid out in 2023. The average pension paid out in 2024 was RSD 46,138, up by 20.4% in nominal terms from a year earlier. Residents’ FX savings reached a record high of EUR 14.3 bn at end-2024, an increase of EUR 0.9 bn from end-2023, while dinar savings equalled RSD 187.5 bn, as much as RSD 51.0 bn more than at end-2023. The degree of dinarisation of household loans continued to rise – from 54.1% at end-2023 to 55.4% at end-2024, and further to 55.6% in late April 2025. The share of gross NPLs in total household loans was 3.4% in December 2024. Some of the measures taken by the NBS to facilitate the settlement of outstanding liabilities and access to new sources of financing for households continued in 2024 as well, and new regulations were adopted in order to maintain the living standard of households.

Though global uncertainties persisted, demand in the real estate market expanded in 2024 thanks to the resilience of the domestic economy, favourable trends in the labour market, lower interest rates and the easing of banks’ credit standards.

Based on the data of the Republic Geodetic Authority, the total volume of funds in the real estate market in 2024 amounted to RSD 7.4 bn, up by 15% relative to 2023. Some 10% of all purchased real estate, or 22% of all purchased apartments, were financed from loans. The rise in real estate prices continued in 2024, but the pace of that growth slowed down for the second year in a row. The y-o-y increase in apartment prices remained moderate, staying at approximately the same level throughout the entire year. Apartment prices in the Republic of Serbia rose by 5.05% in the final quarter of 2024. The results of the bank lending survey point to rising demand for loan-financed real estate, which is also confirmed by growth in housing loans by RSD 44 bn.

Serbia's banking sector, accounting for around 91% of financial sector assets, remained stable during 2024 thanks to good capitalization, high liquidity and profitability.

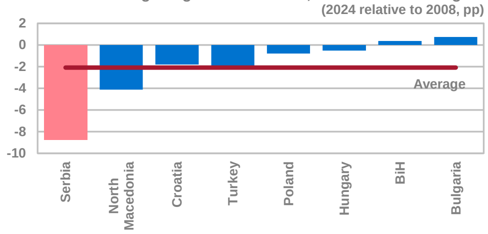
Banking sector capital adequacy



Source: NBS.

The share of NPLs in total loans dropped to a new all-time low, confirming that higher costs of loan repayment in the prior period did not worsen the quality of banks' assets and that the NBS's measures were well-timed and adequate. Financial stability was preserved despite all the challenges we faced in the prior period.

Change in gross NPL ratios, countries of the region



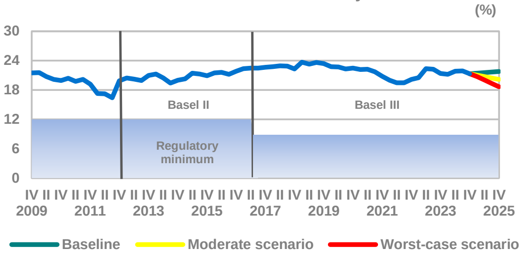
Sources: NBS and IMF.

Domestic deposits dominate the structure of bank funding sources.

At 21.3% at end-2024, Serbia's banking sector capital adequacy ratio was above the regional average. Thanks to the favourable structure of capital, CET1 capital ratio and Tier 1 capital ratio were high. The average monthly liquidity ratio was 2.5, well above the prescribed minimum (1.0). Serbia's banking sector recorded a positive financial result in 2024, with ROA of 2.8% and ROE of 20.3%. Domestic lending activity continued up, with growth rates accelerating notably. This was supported by monetary policy easing of the NBS and the ECB, temporary caps on lending rates, easing of banks' credit standards and reduced costs of funding. At end-2024, total domestic loans, excluding the exchange rate effect, gained 8.2% from end-2023. Loans to households contributed more than corporate loans to y-o-y growth in total domestic loans. According to the results of the bank lending survey, in early 2024 banks eased their corporate credit standards for the first time after a longer period of tightening, with relaxation continuing until the end of the year. Household credit standards were eased in 2024, primarily for dinar cash and refinancing loans, and for FX-indexed housing loans. The share of NPLs in total loans shrank to 2.5% in late 2024. The above share continued to decrease in early 2025, falling to a new all-time low of 2.3% in April 2025. NPLs have been on a downward path for several years, despite heightened geopolitical tensions and higher costs of loan repayment in the preceding period, as a result of a systemic approach to the NPLs resolution. This confirms that the measures taken by the NBS already in 2015 were both well-timed and adequate, preserving the quality of banking sector assets and strengthening financial system stability. The reinforcement of the domestic deposit base, which in 2024 was more than enough to cover the amount of loans, enabled banks to reduce their dependence on other sources of funding and their exposure to influences from the international environment.

The results of the conducted macroprudential stress tests point to the preserved stability and resilience of the Serbian banking sector in 2024. The banking sector as a whole remains resilient even to the strongest assumed shocks and has sufficient capacities to mitigate the consequences of the financial risks to which it may be exposed. Network modelling indicates a low systemic risk component arising from interbank interconnectedness, preventing potential shocks from spreading to the rest of the banking sector.

CAR by stress scenario*



* NBS estimate.
Source: NBS.

According to the results of macroprudential stress tests for end-2024, the Serbian banking sector would remain resilient, capitalised and liquid even if the strongest assumed shocks were to materialise. The capital adequacy ratio meets all the prescribed capital adequacy regulatory minimums and all requirements for the coverage of capital buffers, in all scenarios. Based on the results of macroprudential solvency stress tests, the capital adequacy ratio would measure 18.67%, remaining above the regulatory minimum even in the worst-case scenario. Also, the banking sector would remain liquid even in the conditions of the largest assumed outflow of deposits. The network structure indicates a low and stable systemic risk component in the Serbian banking sector. Macroprudential stress tests confirm that the banking sector has sufficient capacities to mitigate the consequences of the risks to which it may be exposed even in the case of the most adverse developments.

The stability of the insurance sector was preserved, with positive trends recorded by key performance indicators in 2024. The insurance sector is solvent and profitable, smoothly settling its obligations to policyholders, insurance beneficiaries and third injured parties.

The key performance indicators of the insurance sector, relating to total assets, technical reserves and capital, recorded positive trends in 2024 despite numerous challenges. The insurance sector ended the year 2024 with a positive net result after tax of RSD 12.4 bn. The end-2024 value of the combined ratio of non-life insurance undertakings equalled 92.27%, indicating a premium level adequate for meeting obligations under insurance contracts. A positive trend was recorded in total premium, which equalled RSD 177.4 bn in 2024, up by 14.3% from 2023. The Serbian insurance sector is adequately capitalised given the risks to which it is exposed. In 2024, the main capital adequacy ratio, i.e. the ratio of available to required solvency margin, was 204.81% for non-life insurance and 237.49% for life insurance.

The key performance indicators of voluntary pension funds recorded positive trends. Thanks to the initiated cycle of interest rate reductions, which raised the value of previously issued financial instruments, revenues from VPF investment increased, resulting in substantial VPF net asset growth in 2024.

Thanks to the initiated cycle of interest rate reductions, net assets of VPFs rose substantially in 2024 to RSD 61.7 bn at year end, up by 14.8% from end-2023. The main factor behind the net VPF asset growth was the return on investment worth RSD 5.4 bn, well above the 2023 level. The FONDex index measured 3,636.62 points at end-2024, up by 325.55 points y-o-y. The annual return on FONDex, which is the weighted average return of all funds, measured 9.8% in 2024, while the return since the start of VPFs operation was 7.4% at end-2024.

The financial leasing sector continued to post positive results. The sector's balance sheet assets increased further and the share of non-performing in total receivables remained unchanged from a year earlier.

At end-2024, balance sheet assets of financial lessors stood at RSD 203.0 bn, up by 23.9% from end-2023. The share of non-performing in total receivables stayed the same as in 2023. At end-2024, gross past due outstanding receivables (RSD 3.5 bn) made up 1.9% of gross financial lease receivables. The pre-tax result amounted to RSD 2.5 bn, which is more than a year before. As in earlier years, the structure of lessees was dominated by companies, accounting for 85.8% of total receivables. The financing of passenger vehicles was dominant in the composition of investments by lease asset (43.5% in 2024).

The development of the payment services market continued in 2024, thanks also to the amended Law on Payment Services. The trend of rising interest in electronic money continued as well.

The Law on Amendments and Supplements to the Law on Payment Services from July 2024 encouraged further innovation in the market. It also ensured greater competition and transparency in the area of payment services provision, and provided for enhanced consumer protection and payment security. At end-2024, there were eight payment institutions licenced by the NBS to provide payment services, and seven electronic money institutions. According to data of all payment services providers for 2024, there was an increase in the number of almost all payment services provided, particularly of cashless payments. Relative to 2023, the total number of m-banking users increased by 13.9% and that of e-banking users – by 7.5%.

In May 2025, Serbia officially became a member of the SEPA geographical scope, an important step towards further economic and financial integration with the EU. SEPA has thus become not only a platform for faster and cheaper payments, but also a symbol of Serbia's integration in modern European economic flows.

In May 2025, the Republic of Serbia officially became the 41st member of the SEPA area. SEPA has thus become not only a platform for faster and cheaper payments, but also a symbol of Serbia's integration in modern European economic flows. Reforms in the payments market, implemented by the NBS in the preceding years by aligning domestic regulations with relevant EU directives and regulations, made it possible to timely adjust the national payments infrastructure with EU rules and standards on payment services and payment systems.

During 2024, the NBS continued to develop and implement the activities and measures coming under its remit to preserve and further strengthen financial system stability. The goal of these measures was to provide comprehensive support to corporates and households in the conditions of elevated geopolitical uncertainties, increased inflation, high costs of loan repayment and global growth slowdown.

In December 2024, the NBS adopted the Decision on Temporary Interest Rate Cap on Loan Agreements Concluded with Natural Person Consumers. This Decision ensured a gradual switch to a market interest rate after the Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans was no longer applied. In addition to capping interest rates on housing loans, the above decision also capped interest rates on cash and consumer loans, credit card debt and current account overdraft. This measure was temporary and continued to be applied with the enactment of the new Law on the Protection of Financial Service Consumers in March 2025. This Law systemically regulates interest rate caps on all credit products for the purpose of protecting the interests of financial service consumers, while preserving and strengthening the stability of the financial system. Another measure applied in 2024 to facilitate access to financing for natural persons allowed banks to offer simplified lending in the amount of up to RSD 90,000, with a maximum two-year repayment term, to natural persons not receiving their wage/pension through an account with that bank. The application of this measure was extended until 30 June 2025. In December 2024, the NBS set up a regulatory framework for implementing the government housing loans programme for young people, allowing banks to apply a 99% loan-to-mortgage ratio, with customers providing a 1% down payment.

The net stable funding ratio was introduced on 30 June 2024 to mitigate the risk of occurrence or increase in the maturity mismatch between banks' funding sources and placements, and to encourage reliance on longer-term sources of funding. As macroprudential policy instruments, capital buffers include the capital conservation buffer, countercyclical capital buffer, capital buffer for a globally systemically important bank, capital buffer for a systemically important bank and systemic risk buffer, and they have been applied since 2017. In addition to the capital conservation buffer with a rate of 2.5% and the countercyclical capital buffer with a rate of 0%, which is reviewed quarterly, the annual review of the capital buffer for a systemically important bank took place in 2024 as well. The systemic risk buffer, which serves to limit the systemic risk of euroisation, was also reviewed. It was decided to keep the prescribed obligation to maintain the systemic risk buffer for all banks in the Republic of Serbia whose share of FX and FX-indexed loans to households and corporates exceeds 10% of total loans of that bank approved to corporates and households. These banks are required to maintain the systemic risk buffer at 3% of FX and FX-indexed corporate and household loans in the Republic of Serbia.

The composite systemic stress indicator and other financial soundness indicators assess the risks in different segments of the financial system and provide a comprehensive assessment of the level of financial system stability. In 2024, these indicators pointed to preserved financial stability of the Republic of Serbia despite uncertainties in the international environment. In addition, the financial system remained stable throughout the year, with a low systemic risk level.

At end-2024, the systemic stress indicator was somewhat more favourable than at end-2023. Its decrease was due to developments in the international environment on account of a lower composite risk premium. Flows in the sector of government securities worked in the same direction, as macroeconomic indicators were maintained, and Serbia's risk premium declined as a result. The systemic stress indicator in 2024 points to a period of high financial system stability, coupled with a low and stable systemic risk level.

I International and domestic environment

During 2024 the international environment was characterised by pronounced geopolitical uncertainty, unpredictable macroeconomic developments, and global market fragmentation. Global economic growth remained stable but is still below the pre-pandemic average. The Serbian economy showed considerable resilience to elevated uncertainty and challenges emanating from the international environment, as attested to by GDP growth measuring 3.9% at end-2024, a record high FDI inflow of EUR 5.2 bn, extended employment and wage growth in the private sector, and record high gross FX reserves of EUR 29.3 bn. At end-December 2024, Serbia's risk premium on the dollar debt measured 147 bp and on the euro debt 194 bp, which is 41 bp and 53 bp, respectively, less than at end-2023. At the level of 2024, average annual inflation equalled 4.6%. In October 2024, Standard & Poor's, one of the three most renowned global rating agencies, awarded Serbia investment grade credit rating of BBB- for the first time in history. Such a decision is yet another confirmation of Serbia's achievements reflected in favourable and stable macroeconomic fundamentals, boosted resilience to external shocks and preserved financial stability.

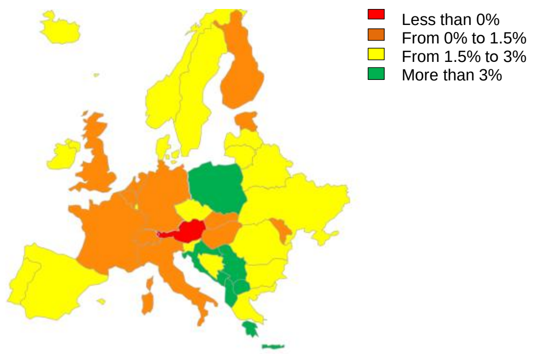
I.1 International environment

Following a series of shocks in the past years, during 2024 global economic growth was stable at 3.3%. However, as the US announced at the start of 2025, they introduced a series of new tariff measures to which some countries responded with countermeasures, leading to major changes in the global environment.

World economy turned out to be resilient to the consequences of the multidimensional global crisis, recording stable growth for a major part of 2024. Inflation came down from multidecade highs, gradually converging to central banks' inflation targets. Labour markets normalised – unemployment rates and the number of available jobs returned to their pre-pandemic levels. Over the past several years, economic growth was around 3%, and global output came close to its potential. Even so, major changes in tariff policy are exerting an impact on the global trade system, giving rise to additional uncertainty. This is once again testing the resilience of global economy which in 2024 recorded growth of 3.3%, i.e. lower than the rate in 2023 (3.5%). Economic growth picked up in advanced countries (from 1.7% in 2023 to 1.8% in 2024), while slowing slightly for emerging countries (from 4.7% in 2023 to 4.3% in 2024). Trade barriers and the associated high level of uncertainty will affect global economic activity in the ongoing and following year. In April 2025, the IMF projected that global economic growth would slow to 2.8% in 2025, and then pick up to 3% in 2026. Relative to projections from January 2025, this is a decrease considering that 3.3% was forecast for both years, which is significantly below the historical average of 3.7% (2000–2019).[1]

Economic growth in the euro area, with which we have the most significant financial and trade ties, accelerated to 0.9% in 2024 (0.4% in 2023). According to the IMF's data from April 2025, the highest GDP growth rates in the euro area in 2024 were recorded by Malta (6.0%), Croatia (3.8%), Cyprus (3.4%) and Spain (3.2%). Growth of the largest euro area economies remained almost unchanged compared to 2023, with Germany recording a negative growth rate of -0.2%, while the French and Italian economies grew by 1.1% and 0.7% respectively. In contrast, the biggest GDP fall in the euro area was recorded in Austria (-1.2%). Emerging and developing European countries recorded higher GDP growth rates in 2024 (3.4%) than euro area

Chart I.1.1 **GDP growth projections for 2025 − European countries**
(%)



Source: IMF.

[1] IMF WEO, April 2025.

countries (0.9%). The highest growth rates among emerging and developing European countries were recorded in Russia (4.1%), Belarus (4.0%), Serbia (3.9%) and Ukraine (3.5%).

The IMF underlined that global economic performances would remain average amid a slow implementation of structural reforms, as countries continue to tackle numerous global challenges. For many developing countries and emerging markets, as well as quite a number of advanced countries, the current medium-term growth forecasts are lower than the ones from the pandemic year. Beside significant global uncertainties and a gradual adjustment of countries' policies to new circumstances, the main and increasingly frequent reason behind slower dynamics of medium-term growth is demographic change. Population aging is expected to exert a major impact on global productivity and economic growth. Population movements across borders could help alleviate some of the demographic drag, while migration and refugee policies can also have complex spillovers onto growth.

The IMF expects global inflation to fall to 4.3% in 2025 and 3.6% in 2026. Advanced countries are expected to reach their inflation targets (2.2% in 2026) sooner than the emerging and developing ones, where inflation will retreat to 4.6% in the same period. The euro area's economic growth is expected to contract slightly to 0.8% in 2025, before it gradually picks up to 1.2% in 2026. The growing uncertainty and the introduction of new customs policies are key factors behind the expected weak economic growth in 2025. Increased production, attributable to real wage growth and the projected fiscal stimulus in Germany in the wake of significant fiscal policy changes in that country will reflect on moderate economic recovery in 2026. Within the region, the dynamics of Spain's economic growth stands out in comparison with the slower dynamics of economic growth in other countries. Spain's projected economic growth in 2025 is 2.5%, reflecting a significant transfer of positive results from 2024 and of construction works to rebuild the country in the wake of catastrophic floods (Chart I.1.1).

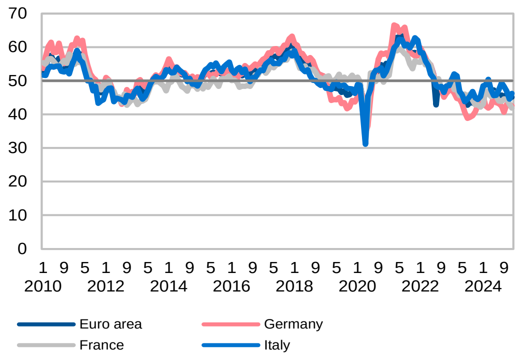
According to the European Commission's forecast from May 2025, the EU's economic growth is estimated at 1.1% in 2025 and 1.5% in 2026, and for the euro area at 0.9% in 2025, followed by a pick-up to 1.4% in 2026. With the exception of Austria, where a negative growth rate is forecast, and Germany, where growth is expected to stagnate, all other EU member countries are expected to record positive economic growth rates in 2025. Inflation in the euro area should recede from 2.4% in 2024 to 2.1% in 2025, and to 1.7% in 2026. A similar dynamics is forecast for the EU, with 2.3% inflation in 2025 and 1.9% in 2026. Core inflation should recede at the same pace as headline inflation (2.5% rate projected in 2025 for both the EU and the euro area). The considerably lower energy prices will have a disinflationary effect during 2025 and 2026. With the trade relations between the US and China calming down for the moment, competitive pressures on non-energy industrial products in the EU are intensifying, resulting in a lower contribution of this component to inflation. Also, the appreciation of the euro and other EU currencies is intensifying disinflationary pressures on imported goods. Markets expect the monetary policy to become slightly more accommodative owing to stronger disinflationary pressures.

For the US, the IMF projected growth edging down to 1.8% in 2025, which is 1.0 pp lower than the growth projection for 2024 and 0.9 pp lower than the anticipated rate from January 2025. This downward revision is a result of increased global uncertainty, trade tensions and subdued demand given that consumption growth turned out to be slower than assumed. The introduction of new tariff policies could also have an adverse impact on growth in 2026, where 1.7% growth rate and moderate private consumption have been forecast.

In December 2024, the euro area's PMI Manufacturing measured 45.1 points, which is more than at end-2023 (44.4 points).[2] At end-2024, the indicator recorded the following values in leading euro area countries: Italy 46.2 points, Germany 42.5 points and France 41.9 points. During 2024, the PMI Manufacturing in the euro area dropped to its lowest level in September – 45.0 points. Observed by country, the value of PMI in Germany was also the lowest in September – 40.6 points (Chart I.1.2).

In December 2024, the PMI Services indicator for the euro area equalled 51.6 points and was higher than at end-2023 (48.8 points). Of the largest euro area economies, the highest PMI Services value at end-2024

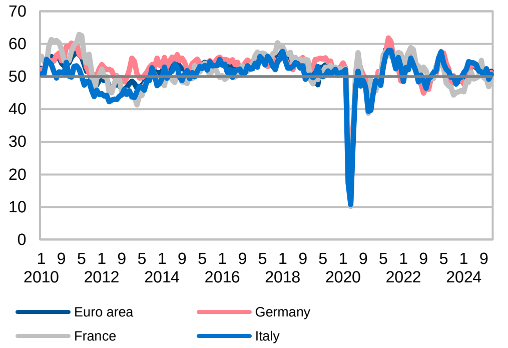
Chart I.1.2 **Activity indicator* (manufacturing)**
(index points)



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

[2] Values of PMI Manufacturing and PMI Services above 50 points indicate expansion, and below 50 points – contraction.

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



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

was recorded by Germany (51.2 points), and the lowest by France (49.3 points) (Chart I.1.3). The PMI Services dropped to its lowest level in January, measuring 45.4 points in France, and its lowest level in the euro area was also recorded in January (48.4 points).

The euro area unemployment rate decreased from 6.5% at end-2023 to 6.2% at end-2024. The EU unemployment rate equalled 5.8% in December 2024, having edged down from 6.1% at end-2023. The lowest unemployment rate in December was recorded in the Czech Republic and Poland (2.7% each), Malta (3.0%) and Germany (3.5%), and the highest in Spain (10.8%) and Greece (9.2%). The euro area labour market continued to sustain economic activity given that the unemployment rate still hovers around the record low level.

The US unemployment rate rose from 3.8% in December 2023 to 4.1% in December 2024. The participation rate remained unchanged – 62.5%, while the employment rate edged down slightly (from 60.1% to 60.0%). In the meeting in March 2025, the Fed estimated that the unemployment rate stabilised at a low level over the past several months, and that labour market conditions remain sound. In view of that, in 2025 the Fed projected an unemployment rate of 4.4% in 2026 and 4.3% in 2027.

The global oil price movements in 2024 were volatile, mirroring geopolitical tensions in the Middle East, as well as decisions by OPEC+ countries, variable global growth prospects, oil inventories and demand from China, the world's biggest oil importer. After pronounced volatility and oil price hikes in the first seven months of 2024, the oil price displayed a downward tendency as of August, averaging USD 73.8 per barrel in December, i.e. 5.2% less than at end-2023. According to market futures, the oil price is expected to continue retreating in 2025.

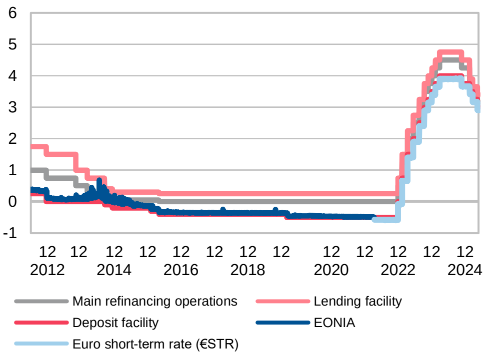
I.1.1 ECB and Fed's monetary policy and overview of economic developments in 2024

A decrease in inflation and inflationary pressures enabled the ECB and the Fed to start with monetary policy accommodation in 2024. The ECB's key rates – main refinancing operations rate and the deposit and credit facilities rates – measured 3.15%, 3.00% and 3.40%, respectively, at end-2024. In June, for the first time since 2019, the ECB trimmed its main rates by 25 bp, and later again in September, October and December, by a total of 100 bp in 2024. The Fed began the cycle of monetary policy easing in September, continuing into November and December with the third consecutive cut in the federal funds rate, whereby the total decrease in 2024 measured 100 bp. At end-2024, the Fed's federal funds rate measured 4.25–4.50%.

The ECB's key rates – main refinancing operations rate and the deposit and credit facilities rates – measured 3.15%, 3.00% and 3.40%, respectively, at end-2024. In June, for the first time since 2019, the ECB trimmed its main rates by 25 bp, having estimated that the time had come for it to ease monetary policy restrictiveness by trimming the rates, primarily in view of the weakening of cost-push pressures and inflation slowdown. This was greatly facilitated by the previously restrictive monetary policy, as well as tight financial conditions. Then, in September, it shaved off the deposit facility rate further, by 25 bp to 3.50%, and at the same time adjusted the difference between the main refinancing operations rate and the deposit facility rate (from 50 bp to 15 bp), while the difference relative to the credit facilities rate remained unchanged (25 bp). In October and December, the ECB lowered its rates further, each time by 25 bp, hence at the end of the year the deposit facility rate equalled 3.00%, and the main refinancing operations and credit facilities rates 3.15% and 3.40%, respectively. As expected, in February, March and April 2025, the ECB trimmed the deposit rate yet again, each time by 25 bp, to 2.25%. It estimated that the disinflation process is on a sound path, but that economic growth will likely be slower than expected, with risks still skewed to the downside.

During 2024, the ECB continued downsizing its balance sheet at a moderate pace, according to plan. In addition, the downsizing of the portfolio of securities purchased within the Asset Purchase Programme (APP) continued, as the ECB is no longer reinvesting the principal payments from maturing securities. As for the Pandemic Emergency Purchase Programme (PEPP), the ECB is no longer reinvesting the principal payments from maturing securities in full, and during H2 it started to gradually downsize the portfolio at the monthly pace of EUR 7.5 bn on average in order to discontinue reinvesting by the end of the year. Additionally, the ECB is regularly monitoring the impact of the return of funds to banks, borrowed under the long-term

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



Sources: ECB and Bloomberg.

refinancing operations (TLTROs), on monetary conditions.

At end-2024, the Fed's federal funds rate moved within the range of 4.25–4.50%. The Fed embarked on a cycle of monetary policy easing in September, continuing it in November and December, hence the total reduction in 2024 measured 100 bp. However, almost all Federal Open Market Committee (FOMC) members said that risks of inflation growth have increased both because of inflation rates that were higher than expected at end-2024, and because of the announced changes in the US foreign trade policy. Elevated risk of inflation growth mandates caution in the monetary policy pursuit, therefore in March 2025 the Fed projected only two federal rate cuts in 2025, which is two times less than in the September projection. At the meetings in January and March 2025, the Fed did not change the federal funds rate range.

Of the central banks in the Central and Southeast European region, the Polish bank was the first to begin easing its monetary conditions already in September 2023. After another reduction to 5.75% in October 2023, the Polish central bank left its policy rate untouched during 2024, only to trim it by 0.50 pp in May 2025, to 5.25%. The Romanian central bank kept its policy rate unchanged at 7.00% until July 2024, trimming it afterwards for two consecutive months, each time by 0.25 pp, therefore it measured 6.50% in August. It was kept on hold until the end of 2024 and maintained at the same level in May 2025 as well. In the first seven months of 2024, and in September, the central bank of Hungary cut its policy rate by a total of 4.25 pp, hence it measured 6.50% at end-year, where it remained in April 2025 as well. During 2024, the central bank of the Czech Republic trimmed its policy rate by 2.75 pp to 4.00%. In February and May 2025, the rate was lowered by another 25 bp each time, to 3.50%. On the other hand, the central bank of Russia lifted its policy rate in 2024, by 5.0 pp to 21.0%, where it stood in April 2025 as well. Having raised the policy rate in January and March 2024, the central bank of Turkey kept it at 50.0% until December, when it was trimmed by 2.5 pp. The cycle of policy rate cuts was continued in January and March 2025, whereas in April the policy rate was lifted by 3.5 pp to 46.0%.

In December 2024, euro area inflation retreated to 2.4% y-o-y, which is lower than the level from December 2023, when it stood at 2.9% y-o-y. Euro area core inflation (excluding the prices of food, energy, alcohol and cigarettes) also retreated, from 3.4% y-o-y in December 2023 to 2.7% in December 2024. After a brief inflation rise at end-2024, notably due to the base effect from energy prices, the ECB expects euro area inflation to resume its downward trajectory in the coming period, and trend around the target level of 2.0% during Q2 2025.

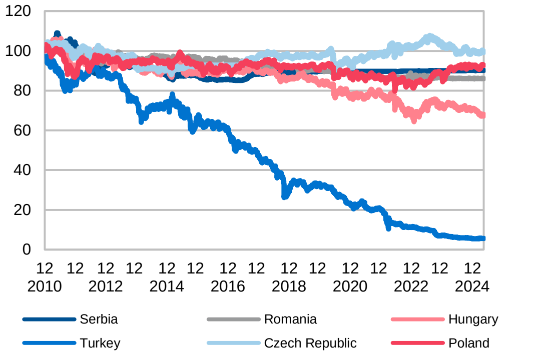
According to the ECB's March 2025 projection, inflation continued to move largely in line with expectations. The ECB projects that headline inflation in the euro area will average 2.3% in 2025, 1.9% in 2026 and 2.0% in 2027.

Headline inflation in the USA (measured by the change in the CPI[3]) equalled 2.9% y-o-y in December, which is below the level from end-2023 when it measured 3.4%. At the end of 2024, inflation movements were under the impact of the base effect from energy prices and higher prices of food in the domestic market. Similar y-o-y dynamics as the CPI was recorded by the personal consumption indices (total and excluding food and energy prices), which rose 2.6% and 2.8% y-o-y, respectively, in December. The Fed's inflation projections from March 2025 are slightly higher for 2025 than the previous year, reflecting primarily the latest inflation data, which is higher than expected. Inflation in 2025 is forecast to be somewhat higher than the rate projected in December 2024, with headline inflation measuring 2.7%, and core inflation 2.8% (measured by the change in the CPI excluding food and energy). Moreover, inflation is projected to drop to the target 2.0% by 2027.

At the level of 2024, the dollar gained on the euro by 6.4%. In 2024, the euro-to-dollar exchange rate recorded significant oscillations under the impact of various economic and political factors. During Q1, the euro reached its lowest level vis-à-vis the dollar in March, which is attributable to expectations that the ECB would reduce its interest rates to support the euro area economy. Thanks to positive economic indicators in the euro area during Q2, the euro appreciated slightly, only to weaken again in Q3. By the end of the

[3] CPI – Consumer Price Index.

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.

year, the euro exchange rate was volatile, with a tendency to depreciate against the dollar.

During 2024 the dinar gained 0.1% vis-à-vis the euro in nominal terms and weakened against the US dollar by 5.8% as a consequence of the dollar's gains on the euro in the international financial market. The currencies of observed countries in the region displayed diverging movements against the euro. At the level of 2024, the Polish zloty was the only one to appreciate against the euro (1.8%), the Romanian leu kept its value unchanged, while the Czech koruna, the Hungarian forint and the Turkish lira weakened (1.8%, 6.7% and 11.0%, respectively) (Chart I.1.5).

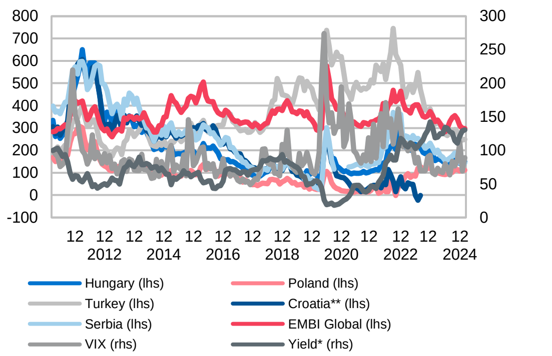
Volatility in the international financial market, measured by the implicit measure of financial market volatility (VIX), ranged from 11.5 (mid-May) to 38.6 points (early August) during 2024 (Chart I.1.6). The high values of VIX indicate elevated market uncertainty and investors' risk aversion, while lower values suggest stable market conditions. Early in the year the values were lower, indicating market stability. However, during the year VIX rose, reaching maximum levels in periods of elevated market volatility.

During 2024, the global risk premium displayed a downward tendency, despite recording growth between April and August. At the end of the year, the global risk premium continued to decline as the Fed further loosened its monetary conditions. The EMBI Global measured 297 bp at end-December, which is 22 bp lower than at end-December 2023. Serbia's dollar risk premium decreased by 41 bp, measuring 147 bp at end-December 2024 (188 bp at end-December 2023).

The values of stock exchange indices on financial markets of countries in the region were at a somewhat higher level at end-2024 relative to end-2023 in both Serbia and the observed countries, with Hungary recording the most intensive index growth (Chart I.1.7).

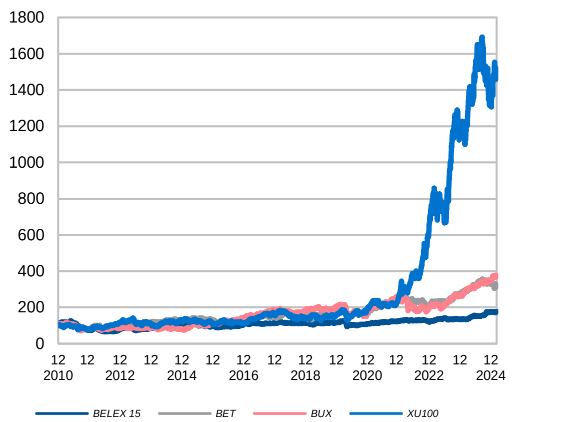
According to the January 2025 euro area Bank Lending Survey,[4] euro area banks reported a tightening of corporate credit standards in Q4 2024. As for household loans for real estate purchase, banks kept credit standards largely unchanged after loosening them for three consecutive months, while credit standards for consumer and other household loans were additionally tightened. In terms of corporate loans, mitigating the impact of lower interest rates and lower margins was compensated for by stricter collateral requirements to offset the estimation of higher risks. Interest rates and margins were the main drivers of the easing of conditions for housing loans, while for consumer loans interest rates had a mitigating effect, with margins acting in the opposite direction. The tightening of corporate credit conditions was driven by bigger identified risks associated with economic prospects and banks' lower risk tolerance. Corporate loan demand continued slightly up in Q4 2024, but on the whole it remained weak. A modest increase in loan demand was mostly prompted by declining interest rates. The total

Chart I.1.6 **EMBI for Serbia and its regional peers, VIX and yields on US bonds**
(bp, 31 Jan 2011 = 100)



* On derived ten-year US bonds.
** Data for Croatia available until 30 June 2023.
Sources: J.P. Morgan and Bloomberg.

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



Sources: Stock exchange websites.

[4]https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/ecb.blssurvey2024q4~e1ddae0f19.en.html

reduced demand is a reflection of the continuously subdued economic situation, especially in some economic sectors with intensive investments. Some banks listed economic and geopolitical uncertainty as factors supressing corporate loan demand.

Housing loan demand upheld a strong growth path, while demand for consumer loans edged up negligibly. Increase in housing loan demand is mostly conditioned by a fall in interest rates and, to a lesser extent, prospects in the real estate market. Consumer loan demand was supported by the declining interest rates, while consumer confidence, durable goods consumption and use of alternative sources of financing from other banks and non-banking institutions acted towards reducing demand.

The impact on corporate and household credit standards and conditions is expected to remain similar to that in H2 2024. In H1 2025, euro area banks expect a further tightening of the impact of credit quality on lending conditions for corporates and consumer loans, and a mostly neutral impact on lending conditions for housing loans. In Q1 2025, banks expect a further tightening of credit standards for consumer and other household loans.

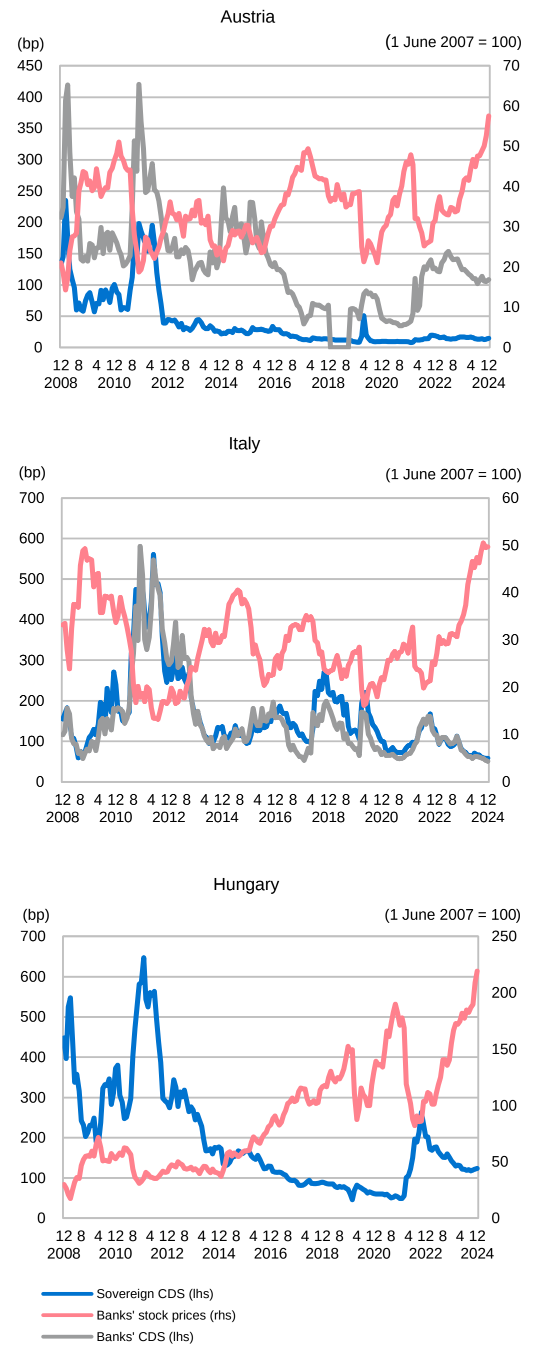
I.1.2 Lending in CESEE countries

In 2024, the CESEE region saw an improvement in loan supply and demand. The trend of banking groups' exposures to the region increased during the year.

According to the CESEE Bank Lending Survey,[5] published in June[6] and December[7] 2024 by the EIB, loan supply and demand improved. Loan demand recovered largely thanks to the household loan demand and working capital financing in the case of the corporate sector. Going forward, total loan demand will contract despite significant corporate investments and sound household demand. For the first time in two years, the loan supply improved after a period of elevated inflation and tight financial conditions. The main contribution to improved loan supply came from the SME sector. Even so, the positive loan supply trend may lose breath in the coming period due to the situation in the household sector, while credit conditions for large enterprises are expected to improve.

Improvement in credit conditions on the supply side in the prior period is mainly attributable to the positive prospects at the level of banking groups, while a lower contribution came from the prospects of the domestic market of countries in this region. Banks in CESEE countries also benefited from the positive business results of banking sectors across the world and in Europe, which is a consequence of several factors, especially higher interest margins. Going forward, banking groups expect a deterioration in supply-side credit conditions, mostly due to local and EU-level regulations, as well as the worsened financing conditions at the banking group level and domestic market prospects.

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.

[5] The survey, published twice a year, was developed within the Vienna Initiative to monitor cross-border activities and deleveraging in the CESEE region.
[6] https://www.eib.org/attachments/lucalli/20240113_economics_cesee_bls_2024_h1_en.pdf
[7] https://www.eib.org/attachments/lucalli/20240262_economics_cesee_bls_2024_h2_en.pdf

Access to financing sources in CESEE countries improved in the prior period owing to facilitated access to corporate deposits and, notably, household deposits. Financing from international financial institutions also gave a positive push, while in-group financing exerted a negative impact. Looking ahead, banking groups expect a further improvement in access to financing sources, when the largest contribution will still come from household and corporate deposits. Chart I.1.8 shows developments in the home markets of banking groups present in Serbia.

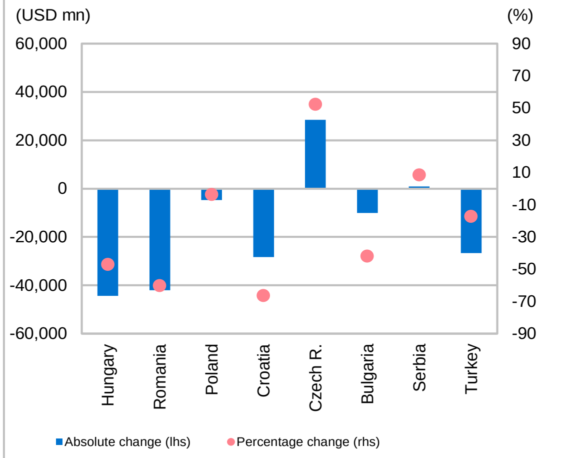
Credit quality improved in the prior period for both corporates and households, after a period of deterioration during 2020–2021. Still, the surveyed banks are less optimistic for the coming period, anticipating a deterioration in credit quality, which will affect both the corporate and household sectors.

Before 2019, banking groups deleveraged significantly, which resulted in a lowered LtD (loan-to-deposit) ratio, but in the previous several years deleveraging slowed considerably. The majority of banks predict a stable LtD ratio for the coming period, while a quarter of them expect it to go up.

According to the survey, banking groups' cross-border exposure to CESEE countries increased on average. The majority of banks (73%) kept the same level of exposure in the prior period, 9% of them reduced their exposure (compared to 17% in December 2023), while 18% increased it. Looking ahead, banks expect their exposure to the region to increase. The share of banking groups willing to increase their exposure is 27%, while 64% of them estimated that they will retain the same level of exposure.

According to BIS data, in Q4 2024 relative to the beginning of the global financial crisis (Q3 2008), euro area banks reduced their cross-border exposure to countries in the region, except to the Czech Republic and Serbia. In terms of percentage change, exposure was reduced the most for Croatia, Romania, Hungary and Bulgaria, and the least for Poland and Turkey (Chart I.1.9). Deleveraging by foreign banks in the wake of the 2008 global financial crisis in the CESEE region did not have major consequences on Serbia's financial stability thanks to the strengthened domestic deposit base, as well as the NBS's adequate and timely measures. Relative to the period before the coronavirus pandemic (Q4 2019), exposure to Poland, Hungary, Bulgaria, Romania, Serbia and Croatia increased, while in the case of Turkey and the Czech Republic, it decreased. Relative to Q4 2023, in Q4 2024 the exposure to Croatia, the Czech Republic and Hungary decreased, while increasing in the case of Turkey, Poland, Bulgaria, Serbia and Romania.

Chart I.1.9 **Change of cross-border exposure to selected countries, Q3 2008 – Q4 2024**



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

Text box 1: *Impact of DeepSeek artificial intelligence model on financial markets*

Artificial intelligence (AI) represents one of the major technological revolutions of the modern era, with broad applications across various fields such as manufacturing, transportation, finance,[8] medicine and education. Its use spans a wide range of domains, including natural language processing, data analysis and process automation. AI is a broad concept encompassing systems and algorithms that mimic human intelligence – from logical reasoning, learning, pattern recognition and decision-making to language, image and sound comprehension. One of the most advanced and useful forms of AI today is Large Language Models (LLMs),[9] which are sophisticated AI systems designed for processing, understanding and generating natural language. These models are based on deep learning techniques, particularly the transformer architecture,[10] enabling them to process vast amounts of data and recognise complex linguistic patterns.

The DeepSeek-R1 model delivers performance comparable to other cutting-edge LLMs, such as GPT-4o[11] and o1.[12] However, what sets DeepSeek apart are its significantly lower research and development costs compared to competitors like OpenAI and GPT-4, attributable to a combination of several factors. First, DeepSeek employs a more efficient learning approach that optimises resource usage. Second, it heavily relies on local infrastructure and resources, reducing costs compared to systems dependent on expensive global platforms and chips. Additionally, some research, development and infrastructure costs may have been excluded from initial cost estimates. Finally, the company's strategy focuses on rapid expansion and affordability for users, alongside internal process optimisation, which collectively contribute to substantially lower overall costs compared to its competitors.

The entry of DeepSeek into the market has caused a stir on Wall Street, challenging the dominance of OpenAI and other leading AI companies. In early January 2025, DeepSeek launched its first free chatbot application, based on the DeepSeek-R1 model, for iOS and Android. By the end of January 2025, DeepSeek-R1 surpassed ChatGPT as the most downloaded free application in the iOS App Store in the United States. Moreover, DeepSeek's market entry triggered a decline in the stock values of major AI companies. Notably, Nvidia lost nearly USD 600 bn in market capitalisation in a single day – the largest one-day drop in Wall Street history. Shares of ASML[13] fell by 6%, while Broadcom[14] lost 17% of its value. Investors expressed concerns that DeepSeek's cost-effective AI model could reduce demand for high-performance chips produced by Nvidia, which are considered critical for developing advanced LLMs. Other tech companies, such as Marvell Technology and Microsoft, also saw their stock values decline. Marvell Technology shares dropped by around 19% in late January 2025, while Microsoft's stock value also decreased (by approximately 2%).[15] Additionally, DeepSeek's lower energy consumption led to declines in the stock prices of energy companies like Siemens Energy (down by 20%), GE Vernova (down by 21%) and Vistra (down by 28%). Most major stock indices also recorded losses, with the Nasdaq falling by around 3%, while the S&P 500 declined by 1.5%.

Despite the turbulence caused by DeepSeek, Nvidia continues to dominate the AI chip supply chain, and the demand for AI infrastructure is likely to remain high. Stock market analysts point out that while training AI models[16] may become cheaper, widespread use of artificial intelligence will still require massive computing resources. They also note that when the cost of using a resource decreases, it doesn't necessarily lead to a drop in demand for it – quite the opposite. In this case, the emergence of more efficient and economical AI suggests that its adoption in business and daily life will accelerate, driving renewed demand for AI services and hardware, including Nvidia's chips.

DeepSeek also raises geopolitical and security issues. In January 2025, US President Donald Trump announced a new USD 500 bn AI initiative called Stargate, in collaboration with OpenAI, Softbank and Oracle. This project aims to secure American dominance in AI. Additionally, the US government has taken measures to restrict the use of DeepSeek. Several federal agencies, including the National Aeronautics and Space Administration (NASA) and the Pentagon, have banned

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[8] More information about the application of artificial intelligence in financial institutions and central banking can be found in Text box 4 of the *Annual Financial Stability Report – 2023*.
[9] A large language model (LLM) is a type of machine learning model designed for natural language processing tasks such as language generating. LLMs are language models with many parameters, trained on vast amounts of text.
[10] The transformer architecture is a type of deep learning underlying many contemporary LLMs. Simply put, transformers process text by looking at all the words in a sentence at once (instead of in sequence, like earlier models), using a mechanism called self-attention. This allows them to understand the context of each word in relation to all others, which is key to understanding the meaning.
[11] GPT-4o is a multilingual, multimodal generative transformer developed by OpenAI (OpenAI is an American AI research company founded in December 2015, headquartered in San Francisco, USA) and released in May 2024.
[12] OpenAI o1 is a generative, pre-trained transformer that requires more time to "think" before responding, which makes it better for complex reasoning tasks, science, and programming compared to GPT-4o. The full version for users was released in early December 2024.
[13] ASML is a Dutch multinational company founded in 1984, specialising in the development and production of photolithography machines used in the production of computer chips.
[14] Broadcom is an American multinational company involved in the design, programming, and manufacturing of a wide range of semiconductor and infrastructure software products.
[15] https://www.econotimes.com/Global-Tech-Stocks-Tumble-Amid-DeepSeek-AI-Disruption-1700318
[16] Training an AI model is the process in which artificial intelligence "learns" by analysing large amounts of data to recognise patterns, relationships and structures. During this phase, the model adjusts its internal parameters so that it can provide accurate responses or predictions when it later encounters new, previously unknown information. This is the foundation for its future application in various tasks.

its use on devices used by government employees. This move aligns with previous restrictions on other Chinese applications, such as TikTok. Another critical issue is user data privacy. DeepSeek stores user data, including text and audio recordings, files, chat histories and other sensitive information – on servers located in China. Despite its technological achievements, concerns about data security persist. In 2025, the EU implemented regulatory measures targeting DeepSeek. Italy's Data Protection Authority (Garante per la protezione dei dati personali) ordered a ban on DeepSeek's chatbot service in January 2025, citing concerns over transparency in data collection and processing. The agency has requested detailed information from DeepSeek regarding the types of data collected, their sources, legal framework and storage locations. After DeepSeek failed to provide satisfactory responses, the service was removed from Italian app stores. Similar reactions followed from regulatory bodies in Ireland and France.[17] The EU's regulatory response reflects its commitment to protecting citizens' data and aligning with the newly adopted AI legislation.[18] These actions underscore the need for transparency and accountability among companies offering AI services in the European market.

DeepSeek's technology is already being adopted by major corporations. For example, Saudi Aramco[19] has integrated DeepSeek's AI algorithms into its data centres, significantly improving operational efficiency and productivity in the energy sector. Additionally, at least twenty Chinese brokers and investment fund managers have begun integrating DeepSeek models into their operations, potentially enhancing research, risk management, investment decisions, and client communication, thereby increasing efficiency and competitiveness of these institutions. Tiger Brokers announced in mid-February 2025 that it had incorporated DeepSeek's model into its AI-powered chatbot, as brokerage firms and money market participants race to capitalise on the breakthrough of the Chinese startup's AI and enhance its use in the financial sector. The integration of DeepSeek-R1 into TigerGPT mirrors DeepSeek's meteoric rise, which has surprised Silicon Valley experts and fuelled significant growth in Chinese tech stocks. CICC Wealth Management[20] has integrated DeepSeek's R1 model into its investment advisory services, potentially increasing information processing efficiency by 90%.[21]

What does the future hold? While analysts debate the long-term impact of DeepSeek, questions arise about whether the AI technology market is overvalued and whether companies like OpenAI and Google, despite strong backing and partnerships, such as OpenAI's collaboration with Microsoft – have overinvested in AI research. Tech experts predict further surprises in the AI sector, given the still unpredictable trajectory of this technology. Some researchers suggest that although DeepSeek may have reduced training costs by using OpenAI's latest models, and managed to replicate other models very quickly, it remains uncertain whether the Chinese company can assume a leading role in the industry. Despite challenges, Nvidia continues to play a pivotal role in AI industry. Another question is whether restricted access to Nvidia's latest graphics processing unit (GPUs) and high-performance networks could hinder DeepSeek's progress. Moreover, cost-reduction innovations are not likely to remain DeepSeek's exclusive advantage for long, as AI companies quickly adopt technological advancements.

Clearly, AI represents a pivotal milestone in technological progress and economic transformation. While it offers significant advantages, its use requires careful consideration of regulatory, ethical and strategic factors to optimise positive outcomes while mitigating risks. The emergence of DeepSeek has demonstrated how rapid AI innovations can disrupt financial markets, posing challenges for stakeholders and regulators alike. This underscores the need for continuous monitoring of technological trends and adaptive strategies in a dynamic financial environment. On the other hand, although DeepSeek has positioned itself as a serious competitor to industry leaders, it should not be overlooked that AI development is not solely a matter of technological superiority, but also involves a wide range of global political, economic and security factors. Ultimately, DeepSeek's success is yet another proof that the AI industry is undergoing accelerated change. Companies, governments and financial institutions should adapt to a new reality where AI increasingly shapes economies, business and society as a whole.

[17] https://www.reuters.com/technology/artificial-intelligence/italys-privacy-watchdog-blocks-chinese-ai-app-deepseek-2025-01-30/
[18] On 1 August 2024, the European Union adopted the Artificial Intelligence Act (AI Act), the first comprehensive legal framework of its kind in the world. The aim of this legislation is to establish a harmonised market for artificial intelligence within the EU, encourage innovation, and at the same time guarantee the security and fundamental rights of citizens.
[19] https://www.ft.com/content/0d24dcf4-b53b-48e5-b49c-99606958a96d
[20] CICC Wealth Management is a wealth management platform under China International Capital Corporation Limited (CICC), one of the leading investment banks in China. Established as its subsidiary, CICC Wealth Management provides comprehensive financial services to individual and institutional clients across China and internationally.
[21] https://www.reuters.com/technology/artificial-intelligence/tiger-brokers-adopts-deepseek-model-chinese-brokerages-funds-rush-embrace-ai-2025-02-18/

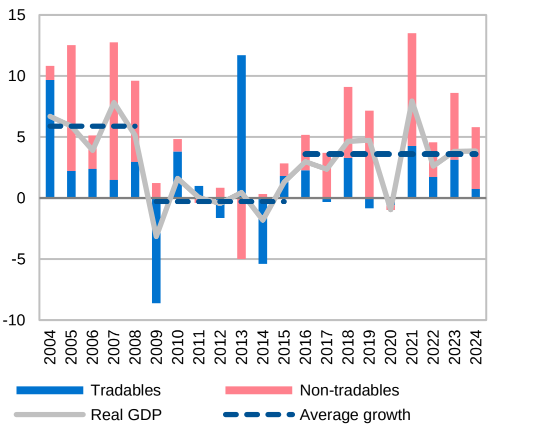
I.2 Overview of domestic macroeconomic developments

In 2024, real GDP growth amounted to 3.9%, with positive contributions coming from industry, construction and service sectors. Annual inflation in 2024 averaged 4.6%, while y-o-y inflation stood at 4.3% in December and was within the NBS target tolerance band (3±1.5%).

GDP grew by 3.9% in 2024. On the production side, growth was driven by industry, construction and service sectors, but received headwinds from a bad agricultural season. Industrial production contributed 0.6 pp to economic growth and the increased volume of production in mining – 0.2 pp. In contrast, the energy sector provided a negative contribution of 0.1 pp due to reduced production of electricity caused by the drought and accordingly lower hydro-energy potential. The construction sector expanded by 2.9%, adding 0.1 pp to economic growth, consistent with the real growth in total fixed investments (6.5%). The pick-up in services contributed 2.8 pp to economic growth, while agriculture recorded a decline of 8.1%, according to SORS, due to the severe drought, dampening economic growth by 0.4 pp. On the expenditure side, growth was driven by domestic demand, with the greatest impetus coming from household consumption and investments, while the stronger real growth in the import of goods and services than in export amid rising investments and disposable income resulted in a negative contribution of net exports.

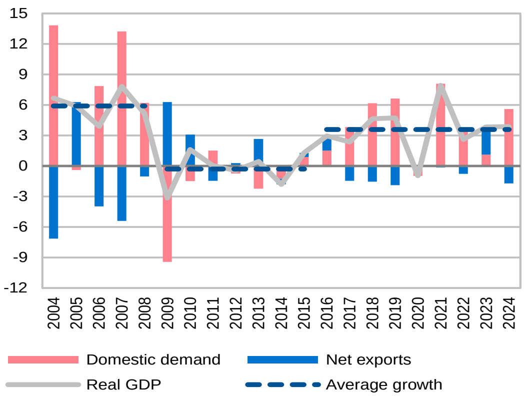
In 2025, GDP growth is expected to pick up to 3.5%. Economic growth in 2026 and 2027 is estimated within the range of 4.0–5.0%, going closer to the upper bound of this range in 2027 when the specialised exhibition Expo 2027 will take place. Economic growth in the current and the following years will be led by domestic demand, with private consumption providing the highest positive contribution owing to continued employment and wage growth, as well as more favourable monetary conditions. The next in line are fixed investments, which are expected to provide a significant contribution to GDP growth owing to preserved investor confidence, confirmed additionally by investment grade credit rating awarded to Serbia by Standard & Poor's. The rise in total investments will also be underpinned by the implementation of investments under the Expo 2027 and other infrastructure projects. A further increase in investments, which are expected to exceed 25% of GDP in the next two years, will be supported by lower global inflationary pressures and more favourable financing conditions, as well as high corporate profitability from previous years and FDI inflows. Stepped-up growth in the medium term on account of investment and productivity gains should also boost Serbia's potential output and accelerate the country's real convergence to the EU. It is expected, at the same time, that in 2025 and 2026 imports will rise faster than exports owing to the anticipated upturn in investments and personal consumption. As a result, the contribution of net exports will be negative, but every year this contribution will be decreasing only to turn positive in 2027 on the back of export growth,

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



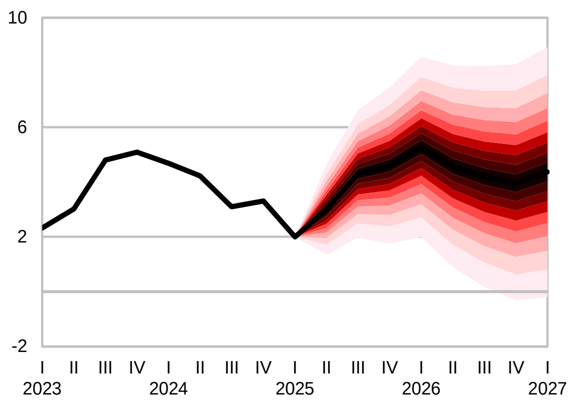
Sources: SORS and NBS.

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



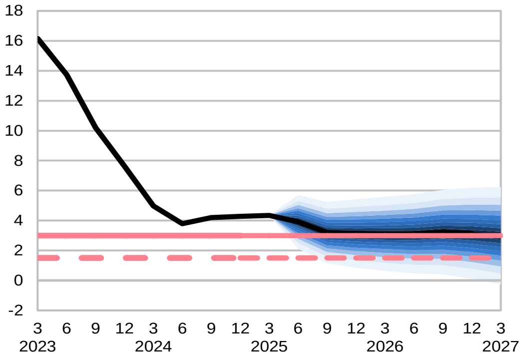
Sources: SORS and NBS.

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



* May 2025.
Source: NBS.

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



* May 2025.
Source: NBS.

particularly of tourist and business services owing to the Expo 2027.

Annual inflation averaged 4.6% in 2024, while y-o-y inflation in December stood at 4.3%, which is within the NBS target band of 3±1.5%. Inflation continued on a downward trajectory this year as well, primarily due to a slowdown in food inflation, lower energy price growth, and a reduction in core inflation (CPI excluding food, energy, alcohol and cigarettes). Since May 2024, core inflation has been higher than headline, a trend observed also in other countries in the region, including the euro area. In fact, core inflation hovered slightly above 5% y-o-y. The decline in core inflation was mainly driven by lower energy prices and a slowdown in food inflation. Additionally, the inflation slowdown in 2024 was supported by the effects of monetary policy measures, lower imported inflation, and a reduction in inflation expectations.

According to the central projection from May 2025, y-o-y inflation is expected to remain within the target band (3±1.5%) until the end of the projection horizon, i.e. over the next two years. This year, inflation is projected to follow a downward trend, approach the target midpoint by the end of the year, and remain close to that value in 2026. This inflation trajectory will reflect primarily the still restrictive monetary conditions, the anticipated lower global energy prices and reduced imported inflation, the onset of the new agricultural season, assumed to be average, as well as the projected movement of real wages in line with productivity growth.

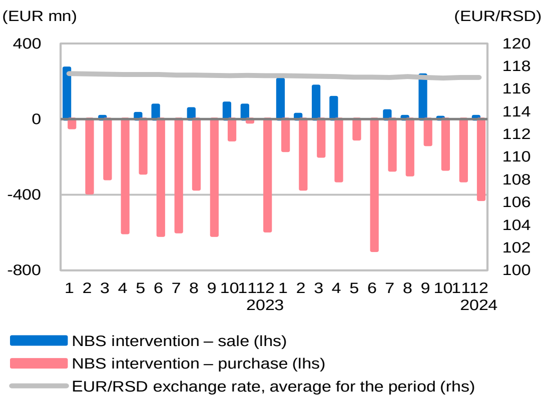
Favourable developments in the labour market continued into 2024, with further growth in employment, a reduction in unemployment, and a real increase in wages and living standards. According to the Labour Force Survey, the average unemployment rate in 2024 decreased by 0.9 pp from the 2023 average to 8.6%, while the average employment rate increased by 1.2 pp to 51.4%. Gross wages rose by 14.2% in nominal and 9.2% in real terms, compared to 2023, while the average net wage increased by 14.1% in nominal and 9.1% in real terms.

The key policy rate was trimmed three times during 2024, by 25 bp each, ending the year at 5.75%. The NBS initiated the process of lowering the interest rate taking into account the establishment of a downward inflation trajectory, in place since April 2023, and the inflation's return within the target band in May 2024.

In 2024, the Serbian dinar maintained relative stability against the euro, with appreciation pressures prevailing for most of the year. The dinar nominally strengthened against the euro by 0.1% in 2024, while it weakened against the US dollar by 5.8% reflecting the dollar's strengthening against the euro in the international financial market. In 2024, the NBS intervened in the IFEM by net purchasing EUR 2,725 mn. Gross FX reserves reached a record high level of EUR 29.3 bn at end-2024, EUR 4.4 bn more than at end-2023. The increase in gross FX reserves in 2024 was primarily driven by inflows from the NBS's interventions in the IFEM, as well as from the allocation of banks' FX required reserves, FX reserve management, grants and other sources. This level of FX reserves covers 168.2% of money supply M1 and 7.3 months' worth of the country's imports of goods and services, which is more than double the relevant adequacy standard. Net FX reserves[22] at end-2024 amounted to EUR 24.7 bn, representing an increase of EUR 3.9 bn from end-2023.

The global risk premium mostly followed a downward trend in H2 2024, primarily owing to the continued easing of monetary conditions by leading central banks. The risk premium, measured by EMBI, stood at 147 bp at the end of 2024 (188 bp at end-2023). EMBI for Serbia remained below the composite measure for emerging markets throughout the year and amounted to

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



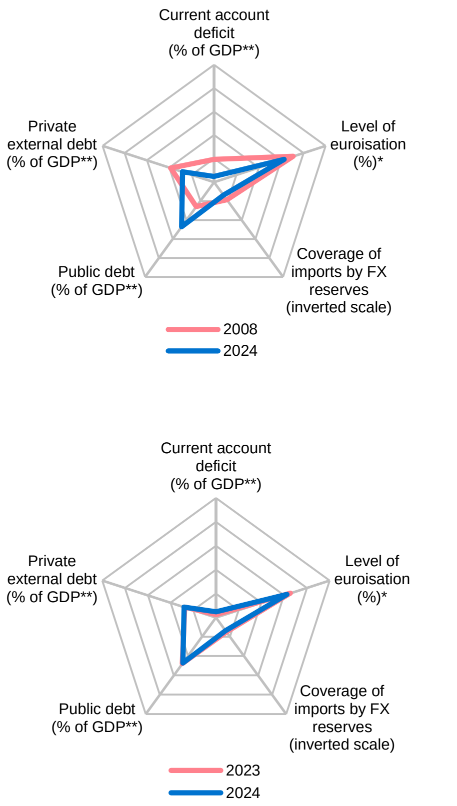
Source: NBS.

[22] Gross FX reserves less banks' FX required reserves, liabilities to the IMF on account of the three-year Policy Coordination Instrument, etc.

297 bp at end-2024 (319 bp at end-2023). At the end of 2024, EURO EMBIG for Serbia was 194 bp (247 bp at end-2023).

In 2024, for the first time in its history, Serbia was classified among countries with an investment-grade credit rating. After Standard & Poor's upgraded Serbia's outlook from stable to positive in April 2024 (while maintaining the credit rating at BB+), in October 2024 it raised Serbia's rating to investment grade, at BBB–, with a stable outlook. The decision to upgrade the rating was made in the context of favourable macroeconomic prospects and increased resilience to external shocks, thanks to the responsible economic policy conduct – a trend expected to continue in the coming years. In February 2024, Fitch Ratings affirmed Serbia's credit rating at BB+, with a stable outlook. In August 2024, the agency revised the outlook to positive, while keeping the rating unchanged. The decision to assign a positive outlook to Serbia was based on the appropriate mix of economic policies, the results of sound public finance management, strong economic growth outlook, high FX reserves, and a higher GDP per capita compared to rating peers. In January 2025, Fitch Ratings maintained Serbia's rating at BB+, with a positive outlook. The third most influential global credit rating agency, Moody's Ratings, also maintained Serbia's rating at Ba2 in August 2024, while upgrading the outlook from stable to positive. The decision to improve the outlook was made in view of the economy's resilience demonstrated in recent years amid uncertain global conditions. During this period, Serbia preserved a strong external position and a declining public debt trajectory, alongside an investment cycle aimed at supporting accelerated economic growth.

Chart I.2.6 **Key macroeconomic risks**



* Share of FX and FX-indexed receivables in total household and corporate receivables.

** GDP is compliant with ESA 2010 methodology.

Source: NBS.

A comparison of financial system vulnerability indicators[23] in 2024 with those from 2023 points to strengthened resilience of the financial system. This is evidenced by a reduction in the public debt-to-GDP ratio (from 48.0% to 47.2%), an increase in the country's FX reserves – which reached a record end-of-year level of EUR 29.3 bn – and the coverage of imports of goods and services by FX reserves, which was more than double the standard used to assess FX reserve adequacy. Further evidence of the stronger resilience of the financial system is the degree of euroisation of the domestic financial sector, measured by the share of FX and FX-indexed loans to corporates and households in total bank lending, which dropped by 2.9 pp in 2024, reaching 62.6% by the end of the year. In addition, the share of FX and FX-indexed deposits of corporates and households in total bank deposits also declined – from 55.6% at end-2023 to 53.5% at end-2024. On the other hand, in 2024 the share of private external debt in GDP increased slightly (from 27.5% to 28.1%), while the current account deficit as a share of GDP rose from 2.4% to 4.7%. The increase in the current account deficit in 2024 from a historically low level of 2.4% of GDP last year was expected given the implementation of investment projects related to the Expo 2027 and the rise in households' disposable income, and partly also given the reduced external demand, primarily from the euro area. FDI inflows to Serbia reached a record high level of EUR 5.2 bn in 2024 and fully covered the current account deficit for the tenth year in a row.

I.3 Foreign exchange reserves

At end-2024, NBS FX reserves reached a record high level of EUR 29.3 bn, while net FX reserves[24] amounted to EUR 24.7 bn. Gross FX reserves increased by EUR 4.4 bn in the course of the year, reinforcing the resilience of the domestic financial system to shocks from the international environment. Different stress scenarios lead to the conclusion that FX reserves are high enough to safeguard

[23] Chart I.2.6 shows the main financial vulnerability indicators for the Republic of Serbia, i.e. changes in the current account deficit, private external debt, public debt, the degree of euroisation and FX reserves adequacy (inverted value of the number of months of coverage of imports by gross FX reserves). Increased distance from the centre for each indicator warns of elevated risk and poses a threat to stability. Increased surface indicates higher vulnerability of the economy.

[24] Net FX reserves are gross FX reserves less FX bank balances on account of required reserves and other grounds.

the domestic financial system even in the event of materialisation of extreme scenarios.

At end-2024, gross NBS FX reserves stood at EUR 29.3 bn, their highest end-of-year level. They increased by EUR 4.4 bn from end-2023, driven largely by the inflows from the NBS's interventions in the IFEM of net FX purchase of EUR 2.7 bn (Chart 1.3.1 and Chart 1.3.2).

As an institution mandated to safeguard and strengthen the stability of the financial system, the NBS manages and maintains an adequate level of FX reserves, in line with liquidity and security principles. FX reserves are used for maintaining relative stability of the dinar exchange rate and financial sector stability, settlement of government liabilities to foreign creditors, and in times of crisis, for financing potential major balance of payments imbalances.

The adequacy of FX reserves is assessed by various analyses and indicators, from the aspect of materialisation of an individual risk or a mix of several risks. The most significant risks, based on which relevant indicators are constructed, are hindered financing of the imports of goods and services and of external debt of one-year maturity in the event of reduced capital inflows from abroad due to the limited access to the international capital market, and the risk of withdrawal of a portion of deposits from the banking sector.

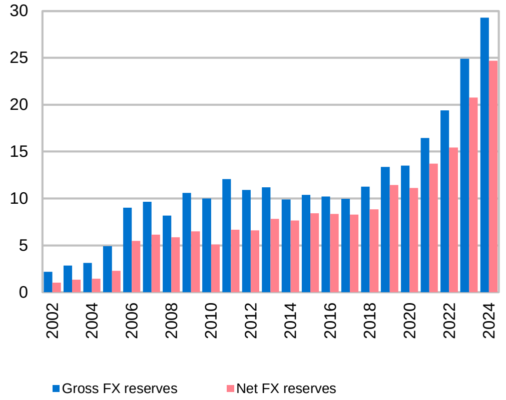
Traditional indicators of FX reserves adequacy analyse the protection against individual risks (Chart 1.3.1). The indicator of FX reserves import coverage compares FX reserves and the size and market openness of the economy. The level of FX reserves is considered adequate if it covers three months' worth of the country's imports of goods and services. In addition to import coverage indicator, protection against individual risks is also measured by an indicator known as the Greenspan–Guidotti rule,[25] 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

Table I.3.1 **Indicators of FX reserves adequacy, end-2024**

Indicators of adequacy	Adequate level (EUR bn)	Coverage of adequate level with gross FX reserves
Average three-month imports of goods and services	12.1	243%
Short-term external debt at remaining maturity	6.1	480%
20% money supply M3	8.8	332%
"Right measure for Serbia"	9.3	314%
FX reserves		
Gross	29.3	
Net	24.7	

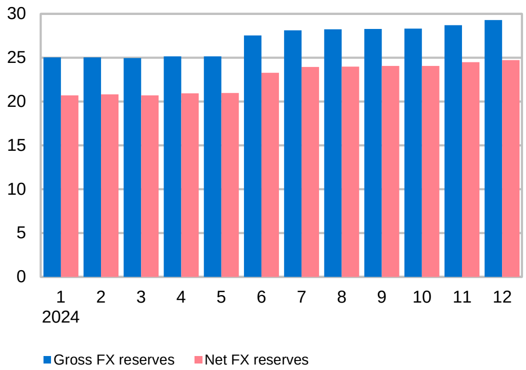
Source: NBS.

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



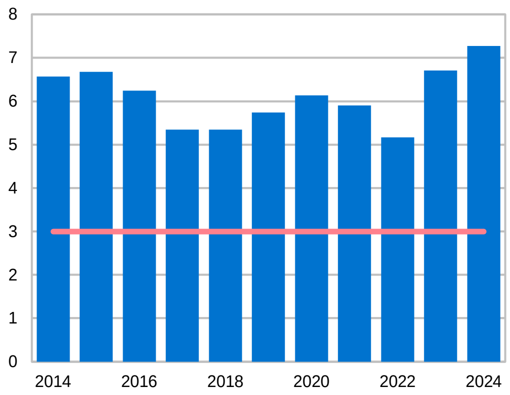
Source: NBS.

Chart I.3.2 **National Bank of Serbia FX reserves in 2024**
(EUR bn)



Source: NBS.

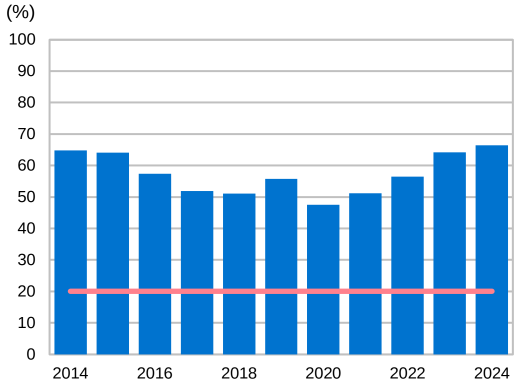
Chart I.3.3 **Months of imports covered by gross FX reserves**



Source: NBS.

[25] Guidotti, Pablo, Sturzenegger, Federico and Augustin Villar (2004), "On the Consequences of Sudden Stops", *Economia*, vol. 4, no. 2, p.171–203.

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



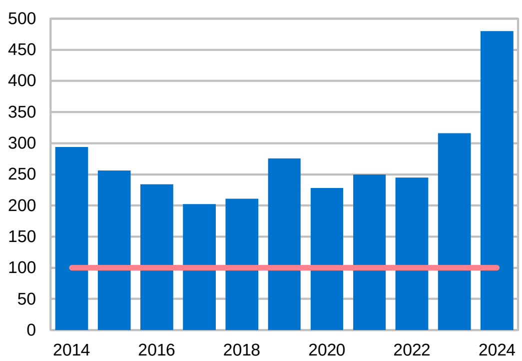
Source: NBS.

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 measures the ratio of FX reserves to monetary aggregates. The optimal level is achieved if FX reserves cover at least 20% of broad money (M3). At end-2024, Serbia's FX reserves were at a more than adequate level to serve as a protection against individual risks: they provided for the financing of over seven months' worth of imports of goods and services, 480.1% coverage of external short-term debt at remaining maturity and 66.4% coverage of M3.

In order to make a comprehensive assessment of the adequacy of FX reserves, we developed "the right measure for Serbia" indicator[26] that takes into account the specificities of the Serbian economy. It implies the coverage of the sum of short-term external debt at remaining maturity, the current account deficit adjusted for FDI, 15% of FX and FX-indexed deposits and 5% of dinar deposits of corporates and households.

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

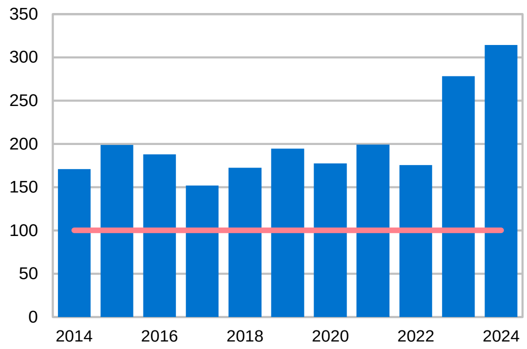


Source: NBS.

At end-2024, "the right measure for Serbia" indicator was also considerably above the optimal 100% (314.5%). The indicator improved in comparison to the previous year (278.3%), mainly due to the increase in FX reserves and higher FDI inflows.

The Jeanne–Ranciere model[27] 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 of capital flows (γ), real depreciation (ΔQ), risk aversion (σ), return on reserves (r), opportunity cost of holding reserves (δ) and real GDP growth (g).

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



Source: NBS.

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

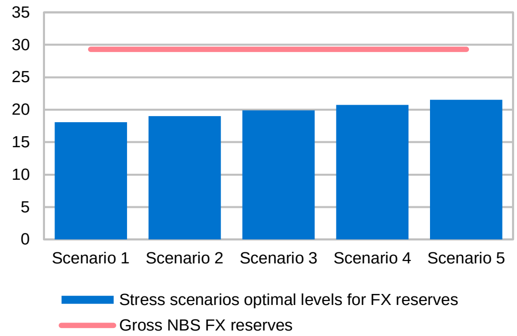
Symbol	**Parameter**	**Scenario**				
		1	2	3	4	5
γ	Damage caused by sudden stop	7%	7%	7%	7%	7%
r	Yield on reserves	2.5%	2.25%	2.0%	1.75%	1.5%
g	Average GDP growth	3.5%	3%	2.5%	2%	1.5%
σ	Risk aversion	2	2	2	2	2
δ	Opportunity cost	1%	1%	1%	1%	1%
π	Probability of sudden stop	10%	10%	10%	10%	10%
λ	Size 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)	18.1	19.0	19.9	20.7	21.5
Gross NBS FX reserves (2024, EUR bn)				29.3		

Source: NBS.

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

[27] 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.3.7 **Optimal levels of FX reserves under stress scenarios, December 2024**
(EUR bn)



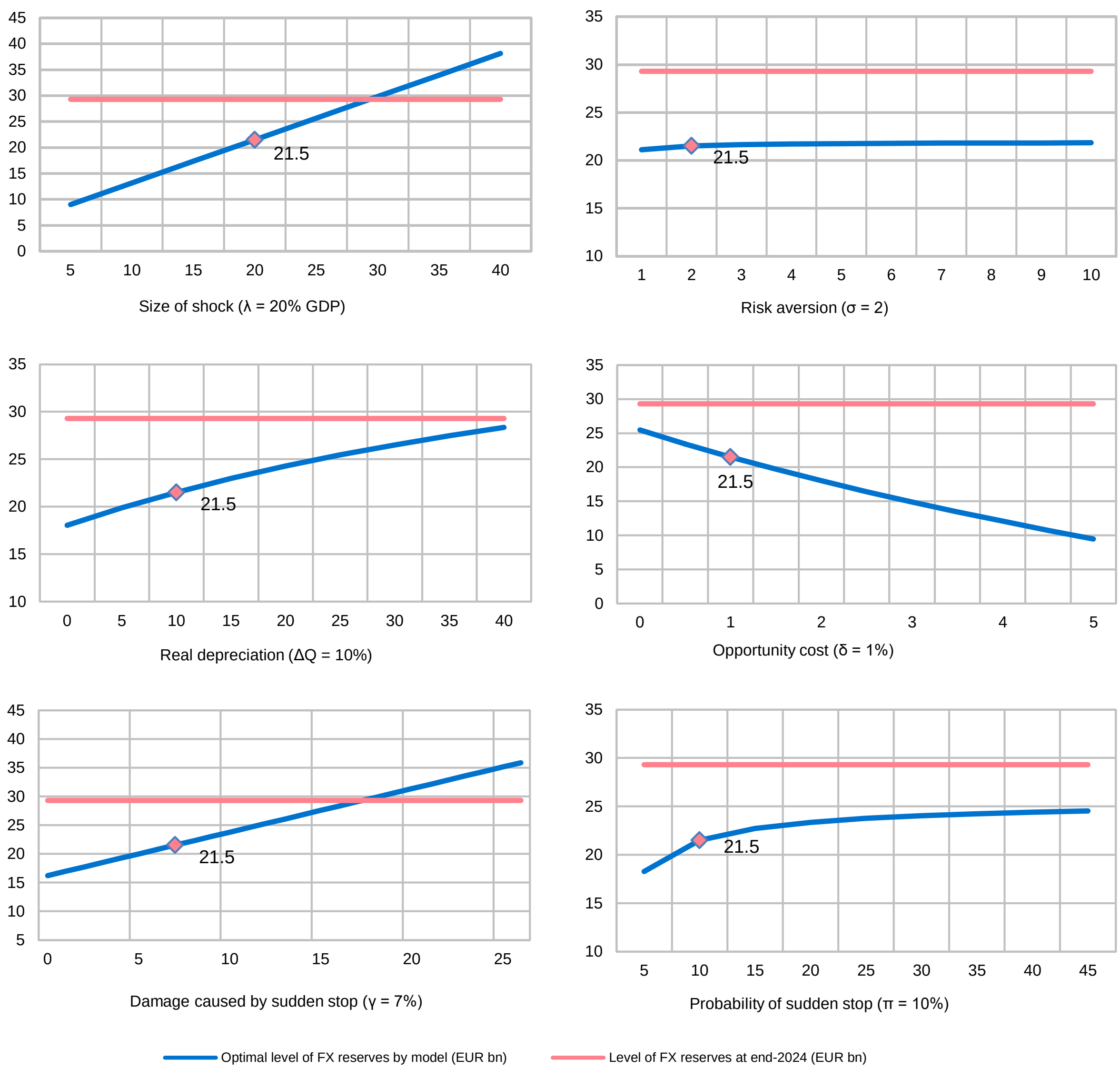
Source: NBS.

The model assumes that in a small and open economy, vulnerable to sudden stops to capital flows, economic policy makers set the optimal level of FX reserves. In the event of a sudden stop to financial flows, resulting in the impossibility of external debt rollover, 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 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 gives an overview of stress scenarios for FX reserves, according to the Jeanne-Ranciere model, where the fifth scenario is extreme, i.e. least likely to occur.

All five scenarios run on the used adequacy model, including all indicators of FX reserves adequacy, confirmed that the level of FX reserves at end-2024 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, materialised. And the conclusion is that even in this scenario Serbia would have an adequate level of FX reserves.

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



Source: NBS.

I.4 Fiscal policy, public and external debt

In 2024, fiscal discipline and strong investment growth were preserved despite the multidimensional global crisis and pronounced geopolitical uncertainties. A record high FDI inflow, a declining public debt and a rise in exports confirmed the resilience of the domestic economy to external shocks. Fiscal deficit came at 2.0% of GDP, down by 0.1 pp y-o-y. The share of central government public debt in GDP dropped from 48.0% at end-2023 to 47.2% at end-2024. Compared to 2023, the share of external debt in GDP in 2024 rose insignificantly (by 0.2 pp) to 60.5% of GDP. A responsible fiscal policy is also confirmed by the increase in the country's credit rating to investment grade and by the continued successful cooperation with the IMF.

I.4.1 Fiscal policy

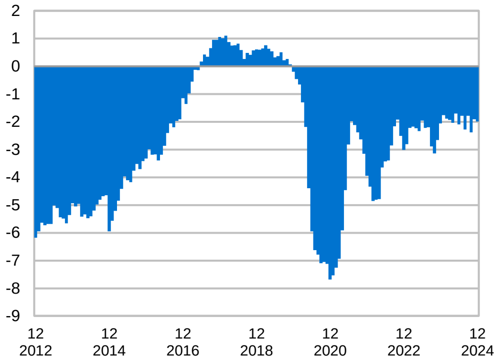
Despite all challenges and pronounced global fragmentation, the Republic of Serbia managed to preserve macroeconomic stability owing to the production and geographic diversification of goods and services exports and predominantly export-oriented investments, as well as a significant FDI inflow. The Serbian government continued with adequate and timely fiscal policy measures which, in the previous period, contributed to the preservation of macroeconomic stability and an adequate level of reserves that provide a backstop against potential shocks. With widely dispersed FDIs and accelerated infrastructure building, the economy could successfully neutralise the effects of the multidimensional global crisis that has been on for five years now.

In 2024, a part of the new set of fiscal rules[28] was applied, contributing to the stability of public finances and the sustainable fiscal framework. The rules for keeping the most significant categories of public expenditures in check (wages and pensions) have been in force since 2023. These rules place outlays for wages at no more than 10% of GDP and envisage the indexation of pensions depending on their share in GDP.

General government fiscal deficit amounted to RSD 191.9 bn in 2024, slightly higher than in 2023 (RSD 181.1 bn), while the share of general government fiscal deficit in GDP declined to 2.0% in 2024 from 2.1% in 2023 (Chart I.4.1).

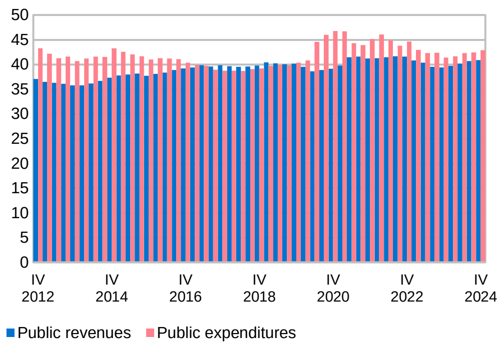
Looking at different government levels, the highest deficit was recorded by central government budget – RSD 212.0 bn.

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.

The primary fiscal result,[29] as an indicator of the efficiency of the current fiscal policy and its impact on public debt was also negative in 2024 and came at RSD 23.7 bn (0.2% of GDP), continuing the downward trend of primary fiscal deficit both in absolute terms and as the share in GDP, relative to 2023 when it stood at RSD 41.3 bn, or 0.5% of GDP.

The fiscal deficit expanded in 2024 amid an increase in both fiscal revenues and expenditures relative to the year before. Total public revenues of the general government climbed by RSD 467.6 bn y-o-y. The strongest growth was recorded for current revenues (by RSD 489.1 bn), and within that category for those originating from tax (by RSD 418.6 bn). Looking at individual categories, the key impetus to growth came from contributions (which increased by RSD 164.2 bn y-o-y owing to favourable labour market developments) and VAT (by RSD 108.9 bn). Non-tax revenues also increased by RSD 70.5 bn y-o-y. On the other hand, in 2024, revenues from donations declined by RSD 21.5 bn y-o-y, or by 50.3%.

[28] The Law Amending the Law on the Budget System (RS Official Gazette, No 138/2022).

[29] The primary fiscal result is the fiscal result adjusted for the impact of paid and charged interest. It shows whether the realised fiscal revenues suffice to cover fiscal expenditures other than those arising from public debt servicing.

Total public expenditures of the general government increased by RSD 478.4 bn y-o-y. The bulk of this increase pertains to the current and then capital expenditures. Current expenditures rose by RSD 390.7 bn y-o-y, reflecting primarily higher expenditures for social assistance and transfers (RSD 161.5 bn), due, above all, to higher outlays for pensions (RSD 155.6 bn), as well as expenditures for employees (RSD 132.2 bn). On the other hand, spending on budget loans decreased in 2024 by RSD 52.4 bn, or by 71.4% relative to 2023.

Spending on subsidies increased in 2024 relative to 2023 (by RSD 23.0 bn, or by 10.8%), and their share in GDP reached 2.5% (2.4% in 2023). Most of the subsidies in 2024 went to tourism.

Amid still relatively high interest rates in 2024, interest payment expenses climbed by RSD 31.2 bn from 2023, to RSD 180.5 bn (1.9% of GDP).

Rising by RSD 136.0 bn from 2023, capital investment reached an all-time high in 2024 (RSD 704.6 bn). The share of capital expenditures in total general government expenditure in 2024 (17.1%) went up from 2023 (15.6%), as did the share of capital expenditures in GDP from 6.4% in 2023 to 7.3%. Given the importance of infrastructure improvements for long-term sustainable economic growth, as well as planned infrastructure investments, an increase in the achieved level of investment in capital expenditures will remain a fiscal policy priority going forward. Investment projects are expected to continue in the medium term under the development scheme “Leap into the Future – Serbia Expo 2027”, which is a central framework for accelerated infrastructure modernisation, aimed at making Serbia a key investment destination in the areas such as energy, transport, and digitalisation. In the coming period, in addition to rising public investments, significant investments should also be channelled to public investments management reform, which will further aid the high quality of investments.

The achieved fiscal and overall economic results of the Republic of Serbia were also confirmed by the IMF. The Stand-by Arrangement (SBA), approved by the IMF Executive Board to the Republic of Serbia in December 2022, was successfully completed in late 2024. It was initially granted for the duration of 24 months, as a support to the agreed economic programme. In view of the significant accumulation of reserves, the creation of fiscal room for manoeuvre and sustainable financing of the balance of payments, the SBA was treated as precautionary since December 2023, which is one review earlier than expected at the time of the SBA approval. In July 2024, the third review of the implementation of the agreed economic programme was successfully completed. It was concluded that macroeconomic results exceeded expectations despite numerous challenges from the global and regional environment. Economic recovery, preserved fiscal position, lower inflation, record high FX reserves and strong labour market contributed to the accomplishment of all quantitative targets, coupled with the progress in the implementation of the structural reform agenda. The fourth and the last review of the implementation of the SBA was successfully completed in December 2024. The IMF assessed that the Republic of Serbia implemented ambitious reforms under this arrangement, contributing to its impressive macroeconomic results.

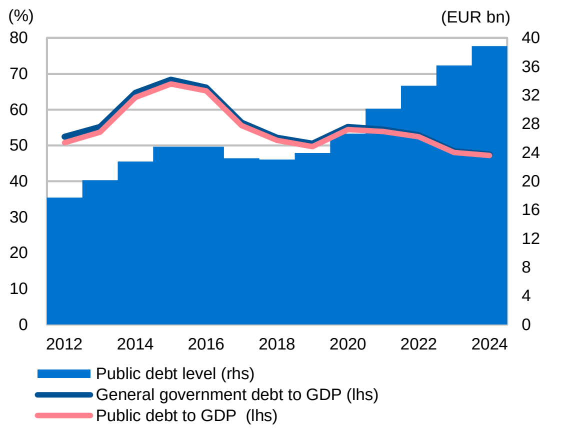
Also, in December 2024, IMF Executive Board approved a new three-year Policy Coordination Instrument (PCI) to Serbia. The aim of the new programme is the preservation of macroeconomic and financial stability, maintenance of fiscal discipline and downward public debt trajectory, as well as further strengthening of the resilience of the energy sector and creation of room for the realization of investment needs in this sector. The nature of the new instrument is advisory, and it is intended for countries pursuing a credible economic policy.

Going forward, and in line with the available fiscal room, fiscal policy will focus on further reduction in overall tax burdens, additionally easing the weight carried by corporates, and enhancing the private sector competitiveness. On the expenditure side, pensions and wages policy will be prioritised in addition to infrastructure and capital projects, aimed at continued rise in the living standard.[30]

I.4.2 Public debt

Observed at the year end, the share of public debt in GDP has been on a downward trajectory since 2021. In 2024, this trend continued. At end-2024, the share of central government debt in GDP came at 47.2%, down by 0.8 pp from end-2023 (Chart I.4.3).

Chart I.4.3 **Public debt dynamics**



Source: Ministry of Finance.

[30] https://javnidug.gov.rs/static/uploads/Fiskalna%20strategija%202025-2027.pdf

The share of general government debt, which includes the non-guaranteed debt of local governments and AP Vojvodina, amounted to 47.5% of GDP at end-2024, or 0.9 pp less than a year ago. Observed in absolute amounts, central government debt equalled EUR 38.9 bn at end-2024 (EUR 36.2 bn at end-2023), and general government debt EUR 39.1 bn (EUR 36.4 bn at end-2023).

The share of debt in foreign currency was high (78.2%) at end-2024, indicating the presence of FX risk (Charts I.4.4 and I.4.5). Relative to the previous year, the dinar portion of public debt increased by 0.1 pp, to 21.8%, while the euro share shrank by 0.1 pp, to 57.6%. The share of public debt in the US dollars expanded by 0.5 pp from 2023, to 13.9%.

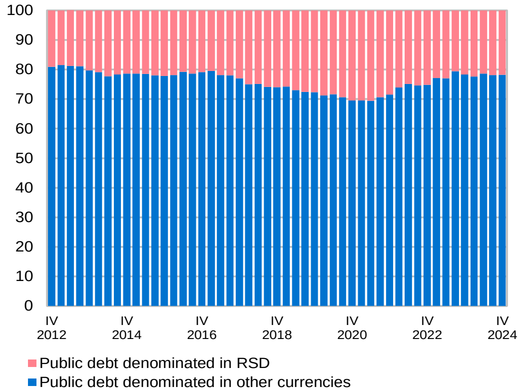
The share of debt at a fixed interest rate declined by 0.9 pp from 2023, to 71.7% at end-2024 (Chart I.4.6). Despite the decline, the share of debt at a fixed interest rate remains relatively high, indicating that public debt is not considerably exposed to the risk of interest rate changes.

In the course of 2024, the government borrowed partly by selling securities in the local and international market. The share of government securities in total central government public debt measured 49.7% in 2024 (Chart I.4.7).

In mid-January 2024, for the third time, the Republic of Serbia issued restitution bonds[31] which regulate its liabilities in accordance with the Law on Property Restitution and Compensation.[32] Namely, the government issued 5Y, 10Y and 12Y bonds in the total amount of EUR 48.0 mn. Since end-January 2024 this issue of restitution bonds has also been included in the Belgrade Stock Exchange Prime Listing.

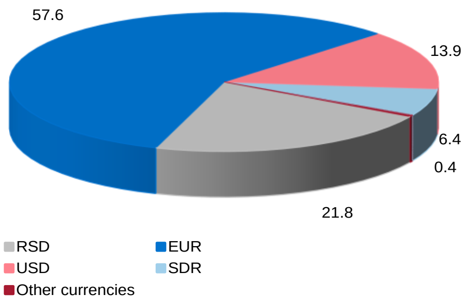
In Q1 2024, three auctions of dinar government bonds with 8Y original maturity were held. The investors' demand for these bonds was high and the total nominal value of securities sold was RSD 107.6 bn (whereby the total volume of the issue of these securities was sold), with a significant share of non-residents. The executive rate went down at these auctions from 6.15% to 6.00%, while the coupon rate equalled 7.00%. At end-February 2024, the mentioned 8Y dinar bond was included in the renowned J.P. Morgan GBI-EM Index, where, previously, in June 2021, three dinar benchmark bonds of the Republic of Serbia were also listed.[33] This listing is a clear signal to international investors about the achieved level of economic and market progress, which will have a multiple positive effect on the domestic financial market and enable even more favourable conditions for government financing. An additional diversification of the already broad base of investors investing in the securities of the Republic of Serbia is expected, as the listing of dinar bonds in the said index considerably increases the attractiveness of Serbia as an investment destination.

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



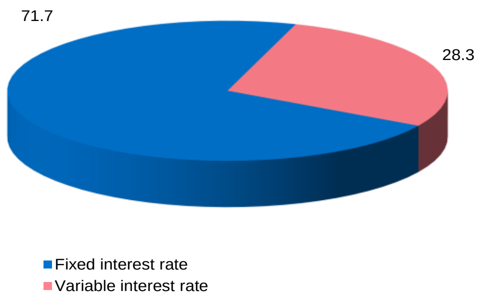
Source: Ministry of Finance.

Chart I.4.5 **Public debt currency composition, 31 December 2024**
(%)



Source: Ministry of Finance.

Chart I.4.6 **Public debt interest rate composition, 31 December 2024**
(%)



Source: Ministry of Finance.

[31] The previous issues of restitution bonds were organised in January 2022 and 2023.

[32] RS Official Gazette, Nos 72/11, 108/13, 142/14, 88/15 – CC decision, 95/18 and 153/20.

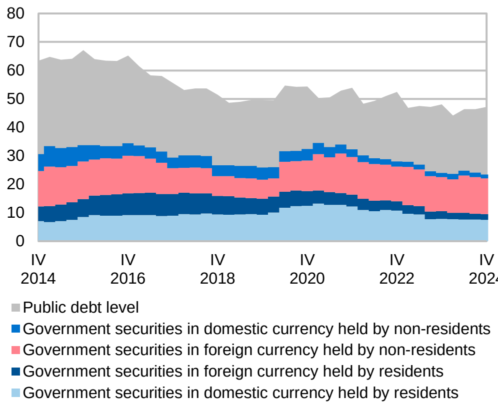
[33] In March 2025, a new 10Y benchmark bond was included in the J.P. Morgan GBI-EM Index.

Late January 2024 saw the first auction of 3Y euro-denominated government bonds, maturing on 29 January 2027. In this and in the next two auctions of these bonds (in April and May 2024), securities were sold in the nominal amount of EUR 220.8 mn at the yield rate of 4.0%, unchanged at all auctions.

In June 2024, the Republic of Serbia successfully realised in the international financial market an issue of 10Y dollar sustainability bonds, bonds whose proceeds are used for sustainable projects in the area of green agenda and socially responsible activities. Securities were sold in the total amount of USD 1.5 bn at the coupon rate at 6%, while the investors' demand exceeded USD 6.5 bn. Following the issue of green eurobonds of the Republic of Serbia in the international financial market in 2021, Serbia has been the single European non-EU country that issued a sustainability bond. To manage the public debt efficiently, a hedging transaction was concluded at the same time, i.e. a liability arising from the issue of dollar sustainability eurobonds was immediately converted into a liability in euros. This also reduced the cost of borrowing of the Republic of Serbia, in addition to lowering the exposure to exchange rate risk of the dollar against the euro, and after the cross-currency swap (CCS) for the 10Y eurobond it came at 4.75%.

The positive perception of Serbia as an investment destination is also indicated by the increase in the credit rating to investment grade, despite pronounced uncertainties in the international environment. Standard & Poor's raised Serbia's credit rating to BBB- in October 2024, after it improved Serbia's outlook for attaining an investment grade from stable to positive in April 2024. With this, for the first time in history Serbia was listed among countries with investment grade rating. Responsible fiscal policy and a declining public debt share in GDP were conducive to this decision and to positive outlooks of other leading rating agencies (Fitch Ratings[34] and Moody's Ratings[35]).

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



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

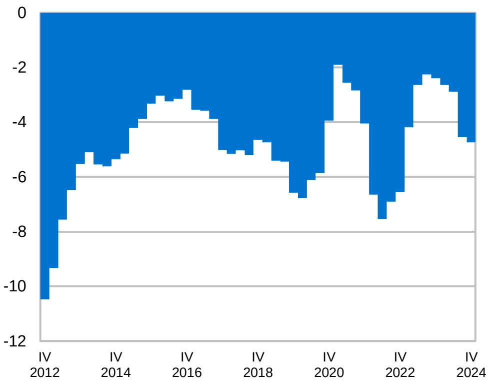
I.4.3 External debt

The current account deficit increase to 4.7% of GDP in 2024 from the lowest level of 2.4% of GDP in 2023 (Chart I.4.8) resulted from a faster rise in goods and services imports than in exports.

Namely, owing to the accelerated investment cycle, particularly under the project "Leap into the Future – Serbia Expo 2027", and a rise in household disposable income, the growth in the import of goods and services in 2024 measured 8.4% and was higher than the growth in the export of goods and services, which equalled 8.0% (Chart I.4.9).

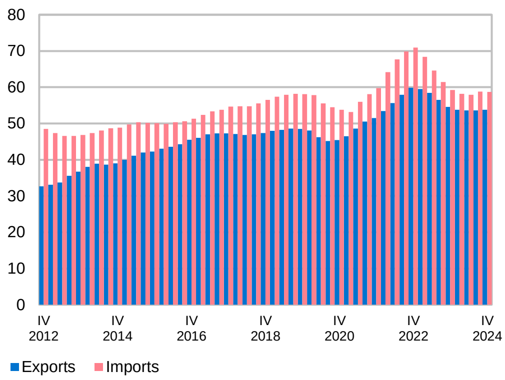
The export of goods and services recorded growth despite a slowdown in global trade and a weaker demand in the euro area, Serbia's main trade partner. The largest contribution to the rise in the export of

Chart I.4.8 **Current account***
(% of GDP)



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

Chart I.4.9 **Exports and imports of Serbia***
(% of GDP)

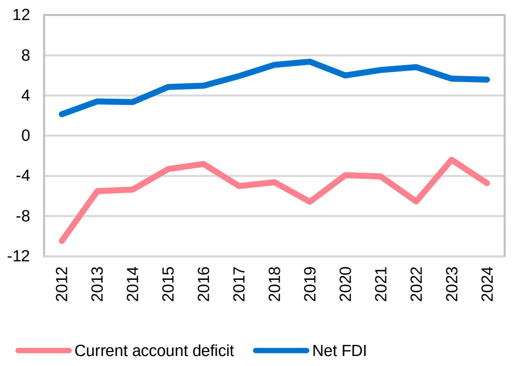


* Moving sums for the last four quarters.
Source: NBS.

[34] In February 2024, Fitch Ratings kept Serbia's credit rating at BB+, with a stable outlook, while in August 2024, it raised the outlook for attaining an investment grade from stable to positive, while keeping the rating unchanged. Also in January 2025, Fitch Ratings kept the positive outlook for investment grade.

[35] In August 2024, Moody's Ratings raised Serbia's outlook for improvement of credit rating from stable to positive, while keeping the rating at Ba2.

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



Source: NBS.

goods stemmed from manufacturing, followed by agriculture and mining. At the same time, the rise in the export of services also continued, with the ICT and tourism remaining the leading sectors.

The FDI growth trend continued into 2024, confirming that Serbia is an attractive investment destination and a regional leader in attracting investments. Total FDI inflow to Serbia reached the record EUR 5.2 bn (6.3% of GDP) in 2024 outstripping the highest amount thus far from 2023 by around 14.2%. A net FDI inflow amounted to EUR 4.6 bn (Chart I.4.10).

For the tenth consecutive year, the current account deficit was fully covered by FDI inflow, which is an important pillar of the country's external stability. In 2024, FDIs maintained their geographical and sectoral dispersion, contributing to a rise in productivity, employment and competitiveness of the economy. Observed by sector, the bulk of investments went to the sectors of construction and mining, manufacturing, as well as professional, scientific, innovation and technical activities.

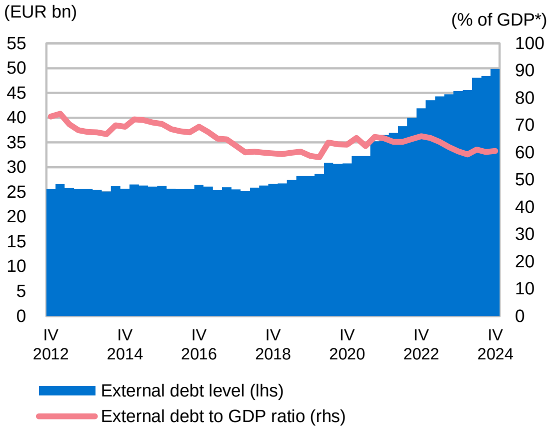
Geographic structure of inflows shows that European countries, particularly EU members, remained the main source of inflows. At the same time, investments from Asia are constantly rising, contributing to greater diversification and additionally boosting the resilience of the domestic economy to potential economic shocks in the international environment.

At end-2024, external debt amounted to EUR 49.8 bn, or 60.5% of GDP. Relative to end-2023, total external debt expanded by EUR 4.4 bn, and its share in GDP was insignificantly higher (by 0.2 pp) (Chart I.4.11).

External debt increase in 2024 is due to both public and private sector borrowing. Relative to the previous year, public sector debt went up by EUR 1.9 bn, while the private sector debt climbed by EUR 2.5 bn. Total debt of corporates and natural persons increased by EUR 2.7 bn, while, on the other hand, banks downsized their debt by EUR 0.2 bn (Chart I.4.12).

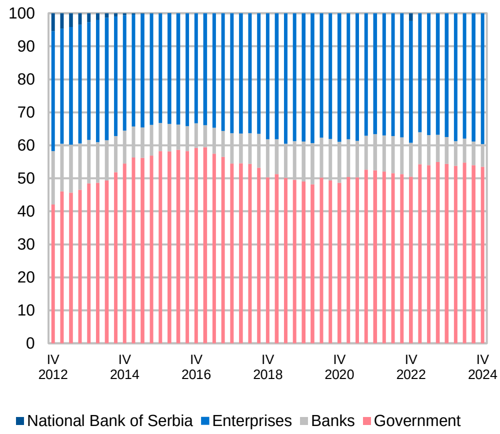
The risk of external debt refinancing is relatively low, given that its maturity structure is favourable. The share of external debt with original and remaining maturity

Chart I.4.11 **External debt dynamics**



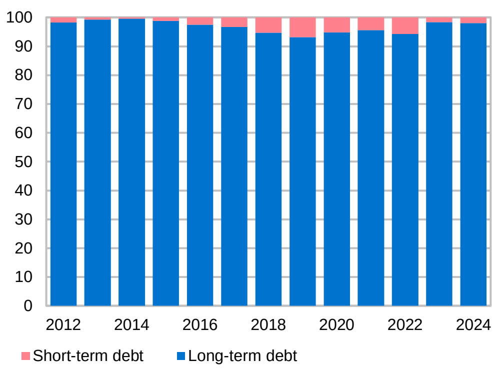
* Moving sums for the last four quarters.
Source: NBS.

Chart I.4.12 **External debt by borrower**
(%)



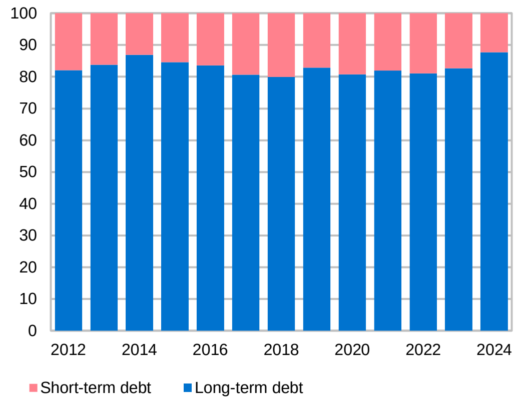
Source: NBS.

Chart I.4.13 **External debt by original maturity**
(%)



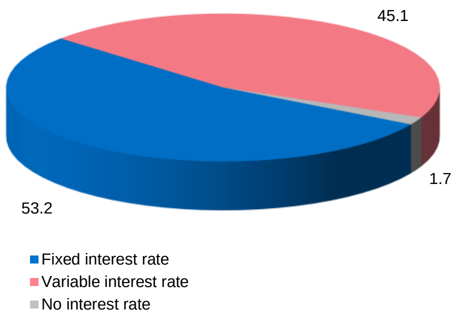
Source: NBS.

Chart I.4.14 **External debt by remaining maturity**
(%)



Source: NBS.

Chart I.4.15 **External debt interest rate composition, 31 December 2024**
(%)



Source: NBS.

of over one year is high, measuring 98.1% at end-2024 (Chart I.4.13) and 87.8% (Chart I.4.14), respectively.

Of the total external debt, 53.2% of liabilities were agreed at a fixed interest rate, 45.1% at a variable rate and 1.7% at no interest rate at all (Chart I.4.15).

Relative to the previous year, the share of external debt at a fixed rate increased insignificantly (by 0.2 pp). The share of external debt at a variable rate was mainly concentrated in the banking sector (91.1%), while in the public sector, corporates and natural persons, the highest share was that of a fixed-rate debt.

I.5 Corporate sector

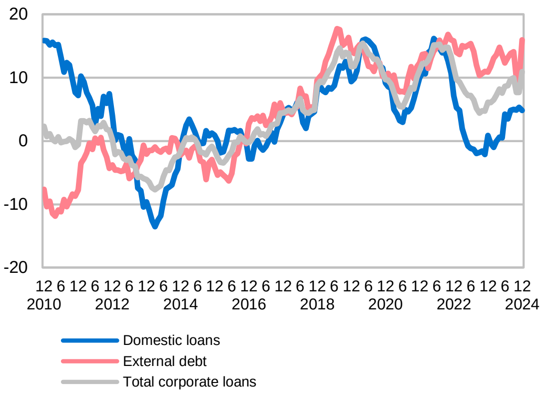
Corporate lending accelerated in 2024, owing to eased credit standards and lower costs of financing. The share of corporate NPLs at end-2024 lowered further y-o-y, indicating the sector's preserved debt servicing capacity.

Corporate lending activity gained pace in 2024 due to the monetary policy easing by the NBS and the ECB, as well as the waning effect of maturing guarantee scheme loans. Excluding the exchange rate effect,[36] domestic corporate loans increased by 4.8% in 2024.[37] Excluding the exchange rate effect, the rise in total corporate lending, which includes external debt as well, measured 11.0% y-o-y at end-2024 (Chart I.5.1).

The increase in corporate loans in 2024 was led by investment loans, which suggests the strengthening of investment activity and is associated with the start of a new investment cycle. Accordingly, the share of investment loans in total corporate loans rose by 0.9 pp, to 42.8% at end-2024. However, the dominant share in corporate lending at end-2024, as in the previous period, pertained to liquidity and working capital loans (47.1%).

Total bank receivables[38] from the corporate sector at end-2024 rose 5.8% in nominal terms relative to end-2023, driven mostly by receivables from the sectors of real estate, scientific and service activities, art, entertainment and recreation (up by RSD 29.9 bn or 15.5%), followed by mining, manufacturing and water supply (RSD 29.5 bn or 6.3%), the sector of wholesale and retail trade, and repair of motor vehicles and motorcycles (RSD 23.4 bn or 6.1%), as well as construction (RSD 17.4 bn or 11.2%). Conversely, the sharpest decline was recorded by agriculture, forestry and fishing (by RSD 3.8 bn or 4.3%). The bulk of bank receivables from corporates at end-2024 were receivables from the sector of mining, manufacturing

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



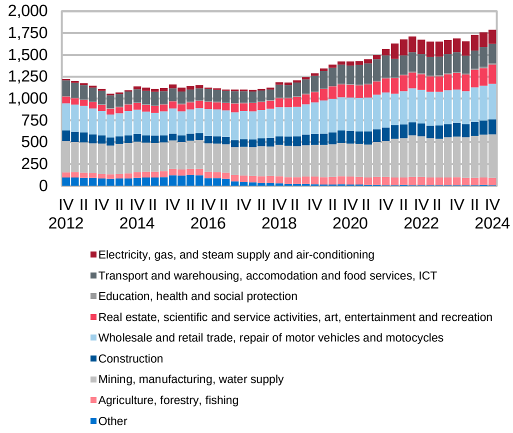
* Excluding the exchange rate effect.
Source: NBS.

[36] Calculated at the dinar exchange rate against the euro, Swiss franc and US dollar as at 30 September 2024 (the programme exchange rate used for monitoring the performance under the arrangement with the IMF), taking into account the currency structure of loan receivables.

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

[38] Receivables include loans, securities, interests, fees and shares.

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



Source: NBS.

and water supply worth RSD 496.7 bn (27.8% of total receivables), followed by wholesale and retail trade, and repair of motor vehicles and motorcycles worth RSD 404.6 bn (22.6% of total receivables), transport and warehousing, accommodation and food services, and information and communications worth RSD 225.4 bn (12.6% of total receivables), as well as the sectors of real estate, scientific and service activities, art, entertainment and recreation worth RSD 222.5 bn (or 12.5% of total receivables) (Chart I.5.2).

The Bank Lending Survey indicates that, after a longer period of tightening, in early 2024 banks eased corporate credit standards, largely owing to lower costs of funding, ongoing competition in the banking sector, as well as positive expectations as to the overall economic situation. The easing of corporate credit standards in the remainder of the year was underpinned by reduced costs of funding, which can be associated with the NBS and ECB monetary policy easing. The easing of standards, especially for dinar loans, enabled better access to funding for SMEs and farmers. However, challenges in the form of increased risk perception and reduced competition in the banking sector have posed obstacles to greater investments, especially in the context of FX and FX-indexed loans. In 2024, banks generally eased the terms of approving corporate loans by lowering interest margins, as well as fees and commissions. At the same time, conditions for loan approval were tightened through reductions in the maximum loan amount and increased collateral requirements, indicating banks' balanced approach to credit risk management. During 2024, corporate loan demand varied depending on economic conditions, the needs of corporates and access to various sources of funding. Q1 and Q3 were marked by a relative decrease in demand, while growth was recorded in Q2 and Q4.

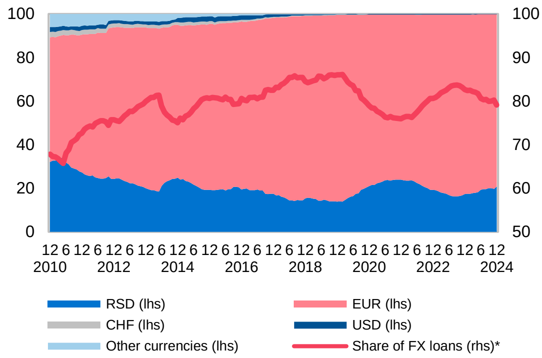
The key factors that boosted demand were the need to finance working capital and capital investments and to restructure outstanding liabilities, while the use of alternative sources of funding worked in the opposite direction.

By company size,[39] in 2024 the volume of lending increased for micro enterprises and SMEs, as well as for large enterprises. Loans approved to micro enterprises and SMEs accounted for 60.8% of total corporate loans at end-2024, recording y-o-y growth of 15.5%, 9.0% and 3.9%, respectively. Loans granted to large enterprises accounted for 39.2% of total corporate loans, recording 0.4% y-o-y growth.

By maturity, at end-2024, long-term receivables were dominant. The share of long-term loans in total corporate loans measured 83.6%, which, despite the 4.6 pp decrease relative to end-2023, indicates low risk of refinancing in the corporate sector.

Corporate sector lending grew in 2024, led by the rise in dinar loans, contributing also to the higher degree of dinarisation in the corporate sector. At end-2024, the share of dinar receivables in total bank receivables from corporates equalled 20.9%, up by 3.6 pp from end-2023 (Chart I.5.3). This is partly a result of the fact that 2024 was the final year for alignment with the new measure prescribed by the Decision on Capital Adequacy of Banks, which, after several years of postponement, became effective as of early 2025.[40] Almost all FX and FX-indexed receivables pertain to euro receivables, whose share dipped by 3.4 pp. To reduce exposure of the corporate sector to the currency risk, the NBS is actively promoting the use of hedging instruments, attempting to lower the risk of exchange rate volatility and in turn contribute to the strengthening of financial stability. Hedging instruments offered in the market are

Chart I.5.3 **Currency structure of domestic bank claims on corporates**
(%)



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

[39] Legal persons are classified in line with the provisions of the law governing accounting.

[40] This measure requires banks to reduce their capital when calculating the capital adequacy ratio if the share of approved FX and FX-indexed loans and debt securities in total loans and debt securities to non-financial and non-government sector, approved after 1 July 2023, exceeds 71% in 2025. The threshold decreases to 64% in 2026, 57% in 2027, and 50% from the beginning of 2028.

FX forward contracts (FX forwards), forward FX purchases (covered forward contracts) and currency swaps.

The share of NPLs in total corporate loans (companies and public non-financial sector) measured 1.8% at end-2024. This share decreased by 0.3 pp relative to end-2023. Lower share of NPLs in total corporate loans in 2024 reflected a y-o-y decrease in the sector's NPLs by RSD 3.9 bn (-11.1%), and a y-o-y rise in total corporate loans by RSD 73.3 bn (4.5%).

Such movements indicate that in 2024 the corporate sector preserved its debt servicing capacity. Also, the share of NPLs in total corporate loans is below the pre-pandemic level, which shows that the NBS's economic support measures for the corporate sector during the pandemic were well-timed and adequate, helping to preserve bank asset quality and financial stability.

Since the adoption of the NPL Resolution Strategy in August 2015,[41] the share of NPLs of this sector dropped by 22.6 pp at end-2024. The share of NPLs declined in all economic branches, mostly in construction (by 48.4 pp) and real estate, scientific and service activities, arts, entertainment and recreation (by 37.9 pp).

Observed by sector, 2024 saw the sharpest decline of NPLs in real estate, scientific and service activities, arts, entertainment and recreation by RSD 2.4 bn (a drop in the share by 1.3 pp to 0.3%), followed by construction, and agriculture, forestry and fishing by RSD 1.0 bn each (a decline in the share by 0.8 pp to 1.3%, and 0.9 pp to 3.9%, respectively). Mining, manufacturing and water supply also recorded a decline by RSD 0.9 bn (a drop in the share by 0.4 pp, to 2.6%). The highest increase (RSD 0.8 bn) in 2024 was recorded in transport and warehousing, accommodation and food services, and information and communications (an increase in the share by 0.5 pp to 2.0%) (Chart I.5.4).

The share of NPLs in total corporate loans declined by 0.4 pp y-o-y to 2.0% at end-2024, while the share of NPLs of public non-financial sector fell by 0.1 pp to 0.2%.

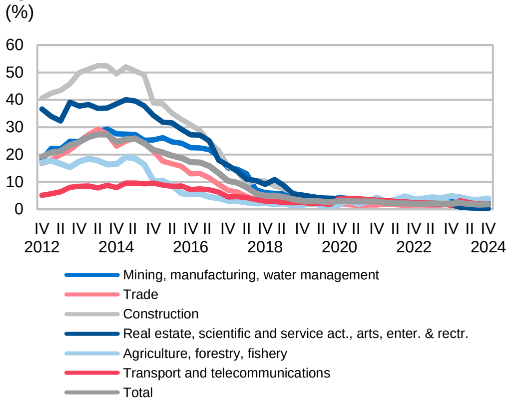
Sector-wise, at end-2024 the sharpest y-o-y decline in the share of NPLs in total loans was recorded in construction, scientific and service activities, arts, entertainment and recreation (by 1.4 pp), and the strongest rise in transport and warehousing, accommodation and food services, and information and communications (by 0.5 pp).

In terms of the currency structure (Chart I.5.5), the share of corporate FX-denominated NPLs stood at 1.9% at end-2024, down by 0.2 pp y-o-y. The share of dinar NPLs stood at 1.5% at end-2024, down by 0.8 pp y-o-y.

In 2024, banks wrote off RSD 6.8 bn[42] and sold RSD 3.3 bn of corporate NPLs to entities outside the banking sector.

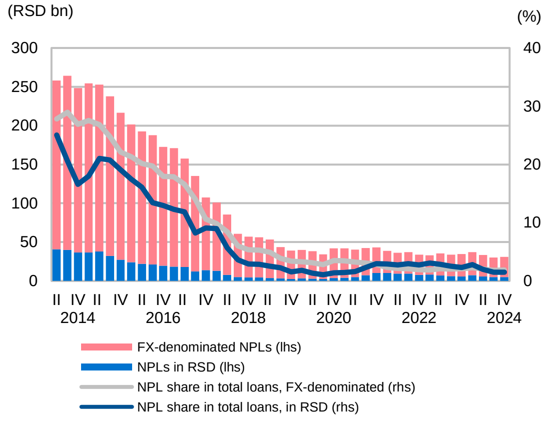
In 2024, the borrowing costs of corporates decreased relative to end-2023, due to monetary policy easing by the NBS and the ECB (Chart I.5.6). Observing the cost of borrowing in dinars, in December 2024, the weighted average interest rate on new dinar loans came at 6.90%, down by 1.43 pp from December 2023. The weighted average rate on new euro and euro-indexed dinar loans also decreased to 5.56% in December 2024 (1.51 pp lower than in December 2023). The interest rate on term dinar deposits of the corporate sector decreased by 1.40 pp y-o-y, to 4.37% in December 2024, while that on euro deposits fell by 0.59 pp y-o-y, to 2.44%.

Chart I.5.4 **NPL share in total loans of corporates by sector**



Source: NBS.

Chart I.5.5 **Corporate NPLs by currency**

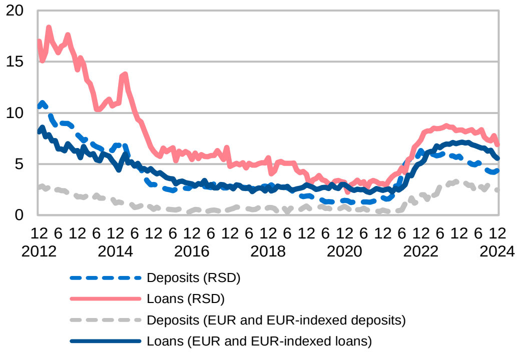


Source: NBS.

[41] The successful implementation of the NPL Resolution Strategy and implementation of the Decision on the Accounting Write-Off of Bank Balance Sheet Assets remained important factors contributing to the sharp fall in NPLs from 2016. In accordance with the Strategy, the NBS adopted an Action Plan aimed at strengthening banks' capacity for NPL resolution and contributing to the development of the NPL market (https://nbs.rs/en/scripts/showcontent/index.html?id=8678). Activities in the Action Plan have been fully implemented.

[42] Including write-offs of NPLs of the non-financial sector undergoing bankruptcy.

Chart I.5.6 **Interest rates on corporate loans and deposits – new business**
(weighted average, annual, %)



Source: NBS.

At end-2024, there were 50,470 corporates with blocked accounts (Chart I.5.7), up by 9.3% from end-2023. The amount of blocked funds increased from last year by 1.1%, to RSD 215.2 bn.

In 2024, the NBS Enforced Collection received from competent commercial courts 445 decisions on opening bankruptcy proceedings against debtors (up by 41 from 2023), and 383 decisions on closing bankruptcy proceedings (up by 47 from 2023). Further, it also received: 16 decisions on suspension of the bankruptcy proceedings (17 in 2023) and 36 decisions on suspension of the proceedings in order to sell the debtor's assets (45 in 2023). In addition, the NBS received 64 decisions on instituting a preliminary bankruptcy procedure with safeguard measures (51 in 2023), and 21 decisions on the adoption of the pre-pack reorganisation plans (14 in 2023).

In 2024, the Serbian government adopted a series of regulations[43] establishing a support programme for micro enterprises and SMEs.

To strengthen the competitiveness of business entities, improve their operations and technological production process, as well as support employment, the government implemented the equipment procurement programme for small enterprises. The programme is a combination of favourable loans and grants intended for the procurement of production equipment, construction machinery, machines, and equipment for improving energy efficiency. It is aimed at micro and small enterprises, as well as entrepreneurs and cooperatives, with funding provided by the state in cooperation with banks and leasing companies.[44]

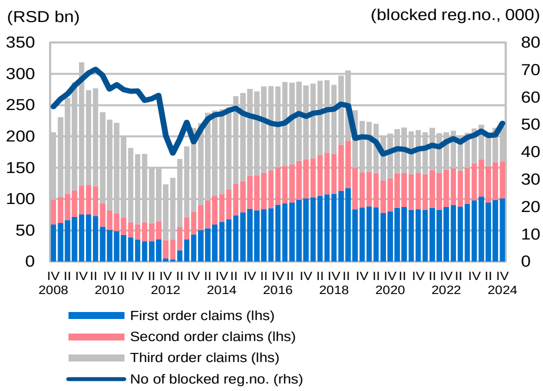
Through the Development Opportunity Programme – line for the manufacturing industry, in 2024 grants were allocated to micro enterprises, SMEs, entrepreneurs and cooperatives for the procurement of property, plant and equipment, including equipment for improving energy efficiency and environmental aspects of production.[45]

In addition, to support business entities investing in the construction and expansion of production capacities for game and fish processing, production of wine, beer and spirits, financial support was provided to entrepreneurs, micro enterprises, SMEs and cooperatives. This support can be used for the procurement of property, plant and equipment.[46]

Furthermore, in 2024 the government announced public calls for the allocation of grants within the programme to encourage the development of entrepreneurship, micro enterprises and SMEs (for young people and start-ups, women, single parents, holders of certificates for traditional and artistic crafts and home-made trades, as well as employers involved in dual education).[47]

In 2024, the programme to support product and service safety and quality improvement was developed. The objective of this programme is to enhance the competitiveness, safety, and quality of products and services in the market, thereby facilitating market access and increasing the competitiveness of micro enterprises, SMEs and entrepreneurs, and in turn, the economy as a whole. The programme is expected to enhance the use of standards in production and business organisation, as well as product certification. This type of programme is being implemented for the first time. The government thus aims to encourage primarily small enterprises and entrepreneurs to certify and standardise their products and services, thereby enabling faster and easier distribution.[48]

Chart I.5.7 **Movement of claims through enforced collection by priority**



Source: NBS.

[43] RS Official Gazette, No 58/2024.

[44]https://privreda.gov.rs/usluge/javni-pozivi/ministarstvo-raspisalo-javni-poziv-malim-preduzecima-za-nabavku-opreme

[45]https://privreda.gov.rs/usluge/javni-pozivi/javni-poziv-za-dodelu-bespovratnih-sredstava-u-okviru-programa-razvojna-sansa-linija-za

[46]https://privreda.gov.rs/usluge/javni-pozivi/programa-za-podsticaj-razvoja-preradjivackih-kapaciteta-u-oblasti-lova-ribarstva-proizvodnje-vina

[47]https://preduzetnistvo.gov.rs/vesti/paket-10-programa-podrske-mspp-ministarstva-privrede-u-2024/

[48]https://privreda.gov.rs/usluge/javni-pozivi/javni-poziv-za-ucesce-u-programu-podrske-unapredjenju-bezbednosti-i-kvaliteta-proizvoda-i-usluga-u

I.6 Household sector

Key labour market indicators improved further in 2024 owing to preserved macroeconomic stability. Household savings maintained upward trend, reaching new record highs and strengthening the banking sector deposit base. Record-high levels of dinar savings in 2024 are yet another proof of citizens' unwavering confidence in the domestic currency. Savings in dinars proved more profitable than in FX for the twelfth year in a row. The NBS continued to implement various measures in 2024 with a view to preserving the living standards.

Positive labour market developments continued in 2024, reflected in rising net wages and employment, as well as a further decline in the unemployment rate. According to the Labour Force Survey, the average employment rate went up by 1.2 pp from 2023, to 51.4% in 2024. Compared to the previous year, the average unemployment rate declined, falling by 0.9 pp, to 8.6% in 2024. The average monthly net wage in Serbia in 2024 equalled RSD 98,143, having risen 14.1% in nominal and 9.1% in real terms, compared to 2023.[49] The average pension in 2024 equalled RSD 46,138, which is a nominal increase of 20.4% from the previous year.[50]

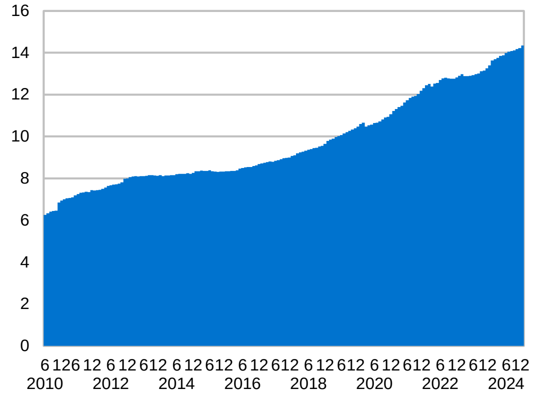
Both dinar and FX savings went up in 2024, thanks to the preserved macroeconomic and financial stability. Total savings went up, even amid global uncertainty, strengthening the banking sector deposit base as the main source of loan financing.

FX savings of residents reached record EUR 14.3 bn at end-2024, up by EUR 0.9 bn from end-2023 (Chart I.6.1). The maturity structure of FX savings shows that the share of long-term savings in total FX savings went down by 9.0 pp, to 9.4% in 2024, which is attributable to the leap year effect (Chart I.6.2).

Since the NBS has been implementing the strategy of dinarisation of the financial system, savings in dinars rose eleven times, to RSD 187.5 bn at end-2024, up by as much as RSD 51.0 bn from end-2023. Chart I.6.3 shows that in 2024 the maturity structure of dinar savings changed in favour of short-term in total household savings, which is also linked to the leap year effect in 2024. Their share in total dinar savings of residents equalled 85.2% at the end of the year, up by 14.0 pp from end-2023.

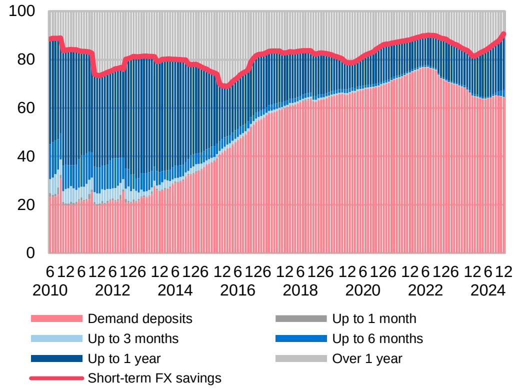
Promoting savings in the local currency and emphasising their higher profitability is a part of the NBS strategy of dinarisation of the financial system. Robust growth in dinar savings in the past twelve years, during the implementation of this strategy, led to a considerable increase in the dinarisation of household deposits, which reached its maximum at end-2024. This bolsters financial stability given that a higher degree of dinarisation of the financial system ensures greater efficiency of monetary policy measures and stronger resilience to the risk of exchange rate volatility, as well

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



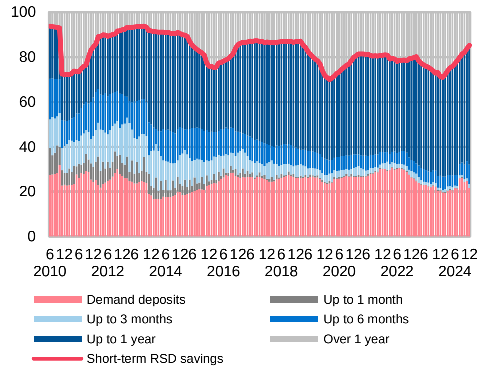
Source: NBS.

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



Source: NBS.

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



Source: NBS.

[49] Source: SORS.

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

as reduced exposure to risks from the international environment.

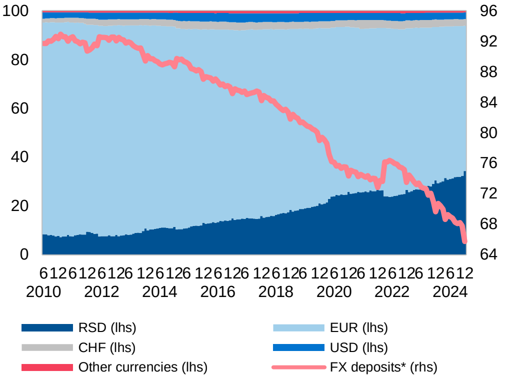
The analysis of savings profitability[51] shows that in the past twelve years dinar savings were more profitable than euro savings both in the short and long run, reflecting higher interest rates on savings in dinars than in euros, a more favourable tax treatment of income from savings in the domestic currency (they are not subject to tax) compared to savings in foreign currency, as well as preserved financial stability and a stable EUR/RSD exchange rate.

The share of dinar deposits in total household deposits[52] increased by 3.9 pp from end-2023, to 34.3% at end-2024. Euro deposits continued to account for the bulk of deposits (59.7%), while their share was 3.4 pp lower than at end-2023. At end-2024, the share of dollar and Swiss franc deposits was low and amounted to 2.8% and 2.7%, respectively (Chart I.6.4).

The cost of household borrowing and interest rates on household savings with banks decreased compared to the previous year. The fall in interest rates on new dinar loans to households was recorded for the first time since the cycle of monetary policy tightening began in 2022. The gradual monetary policy easing by the NBS and the ECB led to a drop in interest rates on term household savings. The cost of household borrowing declined further at end-2024, as a result of the application of the temporary cap on the rates on housing loans to natural persons,[53] and promotional cash loan offers of some banks. Interest rates on new dinar household loans in 2024 went down by 2.63 pp, to 9.87% at end-December. In the same period, interest rates on new euro-indexed and euro loans decreased by 0.78 pp to 5.52% (Chart I.6.5). The interest rates on new dinar deposits declined by 0.55 pp, to 4.70% in December 2024. The interest rates on euro-indexed and euro deposits fell by 0.73 pp y-o-y, to 3.02% at end-2024.

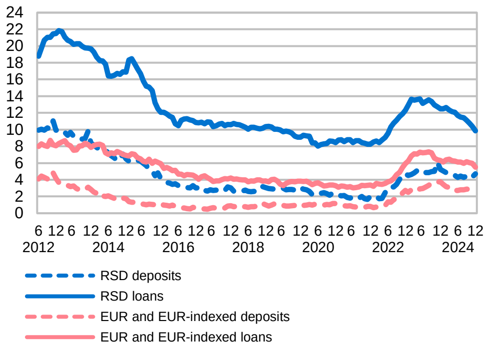
Total bank receivables[54] from the household sector[55] at end-2024 rose 10.2% in nominal terms relative to a year earlier (Chart I.6.6). This increase is aided by the eased credit standards, lower interest rates, wage growth and promotional offers made by banks. Broken down by purpose, a significant contribution to the nominal growth in household receivables came from the increase in cash and housing loans (6.3 pp and 3.0 pp, respectively), which provided a positive contribution to growth, as opposed to the last year. At end-2024, the number of housing loans totalled 161,294. Their gross value was RSD 620.0 bn, and they made up 38.2% of total bank household receivables, which is 0.9 pp less than in 2023. The share of receivables under cash loans

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



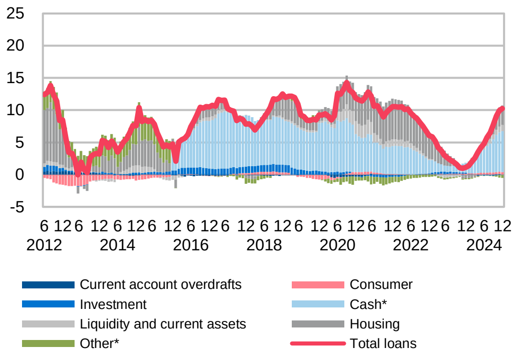
* The share of FX and FX-indexed deposits in total household deposits.
Source: NBS.

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



Source: NBS.

Chart I.6.6 **Contributions to growth in bank receivables from households, by purpose**
(y-o-y growth rates, pp)



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

in total household receivables rose by 1.6 pp, to 46.1% at end-2024 (Chart I.6.7).

The volume of new loans to households (non-profit institutions included) in 2024 expanded by 46.1% from

[51] https://www.nbs.rs/export/sites/NBS_site/documents-eng/publikacije/dinarizacija/analize/analiza_isplativosti_dds_e_II_2024.pdf

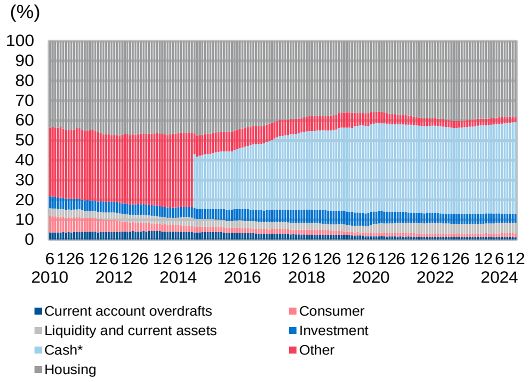
[52] In addition to savings, household deposits also include transaction deposits. The calculation includes the household sector without non-profit institutions serving households.

[53] Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans (RS Official Gazette, No 78/2023).

[54] Receivables include loans, interests, fees and other receivables.

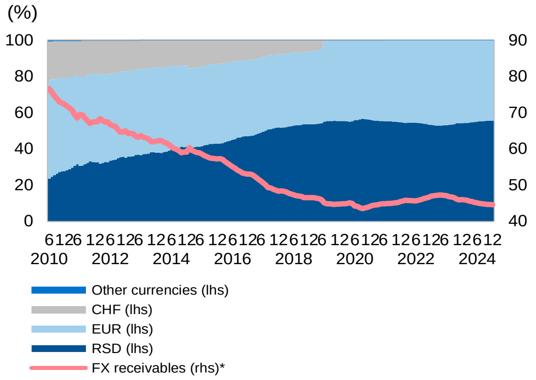
[55] The household sector comprises domestic natural persons, foreign natural persons – residents, private households with employed persons, registered farmers and entrepreneurs.

Chart I.6.7 **Structure of bank receivables from households, by purpose**



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

Chart I.6.8 **Currency structure of bank receivables from households**



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

2023. In 2024, households were mostly granted cash loans (68.4% of new household loans), up by 4.5 pp from 2023. New housing loans made up 15.6% of new household loans in 2024, down by 1.0 pp from 2023.

As for the currency composition, the bulk of new household loans (78.2%) was granted in dinars (up by 2.8 pp from 2023), much as a result of NBS regulations[56], which encourage borrowing in dinars. In the category of cash loans, new dinar loans accounted for almost 100% of total new loans in 2024, which is supportive of the dinarisation process. Relative to 2023, the share of dinar receivables in total household receivables rose by 1.4 pp to 55.4% (Chart I.6.8), reflecting a more vibrant growth in dinar loans. This share moved above the share of FX and FX-indexed receivables (44.6% at end-2024), among which euro-indexed and euro receivables were dominant (accounting for 44.5% of total bank receivables from households).

The share of gross NPLs of the household sector in total household loans (gross NPL ratio) measured 3.4% in December 2024, down by 0.9 pp from end-2023. At end-2024, gross NPL ratio for housing loans decreased by 0.3 pp relative to the previous year, to 1.4%, and by 1.6 pp for cash loans, to 4.9%. Timely and adequate NBS and Serbian government measures helped avert larger negative effects of tightened global financial conditions on households' debt servicing capacity.

The majority of housing loans (58.6%) were insured by the National Mortgage Insurance Corporation. At end-2024, there were 94,513 insured loans, down by 3,083 from end-2023. The initially insured amount was EUR 3.2 bn, of which EUR 1.8 bn was outstanding. At the end of 2024, the Corporation portfolio contained 251 past due loans worth EUR 10.1 mn. These loans were declared past due because of difficulties in repayment, and until the mortgaged property is sold, the Corporation is the one paying the annuities. Compared to 2023, the number of these loans decreased by 36, while the outstanding amount of insured past due loans went down by EUR 2.3 mn. As at end-2024, a total of 760 mortgages under insured housing loans were foreclosed since the Corporation began operating (42 foreclosed mortgages in 2024).

To safeguard citizens' living standards amid rising interest rates, in September 2023 the NBS adopted a Decision[57] that enabled a temporary restriction of housing loan interest rates. The temporary measure was being implemented until end-2024, limiting the nominal interest rate during 15 months for first-time beneficiaries of a variable-rate housing loan worth no more than EUR 200,000. The interest rate on housing loans approved concluding with 30 July 2022 could not exceed 4.08%. For housing loans approved as of 31 July 2022 and until the effective date of this Decision, citizens were allowed to pay a lower instalment, at the rate from the original repayment plan. Banks could not charge to the borrower any difference in the interest rate that occurred as a result of the Decision's implementation. During the period of the Decision's validity, interest rates on new housing loans were also limited, therefore for loans with a variable interest rate, the fixed part of the nominal interest rate (bank's margin) could not be higher than 1.1%, whereas for loans with a fixed interest rate, the nominal rate was limited to 5.03%. In addition to these measures, all housing loan beneficiaries were allowed to repay their loans early without paying the early repayment fee. This measure resulted in a decrease in the interest rate on new housing loans from 6.45% at end-September 2023 to 4.96% at end-December 2024, thereby easing the burden on housing loan beneficiaries and increasing the disposable household income.

In December 2024, the NBS adopted the Decision on Temporary Interest Rate Cap on Loan Agreements Concluded with Natural Person Consumers, with a

[56] Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, Nos 34/2011, 114/2017, 84/2020 and 102/2024).

[57] Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans (RS Official Gazette, No 78/2023).

view to protecting the rights of financial service consumers[58]. This Decision ensured a gradual transition to a market interest rate after the expiration of the temporary measure limiting interest rates on housing loans. In addition to the limitation on interest rates on housing loans, the new decision also introduced interest rate caps for cash and consumer loans, as well as for credit cards and current account overdrafts. This measure was also of a temporary nature and was intended to be applied until the adoption of the new Law on the Protection of Financial Service Consumers,[59] and no later than end-2025. The Law takes a systematic approach to limiting interest rates on all credit products with a view to protecting the interests of financial service consumers, i.e. safeguarding the households' living standards, while preserving and strengthening financial system stability.

In addition, during 2024 the provisions of the Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons[60] were implemented, enabling simplified lending to natural persons who do not receive their wage or pension via an account with the lending bank in the amount of up to RSD 90,000 and the maturity of maximum two years. The application of this provision was extended until 30 June 2025.

In December 2024, the NBS timely set up an appropriate regulatory framework for the implementation of the government's youth housing loan programme. Namely, when approving loans under this programme, banks may apply the so-called LTV limit of 99% (meaning that the client can make a down payment of 1% of the real estate value purchased under the loan). In addition, banks may apply a lower risk weight of 35% to the entire exposure under a housing loan approved within the Youth Housing Loan Programme to first-time home buyers. The above amendments create a framework which provides incentives both to borrowers, through minimum participation in financing the real estate, and to banks, through the application of lower risk weight to housing loans included in the programme. The law on this programme was adopted on 6 March 2025. Also, since 2020, banks have been permanently allowed to approve loans for first-time home buyers in the amount of up to 90% (instead of 80%) of the estimated value of such real estate.[61]

NBS regulations also allowed financially distressed debtors to extend the payment term by up to three years relative to the applicable regulatory solution for cash, consumer and similar loans.[62]

As so far, the NBS continues to monitor developments in this sector and implement all the necessary measures and relevant decisions aimed at protecting households and preserving the stability of the financial system of the Republic of Serbia.

The table below contains the main indicators for the household sector for 2011–2024.

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

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Bank receivables from households														
RSD bn	601.7	652.7	673.7	724.6	759.1	838.6	904.2	1,017.3	1,111.3	1,243.0	1,374.2	1,457.5	1,473.8	1,624.7
EUR mn	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	11,687.2	12,423.1	12,578.3	13,885.0
Total deposits of households														
RSD bn	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	1,989.3	2,048.7	2,255.8	2,555.9
EUR mn	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	16,918.7	17,462.6	19,251.3	21,842.8
FX bank receivables to total receivables[1]	67.4	65.0	62.1	59.0	57.2	53.0	48.3	46.4	44.7	44.1	45.4	46.9	45.9	44.6
FX to total deposits[1]	90.7	92.1	89.4	88.7	87.1	85.1	84.2	81.8	79.0	74.3	72.8	73.5	69.6	65.7
FX deposits to FX bank receivables[1]	191.2	214.7	223.3	233.4	233.9	241.0	246.2	241.3	248.1	237.7	232.1	220.2	231.9	232.0
LTV ratio - flats	n/a	n/a	n/a	n/a	n/a	59.1	55.8	58.8	51.5	58.7	59.4	64.4	58.6	61.5
Average loan per resident														
RSD thousand	80.6	87.8	91.0	99.9	105.3	117.4	127.7	144.5	158.8	177.9	198.7	213.2	220.7	244.7
EUR	770.1	771.9	793.4	826.3	865.7	950.5	1,077.6	1,222.8	1,350.8	1,513.3	1,689.6	1,817.4	1,883.7	2,091.3
Average loan amount														
RSD thousand	439.6	460.4	489.9	511.1	472.2	483.9	483.8	516.3	553.1	564.0	575.6	586.6	579.7	621.1
EUR	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	4,895.5	5,000.1	4,947.6	5,308.1
Average loan per user														
RSD thousand	530.9	570.1	612.0	644.7	614.6	634.7	646.9	701.7	747.9	786.7	824.9	853.1	858.8	929.8
EUR	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	7,015.8	7,271.5	7,329.4	7,946.4

[1] FX receivables and deposits include FX-indexed claims and deposits.
Sources: SORS, ASB and NBS.

[58] RS Official Gazette, No 102/2024.

[59] RS Official Gazette, No 19/2025.

[60] Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons (RS Official Gazette, Nos 108/2020, 119/2021, 137/2022, 110/2023 and 102/2024).

[61] Decision Amending the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, No 102/2024).

[62] Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 137/2022).

II Financial sector

Accounting for around 91% of financial sector assets, the Serbian banking sector was stable in 2024 owing to adequate capitalisation, high liquidity and recorded profitability. In 2024, commercial banks posted a positive net financial result, with 2.8% RoA and 20.3% RoE. Owing to eased credit standards and lower funding costs, domestic lending activity accelerated further, and recorded an 8.2% y-o-y rise at end-2024. The increase in lending activity and the decline in NPLs led to a reduction in the share of NPLs in total loans to 2.5% at end-2024, and to a new all-time low of 2.3% in April 2025. This indicates that the increased costs of loan repayment did not lead to a deterioration of bank asset quality, and that the NBS's measures were timely and adequate. Financial stability was preserved despite all the challenges we have been facing in the previous period.

II.1 Banking sector

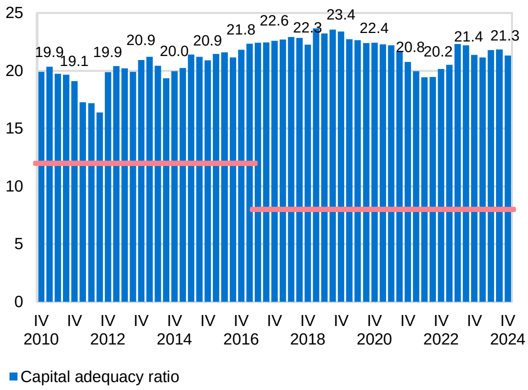
II.1.1 Capital adequacy

In 2024, the Serbian banking sector was well-capitalised, as confirmed by CARs, which were considerably above the prescribed regulatory minimums. At end-2024, CAR measured 21.3% (Chart II.1.1), and was above the regional average (Chart II.1.2). Owing to a favourable capital structure, high levels of Common Equity Tier 1 (CET 1) capital adequacy ratio (19.59%) and Tier 1 capital adequacy ratio (19.63%) were recorded.

At end-2024, CAR went down negligibly by 0.1 pp y-o-y, under the impact of risk-weighted assets which rose by RSD 304 bn in 2024 to RSD 3,606 bn. Meanwhile, regulatory capital increased by RSD 63 bn, to RSD 769 bn at end-2024. Banks' CET 1 rose in 2024 by RSD 58 bn, to RSD 706 bn.

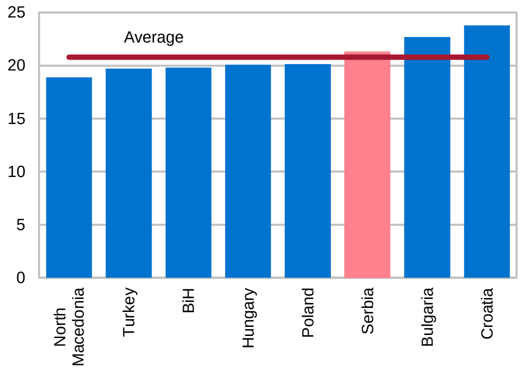
In 2024, banks were allowed to exclude a part of net unrealised losses and gains based on the change in value of debt instruments from the calculation of CET 1 capital (50% by June 2024, 25% by end-2024), in line with the temporary measure[63] which the NBS adopted in June 2022[64] enabling banks to mitigate the adverse impact of changes in the prices of securities on capital. The measure was initially adopted in order to maintain

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



Source: NBS.

Chart II.1.2 **Regulatory capital to risk-weighted assets, countries of the region**
(2024, latest available data, %)



Sources: IMF and NBS.

[63] Decision on Temporary Measure Regarding the Calculation of Bank Capital (RS Official Gazette, Nos 72/2022, 124/2022 and 110/2023).
[64] The measure was originally intended to be applied until 31 December 2023, but its application was extended until end-2024 by the December 2023 Decision Amending the Decision on Temporary Measure Regarding the Calculation of Bank Capital (RS Official Gazette, No 110/2023), with a gradual reduction in the percentage of net unrealised losses that can be excluded from the calculation of CET 1 capital.

the balance between the tightening of monetary conditions required for limiting the effects of inflationary pressures and stimulating bank lending activity to continue supporting the real sector and further economic growth. Once the cycle of monetary policy tightening was wound up, this facility was gradually phased out, and ceased to be applied after end-2024.

According to end-2024 reports, banks allocated RSD 203.6 bn worth of CET 1, or 5.6% of risk-weighted assets for the combined capital buffer.[65] The maintenance of capital buffers above the prescribed regulatory minimums increases banks' resilience to losses, decreases excessive exposures and limits capital distribution in order to contain systemic risks in the financial system.

Bank business models in Serbia are traditional and based on corporate and household lending. Hence, credit risk was the most dominant risk in the Serbian banking sector in 2024. At end-2024 credit risk accounted for 85.2% of risk-weighted assets, while the shares of the operational risk and market risks were significantly lower – 14.1% and 0.5%, respectively.

High capitalisation of the banking sector is also evidenced by the leverage ratio,[66] introduced in Serbia's regulatory framework by Basel III regulations, which measured 9.9% at end-2024.

In March 2025, the Law Amending and Supplementing the Law on Banks[67] was adopted, further enhancing the regulatory and supervisory framework for banks operating in Serbia. The amendments were introduced to strengthen the framework for banking operations, primarily in the areas of corporate governance and risk management. In addition, the legal framework for bank resolution was improved, and the establishment of a Bank Resolution Fund was envisaged. The establishment of this fund, which will be financed through contributions from banks, will provide resources for bank resolution in times of crisis. This reduces the risk of using taxpayers' funds for such purposes and thus, contributes to the banking sector stability. Most of the provisions of the Law Amending and Supplementing the Law on Banks will be applied as of 1 October 2025.

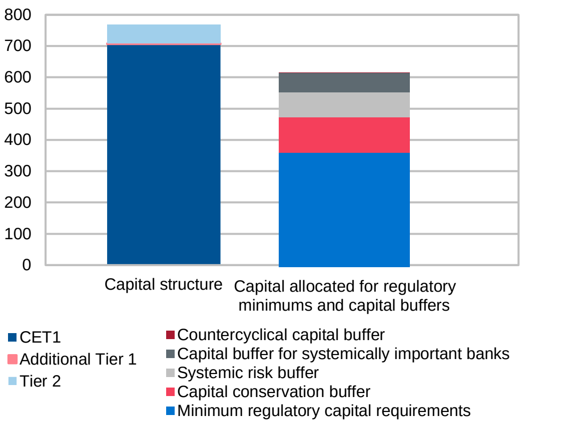
II.1.2 Level, structure and quality of assets

Twenty banks operated in Serbia at end-2024 (unchanged from end-2023). The banking sector's net assets amounted to RSD 6,635 bn (around 69% of GDP). In terms of the ownership structure of the banking sector, the largest share was held by foreign-owned banks (77.5%), while domestic private and state-owned banks accounted for 13.6% and 9.0%, respectively.

Loans and receivables accounted for the bulk of total net assets of banks (64.4%), reflecting traditional bank business models based on credit-deposit activities. Loans and receivables from clients accounted for 52.7% of assets, while loans and receivables from banks and other financial organisations made up 11.7%. The remainder related to cash and deposits with the central bank (20.5%) and securities (11.9%), primarily securities of the Republic of Serbia.

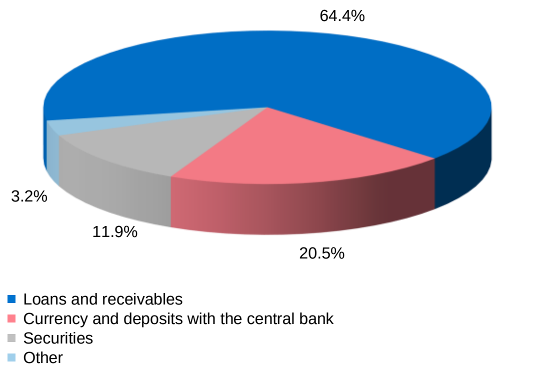
At end-2024, the credit portfolio[68] was worth RSD 3,955 bn. The bulk of the portfolio related to

Chart II.1.3 **Structure of regulatory capital and capital buffers**
(2024 eop, RSD bn)



Source: NBS.

Chart II.1.4 **Structure of assets of the Republic of Serbia's banking sector as at 31 December 2024**



Source: NBS.

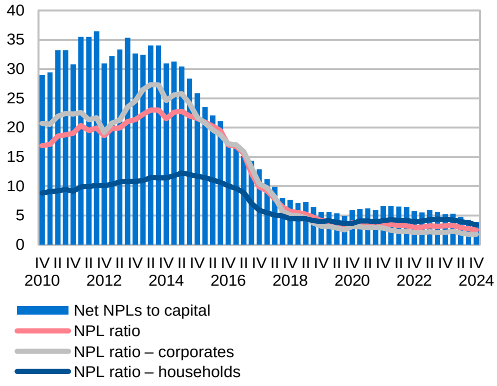
[65] The combined capital buffer consists of the capital conservation buffer, countercyclical capital buffer, capital buffer for systemically important banks, and systemic risk buffer.
[66] The leverage ratio is calculated as a ratio of Tier 1 capital and a bank's total exposure amount.
[67] RS Official Gazette, No 19/2025.
[68] Net bank loans approved to the finance and insurance sector, the public non-financial sector, corporates, entrepreneurs, general government, households, foreigners, private households with employed persons, registered farmers and other legal persons.

corporate[69] (41.5%) and household loans[70] (39.5%). Total net corporate loans stood at RSD 1,640 bn, of which 82.2% was in foreign currency, i.e. 82.1% in euros. Total net household loans were worth around RSD 1,564 bn, of which RSD 713 bn (45.6%) related to cash loans and RSD 613 bn (39.2%) to housing loans. The share of loans in dinars in total household loans was 54.5%, while FX and FX-indexed loans were almost entirely related to euro loans.

As loans account for a dominant share of total balance sheet assets of the domestic banking sector, the NPL ratio is a significant measure of asset quality.[71]

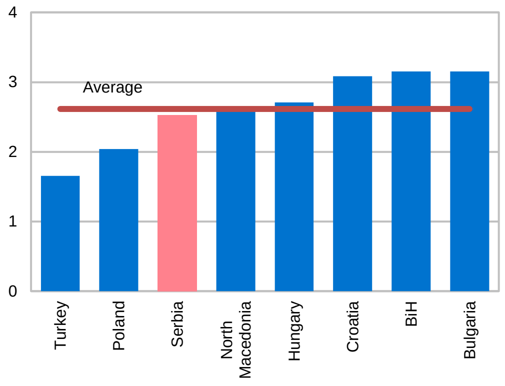
In 2024 and early 2025, the share of NPLs in total Serbian banking sector loans decreased further and touched a new historical low of 2.3% in April 2025. The reduction in NPLs signals that higher interest rates did not affect bank asset quality, nor did the termination of some measures[72] which supported the corporate and household sectors in the past period. In 2024, the NBS continued to facilitate the servicing of private sector credit liabilities. Banks were encouraged to extend the repayment term for cash, consumer and similar loans for citizens in financial distress. In addition, from September 2023 until end-2024, a measure[73] which temporarily capped the interest rates on housing loans and enabled early repayment of housing loans without any fees during the implementation of these facilities was applied. In December 2024, a new temporary decision[74] was adopted, which ensured a gradual transition to a market interest rate after the expiration of the temporary cap on housing loan rates. In addition to capping interest rates on housing loans, the new decision also introduced interest rate caps for cash and consumer loans, as well as for credit cards and current account overdrafts. This measure is included in the new Law on the Protection of Financial Service Consumers, adopted in March 2025, which systematically regulates interest rates caps for all credit products in order to protect the interests of financial services consumers, while maintaining and strengthening the stability of the financial system. The NBS's measures were timely and prevented a greater adverse effect on corporates and households, thereby contributing to the preservation of financial stability during the recent multidimensional crises.

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



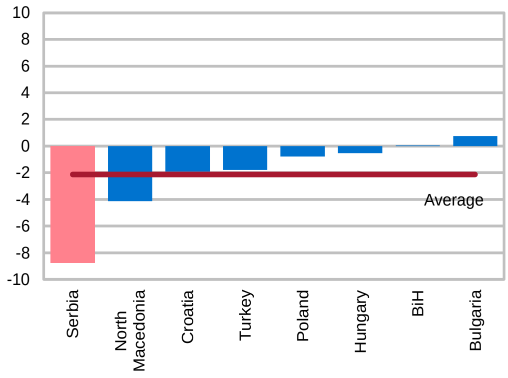
Source: NBS.

Chart II.1.6 **NPL ratios, countries of the region**
(2024, latest available data, %)



Sources: IMF and NBS.

Chart II.1.7 **Change in the NPL ratio, countries of the region**
(2024 relative to 2008, pp)



Sources: IMF and NBS.

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

[70] The household sector includes domestic natural persons, foreign natural persons – residents, private households with employed persons, registered farmers, entrepreneurs, and entrepreneurs in bankruptcy.

[71] The Decision Amending the Decision on the Classification of Bank Balance Sheet Assets and Off-Balance Sheet Items (RS Official Gazette, No 10/2024) has been applied as of 30 June 2024. This amendment envisages that a materially significant amount is defined as exceeding 1% of the bank's individual receivables from a debtor, but not less than RSD 10,000 for a natural person, or RSD 50,000 for a legal person. The absolute thresholds have been raised from RSD 1,000 to RSD 10,000 for natural persons and from RSD 10,000 to RSD 50,000 for legal persons.

[72] In the past period, the NBS applied numerous measures, including moratorium on loan repayments, facilities for debtors who experienced difficulties in the repayment of liabilities due to the coronavirus pandemic, rescheduling of farmers' obligations, etc. For more information, visit: https://nbs.rs/en/drugi-nivo-navigacije/pres/covid19/index.html and https://nbs.rs/en/drugi-nivo-navigacije/propisi/propisi-kpb/index.html.

[73] Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans (RS Official Gazette, No 78/2023).

[74] Decision on Temporary Interest Rate Cap on Loan Agreements Concluded with Natural Person Consumers (RS Official Gazette, No 102/2024).

At end-2024, the share of NPLs in total Serbian banking sector loans stood at 2.5% (Chart II.1.5). In y-o-y terms, this share edged down by 0.7 pp, as a result of a decrease in gross NPLs by 12.3% or RSD 13.2 bn and an increase in total gross loans by 11.2% or RSD 376.1 bn.

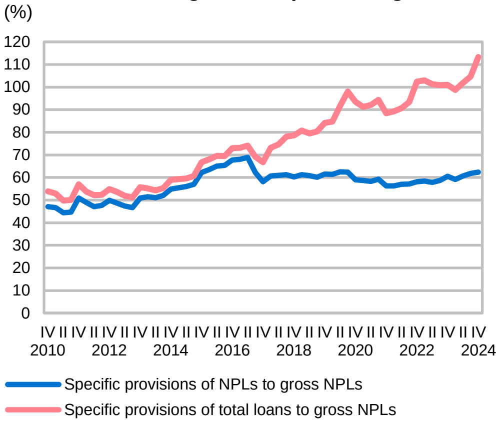
The years-long downward trend of NPLs even amid heightened geopolitical tensions, higher costs of loan repayment and weak global economic growth is a result of a systemic approach to addressing NPLs that was initiated in 2015 with the adoption of the NPL Resolution Strategy. Such an approach has continuously yielded excellent results. The share of NPLs at end-2024 was reduced by 19.7 pp relative to August 2015 when the NPL Resolution Strategy was adopted. The main channels of reducing NPLs were collection, write-off and assignment (sale) to third persons.

In 2024, RSD 20.6 bn worth of gross NPLs were written off and RSD 3.4 bn assigned/sold.

The share of NPLs in total loans to corporates (companies and public non-financial sector) stood at 1.8% at end-December 2024, down by 0.3 pp compared to the same period last year. In terms of individual categories, the share of NPLs in total loans to companies decreased by 0.4 pp, to 2.0%, while the share of NPLs in total loans to public non-financial sector declined by 0.1 pp y-o-y, to 0.2% at end-2024.

A reduced share of NPLs in total corporate loans in 2024 was recorded amid a decrease in the amount of the sector's NPLs by 11.1% (RSD 3.9 bn) and a rise in total corporate loans by 4.5% (RSD 73.3 bn). In 2024, the amount of NPLs declined the most in real estate sector[75] (by RSD 2.4 bn, and their share in total gross loans of this sector by 1.3 pp, to 0.3%) and construction (by RSD 1.0 bn, and their share in total gross loans of this sector by 0.8 pp, to 1.3%). Conversely, the strongest increase in the amount of NPLs was recorded in transport and warehousing, accommodation and food services, information and communications (by RSD 0.8 bn, and their share in total gross loans of this sector by 0.5 pp, to 2.0%).

Chart II.1.8 **Coverage of non-performing loans**



Source: NBS.

At end-2024, the share of NPLs in total gross loans to households[76] came at 3.4%, dropping by 0.9 pp from end-2023. The y-o-y fall resulted from the reduction of gross household NPLs by 13.8% in 2024 (RSD 8.8 bn), whereas total gross household loans increased by 10.1% (RSD 149.8 bn) in the same period. The amount of NPLs dropped across almost all categories of household loans. The sharpest fall of NPL share in total loans in 2024 was recorded for credit cards (by 2.5 pp, to 3.4%). As for the most significant household loan categories, the NPL ratio for cash loans declined by 1.6 pp y-o-y, to 4.9% at end-2024, while the one for housing construction loans fell by 0.3 pp y-o-y, to 1.4%. The decrease in the share of non-performing cash loans reflects a slash in their amount by RSD 6.4 bn in 2024. At the same time, total cash loans went up by RSD 87.3 bn. NPLs in housing construction went down by RSD 1.0 bn in 2024, while total housing loans increased by RSD 44.1 bn.

At end-2024, the coverage of total gross NPLs with allowances for impairment stood at 62.3% on average, and the coverage with allowances for impairment of total loans at 113.4% (Chart II.1.8). The level and solid coverage of NPLs with allowances for impairment moderate the NPL channel as the possible source of instability in the financial system. This is also confirmed by the macroprudential solvency stress tests conducted by the NBS, which project changes in the trajectory of the NPL ratios over a one-year horizon in order to assess the resilience of the banking sector. The banking sector remains adequately capitalised even under the worst-case scenario.[77]

II.1.3 Lending activity

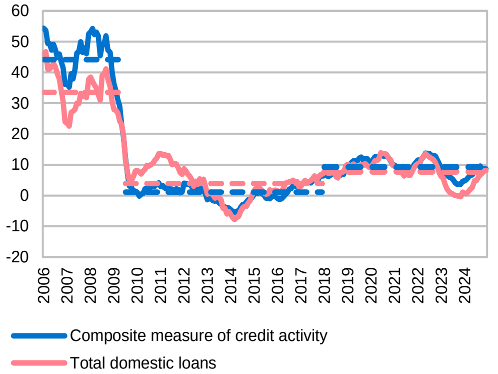
Domestic lending activity continued growing, at a noticeably accelerated pace. The NBS and ECB monetary policy accommodation, eased bank credit standards and lower costs of funding boosted lending activity. At end-2024, total domestic loans rose by

[75] Beside real estate sector, this includes professional, scientific, innovation and technical services, as well as administrative and auxiliary services, art, entertainment and recreation, other services, education, health and social protection.

[76] The household sector includes, in addition to households, entrepreneurs, private households with employed persons and registered farmers.

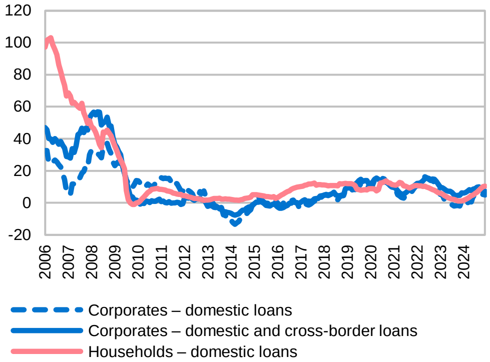
[77] For more details on macroprudential stress tests, see Chapter II.2 Macroprudential stress tests.

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



* Excluding the exchange rate effect.
Source: NBS.

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



* Excluding the exchange rate effect.
Source: NBS.

8.2% y-o-y, excluding the exchange rate effect[78] (Chart II.1.9). The contribution of household loans to the y-o-y increase in domestic loans was higher in comparison to that of corporate loans.

Excluding the exchange rate effect, domestic corporate loans increased by 4.8% in 2024 from a year earlier (Chart II.1.10). In H1 2024, in the January–May period, corporate lending activity was subdued, reflecting among other things, the maturity of guarantee-scheme loans. Subsequently, there was an increase in corporate lending, partly driven by the rise in dinar loans. The pronounced growth in dinar lending can partly be attributed to the Decision on Capital Adequacy of Banks, which sets out that starting from 2025, when calculating the capital adequacy ratios, banks are required to reduce capital if the share of approved FX and FX-indexed loans in total loans to non-financial and non-government sector approved after 1 July 2023 exceeds 71%.[79]

The growth in domestic household loans accelerated in 2024, primarily reflecting lower interest rates, eased credit standards, promotional offers, and wage growth. The growth in lending activity was also supported by the NBS's decision on the temporary capping of interest rates on loans.[80] Excluding the exchange rate effect, domestic household loans increased by 10.4% in 2024 from a year earlier (Chart II.1.10). The share of dinar in total household loans recorded an upward trend in 2024, driven by the rise in dinar lending as a result of the decline in interest rates on dinar loans, which began in late 2023.

Bank lending surveys show that for the first time after a longer period of tightening, in early 2024 banks eased their corporate credit standards, which continued until the end of the year. The easing was motivated by the lower costs of the sources of funding. According to banks' assessments, lower competition in the banking sector, reduced risk appetite, and, to some extent, the overall economic and geopolitical situation worked in the opposite direction. The easing concerned mainly dinar loans. Standards were eased for SMEs and farmers, while they were tightened for large enterprises. Banks reduced interest margins as well as fees and commissions for enterprises of all sizes, and in Q2 and Q3, they also extended loan maturities for SMEs. On the other hand, collateral requirements were tightened further and the maximum loan amount was reduced.

Household credit standards were eased in 2024, primarily for dinar cash and refinancing loans, as well as for FX-indexed housing loans (except in Q2, when standards for this category remained unchanged). The standards were eased under the impact of lower costs of funding, positive expectations regarding economic activity, effects of competition, and more favourable conditions in the real estate market. Interest margins were reduced for both dinar and FX-indexed loans, with the reduction being more pronounced for dinar loans in H2.

Banks estimate that corporate sector demand for loans increased in Q2 and Q4, driven by the financing of capital investments and working capital. Conversely, own financing of enterprises, as well as borrowing from other banks and non-bank financial institutions dampened demand during Q1 and Q3. Household demand for loans increased throughout 2024. In the banks' view, demand expansion was driven by the needs to refinance existing loans and purchase durable

[78] Calculated at the dinar exchange rate against the euro, Swiss franc and US dollar as at 30 September 2024 (the programme exchange rate used for monitoring the performance under the arrangement with the IMF), taking into account the currency structure of loan receivables.

[79] It is stipulated that this threshold will further decrease to 64% in 2026, 57% in 2027, and 50% as of the beginning of 2028.

[80] Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans (RS Official Gazette, No 78/2023).

consumer goods, with a positive influence from rising wages, and from Q2, also by real estate purchases.

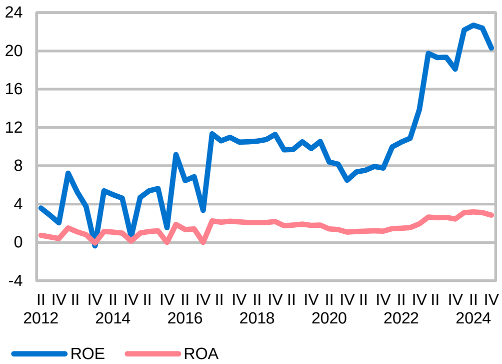
II.1.4 Profitability

The Serbian banking sector posted a positive financial result in 2024. Banking sector profitability increased in 2024 y-o-y, thanks to lending activity growth amid higher interest rates. Banking sector profit at year end produced a 2.8% RoA and a 20.3% RoE (Chart II.1.11). Both RoA and RoE moved above the region's average (Chart II.1.12).

In 2024, the highest profitability, measured by RoA, was posted by non-EU foreign banks, followed by EU foreign banks, domestic private banks and domestic state-owned banks (Chart II.1.13).

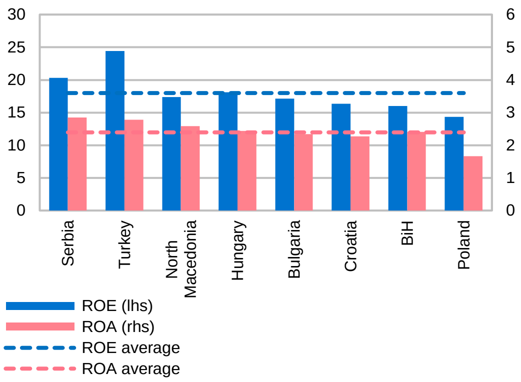
Banking sector net profit before tax amounted to RSD 176.3 bn in 2024, up by RSD 38.1 bn from 2023 (Chart II.1.14). Total profit of RSD 176.5 bn was made by 19 banks (99.9% of banking sector net assets), while only one bank operated at a loss of RSD 0.2 bn. Around 75% of profit was generated by five banks.

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



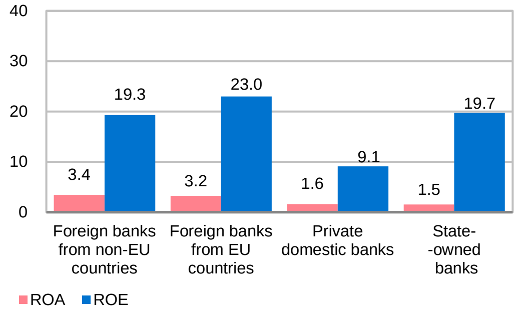
Source: NBS.

Chart II.1.12 **ROE and ROA, countries of the region**
(2024, latest available data, %)



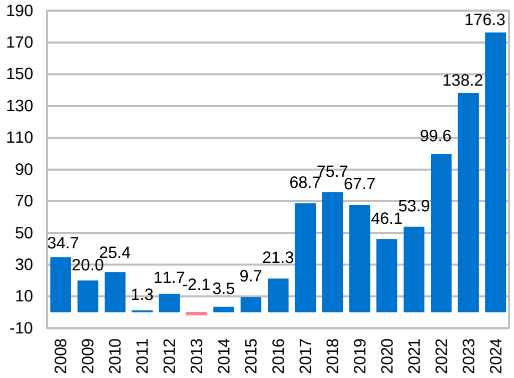
Sources: IMF and NBS.

Chart II.1.13 **Profitability indicators, by majority shareholder's country of origin and ownership structure in 2024**
(%)



Source: NBS.

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



Source: NBS.

Given the traditional character of domestic banks' business model based on credit – deposit operations, net interest income provided the major boost to the y-o-y growth in bank net profit in 2024, having risen by RSD 29.8 bn. Net income from fees and commissions increased by RSD 15.7 bn. The reduction in net losses from impairment of financial assets not carried at fair value through income statement by RSD 7.1 bn y-o-y worked in the same direction. Salaries, compensations and other expenses related to employees increased by RSD 8.3 bn, while the category other expenses rose by RSD 6.6 bn, with both categories having a negative impact on the y-o-y change in the financial result.

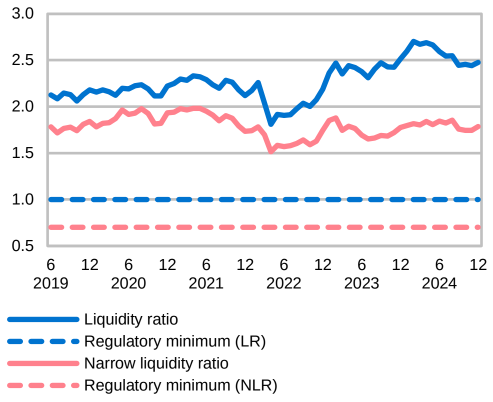
II.1.5 Liquidity

Serbian banking sector liquidity remained at a record-high level in 2024. At year end, the average monthly liquidity ratio equalled 2.5, almost unchanged y-o-y and considerably above the prescribed minimum (1.0). The average monthly narrow liquidity ratio of 1.8 was also considerably above the regulatory minimum (0.7). The movement of average monthly liquidity ratios is presented in Chart II.1.15, while Charts II.1.16 and

II.1.17 show the distribution of liquidity ratios across banks.

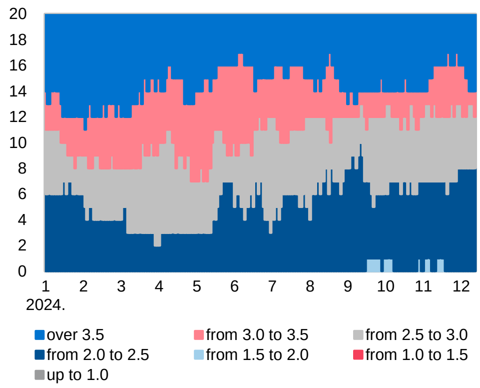
The liquidity coverage ratio and the net stable funding ratio, standing at 192.4% and 183.7%, respectively, were considerably above the regulatory minimum (100%), further confirming high liquidity of the banking sector.

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



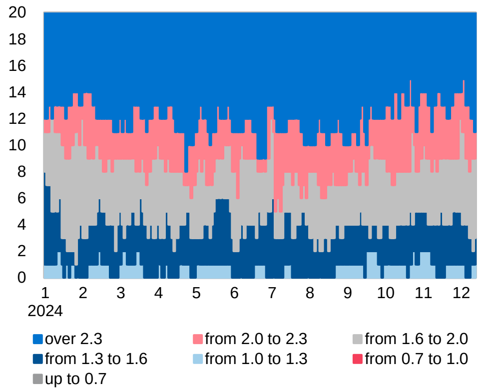
Source: NBS.

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



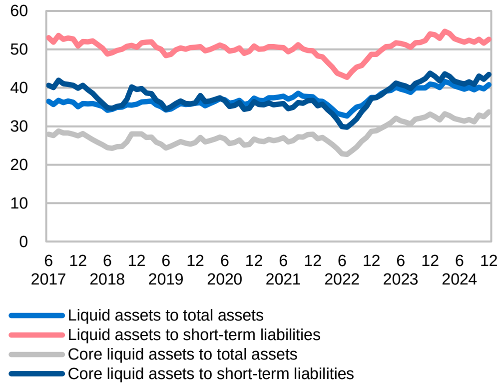
Source: NBS.

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



Source: NBS.

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



Source: NBS.

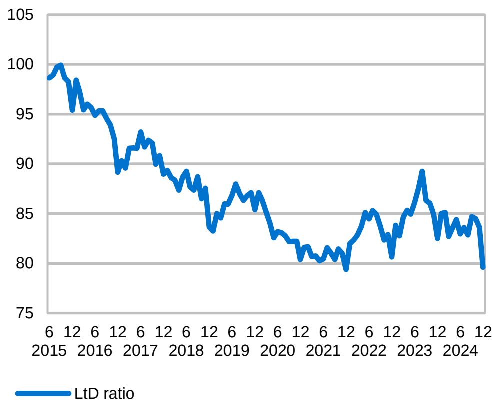
The Republic of Serbia features a traditional banking model, where deposits are the main source of financing bank activities. Given that macroprudential stress tests show that the banking sector would remain highly liquid even amid an extreme deposit outflow, there are no risks to financial stability in this respect.

At end-2024, liquid assets accounted for 40.8% of total assets and covered 52.6% of short-term liabilities. As for liquid assets in the narrow sense, their share in total assets and their coverage of short-term liabilities stood at 33.7% and 43.5%, respectively (Chart II.1.18). During the year, liquidity ratios exhibited stable movement, without any major fluctuations. The Serbian banking sector holds substantial provisions of liquid assets, which contributes to its stability. However, while the high share of liquid assets carries low risk, it also brings lower returns than investment in lending activity.

II.1.6 Sources of funding

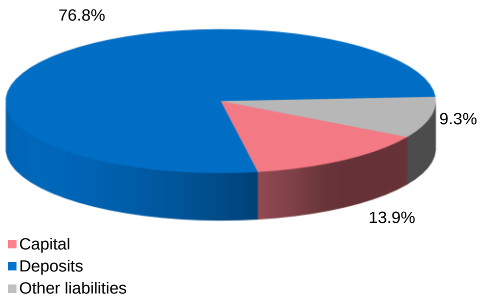
Banks operating in Serbia rely mostly on domestic, stable sources of funding. The LtD ratio stood at 79.6% at end-2024 (Chart II.1.19). In 2024, the amount of

Chart II.1.19 **Loan-to-deposit ratio**
(%)



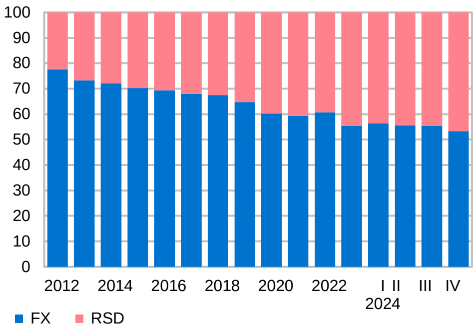
Source: NBS.

Chart II.1.20 **Sources of banking sector funding as at 31 December 2024**



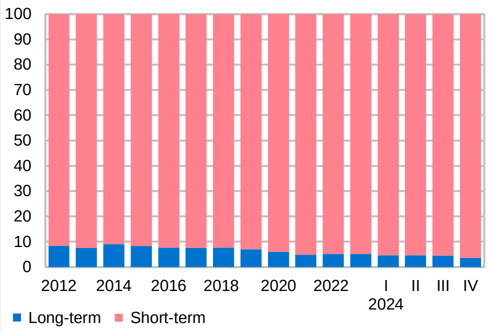
Source: NBS.

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.

deposits was more than sufficient to cover the entire amount of loans. The strengthening of the domestic deposit base helps banks reduce their reliance on other sources of funding, e.g. on parent exposure to risks from the international environment. In particular, this mitigates the risk of a sudden withdrawal of funding by parent banks, which was one of the challenges faced by countries of the region in the wake of 2008.[81] Macroprudential liquidity stress tests confirm that even in the event of a deposit withdrawal due to domestic banks' deleveraging to parent banks, banking sector liquidity would not be jeopardised.

Deposits accounted for 76.8% and capital for 13.9% of the total banking sector liabilities at end-2024 (Chart II.1.20).

The share of dinar deposits in total bank deposits edged up mildly from 44.5% at end-2023 to 46.7% at end-2024 (Chart II.1.21). The degree of dinarisation of corporate and household deposits rose from 44.4% to 46.5% in the same period.

In terms of maturity composition, short-term deposits made up the largest share (96.4%) (Chart II.1.22).

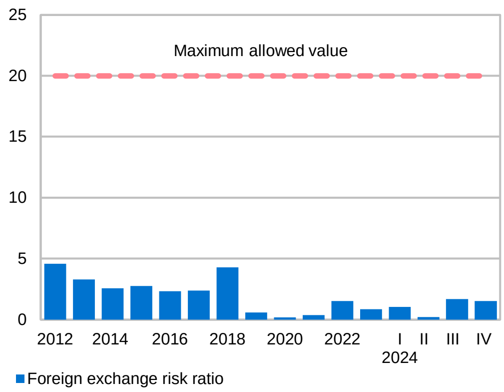
II.1.7 Sensitivity to market risks

Serbia's banking sector exposure to market risks[82] is minimal. Exposure to market risks in 2024 was slightly higher than the year before, accounting for only 0.5% of total risk-weighted assets.

The FX risk indicator expressed as net open FX position to regulatory capital (Chart II.1.23) amounted to 1.5%[83] at end-2024, up by 0.7 pp from a year earlier, and considerably below the regulatory limit of 20.0%.

Banks' FX position is well-balanced and without direct exposure to the FX risk. However, they are exposed to this risk indirectly, as the approval of FX-indexed loans to clients with a currency mismatch may generate FX-induced credit risk. In view of the structure of banks'

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



Source: NBS.

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

[82] Market risks include price, foreign exchange and commodity risk.

[83] Calculated under net principle.

portfolio, the risk of negative effects on banks' financial result and capital due to the direct impact of exchange rate changes is judged to be minimal.

Table II.1.1 **Serbia: Financial sector structure**

	2016			2017			2018			2019			2020			2021			2022			2023			2024		
		Assets			Assets			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	%	No.	RSD billion	%	No.	RSD billion	%
Financial sector	76	3,556	100	73	3,714	100	72	4,179	100	70	4,532	100	69	5,078	100	66	5,555	100	63	5,985	100	62	6,534	100	62	7,317	100
(in % of GDP)		*75.7%*			*75.0%*			*79.0%*			*79.9%*			*88.1%*			*84.5%*			*80.2%*			*74.1%*			*75.9%*	
Banking system	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	23	5,048	90.9	21	5,455	91.1	20	5,941	90.9	20	6,635	90.7
State-owned banks	6	561	15.8	6	544	14.6	5	660	15.8	4	686	15.1	3	325	6.4	2	368	6.6	2	427	7.1	2	509	7.8	2	594	8.1
Domestic private banks	2	195	5.5	2	236	6.4	2	266	6.4	3	305	6.7	3	319	6.3	2	290	5.2	2	468	7.8	3	860	13.2	3	900	12.3
Foreign-owned banks	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	19	4,390	79.0	17	4,561	76.2	15	4,572	70.0	15	5,141	70.3
Italian	2	884	24.8	2	928	25.0	2	1,008	24.1	2	1,094	24.1	2	1,204	23.7	2	1,284	23.1	2	1,408	23.5	2	1,564	23.9	2	1,772	24.2
Austrian	3	494	13.9	2	427	11.5	2	495	11.8	2	550	12.1	2	665	13.1	2	752	13.5	3	1,051	17.6	3	1,153	17.6	3	1,264	17.3
Hungarian	1	48	1.3	2	196	5.3	2	221	5.3	2	551	12.1	2	615	12.1	1	666	12.0	1	744	12.4	1	829	12.7	1	943	12.9
Slovenian	1	34	1.0	1	44	1.2	1	57	1.4	1	72	1.6	2	540	10.6	2	574	10.3	1	548	9.2	1	589	9.0	1	649	8.9
Other	15	1,026	28.8	14	995	26.8	13	1,065	25.5	12	826	18.2	12	934	18.4	12	1,115	20.1	10	810	13.5	8	436	6.7	8	513	7.0
Nonbank financial institutions	46	315	8.8	44	344	9.3	45	406	9.7	44	448	9.9	43	477	9.4	43	507	9.1	42	530	8.9	42	593	9.1	42	682	9.3
Insurance companies	23	216	6.1	21	233	6.3	21	279	6.7	20	300	6.6	20	314	6.2	20	334	6.0	20	337	5.6	20	376	5.7	20	417	5.7
Pension funds	7	33	0.9	7	36	1.0	7	40	1.0	7	45	1.0	7	47	0.9	7	49	0.9	7	48	0.8	7	54	0.8	7	62	0.8
Leasing companies	16	66	1.9	16	75	2.0	17	87	2.1	17	103	2.3	16	115	2.3	16	124	2.2	15	145	2.4	15	164	2.5	15	203	2.8

Source: NBS.

Table II.1.2 **Serbia: Key macroprudential indicators**
(in % unless otherwise indicated)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
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	20.8	20.2	21.4	21.3
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	19.7	18.8	19.7	19.6
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	7.6	6.5	6.0	4.6
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	11.8	11.0	10.9	10.7
Large exposures to capital	-	-	-	110.1	104.5	90.4	130.5	115.7	86.0	69.3	77.4	66.5	73.8	86.0	86.7	85.8	95.7
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	12.4	11.7	11.9	11.6
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	3.6	3.0	3.2	2.5
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	0.0	0.7	0.2	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	1.5	3.3	11.0	9.6
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	1.7	2.2	2.7	4.1
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	0.6	1.1	1.0	1.5
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	49.3	47.6	43.4	41.6
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	3.0	2.8	2.4	2.1
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	15.5	18.4	16.4	15.7
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	4.9	4.1	4.0	4.1
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	12.5	10.7	9.4	9.0
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	13.4	11.7	11.2	10.6
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	45.0	43.2	39.4	39.9
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	17.4	17.4	15.5	15.3
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	1.9	2.0	2.3	3.1
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	56.3	58.1	60.5	62.3
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	3.2	3.1	3.2	2.9
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	1.2	1.9	2.5	2.8
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	7.8	13.9	18.1	20.3
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	58.2	50.9	63.7	62.9
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	71.0	58.7	53.7	52.0
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	30.2	28.5	29.2	30.3
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	27.9	28.7	33.2	33.7
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	36.8	37.2	43.8	43.5
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	37.7	37.5	41.0	40.8
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	49.6	48.7	54.0	52.6
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	119.5	120.5	132.1	136.3
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	63.2	65.5	59.7	57.2
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	2.1	2.2	2.5	2.5
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	1.7	1.7	1.8	1.8
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	0.4	1.5	0.8	1.5
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	61.4	62.1	57.9	55.9
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	39.1	39.6	45.2	48.6

Source: NBS.

Text box 2: ***Net stable funding ratio stress test***

Traditional banking is based on credit-deposit activities, which assumes attracting deposits from depositors and placing them to clients in need of funding. Banks acquire funds with short maturities (such as demand deposits) and channel them to longer-maturity assets. Thus, they are exposed to the risk of maturity mismatch between their assets and liabilities. This mismatch can jeopardise banks' liquidity, i.e. the ability to adequately respond to potential deposit outflows. Sudden changes in market conditions, especially during and after the global financial crisis of 2007/2008, clearly demonstrated that liquidity can be threatened in a very short period of time. The crisis also underscored the significance of liquidity for stable functioning of financial markets and the banking sector, so central banks took additional measures to support the money market and individual institutions. In order to contain these risks, regulatory frameworks impose requirements on banks to cover their investments and other activities with stable sources of funding, thereby reducing exposure to potential problems caused by maturity mismatches.

In a bid to mitigate systemic risk and negative consequences of liquidity shortfall, the Basel Committee on Banking Supervision introduced the net stable funding ratio (hereinafter: NSFR). The main purpose of this ratio is to reduce the probability of having banks' liquidity undermined and, consequently, mitigate the risk of illiquidity, which may be caused by disruptions to regular sources of funding. This also helps to prevent systemic stress. The introduction of this ratio limits excessive reliance on short-term funding and concurrently supports funding risk assessment and stable banking operations.[84]

Following the collapse of the Silicon Valley Bank and subsequently Credit Suisse in March 2023,[85] regulators proposed a revision of the NSFR. Due to its size, the Silicon Valley Bank was exempt from the calculation of this ratio, but analysts subsequently assessed it would have amounted to 132%, exceeding the minimum of 100%.[86] Despite its advantages, the NSFR ratio demonstrates weaknesses in terms of time dimension of liquidity over a longer term, as it fails to differentiate between medium-term and long-term positions (e.g. a 366-day maturity is treated equally as a 30-year maturity). The proposal for improvement, in the form of NSFR+, assumes the introduction of a finer granulation of asset and liability maturity, to arrive at a more precise liquidity assessment.

Regulatory solutions related to the net stable funding ratio

As one of the key liquidity indicators, NSFR has been applied within Basel III standards already from 1 January 2018, at BIS recommendation, while the EU introduced it by Regulation (EU) 2019/876[87], published in the Official Journal of the European Union of 7 June 2019. This Regulation mandates the minimum NSFR level of 100% effective as of 28 June 2021, and is part of the process of harmonisation with the Basel Committee standards, aimed at promoting the stability of the banking sector.

The NBS introduced the NSFR in the domestic regulatory framework, as a measure of bank liquidity, by its Decision on Liquidity Risk Management by Banks[88]. The implementation of the amended regulatory package commenced on 30 June 2024, after which banks submitted their first NSFR reports. According to the Decision, banks are required to maintain the ratio at least at 100%. The ratio is calculated by a formula (1), as a ratio of available stable funding and required stable funding. The available stable funding consists of components of capital and liabilities that are expected to be available to the bank over a one-year period. The required stable funding consists of elements of the balance sheet assets and certain off-balance sheet items of the bank, with the amount of these elements depending on the characteristics, marketability, and remaining maturity.

$$\text{NSFR ratio } = \frac{\text{Available stable funding}}{\text{Required stable funding}} \geq 100\% \qquad (1)$$

[84] https://www.bis.org/bcbs/publ/d295.pdf

[85] For more information, see the *Annual Financial Stability Report – 2023*, Text box 2.

[86] https://som.yale.edu/story/2023/silicon-valley-banks-liquidity-part-two-what-about-net-stable-funding-ratio

[87] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32019R0876

[88] RS Official Gazette, No 100/2023, https://www.nbs.rs/export/sites/NBS_site/documents-eng/propisi/propisi-kpb/upravljanje_rizikom_likvidnosti_2024_e.pdf

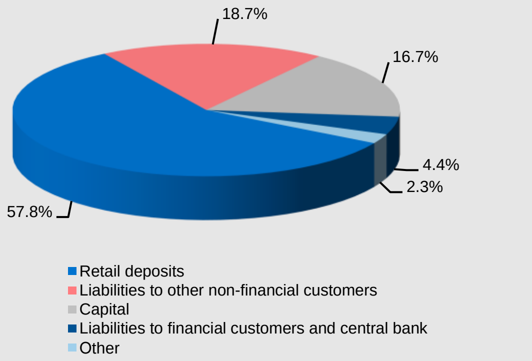
According to the submitted reports as of 31 December 2024, it can be concluded that available stable funding is comprised mainly of the following categories:

- retail deposits, with the share of 57.8%,
- liabilities to other non-financial customers except financial sector entities or central banks (18.7%), and
- bank's capital, accounting for 16.7% (Chart O.2.1).

Other categories do not hold a significant share in the total sum of available stable funding.

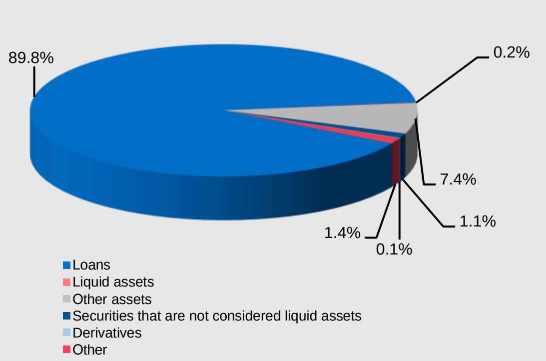
According to data for end-December 2024, the required stable funding related primarily to loans, with the share of 89.8% (Chart O.2.2). Categories such as securities, which do not make up liquid assets, derivatives, as well as liquid assets, do not constitute a major share in the total sum of required stable funding.

Chart O.2.1 **Structure of available stable funding as at 31 December 2024**



Source: NBS.

Chart O.2.2 **Structure of required stable funding as at 31 December 2024**



Source: NBS.

Net stable funding ratio stress test

The Central Bank of Malta is an example of a central bank that introduced stress testing of the NSFR and published the results in its *2021 Annual Financial Stability Report*.[89] By applying defined shocks to the ratio numerator, the available stable funding sources are reduced due to deposit withdrawals. On the other hand, by increasing the factor for calculating the required stable funding, stress testing the ratio denominator assumes a deterioration in the quality of assets and off-balance sheet items, meaning that more stable funding sources are required.

The Central Bank of Malta's framework for conducting stress tests involves a baseline, as well as three negative scenarios. The baseline assumes corrective factors foreseen by the CRR2,[90] while the first scenario refers to stress testing the corrective factors for calculating the available stable funding, entailing the assumption of greater deposit withdrawals by households and corporates. The second scenario relies on the same assumptions, but with the additional shock of assuming that some loans will migrate to the non-performing category, which calls for additional stable funding sources. The third scenario is based on the assumptions of the second scenario, with the addition of market pressures. These market pressures assume the possibility of a decrease in the value of certain asset categories, such as bonds and stocks.

The NBS has improved the methodology for conducting macroprudential liquidity stress tests by applying corrective factors on available stable funding, depending on the assumed deposit outflow. Accordingly, the NBS stress tested the NSFR of Serbia's banking sector with end-2024 data. Table O.2.1 features three scenarios: *déjà vu*, risk spillover and worst-case scenario, that were used in running liquidity stress tests from Chapter II.2 Macroprudential stress tests. By applying the defined scenarios regarding the assumed deposit withdrawals, the values of corrective factors of available stable funding were calculated. The results obtained show that *déjà vu* scenario implies a deposit withdrawal of around RSD 544 bn, and risk spillover and worst-case scenarios of around RSD 749 bn and RSD 1,073 bn, respectively.

[89] https://www.centralbankmalta.org/site/Publications/FSR-2021.pdf?revcount=4203

[90] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0876

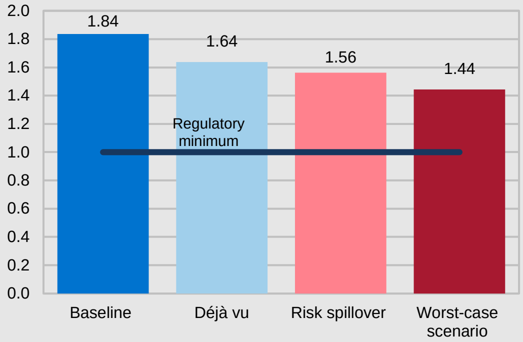
The results of the NSFR stress testing under the above scenarios are shown in Chart O.2.3. The baseline shows the NSFR value on 31 December 2024 – 1.84. Under the *déjà vu* scenario, the ratio would measure 1.64, and under the risk spillover – 1.56, while in the worst-case scenario it would equal 1.44. Based on this, it can be concluded that the NSFR of the Serbian banking sector would remain above the regulatory minimum of 1 under all scenarios defined.

Table O.2.1 **Assumptions of deposit withdrawals by sector**

DEPOSIT WITHDRAWAL	*Déjà vu* 2008	Risk spillover	Worst-case scenario
Corporate demand deposits	10%	10%	20%
Household demand deposits	11%	17%	22%
Government demand deposits	23%	23%	35%
Other demand deposits	11%	15%	22%
Total deposits withdrawn (in RSD bn)	544	749	1073

Source: NBS.

Chart O.2.3 **Banking sector's NSFR by stress scenario***



* NBS estimate.
Source: NBS.

The NBS will continue to carefully monitor risks in the domestic banking sector to further strengthen financial stability and the protection of the depositors. Within its tasks and competences, the NBS continues to develop methodologies for the assessment of key risks for the preservation of macroeconomic and financial stability, especially in a period of global challenges and uncertainties.

II.2 Macroprudential stress tests

The results of the macroprudential stress tests confirm the stability and resilience of Serbia's banking sector even amid globally heightened uncertainty in 2024. The entire banking sector remains highly resilient even to the strongest of the shocks assumed and has sufficient capacity to mitigate the consequences of the financial risks to which it might be exposed. Also, the network structure indicates a low and stable systemic risk component, i.e. the system's high resilience to individual shocks.

Macroprudential stress tests are used as one of the tools to assess the key risks and vulnerability of the financial system as a whole, as well as of individual financial institutions. Also, in order to assess systemic risk in Serbia's banking sector, based on network modelling, the dynamics of banks' mutual relations is considered and potential ways of the transfer of risks between financial institutions are analysed. The assumptions underlying macroprudential stress testing were made in line with macroeconomic movements at end-2024.

Basel III[91] standards and NBS regulations require that banks also use stress tests to assess their capital adequacy. Stress tests are based on plausible but highly improbable assumptions, or events that may produce negative consequences for the financial system. Therefore, poor stress test results do not necessarily mean that the sector, an individual bank or a group of banks are faced with major risks, but rather indicate the capacity of banks to continue operating smoothly in case such events do take place.

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 loss of depositors' confidence and withdrawal of funds from banks;

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

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

Three parts of the analysis of the impact of the assumed shocks on banking sector stability are presented in this *Report*. *The first part* involves credit risk assessment in relation to predefined scenarios which are based on assumed macroeconomic developments. *The second* involves the assessment of whether, in case of significant deposit withdrawals and additional liquidity needs, the banking sector can continue operating normally. *The third part* involves assessment of systemic risk in the banking sector – 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

Elasticity coefficients (assessing the impact of each variable[92] on NPLs) and individual contributions of each variable to any change in NPLs are presented in Table II.2.1. According to model specification, the factors which would have the greatest impact on a change in gross NPLs are changes in the exchange rate (elasticity coefficient of 1.32), changes in s-a real net wages (-0.19) and 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

Table II.2.1 **Elasticity coefficients of NPLs and contributions of independent variables from Q4 2023 to Q4 2024**

	Elasticity coefficients	Contributions of independent variables (pp)
Nominal exchange rate	1.32	-0.03
Key policy rate	0.03	0.44
Seasonally-adjusted real net wages	-0.19	-0.20

Source: NBS.

Table II.2.2 **Overview of scenarios**

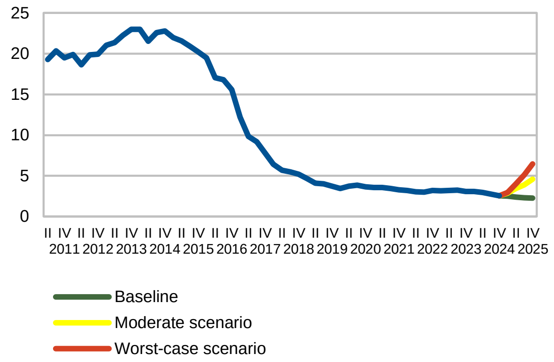
	Baseline	Moderate	Worst-case
Y-o-y growth in NPL ratio (pp)	-0.25	2.06	3.93
Y-o-y depreciation of RSD against EUR (%)	0.13	16.49	34.02
Y-o-y change in key policy rate (pp)	0.00	10.50	22.75
Y-o-y growth in real net wages (%)	4.42	-10.22	-18.51

Source: NBS.

[91] The regulatory framework of Basel III standards came into force on 30 June 2017.

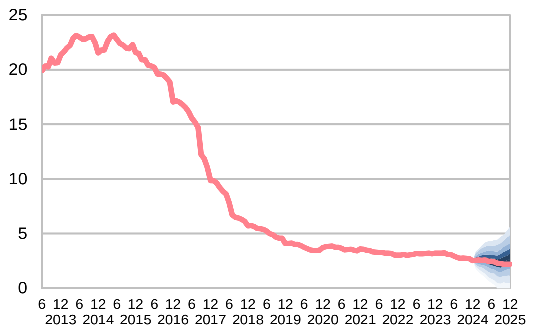
[92] Out of a large number of variables that qualify for inclusion in the econometric analysis and could potentially influence the monthly dynamics of non-performing loans, three demonstrated reliable predictive power: the nominal exchange rate, s-a real net wages in dinars, and the key policy rate.

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.

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.

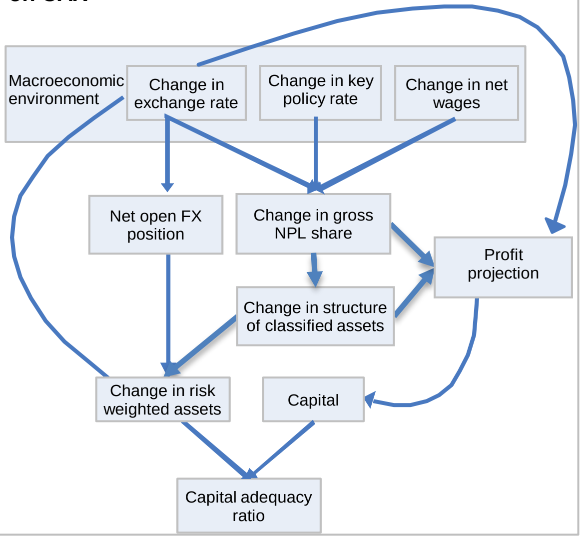
Chart II.2.1 shows the projected change in the share of NPLs in total loans for the three scenarios: -0.25 pp, 2.06 pp and 3.93 pp, respectively.

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

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



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 can be considered 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. In solvency macroprudential stress testing, the financial result before tax is projected depending on movements in macroeconomic variables. When projecting the 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 it also affects the level of capital allocated to cover capital buffers.

According to the Decision on Capital Adequacy of Banks,[93] banks are required to always maintain their CAR at no less than:

– 4.5% for CET 1 capital adequacy ratio;
– 6% for Tier 1 capital adequacy ratio;

[93] Decision on Capital Adequacy of Banks (RS Official Gazette, Nos 103/2016, 103/2018, 88/2019, 67/2020, 98/2020, 137/2020, 59/2021, 67/2022, 137/2022, 48/2023, 110/2023, 102/2024 and 41/2025.

– 8% for capital adequacy ratio.

In addition to meeting these requirements, banks are required to maintain their capital at all times at a level necessary to cover all risks to which they are or may be exposed in their operations, i.e. at least at the level necessary for maintaining increased capital adequacy ratios, if such higher than prescribed capital adequacy ratios were set by the NBS, in line with the Decision on Capital Adequacy of Banks.

Capital buffers are additional CET 1 capital that banks are obliged to maintain above the prescribed 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:[94]

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

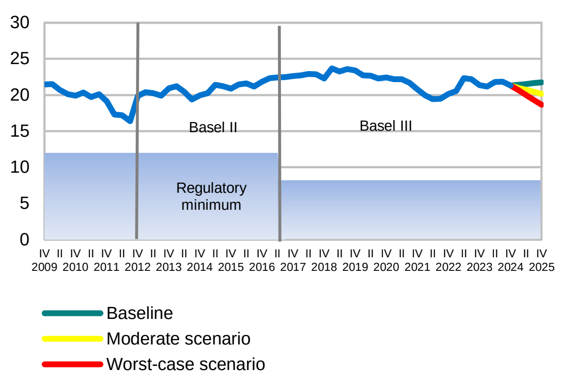
– countercyclical capital buffer (0% of risk-weighted assets);

– 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 2024, CET 1 capital adequacy ratio and capital adequacy ratio for the Serbian banking sector measured 19.59% and 21.32%, respectively.

Chart II.2.3 **CAR by stress scenario***
(%)



* NBS estimate.
Source: NBS.

Under the baseline scenario, CET 1 capital adequacy ratio would be 20.01%, and capital adequacy ratio – 21.74%.

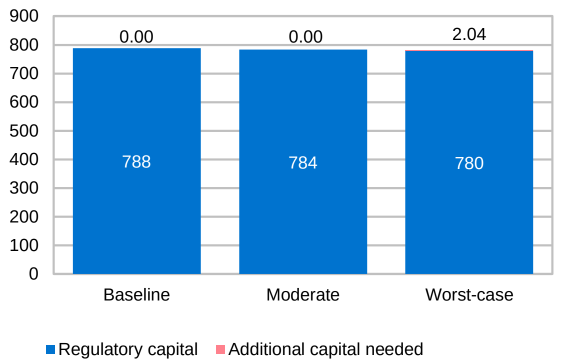
Under the moderate scenario, these ratios would measure 18.54% and 20.15%, respectively.

Under the worst-case scenario, implying a powerful but highly improbable shock, CET 1 capital adequacy ratio would be 17.17%, and capital adequacy ratio – 18.67%.

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

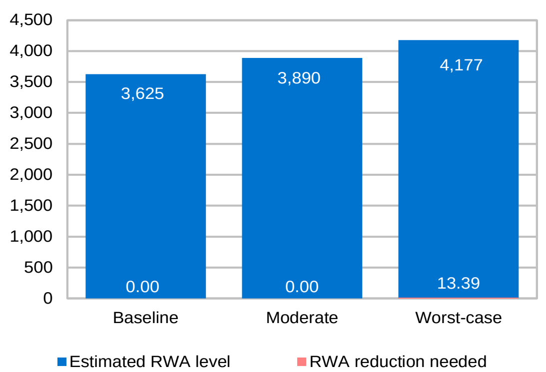
Based on data as at 31 December 2024, and under the **baseline and moderate scenario** assumptions, there is no need for the recapitalisation of banks in order to meet the requirements for CET 1 capital ratio of 4.5% of risk-weighted assets, Tier 1 capital ratio of 6% of risk-weighted assets and capital adequacy ratio of 8%

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.

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

of risk-weighted assets, or the increased capital adequacy ratios in line with the Decision on Capital Adequacy of Banks. Also, all banks would have sufficient CET 1 capital for the coverage of all prescribed capital buffers.

Under the **worst-case scenario**, banks would need additional capital of RSD 2.04 bn, or 0.26% of the regulatory capital at banking sector level. An alternative to capital increase would be a RSD 13.39 bn decrease in risk-weighted assets, which accounts for 0.32% of the banking sector's risk-weighted assets.[95]

Assuming a projected profit buffer,[96] 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.

NPLs that bring CAR to the threshold

This stage of macroprudential 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 plus the established capital buffers in line with the Decision on Capital Adequacy. In conditions of a projected significant deterioration in the macroeconomic environment which would drive the share of gross NPLs in total loans up by 5.71 pp, the banking sector's capital adequacy ratio could drop from the initial 21.32% to the threshold level of 17.33% over a one-year span.

However, it should be noted that the probability of such an increase in the share of NPLs in total loans, which would bring the CAR down to the threshold, is very low.

Leverage ratio values by scenario

According to the Decision on Reporting Requirements for Banks,[97] banks are required to monitor and submit to the NBS quarterly reports about the ratio of their Tier 1 capital and total exposure amount – the leverage ratio. The introduction of the leverage ratio aims to limit the amount of capital which banks may use and to ensure complementary measures for capital assessment regardless of the risk estimated by banks. Under Basel III, the leverage ratio should be kept at no less than 3%.

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 deposits withdrawn (RSD bn)	544	749	1073
Share in total deposits (%)	11%	15%	21%

Source: NBS.

The leverage ratio for the Serbian banking sector at end-2024 equalled 9.91%. Under the baseline scenario, the leverage ratio would measure 9.92%, while under the moderate and worst-case scenarios, this ratio would amount to 9.01% and 8.17%, respectively, i.e. well above the 3% minimum.

Liquidity stress tests

The liquidity risk in Serbia's banking sector is not as pronounced as the credit risk. However, the sudden withdrawal of deposits in late 2008 as a result of the global financial crisis and a temporary loss of confidence in the European parents of banks operating in Serbia indicates the importance of monitoring this risk.[98]

Liquidity stress testing aims to determine whether the Serbian banking sector could continue to operate normally in case of the similar 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, market liquidity squeeze, fall in asset value, etc., which would further impair banks' liquidity position.

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

[95] Banks which fail to meet the combined capital buffer requirement are subject to restrictions on profit distribution and are obliged 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, 137/2020, 59/2021, 67/2022, 137/2022, 48/2023, 110/2023, 102/2024 and 41/2025).

[96] 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.

[97] RS Official Gazette, Nos 125/2014, 4/2015, 111/2015, 61/2016, 69/2016 103/2016, 101/2017, 46/2018, 8/2019, 27/2020, 67/2020, 137/2020, 59/2021, 60/2021, 67/2022, 48/2023 and 100/2023.

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

– *déjà vu* scenario, envisaging a deposit withdrawal worth around RSD 544 bn (11% of total deposits) and the same structure of deposits withdrawn 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 a lack of support from parent banks due to the international banking crisis, which raises total deposit withdrawal to around RSD 749 bn (15% of total deposits);

– worst-case scenario, envisaging a shock two times stronger than in October 2008, i.e. a deposit withdrawal of around RSD 1,073 bn (21% of total deposits).

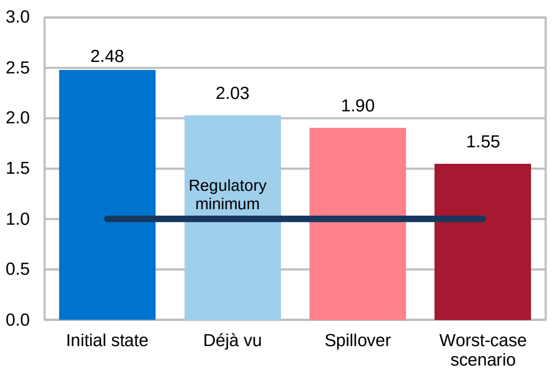
For the purposes of the analysis, deposits are divided into two main groups – demand and time deposits. Deposit withdrawal assumptions for all three scenarios are presented in Table II.2.3.

According to the initial data, the liquidity ratios of all banks would be above the regulatory minimum. In the scenarios described above (déjà vu, risk spillover, and the worst-case scenario), none of the banks would post a liquidity ratio lower than the prescribed minimum.

In the assumed scenarios the banking sector liquidity ratio would range from 2.48, where it stood on 31 December 2024, to 1.55 in the worst-case scenario (Chart II.2.6).

The Decision on Liquidity Risk Management by Banks,[99] applied as of 30 June 2017, introduced the Liquidity Coverage Ratio in order to ensure banks' resilience to liquidity shocks over a 30-day span. According to bank reports as at 31 December 2024, all banks disclosed the liquidity coverage ratio, aggregately by all currencies, above the regulatory minimum, while at the banking sector level this ratio stood at 1.92.

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



* NBS estimate.
Source: NBS.

The Decision on Liquidity Risk Management by Banks,[100] applied as of 30 June 2024, introduces the Net Stable Funding Ratio (NSFR).[101] This ratio measured 1.84 at end-December 2024. In the déjà vu scenario this ratio would measure 1.64, while in the risk spillover and in the worst-case scenario this ratio would measure 1.56 and 1.44, respectively.

Liquidity needs by scenario

Based on reported data as at 31 December 2024, there was no need for additional first-order liquidity.

Under the déjà vu and risk spillover scenarios, as well as under the worst-case scenario, there would be no need for first-class liquidity in any bank.

Deposit withdrawal values that bring liquidity ratio to the threshold

The 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 initial 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).

At the banking sector level, under the déjà vu scenario assuming deposit withdrawal structure of around RSD 1,275.7 bn or 25.1% of total deposits (RSD 932.4 bn demand and around RSD 343.3 bn time deposits), the liquidity ratio would measure 1.5. In case of a withdrawal of RSD 2,076.5 bn, i.e. 40.9% of total deposits (of which around RSD 1,517.7 bn in demand

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

	Déjà vu
Withdrawal of demand deposits	73%
Withdrawal of time deposits	27%
Structure of total demand deposit withdrawal	
Banks	0%
Other depositors	85%
Household savings	15%

Source: NBS.

[99] RS Official Gazette, No 103/2016.
[100] RS Official Gazette, No 100/2023.
[101] NSFR is the ratio of elements that provide and those that require stable funding. Banks are required to maintain this ratio, aggregated in all currencies, at no less than 100%.

and around RSD 558.8 bn in time deposits), the liquidity ratio would fall to 1.

Banking sector survival period in case of sudden deposit withdrawal

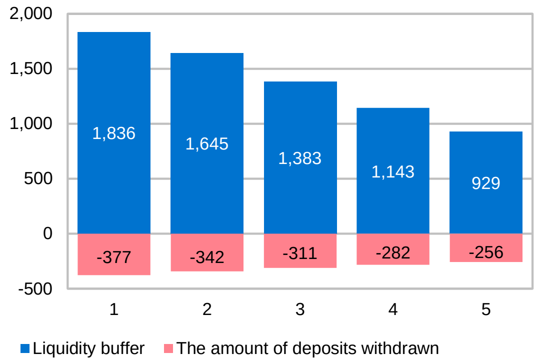
The period in which we observe the effects of a strong shock is defined as the survival period, and it consists of two stages. The first is a short period of high-intensity stress, lasting for several days. During that time an evaluation is made of the bank's ability to cover liquidity outflows amid reduced possibility of obtaining new liquid assets and changing the business model. The

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%

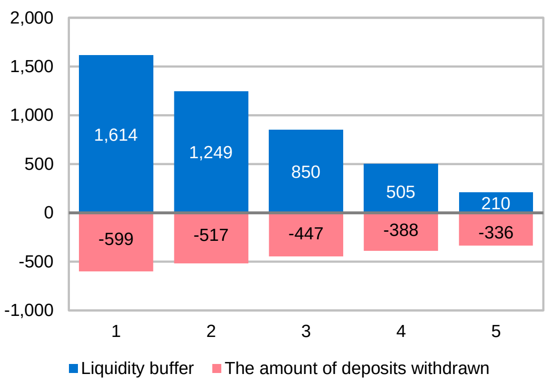
Source: NBS.

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



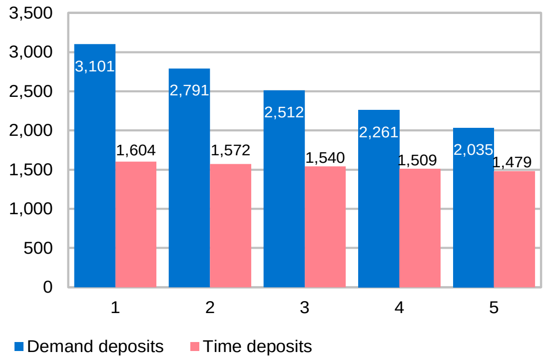
* NBS estimate.
Source: NBS.

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



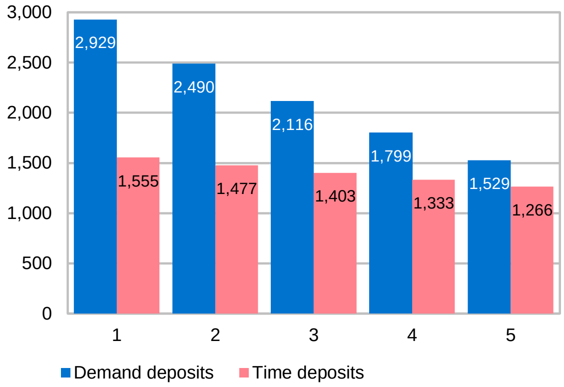
* NBS estimate.
Source: NBS.

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.

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.

Charts II.2.7 and II.2.8 show available liquid assets and the amount of deposits withdrawn at the 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 2024, the entire banking sector can withstand twelve business days[102] in conditions of daily deposit withdrawal in the moderate scenario, or six business days in the worst-case scenario.

Simulations of the liquidity shock

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

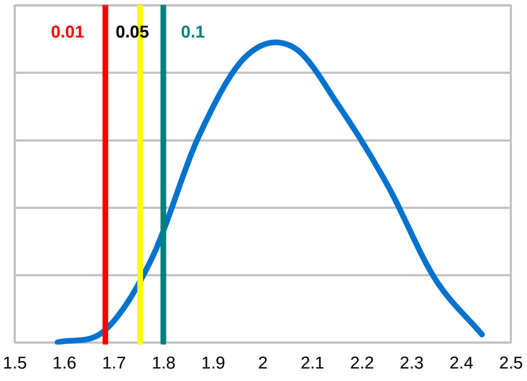
The liquidity ratios are obtained based on tens of thousands of different scenarios, which imply the statistical sampling of the assumptions of deposit withdrawal by sector, from zero to the worst-case scenario value (Table II.2.4). Since only assumption values with a negative effect are observed, the 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 shocks to Serbia's banking sector liquidity for test purposes.

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 1.80, while for confidence intervals of 5% and 1%, it equals 1.75 and 1.68, respectively.

In other words, it can be asserted with a 90% certainty that the liquidity ratio will not fall below 1.80 in various combinations of deposit withdrawal assumptions. Moreover, there is a certainty of 99% that the ratio will not fall below 1.68.

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



* NBS estimate.
Source: NBS.

[102] The IMF's recommendation about the 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.

Network modelling in the assessment of banking sector systemic risk

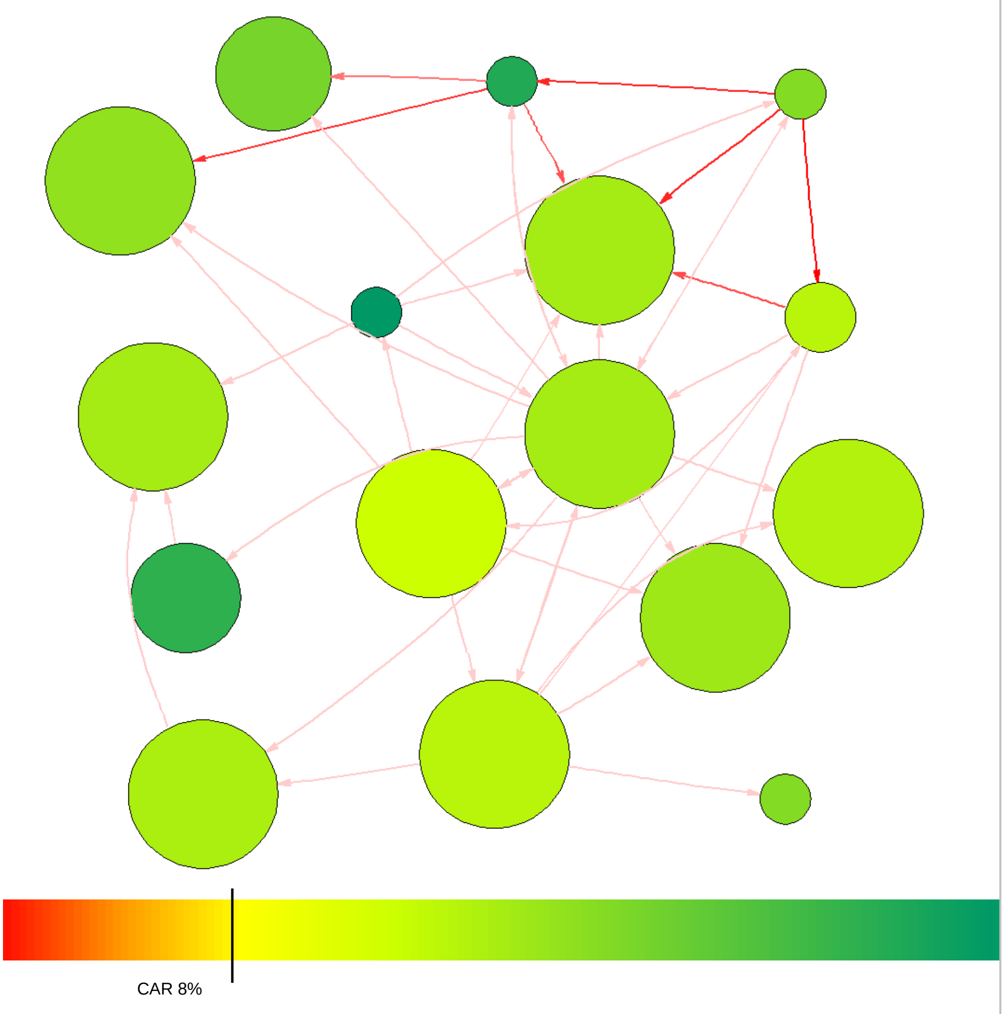
In terms of the systemic risk, it is important to determine which financial institutions are systemically important, whether the existing structure of interconnectedness is conducive to the transmission of the shock through the system, and above all, to what extent the entire system is resilient to potential 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 network of Serbia's banking sector, in accordance with the given definition,[103] is presented in Chart II.2.12.

Global efficiency indicates the banking sector's network capacity in terms of shock transmission and equals 0.18. 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 0.18 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

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

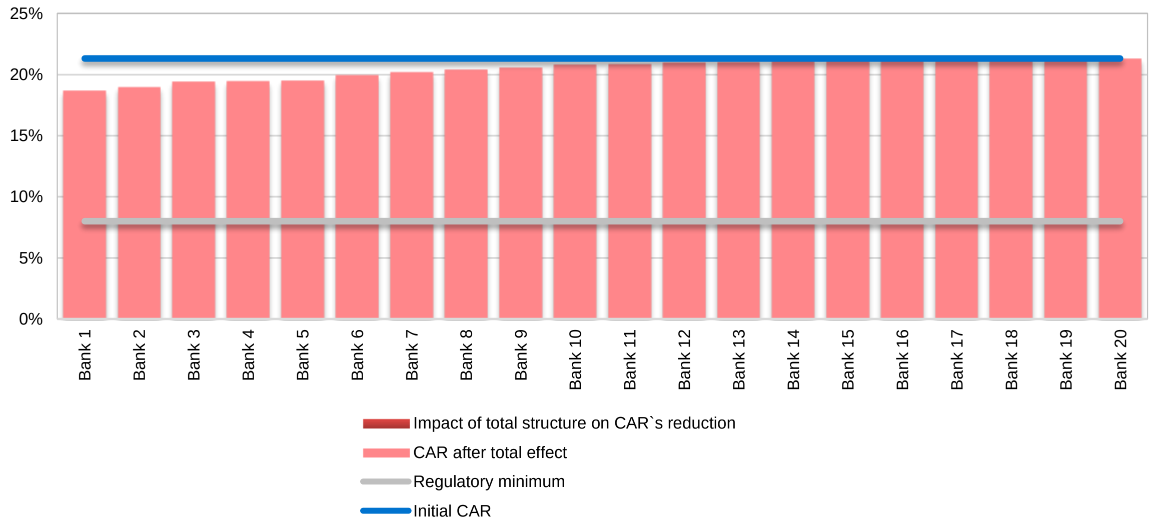


Source: NBS.

[103] 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 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 spectre from red to green, red corresponds to the minimum observed CAR of 0%, while green corresponds to CAR of 36%. Values above 36% are considered exceptionally high and are therefore not taken into account when forming the scale of CAR.

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

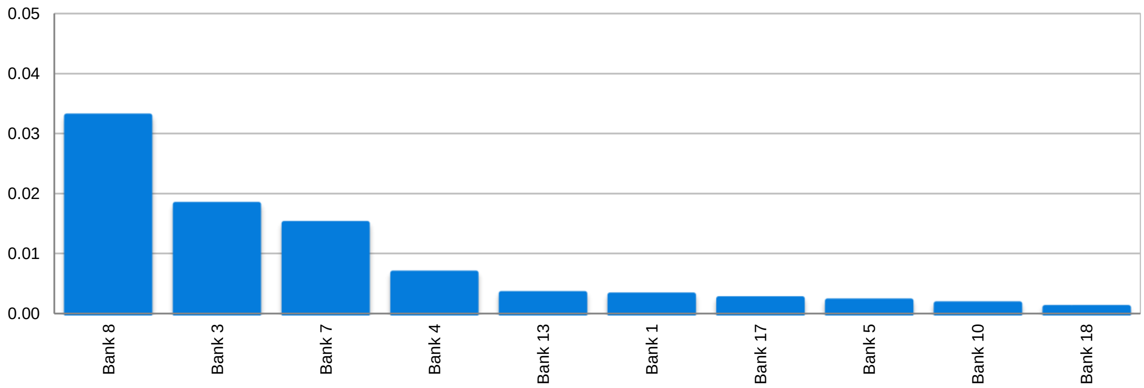
(%)



Source: NBS.

Chart II.2.14 **Impact of network structure on the drop in banking sector's CAR after the insolvency of an individual bank**

(pp)



Source: NBS.

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 neutralised when further iterations register no change in 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 the system, as was explained, the effect on each individual bank, and therefore on the system, originates from two different sources. The former 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 latter 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.

Conclusion

The Serbian banking sector would remain resilient, adequately capitalised and highly liquid even in case of the strongest assumed shocks against the backdrop of globally heightened uncertainty. Further strengthening of the financial stability function, protecting depositors, as well as building public trust in the banking system mandates continuous and systemic monitoring of risks in the banking sector.

The results of macroprudential stress testing indicate that the capital adequacy ratio of the banking sector would remain above the regulatory minimum even in the worst-case scenario.

The banking sector would also stay liquid even in conditions of the largest assumed deposit outflow. 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 financial institutions' sources of funding and investment. In this regard, the NBS also conducted a macroprudential liquidity stress test on indicators of net stable sources of funding[104] the results of which suggest that even if the worst-case scenario materialised, the ratio would remain above the regulatory minimum.

As the interconnectedness of financial institutions may lead to a contagion or shock transmission in the banking sector, 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.

In terms of preserving financial stability, the NBS aims to achieve a full coordination between monetary and macroprudential policy. The NBS uses available macroprudential tools with the aim of making the financial system more resilient, limiting the accumulation of vulnerabilities and mitigating systemic risk. This approach contributes to the stability, resilience and lower procyclicality of the financial system and works towards increasing the efficiency of monetary policy transmission.

As part of its activities, in 2024, for the second consecutive year, the NBS conducted a stress test of transitional climate risks[105] based on available data. This represents a quantitative analysis of the impact of transitional risks on the solvency of banks and the Serbian banking sector as a whole. The application of such tools enables the simulation of various climate change scenarios and their effects on banks' financial performance, identification of vulnerabilities in the banking sector, and improved strategic planning as well as adaptation of economic policy to future climate change challenges. For details on the results of the quantitative scenario analysis of the impact of transitional risks on bank solvency, as well as on the Serbian banking sector overall, see Text box 2. The response to the risks stemming 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 transition) and the channels of their impact on the banking sector, corporate sector, households, as well as the overall financial system stability.

[104] For more details see Text box 2, on p. 47.

[105] For more details on the methodology, see the *Annual Financial Stability Report – 2023*, Text box 3.

Text box 3: ***Climate stress testing in 2024 – quantitative analysis of the impact of transition climate risks on the Serbian banking sector***

Climate changes are one of the more significant challenges facing modern society, with far-reaching consequences for economic, environmental and social systems. Increasingly frequent extreme weather conditions such as heatwaves, droughts, floods and other climate changes, are seriously endangering critical infrastructure systems, agriculture and energy which, in turn, affect the economy and the financial sector. A growing number of macroprudential authorities are incorporating climate risks into their financial stability assessment frameworks. The assessment of the resilience of the financial system to climate risks presents a major challenge for all central banks due to limited availability of climate-related data, the uncertain impact of future climate measures and policies and the complex effects of climate risks on the financial sector.

Climate risks[106] may have a smaller direct impact on the financial sector. Their indirect impact on the financial sector manifests through an increase in traditional financial risks to which the financial sector is exposed (such as credit, market, liquidity, operational risks, etc.). Physical climate risks, such as natural disasters caused by weather conditions, can adversely affect the assets of both households and corporates. Due to its geographical position, Serbia is exposed to physical climate risks including extreme weather events, such as droughts, floods and high temperatures, which have direct economic consequences. On the other hand, transition climate risks, such as potential tightening of regulatory requirements for certain technological processes (e.g. introduction of taxes to reduce carbon emissions), can affect businesses whose production processes release greenhouse gases. The materialisation of transition climate risks could lead to increased production costs for companies and the need for greater investment to reduce emissions. Consequently, the affected companies would face reduced demand for their products and services, as well as higher borrowing costs. This would adversely affect their operations and the capacity to service their liabilities to the financial sector.

Climate stress tests are a significant tool for assessing the impact of climate risks on financial entities. Their application can not only improve the resilience of the financial system and the economy, but also enable better strategic planning and the adaptation of economic policy and financial system to the future challenges of climate changes.

Based on the latest available data, the NBS conducted a stress test of transition climate risks in 2024, following the example of the climate stress test carried out in 2023.[107] This quantitative analysis comprises four stages: 1) the NP model,[108] 2) the sectoral carbon price model,[109] 3) the analysis of corporate financial performance indicators in the NP model assuming materialisation of the transition climate risk, and 4) solvency stress testing of the banking sector against the transition climate risk.

The basis for the analysis and construction of financial performance indicators of companies in the NP model were the data from annual financial statements for 2022,[110] submitted by companies and public enterprises to the Business Registers Agency,[111] as well as banks' reports on the classification of balance sheet assets and off-balance sheet items, reports on the structure of the bank's non-performing loans,[112] and reports from companies undergoing enforced collection.[113]

Based on the NP model, out of a large number of financial performance indicators of companies and the public non-financial sector, four financial indicators demonstrated the greatest statistical significance for assessing the likelihood of non-performance: the asset turnover ratio[114], the capital turnover ratio,[115] the after-tax return on assets[116] and the borrowed capital ratio.[117]

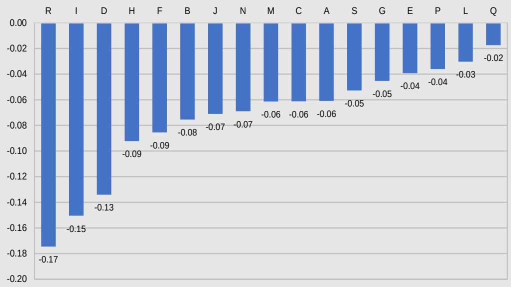
[106] For more details on the applied methodology see the *Annual Financial Stability Report – 2020*, Text box 4.
[107] For more details on the applied methodology see the *Annual Financial Stability Report – 2023*, Text box 3.
[108] Non-performing – NP model is a rating model based on logistic regression aimed at estimating the probability of corporate non-performance over a one year period, based on performance indicators. The main methodological challenge is the selection of a core set of relevant indicators with sufficient predictive power for estimating the probability of non-performance.
[109] Miller, R. E. and P. D. Blair (2009), "Input-Output Analysis. Foundations and Extensions", *Second Edition, Cambridge University Press. New York*.
[110] In line with the latest data on carbon emmissions for the Republic of Serbia from 2022 used for the sectoral carbon price model in the second phase.
[111] https://www.apr.gov.rs/home.1435.html
[112] Decision on Reporting Requirements for Banks (RS Official Gazette, Nos 125/2014, 4/2015, 111/2015, 61/2016, 69/2016, 103/2016, 101/2017, 46/2018, 8/2019, 27/2020, 67/2020, 67/2020 – other decision 137/2020, 137/2020 – other decision, 59/2021, 59/2021 – other decision, 60/6021 – correction, 60/2021 – correction of other decision 67/2022, 67/2022 – other decision, 48/2023, 100/2023 and 41/2025).
[113] Decision on the Manner of Enforcement of Claims by Debiting the Client's Account (RS Official Gazette, Nos 14/2014, 76/2016, 8/2020 and 21/2021).
[114] Ratio of operating revenue and average operating assets.
[115] The ratio of a company's operating revenue and average capital.
[116] The ratio of a company's net profit/loss and total operating assets.
[117] The share of total debt and long-term provisions in total liabilities of a company.

Within the second phase of the analysis, a sectoral carbon price model was constructed, which estimates the effect of carbon tax introduction on the costs and volume of production across individual economic sectors, based on the latest available data, input-output tables[118] at 2020 base prices by activity,[119] and 2022 carbon emission data for Serbia.[120] The model and price elasticity tables were developed following the example of the National Bank of Austria (Oesterreichische Nationalbank – OeNB) model on the transmission of the carbon price effect to the Austrian banking sector.[121] It is assumed that companies would continue to produce with the same input structure but would cut down production due to changes in costs and demand under the impact of carbon prices.

The results of the sectoral model, assuming the introduction of a carbon price of EUR 200 per metric tonne, show a potential reduction in the volume of production across economic sectors[122] (Chart O.3.1). The estimated decrease in the production volume is a consequence of reduced demand for products of certain sectors due to their higher prices resulting from intensive carbon emissions or high demand elasticity for products or services of specific sectors (which would lead consumers to largely stop using them if the prices of those sectors' products increased). The results of this analysis indicate that the largest production losses would occur in the arts, entertainment and recreation (R), accommodation and food service activities (I), and electricity, gas, steam and air conditioning supply (D) sectors, while health and social work (Q) would be the least affected.

Chart O.3.1 **Reduced volume of production due to higher tax on CO_2 emission, by economic sector**

(for CO_2 price of 200€/t CO_2)



* NBS assessment.

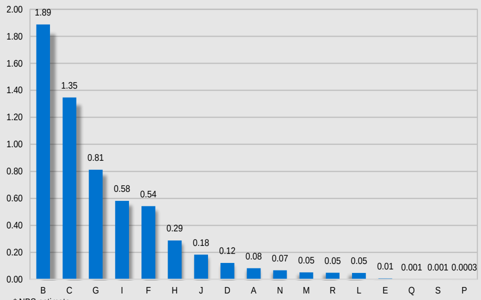
Sources: SORS, OeNB and NBS.

The results obtained from the sectoral carbon price model were used as the starting point for assessing companies' financial performance indicators in the third phase. The estimated reduction in the volume of production across economic sectors (from the second phase) would push the asset turnover ratio at the level of the entire economy down by 6.4 pp and the capital turnover ratio by 14.2 pp from their initial values. Additionally, the after-tax return on assets would be lower by 0.4 pp. According to the model used, the decline in the production volume would not directly affect the borrowed capital ratio, although the introduction of a carbon tax would indirectly impact this indicator through the cost of borrowing, which could be utilised in the development of climate stress tests in the future.

Chart O.3.2 **Projected rise in expected losses of the banking sector for a time horizon of 5 years, assuming materialisation of transition climate risk, by economic sector**

(based on data concluding with December 2022)

(RSD bn)



* NBS estimate.

Sources: NBS and SBRA.

The introduction of a carbon tax would increase the probability of non-performance across all economic sectors to some extent compared to the initially estimated probability, indicating a rise in expected credit losses of banks. In this phase of stress testing, we projected an increase in expected losses of individual banks and the banking sector for each economic sector, assuming the introduction of carbon tax (Chart O.3.2). The largest increase would be recorded in mining, followed by manufacturing, and the smallest in the education sector.

The solvency stress testing of the Serbian banking sector against transition climate risk in the fourth phase of this quantitative analysis is based on estimating the impact of an increase in expected credit losses on the capital adequacy ratio of the Serbian banking sector, assuming materialisation of the transition climate risk. It is carried out over a five-

[118] The supply table pertains to goods and services flows either produced in the domestic economy or imported from every industry that is considered a producer toward every industry that is considered a consumer and that forms a use table, including the industry of the producer as one of the consumers of those products. The use table shows the consumption of goods and services by sector, used in final consumption, investments and exports, with prices valued at sale prices. It may be expanded for certain non-industrial inputs, such as taxes, salaries, import and similar.

[119] https://www.stat.gov.rs/en-US/vesti/20190930-nacinalnitabponudeiupotrebe

[120] https://data.stat.gov.rs/Home/Result/25040101?languageCode=en-US

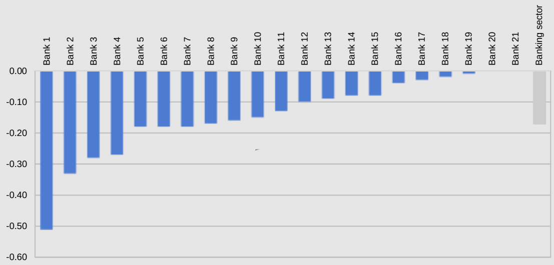
[121] https://www.oenb.at/dam/jcr:2c2077e8-9729-441a-bb43-3b7a50ec2228/05_FSR_42_OeNB-climate-risk-stress-test.pdf

[122] *A* – agriculture, forestry and fishing; *B* – mining; *C* – manufacturing; *D* – electricity, gas, steam and air conditioning supply; *E* – water supply; sewerage, waste management and remediation activities; *F* – construction; *G* – wholesale and retail trade; repair of motor vehicles and motorcycles; *H* – transportation and storage; *I* – accommodation and food service activities; *J* – information and communication; *L* – real estate activities; *M* – professional, scientific, innovation and technical activities; *N* – administrative and support service activities; *P* – education; *Q* – health and social work activities; *R* – arts; entertainment and recreation; *S* – other service activities.

year horizon, using a top-down methodology[123] and the standard macroprudential solvency stress testing framework of the NBS. When calculating the impact on the capital adequacy ratio within the macroprudential solvency stress testing of individual banks and the banking sector, comparisons were made with projections excluding the impact of the mentioned risk. Additionally, a profit projection was applied, as the average pre-tax financial result for the five-year period from 2020 to 2024.

According to the stated projections, in the event of materialisation of the transition climate risk, the capital adequacy ratio of the banking sector as a whole, as well as that of each individual bank, would fall below the values previously calculated without the impact of that risk (Chart O.3.3). At the level of the Serbian banking sector, the capital adequacy ratio would be 0.17 pp lower over the five-year horizon than it would be without the impact of the transition climate risk, while at the level of individual banks, the largest decline in the capital adequacy ratio under these assumptions would amount to 0.51 pp.

Chart O.3.3 **Changes in projected CARs assuming materialisation of transition climate risk**
(based on data concluding with December 2022)
(pp)



* NBS estimate.

Source: NBS.

The analysis of the impact of carbon tax introduction showed that the effect of climate risk would reduce banks' capital adequacy ratios, particularly in cases of significant exposure to sectors with high levels of greenhouse gas emissions.

The results of the climate stress tests indicate that the impact of transition climate risks on the credit losses of domestic banks would be limited in the medium term, and that the stability of the Serbian banking sector would not be jeopardised. The analysis of the impact of transition climate risks on the Serbian banking sector is a key tool in assessing the sector's resilience to climate-related risks. This approach enables the analysis of various climate scenarios and their effects on financial performance, identification of financial system vulnerabilities, and strategic decision-making aimed at promoting Serbia's sustainable economic development.

[123] Top-down stress tests rely on individual bank reports, single methodology and assumptions. In order for stress tests to produce reliable results, close cooperation is needed between teams conducting macroprudential and supervisory stress tests and between banks and the central bank (supervisory authority).

II.3 Non-bank financial sector

II.3.1 (Re)insurance undertakings

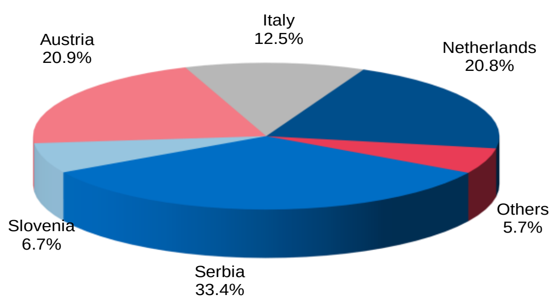
The stability of the insurance sector has been preserved, with key business indicators trending positively in 2024. Total premium continued up, with the rising share of non-life insurance premium. Serbia's insurance sector is well-capitalised and profitability increased relative to the year before.

The share of the insurance sector in the total balance sheet assets of the financial sector supervised by the NBS (banks, financial lessors, (re)insurance undertakings and VPFs)[124] at end-2024 was unchanged relative to end-2023, measuring 5.7%. After the dominant banking sector, insurance is the second largest segment of the Serbian financial system.

At end-2024, there were 16 insurance undertakings and four reinsurance undertakings in Serbia.[125] Among insurance undertakings, four were engaged exclusively in life insurance, six provided exclusively non-life insurance, while another six provided both life and non-life insurance. Of the total number of undertakings, 15 were in majority foreign ownership. Major foreign owners were from Austria (20.9%) and the Netherlands (20.8%). Insurance undertakings in majority domestic ownership accounted for 33.4% of all insurance undertakings[126] (Chart II.3.1), up by 1.9 pp from 2023.

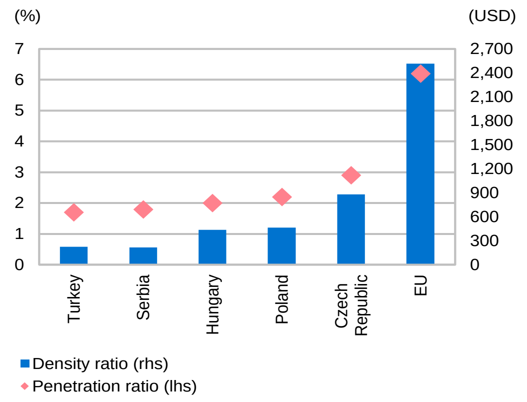
In addition to insurance undertakings, in 2024, the sales network included 15 banks, 11 financial lessors, and one public postal operator, all of them licensed to carry on insurance agency activities, 115 legal entities (undertakings for insurance brokerage and insurance agency activities), and 84 insurance agents (natural persons – entrepreneurs).

Chart II.3.1 **Insurance undertakings* ownership structure, as at 31 December 2024**



* Does not include reinsurance undertakings.
Source: NBS.

Chart II.3.2 **Insurance sector development indicators as at 31 December 2023***

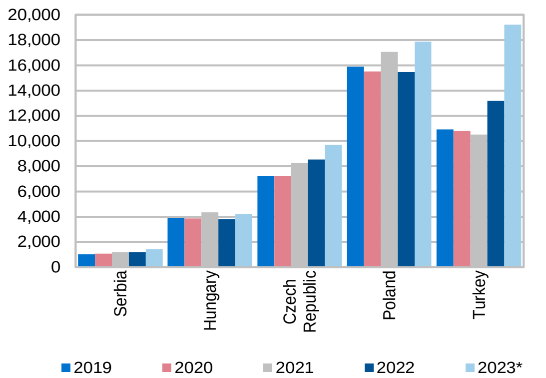


* Latest available data.
Sources: Swiss RE and NBS.

Given the level of development of the insurance sector in the neighbouring countries and EU member states, it can be concluded that Serbia's insurance market has a significant potential for further development. According to data of the Swiss Re Institute, in 2024, the penetration ratio (gross written premium as a percentage of GDP) at the EU level[127] stood at 6.2%,[128] while the same ratio in Serbia measured 1.8%.[129] Also, the EU's density ratio (the average premium per capita spent on insurance) of USD 2,516[130] in 2023,[131] was much higher than Serbia's – USD 216 (USD 248 in 2024)[132] (Chart II.3.2).

A positive trend was also recorded in the total premium, which measured RSD 177.4 bn in 2024, having risen by 14.3% from 2023. However, Serbia lags behind the

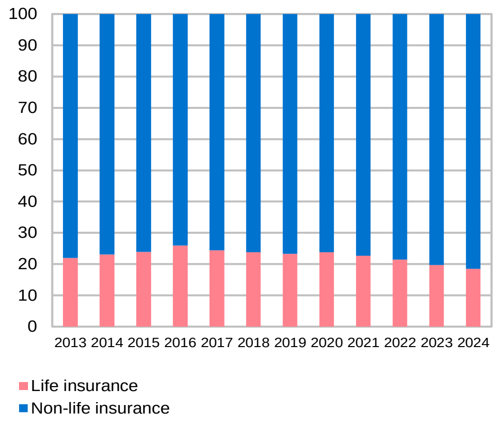
Chart II.3.3 **Total insurance premium**
(USD mn)



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

[124] Excluding payment institutions, e-money institutions and virtual currency service providers.
[125] *https://nbs.rs/en/finansijske-institucije/osiguranje/registar/index.html*
[126] Excluding reinsurance undertakings.
[127] Latest available data.
[128] Source: Swiss Re Sigma 3/2024.
[129] Source: NBS.
[130] Source: Swiss Re Sigma *3/2024*
[131] The latest available data.
[132] Source: NBS.

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



Source: NBS.

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

Owing to higher nominal growth in non-life than in life insurance premium, the share of life insurance premium decreased from 19.7% at end-2023 to 18.5% at end-2024 (Chart II.3.4).

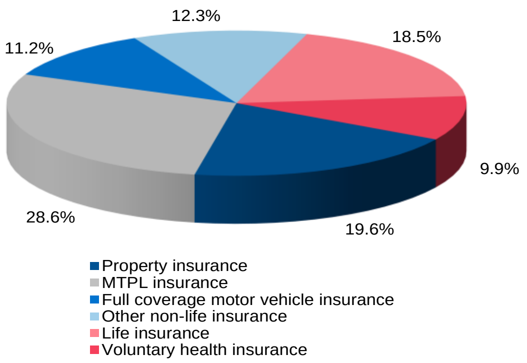
At end-2024, within the total premium, motor third party liability insurance was still dominant (28.6%), followed by property insurance (19.6%), life insurance (18.5%) and full-coverage motor vehicle insurance (11.2%) (Chart II.3.5). In the post-pandemic period, i.e. after 2020, there was also a noticeable increase in the share of voluntary health insurance premium, which at end-2024 accounted for 9.9% of the total premium, confirming a significant change in the insured persons' awareness of the importance of health.

The Serbian insurance sector is adequately capitalised in view of the risks to which it is exposed. The available solvency margin (guarantee reserve) is the amount of assets that an insurance undertaking must provide to be able to continuously perform its obligations. According to the Insurance Law, it must be at least at the level of the required solvency margin. Given that at end-2024 the core CAR was 204.81% for non-life, and 237.49% for life insurance, it can be concluded that insurance undertakings in Serbia are well-capitalised.

The leverage ratio (capital to asset ratio), which reflects the level of exposure of insurance undertakings to risks, also confirms that the Serbian insurance sector is well-capitalised. At end-2024, this ratio edged up in undertakings mainly engaged in life insurance, to 18.53% (17.84% in 2023), while dropping slightly in non-life insurers, to 22.27% (22.35% in 2023).

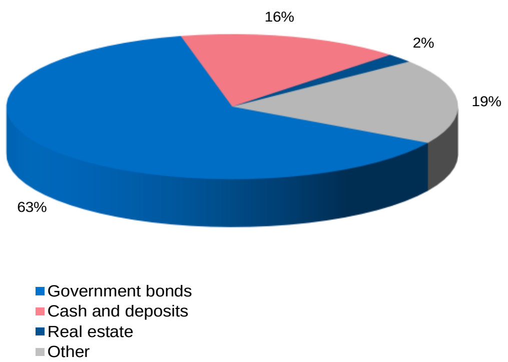
For an insurance undertaking to be able to protect the interests of the insured and injured third parties, i.e. to timely settle claims, it must create an adequate amount of technical provisions and invest them in such a way so as to ensure that their real value is maintained and increased so that the undertaken insurance obligations can be fully and timely met. To be able to settle all its liabilities, an undertaking must invest its assets in line with its investment policy, while taking into account the risks of such a policy. Technical provisions must be invested into the prescribed types of assets. At end-2024, technical provisions of all (re)insurance undertakings stood at RSD 285.9 bn, rising by 11.7% in nominal terms relative to 2023. Mathematical reserve[133] kept the dominant share in technical provisions, despite the mild growth rate of 2.3% at end-2024.

Chart II.3.5 **Total premium according to types of insurance as at 31 December 2024**



Source: NBS.

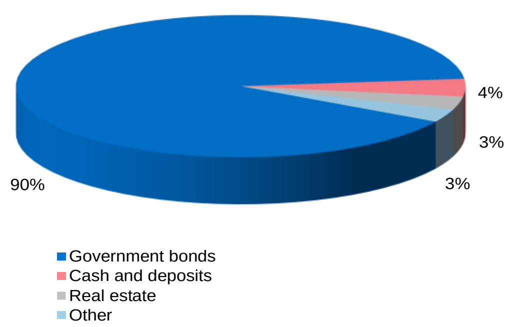
Chart II.3.6 **Non-life insurance technical provisions coverage as at 31 December 2024**



Source: NBS.

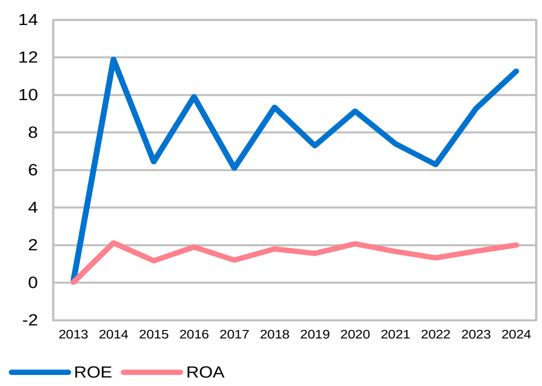
[133] Mathematical reserve means technical provision of insurance undertakings intended for meeting the present value of future liabilities under life insurance contracts (as well as under multi-year non-life insurance contracts accumulating savings or funds for risk coverage in future years and to which probability tables and calculations are applied same as in life insurance).

Chart II.3.7 **Life insurance technical provisions coverage as at 31 December 2024**



Source: NBS.

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



Source: NBS.

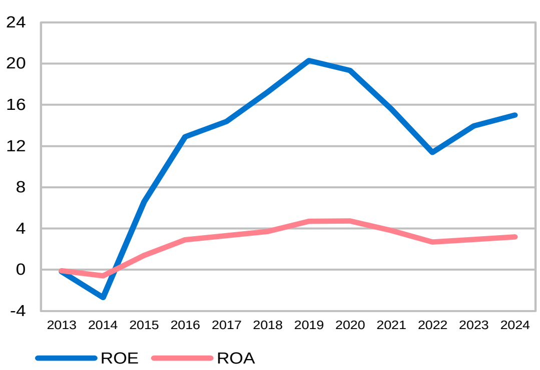
The bulk of technical provisions of non-life insurance was invested in government securities of the Republic of Serbia (63% at end-2024) (Chart II.3.6). Technical provisions of life insurance were also predominantly invested in government securities (90% at end-2024) (Chart II.3.7). The high share of Serbian government securities in non-life and life insurance portfolios indicates a low level of investment credit risk thanks to the preserved macroeconomic and financial stability of Serbia.

The liquidity of insurance undertakings is also an important factor in assessing the quality of assets. Setting an adequate liquidity level is extremely important for the timely settlement of liabilities. Apart from liquid forms of assets, insurance undertakings also invest in instruments of limited liquidity, such as intangible assets, real estate, non-tradable securities and receivables. In 2024, the indicator of less tradable assets (share of less liquid assets in total assets) in undertakings mainly engaged in non-life insurance measured 19.80%, a slight drop from 2023 (20.27%). In undertakings engaged mainly in life insurance, this indicator equalled 7.15%, also edging down slightly y-o-y (7.28% in 2023).

The insurance sector ended 2024 with a positive after-tax net result[134] amounting to RSD 12.4 bn. Profitability indicators increased relative to 2023. In 2024 ROE in non-life insurance undertakings was 15.02% (13.95% in 2023), and ROA 3.17% (2.94% in 2023) (Chart II.3.8). Life insurers' ROE was 11.26% (9.28% in 2023) and ROA 2.00% (1.68% in 2023) (Chart II.3.9).

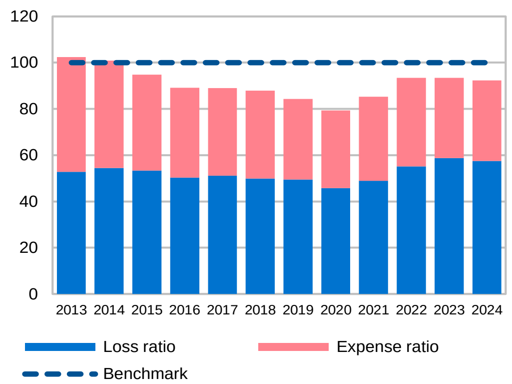
The profitability of insurance undertakings is indicated by the combined ratio for self-retention.[135] The ratio value below 100% indicates that an undertaking is able to pay out claims and cover expenses from the collected premiums. If the ratio value is above 100%, it is assumed that an insurer determines the level of the premium by taking into account the potential income

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



Source: NBS.

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



Source: NBS.

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

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

from investment in 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 at end-2024 edged down from the year before, to 92.27% (93.36% at end-2023) (Chart II.3.10). The ratio value indicates that the premium level is adequate to meet the liabilities under insurance contracts and that the readiness to take risks does not compromise the fulfilment of both assumed and future liabilities.

The expense ratio (ratio of insurance underwritten expenses to premium earned) went slightly up – from 34.59% at end-2023 to 34.78% at end-2024, and suggests improved efficiency in cost administration. 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 earned. This ratio dropped to 57.49% at end-2024, from 58.77% at end-2023.

As regards the regulatory activities in the insurance sector, in October 2024 the NBS adopted the Decision Amending the Decision on Investment of Insurance Funds,[136] enabling the acquisition of unearned premium receivables under unexpired non-life insurance, coinsurance and reinsurance by technical provisions by 31 December 2026, and investment units of open-ended alternative investment funds, provided that they meet the prescribed conditions (quantitative – up to 5% of non-life technical provisions, and qualitative). Apart from that, aiming to improve the corporate governance process, in May 2024 the NBS adopted the Decision Amending the Decision on Implementing Provisions of the Insurance Law relating to the Issuance of License to Carry on Insurance/Reinsurance Activities and Specific Approvals of the National Bank of Serbia.[137] The Decision Amending the Decision on the System of Governance in an Insurance/Reinsurance Undertaking[138] from October 2024 specifies risks which (re)insurance undertakings may face in their operation and introduces improvements to the risk management system in this sector. In October 2024, the NBS adopted the Decision Amending the Decision on Reporting by Insurance/Reinsurance Undertakings,[139] replacing the form of the report on the structure of investment portfolio by non-life insurance assets.

The current insurance regulations in the Republic of Serbia lays the legislative groundwork for further convergence of the Serbian insurance sector to that of the EU. To further improve the regulations, the initiated activities of alignment with Solvency II standard (Directive 2009/138/EC of the European Parliament and of the Council on taking-up and pursuit of the business of Insurance and Reinsurance), as well as alignment with the Directive (EU) 2016/97 – the Insurance Distribution Directive – IDD, will be continued going forward.

The current risks stemming from sluggish global economic growth, heightened geopolitical uncertainties and climate changes have increased awareness of the importance of insurance. Thanks to a previously created stable business environment and adequate buffers, the resilience of the insurance sector was preserved so that insurance undertakings are able to smoothly fulfil their obligations to the insured, insurance service users and injured third parties. In the face of heightened uncertainties in the international environment, (re)insurance undertakings should continue with adequate capital and risk management, staying focused on the creation and sale of new products, in line with the insured persons' needs. As so far, the NBS will continue to monitor developments in this segment of the financial system and protect the interests of insurance service users, as well as the stability of operation of (re)insurance undertakings.

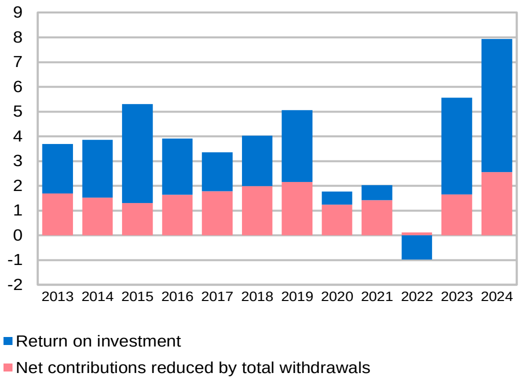
II.3.2 Voluntary pension funds

Thanks to the onset of an interest rate cutting cycle, the returns on VPF investments recorded growth, which significantly boosted net VPF assets in 2024. Other key VPF performance indicators also trended positively. With ample potential for further growth, this sector could play an important role in the future of the Serbian pension system.

VPFs[140] are collective investment institutions that collect pension contributions and invest them into various types of assets in order to generate private pensions. They represent long-term saving for old age, complementing the government pension system which remains the key source of pension income. 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.[141]

[136] RS Official Gazette, No 82/2024.
[137] RS Official Gazette, No 44/2024.
[138] RS Official Gazette, No 82/2024.
[139] RS Official Gazette, No 82/2024.
[140] Pursuant to the Law on Voluntary Pension Funds and Pension Schemes (RS Official Gazette, Nos 85/2005 and 31/2011).
[141] 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.

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



Source: NBS.

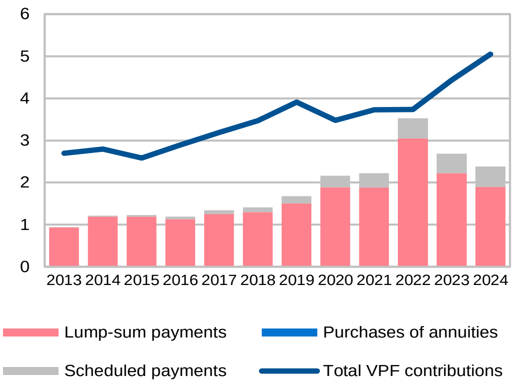
The number of management companies and VPFs did not change in 2024 – at the end of the year there were four management companies in Serbia in charge of managing the assets of seven VPFs. The assets of all VPFs were kept in accounts with two custody banks in 2024.

From the start of operation of VPFs (2006), their total net assets have been almost constantly increasing.[142] Thanks to the onset of an interest rate trimming cycle,[143] net VPF assets grew considerably in 2024, reaching RSD 61.7 bn at year end, up by 14.8% (or by around RSD 7.9 bn) from end-2023. Changes in the value of net VPF assets depend on members' contributions, collected fees, withdrawals of accumulated funds and return on VPF investment (Chart II.3.11). Return on investment was the main driver of the rise in net VPF assets in 2024 and measured RSD 5.4 bn, significantly exceeding last year's result (RSD 3.9 bn). Given the structure of VPF investment, the return is influenced by: a change in the yield curve on government debt instruments, change in the value of shares, change in the value of investment units of open investment funds, level of the key interest rates, banks' interest rates, and changes in the dinar exchange rate against the euro.

Total contributions in 2024 amounted to RSD 5.1 bn (RSD 4.9 bn excluding front load fee), rising by RSD 0.6 bn from 2023. Members withdrew RSD 2.4 bn, or RSD 0.3 bn less than in 2023 (Chart II.3.12). Assets are largely paid out as a lump sum, usually as soon as the member reaches the age limit for the withdrawal of accumulated funds. The share of lump-sum withdrawals in total withdrawals amounted to 79.5% in 2024, down by 3.4 pp from the previous year. Since withdrawals are made by the members who fulfil the requirements, and are usually not long-standing fund members, their accumulated sum is relatively small, and this kind of withdrawal is expected, even though it is not in accordance with the nature of VPFs, which assumes the use of accumulated funds over a longer time period. As the accumulation period lengthens and the accumulated sums increase, the share of scheduled withdrawals increases as well. In 2024, these withdrawals made up 20.5% of total withdrawals, up by 3.4 pp from the year before.

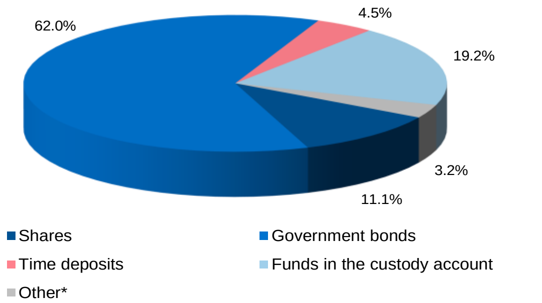
The total number of VPF users went up by 4,951 from the previous year to 225,665 at end-2024. These users concluded a total of 312,209 membership contracts. In 2024, the number of active users (users that regularly pay contributions) also increased, but their share in the total number of users in the accumulation stage is still relatively low – 36.8% in December 2024. The average age of VPF users in Serbia is around 48 years, with users aged 40–60 making up the dominant share

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



Source: NBS.

Chart II.3.13 **Structure of VPF assets as at 31 December 2024**



* Investments abroad, corporate bonds, investment units of investment funds and receivables.
Source: NBS.

[142] The year 2022 was an exemption, since for the first time at year end a y-o-y decrease in net assets was recorded. This was a one-off effect of a general rise in interest rates, driving down the prices of financial instruments in which VPF assets were previously invested.

[143] A decline in interest rates on newly issued financial instruments boosts the price of instruments in which VPF assets were previously invested, and which were issued at higher interest rates. The prices of longer-maturity instruments are more sensitive to interest rate changes.

(62.1%). The percentage of users above the age of 53 was similar as in prior years, accounting for 32.7%, while the percentage of those aged above 58 was 19.5%. The share of VPF users in the total number of employees was 9.7%, which indicates that this sector is still underdeveloped, but leaves room for future education about VPF membership and thus for the development of this financial market segment.

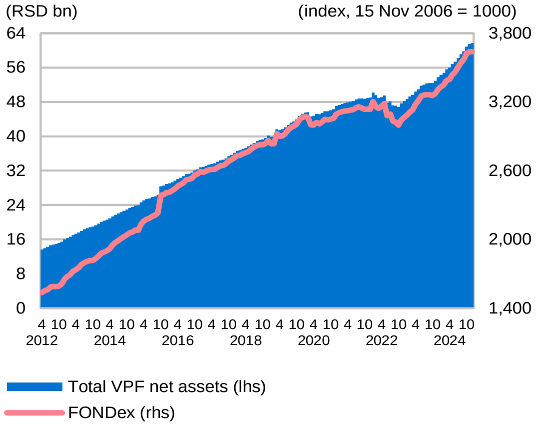
At end-2024, the bulk of VPF assets were invested in government bonds (62.0%, or 8.1 pp less than at end-2023) (Chart II.3.13). Given that government bonds are issued by the Republic of Serbia, credit risk is low. However, due to the high share of long-term debt instruments and deposits with banks in the funds' portfolios, the bulk of funds' assets are exposed to the interest rate risk. At end-2024, time deposits and custody bank assets made up 23.7% of total assets (17.8% at end-2023). The portion of shares in total VPF assets (11.1% at end-2024) increased slightly from end-2023 (10.8%). In 2024, VPF assets were also invested in the shares of foreign legal entities in foreign stock exchanges (1.6% of total VPF assets at end-2024, while in 2023 this type of investment was non-existent), and investment units of domestic investment funds and corporate bonds (0.8% or 0.4%, respectively). The relevant secondary legislation of the NBS, governing the investment of VPF assets and aimed at protecting VPF users' interests and assets, leaves enough room for the diversification of VPF investments. Going forward, increasing diversification of investments will be of great relevance for the further development of the domestic capital market and creation of new long-term financial instruments.

At end-2024, 71.3% of total VPF assets were in the domestic currency (RSD 44.3 bn), 14.6% in euros (RSD 9.1 bn) and 14.1% in US dollars (RSD 8.7 bn).

At end-2024, FONDex[144] reached the value of 3,636.62 points (Chart II.3.14), which was 325.55 points higher than a year earlier. The annual FONDex return, as the weighted average return of all funds, equalled 9.8% in 2024 (8.1% at end-2023). At end-2024, FONDex return since the start of VPF operations equalled 7.4%.

Fees charged by VPF management companies include contribution fees and management fees. Though the contribution fee is front-loaded, it is not the largest cost for the members. The management fee is calculated daily, and it made up 87% of total collected fees in 2024. Total management fees amounted to RSD 715.7

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



Source: NBS.

mn in 2024, significantly higher than in 2023 (RSD 633.4 mn) due to the rise in the value of VPF assets.

VPF contributions have been continuously increasing over the last couple of years. 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. Tax incentives have also exerted a positive impact on the VPF sector. In 2024, payments made by employers in the amount of up to RSD 8,101[145] were exempt from income tax and contributions for mandatory social insurance, as well as payments in the same amount made by the employer through wage garnishment. This is an additional incentive for employees and employers to allocate a part of the wage to long-term saving in VPFs.

The first step of those interested is to determine how much they can set aside for this type of additional retirement savings. In order to educate future and current members, the NBS continuously presents to the public the advantages of this type of saving on its website, in the section "Be ready for retirement",[146] pointing out the important aspects that should be taken into account when making a decision on a private pension.

II.3.3 Financial leasing

The financial leasing sector continued to record positive results in 2024. The sector's balance sheet assets increased further, while the share of non-performing in total receivables stayed unchanged from the year before.

Financial leasing is a type of financial intermediation. The lessor keeps the ownership of the lease asset, while

[144] FONDex indicates movements in the value of 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.

[145] Under the government decision, this amount is adjusted for previous-year inflation once a year.

[146] https://tvojnovac.nbs.rs/cirilica/korisno/penzija/

transferring to the lessee, in exchange for the lease payment, the right to hold and use the asset with all the risks and rewards of ownership.

At end-2024, there were 15 lessors in the Serbian financial leasing sector, two of which undergoing voluntary liquidation.

The bulk of lessors (12) are owned by banks, banking group members or other financial institutions. Five lessors are entirely or largely owned by foreign legal entities, while ten lessors are in the majority ownership of domestic entities, of which seven are owned by domestic banks with foreign capital. At end-2024, the financial leasing sector employed 426 people.

Lessors' balance sheet assets continued up. At end-2024, they stood at RSD 203.0 bn, up by 23.9% from end-2023 (RSD 163.8 bn).

At end-2024, past due gross receivables (RSD 3.5 bn) made up 1.9% of gross financial leasing receivables, unchanged from the year before. The net value of those receivables in total net receivables relative to end-2023 edged slightly down (at end-2024, these receivables accounted for 0.76%). Receivables past due more than 90 days accounted for the bulk of total past due receivables. At end-2024, these receivables measured RSD 2.17 bn. Their share in total gross financial leasing receivables equalled 1.17% (0.94% at end-2023). The net value of receivables past due more than 90 days made up 0.06% of the total net portfolio.

Total lessors' capital at end-2024 equalled RSD 15.4 bn, or 18.9% more than the year before.

The pre-tax result of the financial leasing sector equalled RSD 2.5 bn, increasing from end-2023 (RSD 2 bn). Net profit came at RSD 1.8 bn, with most lessors (11) posting a positive net result. Total revenues and profit in 2024 equalled RSD 13.7 bn, up by 35.9% from the year before, and total expenses and losses – RSD 11.3 bn, up by 40.4% relative to 2023.

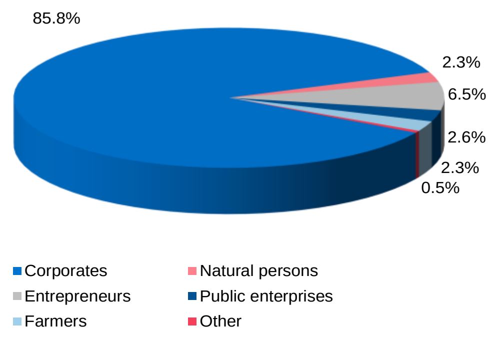
At end-2024, ROA and ROE were higher than at end-2023. ROA rose from 1.27% to 1.35% and ROE from 16.23% to 17.46%.

Structure of lessees

The structure of lessees stayed broadly unchanged. As in the previous years, the most common lessees were companies outside the financial sector, with an 85.8% share in total investment, slightly higher than in 2023 (84.6%).

As can be seen in Chart II.3.15, entrepreneurs accounted for 6.5% of total investment (6.4% in 2023), public enterprises for 2.6% (3.2% in 2023), natural persons for 2.3% (2.7% y 2023) and farmers for 2.3% (2.8% in 2023).

Chart II.3.15 **Investment structure by lessee as at 31 December 2024**



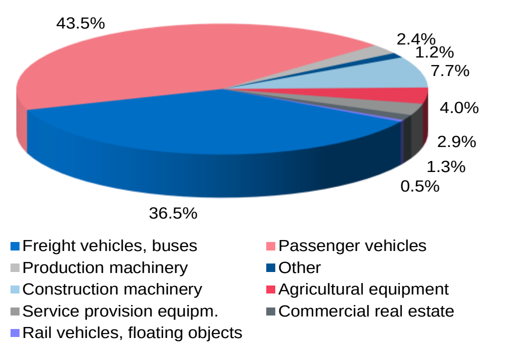
Source: NBS.

Structure of investment by lease asset

As Chart II.3.16 indicates, the financing of passenger vehicles, which has had the largest share in the structure of investment by the lease asset, went slightly up in 2024 (from 43.2% in 2023 to 43.5% in 2024). The share of financing of freight vehicles, minibuses and buses also increased (from 34.8% at end-2023 to 36.5% at end-2024). On the other hand, the share of financing of agricultural machinery and equipment decreased (from 5.3% in 2023 to 4.0% in 2024).

The share of financial leasing sector in the total balance sheet of the NBS-supervised segment of the financial sector (banks, financial lessors, (re)insurance undertakings and voluntary pension funds) was somewhat higher at end-2024 (2.8%) than at end-2023 (2.5%).

Chart II.3.16 **Investment structure by lease asset as at 31 December 2024**



Source: NBS.

Dynamic business environment requires continuous improvement and modification of lessor services to ensure their smooth operation, as well an offer tailored to user needs and further development of this sector.

II.3.4 Payment institutions, electronic money institutions and virtual currency service providers

The Law Amending the Law on Payment Services, adopted in July 2024, additionally encourages innovations in the market and strengthens competition and transparency in payment service provision, as well as greater consumer protection and payment security. At end-2024, eight payment institutions and seven e-money institutions operated in the market. In 2024, the number of payment services provided rose across all categories, particularly cashless payments.

Pursuant to the Law on Payment Services[147] (in force since October 2015), special institutions registered to provide payment services [148] and issue e-money operate in Serbia – payment institutions and e-money institutions. Payment institutions may only be an undertaking, in accordance with the law governing companies, with the head office in the Republic of Serbia and licensed by the NBS to provide payment services.

To additionally encourage innovation in the market and strengthen competition and transparency in payment service provision, as well as consumer protection and payment security, in July 2024 the NBS adopted the Law Amending the Law on Payment Services.[149] The key novelty is the introduction of open banking, i.e. a legal and technological framework for development and provision of new forms of payment services, relying, among other, on data sharing between bank and non-bank payment service providers. The amendments introduce two new types of payment services (payment initiation service and account information service) and two new types of payment service providers (payment initiation service provider and account information service provider). The major part of Law provisions has been applied as of 6 May 2025.

Given their 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.[150] At end-2024, eight payment institutions[151] were licensed by the NBS to provide payment services. Of these, seven also provided payment services through a network of their agents. The domestic payment institutions act as representatives of world-renowned companies as well, which enables the transfer of money in a short time in a great number of countries across the globe.

An e-money institution may only be an undertaking, in accordance with the law governing companies, headquartered in Serbia. These institutions are authorised to issue e-money subject to the NBS's licensing. The first licence for the issuing of e-money was granted in 2016. At end-2024, there were seven institutions licensed to issue e-money in the Serbian market.[152] In addition to e-money issuing, e-money institutions can also provide payment services both at their location and through the network of their agents. Unlike licensed domestic e-money institutions, the services of e-money institutions from third countries[153] operating in line with the Law on Foreign Exchange Operations[154] may be used only in foreign payment transactions (for payments and collection of payments in e-purchases/sales of goods and services).

In addition to licensing, the NBS also supervises all payment institutions and e-money institutions, as well as a public postal operator, i.e. a portion of their operations which refers to the provision of payment services and/or e-money issuing.

Starting from the obligation to adopt secondary legislation accompanying the previously adopted Law Amending the Law on Payment Services for the sake of alignment with PSD2,[155] on 20 December 2024 the NBS adopted the relevant bylaws thereby additionally improving the established regulatory framework in this segment of the financial market.[156]

[147] RS Official Gazette, Nos 139/2014, 44/2018 and 64/2024.

[148] 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.

[149] RS Official Gazette, No 64/2024.

[150] 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, or other information available. 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.

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

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

[153] https://www.nbs.rs/export/sites/NBS_site/documents/platne-institucije/lista_ien_trece_drzave.pdf

[154] RS Official Gazette, Nos 62/2006, 31/2011, 119/2012, 139/2014, 30/2018 and 19/2025.

[155] Directive (EU) 2015/2366 of the European Parliament and of the Council on payment services in the internal market.

[156] In 2024, the NBS adopted: the Decision on Implementation of Provisions of the Law on Payment Services Relating to Issuing of Licenses and Approvals of the National Bank of Serbia (RS Official Gazette, No 102/2024), Decision Amending the Decision on Capital and Capital Adequacy of Payment and Electronic Money Institutions (RS Official Gazette, No 102/2024), Decision Amending the Decision on Detailed Conditions and Manner of Supervision of Payment Institutions, Electronic Money Institutions and Public Postal Operator (RS Official Gazette, No 102/2024) and Decision on the Contents of Registers of Payment Institutions and Electronic Money Institutions, as well as on Detailed Conditions and Manner of Maintaining these Registers (RS Official Gazette, No 102/2024).

In 2022, the NBS issued the first two licences for virtual currency service provision pursuant to the Law on Digital Assets,[157] applied since end-June 2021. This enabled the use of virtual currency services covered by these licences through domestic licensed companies which are comprehensively supervised by the NBS and are fully compliant with international standards. A digital asset service provider may only be a legal person, in accordance with the law governing companies, headquartered in the Republic of Serbia and licensed by the NBS and/or the Securities Commission to provide one or more digital asset services. The NBS is in charge of issues referred to in the Law on Digital Assets which pertain to decision-making in administrative procedures, the adoption of bylaws, supervision of operations and exercise of other rights and obligations of the supervisory body relating to virtual currencies as a type of digital assets.

In addition to licensing, the NBS also supervises virtual currency service providers and issuers as well as holders of virtual currency as a type of digital assets, and continuously examines unauthorised provision of virtual currency services.

Data on payment services delivered by all service providers

The NBS website offers to users an overview of the fees charged for specific services linked to a payment account, as well as comparable data on fees charged by payment service providers.[158] By enhancing transparency, the NBS enabled users to get better information on the level of fees charged for the 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 2024, the number of almost all payment services provided and, especially cashless payments, increased. In 2024, the total number of m-banking users went up by 13.9% and e-banking users by 7.5% relative to the year before. The rise in the importance of m-banking can be seen in the 25.7% y-o-y increase in the number of transactions executed by natural and legal entities and entrepreneurs. On the other hand, the number of e-banking transactions executed by natural and legal entities, as well as entrepreneurs, fell by 1.8%.[159]

The number of card-based and e-money online purchases of goods and services has been steadily rising. Thus, in 2024, around 82.4 mn online transactions of purchase of goods and services by cards and e-money were carried out in all currencies – by 39.2% more than in 2023.

As for distance financial service contracts, 2024 saw the conclusion of 323,899 contracts, up by 83.9% from the year before. Of this number, 90,642 contracts were concluded using video-identification of clients, which is an increase of 142.2% relative to 2023.

The NBS has also recognised the significance of new payment methods and the introduction of technological innovations in the payment services market and supported the process by an adequate infrastructure and regulatory framework. Owing to continuous activities and efforts invested by the NBS over the years, appropriate conditions have been created for the modernisation and improvement of payment transactions in the Republic of Serbia.

[157] RS Official Gazette, No 153/2020.
[158] https://nbs.rs/sr_RS/novac-i-placanja/platne-usluge/naknade/
[159] An overview of data about payment services provision and e-money issuance for 2023-2024: https://www.nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/pregled-pu-ien/pu-ien_e_IV_24.pdf

III Financial markets

International financial markets remained stable in 2024 despite pronounced geopolitical tensions and geo-economic fragmentation. In Serbia, a disinflationary path was established from April 2023, and by May 2024, inflation returned within the target band. During 2024, the NBS reduced its key policy rate three times, by 25 bp each, bringing it down to 5.75% by the end of the year. Relative stability of the dinar exchange rate against the euro was preserved, owing to the NBS's net purchases of foreign currency in the IFEM. These interventions also contributed to a further increase in FX reserves to record levels. In June 2024, the Republic of Serbia issued its first 10Y dollar sustainability bond in the international financial market, which attracted strong investor demand. Standard & Poor's upgraded Serbia's credit rating in October 2024 to an investment-grade level of BBB– for the first time in history, while Fitch Ratings and Moody's Ratings assigned positive outlook for upgrades in the near term. Attaining investment grade fulfilled one of the most important strategic objectives of the NBS and the Government of the Republic of Serbia. This achievement confirms the country's favourable macroeconomic indicators and enhanced resilience to external shocks.

III.1 Money market

Despite global uncertainties, pronounced geopolitical tensions, and rising protectionism, economic stability and smooth operation of the domestic financial market were preserved.

The NBS continued to implement a managed floating exchange rate regime, intervening in the FX market to mitigate excessive short-term fluctuations in the dinar-euro exchange rate, as well as to preserve price stability, financial system stability, and maintain an adequate level of FX reserves. Appreciation pressures prevailed throughout 2024. The increase in foreign currency supply was primarily driven by residents, who – owing to higher exports and FDI inflows – were net sellers of foreign currency in the FX market. The growth in banks' currency-indexed assets, the net purchase of foreign cash, and an extended net long position on card transactions worked in the same direction.

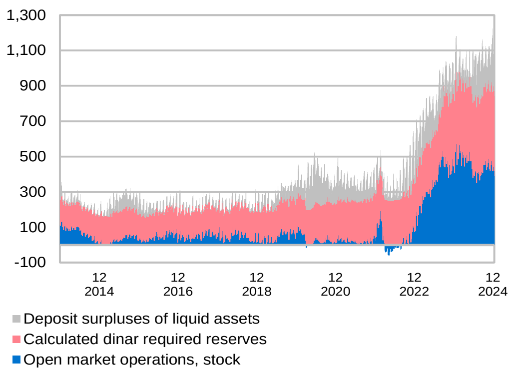
At the level of the year, the dinar strengthened nominally against the euro by 0.1% in 2024. Compared to end-2023, the dinar weakened against the US dollar by 5.8% in 2024, influenced by the dollar's strengthening against the euro in the international financial market. In 2024, the NBS intervened by buying EUR 2,725 mn, net (purchases measured EUR 3,570 mn, while sales amounted to EUR 845 mn). As in previous years, this helped maintain the relative stability of the dinar's exchange rate against the euro.

At end-2024 gross FX reserves reached a record high end-of-year level of EUR 29.3 bn (EUR 24.7 bn, net), up by EUR 4.4 bn from end-December 2023. The main impulse to FX reserves growth came from inflows generated by NBS interventions in the IFEM, followed by allocations of banks' FX required reserves, FX reserves management, grants, and other sources.

The global risk premium mostly followed a downward trajectory in H2, influenced by the continued easing of monetary policy by the Fed. EMBI for Serbia stood at 147 bp at end-December 2024 (188 bp at end-2023). Throughout the year, Serbia's risk premium remained below the composite measure for emerging market dollar debt, which equalled 297 bp at end-December 2024 (319 bp at end-December 2023). At end-2024, EURO EMBIG for Serbia stood at 194 bp (247 bp at end-2023). At the same time, the composite measure of risk for emerging market euro debt stood at 192 bp (200 bp at end-2023).

In 2024, Serbia was awarded investment-grade rating for the first time in its history. After upgrading its outlook from stable to positive in April 2024 (with credit rating at BB+), in October Standard & Poor's raised Serbia's credit rating to investment-grade level of BBB-. In February 2024, Fitch Ratings affirmed Serbia's credit rating at BB+, with a stable outlook, while in August 2024 it raised the outlook to positive, keeping the rating at BB+. In January 2025, Fitch Ratings kept the positive outlook, affirming the rating at BB+. In August 2024, in addition to Standard &

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



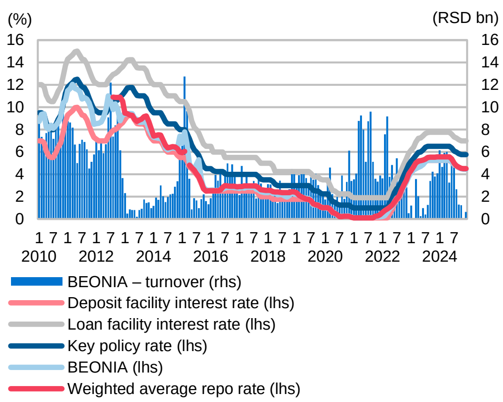
Source: NBS.

Poor's and Fitch Ratings, the third most influential global rating agency, Moody's Ratings, also upgraded Serbia's outlook from stable to positive, while keeping the rating at Ba2.

In view of the established downward trajectory of inflation, in place since April 2023, and its return within the target band in May 2024, the NBS embarked on monetary policy easing. In 2024, the key policy rate was lowered three times, by 25 bp each, to 5.75% at end-2024, while the interest rates on credit and deposit facilities were cut to 7.00% and 4.50%, respectively.

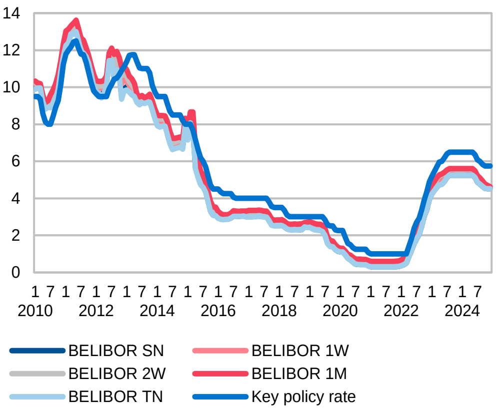
In 2024, the NBS continued to conduct reverse repo transactions (repo sales of securities with a one-week maturity) as its main open market operations, to withdraw excess dinar liquidity from the banking sector. Leveraging the full flexibility of its monetary framework, the NBS gradually adjusted its strategy for conducting the main operations from June, reducing the supply amount relative to the estimated demand from banks at one-week reverse repo sales of securities. This approach resulted in a reduction of the

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



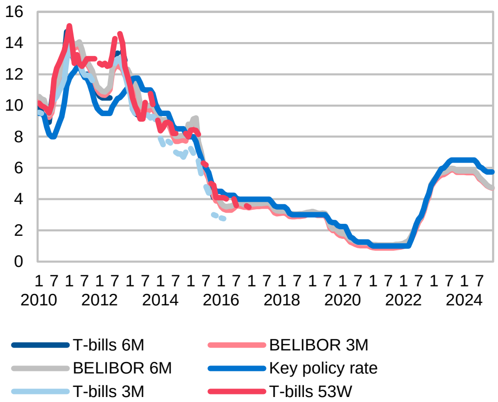
Source: NBS.

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.

relative amount of excess dinar liquidity withdrawn by the NBS through its main operations, alongside a decrease in the weighted average repo rate. The latter stood at 4.50% at the last one-week repo auction in 2024 (5.56% at the final auction in 2023). Relative to end-2023, banks mildly reduced their investment in NBS securities in reverse repo transactions (from RSD 405 bn to RSD 390 bn) (Chart III.1.1).

The average daily turnover in the interbank overnight money market in 2024 amounted to RSD 3.5 bn, exceeding the average daily turnover in 2023 (RSD 2.1 bn) (Chart III.1.2). Furthermore, higher average turnover in this market was recorded during the first two quarters of 2024 (RSD 5.6 bn and RSD 4.8 bn, respectively), but it decreased in Q3 and Q4 (RSD 3.0 bn and RSD 0.7 bn, respectively).

Monetary policy easing also contributed to lower interest rates in the domestic interbank market. The average BEONIA[160] rate stood at 4.45% in December 2024, which is a decrease of 80 bp compared to the average value in December 2023. In December 2024, BELIBOR rates, on average, ranged from 4.51% for the shortest to 4.74% for the longest maturity (in December 2023, the average BELIBOR rates ranged from 5.25% for the shortest to 5.80% for the longest maturity) (Chart III.1.3).

In 2024, the NBS continued to conduct bilateral transactions of FX swap purchases and sales, introduced in early 2022. These transactions are an efficient instrument for providing support to banks in managing their dinar and FX liquidity, owing to their flexibility regarding the timing of transactions and their maturity.

In 2024, the NBS swap bought and sold EUR 1.257,0 mn each in bilateral FX swap transactions with banks (EUR 563.0 mn each in 2023). Interbank FX swap transactions amounted to EUR 20.0 mn in 2024 (no interbank swap transactions were concluded in 2023).

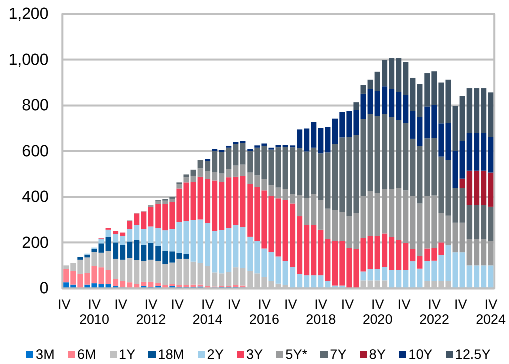
In 2024, there were no issues of T-bills in dinars or euros.

III.2 Bond and share market

The government bond market is one of the most significant segments of the domestic financial market. Primary sale of government bonds is organised by the Ministry of Finance – Public Debt Administration, using the single interest rate auction method. The sale of the dinar bonds in the domestic market reduces the exposure to currency risk and contributes to advancing dinarisation of the financial system. Over the past twelve years, the dinar yield curve has been strategically developed in such a way that it has been significantly extended, resulting in an increase in the average maturity of dinar government securities and thereby reducing exposure to the refinancing risk. In addition, in previous years there has been a gradual increase in the share of dinar bonds in the total volume of Serbian government bonds issued in the domestic market (83% at end-2024). In 2024, there was no early buyback of dinar government bonds (in 2023, 7Y dinar government bonds were bought back early in the amount of RSD 6.8 bn). The stock of sold dinar government bonds with maturities over one year amounted to RSD 856.6 bn at end-2024, which is 2.0% more than at end-2023 (Chart III.2.1). In the structure of dinar government bonds with maturities of over one year, 12Y bonds had the largest share at end-2024 – 22.8%, which is below their share at end-2023 (23.3%), followed by 10Y government bonds with a share of 18.1% (19.6% in 2023).

In 2024, the issuance of benchmark bonds continued, which is a continuation of the approach that has been applied since 2016. When issuing benchmark bonds, the planned volume of sale is only a portion of the total issue, with provisions for reopening these bond issues multiple times throughout the year. These issues contribute to increased volumes of secondary market trading. In addition, the issuance of benchmark bonds was one of the requirements for inclusion of government securities in global government bond indices (Local Currency Government Bond Emerging Market Indices). Following the inclusion of three dinar benchmark bonds of the Republic of Serbia – with 7Y, 10Y and 12.5Y initial maturities – in the renowned J.P. Morgan GBI-EM Index in June 2021, a new 8Y dinar benchmark bond was also included in the index at end-February 2024. In March 2025, a new 10.5Y benchmark bond issued in January 2025 was also included in the J.P. Morgan GBI-EM Index. The inclusion of five dinar government bonds in the index

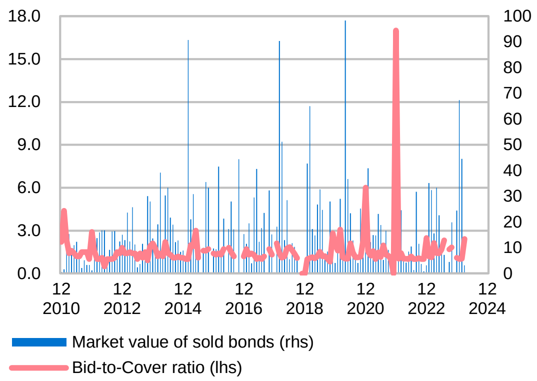
Chart III.2.1 **Stock of dinar government securities**
(nominal value, RSD bn)



* Maturities of 5Y and 5.5Y are included.

Source: Ministry of Finance.

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



*There were no auctions of RSD government securities in the period April-December 2024.

Source: Ministry of Finance.

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

implies greater potential investment by foreign portfolio investors and enhanced liquidity in the secondary market for government securities, as this index is one of the most frequently monitored benchmark indices for bonds issued in local currency of emerging markets.

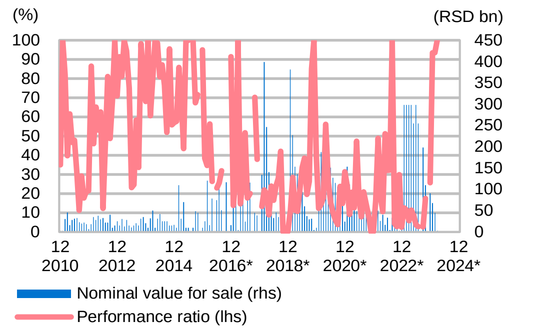
The bid-to-cover ratio – the indicator of investor demand and the amount of dinar government bonds sold at primary auctions – reached its highest value in 2024 in March (2.4) (Chart III.2.2).

In Q1 2024, three auctions of dinar government bonds with an 8Y original maturity were held. This continued the reopening of the 8Y government bonds, maturing on 26 October 2031, which were first issued on 24 October 2023. The initial volume of the issue was RSD 110.0 bn, and at end-January 2024, the Public Debt Administration decided to increase the volume of the existing 8Y bond issue by additional RSD 40 bn – to a total of RSD 150 bn – owing to strong investor demand. At the three auctions held in 2024, a nominal amount of RSD 107.6 bn was sold, whereby the total volume of the issue of these securities was sold.[161] The accepted rate ranged from 6.00% to 6.15%, with the coupon rate of 7.00%.

In 2024, the share of foreign investors in the portfolio of dinar government bonds decreased from 16.02% in December 2023 to 15.8% in December 2024 (Chart III.2.4). Since the end of 2015, domestic banks have been the dominant holders of dinar government bonds. Their share in the portfolio of dinar securities at end-2024 was 61.3%, an increase of 1.5 pp compared to December 2023. In recent years, the share of other domestic investors (insurance undertakings, pension and investment funds, etc.) has been growing, although this growth slightly slowed in 2023 and 2024. Nevertheless, other domestic investors still account for a relatively small portion of the ownership of dinar government bonds. The continued expansion and strengthening of the domestic institutional investor base will remain of key importance in the coming period for the advancement of the government bond market, as well as for reducing the sensitivity of this market segment to developments in the international environment.

In 2024, there were three auctions of the Republic of Serbia's 3Y government eurobonds which will mature on 29 January 2027. The volume of the issue was EUR 250 mn, with the coupon rate of 4.25%. At the three auctions, bonds were sold in the nominal amount of EUR 220.8 mn, at the accepted rate of 4.00%. The auctions were held in January, April and May 2024, after which no further auctions of government eurobonds of the Republic of Serbia were held for the remainder of the year.

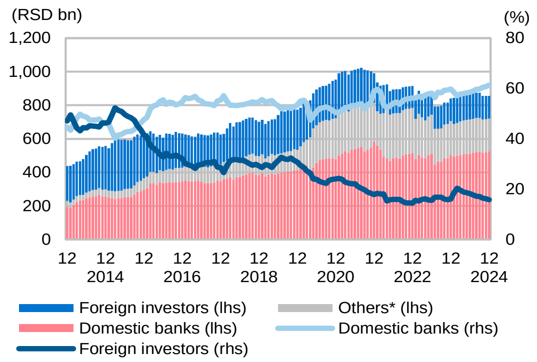
Chart III.2.3 **Performance ratio in auctions of dinar government bonds****



* 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.
**There were no auctions of RSD government securities in the period April-December 2024.

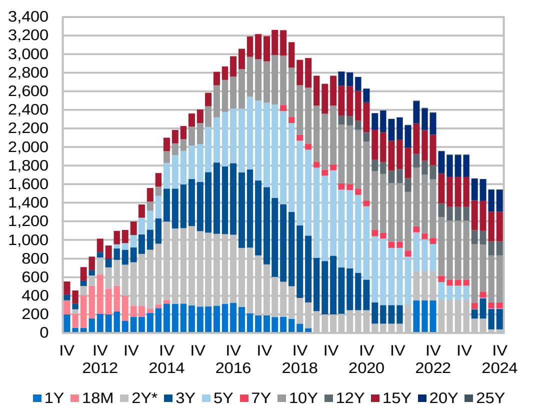
Source: Ministry of Finance.

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.

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



* Maturities of 2Y and 2.5Y are included.

Source: Ministry of Finance.

[161] A nominal amount of RSD 42.4 bn of 8Y government dinar bonds was sold at two auctions in 2023.

In mid-January 2024, the Republic of Serbia issued government bonds for the third time to settle compensations for confiscated property,[162] regulating the state's obligations under the Law on Restitution of Confiscated Property and Compensation.[163] Bonds with the maturities of five, ten, and twelve years were issued, in the total amount of EUR 48.0 mn. At end-January, the BSE adopted a decision to include long-term restitution bonds issued for the purpose of settling the Republic of Serbia's liabilities related to the compensation for confiscated property in the BSE Prime Listing.[164]

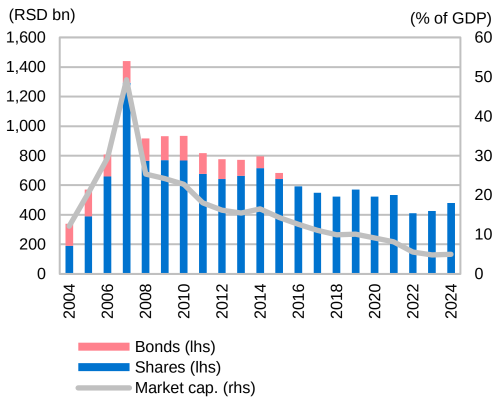
In 2024, there was no early buyback of eurobonds. The stock of eurobonds with maturities over one year in December 2024 was EUR 1.5 bn, EUR 371 mn lower than in 2023 (Chart III.2.5). The largest share in the total portfolio of government eurobonds is held by 10Y (32.8%), 15Y (20.8%) and 20Y (15.2%) bonds.

In early June 2024, the Republic of Serbia successfully completed the issuance of 10Y US dollar sustainability eurobonds in the international financial market. These bonds are designed to fund sustainable projects related to the green agenda and socially responsible activities. Securities were sold in the total amount of USD 1.5 bn, with the coupon rate of 6.00%, while investor demand exceeded USD 6.5 bn. Following the issue of Serbia's green eurobonds in the international financial market in 2021, Serbia became the only non-EU European country to issue a sustainability eurobond. To ensure efficient public debt management, a hedging transaction was simultaneously concluded, i.e. liabilities under dollar sustainability eurobond issue were immediately converted into euro liabilities. This not only reduced the exposure to the USD/EUR exchange rate risk, but also lowered the borrowing cost for the Republic of Serbia. Following the executed cross-currency swap (CCS), the cost for the 10Y eurobond stands at 4.75%.

The volume of trading in the secondary market for dinar government securities in 2024 was significantly higher than in 2023 (RSD 187.3 bn), reaching RSD 309.2 bn. Secondary trading in euro securities amounted to EUR 186.9 mn (EUR 206.4 mn in 2023). Total trading in long-term government bonds listed in the BSE Prime Listing (in dinars and euros) amounted to RSD 33.1 bn in 2024. The development of secondary trading in government bonds in the regulated market contributes to greater transparency and liquidity of the secondary market of government bonds, enabling more efficient valuation of these securities.

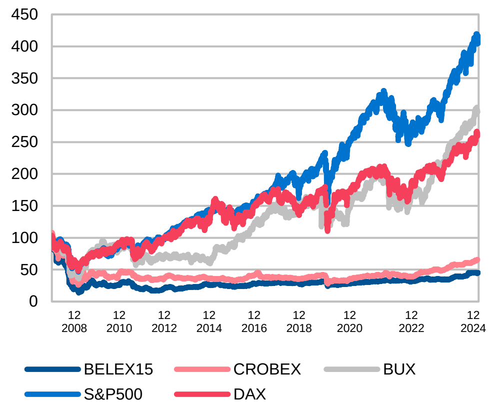
BSE market capitalisation at end-2024 amounted to RSD 480.7 bn (5.0% of GDP) (Chart III.2.6). Compared to 2023, market capitalisation in 2024 increased primarily in the open market segment, by RSD 54.7 bn.

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



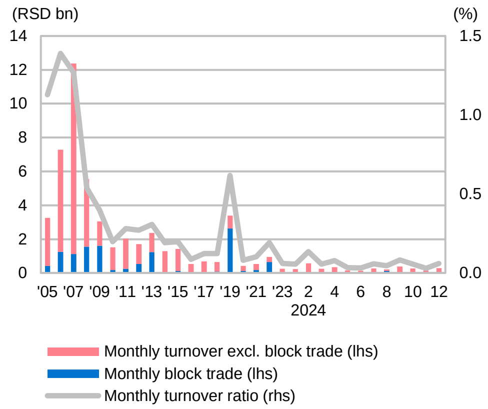
Sources: Belgrade Stock Exchange and NBS.

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.

[162] The government for the first time issued bonds to service compensations for confiscated property in January 2022 and then in January 2023.

[163] RS Official Gazette, Nos 72/11, 108/13, 142/14, 88/15 – CC decision, 95/18 and 153/20.

[164] Available at: Belgrade Stock Exchange (https://www.belex.rs/eng/).

At end-December 2024, the BELEX15 index of the most liquid shares stood at 1,146.76, which is an increase of 31.0% compared to the end of the previous year (875.66). During the same period, the BELEXline index rose by 28.2%, reaching 2,453.68 (1,914.04 at end-December 2023) (Chart III.2.7).

Total shares turnover on the BSE amounted to RSD 3.3 bn in 2024, which is RSD 0.2 bn more than in 2023. The largest share turnover was recorded in the open market segment of the BSE, amounting to RSD 2.0 bn.

The average monthly share turnover ratio[165] was 0.06% in December 2024, which is virtually unchanged compared to the same period of the previous year and indicates low BSE liquidity (Chart III.2.8).

The number of transactions on the BSE in 2024 (19,095) slightly decreased compared to 2023 (19,471).

Foreign investor participation in total BSE turnover in 2024 was 8.2%, up by 2.7 pp from 2023. In 2024, foreign investors were more active on the purchase (12.1%) than on the sale side (4.2%).

The BSE also lists long-term dinar bonds issued by Raiffeisen Bank. These bonds were issued in June 2024, in the total amount of RSD 6 bn, with the maturity date of 6 June 2028. The issuance aimed to diversify funding sources, increase the level of eligible liabilities, and strengthen Raiffeisen Bank's Minimum Requirement for Own Funds and Eligible Liabilities (MREL) indicators. The bonds were issued with a so-called call option, which gives the issuer the right to redeem the bonds early under pre-defined conditions.[166]

In 2024, the Securities Commission approved six white papers,[167] and in October 2024, it approved the first tokenization project[168] for a solar power plant in Serbia. This was a significant breakthrough in combining renewable energy sources with modern financial instruments.[169]

In March 2024, the Council of Europe's Committee of Experts on the Evaluation of Anti-Money Laundering Measures and the Financing of Terrorism (Moneyval) published the Fifth Follow-up Report on the Republic of Serbia. The report assessed that the Republic of Serbia is largely compliant with the recommendation of the global body for combating money laundering and terrorist financing[170] regarding the standards that countries should apply in relation to new (financial) technologies and digital assets. The NBS played a significant role in aligning with the mentioned standards in the field of supervision, and a lead role in complying with standards related to digital assets, primarily in coordination with the Administration for the Prevention of Money Laundering.[171]

After three alternative investment funds were set up[172] in 2022 and 2023 each, the development of this market segment in Serbia continued in 2024 when another two funds were established. Alternative investment funds (AIFs) are primarily intended for professional and semi-professional investors, as their investment policies allow for greater freedom in investment choices compared to traditional open-ended investment funds with a public offering.

Developed financial markets can play a significant role in financing economic growth. Further development of the domestic financial market is also supported by the aforementioned new financial instruments. In addition, the continuation of financial education of the population and the ongoing improvement of financial inclusion remain important aspects for increasing the participation of domestic natural persons in the local financial market. Furthermore, the planned introduction of the primary dealer function is expected to contribute to the enhancement of both the primary and secondary markets for government securities.[173]

III.3 Financial infrastructure

Central banks play a critical role in the functioning and development of national payment systems, and are responsible for ensuring their stability and efficiency, as well as continuous improvement. Their role includes the supervision of the payment infrastructure, and development of new technologies conducive to the improvement of safety and reliability of transactions. Moreover, central banks are actively working to implement innovations that enable faster, safer and less costly payments, which is critical for economic development and the stability of the country.

Pursuant to 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, 44/2018 and 19/2025), the NBS has the mandate to regulate, supervise and

[165] Calculated as the ratio between the total monthly shares turnover and the average stock of market capitalisation of shares at two points in time (the end of the month observed and the end of the previous month).
[166] https://www.belex.rs/data/2024/06/00137877.pdf
[167] White paper is a document published at the issuance of digital assets, which contains information on the issuer of digital assets, the digital assets and the risks associated with the digital assets, so that investors are able to make an informed investment decision.
[168] Digital token is a type of digital assets and means any intangible property representing, in digital form, one or more property rights, which might include the right of a digital token user to specific services.
[169] First the Securities Commission approved the two publications of white papers for initial token offering in 2022 and the first two applications for a licence to provide digital asset services at end-March 2023.
[170] Financial Action Task Force.
[171] https://www.nbs.rs/en/scripts/showcontent/index.html?id=19604
[172] Pursuant to the Law on Alternative Investment Funds (RS Official Gazette, Nos 73/2019 and 94/2024).
[173] The function of primary dealers was introduced in the domestic regulatory framework in early December 2018 by the Law Amending the Law on Public Debt (RS Official Gazette, No 95/2018).

promote the functioning of payment operations in the Republic of Serbia.

Serbia's payment system infrastructure comprises: (1) NBS RTGS payment system; (2) NBS clearing system; (3) NBS interbank clearing of foreign exchange payments; (4) NBS international clearing of foreign exchange payments; (5) DinaCard payment system; (6) ASB cheque clearing; (7) ASB direct debit clearing and (8) NBS IPS system.[174]

The NBS is the operator of: (1) NBS RTGS payment system; (2) NBS IPS system; (3) NBS clearing system; (4) NBS interbank clearing of foreign exchange payments; (5) NBS international clearing of foreign exchange payments; and (6) DinaCard clearing system.[175]

The key functions of a payment system include: (1) transfer of money – payment systems enable the transfer of money between participants, financial institutions and other participants, which is of key importance for everyday monetary transactions; (2) processing and settlement of transfer orders – payment systems process and settle money transfer orders, including verification of order validity, transfer of funds, and notification of participants about a successful transaction; (3) transmission of monetary policy measures – a payment system is a channel for the transmission of monetary policy measures; (4) public confidence – safe and sound payment system operation promotes public confidence in money and the financial system; (5) liquidity maintenance – payment systems make it possible for participants to timely dispose of their money.

The Law on Payment Services (RS Official Gazette, Nos 139/2014, 44/2018 and 64/2024) and regulations on the payment system and payment services governing the finality of settlements in critical payment systems define the NBS RTGS payment system and NBS clearing system as important payment systems, significant for the stability of the overall financial system.[176]

Sound, safe and efficient operation of the NBS RTGS payment system is of special importance for ensuring the stability of the financial system of the Republic of Serbia. Its systemic importance is also reflected in the fact that it is a system for real time money transfer where all interbank payment transactions exceeding RSD 300,000 ("large-value payments") are mandatorily executed. The system also serves for settling money obligations and receivables originating from other payment systems, and for settling the monetary segment of transactions in respect of trade in financial instruments.

Participants in this system are: (1) the NBS, (2) banks headquartered in the Republic of Serbia holding an operating licence issued by the NBS, in accordance with the law regulating banks, (3) the ministry in charge of finance – Treasury Administration, (4) the Association of Serbian Banks (ASB), as the operator of the direct debit and cheque clearing systems; (5) the Central Securities Depository and Clearing House, as the operator of the system for the settlement of financial instruments.[177]

RTGS participants are able to adequately manage the risks they are exposed to since settlement is executed in real time on a gross basis. As mutual transactions are settled in the domestic currency, participants are not exposed to credit and liquidity risk. Participants must have sufficient funds in their accounts to execute transactions smoothly. Accordingly, RTGS participants can manage their liquidity risk as well, as the system enables them to view all their transactions and account balances, and to change the sequence of payment orders execution depending on priority.

An important indicator of the significance of the RTGS system for the national economy is the value of payment transactions executed in the system over a period of time.

The value of turnover in the RTGS system in 2024 measured RSD 221,683.7 bn, with 214.7 mn payments executed (92.5% of the total number of payments and 99.8% of the total value of transactions in the NBS RTGS and clearing systems). The value of turnover in the NBS clearing system was RSD 408.1 bn, or 0.2% of the total value of both systems. Of the total number of payments, 17.5 mn or 7.5% are payment orders executed in the clearing system.[178]

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

	Average for period 2010–2023	2024
NBS RTGS		
Value, RSD bn	70,019.11	221,683.71
Number of payments, mn	161.68	214.74

Source: NBS.

[174] https://nbs.rs/en/ciljevi-i-funkcije/platni-sistem/evidencija
[175] https://nbs.rs/en/ciljevi-i-funkcije/platni-sistem/nbs-operator/index.html
[176] https://www.nbs.rs/export/sites/NBS_site/documents-eng/propisi/propisi-ps/bitni_platni_sistemi_e.pdf
[177] https://nbs.rs/en/ciljevi-i-funkcije/platni-sistem/nbs-operator/index.html
[178] https://www.nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/statistika/rtgs/stat_24.pdf

The average daily value of turnover in the RTGS system was RSD 876.2 bn, and the average daily value of turnover in the clearing system was RSD 1.6 bn.[179] The highest monthly value of turnover in the RTGS payment system in 2024 was recorded in December (RSD 23,805.4 bn[180]).

The availability of the NBS RTGS and clearing systems is one of the key factors affecting financial system stability. Out of a total of 253 business days, i.e. 141,060 minutes of production, the availability of the RTGS and clearing systems was 99.9%.[181]

The NBS also plays a critical role in encouraging and supporting digitalisation and modernisation of payment systems.

Accordingly, the NBS IPS payment system has successfully operated in Serbia for more than six years already enabling households and businesses to execute real time payments 365 days a year, with maximum simplicity and safety. With years of experience and achievements in implementing this innovative payment infrastructure, Serbia has emerged as a regional leader in payment services digitalisation and payment system modernisation, setting an example of how modern technology can improve the financial system and be conducive to economic development.

Direct participants in the NBS IPS system are: (1) banks headquartered in Serbia licensed by the NBS in accordance with the law governing banks; (2) the NBS; and (3) the ministry in charge of finance – Treasury Administration, i.e. participants which can have accounts in this system in line with the regulations and operating rules of the RTGS.[182]

Other payment service providers can be indirect participants if they render services which include credit transfers.[183] There are two forms of indirect participation – entities which directly deliver and/or receive transfer orders in the NBS IPS system, and/or entities with indirect access on whose behalf direct participants deliver and/or receive transfer orders in the NBS IPS system.

By end-2024, four indirect participants in the NBS IPS system were registered, namely one indirect participant with direct access (e-money institution Tenfore doo Belgrade) and three indirect participants as entities with indirect access (PE Pošta Srbije and e-money institutions PaySpot doo Novi Sad and AltaPay Group doo Belgrade).[184]

The total value of turnover in this system in 2024 equalled RSD 1,043.8 bn, with 87.20 mn worth of instant payments executed, i.e. around 30% more than in 2023. The highest monthly turnover in 2024 was recorded in December (RSD 116.0 bn).[185] The record-high daily number of executed transactions this year was recorded on 15 November, when there were 444,994 payments worth RSD 5.8 bn.[186]

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

	Average for period 2019–2023	2024
NBS IPS		
Value, RSD bn	382.43	1,043.80
Number of payments, mn	38.95	87.20

Source: NBS.

In addition to sending instant credit transfers to any recipient with a current account in a bank, the IPS system also enables the following services: [187]

- payment of monthly bills for utility and other services by scanning the unique NBS IPS QR code printed on the bill/invoice;
- *IPS scan* and *IPS show* payments at physical and online points-of-sale;
- *IPS scan* payments at online points-of-sale, made with a few clicks using deep link technology;[188]
- *Transfer* service payments – by specifying the mobile phone number of the recipient;[189]
- Generator and Validator services are available at the NBS website, enabling the generation (technical preparation) of the NBS IPS QR code and the validation (technical verification) of an already prepared NBS IPS QR code.

[179] https://www.nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/statistika/rtgs/stat_24.pdf
[180] https://www.nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/statistika/rtgs/pp_12_24.pdf
[181] https://www.nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/statistika/rtgs/stat_24.pdf
[182] https://ips.nbs.rs/en/lista-ucesnika-u-ips-nbs-sistemu
[183] Credit transfer means a payment service where the payer instructs the payment service provider to initiate the execution of one or more payment transactions, including the issuing of a standing order (Article 4, paragraph 2 of the Law on Payment Services).
[184] https://ips.nbs.rs/en/indirektno-ucestvovanje
[185] https://www.nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/statistika/IPS/ips_12_24.pdf
[186] https://nbs.rs/en/scripts/showcontent/index.html?id=20178
[187] https://ips.nbs.rs/en/pregled-usluga
[188] By 31 December 2024, the *IPS Scan* option has been enabled by 17 banks, 15 of which did so using deep link technology.
[189] By 31 December 2024, 13 banks provided the *Transfer* service.

Also available to citizens is the option of instant payment of fees and commissions for services provided by the Ministry of Interior Affairs and the Ministry of Finance – Tax Administration through the e-Government portal – e-Pay service, by scanning the IPS QR code displayed at the individual payment order created by this portal.[190]

To ensure more efficient and cost-effective execution of euro payment transactions for households and businesses, the NBS operates NBS Interbank Clearing of FX Payments and International Clearing of FX Payments, which execute euro transfers among participants in the system each business day in accordance with the Operating Rules for the clearing of international payments (international clearing of foreign exchange payments).[191]

At end-2024 there were 13 participating banks headquartered in the Republic of Serbia, the National Bank of Serbia, seven banks from Bosnia and Herzegovina and one bank from Montenegro[192] that execute mutual obligations, mostly retail payments by their clients, by participating in multilateral clearing, in a much more efficient, faster and cheaper way, based on the agreement on the clearing of international payments concluded in 2007 between the three countries.

Banks participating in the NBS's system of international clearing from the territories of Serbia, Bosnia and Herzegovina and Montenegro offer the service of execution of cross-border payment transactions both to natural and legal persons, fostering the economic and development potential among these three countries.

In addition, the NBS has been working on Serbia's accession to the Single Euro Payments Area – SEPA[193] while simultaneously considering possible models for connecting payment service providers from Serbia to pan-European payment systems. In May 2025, the Republic of Serbia officially became the 41st member of the SEPA area. SEPA has thus become not only a platform for faster and cheaper payments, but also a symbol of Serbia's integration in modern European economic flows.

In this sense, an initiative was launched together with the ECB about ways to connect Serbia's payment infrastructure with that of the European Union (by connecting the NBS IPS system and the ECB's TIPS[194]). This cooperation aims to ensure the same instant quality of service to users when executing international payments as the one they have had for years when making payments in Serbia, as well as to create conditions for trimming fees for executing international payment transactions, in this case within the SEPA area.

The NBS actively and committedly strives to improve the Serbian payment services market and digitalise financial services both through normative activities and activities aimed at improving the payment infrastructure.

By amending the legal framework for providing payment services, first by passing the Law on Payment Services in 2014 and then by amending it in 2018, Serbia has become almost fully aligned with European Union regulations. By adopting the Law Amending the Law on Payment Services in July 2024, the Payment Services Directive 2 – PSD2[195] was implemented in the Serbian legal framework. Having adopted these amendments to the Law on Payment Services and the accompanying secondary legislation, the alignment with European Union regulations has been completed.

Amendments to the Law on Payment Services primarily aim to further encourage innovations and ensure greater competition and transparency in payment services provision, as well as ensure better user protection and safety when executing payment transactions. By adopting these amendments, Serbia regulated open banking,[196] thus enabling new services and the operation of entities providing such services.

[190] https://nbs.rs/en/scripts/showcontent/index.html?id=19537
[191] https://nbs.rs/en/drugi-nivo-navigacije/propisi/propisi-ps/
[192] https://www.nbs.rs/export/sites/NBS_site/documents-eng/platni-sistem/banks_in_int_po.pdf
[193] Single Euro Payments Area (SEPA) is a single market for euro payments, where citizens, businesses and public institutions have the opportunity to carry out all cashless payment transactions in the European currency. The aim of this system is to make cashless payments between European countries as simple and efficient as national payments within a single country.
[194] TARGET Instant Payment Settlement (TIPS) is a payment infrastructure service launched by the Eurosystem in November 2018. It enables instant and secure execution of payments in euros within seconds, 24 hours a day, 365 days a year.
[195] Directive (EU) 2015/2366 of the European Parliament and of the Council of 25 November 2015 on payment services in the internal market, amending Directives 2002/65/EC, 2009/110/EC and 2013/36/EU and Regulation (EU) No 1093/2010, and repealing Directive 2007/64/EC (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32015L2366).
[196] Open banking is a concept that enables an exchange of financial data between banks and third parties through the API (Application Programming Interface). The aim is to improve competition, innovation and user experience in the financial services sector.

Amendments to the Law on Payment Services envisage a clear and comprehensive set of rules that would apply to the existing and new providers of innovative payment services. These rules seek to ensure a level playing field for the providers, thus resulting in greater efficiency, more choices and better transparency of payment services.

Special attention is paid to the security of electronic payments and security measures to protect the confidentiality and integrity of personalised security elements of payment service users to guarantee secure authentication and reduce the risk of fraud. Also, reliable user authentication has been defined, including when the payment service provider is obliged to implement it. In addition, operational and security risk management has been regulated.

These amendments have brought numerous benefits to all payment services users (primarily better user protection, a wider range of services, lower costs), as well as to the entire payment services market in Serbia, as a legal basis has been created for the development of new, innovative business models and services.

Also, by the accompanying secondary legislation, specifically the Decision on Special Requirements for Credit Transfers and Direct Debits in Euro,[197] which implemented Article 5 and Annex to Regulation (EU) 260/2012 on establishing technical and business requirements for credit transfers and direct debits in euro,[198] the business, technical and other requirements for credit transfers and direct debits in euro are defined so as to implement activities associated with Serbia's accession to SEPA.

Network of interbank transactions of the NBS RTGS payment system

The network indicators of the RTGS system are calculated to assess the connectedness of participants and create a basis for analysing the network's resilience to potential shocks, and the effects of shock transmission in the network.

Network characteristics were analysed using daily data for January–December 2024, on the basis of reports on interbank transactions in the NBS RTGS payment system. During 253 business days, MT202 and MT103[199] 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.[200]

Table III.3.3 **RTGS payment indicators (network-level)**

		Mean	Median	Maximum	Minimum	Standard deviation
Payments	Value (RSD mn)	104,783.39	104,672.74	120,708.97	97,072.19	6,481.85
	Number of transactions	23,913.70	23,913.51	28,250.59	19,457.71	1,952.43
	Average (RSD mn)	4.40	4.36	5.11	3.99	0.30
Network size	Nodes*	21	21	21	21	0.00
	Number of direct links	395.42	396.00	399.00	389.00	3.01
Distance measure	Average path length	1.23	1.23	1.25	1.21	0.01
Connectivity	Node degree	17.04	17.02	17.34	16.74	0.14
	Node out-degree	15.46	15.49	15.83	14.95	0.20
	Connectivity	73.61%	73.76%	75.40%	71.21%	0.94%
	Average clustering	90.85%	90.86%	91.37%	90.39%	0.24%
Others	Betweenness centrality	4.76%	4.76%	4.76%	4.76%	0.00%
	Dissimilarity index	0.28	0.28	0.30	0.27	0.14

* Calculations based on daily reports from the NBS RTGS system, for the period Jan-Dec 2024, 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.

[197] https://www.nbs.rs/export/sites/NBS_site/documents-eng/propisi/propisi-dev/transfer_odobrenja_direktna_zaduzenja_e.pdf

[198] Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009 (https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32012R0260).

[199] 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. In addition, MT102 messages – group orders for retail payments – are also executed in the NBS RTGS system.

[200] A detailed explanation of the indicators is available in the *Financial Stability Report – 2015*, Text box 4 – Network modelling.

For 253 business days in 2024, for the observed sample of transactions (MT202 and MT103), the average daily turnover was RSD 104.8 bn. The average number of transactions per day was 23,913 and the average value per transaction was RSD 4.40 mn.

The size of a financial network is defined by the number of its participants. In 2024, 20 banks participated in the NBS RTGS payment system, with 21 bank accounts. The daily average of direct interbank links was around 395, meaning that a large number of banks executed interbank MT202 and MT103 transactions on a daily basis. The average daily connectivity ratio of 73.61% was relatively high, which means that the interdependence of financial institutions was also high, as indicated by the low average path length of 1.23,[201] i.e. the mean value of all 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 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 15.46, 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 90.85%, which means that the neighbouring nodes were connected to a larger extent.

Banks with high betweenness centrality are important in the payment system as they participate significantly in shock transmission through the network. The betweenness centrality reflects the frequency with which an individual institution is on the shortest path between other nodes of the network. The average betweenness centrality of 4.76% is rather low.

The average mean of the dissimilarity index, which is used to compare the entire network from the perspective of all pairs of related nodes, equalled 0.28 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 consider interbank 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 is highly connected, but that there are several banks that are 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. 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.

The European Securities and Markets Authority (ESMA),[202] central banks, the IMF,[203] as well as other organisations[204] have been increasingly including the stress testing of financial market infrastructure in their regular publications, considering the importance of smooth operation of financial infrastructure.

Being an integral part of financial infrastructure, the payment system offers the network, structural and time perspective for analysing interbank relations. Based on the analysis of network indicators of banks in view of the number and values of interbank transactions as well as their mutual transactions[205] carried out in the RTGS payment system during 2024, it is possible to identify groups of banks whose importance in the NBS RTGS can be determined based on their position in the network.

[201] The average path length l_h 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, i.e. $l = \frac{1}{n-1} \sum_i l_i$.

[202]https://www.esma.europa.eu/press-news/esma-news/esma-updates-guidelines-stress-tests-money-market-funds
[203]https://www.imf.org/en/Publications/Departmental-Papers-Policy-Papers/Issues/2020/01/31/Stress-Testing-at-the-IMF-48825
[204]https://fna.fi/insights/modernising-and-stress-testing-payment-systems/
[205] January–December 2024, interbank payments (MT202 and MT103).

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[206]).

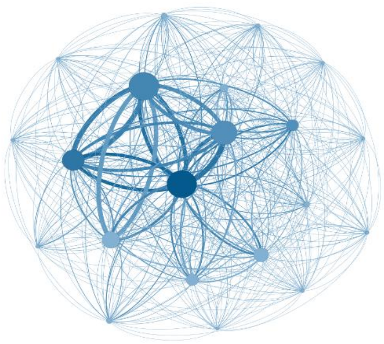
Chart III.3.1 shows four prominent banks and their shares in the total value and number of payments (around 59.3% and 54.3% respectively) in the IPS payment system, hence they can be considered systemically important in this respect.

The NBS IPS system[207] also allows for an insight into the network, structural and time dimension of interbank relationships. Chart III.3.2 shows three banks standing out in terms of the value and number of payments in the IPS system (around 65.6% and 61.3% respectively), hence they can be considered systemically important in this respect.

The NBS IPS system functionality and the applied technical and technological solutions are in line with payment system trends. The IPS system is based on the latest IT solutions and enables a very short processing time (in 2024 the transaction execution time averaged 1.2 seconds in the IPS) and a high degree of availability.

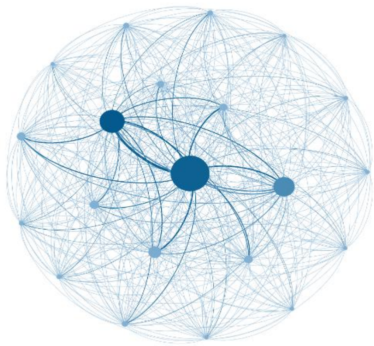
Given that the NBS has put in place the prerequisites for the banks to offer payment system services to households and corporates at the most favourable terms, including the IPS system fee policy, which is at the lowest possible level, it is reasonable to expect a further rise in the number of payments in this system in the future.

Chart III.3.1 **Bank interconnectedness in the NBS RTGS network**



* Interbank payments (MT202 and MT103) for the period Jan-Dec 2024.
** 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.

Chart III.3.2 **Bank interconnectedness in the NBS IPS payment system**



* Interbank payments for the period Jan-Dec 2024.
** 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.

[206] Prestige as the measure of centrality takes into account the characteristics of neighbouring nodes, i.e. a node is important if connected to other significant nodes.

[207] Information about the characteristics of 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) and the NBS IPS website (https://ips.nbs.rs/en).

Text box 4: ***Single Euro Payments Area (SEPA)***

Following the introduction of the euro as the official currency in the EU, the need arose for standardisation and harmonisation of existing national payment systems to improve the speed, reliability and cost-effectiveness of transactions within the EU. The initial concept of establishing a single payment market was formulated as part of the revised Lisbon Agenda,[208] within the broader initiative aimed at strengthening the EU's economic competitiveness. The initiative for the Single Euro Payments Area (SEPA) was launched in 2008, when the implementation of the first payment instruments in this area officially began.[209] The initiative was launched with the goal of establishing a unified, integrated payment market where cashless euro payments would be equally simple, efficient and secure as within a single country.

The idea of harmonising the pan-European retail payments market[210] by introducing a single payment account and a standardised set of payment instruments was born due to the pronounced fragmentation in retail payments. There were as many as 22 automated clearing houses[211] across 21 countries, including non-EU member states and those outside the euro area.

The Single Euro Payments Area is a pan-European project aimed at creating a unified and harmonised system for cashless payments within the territories of SEPA member countries, meaning that citizens, businesses and public institutions can make cashless payments[212] in euros across borders. The main concept of the SEPA project is to replace national payment systems with a single system that enables payments between customers from different countries to be processed under the same conditions, with the same speed, and at the same or lower costs as domestic payments.

The SEPA system[213] is the outcome of comprehensive collaboration among various entities involved in European payment transactions, including central banks, public institutions, the banking sector, professional associations and national operators of retail payment systems. The European Payments Council (EPC) played a key role in coordinating and defining the rules, leading the technical and strategic development of payment schemes. The key drivers of this initiative were the Eurosystem,[214] comprising the ECB and the national central banks of euro area member states, as well as representatives of the European Commission, which contributed to creating relevant strategies, directives and regulations. National retail payment system operators were organised into institutions such as the EBA and the European Automated Clearing House Association (EACHA), which significantly contributed to the operational implementation of the system. To strengthen the supervisory function in the development and application of payment schemes, the SEPA Council was established in June 2010. In December 2013, it was replaced by the Euro Retail Payments Board (ERPB), founded by the ECB and the European Commission. The ERPB is a strategic body tasked with promoting integration, innovation and competitiveness in the euro retail payments market across the EU. Since its inception, the ERPB has played a crucial role in the process to standardise and harmonise national payments following the transition to SEPA rules for credit transfers and direct debits. It has also worked to ensure that new payment solutions do not lead to further fragmentation of the euro retail payments market.

The geographical scope of SEPA consists of EU member states, as well as other countries or territories that have met the SEPA accession criteria. This area includes 41 European countries and territories, of which 27 are EU member states, three belong to the European Economic Area (EEA), while 11 countries are neither EU members nor part of the euro area. Additionally, the SEPA geographical scope includes all four member states of the European Free Trade Association

[208] The Revised Lisbon Strategy additionally emphasized the importance of financial integration as a key element for achieving the EU's growth and employment objectives. In this context, SEPA has been recognised as a concrete initiative that contributes to the creation of a single market of financial services (https://eur-lex.europa.eu/EN/legal-content/summary/a-new-start-for-the-lisbon-strategy-2005.html).

[209] In 2008 SEPA Credit Transfer, in 2009 SEPA Direct Debit.

[210] The pan-European market is a concept of economic integration that encompasses not only EU member states, but also other European countries connected to the EU through various agreements (e.g. EEA countries such as Norway, Iceland and Liechtenstein, or Switzerland through bilateral agreements). This market concept implies the free movement of goods, services, capital, and people – the so-called "four freedoms" – along with harmonised regulations and standards, as well as enabled partnership between non-EU countries and the EU.

[211] A clearing house is a specialised financial institution that serves as an intermediary in the clearing process, which involves the calculation and settlement of mutual monetary obligations between system participants, whether in bilateral or multilateral form. This reduces the number of individual transactions and optimizes fund transfers within the payment system.

[212] A payment transaction is a domestic or international payment transaction within the meaning of the law governing payment services, executed through a credit transfer or direct debit in euros within the SEPA area (https://www.nbs.rs/export/sites/NBS_site/documents-eng/propisi/propisi-dev/transfer_odobrenja_direktna_zaduzenja_e.pdf).

[213] https://www.nbs.rs/documents-eng/publikacije/wp_bulletin/wp_bulletin_03_25.pdf

[214] https://www.ecb.europa.eu/ecb/orga/escb/eurosystem-mission/html/index.en.html

(EFTA), all European microstates,[215] French overseas territories,[216] Gibraltar,[217] and British Crown Dependencies.[218] In this way, SEPA enables the creation of a unified economic area where euro payments are executed in a standardised manner – easily, quickly, and securely, thereby enhancing the overall efficiency of the financial system.

The legal framework for SEPA, developed by the ECB in cooperation with the European Commission, is based on the EU Cross-Border Payments Regulation,[219] the Payment Services Directive,[220] the SEPA Migration End Date Regulation,[221] EU Regulation 260/2012 establishing technical and business requirements for credit transfers and direct debits in euro[222] and the Regulation on interchange fees.[223]

The EU Cross-Border Payments Regulation establishes rules concerning cross-border payments and transparency of currency conversion charges within the EU. This Regulation is applied in accordance with the provisions of the Payment Services Directive, covering payments denominated either in euros or in the national currencies of member states that have notified the European Commission about extending the Regulation's application to their currency. The Regulation stipulates that charges for cross-border payments must equal those for domestic payments in the same currency, thereby eliminating fee disparities and enhancing transparency. Payment service providers are required to clearly display all charges to users, including currency conversion fees, before executing the transaction.

For countries undergoing the European integration process, joining the SEPA area represents a crucial step toward full financial integration. Successful integration into SEPA requires the implementation of unified rules, practices, standards, and guidelines for payment transactions, such as the mandatory use of the IBAN for account identification and adoption of the ISO 20022[224] standard for financial messaging. Such measures ensure the interoperability of technical solutions for executing payment transactions, interconnection of payment infrastructures, their secure and stable operations, and alignment of regulatory frameworks with European standards for payment services.

SEPA in Serbia – the accession process and its significance

The Republic of Serbia has recognised accession to SEPA as one of its strategic priorities in the process of EU convergence. Aware of the initiative's importance for enhancing payment efficiency, reducing transaction costs and strengthening confidence in the financial system, Serbia has conducted numerous activities to fulfil the technical, regulatory and institutional requirements for full SEPA membership.

As of 22 May 2025, Serbia has officially become the 41st SEPA member,[225] thus making a major step toward further economic and financial integration with the EU. SEPA now serves not only as a platform for faster and more cost-effective payments, but also as a symbol of Serbia's inclusion in modern European economic flows. According to the EPC's calendar, payment service providers from Serbia may begin submitting documentation for accession to SEPA payment schemes as of November this year, with May 2026 projected as the earliest operational readiness date within the SEPA schemes, i.e. the date when they can start executing payments.

The reforms in the payment market implemented by the NBS in previous years – aligning domestic regulations with relevant EU directives and regulations – have enabled the timely harmonisation of the national payment infrastructure with the rules and standards applied in the EU regarding payment services and payment systems. These reforms are a crucial prerequisite for Serbia's entry into SEPA.

In this regard, through reforms of the payment services regulatory framework – first by adopting the Law on Payment Services in 2014, followed by its amendments in 2018 and 2024[226] – a near complete alignment with EU payment services regulations has been achieved. The July 2024 amendments[227] to the Law on Payment Services implemented the Second

[215] European microstates include the Vatican City, San Marino, Monaco, Andorra and Lichtenstein.
[216] The French overseas territories belonging to SEPA include: French Guiana, Guadeloupe, Martinique, Mayotte, Réunion, Saint Barthélemy, French part of Saint Martin, Saint Pierre and Miquelon.
[217] Part of the United Kingdom.
[218] The British Crown Dependencies are special territories that are not part of the United Kingdom but fall under the sovereignty of the British Crown. The territories belonging to this group include Guernsey, Jersey and the Isle of Man, and are located near the coast of Great Britain.
[219] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A32021R1230&qid=1689244300028
[220] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A02015L2366-20250117
[221] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32014R0248
[222] Regulation (EU) No 260/2012 of the European Parliament and of the Council of 14 March 2012 establishing technical and business requirements for credit transfers and direct debits in euro and amending Regulation (EC) No 924/2009Text with EEA relevance (europa.eu).
[223] https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32015R0751
[224] https://www.iso20022.org/
[225] https://www.europeanpaymentscouncil.eu/sites/default/files/kb/file/2025-05/EPC172-25%20Press%20Release%20Serbia_0.pdf
[226] RS Official Gazette, Nos 139/2014, 44/2018 and 64/2024.
[227] RS Official Gazette, No 64/2024.

Payment Services Directive (PSD2) into the domestic regulatory framework, fulfilling one of the key requirements for joining SEPA. These legislative changes aimed to further stimulate innovation, ensure greater competition and transparency in payment services, while also enhancing consumer protection and security for payment service users.

The intensive reforms implemented by the NBS in recent years – from achieving full legal alignment with EU regulations to building a technological infrastructure such as the NBS IPS system for instant payments – have enabled Serbia not only to meet all requirements for SEPA accession, but also to attain a high level of readiness for its efficient operation. In this context, the role of the NBS IPS system is particularly significant, as it is based on the international ISO 20022 standard – the same standard used in SEPA infrastructure. This system, which enables real-time transaction processing in just a few seconds, contributes not only to greater efficiency and reliability of domestic payment transactions, but also to strengthening the digitalisation of financial services and overall financial inclusion.

Beyond the obvious economic benefits, such as reduced transaction costs and faster payment processing, joining SEPA also significantly enhances financial stability. Harmonised technical standards and stringent payment security requirements reduce operational risks, increase user confidence in financial institutions and improve the financial system's resilience to potential crises. The advantages of SEPA membership extend beyond the banking sector, stimulating economic digitalisation, reducing the grey economy, boosting electronic commerce and enhancing consumer protection.

III.4 Real estate market

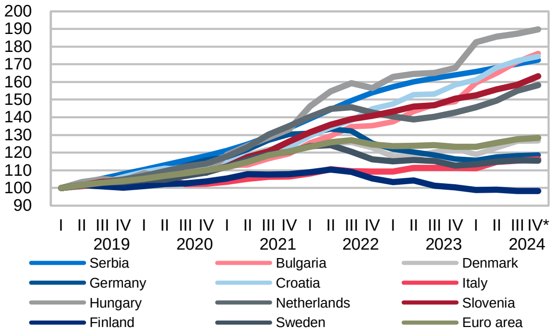
The NBS continuously and carefully monitors and analyses the real estate market trends given that fluctuations in the real estate value may considerably affect the quality of bank credit portfolios, and by extension, financial system stability. Despite the persistent global uncertainties, the demand in the real estate market increased in 2024, owing to the resilience of the domestic economy, favourable labour market trends, lower interest rates and relaxation of credit standards by banks.

The rise in property prices renewed in many countries in 2024, following a slowdown in activity and prices in the real estate market in the previous period due to global geopolitical uncertainties and heightened interest rates. Property prices in the euro area went up 4.2% y-o-y in Q4 2024 and negligibly more in the EU (4.9%). The sharpest growth was recorded in Bulgaria (18.3%), Hungary (13.0%) and Portugal (11.6%), while only France and Finland recorded a y-o-y decline (by 1.9% each).[228]

In Serbia, real estate prices continued growing, but the pace of that growth has been slowing down for the second consecutive year. According to the data of the Republic Geodetic Authority, the average price of flats in old buildings for the territory of the Republic of Serbia in 2024 equalled EUR 1,675 per square metre, and in new buildings – EUR 1,750 per square metre, up by 14% and 3%, respectively from 2023.[229]

Since November 2022, the Republic Geodetic Authority has been publishing the Apartment Price Index. This Index was developed in line with international methodological guidelines, based on the model for mass valuation of apartments which, in addition to the prices quoted in sale contracts considers different qualitative characteristics of real estate from relevant sources.[230] The Index points to a continuous upward trend of the prices of flats during the observed period. The Apartment Price Index for the Republic of Serbia[231] measured 172.32[232] in Q4 2024, up by 5.05% y-o-y. By region, Q4 2024 saw the sharpest rise in the prices of flats in Southern and Eastern Serbia (6.29% y-o-y) and the Belgrade region (5.48% y-o-y).

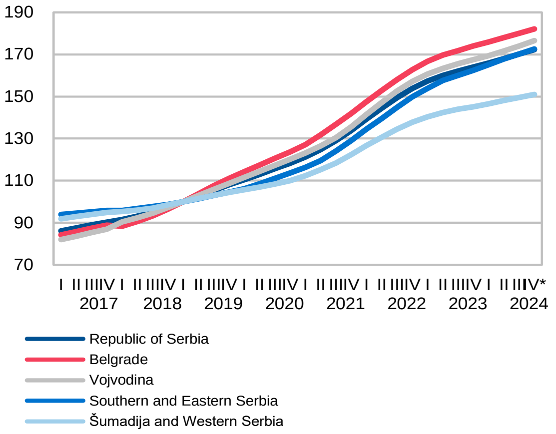
Chart III.4.1 International comparison - Housing Price Index
(index, Q1 2019 = 100)



*preliminary data.

Sources: Republic Geodetic Authority and Eurostat.

Chart III.4.2 **Apartment Price Index**
(index, Q1 2019 = 100)



*preliminary data.

Source: Republic Geodetic Authority.

Real estate market activity, measured by the total number and value of transactions, went up from last year and is above the pre-pandemic level. Based on the data of the Republic Geodetic Authority, there were 126,787 purchase and sale transactions in this market in 2024, up by 4.2% from 2023. The total turnover in the real estate market increased by 15% from a year earlier, reaching EUR 7.4 bn in 2024, the same as the record high posted in 2022. The bulk of the total turnover related to flats (55.6%), the value of these transactions amounting to EUR 4.1 bn, up by 21.1% from 2023. The largest share (54%) in the total turnover of flats was recorded in Belgrade. Compared to the previous period, the use of loans for financing the real estate purchase increased, and 10% of all real estates in Serbia was paid from credit funds (7% in 2023). Loans were mostly used for the purchase of flats – 22% of all trades in 2024 (17% y 2023).

The turnover of residential property was affected by both demand- and supply-side factors. The results of

[228] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Housing_price_statistics_-_house_price_index

[229] https://www.rgz.gov.rs/content/docs/000/000/006/%D0%93%D0%BE%D0%B4%D0%B8%D1%88%D1%9A%D0%B8%20%D0%B8%D0%B7%D0%B2%D0%B5%D1%88%D1%82%D0%B0%D1%98%202024%20%D1%84%D0%B8%D0%BD%D0%B0%D0%BB%D0%BD%D0%B8.pdf

[230] For more details see: https://www.rgz.gov.rs/reports-on-rga-real-estate-price-index and the *Annual Financial System Stability Report – 2022*, Text box 5: Residential real estate valuation in 2022.

[231] https://www.rgz.gov.rs/content/docs/000/000/006/RGZ%20-%20Izvestaj%20indeksi%20cena%20T4%202024.pdf

[232] The benchmark period is Q1 2019, when the value of the index measured 100.

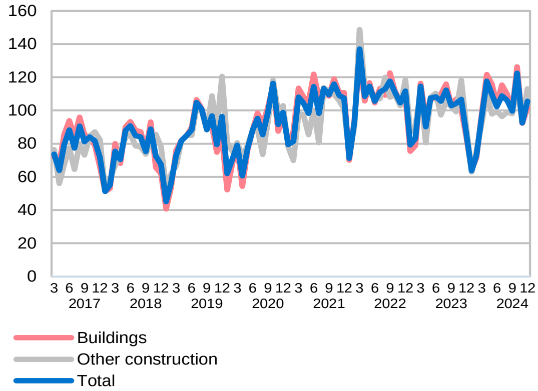
the Bank Lending Survey[233] show that the demand for real estate went up, reflecting favourable labour market trends and lower interest rates on account of the ECB's and NBS's monetary policy easing and the NBS's temporary cap on interest rates on housing loans.[234] Standards for the approval of household loans were eased in 2024 on the supply side.

According to the SORS,[235] the total value of executed construction works in constant prices in the territory of the Republic of Serbia increased in 2024 by 6.0% relative to 2023, and the value of works performed on buildings by 8.6%. Compared to 2023, the total number of issued construction permits fell by 0.3%, with the number of issued permits for the construction of new buildings going up by 1.7%, and for other construction dropping by 4.0%. Following a mild decline of 0.2% last year, 2024 saw a continuation of the declining trend in the number of issued permits for the construction of new apartments (0.6% decrease).

The share of NPLs in total loans of the construction sector dropped by 0.8 pp from 2023 and measured 1.3% at end-2024. The share of NPLs in total housing construction loans came at 1.4%, down by 0.3 pp from end-2023.

Real estate makes up a significant portion of households' assets and is widely used as loan collateral in the Serbian banking sector. For this reason, an adequate valuation of real estate is particularly important, as banks are directly exposed to the risk of price fluctuations in the real estate market. The Law on Real Estate Valuers[236] was adopted in 2016, establishing the regulatory framework which improved legal security and enabled adequate valuation of real

Chart III.4.4 **Indices for the number of issued construction permits for new buildings**
(index, 2023 = 100)

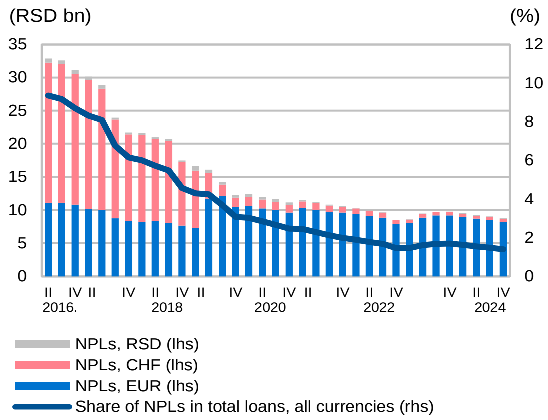


Source: SORS.

estate. This Law introduced licensed valuers as natural persons trained in real estate valuation with a relevant licence for the job. Further, in 2023, the Book of National Standards, Code of Ethics, and Rules of Professional Conduct for Licensed Valuers[237] was adopted, which improved standardised real estate valuation, enabling adequate assessment of credit risk for receivables secured by a mortgage. The List of Licensed Valuers[238] on the Ministry of Finance website cites 279 licensed valuers.[239]

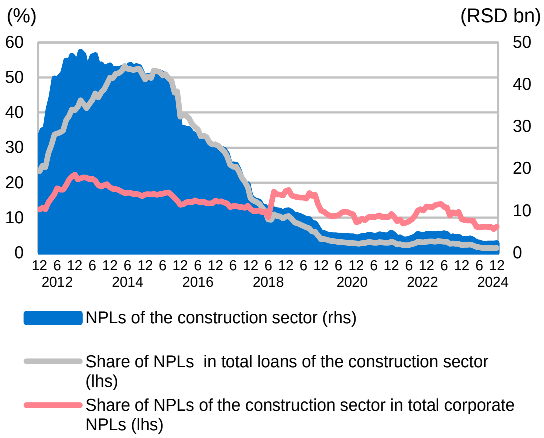
Since 2015 the NBS has kept the database of valuations of mortgaged real estate and mortgage loans so as to improve the conditions for a higher-quality real estate valuation, which diminishes the risk of new NPLs. This database is continuously updated to enable comprehensive collection, storage and distribution of data from the mortgaged real estate market. In addition,

Chart III.4.3 **NPLs in housing construction**



Source: NBS.

Chart III.4.5 **NPLs of the construction sector, corporate sector**



Source: NBS.

[233] https://www.nbs.rs/en/drugi-nivo-navigacije/publikacije-i-istrazivanja/anketa-kreditna-aktivnost/index.html
[234] Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans (RS Official Gazette, No 78/2023).
[235] https://www.stat.gov.rs/en-us/publikacije/publication/?p=17230&tip=8
[236] RS Official Gazette, Nos 108/2016 and 113/2017 – other law.
[237] RS Official Gazette, No 37/2023.
[238] https://www.mfin.gov.rs//upload/media/EKmoZl_660bc1a6167a7.xlsx
[239] This is the number of licensed valuers as at 10 April 2025.

this NBS database gives access to data to banks and licensed valuers.

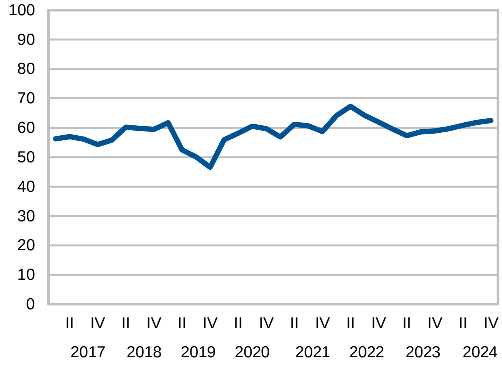
In June 2020, the NBS amended the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System[240] to facilitate access to housing loans for citizens and to support the construction industry. The up-to-then 80% limit on LTV (except 90% if the loan is approved as a measure of government support to certain groups of natural persons) was permanently eased to 90% if the loan is approved to first-time home buyers. In December 2024, the said limit was further mitigated by the Decision Amending the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System.[241] The LTV limit is eased if the loan is approved under the government housing loans scheme for youth who are first-time home buyers. When approving loans under this scheme, banks may apply the 99% LTV limit. Further, banks may also apply a lower risk weight of 35% to overall exposure based on the housing loan approved under this scheme. With these amendments, the NBS established an adequate regulatory framework for the implementation of the government housing loans scheme for youth, creating a framework that stimulates both the borrower – by means of the minimum downpayment for the purchase of residential property, and the banks – by means of the calculation of a lower risk weight for the housing loan under this scheme.

The LTV ratio, as the ratio of the value of housing loans for which apartments were mortgaged and the estimated value of those apartments, measured 62.5% in Q4 2024 (59.0% in Q4 2023)[242], considerably below the regulatory maximum.

From September 2023 until December 2024 the Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans[243] was in force. The Decision enabled a temporary cap on interest rates on housing loans with a view to preserving the living standard of citizens amid rising interest rates. Thanks to the mentioned temporary set of measures, a cap was placed on the nominal interest rate for first-time beneficiaries of variable rate housing loans secured by mortgage worth no more than EUR 200,000. The Decision defined that for housing loans approved until 30 July 2022, the interest rate may not exceed 4.08%. Also, it prescribed that, for housing loans approved from 31 July 2022 to the effective date of the Decision, borrowers paid reduced loan annuities with the interest as specified in the initial repayment plan with the banks having no right to claim from the borrowers any difference in interest arising from the implementation of the Decision. While the Decision was in effect, the interest rates on new loans were also capped – in case of variable rate loans, the fixed part (bank margin) could not exceed 1.1%, and in case of fixed rate loans, the nominal interest rate was limited to 5.03%. In addition to these measures, early loan repayment was made possible without the early repayment fee being charged.

Chart III.4.6 **LtV ratio**

(value of housing loans for which flats were mortgaged in relation to the estimated value of those flats, in %)



Source: NBS.

To support financial system stability and the living standard primarily of housing loan beneficiaries, in December 2024, the NBS adopted the Decision on Temporary Interest Rate Cap on Loan Agreements Concluded with Natural Person Consumers.[244] This Decision placed a 5% cap on interest rates on existing and new variable rate housing loans, as well as on new fixed rate loans. In this way, a gradual transition was ensured to the market interest rate following the expiry of the rate cap on housing loans. The said cap is integrated in the new Law on the Protection of Financial Service Consumers[245] adopted in March 2025. In line with the new Law, until 31 December 2025, in case of existing and new variable rate housing loans and new fixed rate loans, the nominal interest rate cannot exceed 5%. After that, the interest rates on housing loans will be limited depending on the weighted average interest rates on housing loans in a specific currency. The effective interest rate on housing loans has also been limited, so that at the time of the conclusion of the loan agreement it may not exceed the default interest rate decreased by 2.5 pp. The Law regulates systemically the interest rate caps for all credit products with a view to protecting the interests of financial service consumers, while at the same time maintaining and strengthening financial system stability.

[240] RS Official Gazette, Nos 34/2011, 114/2017 and 84/2020.
[241] RS Official Gazette, No 102/2024.
[242] Source: the NBS real estate database about the estimated values of real estate mortgaged and loans secured by mortgage.
[243] RS Official Gazette, No 78/2023.
[244] RS Official Gazette, No 102/2024.
[245] RS Official Gazette, No 19/2025.

Text box 5: ***Residential real estate valuation in 2024***

Global economic and geopolitical developments in the past period affected real estate market trends as well. Unlike 2023, which saw a decline in real estate prices in the euro area, 2024 witnessed a rise in both real estate trading and prices across a large number of EU countries. In Serbia, real estate prices continued up, although the pace of their growth has slowed for the second consecutive year, while the activity in the real estate market remained above the pre-pandemic levels but fell short of the 2022 record. In 2024, trading in loan-financed apartments edged slightly up, mostly owing to the easing of credit conditions, as well as the ECB and NBS monetary policy accommodation, and capping of interest rates on housing loans based on the NBS's decision from September 2023. Increased demand for mortgage loans was also supported by the ECB and NBS monetary policy easing.

Data of the Republic Geodetic Authority[246] and from the database on valuation of mortgaged real estate (hereinafter: real estate database) suggest an increase in real estate prices in 2024 relative to 2023, though at lower and more stable growth rates than in previous years. According to the Republic Geodetic Authority, after declining in 2023, the overall turnover in the Serbian real estate market turned up again in 2024.

Since the start of bank reporting (October 2015) until end-2024, data on 223,593 real estate properties were entered in the database, with the appraised value of RSD 8,208.6 bn, concluding with data as of 20 March 2025. Most of these data concern residential real estate (75.3% of the total). In terms of the appraised real estate value, commercial real estate serving as mortgage was dominant (80.8% of the total appraised value of all types of real estate entered in the database).

Table O.5.1 **Appraised values of residential real estates in 2024**

	Average appraised value per m^2 in 2024 (EUR)*	Average appraised value per m^2 in 2023 (EUR)	Change compared to the previous year (%)	Minimum appraised value per m^2 in 2024 (EUR)	Maximum appraised value per m^2 in 2024 (EUR)	Number of appraised pieces of real estate in 2024
Republic of Serbia	**1,597**	**1,456**	**9.7**	**69**	**9,103**	**9,036**
Belgrade region	**2,352**	**2,197**	**7.1**	**190**	**9,103**	**3,894**
Belgrade – Stari grad	3,797	3,146	20.7	1,861	9,103	130
Belgrade – Savski venac	3,539	3,436	3.0	1,701	5,320	121
Belgrade – Vračar	3,297	3,105	6.2	1,619	4,596	166
Belgrade – Novi Beograd	2,715	2,567	5.8	1,303	5,821	719
Belgrade – Voždovac	2,446	2,232	9.6	882	4,267	506
Belgrade – Zemun	2,269	2,102	7.9	740	4,330	548
Belgrade – Zvezdara	2,172	2,134	1.8	645	3,836	395
Belgrade – Palilula	2,137	1,910	11.9	525	3,600	336
Belgrade – Čukarica	2,079	1,974	5.3	470	4,658	359
Belgrade – Rakovica	1,841	1,693	8.8	689	3,214	278
Belgrade – Surčin	1,510	1,169	29.2	700	2,500	31
Belgrade – Mladenovac	1,200	1,014	18.3	467	2,887	70
Belgrade – Grocka	1,121	890	25.9	246	2,457	80
Belgrade – Obrenovac	1,077	1,020	5.5	190	2,866	69
Belgrade – Lazarevac	1,075	695	54.7	323	1,570	24
Belgrade – Barajevo	883	648	36.2	304	1,458	38
Belgrade – Sopot	747	671	11.3	378	2,019	24
Vojvodina	**1,192**	**1,012**	**17.8**	**69**	**3,752**	**2,869**
Novi Sad	1,920	1,767	8.6	351	3,752	1,270
Other municipalities of the region	784	699	12.1	69	2,682	1,599
Southern and Eastern Serbia	**1,064**	**944**	**12.7**	**224**	**2,488**	**824**
Niš	1,337	1,270	5.2	273	2,488	412
Other municipalities of the region	819	708	15.7	224	2,359	412
Šumadija and Western Serbia	**978**	**902**	**8.4**	**179**	**3,080**	**1,449**
Kragujevac	1,120	979	14.4	240	2,305	305
Other municipalities of the region	942	886	6.3	179	3,080	1,144

* Preliminary estimate, during 2025 banks are expected to continue to submit appraisals from 2024.

Note: Data are based on first valuations of flats and houses in the housing loan approval procedure.

Source: NBS.

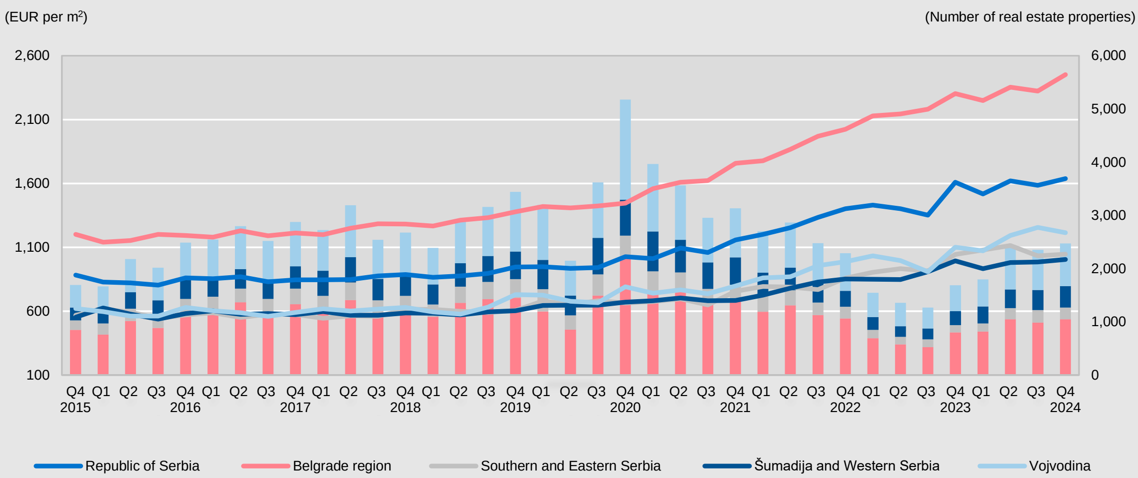
[246] https://www.rgz.gov.rs/%D1%80%D0%B3%D0%B7-%D0%B8%D0%BD%D0%B4%D0%B5%D0%BA%D1%81-%D1%86%D0%B5%D0%BD%D0%B0-%D1%81%D1%82%D0%B0%D0%BD%D0%BE%D0%B2%D0%B0

In accordance with data on the first valuation of residential real estate,[247] serving as mortgage for housing loans entered in the database, in 2024 the average appraised value per square metre for the Republic of Serbia equalled EUR 1,597.

Table O.5.1 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, city, and municipality within the Belgrade region in 2024.

There is a significant dispersion of residential real estate values across regions in the Republic of Serbia. The average appraised value per square metre in the Belgrade region of EUR 2,352 is significantly higher than the average appraised value per square metre in other regions (Vojvodina – EUR 1,192, Southern and Eastern Serbia – EUR 1,064 and Šumadija and Western Serbia – EUR 978). As the largest number of appraised residential real estate concerns Belgrade region, it can be concluded that the average appraised value per square metre of residential real estate in the Republic of Serbia is largely determined by the movement in residential real estate valuations in the Belgrade region.

Chart O.5.1 **Appraised real estate values and number of residential properties per region**



* Data are based on first valuations of flats and houses in the housing loan approval procedure.

Source: NBS.

In the Belgrade region, there is a dispersion of the average appraised value per square metre of a residential real estate by municipality – relatively lower average valuations were made for suburban municipalities and municipalities in the periphery of the city. On the other hand, the average appraised value per square metre of residential real estate in Belgrade downtown was above EUR 3,200 (Savski venac – EUR 3,797, Stari grad – EUR 3,539 and Vračar – EUR 3,297). Such dispersion of average appraised values per square metre of residential real estate is not present only in the Belgrade region, but can be seen in other regional centres as well – in Novi Sad compared to other municipalities in Vojvodina (Novi Sad – EUR 1,920, other municipalities of the region – EUR 784), the region of Southern and Eastern Serbia (Niš – EUR 1,337, other municipalities of the region – EUR 819) and the region of Šumadija and Western Serbia (Kragujevac – EUR 1,120, other municipalities of the region – EUR 942).

The maximum individual residential real estate valuation per square metre in 2024 was registered in Savski venac municipality, and the lowest in the region of Vojvodina.

Relative to the year before, the average appraised value per square metre of residential real estate increased in 2024 by 9.7% in the Republic of Serbia, 17.8% in Vojvodina, 12.7% in the region of Southern and Eastern Serbia, 8.4% in Šumadija and Western Serbia and 7.1% in the Belgrade region. In 2024, a total of 9,036 valuations were recorded in Serbia, up by 3,179 from the year before. This increase in the number of valuations reflects a rising trend of loan-financed purchases of residential real estate.

The average appraised value of a residential real estate per square metre from October 2015 until end-2024 trended upwards, both in Serbia overall and in each individual region (Chart O.5.1).

Based on data from the real estate database, the average appraised value of a residential real estate per square metre can be determined not only by region and municipality but also by the year of construction, type of real estate (house/apartment), apartment structure etc. (Table O.5.2).

[247] In this Text box, residential real estate means apartments and houses appraised for the purpose of collateralisation of housing loans.

Table O.5.2 **Average appraised values of residential real estate in 2024 (year of construction, type, structure)**

	Average appraised value per m^2 (EUR)*	By year of construction		By type of real estate		By structure of flat				
		New construction	Old construction	Flat	House	0.5	1–1.5	2–2.5	3–3.5	4+
Republic of Serbia	**1,597**	**1,920**	**1,503**	**1,935**	**626**	**2,302**	**1,947**	**1,791**	**1,879**	**2,268**
Belgrade region	**2,352**	**2,585**	**2,299**	**2,448**	**1,152**	**2,782**	**2,378**	**2,283**	**2,396**	**2,810**
Belgrade – Stari grad	3,797	4,522	3,375	3,808	3,561	4,308	3,203	3,235	3,670	4,052
Belgrade – Savski venac	3,539	4,395	3,434	3,550	3,273	4,425	3,271	3,519	3,267	3,812
Belgrade – Vračar	3,297	3,402	3,283	3,297	-	3,824	3,217	3,327	3,239	3,304
Belgrade – Novi Beograd	2,715	3,521	2,642	2,720	1,365	3,264	2,814	2,760	2,604	2,790
Belgrade – Voždovac	2,446	2,855	2,356	2,458	1,348	2,931	2,559	2,355	2,414	2,594
Belgrade – Zemun	2,269	2,226	2,283	2,295	1,852	2,649	2,291	2,281	2,219	2,355
Belgrade – Zvezdara	2,172	2,395	2,104	2,187	1,913	2,082	2,248	2,141	2,237	2,231
Belgrade – Palilula	2,137	2,549	2,072	2,197	792	2,348	2,257	2,198	2,118	2,206
Belgrade – Čukarica	2,079	2,024	2,093	2,137	899	2,456	2,174	1,967	2,213	2,288
Belgrade – Rakovica	1,841	2,210	1,792	1,887	1,217	1,921	1,947	1,916	1,803	1,851
Belgrade – Surčin	1,510	1,729	1,224	1,792	1,014	2,362	1,632	1,808	1,767	-
Belgrade – Mladenovac	1,200	1,587	922	1,437	903	-	1,573	1,407	1,242	-
Belgrade – Grocka	1,121	1,473	1,007	1,328	729	1,662	1,504	1,394	1,323	905
Belgrade – Obrenovac	1,077	1,303	925	1,164	575	1,332	1,248	1,172	1,131	1,078
Belgrade – Lazarevac	1,075	1,319	884	1,466	960	-	1,442	1,452	1,514	-
Belgrade – Barajevo	883	1,277	821	1,093	543	1,286	1,125	1,115	1,055	-
Belgrade – Sopot	747	1,316	701	870	721	-	-	965	783	-
Vojvodina	**1,192**	**1,697**	**1,012**	**1,612**	**581**	**2,202**	**1,791**	**1,523**	**1,541**	**1,669**
Novi Sad	1,920	1,976	1,880	2,029	1,174	2,447	2,142	2,013	1,912	2,032
Other municipalities of the region	784	1,327	668	1,145	505	1,344	1,242	1,128	1,141	1,093
Southern and Eastern Serbia	**1,064**	**1,480**	**933**	**1,291**	**531**	**1,492**	**1,402**	**1,256**	**1,277**	**1,227**
Niš	1,337	1,660	1,180	1,506	663	1,604	1,611	1,504	1,472	1,406
Other municipalities of the region	819	1,156	754	1,039	470	1,191	1,147	1,021	1,019	952
Šumadija and Western Serbia	**978**	**1,433**	**847**	**1,223**	**523**	**1,479**	**1,415**	**1,172**	**1,186**	**1,070**
Kragujevac	1,120	1,566	920	1,360	566	1,353	1,390	1,316	1,420	1,297
Other municipalities of the region	942	1,380	831	1,185	514	1,512	1,421	1,130	1,115	1,025

* Preliminary estimate, during 2025 banks are expected to continue to submit appraisals from 2024.

Note: Data are based on first valuations of flats and houses in the housing loan approval procedure.

New construction is considered residential properties built in 2022, 2023, or 2024.

Source: NBS.

The average appraised value per square metre of a newly constructed real estate in 2024 equalled around EUR 1,920 in the Republic of Serbia (EUR 2,585 in the Belgrade region) and was higher than the average appraised value of older real estate, which stood at EUR 1,503 (EUR 2,299 in the Belgrade region).

Furthermore, average appraised values per square metre of apartments (EUR 1,935 in Serbia, EUR 2,448 in the Belgrade region) were significantly higher than those of houses (EUR 626 in Serbia, EUR 1,152 in the Belgrade region).

In terms of apartment structure, the highest average appraised value per square metre in Serbia was recorded for studio apartments (EUR 2,302) and apartments with four and more rooms (EUR 2,268), and in the Belgrade region for four-room and larger (EUR 2,810), which are generally considered luxury real estate, with studios being next in line (EUR 2,782).

In 2024, the majority of apartments – collaterals under housing loans were in buildings with five (1,516), four (1,448) and three floors (1,134), accounting for 51.6% of the total number of valued apartments (7,939) and indicating that three-, four- and five-floor buildings make up the bulk of the building stock in Serbia. Also, the bulk of these apartments are on the last (1,988) and penultimate floor (1,571), making up 44.8% of the total number of valued apartments. As for building floors, most valuations were made for apartments on the first (1,513), second (1,402) and third floor (1,244), which together account for 52.5% of total valuations (Table O.5.3).

Table O.5.3 **Number of flat valuations in 2024 by flat floor and number of floors in the building**

(Building floor) / (Flat floor)	ground floor building	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	28	31	40	Total valuations by flat floor
Lower ground floor			2	3	1																										6
Ground floor	38	91	158	177	198	146	68	35	27	17	6	5		3	1	5	5	1	1		2										984
Upper ground floor			1		1	1	1	1			1			1																	7
1		132	279	285	281	250	90	68	46	16	17	6	16	12	2	3	2	3			1	2	2								1,513
2			300	277	249	245	114	74	39	28	21	16	11	11	6	6			2		1	2									1,402
3				392	296	244	109	77	29	30	20	16	6	8	4	5	2	3		1		1						1			1,244
4					422	297	108	65	46	37	16	14	9	10	2	4	2	4		1	1				1						1,039
5						333	95	57	38	37	15	9	6	8	4	5	1		2			2		1	1			1			615
6							153	80	43	30	21	16	16	6	3	4	2	1	3			2									380
7								77	41	24	19	11	7	8	2	9	4	2	3	2	2	1		1							213
8									35	33	18	13	8	12	6	6	2	1	2	1											137
9										27	26	15	14	14	2	8	5	1		2	1	3	1	1							120
10											19	15	9	6	8	7	3	4	1	1			1						1		75
11												16	16	8	6	8	4	1	1			1			1	1					63
12													14	6	4	4	3	1	2		2				1						37
13														6	4	6	2	3	2	1	1	2			1		1	1			30
14															8	4		2	2	2	1							1			20
15																3	1	1	1	3	1							1			11
16																	2	2			1				1						6
17																		3	4	3	2										12
18																			1	2	4	1	1	1							10
19																					2										2
20																					1										1
21																						2			1						3
22																									1			1			2
23																								2					1		3
24																									1						1
26																														1	1
28																														1	1
31																													1		1
Total valuations by number of building floors	38	223	740	1,134	1,448	1,516	738	534	344	279	199	152	132	119	62	87	40	33	27	19	23	19	5	6	9	1	1	6	3	2	7,939

Note: Data are based on first flat valuations in the housing loan approval procedure.
Source: NBS.

In terms of the number of rooms, the majority of valuations in 2024 were of two-room apartments (1,797 – average apartment size 52.6 m^2), two-and-a-half room (1,305 – average apartment size 61.4 m^2) and three-room (1,207 – average apartment size 70.8 m^2), these three categories representing 54.3% of all apartment valuations. The average apartment size for all valuations in 2024 is around 59.7 m^2, while the median stands at 57.0 m^2, suggesting there is a larger number of smaller-size apartment mortgages.

The data from the real estate database are relevant as they help to determine the relationship between the disbursed loan and the value of mortgaged real estate, which is very important for monitoring the adequacy of collateral and enables timely decision-making on appropriate application of macroprudential tools to contain the risks stemming from the real estate market for banks. This confirms the justifiability and usefulness of the complementary analysis of the mentioned data for monitoring trends in the real estate market and assessment of risks that banks assume under mortgage loans.

IV Financial stability

IV.1 Regulatory framework as support to financial stability

IV.1.1 Macroprudential policy

The global financial crisis of 2007/2008 prompted accelerated development of a new area of public policy – macroprudential policy, aimed at mitigating and limiting systemic risks to which the financial system as a whole may be exposed. The development of appropriate policy measures and instruments helped the global financial system and financial systems of individual countries be more resilient to potential future crises. Capital and liquidity requirements envisaged by the Basel III[248] regulatory standard enhanced the resilience of the financial system in terms of solvency and liquidity. The implementation of macroprudential policy measures in the past period also helped mitigate the risks caused by the multidimensional global crisis which began with the coronavirus pandemic and then continued as geopolitical tensions and conflicts intensified, causing disruptions in supply chains, driving inflation up and slowing economic growth. Still, it was thanks to the implementation of macroprudential instruments and measures discussed below that the financial sector was better prepared to respond to the challenges triggered by these crises than before the global financial crisis of 2007/2008 broke out.

Pursuant to Article 4, paragraph 1, item 3 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, 44/2018 and 19/2005), the legal mandate of the NBS 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 objectives – maintaining and strengthening the stability of the financial system (Article 3, paragraph 2 of the Law on the National Bank of Serbia). To define the macroprudential policy, in 2015 the NBS published the Macroprudential Framework[249] – 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[250] transposing into the domestic regulatory system the regulatory standard Basel III, which was one of the key regulatory responses to the global financial crisis of 2007/2008. These regulations were adopted in December 2016 and implemented as of 30 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, 137/2020, 59/2021, 67/2022, 137/2022, 48/2023, 110/2023, 102/2024 and 41/2025). 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 can be used to limit risks in the financial system, which can be cyclical (capital conservation buffer and countercyclical capital buffer) or structural (capital buffer for a systemically important bank and systemic risk buffer) (Table IV.1.1). Capital buffers are among the most important capital-based macroprudential instruments. The Decision on Liquidity Risk Management by Banks (RS Official Gazette, No 103/2016) introduced the liquidity coverage ratio. Compliance with this requirement enables banks to sustain a presumed liquidity shock over a 30-day period. The importance of adequate liquidity risk management in preventing a financial crisis was thus recognised. To mitigate the risks of occurrence or increase in the maturity mismatch between the funding sources and placements of banks in Serbia and to encourage reliance on longer-term sources of funding, in November 2023 the NBS adopted a new Decision on Liquidity Risk Management by Banks (RS Official Gazette, No 100/2023), which, among other things, introduced the net stable funding ratio, to be applied as of 30 June 2024. This ratio is a macroprudential instrument that requires the coverage of required stable funding by available stable funding (in the period of one year during which the financial system faces conditions of stress). Also, the rules for

[248] For more details on Basel III, see: *Annual Financial Stability Report – 2011*, https://www.nbs.rs/export/sites/NBS_site/documents-eng/publikacije/fs/fsr_2011.pdf

[249] https://www.nbs.rs/export/sites/NBS_site/documents-eng/finansijska-stabilnost/macroprudential_framework_201503.pdf

[250] 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 the Decision Amending the Decision on Risk Management by Banks. These decisions transpose into domestic legislation the requirements prescribed by the relevant EU regulation or directive (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)).

calculating the existing liquidity indicator were amended.

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 the Capital Requirements Regulation, 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 implementation of relevant international standards. The new Decision (EU) 2021/1753 of 24 October 2021 once again confirmed the previously established equivalence. As a responsible regulator in charge of preserving and strengthening financial system stability, the NBS has continuously improved and adapted its regulatory framework to international standards of supervision in all segments. The NBS also actively cooperates with the EBA to monitor the equivalence of Serbia's regulatory and supervisory framework for banks.

Table IV.1.1 Capital buffers in Serbia

Capital conservation buffer

Pursuant to the Decision on Capital Adequacy of Banks (RS Official Gazette, Nos 103/2016, 103/2018, 88/2019, 67/2020, 98/2020, 137/2020, 59/2021, 67/2022, 137/2022, 48/2023, 110/2023, 102/2024 and 41/2025), this capital conservation buffer is set at 2.5% of risk-weighted assets.

Countercyclical capital buffer

Pursuant to the Decision on the Countercyclical Buffer Rate for the Republic of Serbia (RS Official Gazette, No 58/2017), the CCyB rate is set at 0%.
In 2024, this rate was reviewed at a quarterly level and was kept at 0% given that, according to data for end-December 2024, the reference guide for the CCyB rate is 0%; the credit-to-GDP ratio is 71.2%; and the deviation of credit-to-GDP ratio from its long-term trend is -1.2 pp.
By keeping the CCyB rate at 0%, the NBS continues to support the lending market in conditions of the still uncertain macroeconomic developments in the international environment.

Capital buffer for systemically important banks

The Decision on Establishing a List of Systemically Important Bank in the Republic of Serbia and Capital Buffer Rates for Those Banks of 10 May 2024 establishes systemically important banks and the capital buffer rates that those banks are obligated to maintain as of 30 June 2024.

Bank	Rate
BANCA INTESA AD BEOGRAD	2%
OTP BANKA SRBIJA AD NOVI SAD	2%
AGROINDUSTRIJSKO KOMERCIJALNA BANKA AIK BANKA AD	2%
UNICREDIT BANK SRBIJA AD BEOGRAD	2%
RAIFFEISEN BANKA AD BEOGRAD	1%
NLB KOMERCIJALNA BANKA AD BEOGRAD	1%
BANKA POŠTANSKA ŠTEDIONICA AD BEOGRAD	1%
ERSTE BANK AD NOVI SAD	1%
EUROBANK DIREKTNA AD BEOGRAD	1%

Systemic risk buffer

Pursuant to the Decision on the Rate and Manner of Maintaining the Systemic Risk Buffer (RS Official Gazette, Nos 58/2017 and 3/2018), all banks whose share of foreign currency and foreign currency-indexed placements approved to corporates and households in the Republic of Serbia exceeds 10% of the total placements of that bank approved to corporates and households in the Republic of Serbia must maintain the systemic risk buffer at the level of 3% of total foreign currency and foreign currency-indexed placements of a bank approved to corporates and households in the Republic of Serbia.
The systemic risk buffer was introduced to limit the risk of euroisation, one of the key structural non-cyclical systemic risks to the stability of the financial system of the Republic of Serbia. The obligation to maintain the systemic risk buffer rate is reviewed at least once every two years. The obligation to maintain this buffer was reviewed in 2024 when it was established that the Decision on the Rate and Manner of Maintaining the Systemic Risk Buffer ought to be retained.

By introducing Basel III capital buffers and liquidity requirements into banking legislation, systemic risks have been recognised as a specific type of risks, calling for special, tailored measures. Macroprudential policy aims to contain these risks, while considering its interaction with microprudential and monetary[251] policies. The coronavirus pandemic crisis, the energy crisis, geopolitical tensions, trade wars, coupled with elevated inflation and decelerating economic growth, which have played out in the last five years, have only emphasized further the need for coordination of all 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 can pose both a systemic risk to the financial system from the macroprudential aspect and a risk for individual institutions (microprudential aspect). A rising share of NPLs in total loans may be a 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 deferring economic growth. A high NPL ratio may also deepen the severity and extend the duration of a financial crisis. Namely, financial resources are in that case tied down until an NPL is liquidated, which may prolong economic stagnation.

Due to a rise in NPLs in the aftermath of the global financial crisis, there was a need to adopt an NPL Resolution Strategy (hereinafter: Strategy)[252] and the action plans of the Serbian Government and the NBS,

[251] For more information about the interaction of financial stability and monetary policy, see Text box 1: Role of financial stability in the ECB's new monetary policy strategy, *Annual Financial Stability Report – 2021*, pp. 15–17.

[252] RS Official Gazette, No 72/2015.

which produced outstanding results in containing this systemic risk and bringing down the level of NPLs. As a result of a strong regulatory framework for banks and the adopted macroprudential policy measures synchronised with monetary policy measures, amid lending activity growth, the share of NPLs in total loans fell to an all-time low of 2.5% in December 2024. This is 19.7 pp lower than in August 2015 when the Strategy was adopted and 0.7 pp below the end-2023 level, confirming the financial soundness of the banking sector. Such reduction of NPLs, despite the multidimensional crisis we have been facing, is a confirmation that the measures of the NBS and the Serbian Government were well-timed, preventing major negative consequences for corporates and households and, by extension, for the financial sector. The domestic banking system is well capitalised and highly liquid. Allowances for impairment of NPLs were high, measuring 62.3% of gross NPLs in December 2024, while allowances for impairment of total loans measured 113.4%. As this largely contained the direct negative effect of NPLs on lending activity, the effect is mostly indirect. It may play out through the banks' risk aversion, present even in the most advanced markets. Risk aversion manifests itself in the tightening of credit standards and lending conditions, such as limitation of the loan amount and maturity, and stricter collateral requirements. Banks' risk aversion was particularly heightened during the crisis caused by the pandemic, 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 the economic and financial fallout from this crisis, in line with the established guarantee schemes. [253]

After the Strategy from 2015, in December 2018, the Government adopted the NPL Resolution Programme for the Period 2018–2020[254] (hereinafter: Programme) and the Action Plan for its implementation. The objective of this Programme and the implementing Action Plan was to remove, in cooperation with the NBS, the identified obstacles which prevent timely NPL resolution, as well as to pre-empt the accumulation of NPLs and negative effects on lending and, by extension, on potential economic growth.

Presented below are recommendations whose implementation could additionally help in maintaining the low level of NPLs.

Drafting plans by banks to reduce and/or maintain a low share of NPLs. The Decision Amending the Decision on Risk Management by Banks[255] from 2016 improved the process of managing bad assets in banks. The process was further improved by drafting 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 the achievement of the targeted share of NPLs, which may be defined in stages;

– method of decreasing the NPL share (sale, write-off, restructuring or enforced collection of receivables);

– sources of financing the implementation of the plan: recapitalisation by shareholders, or in case of a foreign bank's subsidiary, by the parent bank; debt or capital financing by IFIs; sale of NPLs to private asset management companies, etc.

Promoting a framework for consensual financial restructuring. Consensual financial restructuring is a redefining of the debtor-creditor relationship between a company and/or entrepreneur in financial distress, as a debtor, and its creditors. 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 the current polycrisis environment, when it is important to make sure all possibilities are utilised so that economic entities facing financial difficulties due to the crisis should continue operating. The NBS has always taken an active part in various initiatives aimed at promoting and developing the consensual financial restructuring procedure.

Cross-border deleveraging by banks

Foreign-owned banks account for the bulk of the Serbian banking sector (77.5% at end-December 2024). Most of those banks are members of cross-border banking groups and prior to the global financial crisis of 2007/2008 they were mainly financed 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

[253] See: Law on Establishing a Guarantee Scheme as a Measure of Support to the Economy for Mitigating the Effects of the COVID-19 Pandemic Caused by the SARS-CoV-2 Virus (RS Official Gazette, Nos 153/2020 and 40/2021).

[254] http://www.pravno-informacioni-sistem.rs/SlGlasnikPortal/eli/rep/sgrs/vlada/drugiakt/2018/105/1/reg/

[255] 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, 67/2020 – other decision, 89/2022, 77/2023 and 13/2025.

order to avoid a situation where deleveraging would cause financial instability in host countries of international banking groups' subsidiaries, the year 2009 saw the launching of the so-called Vienna Initiative 1.0 aimed at maintaining the agreed level of exposure of banking groups from Western European countries toward countries of Central, Eastern and Southeastern Europe. However, as the crisis went on, Vienna Initiative 2.0 was 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 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 18.2% of total liabilities, while in December 2024 they fell to 9.7%. This decrease was offset by the rise in the local deposit base. The loan-to-deposit ratio declined from 1.14 at end-2008 to 0.80 at end-2024. A loan-to-deposit ratio below 1 means that banks largely rely on domestic, stable sources of funding, such as deposits, and points to a greater resilience of the banking system, which allows it to preserve its lending activity in crisis conditions regardless of trends in foreign markets. This also limits the effect of cross-border risk spillover, which is particularly pronounced during crises. Owing to preserved macroeconomic and financial stability, and timely and comprehensive measures supporting corporate and household sectors, the spillover of the negative effects of all crises from the international environment onto the domestic banking sector was prevented. However, cross-border exposure of the domestic banking sector should continue to be monitored.

Strengthening domestic dinar sources of funding. Reliance on domestic, primarily dinar sources of funding, limits the exposure to external risks, particularly in the conditions of global crises. Also, stable domestic sources of funding enable an 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.

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 the domestic currency relative to major world currencies. Such a scenario would lead to an increase in foreign currency liabilities, expressed in the local currency, and considering that 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 problems with borrowers' solvency and liquidity. Also, in a highly euroised economy, changes in the key policy rate cannot fully 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 degree 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. Given that macroeconomic stability was ensured and financial stability strengthened in the period after the conclusion of the Memorandum in 2012, it was agreed that preconditions were in place for upgrading the Strategy. To this end, in December 2018 the Government and the NBS signed a new Memorandum on the Strategy of Dinarisation[256] which took stock of past measures and activities and, in view of those results, defined 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 developing the market of dinar securities and introducing new dinar products into the domestic financial market;

– the third pillar includes activities aimed at the development of FX risk hedging instruments.

The degree of dinarisation of the domestic financial system, measured by the share of dinar receivables in total receivables from corporates and households, gradually rose to 37.4% in late 2024, up by 2.9 pp from end-2023 (34.5%). Measured by the share of dinar deposits in total corporate and household deposits, it equalled 46.5%, up by 2.1 pp from end-2023 (44.4%). The country's gross FX reserves increased by EUR 4.4 bn in 2024, reaching a record high of EUR 29.3 bn at end-2024. The coverage of goods and services imports by FX reserves was 7.3 months, which is more than double the adequacy standard. Other indicators of FX reserve adequacy were also higher than the standard level, thus diminishing the risk of euroisation and strengthening our country's resilience to external shocks.

As part of its Strategy of Dinarisation of the Serbian Financial System, in cooperation with the Government, the NBS promotes domestic currency savings,

[256] https://nbs.rs/export/sites/NBS_site/documents-eng/publikacije/dinarizacija/Memorandum_Dinarisation_Strategy_2018.pdf

emphasizing their importance and greater profitability compared to FX savings. Greater profitability of dinar savings was supported by a higher interest rate on dinar than on FX savings, and tax-free treatment of interest on dinar savings, compared to the 15% tax on income from FX savings, but also by the achieved and maintained macroeconomic and financial stability in the past years, especially during the global crises when well-timed monetary, prudential and fiscal policy measures played a key role. Dinar savings continued up throughout the year, climbing to a new record-high of RSD 191.2 bn at end-2024, almost 11 times higher than 12 years ago, confirming preserved confidence of depositors in the domestic currency and financial system stability. Dinar savings rose by RSD 53.3 bn in 2024, up by 38.6%. As dinar savings rose faster than FX savings, their share in total savings also increased – from 1.87% in December 2012 to 9.60% in December 2024.

The NBS is continuously taking various monetary, microprudential and macroprudential policy measures to advance dinarisation. In terms of macroprudential measures, already 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 dinar FX-indexed loans. The Decision defines the following three measures:

– it introduced the 80% LtV (loan-to-value) limit for FX or FX-indexed housing loans. 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. Also, 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 natural persons 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.

In December 2024, the Decision Amending the Decision on Measures for Safeguarding and Strengthening Stability of the Financial System (RS Official Gazette, No 102/2024) relaxed the requirement if a loan is approved within the programme of the government’s support for young people for the purchase of the first residential property with the guarantee of the Republic of Serbia prescribed by the Law on Establishing the Guarantee Scheme and Subsidising a Part of Interest as a Measure of Support to Young People for the Purchase of the First Residential Property[257]. When approving a loan under this programme, banks may apply the 99% limit (which means that the minimum downpayment by the natural person in financing the real estate purchase under this loan may be 1% of the value of such real estate). The NBS estimated that the reduction of the downpayment percentage (from 20% or 10%, to 1%) is also justified from the viewpoint of adequate and cautious risk management by banks, as the portfolio of housing loans for young people approved under this programme will be subject to more favourable terms and backed by a guarantee of 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 to create an environment conducive to 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, namely:

– Decision Amending the Decision on Capital Adequacy of Banks, and

– 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 all bank loans to these entities in the same way, regardless of the currency, this measure provides for a more favourable regulatory treatment of dinar loans, i.e. banks allocate less capital to cover risks in respect of dinar loans than in respect of FX and FX-indexed loans to these categories of borrowers. These incentives represent an additional measure to ensure better lending terms to this important part of the corporate sector which drives the economic growth of each country.

[257] RS Official Gazette, No 19/2025.

An additional novelty introduced by this Decision aims to encourage dinar lending by introducing measures to discourage the approval of new non-purpose and non-investment FX-indexed and FX loans to companies, entrepreneurs and farmers. Namely, the maximum percentages of these loans have been introduced, and if a bank exceeds these maximum levels, it will be subject to capital reduction. Apart from gradualness, this measure is also characterised by the absence of any form of lending prohibition, given that there are no obstacles for a bank to approve a non-purpose or a non-investment loan with the agreed currency clause or a loan in foreign currency to any client, provided that it maintains an appropriate level of capital after that, i.e. it has sufficient own funds to meet all regulatory requirements at all times. To unlock further operational capacities of banks and create more room to provide liquidity to the real sector – all of this against the backdrop of a global multidimensional crisis – the NBS repeatedly postponed the application of this measure[258], which entered into force on 1 July 2023. However, the obligation to reduce capital in case of overstepping the share percentage has been enforced since 1 January 2025 (71% in 2025).[259]

The NBS's comprehensive approach to limiting FX-indexed and FX lending has also resulted in an improved regulatory framework for risk management by banks in this segment of operation. The Decision Amending the Decision on Risk Management by Banks defines risk management requirements for banks concerning FX-indexed and FX loans. This has helped improve the regulatory framework in order to strengthen financial system resilience to the risks which may arise from a high share of FX-indexed and FX loans in bank balance sheets.

The high level of banking sector euroisation has been recognised as a systemic risk, since it increases the sensitivity of borrowers with a debt-income-currency mismatch to exchange rate changes, exposes the banking sector to credit-FX risk and hampers efficient monetary policy implementation. Therefore, the NBS applies the systemic risk buffer as an additional macroprudential policy measure. This instrument aims to strengthen banking sector resilience to potential shocks associated with this systemic risk and to help reduce the euroisation of the domestic financial system. It was introduced by the Decision on the Rate and Manner of Maintaining the Systemic Risk Buffer (RS Official Gazette, Nos 58/2017 and 3/2018). All banks with headquarters in Serbia and with the degree of euroisation above 10% are required to maintain the systemic risk buffer at 3% of their FX and FX-indexed loans to corporates and households in Serbia.[260] The requirement to maintain this buffer was reviewed in 2024, when it was determined that the Decision on the Rate and Manner of Maintaining the Systemic Risk Buffer ought to be retained.

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, 73/2019 and 94/2024) envisages the same insured amounts for both FX and dinar deposits. As the 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 the 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 (RS Official Gazette, No 73/2019) was adopted, introducing the possibility to calculate the insurance premium 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.

Regulatory measures to facilitate debt repayment and access to financing.

In the preceding period, Serbia, like the rest of the world, has faced the consequences of heightened geopolitical tensions, slackened global growth, geoeconomic fragmentation and numerous global uncertainties. Even so, the impact it has sustained is weaker than in most European countries owing to the preserved macroeconomic and financial stability, vigorous economic growth in the past period, the structure of the economy and the created fiscal room, as well as the timely and comprehensive package of measures to support corporates and households. In coordination with the Serbian Government, the NBS responded in a timely fashion, by facilitating the operation of corporates amid disrupted global supply chains and by alleviating the spillover effect of rising

[258] Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 67/2020), Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 137/2020), Decision on Capital Adequacy of Banks (RS Official Gazette, No 59/2021), Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 67/2022) and Decision Amending the Decision on Capital Adequacy of Banks (RS Official Gazette, No 48/2023).

[259] This threshold will go down further to 64% in 2026, and 57% in 2027, and to 50% thereafter.

[260]https://www.nbs.rs/export/sites/NBS_site/documents-eng/propisi/propisi-fs/systemic_risk_buffer.pdf

global primary commodity prices on the domestic market.

In June 2022, the NBS adopted the Decision on Temporary Measure Regarding the Calculation of Bank Capital[261] which enabled banks to mitigate the negative effects of changes in securities prices on capital, triggered by disruptions in the international financial market. The temporary measure refers to debt securities issued by the Republic of Serbia, autonomous province or local government unit, and measured at fair value through other comprehensive income in accordance with IFRS 9 – Financial Instruments. Pursuant to this Decision, in 2023 banks were allowed to exclude from the calculation of CET 1 capital 70% of net unrealised gains/losses based on the valuation of debt instruments. Amid exacerbated global uncertainty, the validity of the measure was extended until 31 December 2024, envisaging that the percentage of net unrealised losses which can be excluded from the calculation of CET 1 is first reduced to 50% by June 2024, and then to 25% by end-2024.

To ensure lasting protection of the households' standard in terms of payment services needed for daily activities, in August 2022 the NBS adopted the Decision on the Payment Account with Basic Features.[262] The maximum amount of the monthly fee for the payment account with basic features is set at RSD 150, and the guaranteed services are defined. The Decision also regulates consumers' rights to the payment account with basic features and the types of services covered.

In August 2022 the NBS adopted the Decision Amending the Decision on Risk Management by Banks[263], laying down banks' obligation to regulate, by means of its relevant internal acts, the process of adoption and/or amendments to its acts governing the fees it charges for the provision of payment services. A bank must notify the NBS of the tariff change by no later than 45 days before the planned adoption of the change. The NBS will thus be timely informed about the planned changes to banks' tariffs, which will allow it to timely identify whether banks' operations are appropriate and take relevant measures, if needed.

Against the backdrop of elevated interest rates, amendments to the Decision on Capital Adequacy by Banks[264] from December 2022 allowed banks to restructure their receivables from natural persons under consumer, cash or other similar loans, without affecting their capital. This regulatory solution allowed financially distressed debtors to submit an elaborated application asking for an extension of their payment term by up to three years relative to the applicable regulatory solution. In this case, the payment term could be extended by up to nine years for cash and consumer loans, and up to 11 years for motor vehicle purchase loans. It must be noted that this procedure does not result in an augmentation of the remainder of the debt, and that rescheduling within the meaning of this Decision may be done only once.

Temporary measures aimed at supporting households and corporates

Considering the strategic importance of agricultural production for households and corporates, in October 2022 the NBS adopted measures[265] allowing debtors of banks and financial lessors to reschedule their existing liabilities, meaning that borrowers could opt for a postponement in the settlement of their liabilities on account of the principal for six to 12 months, depending on their choice of the grace period within the rescheduling. In this case, the repayment period of the loan/lease agreement is extended so that the amount of the annuity (periodic obligation to be paid upon the expiry of the grace period) determined when the rescheduling is approved is not higher than the same amount before the rescheduling. During the grace period, debtors only pay the contracted interest rate. Amid dampened demand and unfavourable fruit price flows in the international market, in January 2023 bank debtors engaged in the purchase and cold storage of fruit were also enabled to reschedule their obligations[266].

To facilitate access to financing and support the construction industry, throughout 2023 the Decision on Temporary Measures for Banks to Facilitate Access to Financing for Natural Persons was implemented.[267] Pursuant to the Decision, until end-2023 banks were able to use a portion of allocated capital buffers (capital conservation buffer and systemic risk buffer) to facilitate access to financing for natural persons. Until 2023, banks were also able to offer facilities to borrowers by extending the repayment term for housing loans by a maximum of five years. In the circumstances of a rising EURIBOR, this reduced the pressure on the beneficiaries of variable-rate housing loans and prevented a build-up of non-performing housing loans. Apart from the option of extending the deadline for the repayment of housing loans, the temporary measures

[261] RS Official Gazette, Nos 72/2022, 124/2022 and 110/2023.
[262] RS Official Gazette, No 89/2022.
[263] RS Official Gazette, No 89/2022.
[264] RS Official Gazette, No 137/2022.
[265] Decision on Temporary Measures for Banks Aimed at Adequate Management of Credit Risk in Agricultural Loans Portfolio in Conditions of Aggravated Agricultural Production (RS Official Gazette, Nos 111/2022 and 5/2023) and Decision on Temporary Measures for Lessors Aimed at Adequate Management of Credit Risk in the Portfolio of Leases of Agricultural Machinery and Equipment in Conditions of Aggravated Agricultural Production (RS Official Gazette, No 111/2022).
[266] Decision Amending the Decision on Temporary Measures for Banks Aimed at Adequate Management of Credit Risk in Agricultural Loans Portfolio (RS Official Gazette, No 5/2023).
[267] RS Official Gazette, Nos 108/2020, 119/2021, 137/2022, 110/2023 and 102/2024.

enabled easier access to housing loans (a lower minimum degree of construction of a facility for the purchase financed by a housing loan is required) and facilitated the procedures for households' access to short-term dinar loans of up to RSD 90,000. The amendments to the Decision[268] from December 2023 and 2024 allowed banks to approve consumer loans of up to RSD 90,000 with a maximum two-year repayment term to natural persons without having to transfer their wage/pension to the bank granting the loan.

To relieve the burden of housing loan consumers and preserve citizens' living standard in an environment of rising interest rates, in September 2023 the NBS adopted the Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans[269] enabling a temporary cap on housing loan interest rates. The temporary measure limited the nominal interest rate for first-time beneficiaries of variable rate mortgage housing loans worth no more than EUR 200,000 in the next 15 months, starting from the October 2023 annuity. The Decision defined that, for housing loans approved concluding with 30 July 2022, the interest rate may not exceed 4.08%. For housing loans approved from 31 July 2022 to the effective date of the Decision, borrowers paid a reduced loan annuity with the interest specified in the initial repayment plan. Banks did not have the right to claim from the borrowers any difference in interest arising from the application of the above Decision. During the application of this Decision, i.e. until 31 December 2024, interest rates on new housing loans were also capped – in case of variable rate housing loans, the fixed part of the nominal interest rate (bank margin) could not exceed 1.1%, and in case of fixed-rate housing loans, the nominal interest rate was limited to 5.03%. In addition to these measures, all housing loan beneficiaries were allowed to repay the loan early without the obligation to pay the early repayment fee, regardless of whether it is a fixed- or variable-rate loan.

The NBS remains committed to timely taking appropriate and concrete measures and activities protecting the interests of financial service consumers, while at the same time preserving and strengthening the stability of the financial system, and the living standard of households, particularly housing loan consumers. In December 2024, the NBS adopted the Decision on Temporary Interest Rate Cap on Loan Agreements Concluded with Natural Person Consumers.[270] This Decision ensured the application of interest rate caps laid down in the proposed Law on the Protection of Financial Service Consumers pending the Law's adoption, but no later than end-2025. The above temporary measure capped the interest rate on existing and new variable-rate housing loans and on new fixed-rate housing loans at 5%. This ensured a gradual switch to a market interest rate after the Decision on Temporary Measures for Banks Relating to Natural Persons' Housing Loans[271] was no longer applied. In addition to capping interest rates on housing loans, the above Decision also capped interest rates on cash and consumer loans, credit card debt and current account overdraft. The above Decision ceased to be valid with the adoption of the Law on the Protection of Financial Service Consumers[272] in March 2025, which systemically regulated interest rate caps on all credit products for the purpose of protecting the interests of financial service consumers, while preserving and strengthening the stability of the financial system. Also, the above law prescribes the provision of pre-contractual information and notifications which, at the loan user's request, must contain detailed explanations about the loan and the associated risks, and help the consumer, by providing advice in good faith, to find the service that best responds to his needs. In this connection, advisory services which the bank can provide to a client have been regulated for the first time in the financial market. Also, the Law for the first time regulates the tying and bundling practices. Namely, banks are prohibited from making loan approval conditional upon the use of another service, other than by way of exception, but they are allowed to bundle services (e.g. offer a package which is more favourable than buying each service individually), though each consumer must also have the possibility to use the services separately as well. This Law specifies what makes up the total cost of the credit to the consumer, which may be also disclosed through several components, supplements the list of mandatory contract elements and defines in more detail the content of the contract. In case of difficulties in loan repayment due to job loss, illness or other circumstances beyond the consumer's control, the bank must offer certain facilities in loan repayment. These facilities imply interest rate reduction, partial interest rate debt write-off, loan refinancing on more favourable terms and many other mechanisms which the bank and the consumer find appropriate. Where it is impossible to repay a housing loan, the bank is required to offer to the client to sell the real estate within a time period of no less than two months and use the proceeds to repay the debt to the bank. The Law on the Protection of Financial Service Consumers further upgrades the procedure in respect of complaints filed by consumers in order to ensure free, efficient, flexible and fair resolution of any disputes between the bank and the user.

[268] RS Official Gazette, Nos 110/2023 and 102/2024.
[269] RS Official Gazette", No 78/2023.
[270] RS Official Gazette, No 102/2024.
[271] RS Official Gazette, No 78/2023.
[272] RS Official Gazette, No 19/2025.

To further strengthen the framework for bank operations, particularly with regard to corporate governance, risk management, internal capital adequacy and liquidity assessment process, disclosing of data, etc., the Law Amending the Law on Banks was adopted in March 2025.[273] The above amendments and supplements to the Law further reinforced the NBS's supervisory function by introducing a new instrument called "mystery shopping" to further enhance the supervision of the legality of the bank's operations in the area of financial services consumer protection, introducing the supervision agreement in the supervisory procedure, and specifying the process of supervisory review and evaluation. In addition, the establishing of the Resolution Fund for banks greatly improved the legal framework for bank resolution.

In the past year, the NBS has timely undertaken all decisions and measures so as to preserve the financial system stability and provide comprehensive support to corporates and households amid heightened geopolitical uncertainty, elevated inflation, high costs of loan repayment and global economic growth slowdown.

As a confirmation of the effectiveness of all measures taken so far, in early October 2024 Standard & Poor's raised Serbia's credit rating to BBB–. Serbia thus became an investment-grade economy for the first time in its history. The key factors behind such a decision include real GDP growth relative to the pre-pandemic level, substantial increase in FX reserves, reduced share of public debt in GDP and responsible conduct of monetary and fiscal policies.

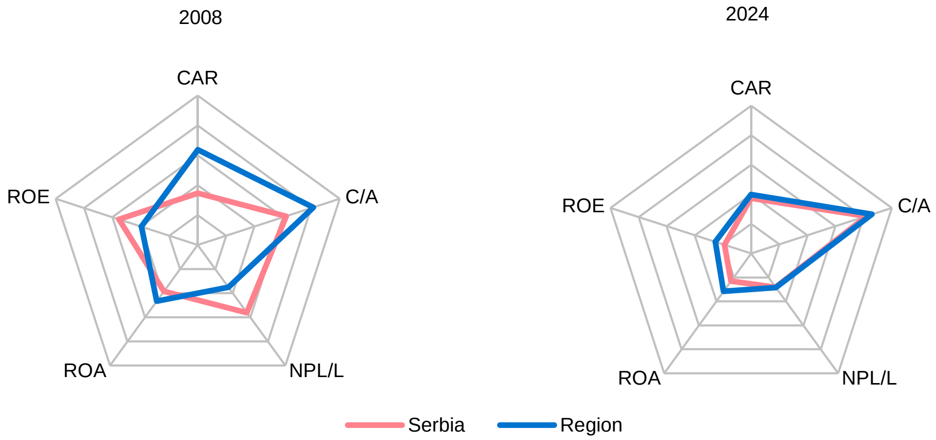
IV.2 Financial soundness indicators

The NBS uses several methodological approaches to assess the stability of the financial system in Serbia. These approaches enable a comparison of financial stability indicators in the regional context and provide an overview of their dynamics during the observed period.

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 2024: a) regulatory capital adequacy, b) Tier 1 capital relative to balance sheet assets, c) NPL ratio, d) return on assets, and e) return on equity.

Financial soundness indicators show that the capitalisation of the Serbian banking sector is above the regional average in terms of the capital adequacy ratio, but also in terms of the Tier 1 capital to balance sheet assets ratio. The share of NPLs in total loans reached a new record low level at end-2024 (2.5%), which is below the regional average. Even amid heightened geopolitical tensions and deceleration of the global economic growth, the quality of bank assets has been preserved both in Serbia and the region. Profitability of

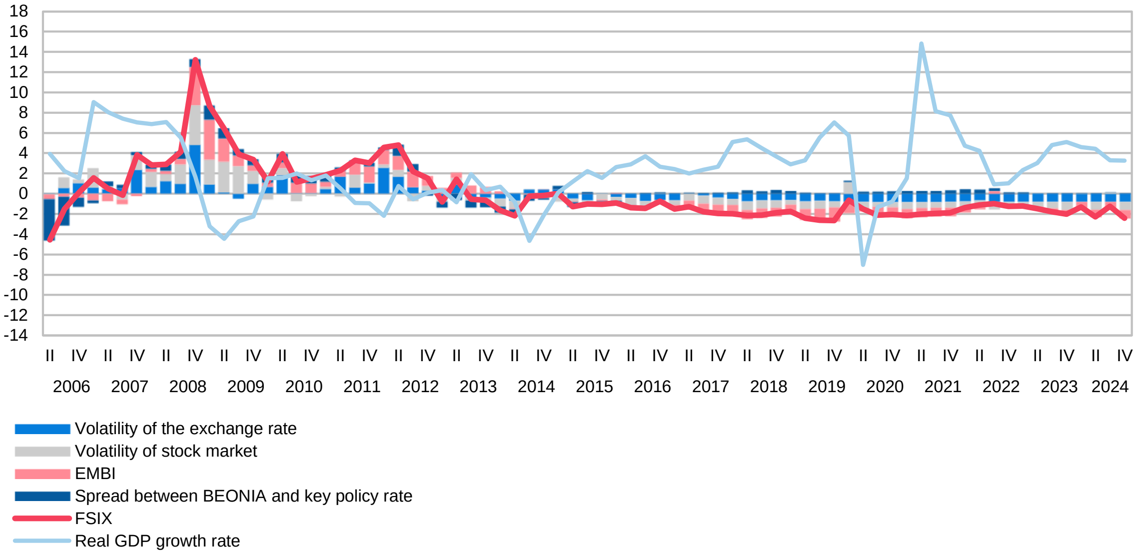
Chart IV.2.1 **Financial soundness of the Serbian banking sector compared to regional average**



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 – Tier 1 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: Serbia, Bosnia and Herzegovina, Hungary, North Macedonia, Poland, Bulgaria, Turkey and Croatia. Region FSIs are non-weighted averages of the individual countries' FSIs.
****Last available data for 2024.
Sources: NBS and IMF.

[273] RS Official Gazette, No 19/2025.

Chart IV.2.2 **Financial Stress Index (FSIX) and GDP growth**
(standardised deviations and GDP growth rate in %)



Source: NBS.

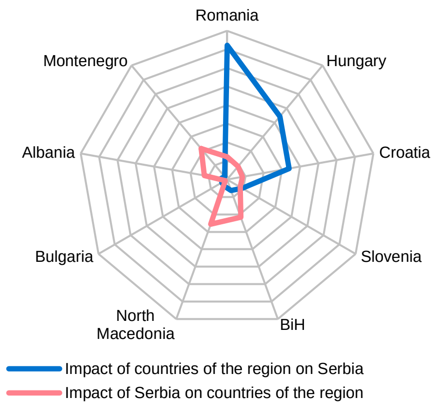
the Serbian banking sector increased in 2024, reflecting largely the pick-up in lending activity in the past year against the backdrop of globally higher interest rates. In 2024, the banking sector of Serbia and the region as a whole posted positive results. Serbia's ROA and ROE were above the region's average.[274] Owing to the preserved asset quality, high capitalisation and profitability, the Serbian banking sector can be assessed as stable.

In addition to the above indicators, financial soundness is also measured by the Financial Stress Index (FSIX). FSIX is a composite index,[275] introduced to identify episodes of heightened financial stress, and their duration, which is why it covers the relevant indicators of the Serbian financial market and economic activity trends. Positive values of the indicator suggest an above-average financial stress level, while negative values point to a below-average stress level.

FSIX recorded below-average values in 2024, lower even than those recorded in 2023. The analysis of individual components indicates that the values of almost all components were lower at end-2024 than at end-2023. A low FSIX level mostly reflects the decrease in risk premium on dollar debt, the relatively low stock exchange volatility as measured by the BELEX 15 index, and the exchange rate stability.

The common lender channel indicator is applied to recognise the risk of financial crisis contagion across countries reliant on the same source of funding. This channel of risk contagion is particularly pronounced in small and open economies, i.e. in financial sectors dominated by foreign banks or their subsidiaries. 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[276] 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 in the region.

Chart IV.2.3 **Shock transmission via common lender channel***



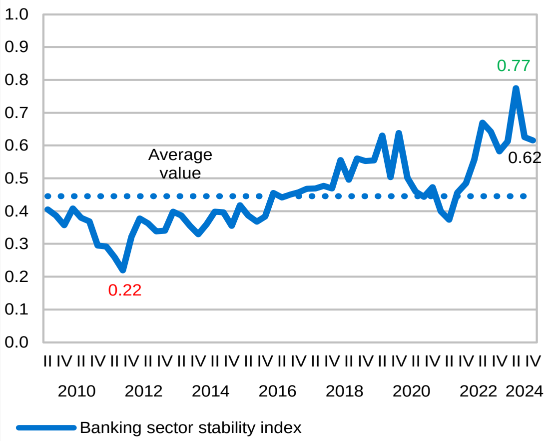
* Data as of Q3 2024.
Sources: BIS and NBS.

[274] For more information on the characteristics and trends in the Serbian banking sector, see Chapter II.1 Banking sector.

[275] For more information on indicator methodology, see the *Annual Financial Stability Report – 2012*.

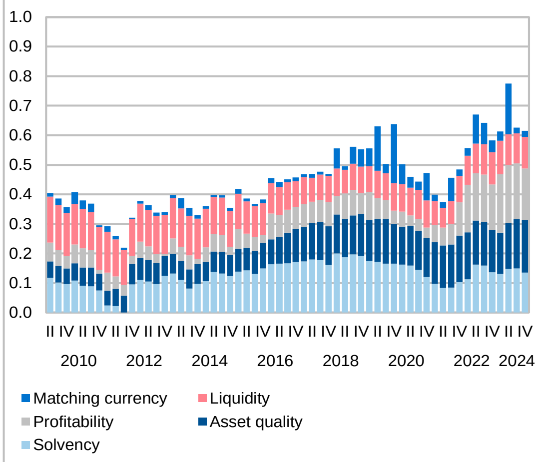
[276] For more information on indicator methodology, see the *Annual Financial Stability Report – 2013*.

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.

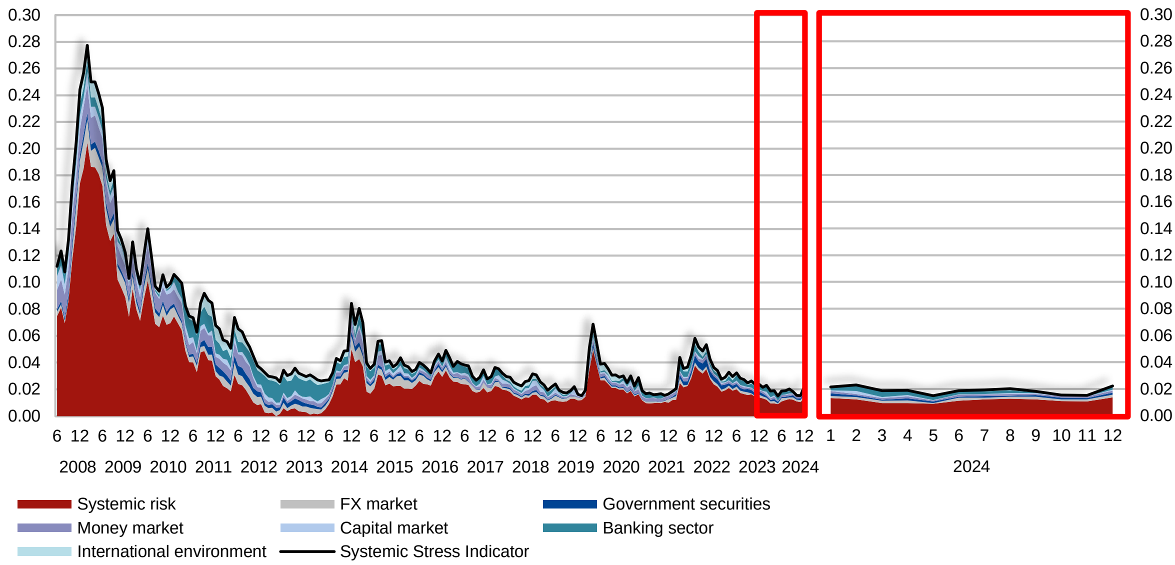
The analysis is based on consolidated BIS reports on cross-border exposures of global banking groups. These reports cover a large number of banks and countries and are therefore highly suitable for a comparative analysis of cross-border exposures. We used the latest available data on the exposures of banking sectors 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 potential 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, Montenegro and Bosnia and Herzegovina.

To capture potential risks to financial stability arising from the banking system, the NBS created the banking sector stability index.[277] The index is calculated based on indicators of solvency, asset quality, profitability, liquidity and currency matching of banking sector assets and liabilities.

The banking sector stability index rose relative to the previous year and measured 0.62 at end-2024, indicating a high level of stability of the Serbian banking sector.[278] In terms of individual components, it was the higher profitability and solvency, as well as the preserved bank asset quality owing to the low share of

Chart IV.2.6 **Systemic Stress Indicator dynamics**



Source: NBS.

[277] For more information on indicator methodology, see the *Annual Financial Stability Report – 2014*.

[278] The values above 0.5 indicate higher stability level, while those below 0.5 indicate lower banking sector stability level.

NPLs in total loans, that contributed the most to banking sector stability in 2024. A considerable contribution to stability also came from liquidity given the very high value of banking sector liquid assets. The smallest contribution to the banking sector stability index at end-2024 came from currency matching of banking sector assets and liabilities. This component increased significantly in Q2 2024 contributing to the maximum value of the index at the time.

To identify crisis periods and assess the level of systemic stress in the Serbian financial system, the NBS developed a methodology to construct a composite indicator of systemic stress.[279] This indicator is based on the methodologies developed by the European Systemic Risk Board and the ECB to analyse the risks in various segments of the financial system and to assess the level of the overall systemic stress. The systemic stress indicator covers 25 indicators which reflect 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.

The systemic stress indicator suggests that 2024 was a year of low risk, with a low and stable systemic component. At end-2024 it was somewhat lower than at end-2023. The decrease in this indicator was driven by the trends in the international market due to a lower composite risk premium. The government securities market worked in the same direction owing to preserved macroeconomic indicators and the consequent decline in the country's risk premium. Overall, the systemic stress indicator was at a low level, reflecting the resilience and preserved stability of the financial system at large, despite global geopolitical and financial uncertainties.

[279] Kovačević Darko (2021) "Assessment of the Republic of Serbia's Systemic Risk and the Likelihood of a Systemic Crisis", *Working Papers Bulletin*, p. 73–119. National Bank of Serbia.

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