Periodical Part

Financial stability report for the Republic of North Macedonia in 2021

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National Bank of the Republic of North Macedonia
Financial Stability and Macroprudential Policy Department

FINANCIAL STABILITY REPORT FOR THE REPUBLIC OF NORTH MACEDONIA IN 2021

August 2022

Contents

List of Charts

List of tables

Summary

In 2021, a key feature of the international and domestic environment was the gradual economic recovery from the pandemic, which in the previous year posed serious health and economic challenges to the countries worldwide. Such movements were highly conducive to the domestic financial sector and to the maintenance of financial stability. However, since early 2022, with the growth of geopolitical tensions and the outbreak of the war in Ukraine, the positive prospects for economic recovery have deteriorated sharply, primarily for the European countries due to their geographical proximity and economic and financial links with conflict areas. The new circumstances have significantly exacerbated inflation risks, with price pressures present since the second half of 2021 due to disrupted energy and commodity markets and disruptions in global supply chains caused by the pandemic. The central banks responded to the inflationary pressures by normalizing the monetary policy, which influenced the expectations of global financial markets, which already indicate tightening of financing conditions, after the long period of low interest rates. All this significantly changes the environment for the domestic financial sector and creates challenges to financial stability, which has been successfully maintained throughout the pandemic period.

The crisis in Ukraine has no direct impact on the domestic financial sector since our financial sector has no significant financial ties with Russia and Ukraine or capital from these two countries. **The consequences of the crisis have so far been mainly transmitted to the domestic economy through the movements on the global energy and commodity market, creating pressure on domestic inflation, with some impacts felt through the expectations channel.** Right after the outbreak of the war, uncertainty increased significantly, urging part of the population to purchase foreign currency, which is a frequent behavior in times of crisis. Also, unfounded speculations about the denar stability intensified and created short-term pressures on the foreign exchange market and the banks' deposit base, which were quickly overcome thanks to the rapid and bold reaction of the National Bank. The National Bank was constantly present on the foreign exchange market by replenishing the supply of foreign currency and by taking targeted measures such as changing the reserve requirement instrument that is further separating the reserve requirement rates from a currency aspect for stimulating savings in domestic currency. The exchange rate stability was maintained successfully reaffirming the National Bank's strong commitment for consistent implementation of the strategy of exchange rate peg, guaranteed by the appropriate level of foreign reserves. The global price growth that is transmitted to the domestic economy through import prices in March 2022 urged the National Bank to gradually increase the policy rate and thus to calm down inflationary expectations and maintain medium-term price stability.

The deteriorating prospects for the global and above all European economy caused by the Russia-Ukraine war, created risks for the domestic economic activity, which recovered and increased by 4% in 2021. Economic recovery was supported by reopening of economies and easing of containment measures after immunization and improvement of foreign demand, as well as the strong support of policies to address the pandemic effects. The external position of economy was relatively stable during the year, enabling further growth of foreign reserves and maintaining relatively stable private (household and corporate) debt to GDP.

Movements in the corporate sector during the year normalized after the strong impact of pandemic, as seen through the growth of sales and improved profitability. The most affected activities also recovered, such as the catering which, despite reporting the highest growth in sales, still failed to return to the path of profitability. The recovery is also slower among micro-

entities that remain the most vulnerable group with the greatest exposure to operational risks. The corporate debt increased in 2021, but measured through its share in GDP, it is stable and below the derived vulnerability threshold. Non-resident sector remains main creditor of the domestic corporate sector, and the debt to domestic banks has also increased. A significant part of the corporate debt has a currency clause and variable interest rates indicating an exposure to currency risk, which is limited due to the strategy of exchange rate targeting and the interest rate risk, which is especially important in the current conditions of changes in the interest rate cycle.

The real estate market proved to be resilient to the pandemic effects. The volume of transactions with real estate in 2021 significantly exceeded the pre-pandemic level, and the growth in the house prices accelerated above the long-term average and long-term trend. The growth in house prices partly reflects the factors on the supply side, such as increased costs of construction materials and the pandemic effects on the offer of apartments in the previous year. The solid growth of housing loans continues as one of the sources of financing real estate transactions, which contributes to preserving the demand on this market segment.

A second year in a row, the growth of housing lending constitutes almost half of the growth of total household debt, which in 2021 continued to increase at an accelerated growth pace, which was lower though than the growth of the nominal GDP. Households' solvency and liquidity ratios currently indicate a relatively limited systemic vulnerability of this sector. However, the debt is increasing faster than the growth of disposable income, which is beginning to affect some of the indicators of debt repayment ability. The growth of household debt, which is mostly long-term, increases uncertainty about the creditworthiness of customers, especially in the current conditions of rising inflation and expected growth of interest rates.

The banking sector successfully dealt with the pandemic risks and is ready to meet any challenges arising from the Russia-Ukraine war. This is largely due to the traditionally high liquidity and the appropriate capitalization of the domestic banking sector with its capital buffers built before by strengthening domestic regulations. Credit portfolio is sound and the rate of non-performing loans improved compared to the pre-pandemic period. The credit growth accelerated, supported by the growth of deposits, and was almost equally directed towards the households and the corporate sector. Profitability improved, which is an important internal source of new capital and the main driver of the improved solvency of the domestic banking sector. Credit risk remained the most significant risk to the domestic banking sector and its management becomes particularly important in the current context of high uncertainty in the surrounding that creates risks of unexpected credit losses in banks' balance sheets. In such circumstances, and in response to the initial increase in systemic risks in certain segments, in July 2022, the National Bank decided to introduce a rate of countercyclical capital buffer of 0.5% for exposures of the banks in the Republic of North Macedonia, which will start to apply from 1 August 2023. The introduction of the rate of countercyclical capital buffer is for prevention purposes and further strengthens the domestic banks' capital, which is crucial for the banking sector resilience to risks, as an additional asset to further strengthening of financial stability.

The banking sector resilience is also confirmed by regular stress testing that shows that banks are resilient to shocks. According to the results of the stress test, the capital adequacy ratio of the banking system would remain above the requirement of 8% even in a hypothetically worsened macroeconomic scenario with an assumed stagflation in 2022 with a slow economic recovery in the following year. The demonstrated resilience of the banking sector to simulated shocks shows that the capital available to the system provides sufficient capacity and space to successfully absorb any losses and maintain operating stability in the coming period.

Fully funded private pension insurance continued reporting growth in accumulated assets and improved investment returns in 2021, yet, the real returns declined over the seven-year period. The structure of pension fund assets is still predominated by investments in debt financial instruments, with the risk exposure emphasizing the importance of credit risk and price risk of foreign equity instruments. The challenges for pension funds in the coming period are associated with the acceleration of inflation, which may affect the real return on investments in the short term, amid potential pressure on the nominal rates of return due to increased volatility on the global financial markets after the onset of the Russia-Ukraine war. On the other hand, changes in interest rate cycle is a positive risk factor for the new investment in fixed income instruments.

In 2021, the **insurance sector** recovered from the shock of the pandemic and reported growth in activities, while maintaining high solvency, which is crucial for its stability. Insurance companies kept on applying relatively conservative investment approach in 2021, with a dominant share of domestic investments in liquid and less risky instruments, which is a solid basis for preserving their solvency, especially in the current period of high global uncertainty and volatility of foreign financial markets. The insurance sector is exposed to potential indirect influences of the Russia-Ukraine war associated with the price increase and the deteriorated economic performances that can be transferred to the insurance sector through increased costs for damages and possibly worsened insurance affordability provided that risks remain over a longer period. This would increase the pressure on the insurance sector profit, which in 2021 records a deterioration, mainly in non-life insurance. Analyzing the insurance sector, a positive risk factor is the change in interest rate cycle, which can increase investment returns and contribute to the insurance sector profitability.

Other financial institutions (savings houses, leasing companies, investment funds and financial companies) still have a small volume of activities and for now have a limited importance as a source of systemic risk for the financial stability.

Challenges to the domestic financial sector mainly arise from the increased geopolitical instability and associated risks to inflation and economic activity, which can be transferred to the operation of financial institutions mainly through the deterioration of creditworthiness of households and corporate sector. The extent and probability of materialization of these risks will depend on the development of the war in Ukraine and the associated economic implications. The rising and highly volatile path of global commodity prices, primarily on the energy market, creates unpredictability and increases costs for companies, which may eventually worsen operational efficiency and debt repayment ability. Price growth affects real household income, with potential effects on the loan repayment ability and the space for new borrowings in the coming period. The total household indebtedness is still moderate, which to a certain extent limits the systemic risks arising from this sector. However, the growth of borrowing, mainly in the form of longer-term housing loans, increases the exposure of the sector to risks, especially in the current conditions of increased inflation and expected growth of interest rates. The growth of housing loans is one of the sources of financing the demand for real estate, in conditions where the growth of housing prices has accelerated under the influence of supply factors. The real estate market movements do not imply weakening of demand and downward pressure on prices through this channel, although there are risks arising from the uncertain environment. Amid potentially sharper shift of the cycle, effects on the liquidity of pledged real estate at the banks are possible, which could ultimately lead to credit risk materialization. **It is critical that banks are properly capitalized and able to absorb risks, while taking macro-prudential measures in the area of countercyclical capital buffer further strengthens its resilience to shocks. In the period ahead, the National Bank will remain ready to take appropriate measures**

if necessary for maintaining stability of the banking sector and the overall financial system.

In the period ahead, we will continue with further coordinated monitoring and assessment of financial sector risks through the Financial Stability Committee, whose role was further strengthened with the adoption of the Law on Financial Stability in July 2022. With the adoption of this law, the Financial Stability Committee becomes legally established and institutionalized as an inter-institutional body responsible for monitoring the implementation of macroprudential policy in the Republic of North Macedonia and for coordinating activities for identification and monitoring of systemic risks to each financial system segment, which can affect those segments and the financial system as a whole when taking macroprudential measures and during the preparation for and management of the financial crisis. The Committee contributes to the maintenance of financial stability in the country. An important novelty is that the Law assigns a mandate to the competent authorities to undertake macroprudential measures, thus formalizing the macroprudential mandate of the National Bank in the banking area and the other competencies established by the Law.

In the long term, as well as globally, the domestic financial sector is also exposed to structural vulnerabilities related to climate change and digital security, which may affect risk management and eventually financial institutions profitability. Recognizing the importance of climate risks, the National Bank has determined green finance as a strategic goal and joined the international green finance network of central banks. Green financing data collection have begun, along with a survey among commercial banks on climate risks at the beginning of 2022. The survey results showed that the domestic banks are aware of the climate risks, but the management of these risks in general, is at an initial level, requiring guidance from the regulator. Thus in this area, the National Bank will be committed to collecting more detailed data for analyzing climate risks to the banking system and preparing green finance guidelines for banks, as well as planning stress tests for the banking system resilience to climate changes. The pandemic has further strengthened the trend of increasing digitization of economies, financial services in particular, which exacerbates the risks of digital attacks and is the reason for strengthening digital security. The National Bank carefully monitors the activities related to direct and indirect damages from organized cyber-attacks and, in accordance with the legal powers, continuously undertakes activities to strengthen the banking system resilience and prevent any materialization of these risks. For strengthening the specialized approach and coordination of supervisory activities in the field of information security, and observing the trend and good practices of other EU central banks in December 2021, the National Bank established a special organizational unit for supervision of information systems. Data from the domestic financial sector show that the situation is stable, with only occasional digital threats, with insignificant material financial damage. In the period ahead, the National Bank will continue to monitor both regional and global trends and will respond preventively in order to minimize digital security risks to the financial system.

I. INTERNATIONAL AND DOMESTIC ENVIRONMENT

1.1. International macroeconomic environment

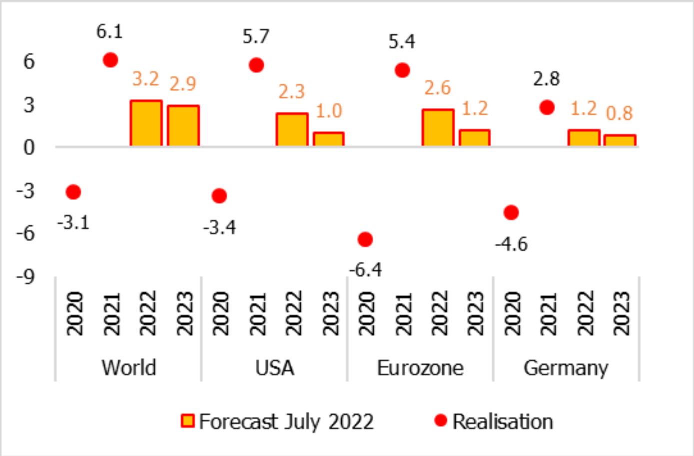
In 2021, the international environment was marked by economic recovery from the pandemic, which took place at a faster pace compared to previous crises. The extensive stimulus measures taken by policy makers in response to the pandemic contributed to such performance, which, together with the relaxation of containment health measures and immunization allowed the global economy to expand, which is estimated as the highest in the last forty years[1]. Besides the longevity of pandemic, the main challenges to the economic recovery arose from the disrupted global supply chains and the rise in commodities prices on the world markets that became increasingly significant since the second half of the year. Since the beginning of 2022, the global economy has faced yet another severe and unexpected non-economic shock, which is Russia's military invasion of Ukraine followed by introduction of severe economic sanctions against Russia by Western countries, the cessation of gas deliveries to Europe, disrupted supply chains, resurgence rates of COVID-19. These developments have highlighted the risks to global financial stability, visible through continued high indebtedness and liquidity, maturity and currency mismatches in balance sheets of economic agents. Given the protracted inflation, fueled by the Russia-Ukraine war, central banks in developed economies embarked on gradual tightening of the monetary policy. Euro area banks' solid capital and liquidity positions have increased their resilience to shocks compared to the global economic crisis, but they remain exposed to profitability risks due to the possibility of credit losses.

In 2021, the global economy gradually recovered from the severe impact of the pandemic, supported by the stimulus measures of policy makers, the further relaxation of containment health measures and immunization. Economic activity expanded by 6.1% globally in 2021. The economic recovery varied among countries, mainly as a result of the speed of immunization and the size of the stimulus packages. The economic recovery was also challenged by the need for occasional reintroduction of health care measures given the new corona virus strains. Such movements on a global scale caused disruptions in supply chains, which led to a slower recovery of industrial output and growth in commodity prices, primarily oil and food, on world stock markets, and to a significant increase in electricity and gas prices in the last months of the year.

[1] It refers to the period since the publication of data on global growth from the IMF (World Economic Outlook Database) database, since 1980.

Chart 1 Economic growth

Real annual GDP growth, in %



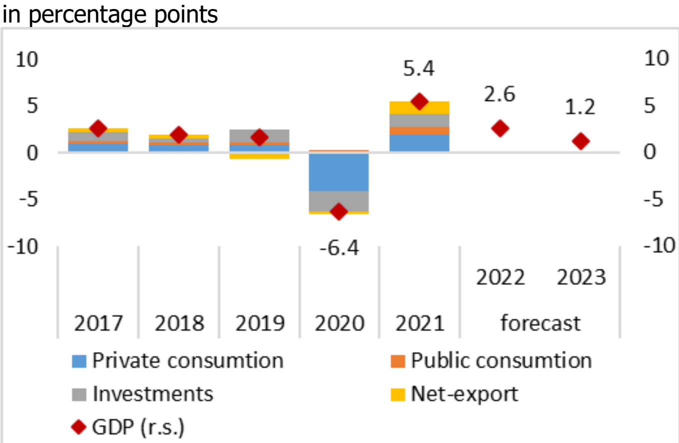
Source: IMF

In early 2022, amid COVID-19 pandemic, the global economy faced yet another strong and unexpected uneconomic shock - Russia's military invasion of Ukraine and the imposition of harsh economic sanctions against Russia by the Western countries. These developments have led to further strong growth of commodities prices, worsening economic prospects and reduced general confidence with risks of potential global recession. The latest estimates show more significant slowdown in global growth, which is expected to be 3.2% and 2.9%, respectively[2] in 2022 and 2023. Forecasts for global growth are accompanied by exceptional uncertainty and mostly downside risks to growth mainly related to the further development of the pandemic and the economic consequences of the war between Russia and Ukraine, which highlights the risks to financial stability and the economies as a whole.

After the deep decline of 6.4% in 2020 as a result of the health and economic crisis caused by the COVID-19 pandemic, **the euro area economy in 2021 grew** by 5.4%. Seen through the GDP structure, the growth comes almost equally from all its components. Within the euro area, Germany, as the largest EU economy and the country with the largest share in the foreign trade[3] of the Republic of North Macedonia, went up by 2.8% in 2021, despite the decline of 4.6% in the previous year. Having a low base effect, such performance results from the expanded economic activity in conditions of easing of containment measures due to the mass immunization, as well as further stimulating monetary and fiscal policy. Bearing in mind the significance of Germany as one of the engines of the European economy, this brought certain optimism, including for economies that have significant trade with this country, such as the Macedonian. Apart from Germany, economic expansion was also observed in all member states. Observations for the coming period so far point to further economic recovery, but at a slower pace. The euro area economy is expected to continue to grow in 2022 and 2023, but at a slower pace, with annual rates of 2.6% and 1.2%, respectively[4].

Chart 2 Contribution to the real annual GDP growth in the euro area

in percentage points



Source: Eurostat

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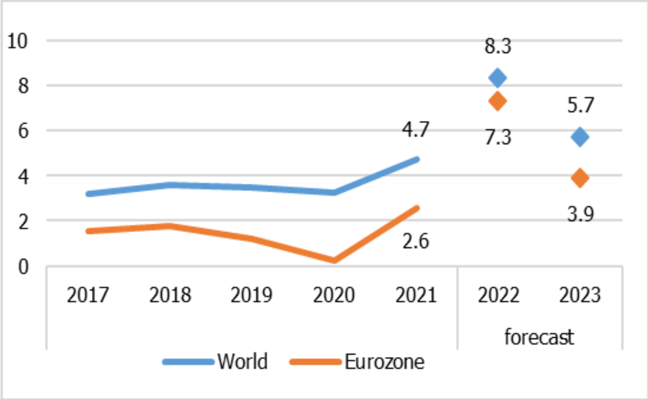
[2] Source: World Economic Outlook July 2022.
[3] Foreign trade to GDP of the Republic of North Macedonia with Germany for 2021 is 35.9% of GDP and has increased compared to 2020 (33.2% of GDP).
[4] Source: World Economic Outlook July 2022.

Chart 3 Inflation
Annual average rate, in %



Source: IMF.

The average inflation rate in the euro area accelerated significantly and in 2021 averaged 2.6% (0.3% in 2020). The acceleration of price growth is mainly driven by the movement of global commodities prices, especially food and energy. Price pressures mainly arise from supply factors related to price changes on the global markets, which is associated with the disruptions on energy markets and of the global supply chains. Uncertainty about price changes is still present and extremely high. Given the increased food and energy prices and expectations for further growth, the euro area inflation for 2022 is expected to average 7.3%, while in 2023 the average level will stabilize at 3.9%[5].

Movements in international financial markets during the year were influenced by investors' expectations for a solid global economic recovery. The stimulus measures of policy makers to support economies and the progress of immunization had a positive effect on investors' expectations. In such conditions, US government bond yields rose significantly on an annual basis, yields on the safest euro area government bonds followed this trend, but moderately, while stock prices registered double-digit growth rates, reaching historical highs. In early 2022, as the Fed began tightening monetary policy in response to rising inflation and inflationary expectations, as well as heightened geopolitical risks, the U.S. and the euro area treasury bills yields saw upward movement.

Chart 4 Bonds and shares market volatility index
in points

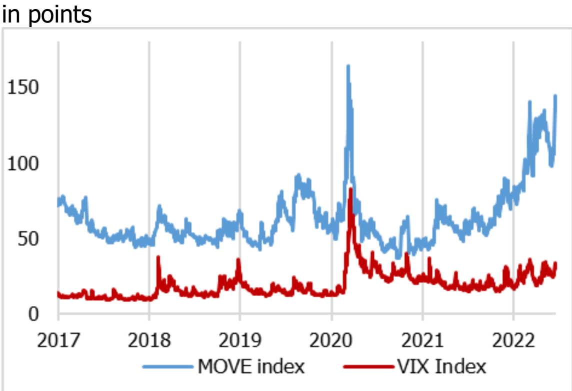
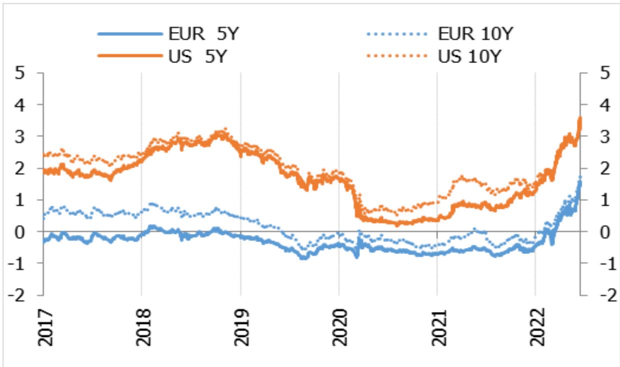


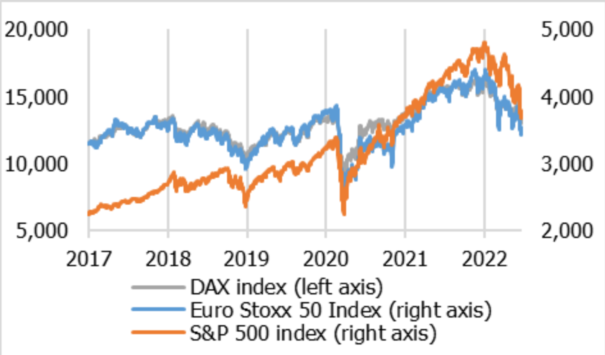
Chart 5 Yields on government bonds in the United States and the euro area
in %



Source: Online publishing service.
Note: The MOVE index (MOVE-Merrill Lynch Option Volatility Estimate) shows the implicit volatility of US government bonds over the next 30 days. It is calculated as a weighted average of bonds with different maturities, with the highest representation of 10-year government bonds. The VIX index (Volatility Index) is constructed based on the implied volatility of S&P500 index options. Downward index path indicates a decrease in volatility of trading terms.

[5] Source: World Economic Outlook July 2022.

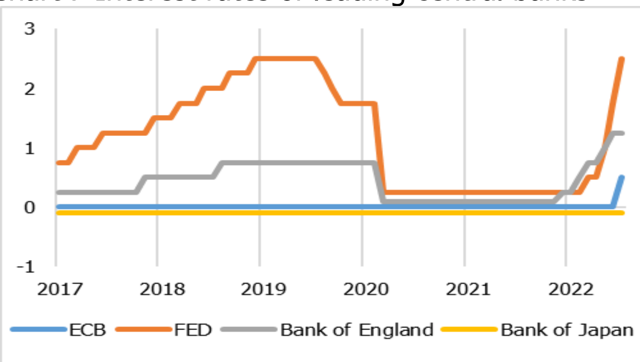
Chart 6 Movement of stock market share indices
in index points



Source: Online publishing service.

The US and euro area stock markets registered upward movements. The stimulus measures of policy makers ensured the smooth functioning of financial markets, ensuring an upward trend of the values of stock market indices in 2021. Movements in stock market indices affect the assets of domestic financial institutions that invest in foreign markets. Pension funds' placements in foreign stocks and in units and stocks in foreign investment funds -to- total pension funds' assets equals 28.9% (for mandatory pension funds) and 28.4% (for voluntary pension funds)[6]. The share of foreign equity instruments in total investment funds' assets equals 31.3%[7]. This share in banks and insurance companies is insignificant, making the direct exposure to price changes in these markets for these financial institutions highly limited. In early 2022, as a result of the increased uncertainty arising from the economic consequences of the war in Ukraine, the US and euro area stock market indices saw a significant downward movement.

Chart 7 Interest rates of leading central banks



Source: Web sites of central banks.

The central banks of the developed countries started with gradual tightening of monetary policy. The initial steps included reduction of securities portfolio in the central banks' balance sheets and announcements of termination of some asset purchase programs by the end of 2021, which gradually cut liquidity in the system. The cycle of monetary tightening by increasing interest rates began in December 2021, when the **Bank of England** made an upward correction of the policy rate (from 0.10% to 0.25%). By the end of July 2022, the Bank of England has repeatedly increased the policy rate to 1.25%. In March 2022, the **Fed**, for the first time in a long period, increased the interest rate target from 0.00%-0.25% to 0.25%-0.50%. By the end of July 2022, several further increases in the FED target rate followed to the level of 2.00%-2.50%. In response to prolonged inflation, and further fueled by the Russia-Ukraine war, in July 2022 the **ECB** increased the three reference interest rates by 0.5 percentage points (the rate on overnight deposit facilities, the main refinancing operations rate and the rate on overnight loans). The **Bank of Japan** kept the reference interest rate unchanged (-0.1%).

[6] The financial result of the pension funds from holding and managing foreign equity instruments for 2021 is positive. For more details, see the pension funds section of this report.

[7] The largest rise in annual rates of return in 2021 was observed in funds that invest in equity instruments where the cyclical movement of rates of return is most pronounced. Thus, the annual rate of return of these funds as of 31.12.2021 was deep in the positive zone, increasing from -2.6% at the end of 2020, to 20.1% as of 31.12.2021. Aggregately, the annual rate of return of all investment funds climbed to 9.6% at the end of 2021 (from 0.2% as of 31.12.2020).

Chart 8 Euro/US dollar

Source: Eurostat

The value of US dollar against the euro continued to increase. At the end of 2021, the US dollar was higher by 8%, on an annual basis (the currency pair EUR/US dollar was 1.1326). The trend of strengthening the US dollar against the euro particularly intensified in the first half of 2022, largely due to the faster tightening of monetary policy by the Fed relative to the ECB, and the increasing interest of investors in the US dollar, amid high uncertainty and pronounced geopolitical risks (the Russia-Ukraine war). In the domestic context, given the policy of nominal denar/euro exchange rate peg and the largest representation of the euro among foreign currencies in the banks' balance sheets, changes in the euro/US dollar currency pair do not have a significant impact on the currency structure of the balance sheets of the Macedonian banks.

The accelerated recovery of economic activity significantly reduced budget deficits in almost all euro area countries, which subsequently affected debt positions. The improved performance of budget deficits is largely explained by the automatic stabilizers and improved budget revenues, despite the continuation of stimulus measures related to the pandemic in certain countries. The budget deficit across euro area in 2021 was 4.7% of GDP and decreased on an annual basis (7.1% of GDP in 2020). Government debt in the euro area was estimated at 97.4% of GDP at the end of 2021 (99.2% of GDP in 2020), and expected to further decline over the next two years to 92.7% of GDP in 2023[8]. However, the tightening of financing conditions, amid high uncertainty surrounding the developments of the Russia-Ukraine war, increases the risks for sustainability of public finances within the euro area, which, given the high public debt, emphasizes the fiscal vulnerability.

Chart 9 Budget deficit, euro area
in % of GDP

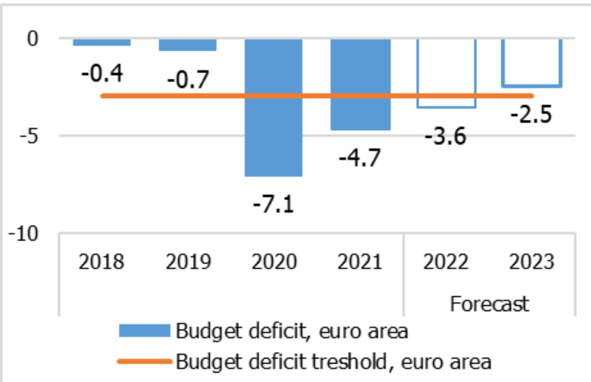
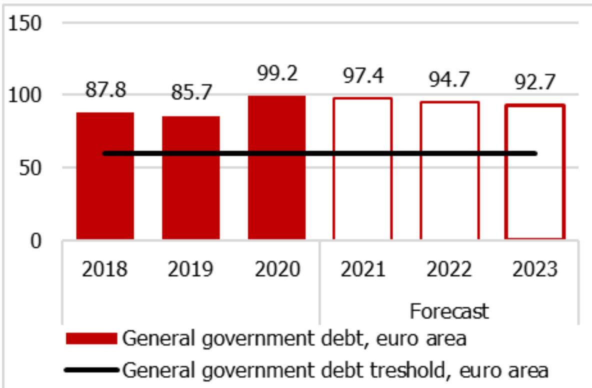


Chart 10 Government debt*, euro area
in % of GDP



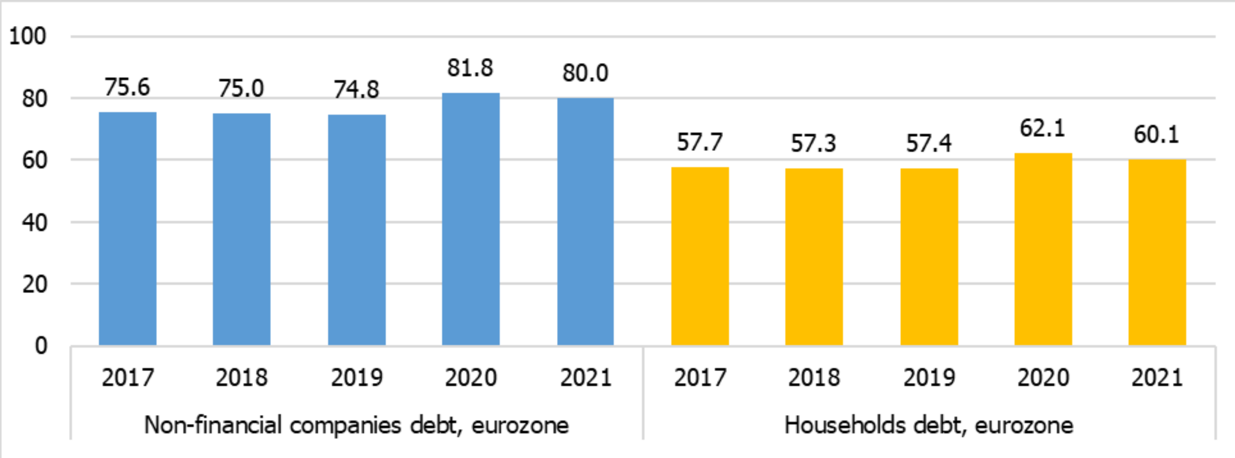
Note: 3% threshold for budget deficit to GDP and 60% threshold for government debt to GDP under the Stability and Growth Pact.
*General government debt.
Source: European Commission, Spring 2022 European Forecasts

Private debt decreased moderately, but is still high. Euro area corporate debt declined to 80% of GDP in 2021, down from 81.8% of GDP in the previous year. An annual

[8] European Commission, Spring 2022 European Forecasts.

decrease was also recorded in household debt to 60.1% of GDP in 2021. However, debt positions of the corporate sector and households remain higher than pre-pandemic levels and represent a significant source of vulnerability and a key challenge to financial stability in the coming period, especially considering the developments at the beginning of 2022.

Chart 11 Private non-financial sector debt (corporate sector and households)*, euro area
in % of GDP



*Private non-financial sector debt.
Source: ECB.

The euro area banking sector continued with solid lending and strengthened resilience to shocks. Euro area banks continued to provide credit support to the real sector smoothly throughout 2021, which was made possible by solid capital and liquidity positions. Authorities' measures in response to the pandemic also made a contribution and allowed for some regulatory flexibility, with the aim of mitigating any adverse effects of the crisis on the balance sheets of these institutions. The adequacy ratio of banks in the euro area in 2021 remained at the level of the previous year (19.5%). Liquidity Coverage Ratio (LCR) at the end of 2021 was 173.4% and increased in comparison to the end of the previous year (171.8%). Return on equity and return on assets in 2021 (6.7% and 0.4%, respectively) improved and returned to pre-pandemic levels. However, amid extremely uncertain landscape that can affect the creditworthiness of households and the corporate sector, ensuring sustainable profitability is still one of the key challenges for the euro area banks, with possible risks to financial stability.

Table 1 Main indicators for the performance of euro area banks

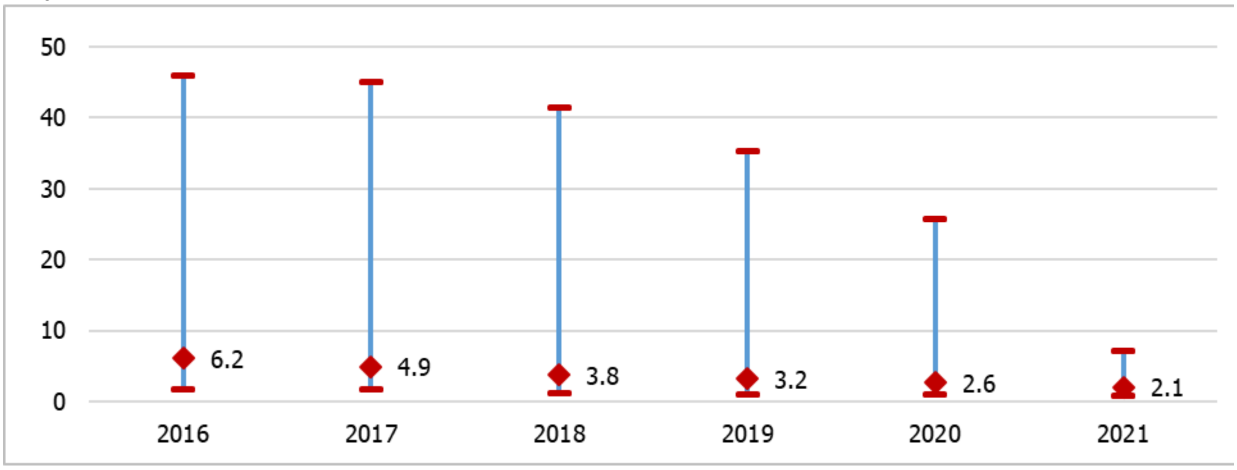
		Q4.2018	Q4.2019	Q4.2020	Q4.2021
Profitalbility	Cost efficiency*	65.9%	65.8%	66.0%	64.3%
	ROE	6.2%	5.2%	1.5%	6.7%
	ROA	0.4%	0.4%	0.1%	0.4%
Asset quality	Non-performing loans coverage				
	Non-performing loans	3.8%	3.2%	2.6%	2.1%
Capital adequacy and leverage	Total capital ratio	18.0%	18.6%	19.5%	19.5%
	Tier 1 ratio	15.6%	16.1%	17.0%	16.8%
	CET 1	14.4%	14.9%	15.6%	15.5%
	Leverage ratio	5.3%	5.6%	5.8%	6.0%
Liquidity	Liquidity coverage ratio	145.0%	146.0%	171.8%	173.4%
Funding	Loan-to-deposit ratio	118.7%	116%	106.7%	104.4%

* Cost to income.
Source: ECB.

The rate of non-performing loans in the euro area continued to decrease and at the end of 2021 was 2.1%, which is the lowest level since 2008. Authorities' measures to enable regulatory relief and postponement of loan repayments by the private sector, contributed to reducing the rate of non-performing loans and improving the quality of European banks' assets. However, risks to the credit portfolio quality for the next period have been highlighted, and may create pressures on the profitability of European banks.

Chart 12 Non-performing loan rate of banks in the euro area

in %



Note: The chart shows the lowest and highest value of indicator across the euro area banks and average value of the indicator for the banking system in the euro area.
Source: ECB

1.2. Domestic macroeconomic environment[9]

During 2021, the domestic economy began to recover from the strong impact of the pandemic in the previous year, which was supported by easing of containment measures and foreign demand recovery, as well as the strong support for policies to overcome the crisis implications. Growth was widespread in most economic sectors, indicating a comprehensive real sector recovery, including the most affected activities of the service sector, which recorded the highest growth. However, new challenges from the beginning of 2022 in the form of geopolitical tensions and the war in Ukraine dampened economic optimism and worsened expectations globally, which could adversely affect the domestic economy. Risks associated with disrupted food and energy markets, which are the main driver of inflation as a global phenomenon and are transmitted to the domestic economy through import prices, are particularly emphasized. The change in interest rate cycle is yet another potential factor of influence on financial stability in the coming period with a possible increase in borrowing costs.

During 2021, the domestic economy recovered from the health crisis effects and reported a real annual GDP growth of 4%. Domestic demand, particularly personal

[9] For more information on the domestic macroeconomic environment see the Annual Report of the National Bank for 2021.

consumption and investments, are drivers of growth, given the more favorable environment, strong fiscal stimulus to ease crisis effects and loose monetary policy. On the other hand, net exports had a negative contribution to GDP, amid imports acceleration, especially in the last quarter, partly under the pressure of the energy crisis. Analyzed by activity, the growth was driven by services (trade, transport, tourism), which were among the most affected by the health crisis. Given the disruptions in supply chains and rising prices of raw materials, industry had a neutral contribution to growth in 2021, while construction once again declined.

Chart 13 Real GDP growth
in %

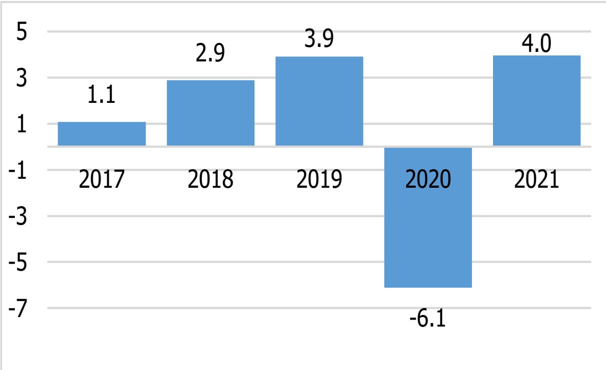


Chart 14 GDP structure, by component
contributions, in percentage points

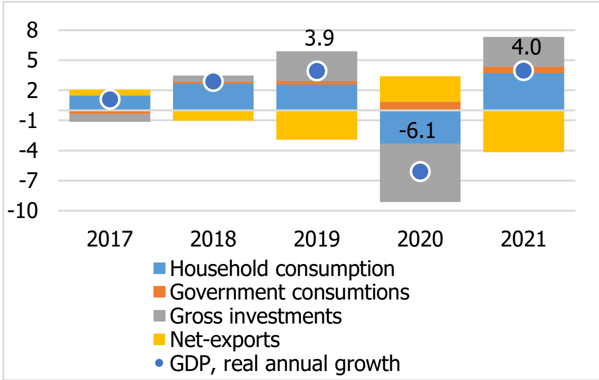


Chart 15 Contribution to the real annual GDP growth, by activity

in percentages and percentage points

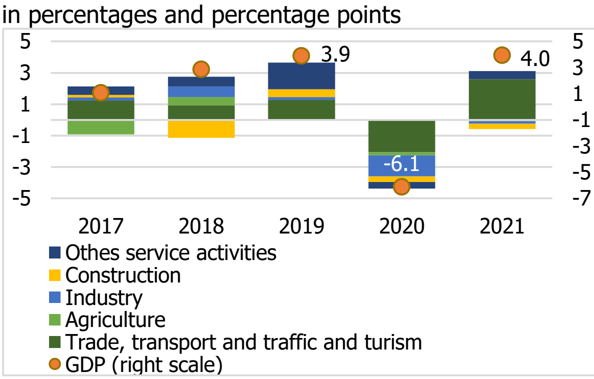
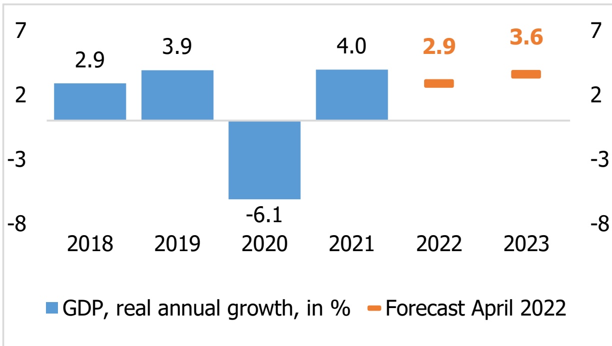


Chart 16 Real GDP growth, actual and forecast

in %



Source: State Statistical Office and National Bank for GDP forecast
Note: GDP data for 2020 are preliminary, and data for 2021 are estimated.

From early 2022, the deteriorating global landscape due to the war in Ukraine has created uncertainty about the economic prospects of the European, and consequently, the domestic economy. The latest April[10] macroeconomic forecast of the National Bank estimates slower economic recovery in 2022 - 2023 (growth of 2.9% and 3.6% in 2022 and 2023, respectively), but still exceeding the pre-pandemic level in 2022. The risks are predominantly downside, which highlights the risks to financial stability that may spill over to the financial sector through the deterioration of the household and corporate creditworthiness. In this light, it is particularly important that financial institutions continue prudent risk management in order to preserve financial sector stability.

[10] For the latest National Bank forecasts from April see the Quarterly Report, May 2022.

Chart 17 Domestic inflation and foreign effective inflation, annual growth rates and forecast

in %

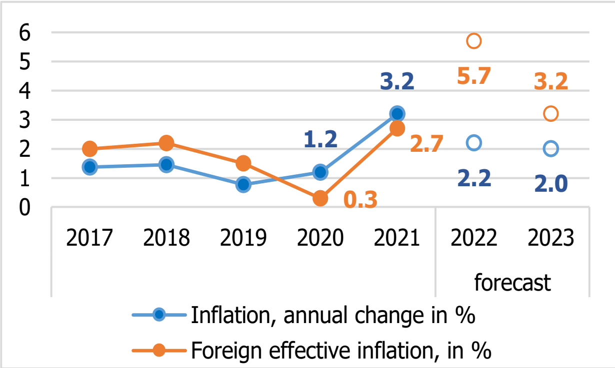
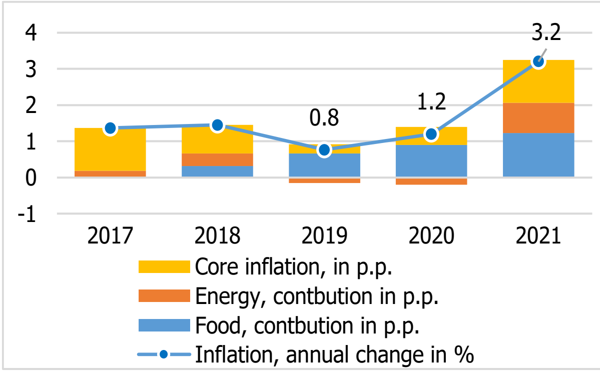


Chart 18 Volatile (food and energy) and long-term component of inflation

annual contributions, in percentage points



Source: SSO, Eurostat and National Bank assessments.

During 2021, the inflation rate moderately accelerated, but remained at a relatively low level and averaged 3.2% (1.2% in 2020). Growth in the general price level in 2021 was mainly driven by supply-side factors, primarily disrupted supply chains that caused commodity prices to rise on world markets, which were passed on to the domestic economy through import prices. Domestic factors also made an impact, i.e., the second round effects from the administrative and regulatory changes from the previous year[11], which contributed to the growth of the energy component of inflation. Analyzed the dynamics, price growth accelerated from the second half and especially towards the end of the year, which is why in December 2021 the Government adopted a Decision on determining the trade margin caps on basic food products in wholesale and retail trade[12], which remained in force during the first half of 2022. Core inflation increased moderately and averaged 2.4% in 2021.

The war in Ukraine pronounced the risks of protracted global inflation, which, due to the high import dependence of the domestic economy, is transmitted to domestic prices. In such circumstances, the latest National Bank macroeconomic forecasts from April expect the inflation rate in 2022 to average 8.8%, followed by stabilization and expected inflation of 3% in 2023. However, inflation risks are mostly negative, which is a potential source of vulnerability for households and their debt sustainability, especially considering that more than half of consumption is related to food and energy. Higher costs are risk factors for the corporate sector as well, which may worsen performance and impair the ability for regular debt repayment.

[11] Energy Regulatory Commission (ERC) decided to increase the electricity price by 7.4% from 1.8.2020. Furthermore, ERC decided to increase electricity price by 12.4% (without VAT) from 1 July 2021, but by reducing VAT (from 18% to 5%), the electricity price including VAT has remained unchanged. For more information, visit the ERC website www.erc.org.mk.

[12] On 4 December 2021, the RNM Government made a decision to freeze prices of bread, sugar, flour, edible sunflower oil, milk, fresh meat and meat products, cheese and cottage cheese at the level of 1 December. On 14 December, this list was expanded to rice, eggs and pasta. The decision to freeze prices of basic food products from early December was temporary and initially valid until 31 January 2022, but was later extended until 28 February 2022. Due to the method of SSO's price screening (in the middle of each month), this decision did not have a full effect when screening prices for December 2021 (https://vlada.mk/node/27162; https://vlada.mk/node/27234 and https://vlada.mk/node/27591).

Chart 19 Total and primary budget balance
in % of GDP

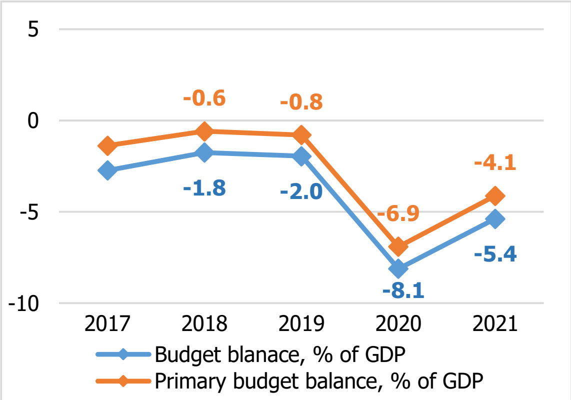
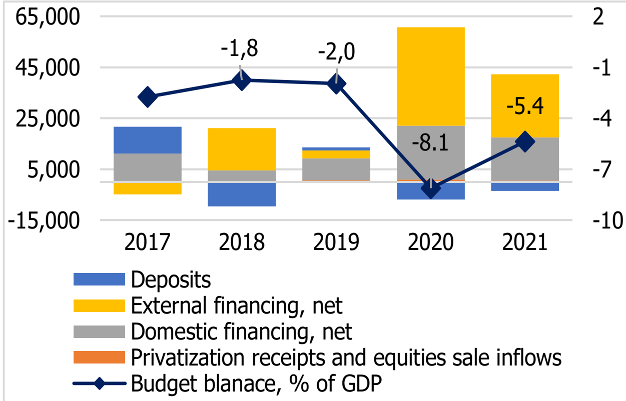


Chart 20 Total budget balance funding structure
in millions of denars in % of GDP



Source: Ministry of Finance and National Bank calculations.

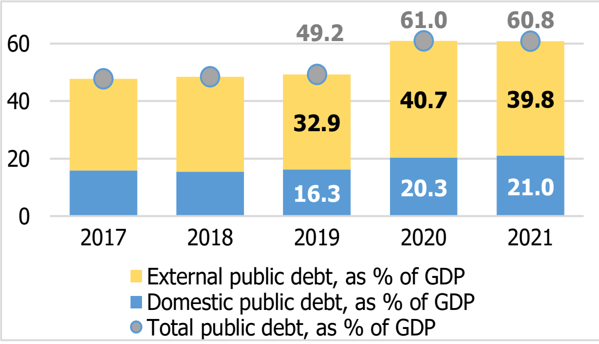
Amid economic recovery from the crisis, the 2021 Budget reduced the pandemic-related expenses accordingly, but continued to support the economy through targeted measures. The growth of budget expenditures slowed down and almost halved on an annual basis. On the other hand, after the fall in the previous year under the influence of the pandemic, budget revenues recorded a rapid growth, which was mainly due to higher tax revenues as a result of the start of economic recovery. Under such circumstances, the budget deficit narrowed in 2021 to 5.4% of GDP, after the significant expansion of 8.1% of GDP in 2020. Primary budget balance[13] followed the same trend and decreased to 4.1% of GDP in 2021 from 7% in 2020. In 2021, the budget deficit was mostly financed through external government[14] borrowing. The domestic debt also increased as a result of the new issues of government bonds[15]. Public debt nominally increased at a rate close to the nominal GDP growth, which contributed to maintaining relatively stable share of public debt in GDP of 60.8% in 2021 (61% in 2020).

[13] The primary budget balance does not include repayments of current loan liabilities (interest). This fiscal indicator is considered more appropriate because it does not contain the fiscal costs that affect public debt related to the implementation of the fiscal policy in the past period.

[14] The government borrowing on the foreign market is mostly due to the eighth Eurobond issued in early March worth Euro 700 million with a maturity of seven years and an interest rate of 1.625% and the withdrawal of the second tranche of the macro-financial aid from the European Union at the beginning of June in the amount of Euro 80 million (out of Euro 160 million of macro-financial assistance from the European Union to overcome the crisis caused by the corona virus), as well as the use of the new special drawing rights (SDR) to finance budget expenditures and repayment of the debt of the Republic of North Macedonia, which the International Monetary Fund (IMF) granted to the government on 23 August 2021, in the amount of about Euro 161 million. Moreover, in July 2021 the government repaid the Eurobond issued in 2014 in the amount of Euro 500 million.

[15] The increased needs for financing the 2021 budget were partly provided through the domestic primary market of government securities, thus increasing the stock of issued securities by Denar 18,444 million to Denar 146,309 million at the end of the year. The maturity of most of the new issues of government securities was longer than the maturity of securities that were about to fall due, which increased the average maturity of issued government securities, enhanced this financial market segment and increased the share of government bonds in the securities structure. Favorable movements were also registered in the currency structure seen through the growth of government securities portfolio in domestic currency.

Chart 21 Dynamics and structure of total public debt
in % of GDP



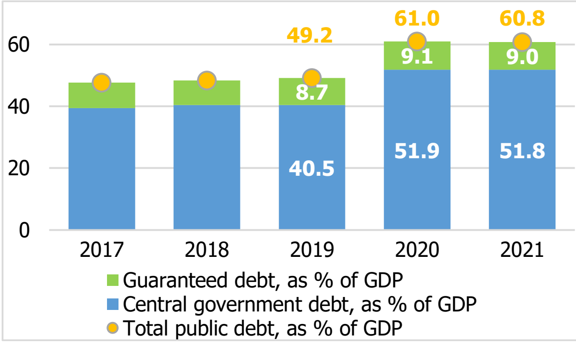


Chart 22b Dynamics and structure of central government debt, by residency
in % of GDP

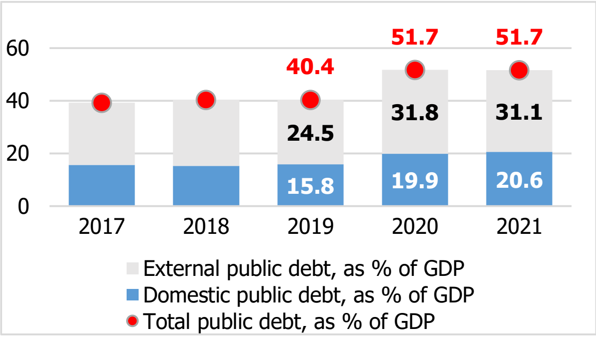
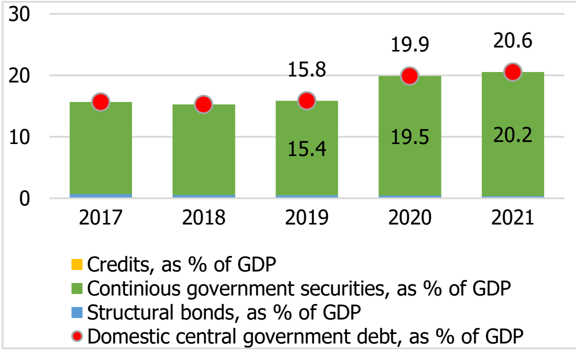


Chart 23c structure of domestic central government debt
in % of GDP



Source: Ministry of Finance and National Bank calculations.

Maintaining fiscal stability and public debt sustainability are important for maintaining financial stability given the high exposure of the domestic financial institutions to the government securities market. In that context, in the medium term, fiscal consolidation is important as it tends to reconstruct fiscal space, while simultaneously continuing the structural reforms to reduce economic vulnerability and increase growth potential. The fiscal strategy of the Ministry of Finance[16] envisages a phased fiscal consolidation in the medium term, with a reduced budget deficit as a percentage of GDP, which is expected to fall below 3% of GDP in the next five years. According to the Public Debt Management Strategy[17], as a result of the crisis effects, public debt is forecast to increase moderately until 2024 above the maximum limit established by the Strategy (60% of GDP). Then, in the period from 2024 onwards, through the fiscal consolidation measures, the debt level is expected to reduce and return within the limits of 60% of GDP.

The external position of the economy was stable during the year and enabled further growth of foreign reserves. The current account deficit of the balance of payments remained stable at 3.5% of GDP. Analyzed by component, trade deficit increased due to the faster growth of imports than the growth of exports of goods, mainly reflecting the increase in commodities prices on the world markets, especially energy sources. On the other hand, the easing of restrictive measures for free and unhindered cross-border movement normalized private transfers and increased inflows in net cash purchased on the foreign exchange market.

[16] Fiscal Strategy of the Republic of North Macedonia for 2023- 2025 (with prospects until 2027), May 2022.
[17] Public Debt Management Strategy of the Republic of North Macedonia for 2022 - 2024 (with prospects until 2026), May 2021.

Chart 24 Current account and main components
in % of GDP

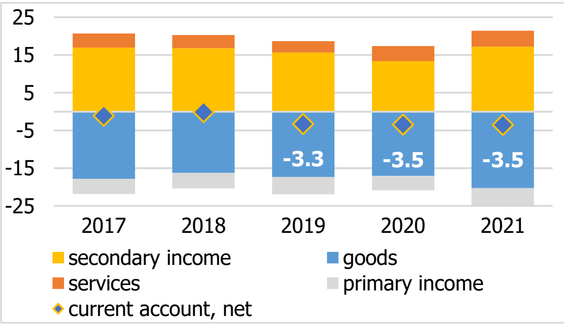
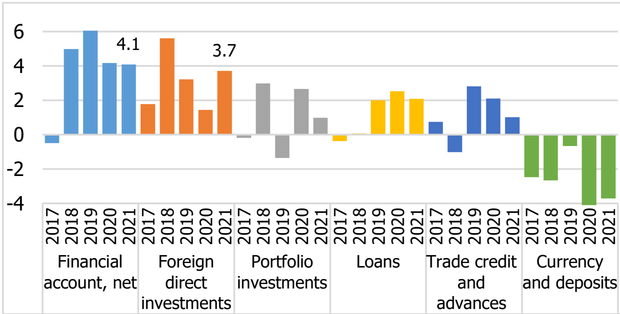


Chart 25 Financial account and main components
in % of GDP



Source: National Bank.

The financial account of the balance of payments, recorded net inflows of 4.1% of GDP, which ensured full financing of the current account deficit and growth of foreign reserves. Almost all financial account components registered favorable movements, with the greatest contribution made by foreign direct investments, which in 2021 equaled 3.7% of GDP, which is a significant growth of 2.3 p.p. compared to the previous year. A positive contribution to the financial flows in 2021 was also made through the portfolio investments, which are due to the external government borrowing on the basis of issued debt securities[18], net inflows of trade credits, as well as inflow from the new Special Drawing Rights (SDR) from the International Monetary Fund[19].

Chart 26 Gross foreign reserves, balances and share in GDP
balances, in millions of euros

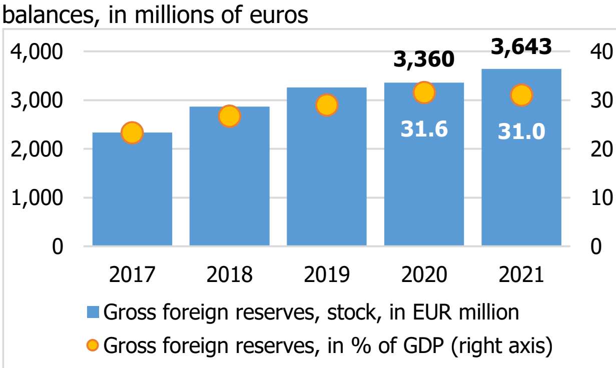
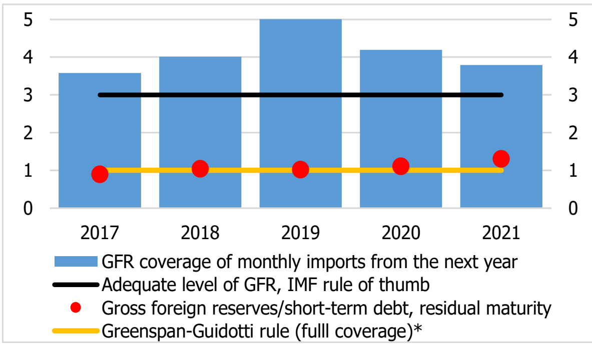


Chart 27 Foreign reserves adequacy ratios
in %



Source: National Bank.
Note: According to the Greenspan-Guidotti rule, the country has to keep full coverage of short-term debt (residual maturity) with foreign reserves.

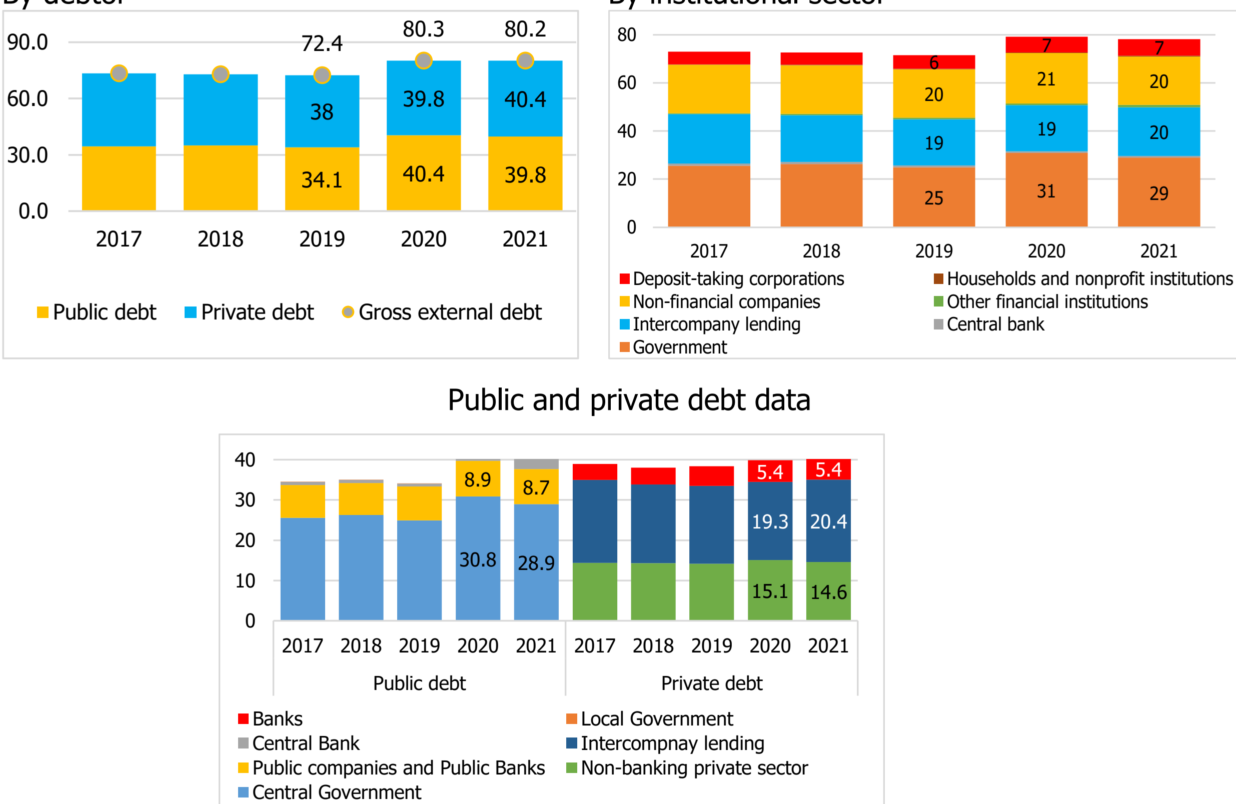
Foreign reserves increased in 2021 and continued to be maintained at an adequate level, which provides support to the exchange rate stability. In such conditions, the National Bank responded by further easing the monetary policy, whereby in March 2021 it again cut the policy rate from 1.5% to the historic low of 1.25%. It thus continued to contribute to maintaining conducive financial environment and credit cycle, as an important factor that supports economy in conditions of protracted pandemic. On the foreign exchange market, the

[18] In March 2021, the eighth seven-year Eurobond of RN Macedonia was issued worth Euro 700 million with the historically lowest interest rate of 1.625%, the funds of which were mostly used in July 2021 to repay the Eurobond issued in 2014.
[19] In August 2021, the International Monetary Fund granted the RN Macedonia new 134.5 million SDRs worth about Euro 162 million.

National Bank sold foreign currency in order to maintain balance between supply of and demand for foreign currency. Interventions were significantly smaller compared to 2020 and mainly conducted in the last quarter of the year, when price growth accelerated and the first effects of the energy crisis appeared. In conditions of prolonged price pressures under the influence of longer-term and stronger growth of import prices, the National Bank interventions in the first half of 2022 consisted of net sales of foreign exchange. Gradual normalization of monetary policy continued through changes in the policy rate, which was increased multiple times from 1.25% in March 2022 to 2.5% in July 2022. Interest rates on overnight and seven-day deposit facilities also increased. The National Bank has been using all available instruments to stabilize inflation expectations and maintain medium-term price stability. There were also changes to the reserve requirement setup by increasing the reserve requirement rate on foreign currency liabilities (from 15% to 18%) and decreasing the reserve requirement rate on denar liabilities (from 8% to 5%). These target measures are expected to encourage denarization on the banks' balance sheets and increase savings in domestic currency, which would be achieved through changes in the banks' interest rate policy and by offering relatively more favorable interest rates on denar deposits.

Chart 28 Gross external debt structure
in % of GDP

By debtor | By institutional sector



Source: National Bank.
Note: Gross external debt does not include central bank liabilities under repo agreements.

In 2021, the gross external debt[20] registered a minor decrease to 80.2% of GDP due to the reduction of the public debt both of central government (repayment of Eurobonds) and public enterprises (long-term loan repayment). On the other hand, private sector debt increased

[20] Gross external debt data does not include central bank liabilities under repo agreements.

mainly due to the higher intercompany debt, while other sectors reported debt reduction. Intercompany borrowing still accounts for about a quarter of the total gross external debt, with a solid share of trade credits (about 10%), which contributes to reducing vulnerability of the economy to the risk of excessive external debt, given that these two categories are relatively more flexible and less risky forms of debt.

The external debt solvency and liquidity data still point to relatively moderate external debt of the domestic economy. Gross external debt to GDP ratio is still the only indicator that classifies our economy in the group of highly indebted countries, while all other ratios point to low indebtedness.

Chart 29 Solvency as an external debt indicator
in %

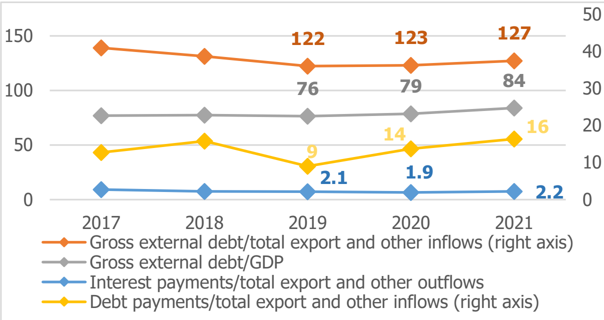
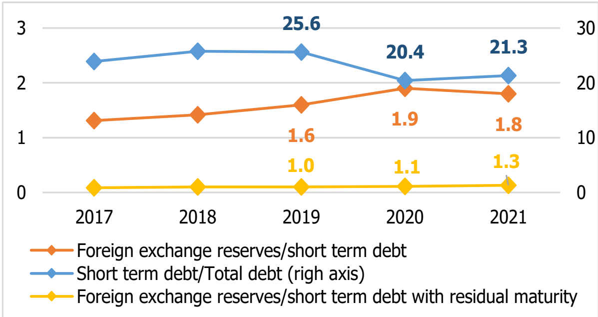


Chart 30 Liquidity as an external debt indicator
in %



Source: National Bank.
*Moderate debt criterion is taken from the World Bank's debt indicator compilation methodology, which implies using three-year moving averages of GDP and export and other inflows as denominators in the indicator compilation.
Moderate debt criterion:
Interest payment/export and other inflows: 12-20%
Debt payment/export and other inflows: 18-30%
Gross external debt/GDP: 30-50%
Gross external debt/export and other inflows: 165-275%
Foreign reserves/short-term debt with residual maturity 1; The country has to maintain full coverage of short-term debt (residual maturity) with foreign reserves.

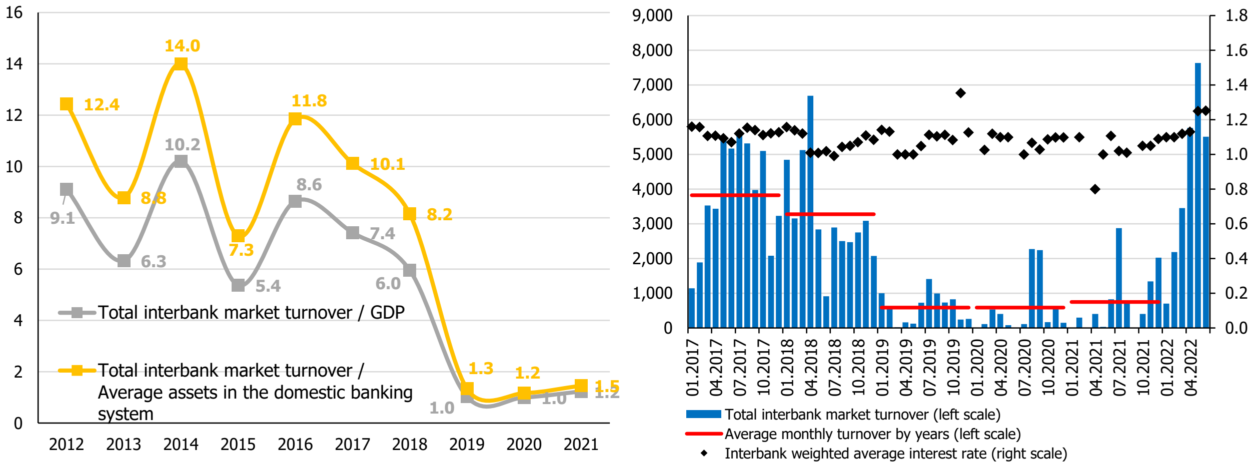
1.2.1. Financial markets

Domestic financial markets retained their modest significance for the financial system in 2021, and thus for financial stability. The turnover on the interbank market of unsecured deposits in 2021 increased (by 34.3% on an annual basis) and amounted to Denar 8.93 billion, but it still has a very low share in the gross domestic product[21]. In the last few years, this share has been maintained at around 1%. Equally modest and significant is the turnover for the banks themselves with a share of 1.5% of their funds. This is due to the high level of liquidity traditionally maintained by domestic banks, which only have a small and occasional need to borrow from the interbank market. **Since early 2022, amid increased challenges for the banks as a result of the uncertain environment, the importance of the interbank market for liquidity management of domestic banks has been increasing.** Banks obtained part of their liquidity needs on the interbank market of unsecured deposits, as well as on the repo market segment. The turnover on the two market segments increased significantly and in the first six months of 2022 amounted to about Denar 33 billion, mostly as a result of transactions with maturity of up to seven days, i.e. to overcome short-term liquidity needs. Banks applied active liquidity

[21] On the repo market segment in 2021, one repo transaction was concluded with government securities in the amount of Denar 140 million at an interest rate of 2.1%, which comes after a two-year absence of transactions on this market segment.

management to successfully overcame challenges and maintain stable and solid liquidity position, which is one of the pillars of the overall banking system stability.

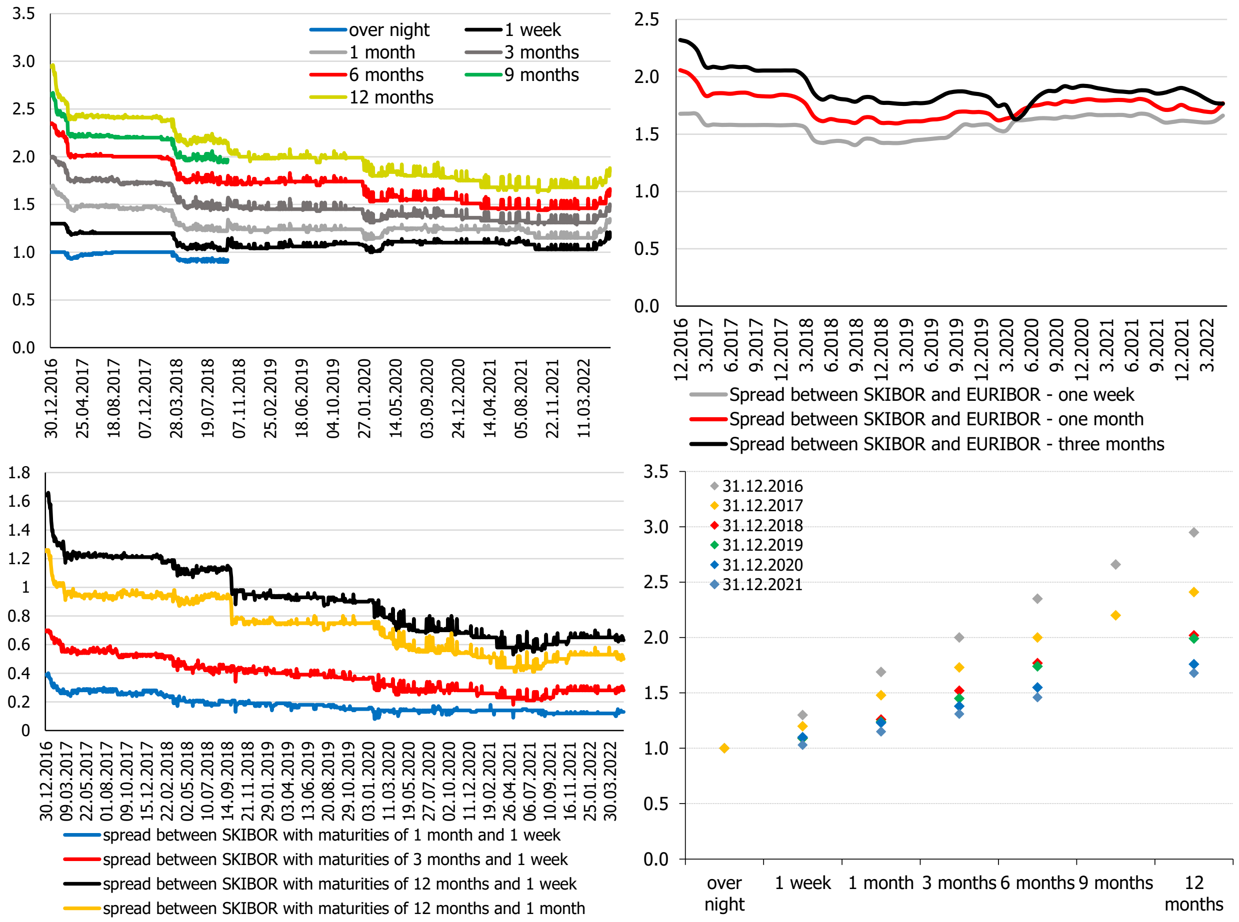
Chart 31 Indicators of the relative importance of the interbank market (left) and total turnover and interest rate on the interbank market (right)
in % and in millions of denars



Source: National Bank.

Interbank interest rates on the deposit market remained at a stable and low level throughout 2021. Having a cut of the National Bank policy rate (CB bill interest rate) in March 2021 by 0.25 p.p, the changes to SKIBOR were insignificant, with a slight downward trend in the year, especially in the long terms. This contributed to a slight tightening of implied term premiums. The interest rate on executed interbank transactions in 2021 remained relatively low, ranging from 0.8% to 1.11% on a monthly basis. In 2021, these interest rates included the average credit risk premium expressed through the spread of interest rates on the National Bank overnight and seven-day deposit facilities of 0.9 and 0.7 percentage points. Interest rates on the interbank market in the euro area (EURIBOR) remained in the zone of negative values in 2021 without major changes during the year. In such circumstances, the spread between the indicative quotations of SKIBOR and EURIBOR was maintained at a relatively stable level during the year.

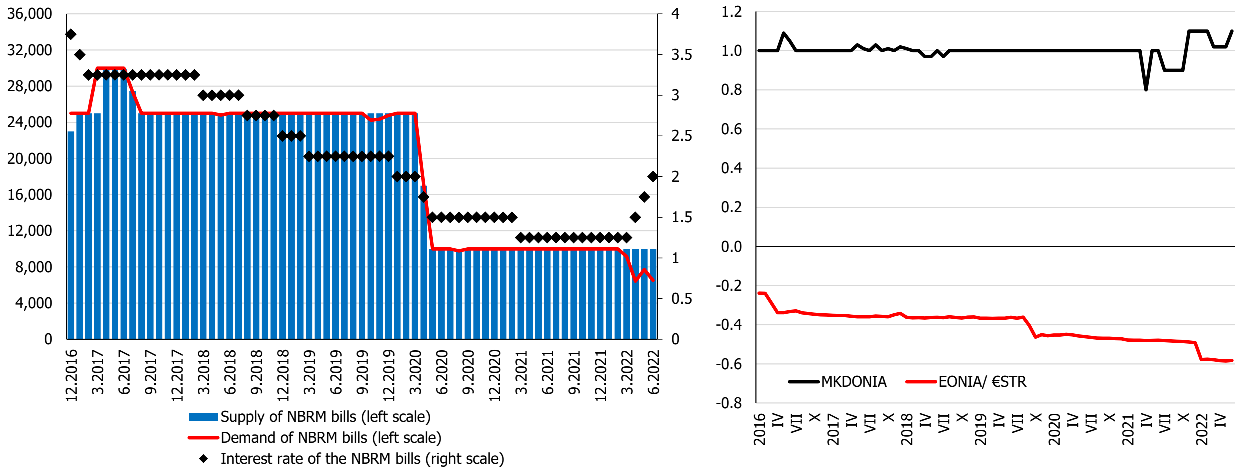
Chart 32 Dynamics of SKIBOR (top, left), dynamics of spreads between SKIBOR and EURIBOR for selected maturities (top, right), derived term premiums from SKIBOR (bottom, left) and SKIBOR yield curves (bottom, right)
in %



Source: National Bank and European Central Bank

Given the high liquidity in the banking sector and economic recovery from the pandemic, in 2021 the National Bank maintained the offer of CB bills at Denar 10 billion. The demand for CB bills by banks during the year was maintained at the level of the offered amount. Since early 2022, having increased challenges from the surrounding, especially after the outbreak of the Russia-Ukraine war, banks managed liquidity also through adaptation of the demand for CB bills. At some CB bill auctions held in the first half of the year, the demand was lower than the offer of CB bills, which remained unchanged. As a preventive response to increasingly high inflation expectations, starting from April 2022, the National Bank has increased policy rate on several occasions, which could subsequently lead to an upward movement in demand.

Chart 33 Characteristics of the primary market of CB bills issued by the National Bank (left) and overnight interest rates on domestic and interbank markets in the EU (right)
in millions of denars and in %



Source: National Bank and European Central Bank
Note: On 3 January 2022, the €STR officially replaced EONIA. This new interest rate measures the costs of banks' unsecured lending on the wholesale markets in the euro area, determined on the basis of overnight transactions. ECB is the administrator of €STR and this rate was published for the first time on 2.10.2019. In the period from 2.10.2019 to 3.1.2022, €STR and EONIA were published together, where EONIA was shown as €STR+8.5 basis points.

In 2021, given the moderate budget deficit narrowing that reduced the budgetary needs for financing, the state reduced the volume of issued government securities. The total amount of government securities[22] issued in 2021 amounted to Denar 56,568 million, which is 7.8% of GDP (9.9% in 2020) and recorded an annual decrease of 13.8%. Considering that in 2021 government securities in the amount of Denar 36,922 million fell due, the net issued amount of government securities on the domestic market in 2021 was Denar 19,634 million. New issues of government securities were mostly concentrated in treasury bills with sole maturity of twelve months and accounted for more than half of the newly issued government securities (58.4%). However, fifteen-year government bonds still make up most of the maturity structure of government securities (40.1%), which is in line with the guidelines from the Fiscal Strategy of the Ministry of Finance[23] for issuing government bonds with longer maturities, in order to optimize debt payments and reduce refinancing risk. In 2021, as in the previous year, there was again a slight increase in the amount of newly issued government securities with a currency clause (annual growth of 27.9%), which amounted to approximately 16% of the total amount of newly issued government securities. However, analyzing the currency structure, government securities without currency clause still have the largest share, accounting for 62.0% of total securities. At the last auction held on the primary market in 2021, the yield to maturity on twelve-month denar treasury bills was 0.7% (0.4% at the end of 2020), while for government bonds it ranged from 2% for a ten-year government bond to 2.5% for a fifteen-year government bond.[24] Since 2022, the

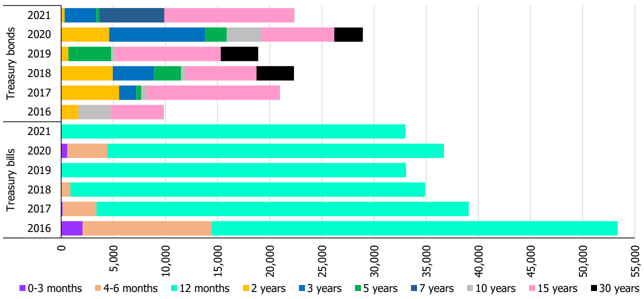
[22] The analysis refers to total government securities (continuous and structural). In 2021, there were two new issues of structural bonds in the amount of Euro 19.5 million. The tenth issue of denationalization bonds in a total amount of Euro 11 million fell due during this year.

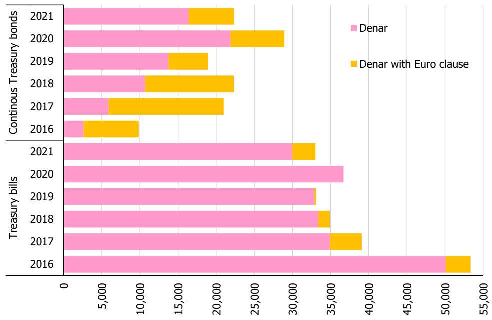
[23] In December 2021, the Ministry of Finance of the Republic of North Macedonia issued the Revised Fiscal Strategy for 2022-2024 (with prospects until 2026), where the directions for financing the deficit and debt repayment remain unchanged, i.e. government bonds are foreseen to be issued with longer maturities, expanding the offer with new instruments such as: green bond, inflation-linked, project and development bond.

[24] The returns relate to government securities without FX clauses.

pressure from movements on international capital markets on the one hand and the tendency to increase interest rate on CB bills on the other hand, have triggered an upward trend in yields to maturity on newly issued government securities. Twelve-month treasury bills reached a yield of 1.5%, while fifteen-year government bonds reached a yield of 3.70%.

Chart 34 Structure of newly issued government securities on the primary market by maturity (left) and by currency denomination of the securities (right)
in millions of denars



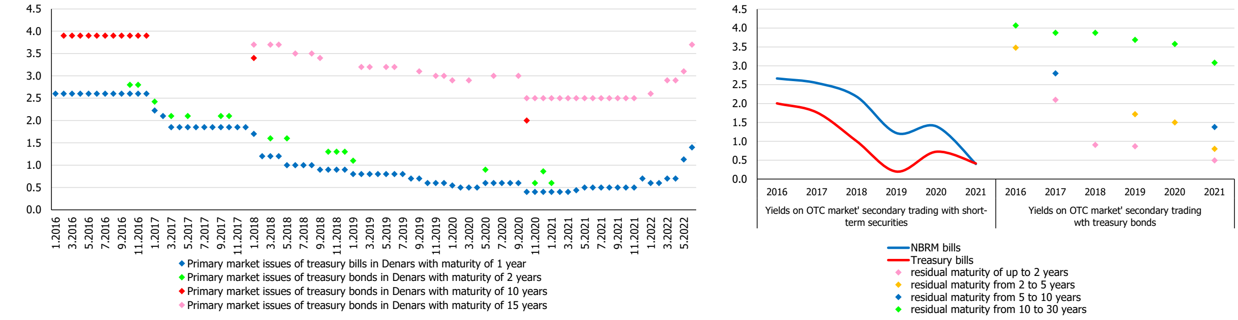


Source: National Bank.

Secondary trading in government securities increased in 2021, but its share in GDP is still very low, which points to poor liquidity of these instruments. Equity securities issued by domestic joint-stock companies play the leading role in trading on the secondary market, and trading is concentrated among domestic investors. Although the trade in government securities in 2021 compared to last year increased by 45.1%, it still amounts to Denar 6,333 million, which is low i.e. 0.88% of GDP (0.66% in 2020). In 2021, trading in the OTC market[25] was mostly focused on government bond transactions, unlike the previous year when treasury bill transactions prevailed. Liquidity in the domestic OTC government bond market in 2021 was also mainly concentrated in the long-term segment of the yield curve (with remaining maturity over five years). However, movement is visible in both the short-term and medium-term segments[26] which is consistent with trends in government securities markets in more developed countries, where liquidity in the secondary government bond market is primarily concentrated in the short- or medium-term segment of the yield curve. At modest trading volumes in the OTC market, government bond yields are generally higher than yields on the corresponding bonds in the primary market[27].

[25] Pursuant to Article 72 of the Law on Securities, secondary trading in all securities is carried out through a stock exchange authorized by the Securities Commission, with the exception of the purchase and sale of short-term securities and government bonds (except denationalization bonds), as well as implementation of repo agreements, can be carried out on the OTC market. However, most of the trade (about 82%) in government securities in 2021 was concentrated in the OTC market, partly reflecting the difference in costs of individual market segments.
[26] In 2021, about 67% of the total trade in government bonds on the OTC market was concentrated in segments with remaining maturity of five to thirty years, in contrast to the previous year when the trade on this long-term segment accounted for 92%. The trade on the medium-term segment (with a remaining maturity of two to five years) in 2021 accounted for 19.8% and of the short-term segment (with a remaining maturity of up to two years) for 13.3% in the total turnover on the OTC government bond market.
[27] For illustration, in 2021, bonds with an initial maturity of fifteen years were issued on the primary market with a yield equal to the coupon interest determined by the issuer, i.e. 2.5% (throughout 2021). On the other hand, on the secondary market, in the ten-year to fifteen-year residual maturity bucket, corresponding to the duration, yields to maturity on transactions concluded in 2021 were approximately 3%.

Chart 35 Yields to maturity on the primary market of government securities (left) and weighted yields to maturity in securities traded on the OTC market (right)
in millions of denars and in %



Source: National Bank.
Note: Over-the-counter market returns are a weighted average of all transactions on this market throughout the year for the corresponding maturity bucket, with the amount of individual transactions used as weights.

Private entities rarely use the domestic financial market as a mechanism for securing financing, although positive movements in this direction were observed in 2021. In 2021, the number of new issues of securities increased (from eight to fourteen) as well as the value of total newly issued securities (from Denar 2,151 million in 2020 to Denar 5,181 million in 2021). Of the total number of issues, twelve were private offers (intended for a buyer known in advance), and two were public offers, one of which was for own shares and one for bonds[28]. Hence, the growth of new issues was almost entirely conditioned by issues for recapitalization of joint stock companies, and less for performing the main function of the capital market, that is to mediate between private entities in need of financing and unknown potential investors. For further capital market development, it is important to improve the regulatory and institutional framework relevant to the financial markets functioning and its alignment with the relevant EU regulation, as well as to increase investment alternatives and strengthen financial education for this market segment that will provide greater visibility and competitiveness in the process of attracting potential investors. An important step to this goal is the preparation of the Capital Market Development Strategy, which was adopted by the Capital Market Development Council at the end of 2021.[29]

Secondary securities trading on the domestic institutionalized capital market continued to increase and in 2021 recorded the highest level in the last ten years. However, its relative size against GDP is modest (1.8%). The growth of total turnover is primarily due to the increased block transactions, which almost tripled on an annual basis. Bond turnover also increased given new listing of structured bonds[30]. After the high growth in the previous year, the stock turnover decreased moderately on an annual basis, but wasstill maintained at a relatively high level, which is almost twice as high as the average for the previous ten years. The post-pandemic recovery of the economy, amid continuous low interest rates, is factor that influences investors' interest in stock investment. Domestic capital market turnover mainly results from one-

[28] A joint-stock company for wholesale and retail sale of goods and services was approved to sell own ordinary shares through a public offering for the purpose of increasing capital necessary for smooth performance of the company's everyday operations. In 2021, corporate bonds were issued by an insurance brokerage company for improving the financial potential and implementing goals and strategies for growth and development.
[29] Strengthening the capital market in the RN Macedonia to the EU average by raising the market capitalization level through capital markets liquidity, structure of sources of financing projects at companies, structure of investment portfolios of individual investors, and financial education is a goal set in the Capital Market Development Strategy.
[30] In 2021, two government bonds were listed (the nineteenth issue of denationalization bonds and the twentieth issue of denationalization bonds) in aggregate amount of Euro 19.5 million. In 2020, there was no quotation of denationalization bonds.

way trade transactions with conventional financial instruments. Modern trading that includes the so-called uncovered short sales and derivative instruments are currently not available. Such situation requires improving the range of financial products and services, especially promotion of debt financial instruments with an environmental, social and governance component (ESG factors), which will increase the interest of domestic and foreign investors and contribute to capital market development.

Table 2 Statistical indicators of secondary trading on the domestic institutionalized capital market

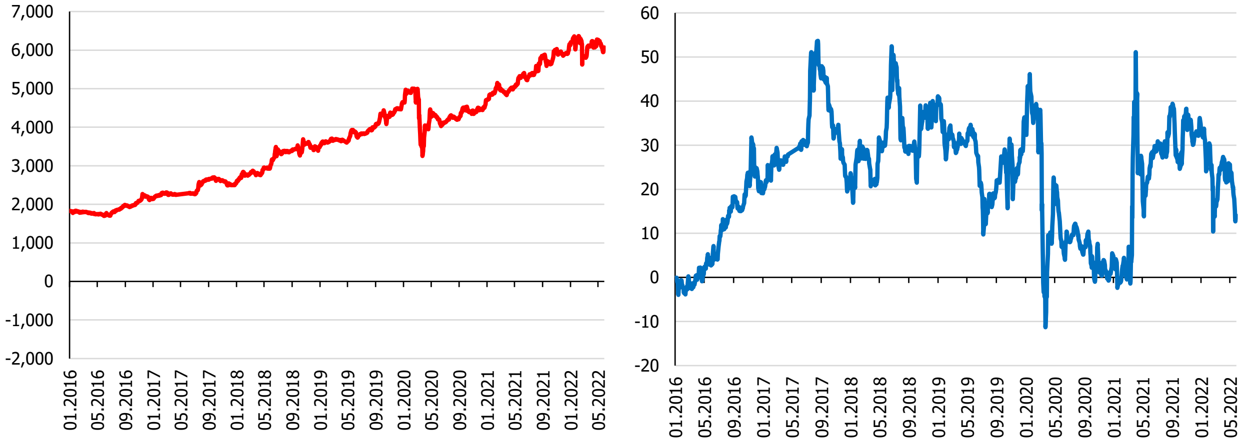
Data and indicators	2017	2018	2019	2020	2021
Total turnover - conventional trading and block transactions (in millions of denars)	4,739	10,409	7,701	8,196	12,854
Total turnover - conventional trading (in milions of denars)	2,908	4,889	4,178	5,965	6,737
Total turnover of conventional trading / GDP (in %)	0.5	0.7	0.6	0.9	0.9
Annual change of total turnover (in %)	56.8	119.6	-26.0	6.4	56.8
Turnover of conventional stock trading (in millions of denars)	2,729	2,729	3,819	5,681	5,395
Turnover of conventional bond trading (in millions of denars)	179	531	359	284	1,342
Turnover of conventional stock trading / Total turnover (in %)	57.6	26.2	49.6	69.3	42.0
Turnover of conventional bond trading / Total turnover (in %)	3.8	5.1	4.7	3.5	10.4
Average monthly turnover (in milions of denars)	395	867	642	683	1,071
Average monthly number of transactions	1,352	1,994	1,573	1,891	1,721
MBI - 10 as of last trading day in the year	2,539	3,469	4,649	4,705	6,153
Annual change of MBI 10, in %	19.0	36.6	34.0	1.2	30.8
Market capitalization of qouted stocks, as of year end (in millions of denars)	132,942	158,773	181,279	179,009	218,251
Market capitalization of quoted stocks / GDP (in %)	21.5	24.0	26.3	27.0	30.2
Market capitalization of all stocks (quoted and stocks of compnaies with special reporting obligation) / GDP (in %)	22.1	24.5	26.9	27.6	31.0

Source: Macedonian Stock Exchange AD Skopje.

The domestic institutional capital market index (MBI-10) registered a positive upward trend in 2021 and increased by 30.8% on an annual basis. The lowest value of the index in 2021 was registered at the beginning of the year, and the highest at the end. From a structural viewpoint, all stocks that make up the index registered an annual growth. On the other hand, the composition of the index itself shows a fairly high level of sector concentration, given that five of its ten components are banks, which in a certain way confirms the limited volume of liquid shares that can arouse significant interest among the general investment public.

The market capitalization of listed shares on the official capital market was growing over the last few years and in 2021 reached 30.2% of GDP. Also, the trend of optimism and increased share valuations continued, seen through the level of financial indicators of listed companies that make up the domestic capital market index, which are higher compared to the period of several years ago. However, with the outbreak of the Russia-Ukraine war, the domestic capital market, as the world markets, responded to the high uncertainty through initial investor restraint and downward corrections in prices and company valuations. Uncertainty about the course of the war and the implications on the domestic economy increases the unpredictability for investors that can affect their willingness to take risks, as well as investments in the domestic capital market.

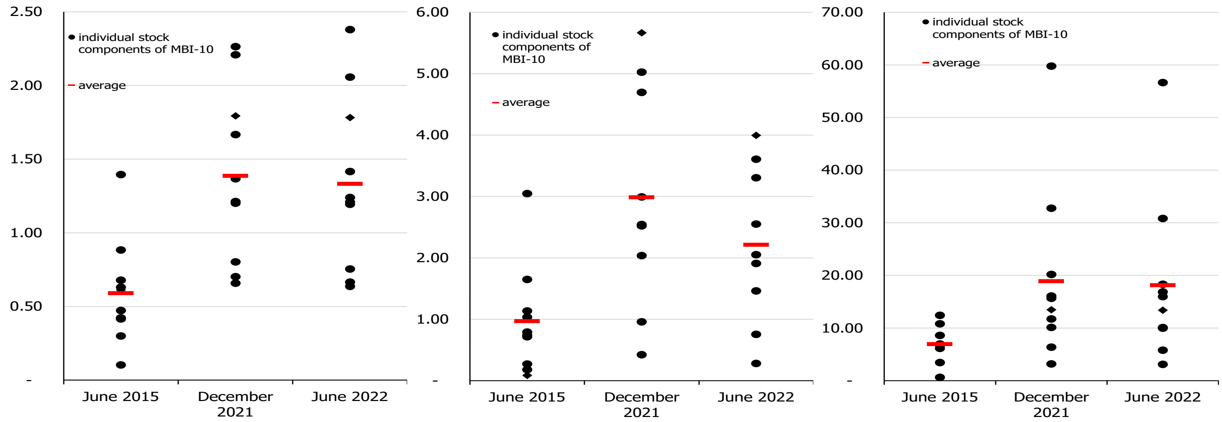
Chart 36 Movement of the domestic capital market index (left) and its annual growth (right)
in millions of denars and in %



Source: Macedonian Stock Exchange AD Skopje.

The domestic institutional capital market is marked by low international visibility as seen through the modest presence of foreign portfolio investors, both individuals and institutional investors. Typical for the foreign investors present in the market for a long time is the greater interest in selling than purchasing securities, acting as a net seller on the capital market. This trend intensified in 2021[31], when the participation of foreign investors was about 3.48% and 5.20% in the total purchase and sale in the institutionalized capital market, respectively (14% and 20%, respectively in 2020).

Chart 37 Selected indicators for valuation of components that make up the domestic capital market index – price -to- book value of a share (left), price -to- sale income per share (middle) and price -to- profit per share (right)



Source: National Bank calculations based on prices published by the Macedonian Stock Exchange AD Skopje, quotations of listed companies and audited financial statements of listed companies.
Note: for the shares issued by banks, total income is considered a sale income.

[31] Net sales of foreign investors in 2021 amounted to Denar 208 million, while in 2020 they amounted to Denar 457 million.

1.3. Real estate market (residential and commercial buildings)

In 2021, real estate prices recorded an accelerated growth that particularly intensified in the fourth quarter, along with the intensified market activities seen through the growth of marketed area and total amount of transactions. Such movements in part reflect supply-side factors, such as rising costs of construction materials amid disrupted global supply chains. The offer of new apartments improved in 2021, after a decrease in the number of completed constructions in the previous year, amid postponement of construction activities due to the pandemic. The number of issued building permits also recorded a significant growth, which points to an increasing supply in the period ahead, amid growing number of unsold apartments. The solid growth of housing loans continues as one of the sources of financing real estate transactions, which contributes to maintaining the demand for real estate.

The average growth of real estate prices in the last few years has been kept in line with the growth of disposable income. However, the accelerated growth of apartment prices towards the end of 2021 that continued in the first half of 2022 could cause an upward deviation in the coming period. Household indebtedness (measured through the share of GDP) is moderate, but the debt is growing as a share of the disposable income, which may affect the creditworthiness of households in the coming period. Households are sensitive to the high uncertainty caused by the war in Ukraine, which worsens the outlook for domestic economic activity and inflation as factors that affect households' ability to service debt regularly and capacity for new borrowing. Despite these risks, however, there is still no serious accumulation of risks to the financial stability resulting from real estate market movements. In the period ahead, the National Bank will continue to monitor closely the real estate market movements and risks, and also stands ready to take appropriate macroprudential measures if deemed necessary to preserve financial stability.

1.3.1. Residential property market

The housing market[32] has proven resilient to the adverse impact caused by the COVID-19 pandemic. Apartment prices grew in 2020 continued growing at an accelerated pace during 2021 amid recovery from the corona crisis. The apartment price, measured through the apartment price index[33], increased by 6.1% in nominal terms on average (2.7% in real terms) during 2021.

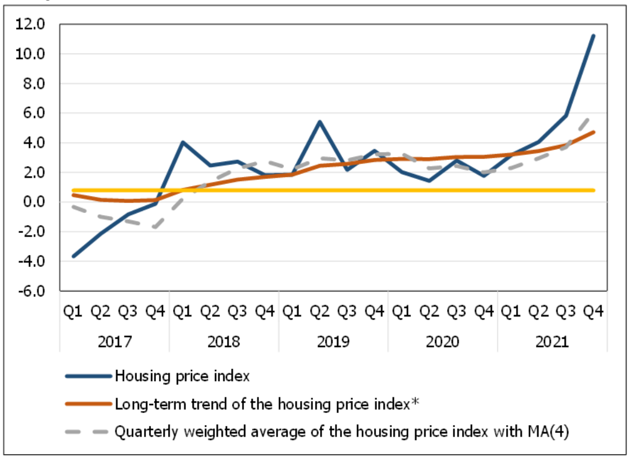
A significant price growth has been noted since the second half of the year, with the price in the fourth quarter increasing at a nominal rate of 11.2% on an annual basis, which is the highest growth rate since the global financial crisis.

[32] According to the Nomenclature of Constructions and Construction Works, 2015 of the State Statistics Office, residential constructions are designated as residential buildings and this group includes: One-apartment buildings; apartment buildings; and community buildings.

[33] Housing price index is calculated on a quarterly basis by the National Bank using the Hedonic method (for more information see Davidovska-Stojanova B., Jovanović B., Kadievska-Vojnović M., Ramadani G., and Petrovska M., (2008). "Real Estate Prices in the Republic of Macedonia, Working Papers, NBRM.) The index calculation uses the prices advertised by real estate agencies and includes only apartments on the territory of the City of Skopje.

Along with the price growth, the volume of transactions with apartments also went up, which in the first three quarters of 2021 significantly exceeded the pre-pandemic level. The total amount of apartments sold in the first three quarters of 2021 compared to the same period in 2019 and 2020 was higher by 44.7% and 33.6%, respectively. Similar movements were observed in the trade in houses, where the total value of traded houses in the first three quarters of 2021 compared to the same period in 2019 and 2020 was higher by 82.7% and 37.5%, respectively. The average price[34] of traded apartments in the first three quarters of 2021 was Denar 44,409 per m^2, while the average price of traded houses was Denar 7,599 per m^2.

Chart 38 Housing prices growth rate
in %

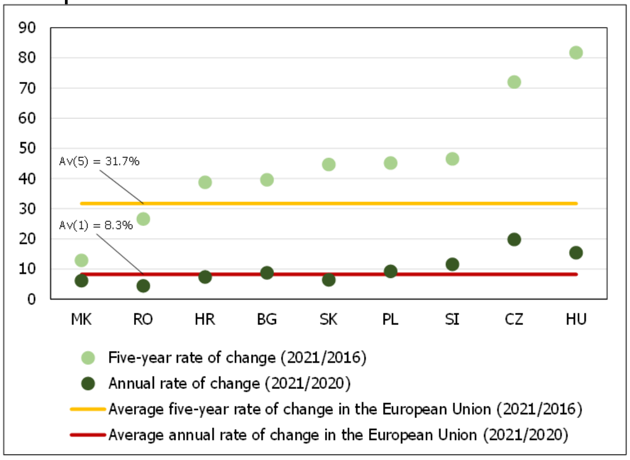


Source: National Bank calculations.
* Calculated using a one-sided Hodrick-Prescott filter and λ = 400,000, for the period Q1 2012 – Q4 2021

The growth rate of housing prices in the domestic economy is somewhat lower than the average for the European Union, which is 8.3%. However, price growth in the second half of the year is above the long-term average and above the long-term trend for the domestic economy, indicating accelerated price growth compared to the pre-pandemic period. Also, with the movements towards the end of the year, the growth of real estate prices began to accelerate above the growth of disposable income, unlike in previous years when they grew at an approximately similar rate.

[34] The average price is the ratio between the total trade based on the purchase and sale of real estate and the total area (in m^2).

Chart 39 Housing price growth rate in selected European countries

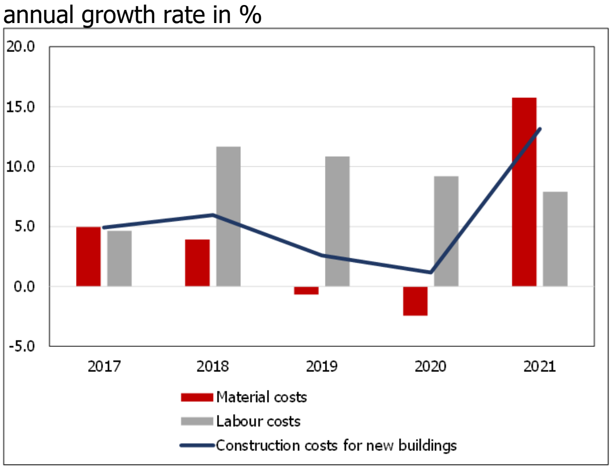


Source: National Bank and National Bank calculations based on Eurostat data.
Notes: Abbreviations: Macedonia (MK), Romania (RO), Croatia (HR), Bulgaria (BG), Slovakia (SK), Poland (PL), Slovenia (SI), Czech Republic (CZ) and Hungary (HU).

The upward trend in housing prices has been partly driven by supply-side factors, such as rising construction costs for new residential buildings. Given the disrupted global supply chains due to the pandemic, material construction costs in 2021 recorded a high growth of 15.8%. Employee expenses also grew, but at a more moderate rate compared to the previous year (7.9% vs 9.2% in the previous year). With such movements, total construction costs in 2021 were higher by 13.1%, while in the previous two years the growth averaged about 2%. The cost price[35] of newly built apartments per square meter in 2021 increased slightly, after the high growth in the previous year.

Chart 40 Construction costs

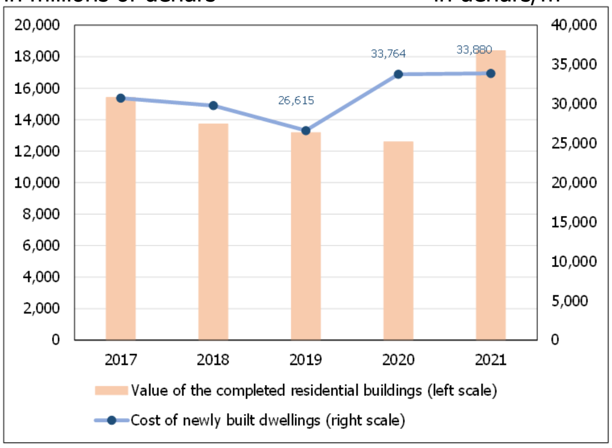
annual growth rate in %



Source: Calculations based on data from the State Statistical Office.

Chart 41 Value of completed residential buildings and cost price

in millions of denars in denars/m²



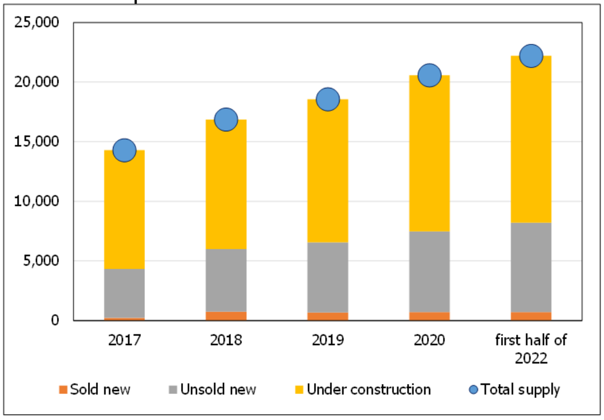
Source: Calculations based on data from the State Statistical Office.

The supply of new apartments increased in 2021, as seen in the number of completed apartments that increased and returned to the pre-pandemic level. This follows the reduction in the previous year, when the pandemic caused a standstill in construction works and their partial postponement for the next period. Moreover, the number of apartments for which building permits have been issued has almost doubled compared to the previous year, which is an indicator of further growth in supply in the next period as well.

[35] The cost price of newly built apartments per square meter is a derived indicator, which is calculated as a ratio between the value of completed residential buildings and the area of completed apartments (in m^2) during the year.

Chart 42 Offer of new apartments

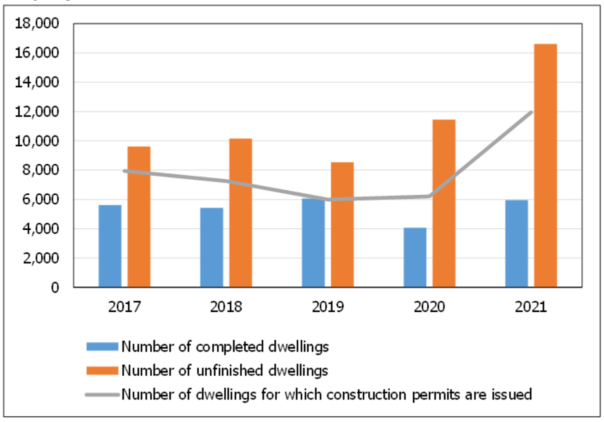
number of apartments



Source: National Bank calculations based on data from the State Statistical Office and the Real Estate Cadastre Agency

Chart 43 Housing construction status and building permits

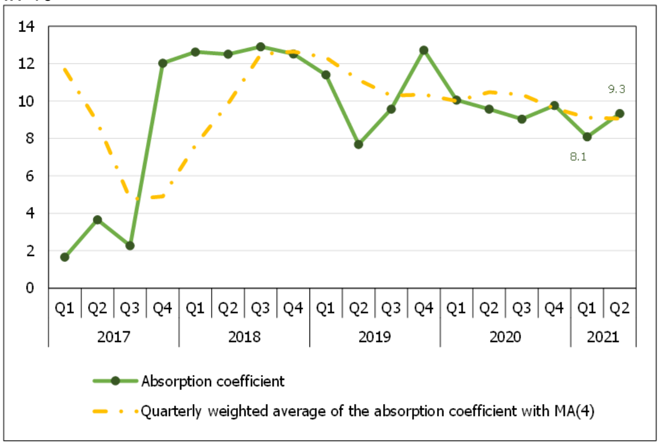
in unit



Source: State Statistical Office and National Bank calculations, based on data from the State Statistical Office

Chart 44 Absorption rate

in %



Source: National Bank calculations based on data from the Real Estate and Cadastre Agency

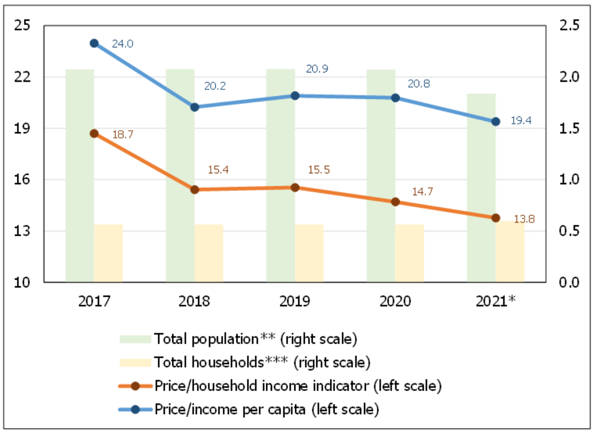
Within the supply of new apartments, there is a noticeable growth in the number of unsold apartments and apartments under construction. The average number of apartments offered[36] in the first two quarters of 2021 is 22,198, of which only 3% are new apartments sold. The structure is dominated by apartments under construction with a share of 63.0%, which moderately decreases due to an increase in the share of unsold apartments (33.8% in the first half of 2021 against 32.8% in the previous year). Based on the absorption rate[37], which in the first half of the year averaged 8.7%, the average period of sale of built and offered apartments is 2.9 years.

[36] The total offer of new apartments consists of the number of new constructions sold, the number of new constructions unsold and the number of buildings under construction. According to RECA's methodology, new constructions sold are apartments with a title deed sold by an investor; unsold new constructions are apartments with a title deed that have not yet been sold by an investor; and the buildings under construction are apartments that have been pre-marked according to the investor's building permit, but the construction has not yet been completed and the title deed has not been issued.

[37] The absorption rate is the ratio between the number of new buildings sold and apartments under construction and the total number of offered apartments. Since there is no data on the number of sold apartments under construction, i.e. pre-marked apartments, an assessment was made that buildings under construction are sold at the same rate as completed new buildings.

Chart 45 Price to income ratio

in % in millions

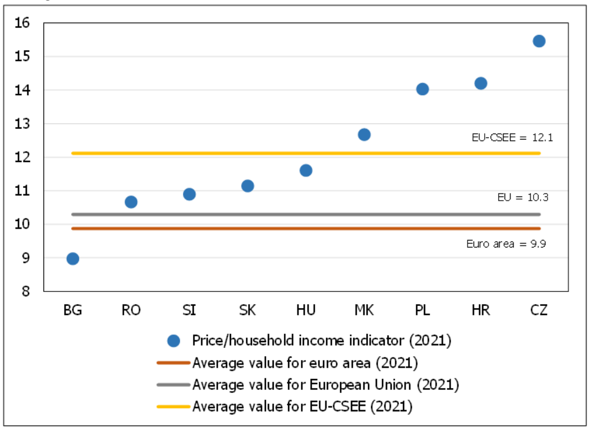


Source: State Statistical Office and National Bank calculations

* 2021 data are as of the second quarter. ** SSO forecasts for the period 2017 - 2020; 2020 forecasts applies for 2020.

Chart 46 Comparison of the price - income ratio, by selected European country

in %



Source: Numbeo and National Bank calculations.

In 2021, housing loans kept on growing, which, given the favorable financing standards, preserved the demand for real estate. Given the uncertain environment, the households might turn to investing in real estate as a relatively safe asset with effects on the demand of the real estate market. Household lending preserved its strong dynamics during 2021 with a growth rate averaging 14.2%. The positive developments in the housing loan market are the result of a lower risk of these loan products and the favorable financing standards with low interest rates. Thus, the rate of non-performing loans continued to decrease and, at the end of 2021, reduced to 0.6%, with further fall registered in the average interest rate on newly approved housing loans that reduced to 3.2% in 2021. Households[38] continued to maintain a relatively moderate debt level (measured as a share of total household debt in GDP), but there was an increase in the debt as a share of disposable income, which is a potential factor of household vulnerability in the next period, especially if we take into account the current conditions of high uncertainty and pronounced surrounding risks.

Housing affordability indices still show lower housing affordability in the domestic economy compared to European countries. The value of price-to-household income ratio[39] in the first three quarters of 2021 was 13.8%, which is higher than the average for the EU-CSEE, the European Union and the euro area. Of the EU-CSEE member states, this ratio is higher in the Czech Republic, Croatia and Poland. Price-to-income per capita[40] ratio in the first three quarters of 2021 was 19.4%.

[38] For more details on the debt and the overall financial position of households, see the Households section of this report.

[39] The price-to-income per household is a ratio between apartment price per square meter and the disposable income per household. The disposable income per household is the product of the disposable income and the average number of employed persons per household, and the average number of employed persons per household is the quotient of the total number of employed persons and the total number of households. The average number of employees calculated in this way per year is as follows: 1.31 for 2017, 1.35 for 2018 and 1.41 for each 2019, 2020 and 2021.

[40] The price-to-income per capita is a ratio between apartment price per square meter and the disposable income per capita.

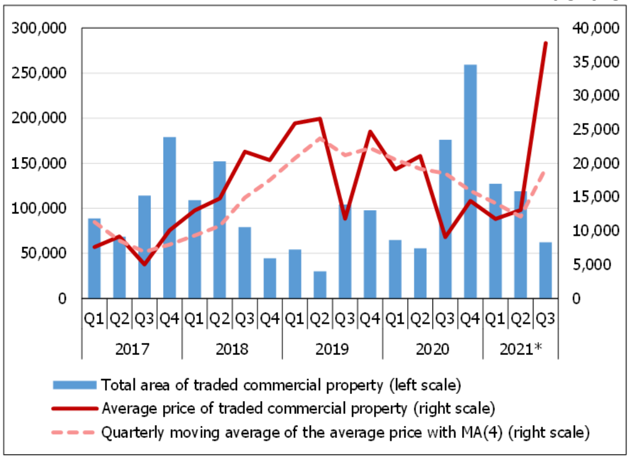
Lending to the construction sector in 2021 accelerated the growth in conditions of economic recovery and increasing number of issued building permits. The average growth rate of loans to construction sector customers throughout the year was 19.3%, driven by the rapid growth in the second half of the year. The risk of lending to the construction sector continued to decline, which can be seen through the reduced rate of non-performing loans of 3.2% at the end of 2021.

Risks to housing construction market in the coming period arise primarily from the uncertainty about the further development of the COVID-19 pandemic and the war in Ukraine. Pressures for rise of consumer prices, amid potential deterioration of the economic outlook, may adversely affect the financial position of households, which, although showing moderate indebtedness, is still sensitive to risks from the surrounding. Amid uncertain environment and expectations for higher interest rates, risks to households creditworthiness have increased, both in terms of the ability to service existing debts, and the capacity for new borrowings. This may adversely affect the demand side of apartments, which, amid supply growth, may put downward pressure on prices. Any sharper shift of the cycle could affect the liquidity of pledged real estate at the banks, which could ultimately lead to credit risk materialization. In the period ahead, the National Bank will continue to monitor closely the real estate market movements and risks, and stands ready to take appropriate macroprudential measures if necessary to preserve financial stability.

1.3.2 Commercial property market

Chart 47 Total number of traded commercial constructions and average prices

in m^2 in denars



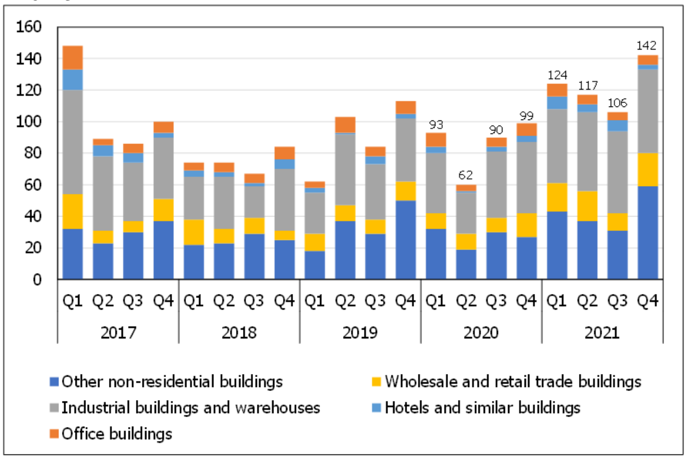
Source: Real Estate and Cadastre Agency and National Bank calculations based on data from the Real Estate and Cadastre Agency

The commercial real estate market[41] is marked by a diverse structure and volatile trends, so the COVID-19 pandemic had a different impact across different market segments. After the commercial real estate market faced a price decline during the previous year, prices in 2021 started to increase, but still fall below the pre-pandemic level. The average price of commercial buildings traded in the first three quarters of the year was Denar 17,534/m^2, which is a growth of 29.7% compared to the same period in 2020, yet 3.7% below the average price in the same period in 2019. Changes caused by the pandemic, such as the introduction of remote jobs and changes in consumer behavior and habits, are a possible demand-side factor affecting office prices. In the third quarter, a significant increase in the average price was recorded, which was mostly due to the drop in the total marketed area. However, positive

[41] According to the 2015 Nomenclature of Constructions and Construction Works of the State Statistics Office, commercial constructions are designated as commercial buildings and this group includes: hotels and similar buildings; office buildings; buildings in wholesale and retail trade; buildings for traffic and other communications; industrial buildings and warehouses; public entertainment, educational, hospital or institutional care buildings; and other non-residential buildings.

market trends were seen through the total amount of executed transactions, which in the first three quarters of 2021 increased by 35.0% compared to the same period in 2020 and by 57.7% compared to the same period in 2019.[42]

Chart 48 Issued non-residential building permits
in unit



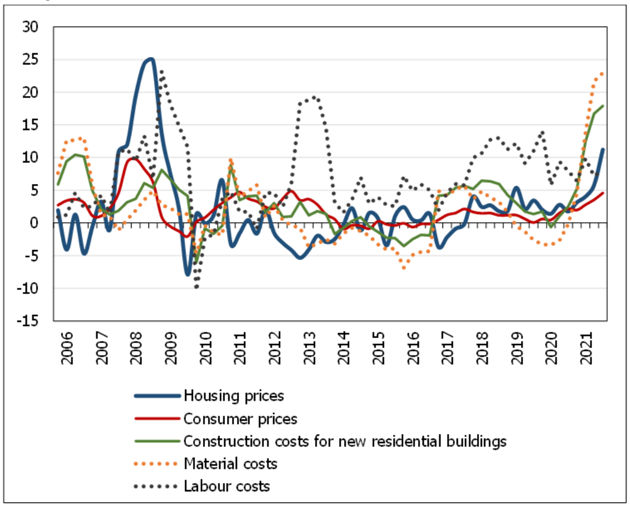
Source: State Statistical Office.

Movements on the supply side of commercial buildings point to a further decline in the total value of completed constructions, although there was certain revival in the construction sector through the increased number of issued building permits. The total value of completed non-residential buildings in 2021 decreased by 4.6% compared to the previous year and recorded a decrease of 15.5% compared to the pre-pandemic 2019. On the other hand, the number of issued non-residential building permits recorded a high growth compared to the previous three years. The growth was due to the increased number of issued permits for almost all types of facilities, and especially for hotels, commercial buildings, industrial facilities and warehouses. Only the number of issued building permits for office buildings decreased.

[42] Since there is no data on lending to companies for purchase of commercial offices, no analysis has been made of the movement of this credit market segment as a potential factor for the positive trends in the total amount of traded commercial offices. The available data on household lending for purchase of commercial offices reveals that its share in total household loans is insignificant (about 0.4%), so the movements of this market segment are not a representative indicator to draw conclusions.

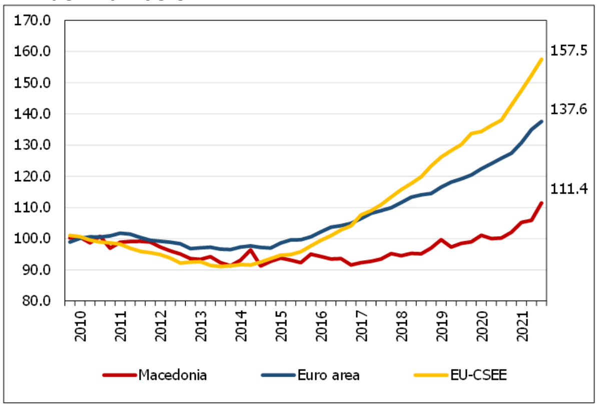
Historical overview of the movements on the real estate market

Chart 49 Annual growth rates of selected price indices
in %



Source: National Bank calculations, based on data of the State Statistical Office

Chart 50 Index of housing prices
in index numbers

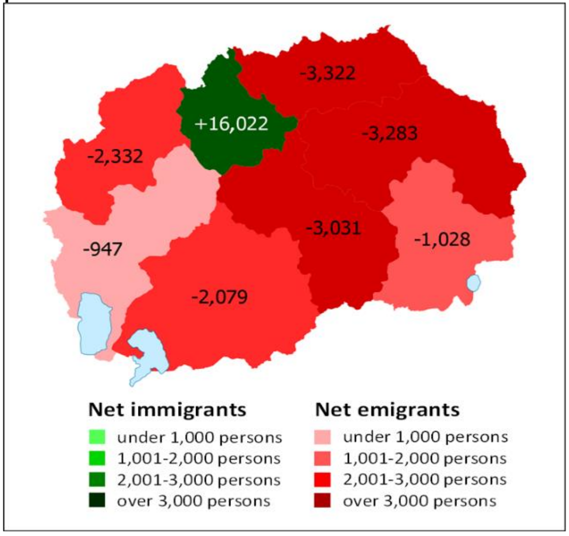


Source: The National Bank and National Bank calculations based on data submitted by Eurostat.

In the last twenty years, the real estate market has recorded mainly positive developments, which have contributed to significant structural changes and encouraged upward trends both on the supply and the demand side. Housing prices registered an average annual growth rate of 2.2% from the first quarter of 2006 to the fourth quarter of 2021, which slightly exceeds the average annual inflation rate of 2.0% over the same period. In terms of the expenses in the construction sector, construction costs for newly built housing facilities have grown faster than housing prices and have increased at an average annual rate of 3.2%, which is mainly due to increased labor costs (average annual rate of 7.0%) and to a lesser extent the increased material costs (average annual rate of 2.0%).

Compared to other European countries, the housing prices in the Republic of North Macedonia in the period after the global financial crisis recorded lower growth rates. The value of the housing price index in the domestic economy at the end of 2021 indicates a growth of 11.4% compared to the average in the base year of 2010. In the euro area countries, the increase for the same period

Chart 51 Map of internal migrations in the period 2000 - 2021



Source: National Bank calculations, based on data from the State Statistical Office

equals 37.6%, while the EU member states coming from Central and Southeastern Europe (EU-CSEE) registered an increase of 57.5%.[43] At the same time, the prices in the member states of the euro area in the period 2010-2013 are characterized by short-term growth and decline episodes, while in the same period in the EU-SCEE member states, they have a decreasing tendency. Such movements are a result of vulnerabilities following the global financial crisis and the European debt crisis, followed by tight credit conditions and a drop in disposable income.[44] However, the easing of lending conditions and increase in the household's income, the housing prices have started to show an upward trend since 2014, which is especially pronounced in EU-SCEE member states. The housing prices in the domestic economy also declined in the post-global crisis period, followed by a period of stagnation amid favorable credit conditions and solid growth in disposable income, and even started to rise in 2017 but slowly than in the European Union.

The positive developments in the real estate market in the last twenty years mirror the increasing demand for dwellings in Skopje and its outskirts, but also of the positive developments in the construction sector as a response to the increased demand. The positive movements on the demand side are mainly the result of village-to-city migration movements and from smaller towns to Skopje, the growth of the living standard of households, the easing of lending conditions and the subsidization of housing loans by the state, as well as the preferential conditions for the purchase of state construction land.[45] On the other hand, the positive developments on the supply side are driven by a series of legal solutions and institutional reforms that led to the facilitation of the procedure and the shortening of the time for obtaining construction,[46] the increased confidence among the managers of the

[43]The housing price index for the European Union member states in Central and Southeastern Europe is a simple average of the individual indices for Bulgaria, Poland, Romania, Slovakia, Slovenia, Hungary, Croatia and the Czech Republic. The time series with the index values for Croatia is included for the entire analyzed period from Q1 2010 to Q4 2021, although the country became a member of the European Union on 1 July 2013. The values of the individual indices at the end of 2021 are: 228.4 for Hungary, 210.7 for the Czech Republic, 168.7 for Slovakia, 146.9 for Poland, 146.0 for Bulgaria, 136.7 for Slovenia, 131.2 for Croatia and 115.0 for Romania.

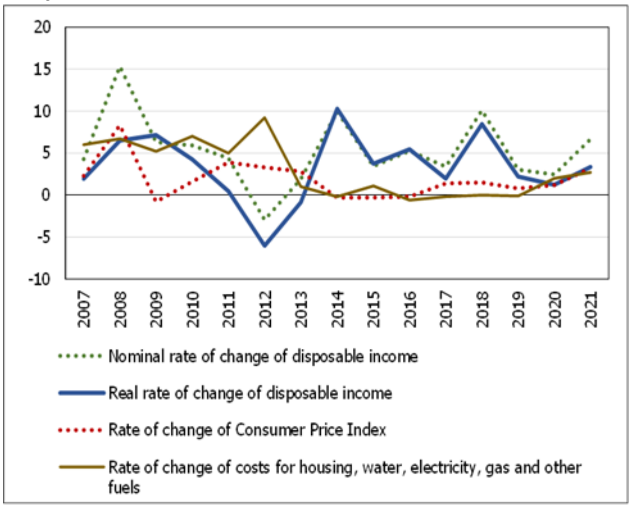
[44] According to data from Eurostat, the disposable income of the households in the European Union has recorded a negative real growth rate in four consecutive years as follows: -0.3% in 2010, -0.4% in 2011, -1.6% in 2012 and -0.3% in 2013.

[45] With the adoption of the Decree on the amount of the price of the construction land property of the Republic of Macedonia and the amount of the special costs for the implementation of the alienation and leasing procedures ("Official Gazette of the Republic of Macedonia" no. 102/11, 106/11, 169/11, 14/12, 38/12, 54/12, 63/12, 150/12, 3/13 and 142/13) and the new Decree on the price of construction land property of the Republic of Macedonia and the amount of the special costs for the implementation of the alienation and leasing procedures as well as for the establishment of the right of real easement ("Official Gazette of the Republic of Macedonia" no. 158/13, 175/13, 134/14, 161/14, 15/15, 2/16 and 48/16) it is possible to sell the construction land owned by the state through bidding at a low starting price.

[46] Legal decisions and reforms include the passing of the Law on Real Estate Cadastre ("Official Gazette of the Republic of Macedonia" no. 40/2008, 158/10, 17/11, 51/11 and 74/12) and the new Law on Real Estate Cadastre ("Official Gazette of the Republic of Macedonia" no. 55/13, 41/14, 115/14, 116/15, 153/15, 192/15, 61/16, 172/16, 64/18 and Official Gazette of the Republic of North Macedonia No. 124/19), as well as the introduction of the System for electronic issuance of building permits in 2013.

enterprises in the construction sector, as well as the greater preference of the banks towards crediting the construction activities.

Chart 52 Disposable income and consumer prices
in %



Source: National Bank calculations, based on data from the State Statistical Office

Data on internal migrations show that there is a pronounced tendency to move to the Skopje Region. In every year of the period 2000 – 2021, the net migration balance was positive only in the Skopje Region, while in all other planning regions it was negative. The total amount of the influx of population in the Skopje Region in the entire period is 16,022 people, which is mostly due to the emigration from the Northeastern, Eastern and Vardar Regions.

The households have an income that increases at a stable rate that is higher than the inflation rate. Within the period 2007 – 2021, the disposable income[47] registered a real growth at an average annual rate of 3.3%, which indicates a solid growth of the purchasing power of the households. Moreover, there is an increase in every year of the analyzed period, except for the period 2012-2013 when a drop in gross inflows was registered as a result of reduced inflows from private transfers and employee funds. The relatively low level of inflation during the 2010s also contributed to the maintenance of positive real growth rates, which allowed real growth rates not to deviate significantly from the nominal ones.

Housing loans are experiencing high growth rates and have become the fastest growing banking product in the last few years. Housing loans recorded a high double-digit growth on an annual basis in almost all quarters in the period 2006-2021. The only exceptions are the period of tightened credit conditions at the end of 2009 and the beginning of 2010 as a result of the global financial crisis, and the period of unfavorable movements in the second half of 2012 as a result of the European debt crisis, when single-digit growth rates were recorded. Starting from the second quarter of 2013, the annual growth rate stabilized and reached and equaled around 14.5% on average. Such movements in the housing loan market are driven by favorable credit conditions with low interest rates and the subsidization of housing loans[48] in conditions of a downward trend of the rate of non-performing loans (from 3.4% during 2013 to 0.6% during 2021). Thus, the share of the housing loans in the total household loans increased just below 20% at the end of 2008 to 33% in 2021.

[47] Having no official statistics data, the data on disposable income represent the National Bank calculations on annual basis, while the components for which official data are not available are estimated.

[48] In 2011, the Law on Housing Loan subsidization was adopted ("Official Gazette of the Republic of Macedonia no. 158/11, 24/13, 43/14, 109/14, 6/16 and Official Gazette of the Republic of North Macedonia No. 101/19), with which, as of 1 January 2012, the Government grants subsidies for solving the housing issue to natural persons who meet certain conditions. The subsidy consists of financial assistance as part of the down payment for the loan or as part of the monthly annuity in the first few years of repayment, as well as a fixed interest rate during the use of the subsidy.

Chart 53 Housing loans and total household loans
in millions of denars in %

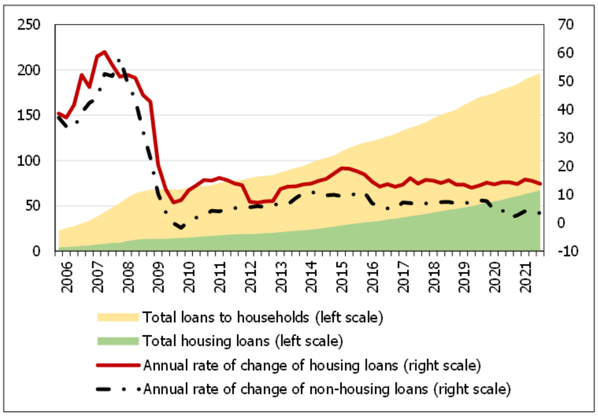
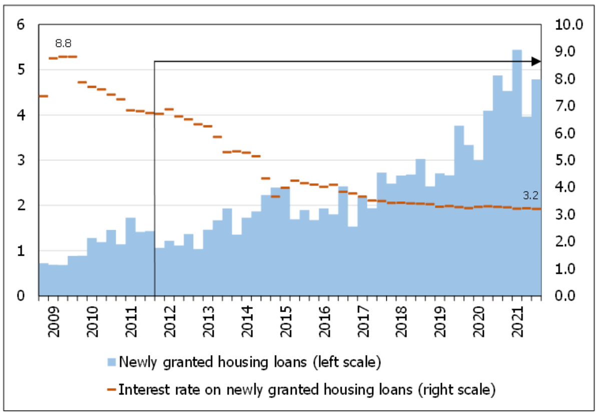


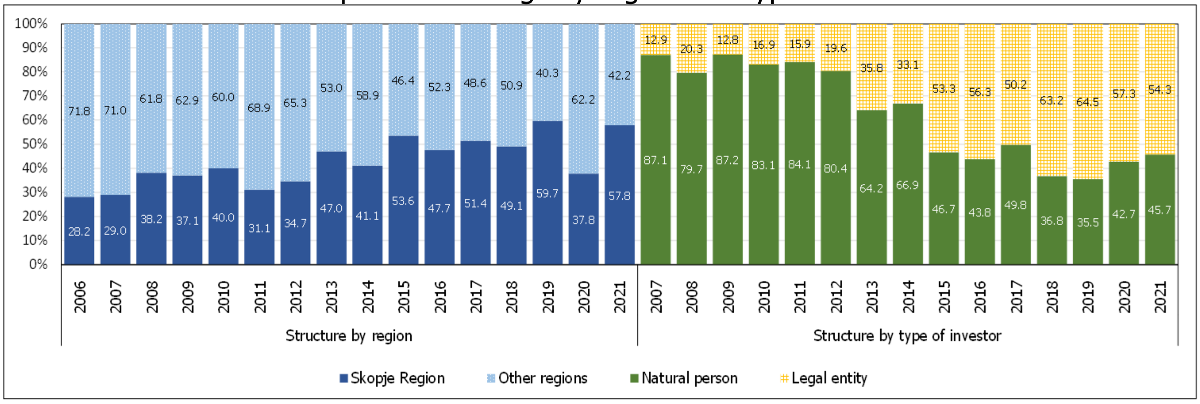
Chart 54 Newly approved housing loans and interest rates
in millions of denars in %



Source: National Bank.

In the construction sector, a significant increase in the value of completed buildings was observed in the building construction sector, with a moderate decrease in the number of issued building permits and the number of completed buildings. The value of completed buildings in the period 2007 - 2021 has collectively increased by 33.7%, which occurs not only due to increased construction costs but also because of changes in the structure of completed dwellings. The most evident changes in the structure have been registered in the geographical distribution and the type of investor. Firstly, in response to the growing demand for housing in the Skopje Region, the volume of construction activities in this area began to grow significantly. Hence, the share of completed dwellings in the Skopje Region from 28.2% in 2006 more than doubled and in 2021 it was 57.8%. The value of the completed buildings in the Skopje Region in the same period has increased by more than three times, at the expense of the value of the completed buildings in the other regions, which has decreased. Secondly, due to the growth of housing loans and financing of investors, a significant increase in the share of completed dwellings directly by an investor at the expense of those completed by the natural persons themselves is registered. Accordingly, if in 2007 as many as 87.1% of completed dwellings were owned by natural persons, in 2019 64.5% were completed by investors.

Chart 55 Structure of completed dwellings by region and type of investor



Source: National Bank calculations, based on data from the State Statistical Office

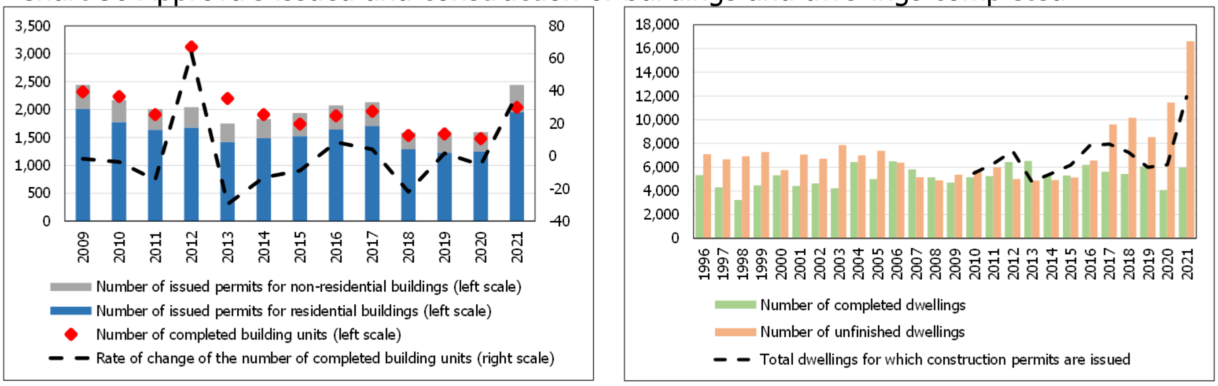
Within the issued permits for building construction, residential buildings prevail in relation to non-residential buildings with a stable ratio over the years of about 4:1, while the number of completed buildings per year with small exceptions corresponds to the number of permits issued in the same period. In terms of individual dwellings, the number of completed units in the period 1996-2021 is stable with small oscillations and on average amounts to 5,268 built dwellings per year, and the number of unfinished dwellings shows a pronounced growing tendency after 2016, exceeding 10 thousand units per year, which is due to the increased number of dwellings for which building permits have been issued in the previous few years.

The results of the business tendency survey in construction[49] indicate a growing confidence among company managers in the construction sector. In 2010, the confidence indicator in construction[50] registers substantial increase, increasing its value from -0.7 in the first quarter of 2011 to 12.7 in the fourth quarter of 2019.

[49] The Survey on Business Tendencies in Construction is a qualitative survey of the State Statistics Office that provides qualitative data from the heads of business entities through the technique of surveying opinions by submitting the Questionnaire on Business Tendencies in Construction, 2015 (DTG). The questionnaire covers a deliberately selected sample of business entities from the construction sector, and the deliberate selection was carried out according to the criterion of including those business entities with the highest realized value in the appropriate department of activities from the National Classification of Activities. The managers of the enterprises give answers on the current state of the main economic indicators in their business entities and express their expectations for the movements of those indicators in the near future. Each individual answer is weighted by assigning an appropriate weight that reflects the importance, that is, the size of each business entity, and the weighting is done by the number of employees in the business entity and its realized value. The results of processed responses to each question are presented as differences between weighted positive and negative responses in %.

[50] The indicator of confidence in construction represents an arithmetic mean of the balances of the questions for the assessment of future orders and expectations for the number of employees in the Business Tendencies Questionnaire in the Construction Sector, 2015 (DTG) of the State Statistical Office.

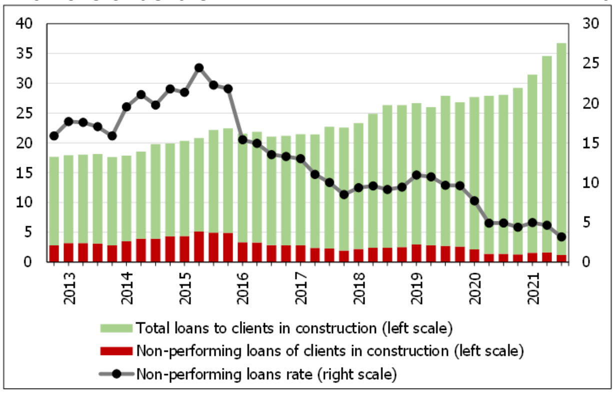
Chart 56 Approvals issued and construction of buildings and dwellings completed



Source: State Statistical Office and National Bank calculations, based on data from the State Statistical Office

Chart 57 Loans to the construction sector and related activities

in billions of denars | in %



Source: National Bank.

Lending to the construction sector shows an upward trend with a significantly increased scope of construction works performed by business entities, so the loans approved to construction clients and activities related to real estate in the period 2014 - 2021 more than doubled, with an average annual growth rate of 8.2%. In addition to the increased lending to construction, there is also a significant decrease in non-performing loans, the share of which exceeding 20% during 2015 has been reduced to below 5% in 2021. However, it should be taken into account that the decrease in the rate of non-performing loans stems from the mandatory regulatory write-off of claims[51].

Simulation of the European Systemic Risk Board's real estate market vulnerability assessment framework

The European Systemic Risk Board (ESRB) has developed a methodology for assessing the degree of vulnerability of the real estate market in the countries of the European economic area, which is used within the framework of the assessment of the macroprudential policies of the national regulators.[52] Based on the findings of the assessment, ESRB issues warnings to individual countries about the risks, and can also make a recommendation with a proposal for the necessary measures that should be implemented in order to mitigate them.

[51]Pursuant to the regulations, starting from July 2019, banks are obliged to transfer off-balance sheet records (write-off) of all claims fully provisioned for more than one year (in the period March 2016 - July 2019 , banks carried out a mandatory write-off of all claims that are fully provisioned for longer than two years). Data on mandatory write-offs are provided only by sector, but not by activity of legal entities or by purpose with the natural persons..

[52]The Methodology has been elaborated in details in the following report: European Systemic Risk Board (2019). *Methodologies for the assessment of real estate vulnerabilities and macroprudential policies: residential real estate*. September.

The framework consists of risk assessment by calculating key indicators divided in three stretches as follows:

1) Collateral stretch
   (1.1) residential real estate price index (36-month real growth, average %);
   (1.2) residential price index relative to trend;
   (1.3) house price to income ratio (deviation from average, %);[53] and
   (1.4) econometric model (overvaluation in %).

2) Lending stretch
   (2.1) loans to households for house purchases (36-month real growth, average %);
   (2.2) loans to households for house purchases relative to trend; and
   (2.3) household loan spread[54].

3) Household stretch
   (3.1) household debt (% of income);
   (3.2) household financial assets to debt (in %); and
   (3.3) debt service to income ratio for households (in %).

Calculated values of the indicators are compared with critical thresholds[55]. Depending on the thresholds, each indicator is assigned a rate from 0 to 3, with a rate of 3 indicating the highest degree of risk[56].

Table 3 Assessment of vulnerabilities in the real estate market

Country	Collateral stretch				Lending stretch			Household stretch			Summary measures			
	(1.1)	(1.2)	(1.3)	(1.4)	(2.1)	(2.2)	(2.3)	(3.1)	(3.2)	(3.3)	(A1)	(A2)	(A3)	(A)
BG	3.8	1.18	-5.0	-10.0	13.1	1.08	2.7	38.5	585.7	6.1	1.0	1.3	0.0	0.8
CZ	8.1	1.16	36.0	30.0	5.2	0.99	1.9	59.6	444.4	6.8	3.0	0.7	0.0	1.2
HR	8.1	1.21	1.0	-9.0	7.0	1.17	2.5	54.3	379.3	7.2	1.5	1.7	0.0	1.1
HU	7.5	1.17	12.0	-1.0	6.9	1.07	3.5	36.1	683.9	5.5	1.8	1.0	0.0	0.9
PL	5.8	1.12	5.0	-6.0	2.8	0.89	2.7	55.4	325.7	9.2	1.5	0.0	0.0	0.5
RO	0.6	1.12	-23.0	-34.0	7.5	1.03	3.1	24.5	484.4	4.8	0.8	0.7	0.0	0.5
SI	7.0	1.24	16.0	3.0	4.5	0.94	1.6	43.1	488.9	5.1	2.3	0.7	0.0	1.0
SK	10.2	1.23	17.0	13.0	7.6	1.05	0.9	73.3	204.2	9.5	3.0	1.7	1.0	1.9
MK	2.0	1.13	-8.8	—[57]	13.7	1.14	2.7	46.3	226.0	14.2	1.0	1.7	2.0	1.6

[53] The average is calculated for the period Q1 2016 – Q3 2021.

[54] The interest rate spread on housing loans is calculated as the difference between the weighted interest rate on newly approved housing loans and the weighted interest rate on denar deposits with a currency clause.

[55] Critical thresholds are determined by the ESRB in such a way that the mean threshold for each indicator is set close to an estimated threshold using an early warning model with balanced propensities between type I and II errors adjusted to the 75th percentile of the time distribution and between countries. The high and low thresholds are determined as the mean threshold +/− two standard deviations from the indicator value.

[56] In the case of indicators whose higher values indicate greater vulnerability, the ratings are given as follows: 0 if it is below the low threshold, 1 if it is between the low and medium threshold, 2 if it is between the medium and high threshold, and 3 if it is above the high threshold; in the case of indicators whose lower values indicate greater vulnerability, the ratings are given in the reverse order, namely: 0 if it is above the high threshold, 1 if it is between the medium and high threshold, 2 if it is between the low and medium threshold, and 3 if it is below the low threshold. Then, summary measures for the three groups are calculated as an average of the individual ratings of their indicators. At the end, a summary measure of the entire framework is calculated as an average of the summary measures for the three stretches.

[57] The value of this indicator has not been calculated due to the lack of high-frequency data and the short length of the time series for some of the included variables. The calculation is based on the assessment of an econometric model for assessing the housing value, which consists of an inverse demand model that is often found in the economic literature (for example, Muellbauer, J. (2012).

EU-CSEE	6.4	1.18	7.4	-1.8	6.8	1.03	2.4	48.1	449.6	6.8	1.9	1.0	0.1	1.0
EU	5.4	1.13	16.0	6.0	3.4	0.99	1.9	91.8	403.2	10.4	1.8	0.9	0.9	1.2
EC	5.4	1.12	16.4	6.8	2.3	0.97	1.6	94.6	380.3	10.8	1.9	1.0	1.1	1.3
Low	2.5	1.00	4.0	0.0	3.0	1.05	1.0	75.0	240.0	10.0	1.0	1.0	1.0	1.0
Medium	5.0	1.04	10.0	6.0	6.0	1.10	1.5	85.0	260.0	12.0	1.2	1.2	1.2	1.2
High	7.5	1.08	16.0	12.0	9.0	1.15	2.0	95.0	280.0	14.0	1.7	1.7	1.7	1.7

Source: European Systemic Risk Board and European Central Bank calculations based on data from the European Central Bank and national regulators (more in European Systemic Risk Board (2022). *Vulnerabilities in the residential real estate sectors of the EEA countries*. February).

Notes: The abbreviations from (1.1) to (1.4), from (2.1) to (2.3) and from (3.1) to (3.3) correspond to the previously defined indicators in the three different groups. The abbreviations (A1), (A2), (A3) and (A) are summary measures for the collateral stretch, lending stretch, household stretch and for all stretches overall. The latest observations for the calculation of the indicators across stretches for the countries of the European economic area include the second quarter of 2021 for the collateral stretch, August 2021 for the lending stretch, and the first quarter of 2021 for the household stretch (with small exceptions). The last observations for the calculation of the domestic economy indicators are given as of the fourth quarter of 2021, with the exception of the deviation from the average of the house price to income ratio, for which they are given as of the third quarter of 2021. The long-term trend was calculated using the one-sided Hodrick-Prescott filter and λ = 400,000, so that the period Q1 2010 – Q4 2021 was taken for the residential real estate price index, and for loans to households the period Q1 2009 – Q4 2021. The high threshold indicates the highest degree of risk in all indicators, except for the spread of loans to households and the household financial assets to debt indicatorwhere the low threshold indicates the highest degree of risk. Indicators whose values are assigned a rating of 0 are colored white, those with a rating of 1 are colored yellow, those with a rating of 2 are colored orange, and those with a rating of 3 are colored red.

The data of the simulation presented in table 3 indicate a moderate overall vulnerability of the domestic real estate market, which is moderately higher compared to the ranking of European Union countries. Vulnerabilities in the domestic real estate market mainly stem from the financial situation of households, i.e. the lower level of financial assets in relation to debt, which is a long-term feature of households (more in table 4). At the same time, in 2021, the share of debt repayment in relation to disposable income increases, which also contributes to greater sensitivity related to the financial standing of the households. The accelerated growth of real estate prices in relation to the trend is an additional risk factor, which becomes more important in 2021. The growth rate of housing loans, which in the last several years hovers over the high vulnerability threshold set within the ESRB also indicates to possible risks. However, when analyzing this indicator, it should be taken into account that the high growth rates of housing loans in the domestic economy largely stems from the low initial basis of housing lending as a result of of the weaker development of this segment of the credit market. Thus, in 2006, housing loans amounted to slightly less than 2% of GDP and accounted for less than 18% of the total household loans. According to 2021 data, housing loans participate with 9.2% in the GDP and account for about a third of total household loans, which is still significantly below the average of developed countries in the euro area, where housing loans account for about 40% of the GDP, i.e. they account for nearly 80% of the total household loans.

"When is a housing market overheated enough to threaten stability?". *Department of Economics Discussion Paper Series*, No 623. University of Oxford.) и е во облик:

$$\log rhp_t = \alpha_0 + \alpha_1 \log y_t - \alpha_2 \log rhcs_t - \alpha_3 \log int_t + e_t,$$

where rhp_t is the real housing price, y_t is the real disposable income of households, $rhcs_t$ is the real value of the household building, int_t is the average real interest rate of the housing loans as a measure for housing expenses and e_t is the residual. The evaluation of the model is performed using Bayesian statistical inference, where the a priori mean values of the coefficients in the model are e -0.015 for interest rates, 1.6 for disposable income and -2.5 for the value of the housing building.

Table 4 Multi-year analysis of the vulnerabilities of the real estate market in North Macedonia

Year	Collateral stretch				Lending stretch			Household stretch			Summary measure			
	(1.1)	(1.2)	(1.3)	(1.4)	(2.1)	(2.2)	(2.3)	(3.1)	(3.2)	(3.3)	(A1)	(A2)	(A3)	(A)
2017	-0.4	1.02	4.7	–	15.7	1.09	2.7	39.4	235.3	8.5	0.3	2.7	1.0	1.1
2018	-0.1	1.03	-2.6	–	14.5	1.11	2.6	39.6	231.7	9.0	0.3	2.6	1.0	1.2
2019	0.2	1.05	-5.6	–	13.9	1.11	2.5	43.1	225.8	12.0	0.7	2.5	1.7	1.6
2020	1.5	1.05	-5.1	–	13.9	1.12	2.7	45.4	225.1	11.0	0.7	2.7	1.3	1.3
2021	2.0	1.13	-8.8	–	13.7	1.14	2.7	46.3	226.0	14.2	1.0	2.7	2.0	1.6
Low	2.5	1.00	4.0	0.0	3.0	1.05	1.0	75.0	240.0	10.0	1.0	1.0	1.0	1.0
Medium	5.0	1.04	10.0	6.0	6.0	1.10	1.5	85.0	260.0	12.0	1.2	1.2	1.2	1.2
High	7.5	1.08	16.0	12.0	9.0	1.15	2.0	95.0	280.0	14.0	1.7	1.7	1.7	1.7

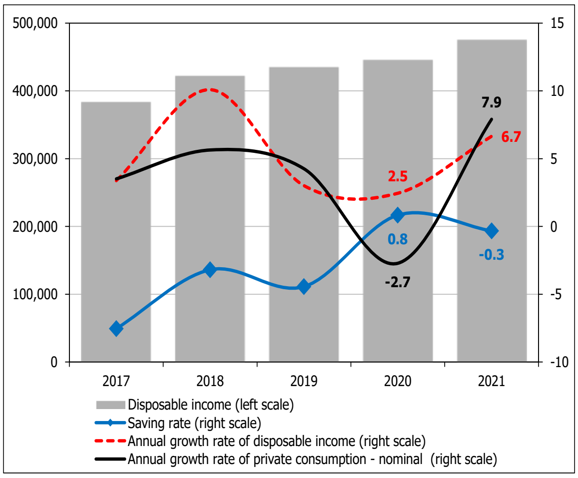
Source: National Bank calculations.

1.4. Household sector

In 2021, the risks associated with the household sector remained under control, they even registered certain reduction. This was supported by the post-pandemic recovery of the economy, which contributed to stabilization in the labor market and growth of disposable income. The increase in the disposable income is the basis for the sustainability of the debt level of the households sector as a whole, as well as for the savings accumulation, taking financial risks through investments and consequently accumulation of financial funds. In 2021, a nominal increase in accumulated financial assets was registered, which is the highest in the past ten years, maintaining the household preference for less risky investments, primarily in deposits with banks and in private pension funds. Households are the most significant creditor not only of domestic banks, but also of other domestic financial institutions, so their perceptions of economic trends and personal financial position are becoming more important for the financial stability. In 2021, household behavior was influenced by the economic recovery, as well as by the uncertainties present during the year and related to the prolonged pandemic, the effects of disrupted supply chains on companies' business activities, and towards the end of the year, also the increased inflation rate due to the price growth on the world stock markets. In such conditions, the household investments in bank deposits were in foreign currency and at very short term, thus causing certain increase in the eurization degree of household deposits (measured by the share of foreign currency deposits in total household deposits).

Household debt continued to increase at an accelerated growth rate, which, however, was lower than nominal GDP growth. This allowed the household debt ratio to be maintained at a relatively stable level of around 30% of GDP, which is still not a high level of indebtedness. However, the debt is increasing at a higher rate than the growth of disposable income, which is beginning to reflect on some of the indicators of the ability to repay the debt. New borrowing by households is mainly in the form of housing loans, which are mostly extended in longer terms, and the creditworthiness of customers is more uncertain, especially in the current conditions of increased inflation and expected growth of interest rates. Households' solvency and liquidity ratios currently indicate a relatively limited systemic vulnerability of this sector.

Chart 58 Disposable income, private consumption and savings rate of households
in millions of denars and in %



Source: National Bank assessments and calculations based on data from SSO, MF and CSD.

But, taking into account the unpredictability of the entire environment caused by the prolonged pandemic and the geopolitical tensions and the developments between Russia and Ukraine, and especially the rising prices of products and the normalization of monetary policies, the risks for the indebtedness of the households and their ability to repay debts further grow. This also increases the risks for potential future greater materialization of the credit risk and growth of the banks' non-performing loans. Namely, the growing inflation may

adversely affect the purchasing power of the population, as well as the ability to regularly repay the debt, which may lead to an increase in the rate of non-performing loans and the credit losses of banks. Particularly vulnerable are the highly indebted part of the population in relation to disposable income, who have a more limited space to mitigate the effects of a price shock.

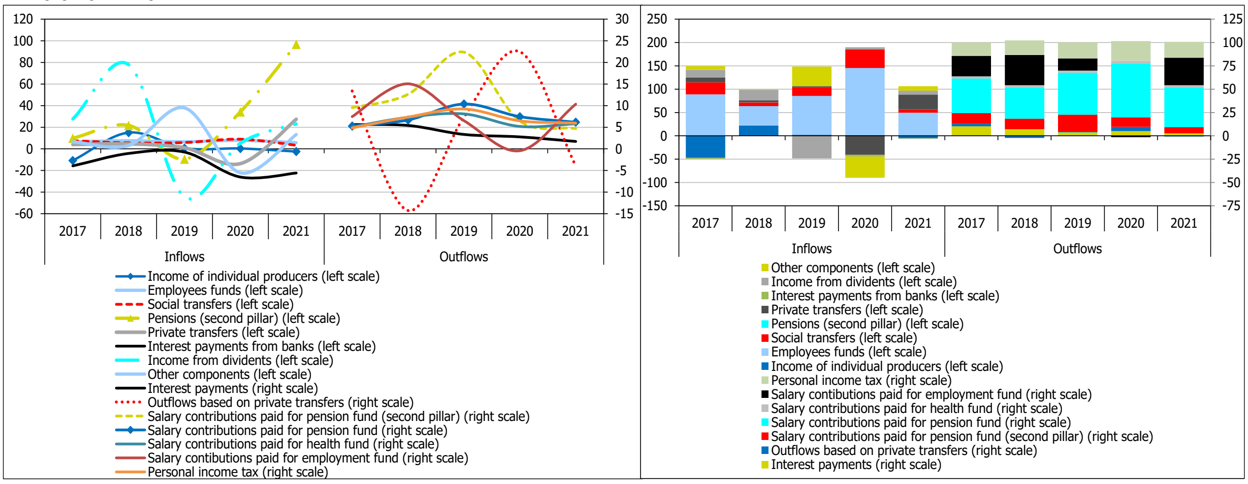
In 2021, in conditions of economic recovery, but also further problems in global supply chains and prolonged uncertainty caused by the emergence and spread of new COVID-19 strains, **the disposable income[58] of households sector registered accelerated annual growth,** registering more than a double higher growth rate compared to the preceding year (6.7% in 2021, as opposed to 2.5% in 2020). According to the individual components that form the disposable income of households, the greatest contribution (almost 50%) to the growth of the total inflows of households (50%) in 2021 is that of the compensations paid to employees, in conditions of gradual stabilization of the situation on tha labour market. Also, contrary to the previous year, private transfers normalized in 2021, which is why inflows from private transfers had a significant contribution (of about 30%) to the solid growth of disposable income. Government expenditures occupy a dominant part (almost 90%) of the total outflows that form the disposable income of the households sector. Thus, the growth of the outflow components of disposable income mainly results from the larger amount of salary contributions, which in conditions of an almost unchanged number of employed persons in 2021[59], is fully due to the increase in the average paid wages[60]. Certain structural factors, such as the lack of labor in some segments, but also the reduction of the number of employees with a wage lower than the average, had an additional influence on the average wage growth as a crisis effect.

[58] Due to lack of data on disposable income in the official statistics, since 2007, the National Bank has been preparing an approximative data on the disposable income of households in the country which is updated annually. For some of the components of disposable income for which there is no official data, estimates are made. Disposable income is the difference between the nominal amount of the estimated inflows and the outflows of cash to and from the household sector. Inflow components include: gross amount of compensations of employees, income of individual producers, social transfers (pensions paid by the Pension and Disability Insurance Fund of North Macedonia, social welfare, unemployment benefits, sick pay compensations, etc.), pensions from the second pension pillar private transfers from abroad, income from interests and from dividends, estimates for taxed income from other grounds (income from royalties and patent rights, income from property and property rights, realized capital gains, revenue from gains from games of chance and other prizes), income from regular repayments of denationalization bonds, interest payments from government securities and compensations of employees residents abroad. Outflows include: interest expenses, wage contributions for the Pension and Disability Insurance Fund of North Macedonia, for the second pension pillar for the government health insurance, for unemployment insurance, private transfers to abroad and payments for personal income tax.

[59] In 2021, the labor market registered stabilization and a gradual reduction of the transferable negative effects of the COVID-19 pandemic on this market segment (a decrease in the number of employed persons was registered only in the first quarter, while in the rest of the year the number of employed persons recorded annual growth). In 2021, several anti-crisis measures were adopted to further mitigate the impact of the crisis on the labor market (more on the following link: https://vlada.mk/ekonomski-merki-covid19), and continued with the implementation of active employment measures to support the employment growth (more on the following link: https://av.gov.mk/operativen-plan.nspx и https://vlada.mk/node/27001). The number of employees remained the same in 2021, amid simultaneous increase in the employment rate of 0.1 pp to the level of 47.3%.

[60] In one part, the growth of average wages is the result of the transfer effect from the increases in the minimum wage in 2020, and then from the regular increase in the minimum wage from April 2021. The minimum wage in gross amount, starting from April 2021 to March 2022 is Denar 22,146 (previously Denar 21,776), i.e. the minimum wage in net amount is Denar 15,194 (previously Denar 14,934).

Chart 59 Annual rate of growth of components of inflows and outflows (left) and contribution of inflow and outflow components (right) to the growth of disposable income
in % and in %



Source: National Bank assessments and calculations based on data from SSO, MF and CSD.

The part of the disposable income of the "household" sector that remains unspent after private consumption expenditure, represents the savings of the "household" sector, which serves as the basis for the calculation of the household saving rate[61]. After the severe drop in 2020, in 2021 private consumption registered an annual growth of 7.9%, which although partly reflects the low comparative base from the previous year, and is also the result of more favorable changes with the gradual stabilization of the epidemiological situation and the gradual return of consumer confidence, with the movements on the labor market being also favorable, given further solid credit support. At the same time, the faster growth of private consumption than the growth of disposable income prevented to fully cover the private consumption with disposable income, which in turn contributed to a significant reduction in the savings rate of the household sector, which again registered negative value in 2021 (in conditions of deposit growth in banks), but it is better compared to the pre-pandemic period. However, it should have in mind that the disposable income is based on an assessment of the National Bank, and its distribution of private consumption and savings should be interpreted with caution, especially if it is known that in our country the grey economy participates in the creation of the disposable income[62].

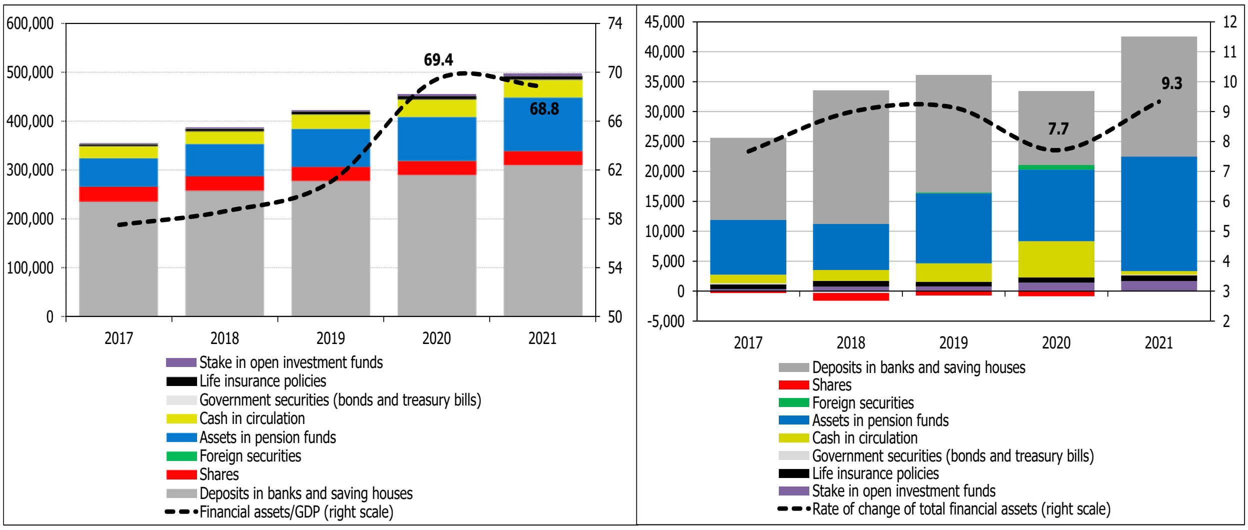
In the next period, the environmental risks, primarily related to inflation and economic activity, will probably affect the growth of disposable income, having possible impacts on private transfers from abroad, which recovered significantly in 2021. This could limit income inflows for households, which could adjust consumption according to the changes in income, or supplement it by borrowing and using part of the savings, which during the pandemic have registered constant solid growth.

[61] The rate of household saving is the ratio of the savings and the disposable income of households.
[62] Given that there is no officially published data on certain components of disposable income, the National Bank makes an assessment, which creates a possibility that the determined disposable income will not be comprehensive, which consequently affects the calculated savings rate. Thus, in certain years, as in the case of 2021, a negative marginal propensity to save of the households sector is obtained, which can still be considered as an extremely unusual data in circumstances of growth in deposits of this sector with banks.

1.4.1. Financial assets of the household sector

The financial assets of the household sector[63] continued to grow in 2021, faster compared to 2020 (a growth of 9.3% in 2021, compared to 7.7% in 2020). The share of the household sector in the gross domestic product is relatively stable and equals 68.8% (from 69.4% in 2020), which is higher level compared to the pre-pandemic 2019 (61%). Most of the growth of financial assets was driven by household deposits in domestic banks and savings houses (47.1%) and investments in private pension funds (45%). Households, which are traditionally the most significant depositors in the Macedonian banking system (with a share of 65.9% in total deposits), in 2021, despite the enlarged uncertainty from the pandemic and other present risks, increased their funds invested in banks by Denar 20,059 million, or by 6.9% (against 4.5% in 2020), thus proving the households' confidence in the banking system. The prolonged COVID-19 pandemic coupled with the rising growth of energy prices and growing inflation brought about a change in the currency and maturity preference of depositors, seen through the growth of foreign currency deposits and very short maturities. Thus, demand deposits and foreign currency deposits made the largest contribution to the growth of household deposits, which caused a moderate increase in the euroization degree (measured by the share of foreign currency deposits in total household deposits).

Chart 60 Financial assets of households (left) and annual growth of components (right)
in millions of denars and in %



Source: National Bank assessments and calculations based on data submitted by banks and savings houses, MF, MAPAS, CSD, ISA and SEC.

[63] Clarification of some more specific components of financial assets: 1) cash in circulation - on the basis of the assessment that 80% of cash in circulation (outside of banks) is in households and is included in their financial assets; 2) domestic shares - the investments of resident natural persons in domestic shares are the sum of listed and non listed shares from domestic joint stock companies, at nominal value; 3) life insurance policies - the amount of the assets that cover the mathematical reserve on the appropriate cut-off date is taken as approximation for the claims of households on the basis of life insurance policies; 4) foreign securities - the stock of the investments of natural persons in foreign financial instruments is approximated through the difference between the inflows and outflows of the realized transactions, obtained through the notifications from the banks for the international payment operations.

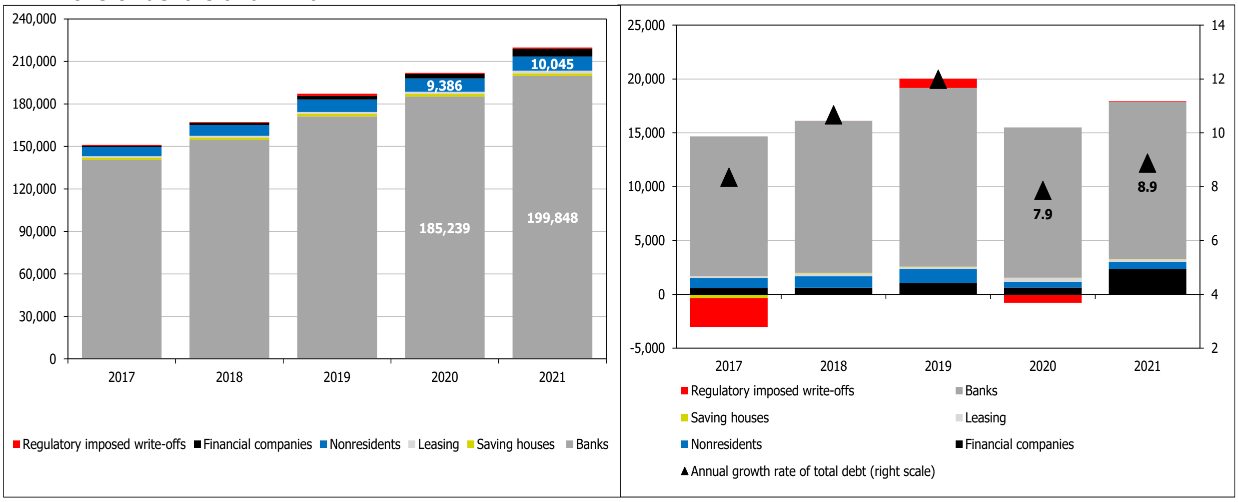
In 2021, the higher deposit growth in relation to household debt resulted in widening of the financial position[64] of this sector to domestic banks. Namely, in 2021 the household deposits have been increasing with an accelerated dynamics (by 6.9% compared to 4.5% in 2020). Compared to 2020, the growth of the total household debt to the domestic banks accelerated (8.9% in 2021, compared to 7.9% in 2020). In such conditions, the annual growth rate in the financial position of households towards domestic banks in 2021 is significantly higher, compared to the previous year and reached 5.3%. Households show a low tolerance to market risks. Although in the recent years, in conditions of low interest rates Although in the past years, in conditions of low interest rates, a certain redirection of funds to alternative financial instruments (such as voluntary pension funds, life insurance policies, shares in open investment funds or foreign financial markets) has been registered,[65] the share of these investments remains relatively moderate compared to the bank deposits.

[64] Financial position of households to domestic banks is the difference between claims on domestic banks (deposits) and debt to domestic banks (loans). This analysis of the household debt also includes the loans that were subject to mandatory write-off in accordance with the regulations.
[65] Residents' investments in financial instruments on foreign financial markets have been allowed since the beginning of 2019 with the start of the second phase of the Stabilization and Association Agreement between our country and the EU.

1.4.2. Household debt

In 2021, the trend of gradual increase in the level of debt of households sector, continued and this year it accelerated and equaled 8.9% (compared to 7.9% in the previous year). However, at the end of 2021, the share of the total household debt relative to the gross domestic product amounts to 30.4%, which is a decrease of 0.4 percentage points compared to the end of the previous year, but is getting higher compared to the pre-pandemic 2019 by 3.4 percentage points. In 2021, the household debt to all creditors increased[66], but the

Chart 61 Structure of household debt (left) and of the annual change in household debt (right)
in millions of denars and in %

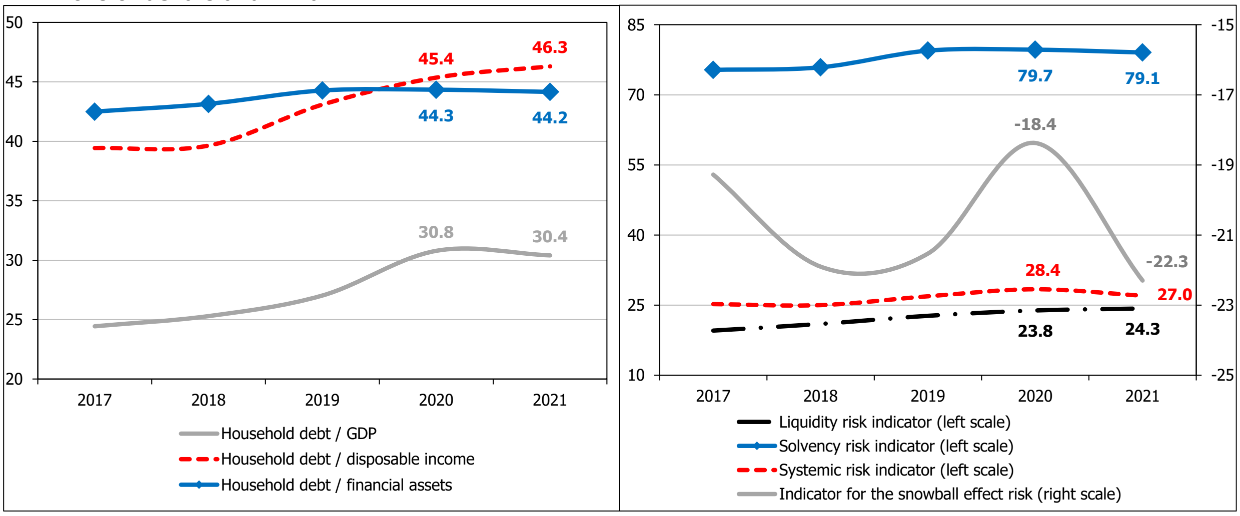


Source: National Bank's Credit Registry, based on data submitted by banks, savings houses, the MF, the CSD, the MAPAS, the SEC and the ISA, as well as the State Statistical Office for the GDP data from the press release published on 9 June 2022.

main growth generator was the debt to the domestic banks[67] (which anyway dominates in the total household debt with a share of 90.9%), followed by the debt to non-residents (4.6%). In 2021, the debt towards financial companies, the participation of which in the total debt is still low (about 2%), does not point to present vulnerabilities at the level of the total households. However, certain categories of borrowers, who are more indebted in relation to income, which limits their access to bank loans, can be more sensitive.

[66] The household debt to domestic financial companies registers an increase (of 75.6%), to leasing companies (by 12.4%) and to non-residents (by 7%). The debt to savings houses also increased (by 1%).
[67] The debt to banks also includes the amounts that were subject to mandatory write-offs in accordance with the regulations.

Chart 63 Indicators of the relative size of household debt (left) and indicators of risks and vulnerability of household debt (right)
in millions of denars and in %

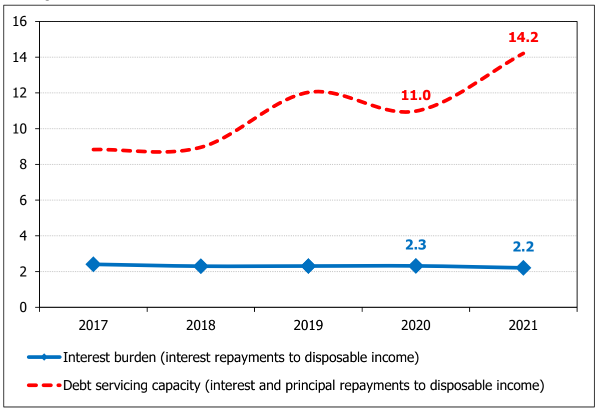


Source: National Bank's Credit Registry, based on data submitted by banks, savings houses, the MF, the CSD, the MAPAS, the SEC and the ISA, as well as the State Statistical Office for the GDP data from the press release published on 9 June 2022.

Note: $\boldsymbol{Liquidity\ risk\ indicator} = \mathbf{0,5}\frac{\boldsymbol{Debt_t}}{\boldsymbol{PDisposable\ income_t}} + \mathbf{0,5}\frac{\boldsymbol{Interest\ payment_t}}{\boldsymbol{Disposable\ income}}$. A higher value of this indicator denotes a higher ratio of debt to household disposable income.

Snowball effect risk ratio = $\frac{Interest\ payment}{\frac{Долг_t+Долг_{t-1}+Долг_{t-2}+Долг_{t-3}}{4}}$ - $\left(\frac{Disposable\ income_t}{Disposable\ income\ \ _{t-4}} - 1\right)$. The snowball effect indicator has a negative value given the fact that the share of the cost of funds received as debt (interest payments) in the average debt for the last four years is lower than the average growth of disposable income for the same period. The insolvency risk indicator is the correlation between the household debt and the net financial assets (the net financial assets represent difference between the financial assets and the household debt). The systemic risk ratio is the average of the analyzed liquidity risk, insolvency risk and snowball effect risk ratios.

Chart 62 Household creditworthiness indicators
in %



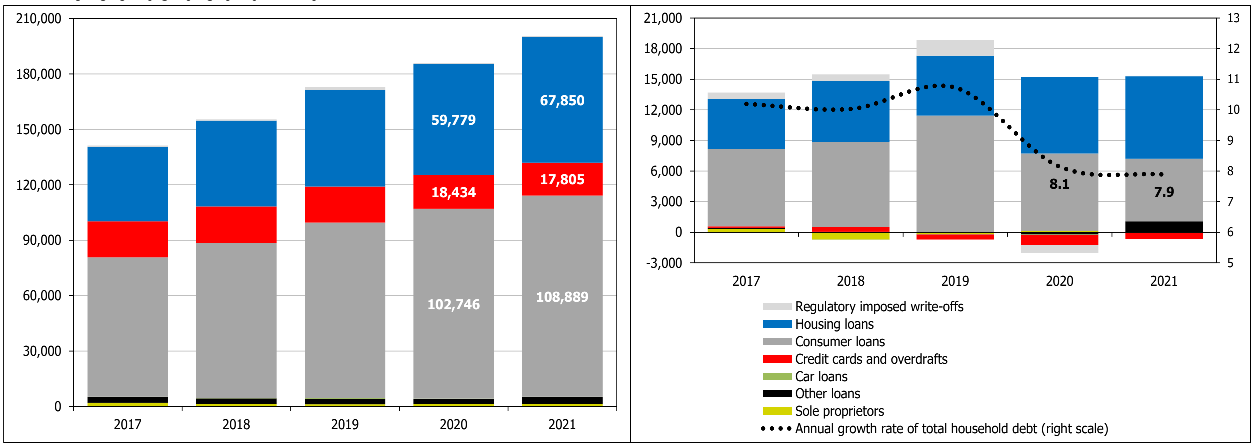
Source: NBRM, based on the data submitted by banks.

In 2021, the solid credit support of domestic banks to households continued[68], contributing to acceleration of the increase in the household debt. The stronger increase of household debt relative to the growth of disposable income led to a slight deterioration of the liquidity and solvency position of households, while the indicators of

[68] In 2021, lending to households contributed with 49.8% to the annual growth of lending to non-financial corporations by domestic banks. The accelerated growth of household lending partly stems from the lower growth in 2020, while it is mostly a result of the increased demand of loans, amid simultaneously eased credit conditions(source: National Bank's Lending Surveys).

households' debt repayment[69] ability registered an improvement. In conditions of growing inflation and reduced purchasing power, the risks of untimely repayment and default of household debt are rising, which can cause an increase in the rate of non-performing loans and credit losses among banks and other creditors. The importance of these risks comes to the fore due to the growing share of total household debt in disposable income, which grew from 39.4% in 2017 to 46.3% in 2021. On the other hand, the more significant increase in net financial assets contributed to a moderate improvement in the solvency position of households. In any case, the indicators of the indebtedness of the "household" sector and the indicators of the risks of household indebtedness remained within the level that was characteristic for the pre-pandemic period. The level of household debt is still below the derived vulnerability threshold[70]. The moderate level of vulnerability of the households in terms of debt, is also confirmed by the aggregate indicator for its systemic risk, which in 2021 registered moderate downward movement. The value of this indicator is maintained relatively stable and points to sustainable risks in the households sector. However, the military intervention of Russia in Ukraine at the beginning of 2022, the rising prices of energy and basic products, the prolonged disruption of production chains, the normalization of monetary policy create growing risks for the future creditworthiness of households, the low income segments are especially vulnerable.

Chart 64 Household debt to domestic banks by type of loan product (left) and annual growth (right)
in millions of denars and in %



Source: NBRM, based on the data submitted by banks.

According to the type of the credit product that the households sector uses from domestic banks[71], the largest annual increase in 2021 was registered in housing loans (by 13.5%) and consumer

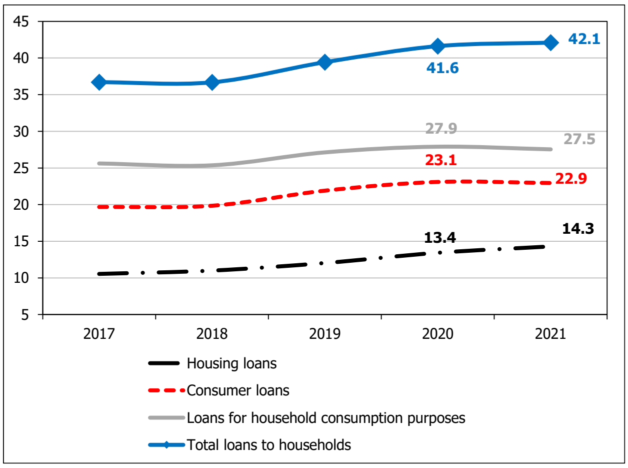
[69] For the purposes of this indicator, the amount of newly approved loans to households during the analyzed year is used. Newly approved loans during 2021 are 21.2% higher compared to the previous year.

[70] Vulnerability threshold for household debt is derived from the MIP Scoreboard used by the European Commission to assess potential risks and macroeconomic imbalances in the EU countries. The MIP scoreboard sets a vulnerability threshold for total private sector debt at 133% of GDP. Vulnerability threshold of household debt of 34% of GDP is derived according to the ECB (ECB Financial Stability Report, November 2018), which decomposes the 133% threshold for total private debt into household debt and corporate debt threshold, based on the average share of household and corporate debt in total private sector debt. For the decomposition of vulnerability threshold for the Republic of North Macedonia, we used the average share of household and corporate debt for the period 2006 - 2021.

[71] The total household debt also includes the amount of mandatory write-offs made by banks due to the requirements in the regulations that refer to credit risk, because the written-off debt remains an obligation of households. The National Bank holds data on mandatory write-offs only by sectors (households and non-financial companies), but not on their currency and maturity structure by type of credit product. Because of this, the effect of write-offs is included only in the total household debt, but not in the analyses according to its individual structural features.

Chart 65 Household debt to disposable income ratio, on various bases

in %



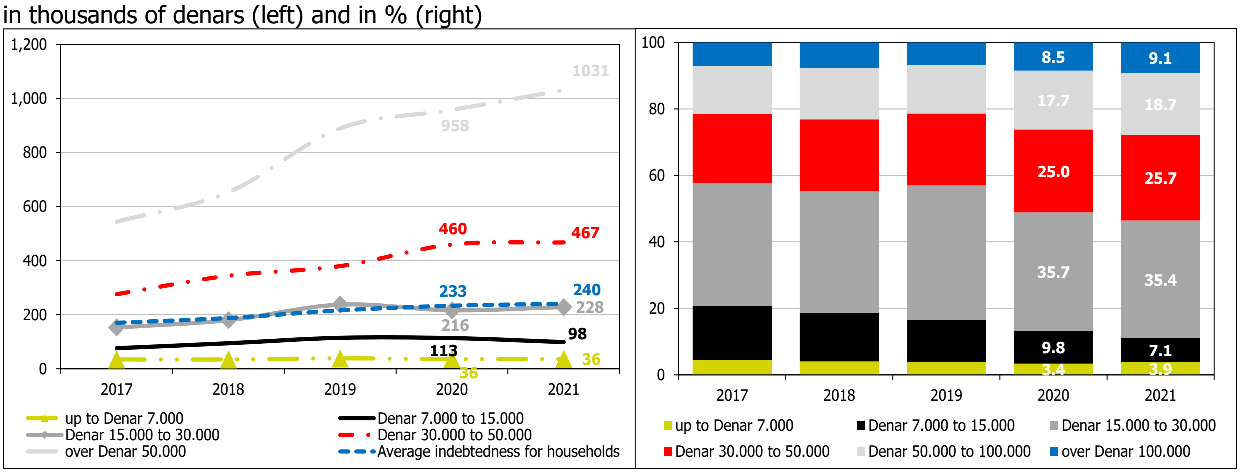
Source: National Bank's Credit Registry, based on data submitted by banks.

loans (by 6%), which almost entirely conditioned the growth of the total household debt to banks. Moreover, in the structure of household debt to banks, the debt that serves to finance household consumption, composed of consumer loans, car loans, overdrafts, credit cards and loans for other purposes, accounts for about 70%. Unlike this, in the countries with a higher level of development, and especially in the countries that have an extremely high household debt to gross domestic product ratio, as a rule, dominant part of household debt is related to the financing of the purchase of real estate. Hence, the changes in the debt structure in the next period will depend on the dynamics of the disposable income that directly determines the creditworthiness of households, that is, at the level of the creditor, it specifies the maximum debt amount that can be paid.

The ability of the household sector to regularly service liabilities determines the level of credit risk arising from this sector, which is one of the more significant risks for domestic financial institutions. In domestic banks, as the most important creditor of the households, the quality of the overall credit portfolio composed of households is good, which is evident from the dynamics of the rate of non-performing loans, which is relatively low for a longer period, despite the increase

Chart 66 Average debt by household (left) and structure of household debt (right), by monthly income

in thousands of denars (left) and in % (right)



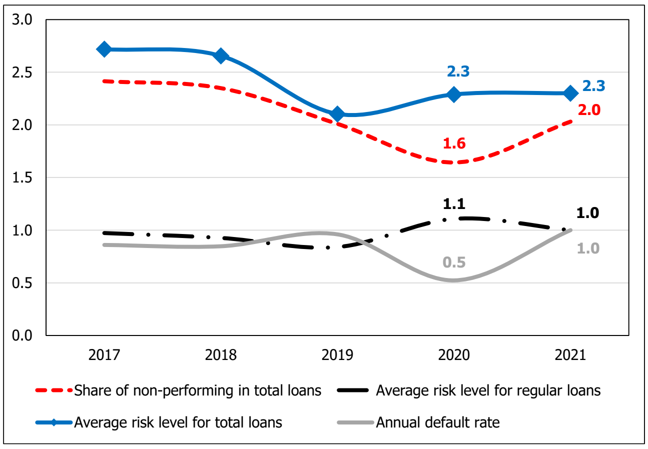
Source: National Bank, based on the data submitted by banks.

in 2021 by 0.4 percentage points, to the level of 2%. The growth of non-performing loans to households of almost one third annually (33.8%), or by Denar 1,007 million[72] is almost entirely attributed to non-performing consumer loans, which increased by almost half (48.8%) or by Denar 913 million, with an increase of Denar 101 million, or by 42.6% being registered in the non-

[72] If the effect of mandatory net write-offs is excluded, then the growth of non-performing loans is significantly lower and amounts to 15.8%, due to the higher growth of previously written-off loans.

performing loans based on credit cards. The new non-performing loans of households mostly come from clients whose loan repayments were temporarily "frozen" due to the pandemic.[73]. At the end of 2021, these non-performing loans take 57.3% of the total non-performing household loans. However, the risks of potential growth of the non-performing loans should not be neglected in the following period due to new uncertain circumstances in 2022 arising from the war in Ukraine, primarily from the growing prices of products and services, as well as the normalization of the monetary policy followed by the increase in the interest rates.

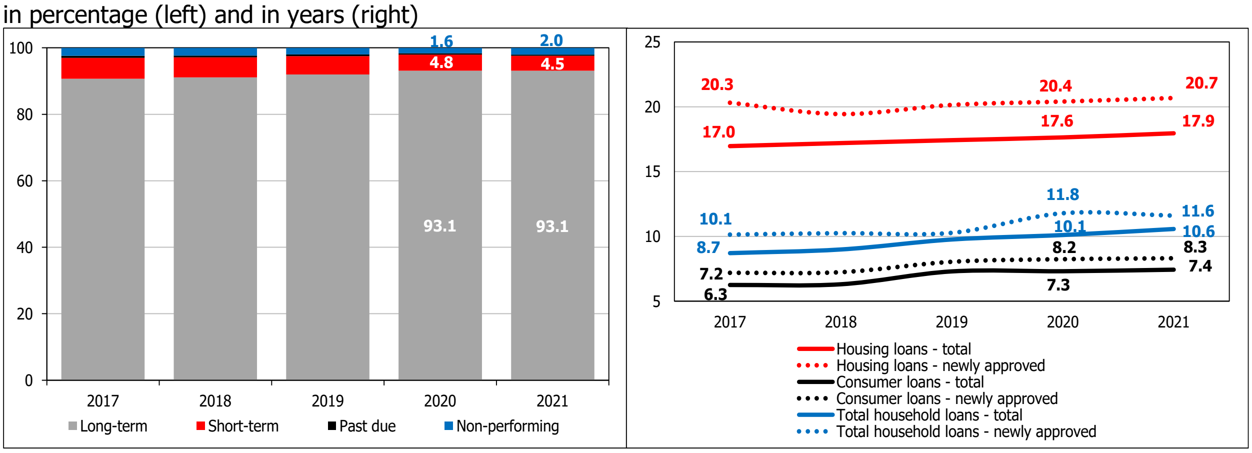
Chart 67 Household loan quality indicators
in %



Source: National Bank's Credit Registry, based on data submitted by banks.

Amid continuous growth of lending to households[74], the quality of this credit portfolio of the banks, as well as the possibilities for its further growth, are directly related to the creditworthiness of households. This primarily applies to the ability of the individual households to service liabilities, measured by the ratio of the monthly obligations for repayments to banks and their monthly income. Moreover, the amount of income is an extremely important factor for the assessment of the creditworthiness, since the risks of high indebtedness and occurrence of excessive indebtedness, are usually far more pronounced in natural persons who have a lower amount of monthly income. In terms of the structure of the credit exposure to households according to their monthly income, in 2021, there is an increase in the share of the indebtedness of the persons with higher monthly income.

Chart 68 Maturity structure of household debt (left) and average weighted maturity of new household loans, and by credit product (right)
in percentage (left) and in years (right)



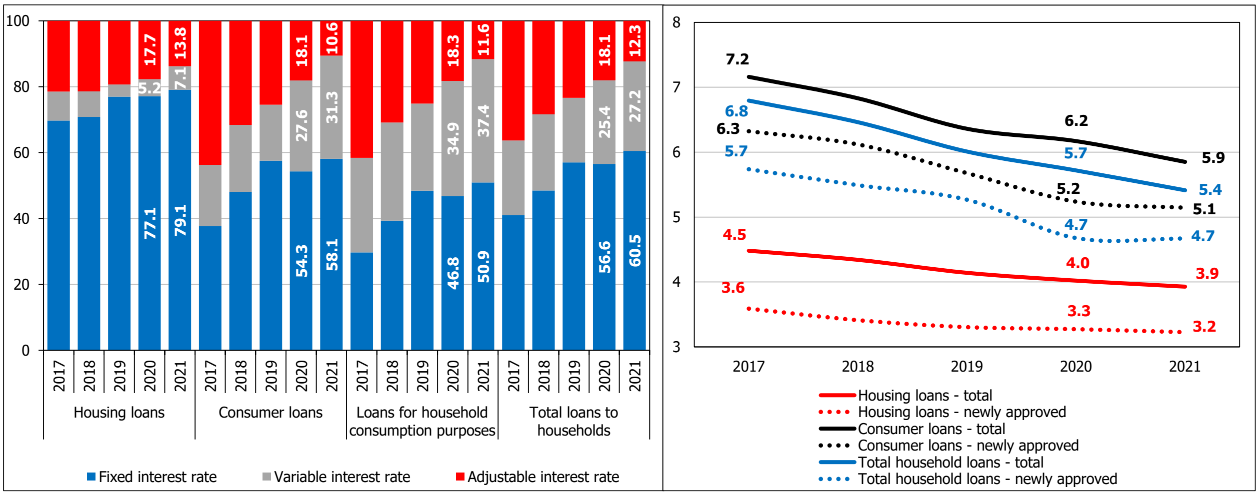
Source: National Bank's Credit Registry, based on data submitted by banks.

The grace period of more than 80% of the loans that were with eased contractual terms expired as of 31.12.2020, and already in the first quarter of 2021 there is a certain growth of non-performing loans to households.

[74] The share of household loans in total bank loans exceeded the share of corporate loans (these shares, as of 31.12.2021, equal 51.1% and 47.9%, respectively).

The faster growth of household debt predominantly in longer maturities[75] in which the creditworthiness of the clients is more uncertain, is a risk factor for the quality of this segment of the loan portfolio of banks, especially in conditions of risen inflation and growing interest rates. The average weighted maturity of newly approved loans to households is around ten years, and if compared to the beginning of the decade, it registered an increase (for example, in 2012 it was about eight years).

Chart 69 Structure of household debt by credit product, by type of interest rate (left) and average interest rate on total and newly approved loans to households, by type of credit product (right)
in %



Source: National Bank's Credit Registry, based on data submitted by banks.

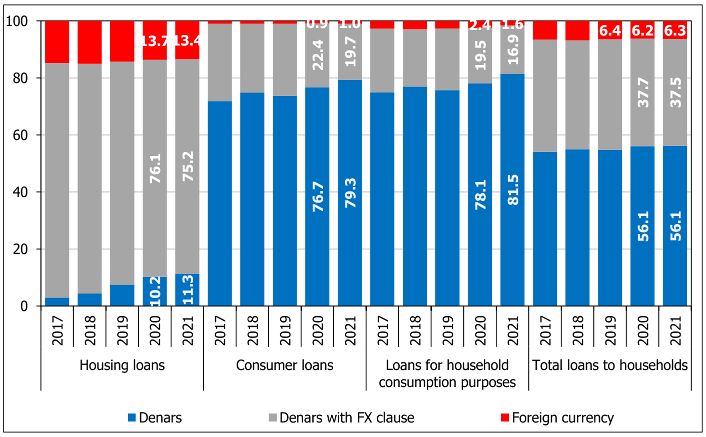
The increase in the maturity of household debt to domestic banks also increases the household exposure to interest rate risk, and accordingly, to indirect credit risk for banks, due to possible increased debt burden for borrowers amid growth of interest rates. This is based on the significant presence of the interest rates that can be changed (adjustable[76] and variable interest rates) in the credit agreements with the households. In 2021, the average weighted interest rates on the newly approved loans[77] and the total household loans continued to decrease. The downward movement of the nominal interest rates was equally present in newly approved loans by individual currency features, whereby the spread between denar loans and loans with a currency component was maintained at an almost identical level as in the previous year. However, the increase in interest rates, which intensified in 2022, creates risks for the volume of repayment liabilities, not only for current, but also for future households' liabilities. Thus, banks are exposed to indirect credit risk related to the risk of interest rates growth, in the conditions of the initiated normalization of monetary policy both globally and nationally.

[75] As of the end of 2021, long-term household loans accounted for 93.1% of total household loans.

[76] In 2021, in the structure of debt and of newly approved loans by type of interest rate, the trend of replacing the adjustable interest rate with greater use of a variable and / or fixed interest rate continued.

[77] Average interest rates are weighted for the share of each type of loans in total household loans.

Chart 70 Currency structure of household debt to banks, by credit product
in %



Source: National Bank's Credit Registry, based on data submitted by banks.

The currency component is still quite present in household debt, which highlights the household exposure to currency risk. In 2021, there are no significant changes in the currency structure of household loans, whereby around 44% of household loans are with a currency component, predominantly in denars with a currency clause. The interest difference between denar loans and loans with a currency component underlines the importance of the cost factor (interest rate) when choosing the currency of financing by households, which acts towards maintaining demand for loans with a currency component, especially in the housing loans segment. In the rest of the credit products, denar lending prevails, with denar loans having a higher share in the total household loans. Unlike the loans, the protracted COVID-19 pandemic coupled with the rising growth in the energy prices and realized higher inflation rate, with the deposits accelerated inflation brought about a change in the currency preference of households, seen through the growth of foreign currency deposits. Thus more than 50% of the household deposits account for foreign currency deposits. Although the households sector as a whole is close to a matched currency position, however it is very likely that most of the depositors are not simultaneously borrowers with banks. Hence, the different categories of households may have individually high short currency positions, i.e. high exposure to currency risk. In circumstances when the repayment sorces of this debt, i.e. most of the households' income is generated in denars, the stability of the denar exchange rate, which has been successfully maintained, is important for maintaining the level of the households' debt and their ability for repayment of the debt to the financial sector.

1.5. Corporate sector[78]

In 2021, the functioning of the domestic corporate sector normalized and started recovering from the pandemic, which had a strong impact on this sector's activities in the previous year. The reopening of the economies and the easing of protective measures, in terms of immunization of the population and adapting to the new circumstances due to the the pandemic, are factors that contributed to the economic recovery and increased activities of the corporate sector. The measures taken to support the economy and the relaxed monetary policy of the National Bank[79] also contributed to this context, which enabled continuous crediting of the corporate sector and easing of financial conditions. In such circumstances, the activities of almost all corporate entities recovered, although with a different intensity, depending on the volume of incurred losses, the specifics of the operations and the coverage with the protective measures, as well as the possibility for adjusting the activities of the pandemic conditions. The recovery is slower in the most affected industry, i.e. catering, which despite the highest growth in sales, still failed to return to profitable operating. Micro entities remain the most vulnerable group with the largest exposure to operational risks. The corporate sector, as a whole, ended the year with improved profitability, moderate leverage and a relatively stable, although traditionally low, liquidity position.

The corporate debt increased in 2021, but its indebtedness, measured through its share in GDP is stable and below the derived vulnerability threshold. Non-resident sector remains the main creditor of the domestic corporate sector, with the indebtedness to domestic banks also registering an increase. A significant part of the companies' debt has a currency component and variable interest rates, which emphasizes the exposure to currency risk, which is limited due to the exchange rate and the interest rate risk targeting strategy, which especially becomes more and more important in the current conditions of changes in the interest rate cycle.

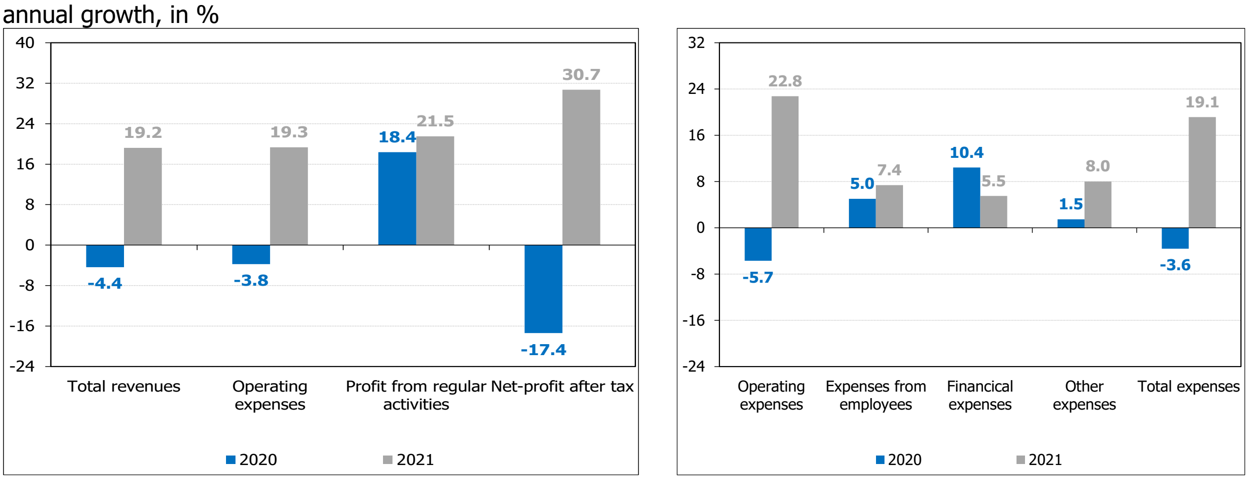
The uncertain environment creates risks for the corporate sector operations in the next period. The war in Ukraine enlarged further the already present imbalances in the global market influenced by the pandemic, which led to the price growth of energy and renewable materials and a general escalation of the inflation in global terms. With monetary authorities reacting by tightening monetary policy, global financial markets

[78] Corporate sector includes companies and sole proprietors whose main activity, according to the National Classification of Activities (NCA), is industry (which includes entities with main activities of mining and quarrying, supply of electricity, gas, steam and air conditioning and water supply, sewerage, waste management and environmental recovery activities), wholesale and retail trade, and repair of motor vehicles and motorcycles, construction, agriculture, forestry and fishing, transport and storage, information and communications, accommodation and food services, real estate activities, professional, scientific and technical activities and administrative and ancillary services. The corporate sector does not cover legal entities that have registered prevailing activity in: financial and insurance activities; public administration and defense, compulsory social security; education; health and social care activities; arts, entertainment and recreation; other services; activities of households as employers; activities of households that produce different goods and perform various services for their own needs; and extraterritorial organizations and bodies.
The analysis of the performance indicators of the corporate sector is made on the basis of data from the Central Registry of the Republic of North Macedonia. According to these data, at the end of 2021, the total number of registered non-financial legal entities in the Central Registry of the Republic of North Macedonia was 114,989 (113,306 entities in 2020). Of these legally and formally existing entities, only 63,603 entities (57,254 entities in 2020) submitted annual accounts to the Central Registry, where 56,733 entities (50,780 entities in 2020) submitted annual accounts to the Central Registry of the Republic of North Macedonia in 2021.

[79] For more information on the National Bank's measures in response to the COVID-19 crisis, access the following link: https://www.nbrm.mk/kovid-19-odgovor-na-narodnata-banka.nspx

are already indicating a tightening of financing conditions and a period of low global growth, expecting even a global recession according to more pessimistic scenarios. All this can lead to a significantly worsened environment for the operation of the domestic corporate sector, followed by increased financing costs, which ultimately can affect the greater materialization of credit risk among domestic banks. Such risks are most present in those entities that currently face with high debt burden, do not register satisfactory volume of operating cash flow from operations or operate with low profit margins.

Chart 71 Revenues, expenditures and profit of the corporate sector
annual growth, in %



Source: Central Registry of the Republic of North Macedonia.

After the reduced activities of the corporate sector in 2021, a significantly high growth of the total income of 19.2% has been registered, which was almost fully conditioned from the increase in the realized sale-based income. Expenditures also increased, with the largest contribution being made by the costs of raw materials and purchases of goods, and there was further growth in the costs of employees (in conditions of an increase in the average gross wages[80] and the number of employees[81]). The growth dynamics of the financial expenses was twice slower, with the increase in interest expenses being evident, primarily due to the accelerated increase of the debt. The easing of protective measures and work protocols, as well as government financial support measures[82] enabled the recovery of activity and an evident improvement of indicators in the activities that form the services sector, which were actually the most affected in 2020 with the beginning of the global pandemic. Most of these activities, such as transport and storage, real estate services, and trade, have fully recovered from pandemic losses and exceeded the profitability over the pre-pandemic levels. The exception is the most

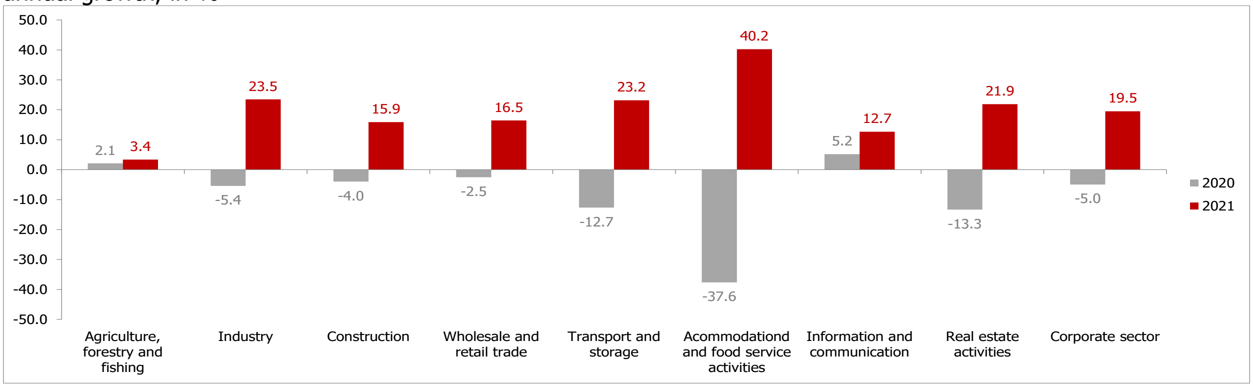
[80] The average gross wage paid in the corporate sector in 2021 increased by 7.3% on an annual basis. The growth of average monthly wages is present in almost all separate activities of the corporate sector, with the highest rate growing in "activities related to real estate, professional, scientific, technical, administrative and auxiliary service activities" (10.9%) and "information and communications" (10.4%). A part of the wage growth is also due to the increase in the minimum wage in April 2021. The amount of minimum wage according to the Law on Minimum Wage (Official Gazette of the Republic of Macedonia No. 80/21) paid for the period from April 2021 to March 2022 is Denar 22,146 in gross amount, i.e. Denar 15,194 net in line with the adjustment with the increase for the previous year of the average wage paid in the country, the consumer price index and the real GDP growth (with one third of the growth of each indicator, respectively).

[81] The recovery in corporate sector activity reflected positively on the domestic labor market through job creation and corporate sector employment growth (0.9% annually to a moderate decline of -2.9% in 2020).

[82] More information about the measures taken by the Government of the Republic of North Macedonia at the following link: https://vlada.mk/node/24947?ln=mk.

affected activity, catering, which, despite achieving the highest growth in sales, still failed to recuperate the profitability. The industry registered better operating results, but below the pre-pandemic level, in conditions of disrupted supply chains that affect the business process, and towards the end of the year, challenges related to the energy crisis.

Chart 72 Income based on sale by activity
annual growth, in %

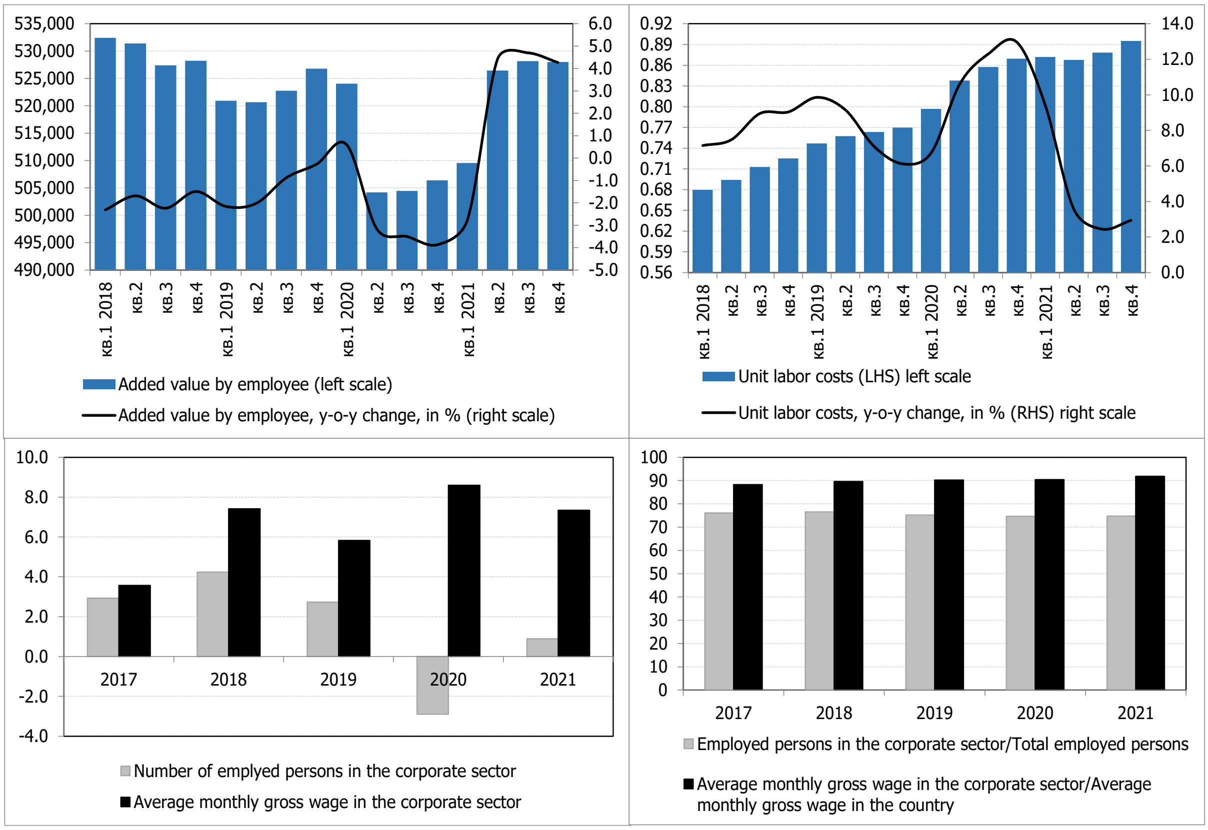


Source: Central Registry of the Republic of North Macedonia.

The recovered activity in 2021 resulted in a certain improvement in the corporate sector's competitiveness indicators, after several year constant deterioration on an annual basis. The improvement refers primarily to labour[83] productivity, which increased by 2.6% in 2021 (compared to the decrease of 2.5% in the previous year). Unit labor costs continued to grow, but at a slower pace compared to the previous year (4.5%, compared to 10.7% in 2020). Such performance proves, on the one hand, the recovery of the corporate sector after the pandemic 2020, but on the other hand, indicate the need to improve productivity in the operating, which will support the wage growth without jeopradising the competitiveness of the sector.

[83] The productivity of the corporate sector is calculated as the ratio between the value added and the number of employees in the sector. Unit labor costs are calculated as the ratio of the average monthly gross wage and the value added per employee in the sector.

Chart 73 Indicators of labor productivity (top) and the importance of employees and wages in the corporate sector to the domestic labor market (bottom)
in % and in denars

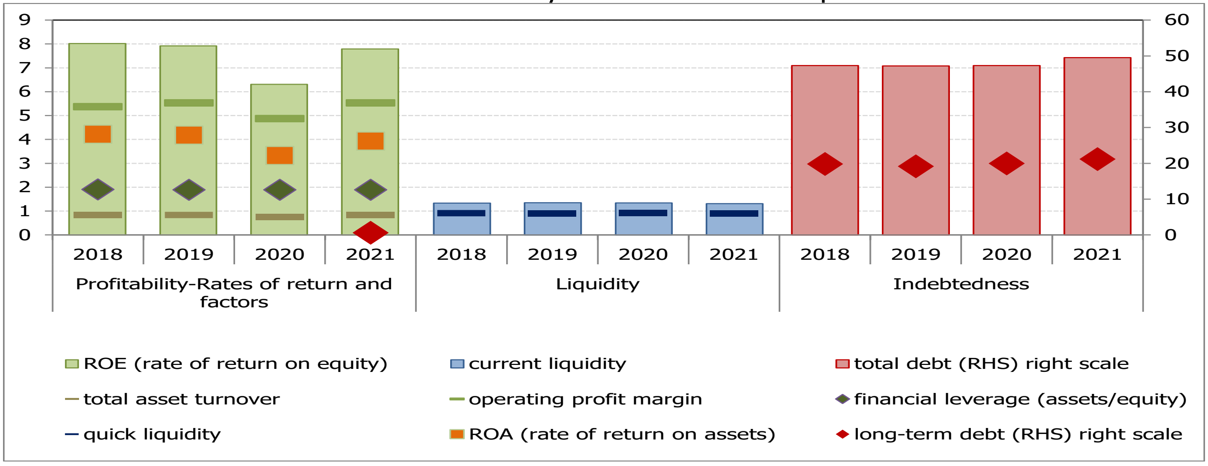


Source: State Statistical Office of the Republic of North Macedonia and National Bank calculations.

The post-pandemic recovery in 2021 also reflected on the relatively high annual growth in the net profit of the corporate sector (by 30.7%), which contributed to the improvement of profitability indicators and their approximate return to pre-pandemic levels. Thus, the realized return on assets (ROAA) in 2021 equaled 3.9%, while the return on equity and reserves (ROAE) was 7.8%, representing an increase of 0.6 and 1.5 percentage points, respectively, on an annual basis. Although the group of small enterprises had the largest contribution to the growth of the corporate sector's net profit, however, the highest share (of 52.3%) in the total realized net profit of the corporate sector is still made by large entities. Micro entities[84] registered an operating cost also in 2021, but it was twice lower compared to the preceding year, thus indicating certain post pandemic recovery in this group of entities, as well. A significant decrease in the participation of the corporate sector's entities that operated at a loss is evident, which in 2021 amounts to 32.7% of the total number of entities from the corporate sector compared to 43.6% in the previous year.

[84] Micro entities in 2021 account for 63.1% of the total number of corporate entities, followed by small entities with a share of 34.2%, medium-size entities (1.6%) and large entities (0.9%).

Chart 74 Indicators of the financial stability of the domestic corporate sector



Source: Central Registry of the Republic of North Macedonia.

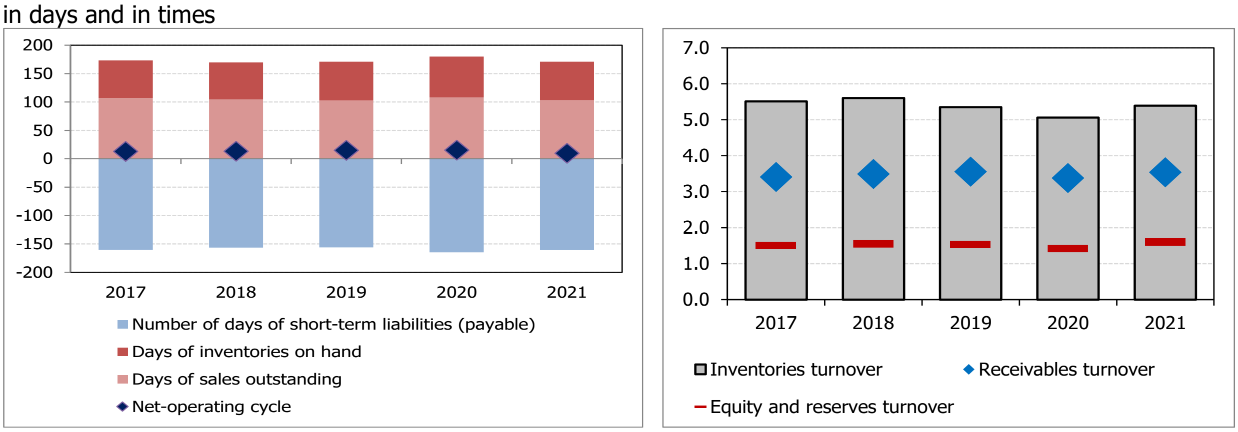
In 2021, the corporate sector improved operational efficiency, which contributed to maintain the liquidity indicators at a stable but moderate level[85]. The domestic corporate sector registered an increase in net working capital in 2021[86] (of 7.1% annually) and slight acceleration in the average turnover of inventories and claims. At the same time, shortening of the net operational cycle [87] to approximately ten days is evident, in conditions of faster collection of claims and servicing of liabilities. The improved regularity in the execution of obligations is a positive indicator of the ability of the corporate sector to maintain liquidity capacity, despite the expiration of the anti-crisis measures that supported liquidity in the previous year. However, differences are evident by group of entities. Micro entities remain the most vulnerable group of entities that are most exposed to liquidity-related risks, given that they register the lowest levels of current and liquidity indicators and negative net working capital. However, there are evident differences by group of entities. Micro entities remain the most vulnerable group of entities that are most exposed to liquidity-related risks, given that they have the lowest levels of moment and current liquidity indicators and negative net working capital. In the current context of highlighted risks arising from the environment, the vulnerability is also highlighted for other entities from the corporate sector that could face liquidity pressures and possible deterioration of the ability to service the debt on time, especially if the shock lasts or deepens in the next period.

[85] For a level that is usually considered satisfactory, 1 is used for moment liquidity, i.e. 2 for current liquidity. The indicator for the moment liquidity of the domestic corporate sector in 2021 was 0.9, while the current liquidity indicator was 1.3.

[86] Net working capital is the difference between current assets and current (shortterm) liabilities of companies.

[87]Net operating cycle is the average time from the payment to suppliers to the collection of claims on customers, including the time needed for transforming raw materials into finished products through a production process.

Chart 75 Selected indicators of operational efficiency of the corporate sector
in days and in times



Source: Central Registry of the Republic of North Macedonia.

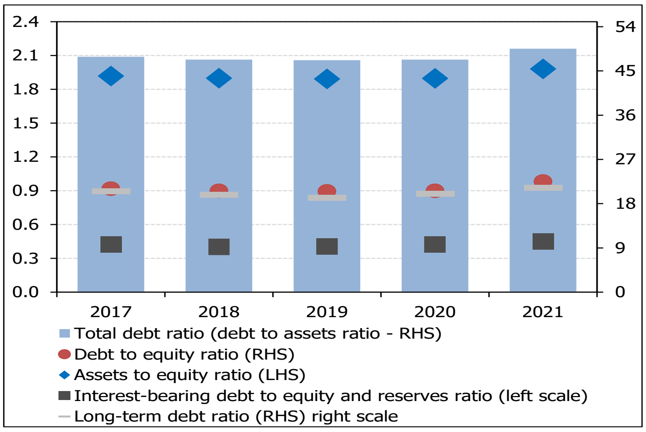
The total debt[88] of the corporate sector increased moderately in 2021 and equaled 49.5% (47.3% in the preceding year). The interest debt has also increased moderately, which at the end of 2021 amounts to 23% of total assets (22% in the previous year). In conditions of initiated economic recovery process, there is a noticeable increase in the coverage of interest expenses and financing expenses with the profit from regular activities[89], which indicates an improvement in the ability to repay the liabilities of the corporate sector. In addition to the prevailing relatively low interest rates, the increase in the profitability of the corporate sector also contributed to this. At the same time, the growth of the capital of the corporate sector[90] accelerated in 2021, which enabled increased debt financing, without significantly increasing the level of indebtedness expressed as a debt-to-capital ratio (financial leverage) of the corporate sector. However, the extremely uncertain global and domestic conditions create risks for debt management in the next period, which are more pronounced for entities with a higher level of indebtedness and those that will not manage to adjust their operations to the new conditions. Vulnerability is again the greatest in relation to micro entities that presented a negative financial result in 2021, and at the same time have the greatest annual deterioration of debt indicators from the current higher level and reduction of the already low liquidity.

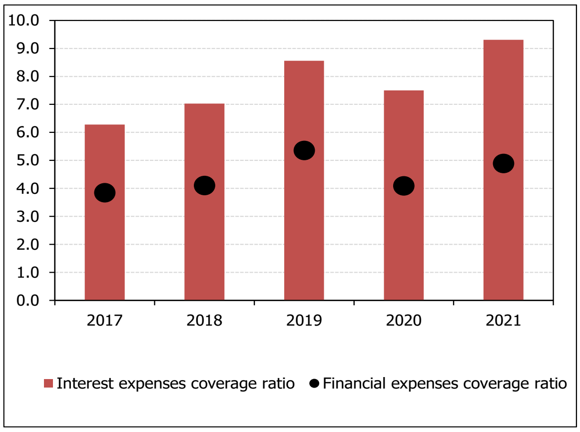
[88] The indicator for the total indebtedness of the corporate sector is calculated as a ratio of total assets reduced by principal and reserves and total assets of the corporate sector. The manner of calculating the performance indicators of the corporate sector is given in the annexes to this report.

[89] Operating profit (profit from normal business activities) is calculated by taking operating expenses away from gross income of the domestic corporate sector.

[90] Capital and reserves of the corporate sector as a whole grew in 2021 by 5.9% compared to 3.7% in 2020.

Chart 76 Selected corporate debt indicators
in times and in %





Source: Central Registry of the Republic of North Macedonia.

With numerous risks from the environment, the sensitivity of the corporate sector to the insolvency risk has increased, which largely remained limited in the first year of the pandemic, which was supported by extensive anti-crisis measures. After the expiration of the measures, in 2021, the exit rate of economic entities from the market increased, and its possible increase in the following period may negatively affect the realization of the credit risk taken by domestic banks and the growth of non-performing loans of the domestic corporate sector. The bankruptcy rate of the legal entities[91] in 2021 equaled 1%[92] (0.8% in the preceding year), while the share of the ceased entities[93] in the total number of active legal entities reached 12.2% (increase of 2.2 percentage points). However, the ceased entities rate remains lower than the rate of newly established legal entities[94], which in 2021 exceeded the pre-pandemic level and reached 14.5%. On the other hand, the downward trend of the number of entities with blocked transaction accounts continued, which in 2021 decreased to 22.1% of the total number of entities in the corporate sector.

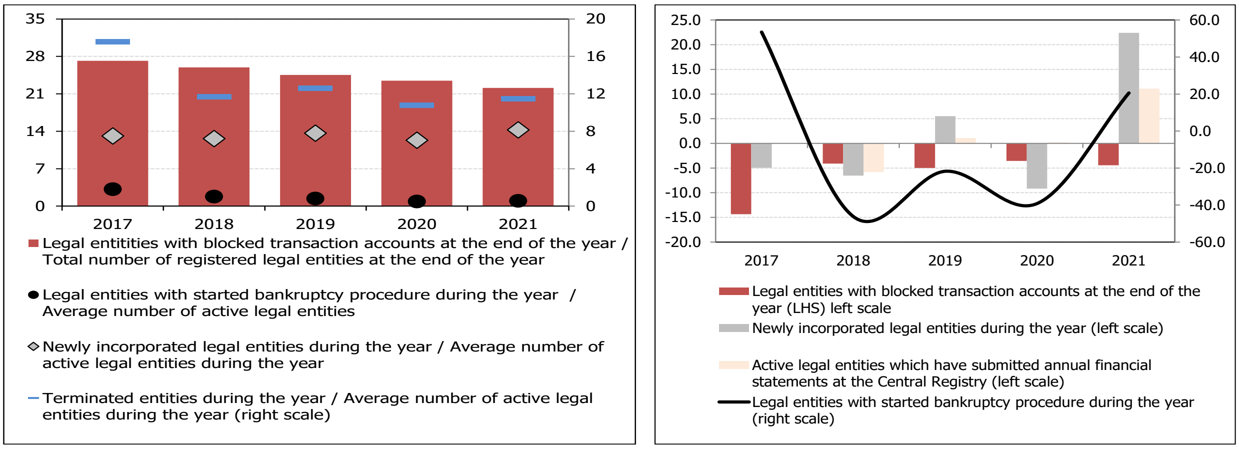
[91] The rate of bankrupted legal entities (so-called bankruptcy rate) is the ratio between the number of legal entities that entered into bankruptcy during the year (which is data from the Central Registry of the Republic of North Macedonia) and the average annual number of active legal entities, which is the average of the number of active legal entities (registered entities that submitted an annual account to the Central Registry of the Republic of North Macedonia) at the end and the beginning of the respective calendar year.

[92] The increased number of bankrupt legal entities in 2021 can be connected in part to the expiration of anti-crisis measures on 30 June 2020, and related to the postponement in the initiation of new and already initiated bankruptcy procedures.

[93] The number of ceased legal entities is a derived data on the basis of the data on the total number of registered legal entities from the end of the previous and the number of newly established legal entities in the current year. Moreover, the reason for the closure of the legal entity is not taken into account, having in mind that the Law on Trade Companies prescribes the procedure for determining the status of an inactive entity and the possibility of deregistration of such entities from the records of the Central Registry of the Republic of North Macedonia, including in case of failure to submit annual accounts.

[94] The rate of newly established companies is calculated as the ratio of the number of newly established legal entities during the year and the average number of active legal entities in the year. Active legal entities in the year are considered those who submitted annual accounts to the Central Registry of the Republic of North Macedonia. The Law on Trade Companies prescribes the procedure for determining the status of an inactive entity and the possibility of deregistration of such entities from the records of the Central Registry, including in case of failure to submit annual accounts.

Chart 77 Relative importance (left) and annual change (right) of newly established, bankrupt, ceased legal entities and legal entities with blocked accounts
in %



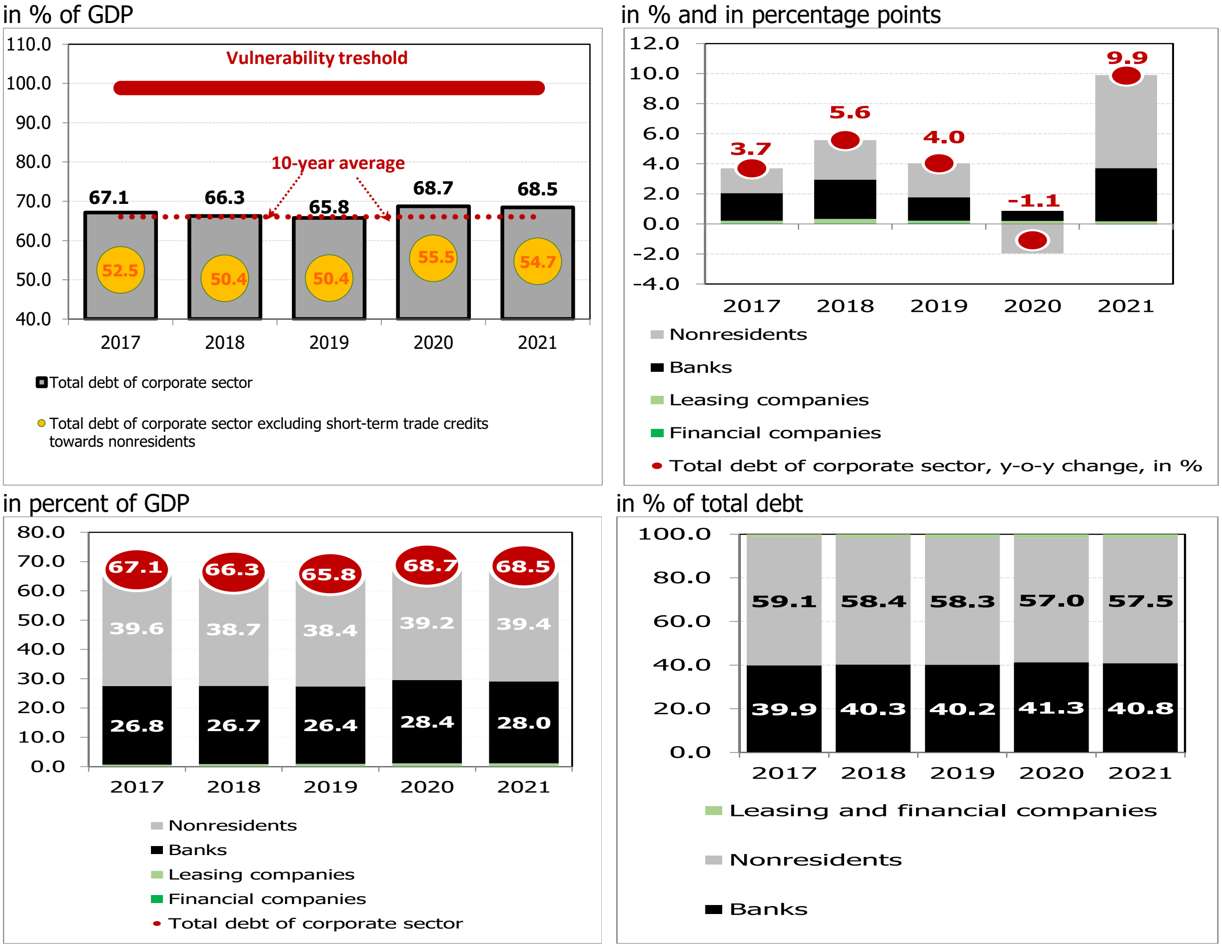
Source: Central Registry of the Republic of North Macedonia and National Bank of the Republic of North Macedonia for the number of blocked accounts.

1.5.1. Indebtedness of the corporate sector

The total debt [95] of the domestic corporate sector in 2021 increased by 9.9%, which is the highest since 2008. However, the post pandemic recovery of economic activity with a more dynamic growth of the gross domestic product enabled the debt ratio[96] **of the corporate sector to remain relatively similar in 2021 as in the previous year (68.5%, compared to 68.7%)**. The debt[97] of the corporate sector (as measured by the share in GDP) remains below the derived vulnerability threshold[98], but exceeded the average of the indebtedness in the past ten years. If the debt of the domestic corporate sector is presented without short-term trade credits[99], as an instrument for financing foreign trade, which is usually interest-free, then the share of the total debt of the domestic corporate sector in the GDP at the end of 2021 is lower and amounts to 54.7%, which marks a decrease compared to 2020 (for 0.8 percentage points).

[95] For the needs of this analysis, the total corporate debt includes: liabilities to banks based on loans, interest and other claims, including the cumulative amount of written-off debt, in accordance with the banks' regulatory obligation for write-off of the exposures that have been fully provisioned for more than two years (for more than one year from July 2019), external liabilities (non-residents), value of active lease contracts and liabilities based on active contracts with financial companies.
[96] The debt ratio is represented by the share of debt in GDP.
[97] At the end of 2021, the total debt of the corporate sector was Denar 495,136 million, compared to Denar 450,698 million, as it was at the end of the previous year.
[98] Vulnerability threshold for corporate debt is derived from the MIP Scoreboard used by the European Commission to assess potential risks and macroeconomic imbalances in the EU countries. The framework prescribes a vulnerability threshold for total private sector debt at a level of 133% of GDP. Vulnerability threshold for corporate debt of 99% of GDP is derived according to the ECB (ECB Financial Stability Report, November 2018), which decomposes the 133% threshold for total private debt into household debt and corporate debt threshold, based on the average share of household and corporate debt in total private sector debt. For the decomposition of vulnerability threshold for the Republic of North Macedonia, we used the average share of household and corporate debt for the period 2006 - 2021.
[99] At the end of 2021, short-term trade credits represent 20.1% of the total debt of the corporate sector and 34.9% of the debt of the corporate sector to non-residents.

Chart 78 Debt of the corporate sector (up left), contribution to the annual growth of the total debt of the corporate sector, by type of creditor (up right) and structure of corporate debt, by type of creditor (down left and right)



Source: National Bank, Ministry of Finance and State Statistical Office.

The main growth generator of the corporate sector indebtedness in 2021 was the external debt, which determined more than 60% of the annual growth of the total indebtedness. In 2021, the domestic debt[100] also increased, which is mainly due to the credit activity of the banking sector as the main domestic creditor of the corporate sector. Non-banking financial institutions still have a very moderate role in financing the domestic corporate sector (1.6% share in total debt). The domestic corporate sector is characterized by lack of funding through the issuance of debt securities on the domestic or foreign financial markets, even despite the relatively favorable movements of market interest rates for corporate debt on the international financial markets during the past decade. At the same time, unlike companies from other countries, even the largest domestic companies have not requested and received a credit rating from any of the internationally active credit rating agencies.

[100] The domestic debt of the corporate sector amounted to Denar 210,293 million at the end of 2021, compared to Denar 193,745 million at the end of the previous year, which represents an increase of 8.5% (2.1% growth in 2020).

Table 5 Structure and changes of components of the domestic corporate debt

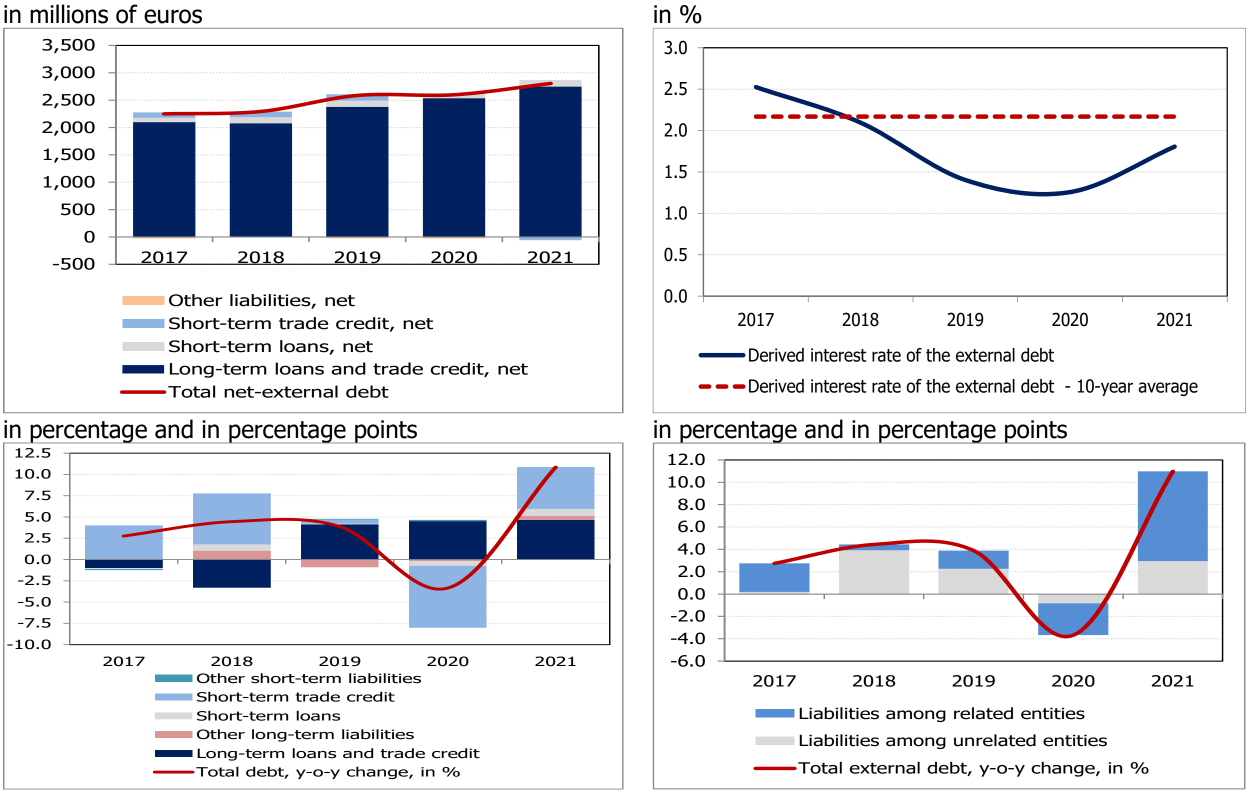
Type of debt		Structure (in %)			Absolute change (in Denar millions)			Relative change (in %)		
		2019	2020	2021	2019	2020	2021	2019	2020	2021
Currency	Denar debt	22.0	22.1	22.6	-385	-542	12,153	-0.4	-0.5	12.2
	FX debt	66.9	65.8	66.5	10,699	-8,241	32,290	3.6	-2.7	10.9
	Denar debt with FX clause	6.8	7.5	6.7	4,217	2,740	-694	15.8	8.9	-2.1
	Cummulative of regulatory imposed write-offs to domestic banks	4.3	4.6	4.3	3119.1	1092.1	689	18.9	5.6	3.3
Maturity	Short-term debt	35.8	31.2	32.4	-214	-22,417	19,660	-0.1	-13.8	14.0
	Long-term debt	56.9	62.1	61.4	15,712	20,868	24,189	6.5	8.1	8.6
	Other debt (past due and nonperforming)	3.0	2.1	1.9	-967	-4,494	-100	-6.5	-32.5	-1.1
	Cummulative of regulatory imposed write-offs to domestic banks	4.3	4.6	4.3	3119.1	1092.1	689	18.9	5.6	3.3
Type of interest rate	Debt with fixed interest rate	41.7	41.9	41.2	21,955	6,463	9,736	18.3	4.6	6.6
	Debt with variable interest rate	40.2	43.9	46.1	19,564	18,615	21,507	16.7	13.6	13.9
	Debt with administratively adjustable interest rate	7.8	3.6	1.7	-30,920	-13,621	-6,304	-53.9	-51.5	-49.1
	Other - interest free debt towards nonresidents	4.8	5.0	5.7	3,646	1,239	4,260	28.6	7.6	24.1
	Cummulative of regulatory imposed write-offs to domestic banks	5.5	5.6	5.3	2991.8	1039.8	631	19.0	5.6	3.2

Source: The National Bank on the corporate debt to banks and non-residents, the Ministry of Finance on the corporate debt to leasing companies and financial entities.
Note: In the maturity structure of the debt, the share of other (past due and non-performing) debt is obtained based on the data for the indebtedness of the corporate sector to banks, due to unavailability of data on the non-performing debt to other creditors. The structure of the debt by type of interest rate is obtained according to the debt to the banking system and debt on the basis of the principal of loans to nonresidents. The item for the written off debt by the domestic banks shows that part of the domestic corporate debt which was written off by banks in 2016 - 2021, is in accordance with the regulatory obligation for write-off of exposure that has been fully covered by impairment for more than two years (more than one year as of July 2019).

After the decline in the pandemic year 2020, in 2021 the external debt of the corporate sector recorded an increase of 11%, and its participation in GDP reached 39.4%. The short-term trade credits also increased [101] after their decrease in the preceding year, as well as the long-term loans. In the external debt structure, long-term borrowing still prevails, so the profile of debt repayments is still relatively favorable due to the predominance of maturing long-term liabilities, which reduces the risk of debt refinancing under less favorable conditions. Relating the creditors, almost half of the total external debt refers to intercompany lending between connected entities, which, assuming that these connected entities will continue with their usual operations, further affects the reduction of the risk of refinancing the external debt of the domestic corporate sector. In the structure of intercompany lending, nearly two-thirds are long-term liabilities, while short-term liabilities almost entirely refer to trade credits (about 90% share, the rest are short-term loans).

[101] Trade (commercial) credits denote relations between residents and non-residents (claims or liabilities) arising from direct loan approval from the supplier (supplier) to the buyer (receiver) on the basis of trade in goods and services, advance payments for trade in goods and services or for performing works.

Chart 79 Net external debt of the corporate sector (up left), derived interest rate of the external debt (up right) and contribution to the annual growth of the debt of the corporate sector to non-residents, by maturity (down left) and creditors (down right)



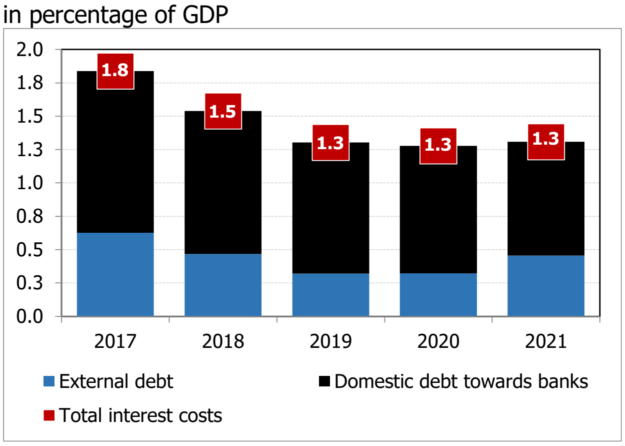
Source: National Bank.
Note: Net external debt is calculated as the difference between the gross external debt and gross external claims of the corporate sector.
The derived interest rate of the external debt is calculated as the ratio of paid interest based on used loans from non-residents by the corporate sector and total liabilities based on used loans from non-residents by the corporate sector.
The red dashed line represents the ten-year average of the derived interest rate of the external debt.

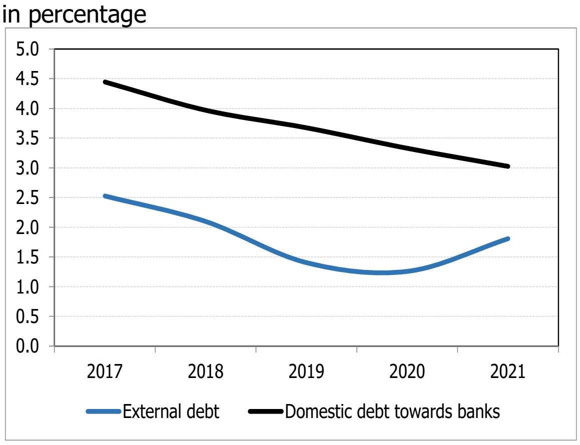
In 2021, the increase in the corporate debt towards domestic banking sector intensified, primarily as a result of the denar loans and higher level of long-term credits. **At the end of the previous year the total corporate debt towards the banking sector equaled 28% of the GDP (28.4% of the GDP in the preceding year) and annually it went up by 8.6%.** Such movements affected the structure of the total corporate debt towards domestic banks, i.e. they contributed to the growth of the share of denar loans and long-term loans to the levels of 55% and 59.8%, respectively (53% and 59.3%, respectively at the end of 2020). At the same time, the measures for regulatory flexibility, which were adopted in the conditions of the corona crisis, and related to the facilitation of loan repayment, expired for almost all customers[102] until June 2021.

[102] In almost all loans that were under moratorium due to the so-called covid-measures, the grace period ended in the first half of 2021 and customers were obliged to continue with regular settlement of their debts. The share of loans that are under moratorium on 31.12.2021 is 0.1% in the enterprise segment.

During 2021, the number of companies using loans from the banking sector increased by 8.1%[103]. Thus according to the data from the submitted annual accounts of the corporate sector[104], in 2021 the banks have credit exposure to 37.1% of the total number of active entities, whereby the largest coverage with bank financing is still that of large and medium-size entities, although they are less numerous compared to small-size and micro entities. The largest group of borrowers consists of small-size and micro enterprises, although the share of these entities that do not use loans from domestic banks remains significant. Micro entities have the most limited access to bank funding, which results from the generally poorer performance.

Chart 80 Interest costs of the corporate sector (left) and derived interest rate of the debt of the corporate sector (right)





Source: National Bank, based on data submitted by banks and external debt data.
Note: Interest costs are based on the data submitted by banks and external debt data. Interest costs for the external debt include the paid interest on the basis of loans used by the corporate sector during the year, while for the domestic debt, the income that banks have earned from non-financial companies during the year is taken.
The derived interest rate of the domestic debt is calculated as the ratio of the banks' interest income from non-financial companies and the total bank loans to the corporate sector. The derived interest rate of the external debt is calculated as the ratio of paid interest based on used corporate loans by non-residents and total liabilities based on used corporate loans by non-residents as of 31 December 2021 (loans possibly taken and returned during 2021 are not included).

Within the maturity structure of the total corporate debt, although in 2021 the short-term debt recorded a higher growth rate, the long-term debt still dominates (61.4%). About three-quarters of the annual growth in short-term corporate debt comes from non-resident creditors, while the annual growth in long-term indebtedness is almost equally distributed between non-residents and banks.

From the aspect of the structure according to the interest rate type, the trend of reducing debt with an adjustable interest rate continued, which at the end of 2021 was reduced to 1.7% of the total debt of the corporate sector, with a simultaneous increase in the share of the debt with variable interest rate. The risk of a change in the level of interest rates remains extremely significant for the domestic corporate sector, considering

[103] Out of a total of 56,733 active legal entities in 2021, there are 527 large entities, 932 are medium entities, 19,451 small entities and 35,823 are micro entities. Banks have credit exposure to 77.6% of the total number of active large entities, to 86.2% of medium size entities, to 56.6% of small entities and to 25.3% of micro entities.
[104] Performance indicators of the total corporate sector and by groups of entities by size are given in the annexes to this report.

that almost half of the total debt depends on future changes in market interest rates[105]. This risk is even more pronounced currently in conditions of initiated normalization of the monetary policy both globally and nationally, which is reflected through the increase in the market interest rates. In 2021, a moderate upward shift in the interest expenses for servicing the corporate sector debt is evident[106] (which in conditions of low interest rates is most probably due to the increased use of loans during the year), although their share in GDP is stable and equals 1.3%. Within their framework, the interest costs of the domestic debt remain dominant, which results from the higher interest rates of the domestic compared to the external debt, which is partly due to the favorable external intercompany financing, especially if it is between connected entities. The derived interest rate of the domestic debt[107] in 2021 is 3% and continued to decrease on an annual basis, compared to the derived interest rate of the external debt[108] which is 1.8% and recorded an increase for the first time since 2014. Thus, the sensitivity of the corporate sector to an unfavorable change in the movement of market policy rates remains highlighted for the next period, especially in the event of a possible faster tightening of monetary policies by the globally influential central banks in response to inflationary pressures that would be reflected through a tightening of financing conditions and subsequent expansion of risk premiums. In such circumstances, one could expect an increased debt repayment burden and potential impairment of the ability to timely service liabilities, especially among those corporate borrowers who already have a high debt burden.

The environment of low interest rates and loose monetary policy in the domestic economy continued during 2021, which contributed to a further reduction in the average interest rates charged by banks on loans granted to the domestic corporate sector, although this reduction in interest rates was significantly slower compared to previous years. The reduction in the average interest rates on loans was followed by **narrowing of the interest rates spreads on loans granted to the domestic corporate sector in relation to the policy interbank rates, which practically brought the credit risk premiums that banks incorporate into their interest rates to historically low levels.**

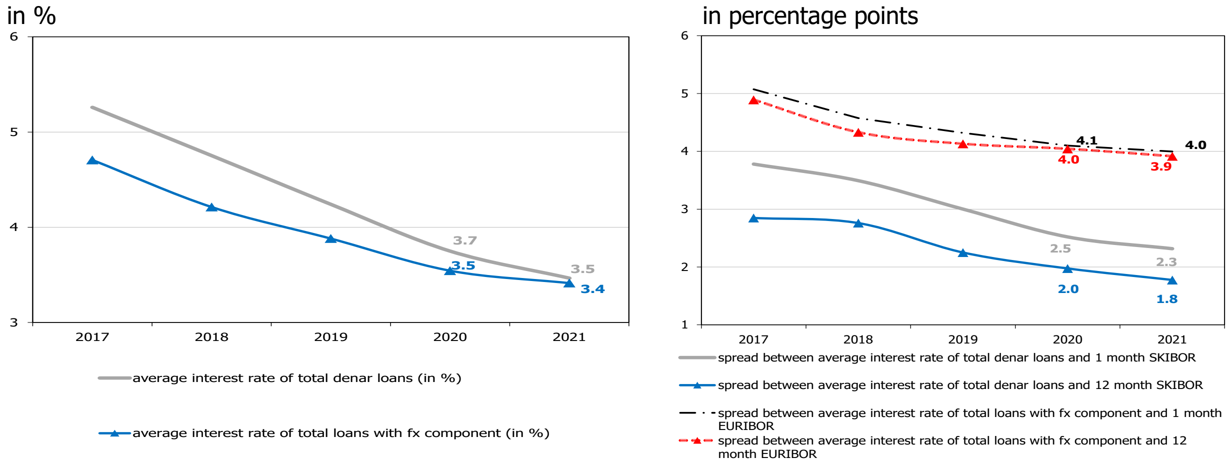
[105] As debt, the repayment of which in the future depends on the future movements of market interest rates, both the debt with variable and the debt with adjustable interest rates are considered, which jointly account for 47.8% of the total debt, with the largest share of the debt with variable interest rates equaling (461%).

[106] Refers to derived interest costs which for the external debt include the paid interest on the basis of loans used by the corporate sector during the year, while for the domestic debt, the income that banks have earned from non-financial entities during the year is taken.

The derived interest rate of the domestic debt is calculated as the ratio of the banks' interest income from non-financial entities and the total bank loans to the corporate sector.

The derived interest rate of the external debt is calculated as the ratio of paid interest based on used loans from non-residents by the corporate sector and total liabilities based on used loans from non-residents by the corporate sector.

Chart 81 The average interest rates on the total corporate sector by the domestic banks (left) and spread of average interest rates above policy interbank rates (right)



Source: National Bank's Credit Registry, based on data submitted by banks and NBRM calculations.

In addition to the risk of changes in interest rates, the risk of changes in the exchange rate remains a significant risk for the corporate sector, given the dominant share of debt with a currency component within the currency structure of the total debt of the corporate sector (a share of 73.1%[109]). Moreover, in 2021, the foreign currency debt had the highest contribution to the annual growth of the total debt, given the reduction of the denar debt with a currency clause. The growth of foreign currency indebtedness of the domestic corporate sector is mainly due to the increase in the external debt (a share of 86.4%), with the domestic banks also having their share in the total growth of foreign currency debt of 13.6%. **This currency structure of the corporate sector debt adds to the importance of the strategy of maintaining a stable denar-to-euro exchange rate, in order to protect against the materialization of the currency risk,** especially if it is taken into account the dominance of euro in the structure of the external debt with a share of 80.4%. In addition, the participation of the euro within the credit exposure of domestic banks to the corporate sector is also important, which amounts to 36.4%, representing 98.6% of the credit exposure with a currency component. The second most important currency is the US dollar, which as of 2021 accounts for 19.1% of total external debt and a moderate 0.5% of domestic banks' exposure to the corporate sector. Considering that the exchange rate of the US dollar against the euro and subsequently to the denar is determined freely on the foreign exchange market, practically the debt in US dollars represents the essential exposure of domestic companies to currency risk.

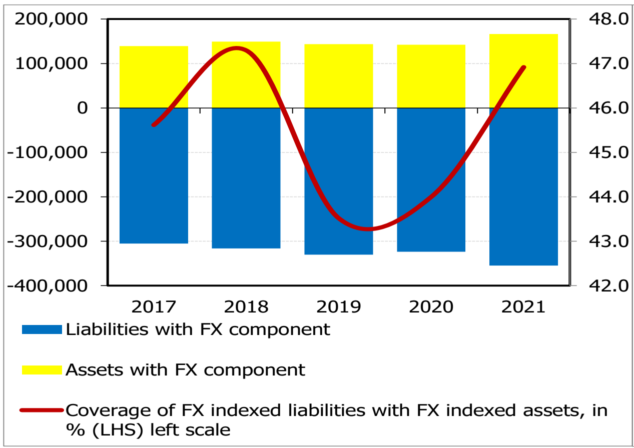
In 2022, the coverage of liabilities with a currency component with assets with a currency component of the corporate sector improved from 44.0% to 46.9%. This led to a minimal narrowing of the short (negative) net foreign currency position[110], which in 2021 amounted to 26.0% of GDP, recording a decrease of 1.6 percentage points on an annual basis. The annual narrowing of the net foreign currency position is due to the more dynamic growth of assets with a currency component of the corporate sector, compared to the growth of

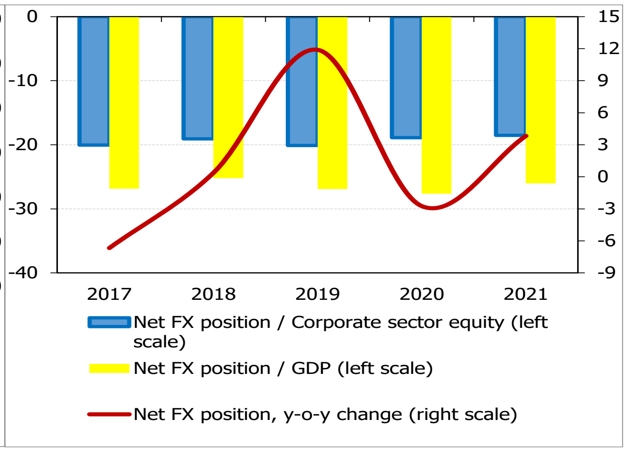
[109] Refers to the joint participation of foreign currency debt and denar debt with a currency clause.

[110] Net currency position is calculated as the difference between assets and liabilities with currency component (in foreign currency and in denars with FX clause) of the corporate sector, which is positive, i.e. long, when the assets are greater than liabilities, and negative, i.e. short, when the liabilities with currency component exceed assets. Assets with currency component include deposits with currency component, total claims on non-residents including cash on accounts abroad and investments abroad. Liabilities with currency component include: credits with a currency component from domestic banks and total liabilities to nonresidents. The stock of investments abroad as of 31.12.2021 is based on data as of 31.12.2019, since the data for 2019 becomes available in the second half of 2022.

its liabilities with a currency component. Although the relative size of the net foreign currency position of the corporate sector in relation to capital and reserves is moderate (18.5% at the end of 2021), the maintenance of stable exchange rate of the denar against the euro is of great importance for the preservation on the long-term sustainability of corporate sector debt.

Chart 82 Net currency position of the corporate sector
in millions of denars and in %





Source: National Bank, State Statistical Office and Central Registry

II. DOMESTIC FINANCIAL SYSTEM AND MARKETS

2.1. Structural features and concentration of the financial system

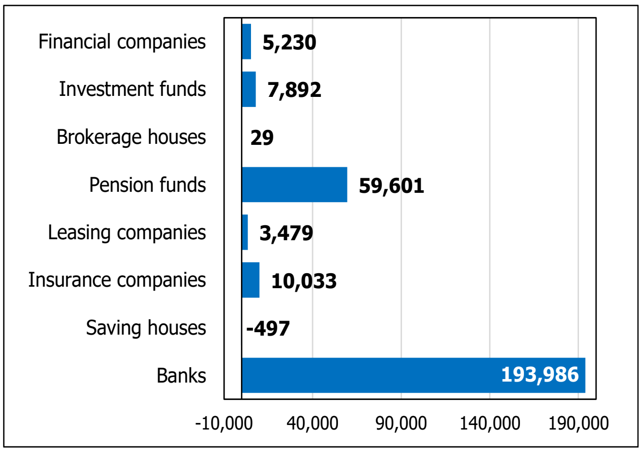
The assets of the financial system and its individual segments increased in 2021 in conditions of a pandemic and pronounced risks associated with the disturbance of the global supply chains, the higher prices of energy and mainly, an increased inflation rate. The banking system, the mandatory private pension funds and the insurance companies still have the highest share in the assets of the financial system and almost constantly contribute the most to its absolute growth. The other segments of the financial system, individually and together, still occupy a very small portion of the total assets of the financial sector, although some of them almost constantly register a relatively dynamic growth. Despite the continuous growth of the financial system, the comparative analysis of the levels of financial intermediation with other countries of Central and Southeastern Europe indicates a modest size of the domestic financial sector. The largest and most important segments of the financial system are predominantly owned by foreign shareholders. The ownership structure and the concentration in the individual segments of the financial system registered no significant changes in 2021.

Table 6 Structure of total assets of the financial sector in the Republic of North Macedonia

Type of financial institutions	Total assets (in millions of Denars)		Structure (in %)		Change 31.12.2021 / 31.12.2020		Number of institutions		Share in GDP (in %)	
	2020	2021	2020	2021	in millions of Denars	in %	2020	2021	2020	2021
Deposit takers	**587,638**	**640,771**	**80.8**	**79.4**	**53,133**	**9.0**	**16**	**15**	**89.6**	**88.6**
Banks*	585,501	638,666	80.5	79.1	53,165	9.1	14	13	89.3	88.3
Saving houses	2,137	2,105	0.3	0.3	-32	-1.5	2	2	0.3	0.3
Non-deposit takers	**139,376**	**166,239**	**19.2**	**20.6**	**26,863**	**19.3**	**137**	**144**	**21.2**	**23.0**
Insurance companies	25,674	28,513	3.5	3.5	2,838	11.1	16	16	3.9	3.9
- Non-life insurance companies	16,410	18,076	2.3	2.2	1,666	10.2	11	11	2.5	2.5
- Life insurance companies	9,264	10,436	1.3	1.3	1,172	12.7	5	5	1.4	1.4
Insurance brokers	2,024	2,281	0.3	0.3	257	12.7	39	39	0.3	0.3
Insurance agents	183	189	0.03	0.02	5	3.0	10	12	0.03	0.03
Leasing companies	6,260	6,766	0.9	0.8	506	8.1	7	7	1.0	0.9
Pension funds	89,585	108,675	12.3	13.5	19,090	21.3	6	6	13.7	15.0
- Mandatory pension funds	87,289	105,801	12.0	13.1	18,512	21.2	3	3	13.3	14.6
- Voluntary pension funds	2,296	2,874	0.3	0.4	578	25.2	3	3	0.4	0.4
Pension funds management companies	1,544	1,600	0.2	0.2	56	3.6	3	3	0.2	0.2
Brokerage houses	145	145	0.02	0.02	0	0.3	5	5	0.02	0.02
Investment funds	8,991	11,516	1.2	1.4	2,525	28.1	16	19	1.4	1.6
Investment funds management companies	245	327	0.0	0.0	82	33.6	5	5	0.04	0.05
Private funds management companies	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Financial companies	4,724	6,226	0.6	0.8	1,502	31.8	30	32	0.7	0.9
Total	**727,014**	**807,010**	**100.0**	**100.0**	**79,996**	**11.0**	**153**	**159**	**110.8**	**111.6**

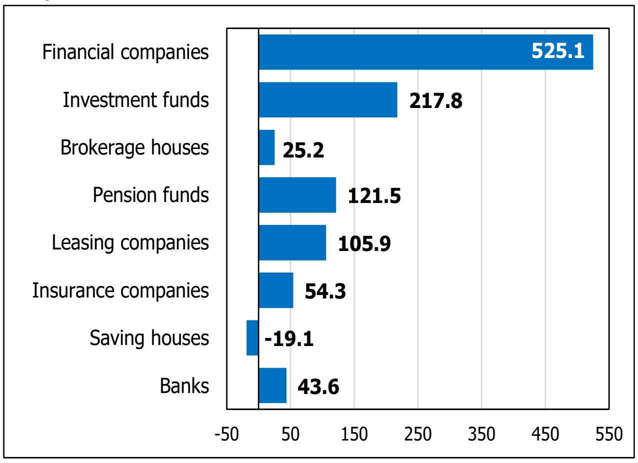
Source: For each institutional segment, the competent supervisory authority (the NBRNM, the SEC, the MAPAS, the ISA and the Ministry of Finance) and the SSO (GDP data).
*Development Bank of North Macedonia AD Skopje operates on the basis of a license issued by the Governor of the National Bank, but performs specific activities as a bank and does not collect deposits from the public.

Chart 83 Cumulative absolute growth of the assets of the individual segments of the financial system for the last five years
in millions of denars



Source: National Bank calculations based on data submitted by banks, savings houses, SEC, MAPAS, ISA and the Ministry of Finance.

Chart 84 Cumulative percentage growth of the assets of the individual segments of the financial system for the last five years
in %

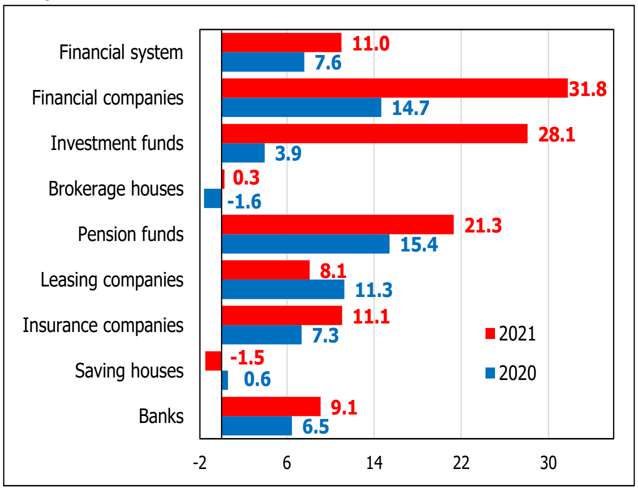


Source: National Bank calculations based on data submitted by banks, savings houses, SEC, MAPAS, ISA and the Ministry of Finance.

In 2021, the assets of the financial system continued to grow at an accelerated pace. The assets of the financial system increased by Denar 79,996 million or by 11%, which is an acceleration compared to the growth registered in 2020 (growth of 8.7% or by Denar 58,818 million). The annual changes in the assets of the banking system and the mandatory private pension funds, made the greatest contribution to the total growth of the assets of the financial system, of 66.5% and 23.9%, respectively. They are followed by the insurance companies, which made a moderate contribution to the absolute change in the assets of the financial system of 3.5%. Moreover, all segments of the financial system, with the exception of savings houses, increased the volume of activities in 2021, which was faster compared to the previous year. Especially rapid growth was registered in financial companies and investment funds, which for the last five years increased the volume of their activities multiply[111]. Analyzed by the annual growth rate, the assets of the open-end investment funds management companies and the assets of the financial companies registered the highest annual growth rates, of 33.6% and 31.8%, respectively, but also other segments registered high growth (the annual growth exceeds 20% in the investment funds, the mandatory and the voluntary private pension funds).

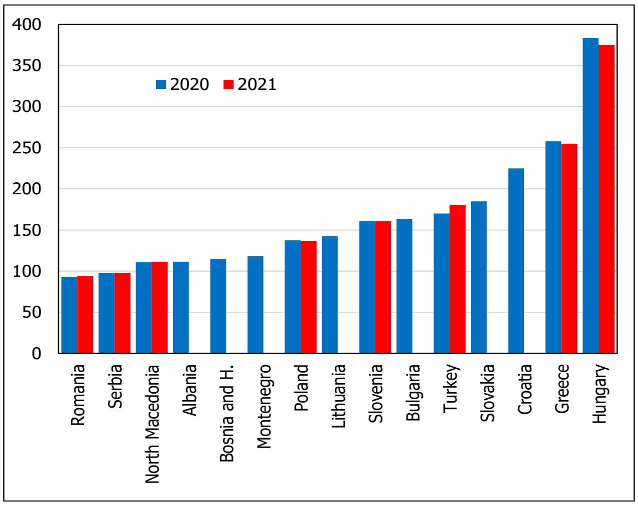
The share of the assets of the financial system in GDP rose by 0.8 percentage points and reached a level of 111.6%,

Chart 85 Comparison between the growth rates of the assets of the financial system in 2020 and 2021
in %



Source: National Bank calculations based on data submitted by banks, savings houses, SEC, MAPAS, ISA and the Ministry of Finance.

Chart 86 Financial system assets to GDP ratio, by country
in %



Source: For North Macedonia, National Bank calculations based on data submitted by banks, savings houses, SEC, MAPAS, ISA, SSO, Ministry of Finance and the SSO. For the other countries, the websites of Eurostat (https://ec.europa.eu/eurostat) and the central banks from the individual countries. Given that the data for 2021 is not available for all countries, for the purpose of better

for 2021. However, the level of financial intermediation in our country is still modest, which particularly comes to the fore in the comparative analysis with the countries of Central and Southeastern Europe. The lower levels of financial intermediation, coupled with the simple structure of the financial system, show that **there is room for greater support from the financial sector for the economic growth and development of the country**. In contrast, the simple structure of the financial sector, the small interdependence of its segments and the small integration with the international flows make it more resistant to external shocks, and its modest size additionally limits the potential returning negative effects from the financial system to the economy.

The concentration in the individual segments of the financial system registers no significant annual changes[112]**.** The Herfindahl index mainly shows an acceptable level of concentration in the segments of the financial system, with the exception of the leasing sector.

The number of institutions in the financial system increased by six compared to the previous year, whereby the number of banks decreased by one[113], while the number of companies of other segments of the financial system increased by seven (three investment funds, two financial companies and two insurance agencies).

In 2021, there are no major changes in the ownership structure of the individual segments of the financial system. **The largest and most important segments of the financial system are predominantly owned by foreign financial institutions** (the banking system, the pension funds management companies and the insurance

[111] In the last five years, the total assets of the financial system increased by Denar 282,290 million, or by 53.8%.

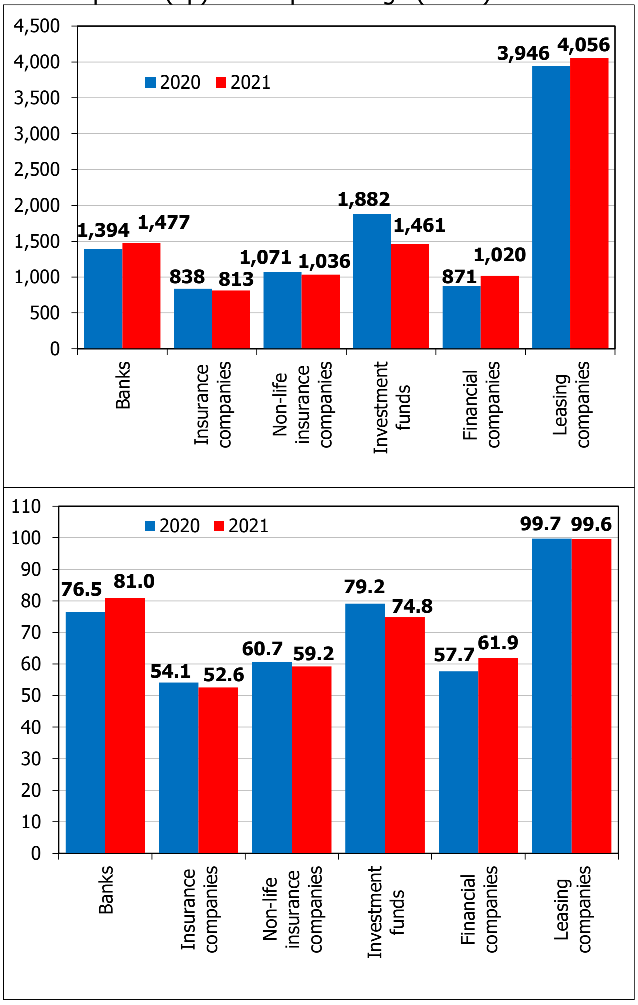
[112] The analysis takes into account those segments of the financial system where at least six institutions actively operate and where data on the amount of assets by individual institution are available.

[113] With a Decision of the Governor of the National Bank of 21 May 2021 a permit for status change was issued - accession of "Ohridska Banka" AD Skopje to "Sparkasse Bank Macedonia" AD Skopje. The registration of the change in the Central Register of the Republic of North Macedonia was conducted on 16 July 2021.

comparability between the countries, the data for 2020 is also presented.

Chart 87 Herfindahl index (up) and CR5 index (down) for the total assets, by segment of the financial system

in index points (up) and in percentage (down)



Source: National Bank calculations, based on data from banks, the ISA, the SEC and the CR.

companies). Hence, these segments of the domestic financial system, through their foreign owners, are more exposed to risks arising from the developments in the international environment, although in a small and open economy, the transmission and materialization of the negative effects of the external shocks mainly occur relatively quickly and easily and by different channels (and not only through the owners of legal entities).

Table 7 Ownership structure of financial institutions

in %

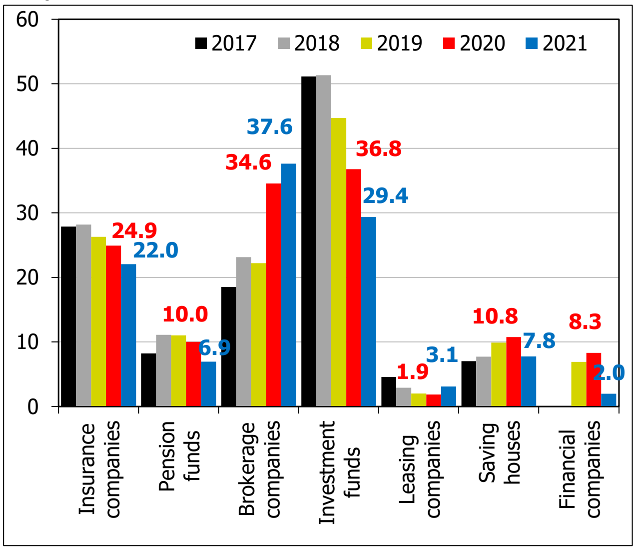
Owners	Banks	Saving houses	Insurance companies	Brokerage houses	Leasing companies	Pension funds management companies	Investment funds management companies	Financial companies
Domestic owners	***23.2***	***100.0***	***24.3***	***87.5***	***84.9***	***12.7***	***57.5***	***60.1***
Non-financial legal entities (including civic associations)	8.9	100.0	0.5	34.9	1.3	0.0	48.3	32.5
Banks	0.1	0.0	17.5	0.0	3.6	12.7	0.0	0.0
Other financial institutions	0.5	0.0	2.0	0.0	0.0	0.0	0.0	0.0
Natural persons	8.3	0.0	4.3	52.6	80.0	0.0	9.2	27.6
Public sector	5.4	0.0	0.03	0.0	0.0	0.0	0.0	0.0
Foreign owners	***76.5***	***0.0***	***75.7***	***12.5***	***15.1***	***87.3***	***42.5***	***39.9***
Natural persons	1.7	0.0	0.5	6.7	0.0	0.0	27.7	13.0
Non-financial legal entities	5.0	0.0	0.0	5.8	5.3	0.0	14.8	0.0
Banks	68.2	0.0	0.0	0.0	9.8	0.0	0.0	0.0
Other financial institutions	1.6	0.0	75.2	0.0	0.0	87.3	0.0	26.9
Undefined status	**0.3**	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***	***0.0***
Total	***100.00***	***100.0***	***100.0***	***100.0***	***100.0***	***100.0***	***100.0***	***100.0***

Source: National Bank calculations based on data submitted by banks, savings houses, SEC, websites of pension funds management companies, ISA, CSD and the Ministry of Finance.
Note: The share by type of owner in the ownership structure refers to shareholder capital / core capital of the financial institutions.

2.2. Cross-sector relation, "contagion" channels and their impact on financial stability

Cross-sector relation of institutional segments in the financial system of the Republic of North Macedonia and the possibilities of risk spillover are low. The reason behind is the simple financial system structure, small interdependence of the activities of the individual segments and absence of complex financial instruments and services. Stability of the financial system is mostly determined by the stability of the banking sector as its dominant segment, where savings of both non-financial sector and other financial institutions are concentrated. The ownership relation between individual institutions of the financial system is moderate and it is not a contagion channel between individual segments.

Chart 88 Deposits of non-banking financial segments in banks to total assets
in %



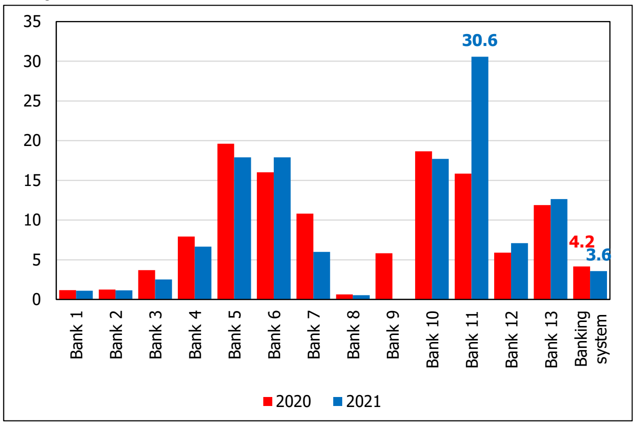
Source: National Bank calculations, based on data from banks, savings houses, ISA, MAPAS and SEC.
Note: Data on deposits of financial companies before 2019 is not available.

Amid still underdeveloped financial markets and limited alternatives to investment and fertilization of the assets of economic agents, a significant portion of the assets of non-banking financial institutions are invested in bank deposits (Denar 19,451 million)[114]. Deposits placed with banks are an important part of the assets of non-bank financial institutions, especially with the brokerage companies, the investment funds and the insurance companies, where more than 20% of the assets are invested in deposits in the domestic banks. Relatively high placements in deposits with domestic banks are in line with the nature of the activities of the non-banking segments of the financial system, but also of the regulatory opportunities / limits and the facilities for investing in other financial instruments. Hence, the solvency and liquidity of the banking system are important factors for the stable operations of the non-bank financial institutions and a significant potential channel for spillover of risks from banks to these financial institutions.

Analyzed at the aggregate level, the **deposits of the domestic non-bank financial institutions do not represent a significant source of funds for the banking system, nor their assumed withdrawal would have a significant influence on the liquidity and stability of the banking system.** However, analyzed by individual bank, with five banks in the system

[114] Deposits also include transaction accounts of other institutional segments in the banks. As of 31.12.2021, 8.9% of the total deposits of the non-bank financial institutions are funds on a transaction account with a bank or are in the form of sight deposits.

Chart 89 Shares of the total deposits from the non-banking financial segments in the total liabilities of the banks and the banking system
in %



Source: National Bank calculations, based on data submitted by banks.
Note: The analysis does not include the DBNM AD Skopje, because it does not accept deposits.

(with a total joint market share in the total assets of 6.8%), the deposits of the non-bank financial institutions represent a relatively significant source of financing and account for at least 10% of the total liabilities of these banks (and with one small bank 30.6%). Such deposits, with banks in which they have more significant share, are potential channel for liquidity consequences in case they are simultaneously withdrawn, given that deposits of financial institutions are treated as less stable source.

Bank loans approved to non-bank financial institutions are yet another potential contagion channel in the financial system, but its importance is rather small. As of 31.12.2021, bank loans approved to domestic non-bank financial institutions equaled modest Denar 687 million, or 0.2% of the total bank loans (analyzed by individual bank this share does not exceed 1.8%). Bank loans do not represent a significant source of financing of the activities of the individual non-bank financial segments, with the exception of insurance brokerage companies, where bank loans account for 12.8% of the total sources of funds. They are followed by leasing companies and savings houses, where bank loans account for 4.7% and 3.4% of the funding sources, respectively.

Interbank claims and liabilities have a relatively small importance as a channel of contagion in the banking system. Namely, the total claims on the basis of interbank loans and deposits (including the interbank transaction accounts) amount to Denar 14,341 million, or 2.2% of the total assets of the banking system. Moreover, most, or 87.4% of the total amount of interbank claims accounts for one bank, whose core activity is to place the loans obtained from the international financial institutions and from the government to end users through domestic banks (due to which most of its assets consists of claims on other banks). The contagion risk in this bank would materialize only in case of an extreme scenario of default by all banks through which the DBNM AD Skopje places the foreign loans. Regarding the other banks, the interbank claims do not exceed 2.8% of the total assets of the individual banks. On the liabilities side, analyzed by individual bank, the highest share of the interbank liabilities in the total liabilities amounts to 8.3%. The analysis of the turnover on the interbank market for collateralized and non-collateralized deposits confirms the relatively low exposure of the banks to the risk of spillover of possible problems, from one bank to another. Namely, in 2021, the banks predominantly traded in non-collateralized deposits (only one repo transaction in the amount of Denar 140 million was concluded), in a total amount of Denar 8,934 million, which is only 1.5% of the total assets of the banking system, at the end of 2020[115]. However, in conditions of increased uncertainty and complicated environment in which banks operate in the first six months of 2022, there is a more

[115] In 2020, the turnover on the interbank deposit market amounted to Denar 6,652 million, which is 1.2% of the assets of the banking system as of 31.12.2019.

significant movement in the interbank trading in deposits. Thus, in the first half of 2022, the turnover on the interbank market of non-collateralized deposits significantly increased compared to the same period of 2021 and reached Denar 25,253 million (this amount represents 4% of the assets of the banking system as of 31.12.2021). In addition, a more significant movement was also registered in the repo segment of interbank borrowing, where Denar 6,753 million were traded (1.1% of the assets of the banking system as of 31.12.2021).

Banking insurance, i.e. cooperation between banks and insurance companies based on an agency agreement in insurance, was applied by seven banks in 2021 (same as in the previous year). The amount of these transactions is growing, but has small to moderate importance for both segments. Namely, in 2021, gross written premiums charged through banks represented only 4.4% of total premiums of insurance companies. Banks' exposure secured by a life insurance policy reached 16% of the total credit exposure to natural persons[116] or 19.2% of the exposure to natural persons excluding credit cards and overdrafts on current accounts which is a significant change compared to the previous year (in 2020, these shares amounted to 11.8% and 14.4%, respectively). At the same time, in 2021 bank loans insured against default in some insurance company reached Denar 12 billion (growth of around half billion denars compared to 2020), or 3.1% of the total loans to non-financial entities. The possible materialization of the credit risk in these loans would be treated as risk event, and the damages resulting thereof will be covered by the insurance companies, in accordance with the amount insured[117]. Moreover, the potential damage to loan collateral, protected by property insurance policy (as of 31.12.2021, in 65.3% of the banks' total credit exposure to non-financial companies collateralized with property, the collateral is protected by property insurance policy[118]) is yet another potential channel for connection between the insurance and banking sectors. In this context, the risk that a single event can cause great damages that could not be paid by the insurance companies, thereby jeopardizing the collection of claims of some bank can be materialized in case of possible natural disasters[119].

There is an inherent connection between the leasing and the insurance sectors due to the regulatory obligation of the leasing user to insure the subject of leasing in an insurance company. Also, the **offer of the so-called unit-linked products, which are a combination of life insurance with corporate investment**, i.e. life insurance in which the investment risk is on the burden of the insuree, point to a connection of this type of insurance with the movements on the financial markets, i.e. the performances of the investment funds (gross written premiums on the basis of unit-linked products account for 19.1% of the total gross written premiums of life insurance companies in 2021[120]). In other words, the investment component of returns from these insurance products is strictly determined by the return from instruments in which the investment funds invest. The attractiveness of this product is constantly increasing (27% growth in 2021). In this context, the insurees need to be appropriately informed on the features and possible risks of these non-traditional insurance products, and all the costs related thereto. The Insurance Supervision Agency took specific measures aimed at greater transparency when investing in unit-

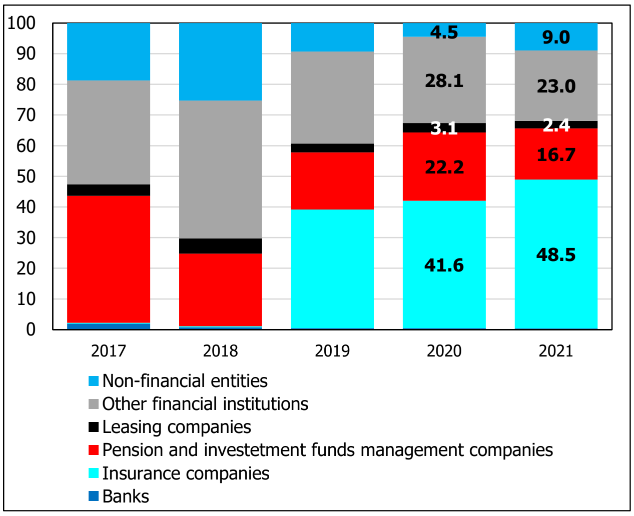
[116] In 2021, risk event covered with life insurance policy occurred in 0.2% of loans collateralized with life insurance (and banks collected damages from insurance companies, according to the insured amount).
[117] In 2021, banks collected damages from insurance companies on the basis of materialization of the credit risk of 0.2% of the total loans insured against default.
[118] Source: data submitted by banks.
[119] According to the data published on the World Bank Climate Change Knowledge Portal, the Macedonian economy is exposed to several geophysical and climate risks / dangers, and the vulnerability to floods and extremely high temperatures (droughts) is the largest. Source: North Macedonia - Summary | Climate Change Knowledge Portal (worldbank.org).
[120] This share was 17.3% for 2020.

linked products. Thus, from the beginning of October 2022, a new regulation on life insurance in relation to stakes in investment funds when the insuree takes the investment risk, will come into effect[121].

Ownership relations between individual financial institutions are yet another potential channel of interdependence and possible spillover of risks from one segment of the financial system to another.

Chart 90 Structure of banks' investments in equity instruments, in subsidiaries and associates, by the type of domestic legal entity

in %



Source: National Bank calculations based on data from banks.

In our country, the capital investments of the banks in domestic financial and non-financial legal entities (investments in equity instruments, subsidiaries and associates) equal modest Denar 1,931 million, or 0.3% of the total assets of the banking system (by individual bank, this share does not exceed 1.3%)[122]. In terms of other financial institutions, banks are the predominant or significant owner of an insurance company in the country, an open-end investment funds management company, a pension funds management company and a leasing company. Banks are also custodians of the assets of the pension and investment funds, which can be a potential channel for cross-sector risk spillover, solely due to the reputational risk.

[121] More details about this regulation are given in the section concerning the insurance sector within this report, in the Official Gazette of the Republic of North Macedonia No. 109/22 or on the website of the ISA.

[122] Banks have (joint) investments also in other domestic financial institutions, such as the Macedonian Stock Exchange, the SEC, KIBS, CaSys.

2.3. Deposit-taking institutions

2.3.1 Banks[123]

In 2021, the banking system continued to operate in conditions of a pandemic, and in the second half of the year, the risks associated with the disturbance of the global supply chains, the higher prices of energy and mainly, the increased inflation rate, were also pronounced. Also in such conditions, the banking system maintained its stability, achieving solid growth rates of lending and deposit activity.

The banking system solvency is stable and registered further improvement. The own funds of the banking system are of high quality and exceed the amount of the necessary regulatory and supervisory minimum. Most of the indicators for monitoring and assessment of liquidity improved in 2021, amid further growth of liquid assets. Thus, for a longer period, the liquid assets have been maintained at a level of one third of total assets and cover around 50-55% of short-term liabilities and around 60-65% of household deposits. The liquidity coverage ratio is almost three times higher than the minimal level prescribed for this ratio, which has been applied starting from 1.1.2021. The stress testing of the banking system resilience to simulated shocks indicates that the resilience of its solvency and liquidity positions is satisfactory.

In 2021, there was certain materialization of the credit risk, as measured by the movements of non-performing loans and their share in total loans. Such movements mainly result from the loans whose payment has previously been temporarily deferred due to the pandemic, but the intensity of the materialization of the credit risk on this basis remained under control and was lower than expected. In 2021, regular restructured loans registered a more significant growth, which results from the loans restructured due to the deteriorating financial position of the clients as a result of the corona-crisis. These loans are closely monitored, but so far do not represent a significant risk factor because of their insignificant amount.

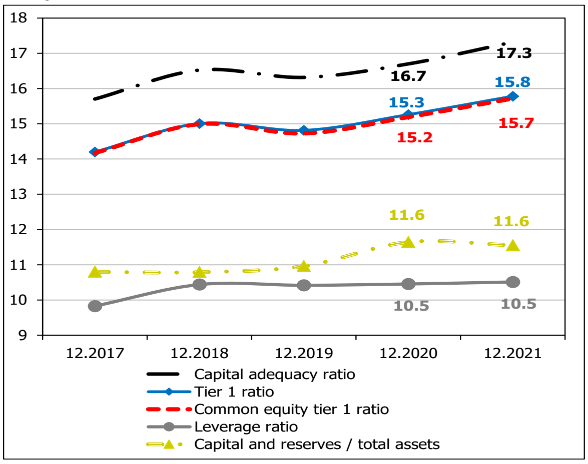
The financial result of the banking system recorded further growth in 2021, whereby the profitability indicators improved even more. At the beginning of 2022, the commencement of the conflict between Russia and Ukraine also tightened the geopolitical risks the Macedonian economy is exposed to, whereby the uncertainty in the environment where banks and their clients operate, further increased. In such conditions, the maintenance of the volume of the sources of funding for banks poses a significant challenge they will be faced with, similar to the management of the credit risk, whose possible materialization can have adverse effects on the financial results of banks.

In conditions of global price growth that was also transferred to the domestic economy, from April 2022, the National Bank increased its policy rate on several occasions (from 1.25% in March 2022 to 2.5% in July 2022) and increased the interest rates on overnight and seven-day deposit facilities. After a longer period of time, the National Bank repo auctions for providing liquidity in the system were held[124]. Within its strategic commitment for denarization, the National Bank also made changes to the reserve requirement by increasing the reserve requirement rate for foreign currency liabilities (from 15% to 18%) and reducing the reserve

requirement rate for denar liabilities (from 8% to 5%). These target measures are expected to encourage denarization of the banks' balance sheets and increase savings in domestic currency, which would be achieved through changes in the interest rate policy of the banks aimed at offering relatively more favorable interest rates on denar deposits.

Chart 91 Indicators of solvency and capitalization of the banking system

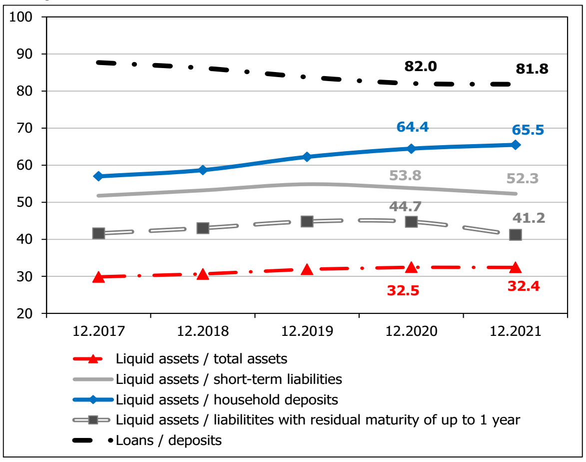
in %



Source: National Bank, based on data submitted by banks.

Chart 92 Liquidity indicators of the banking system

in %



Source: National Bank, based on data submitted by banks.

The banking system ended 2021 with mainly improved solvency and capitalization ratios, compared to the previous year. The improvement of the solvency indicators results from the higher capital positions, which is mostly due to the retained earnings[125], the issue of ordinary shares[126] and the issued new subordinated instruments[127]. At the end of 2021, the capital adequacy ratio of the banking system was higher than the minimum regulatory and supervisory requirements by 1.9 percentage points, determined for this ratio. Thus, after covering all capital requirements (regulatory requirements, supervisory requirements and currently activated capital buffers, for capital preservation and for domestic systemically important banks), excess own funds of 10.9% of the total own funds remains. Over 90% of the own funds account for the Common Equity Tier I capital, which represents the highest-quality segment of the banks' regulatory capital. However, taking into account the current high uncertainty in the environment where the banking system operates (the exposure to risks associated with the health crisis, the conflict in Ukraine, the energy crisis, the disturbed global supply chains, the high inflation, etc.), banks need to

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[123] For more details on the developments in the banking system in 2021 see the Report on the risks in the banking system in 2021 (https://www.nbrm.mk/content/Godisen_BS_31_12_2021.pdf).

[124] Specifically, for the first time after 2016, repo auctions were held in order to provide liquidity, starting from March 2022.

[125] In February 2021, the National Bank adopted a Decision on temporary restriction of dividend distribution and payment. This decision was adopted for preventive purposes, and to further increase and maintain the banking system resilience and stability, as well as support the lending activity, amid uncertainty around the further course of the health crisis. The decision was valid until the end of 2021, with a possibility of being revoked prematurely, depending on the circumstances with the pandemic. Thus, after a detailed analysis of the current circumstances, developments and perceptions of the banking system and the environment in which it operates, taking into account the results of stress tests on the banking system's resilience, at the beginning of August 2021, the National Bank Council revoked this decision.

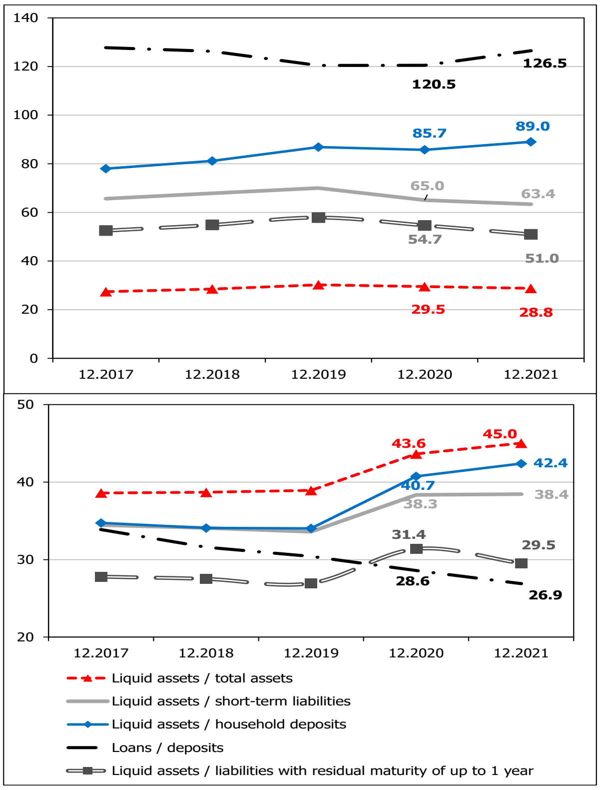
In 2021, all banks retained at least part of the profit realized in the previous year in the own funds.

[126] In 2021, four banks issued new shares.

[127] In 2021, three banks issued new subordinated instruments.

continue to be cautious in maintaining their capital position, as well as in taking and managing risks.

Chart 93 Liquidity ratios by currency - Denars (up) and FX (down)
in %



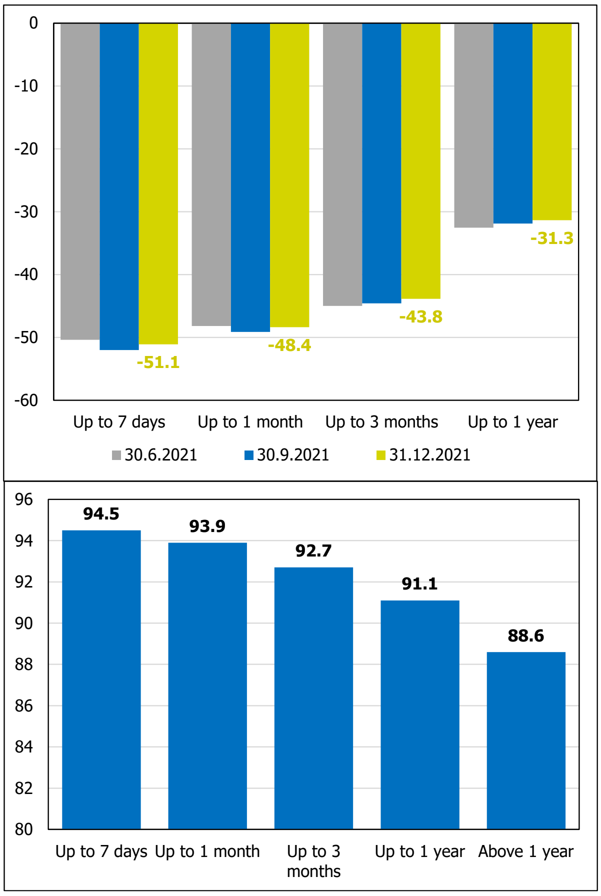
Source: National Bank, based on data submitted by banks.

Banks dispose of a satisfactory volume of liquid assets, which registered further growth in 2021. Hence, part of the liquidity risk indicators improved, and at the end of 2021 they were maintained at a satisfactory level. Analyzing the currency structure, the improvement of the liquidity indicators was more pronounced in the indicators of foreign currency liquidity of the banking system, which, despite the increase, remain at a significantly lower level compared to the indicators of denar liquidity. Hence the great importance of the adequate volume of the foreign reserves and the presence of the National Bank in the foreign exchange market (in order to maintain a stable exchange rate) for covering the possibly increased demand for foreign currency cash[128]. New Decision on the methodology for liquidity risk management has been applied since the beginning of 2021, which introduced a requirement for the banks to maintain minimum level of so-called liquidity coverage ratio. This regulation is a significant step towards harmonization of the domestic regulation with the international standard Basel 3, including the adequate European regulations in relation to the minimum liquidity requirements. More specifically, this Basel liquidity standard measures the banks' liquidity resilience, i.e. the ability of banks to service liabilities that fall due within the next 30 days, amid assumed stress. As of 31.12.2021, the liquidity coverage ratio of the banking system was 292.2% (the regulatory minimum for this ratio is 100%), whereby the so-called high-quality liquid assets of the banking system are almost three times higher compared to the amount of net cash outflows, which would be realized in conditions of stress with a duration of 30 days.

An important requirement for smooth management of banks' liquidity is to ensure adequate maturity matching of the

[128] In this context it should be borne in mind that the European Central Bank (ECB) granted the National Bank access to foreign currency liquidity in euros, with appropriate collateral. This access has been granted in the form of repo line, since August 2020, totaling Denar 400 million. The deadline for application of the repo line was extended several times and is currently until January 2023. So far, the National Bank had no need for using the funds from this repo line.

Chart 94 Cumulative gap between the agreed inflows and outflows, by including the cumulative amount of unencumbered assets (up) and expected deposit stability, according to the remaining period to maturity, as of 31.12.2021 (down)
in %



Source: National Bank, based on data submitted by banks.

agreed inflows and outflows according to their residual maturity. There is a relatively high negative gap between the agreed inflows and outflows up to one year, and the risk arising thereof did not materialize thanks to the stable percentage of keeping bank deposits. Having in mind the fact that almost 65% of the bank deposits are demand deposits, and 66% of the total deposits are deposits of the households (which are usually more sensitive to negative news, information and speculation), the public confidence in banks is crucial for the liquidity and stability of the system.

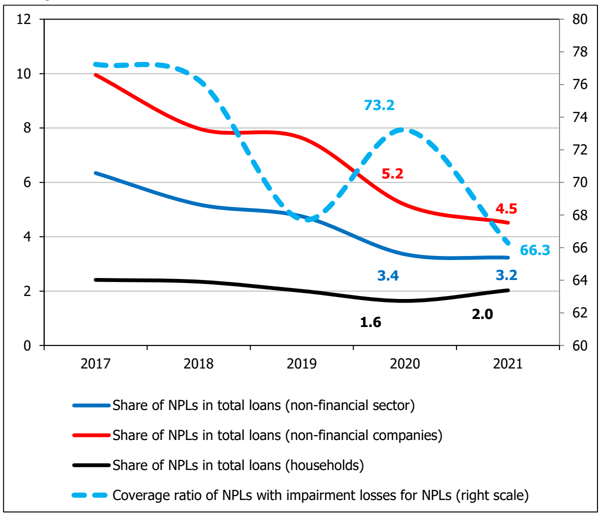
In 2021[129], deposits increased rapidly (by 8.8%, compared to 6.2% in 2020), but the trend of currency transformation, which started with the occurrence of the health crisis, strengthened this year and led to increased share of deposits with currency component in total deposits (45% as of 31.12.2021, compared to 41.9% and 40.8%, at the end of 2020 and 2019, respectively). The maturity transformation of deposits also continued, so that the share of demand deposits in total deposits reached 64.5% (59.9% as of 31.12.2020, 54.1% as of 31.12.2019).

From the beginning of 2022, the Russian-Ukrainian crisis created uncertainty and reactions with some of the population expressed with conversion of denar deposits into foreign currency or into foreign currency cash, which is a common behavior in times of crisis. Also, the unfounded speculations about the stability of the denar intensified, which created short-term pressures on the banks' deposit base. The National Bank responded accordingly to reduce the pressures and since April, household deposits have been continuously increasing. The measures adopted by the National Bank from the beginning of the year through changes in the key interest rate and the reserve requirement are expected to encourage denarization of the banks' balance sheets and increase savings, which would be achieved through changes in the interest rate policy of the banks aimed at offering

[129] In the first months of 2022, total deposits grew at a slower pace (3.1% as of May 2022, on an annual basis), which is a result of the reduction of corporate deposits, amid further growth of household deposits.

Chart 95 Share of non-performing loans in total loans and coverage of non-performing loans with impairment

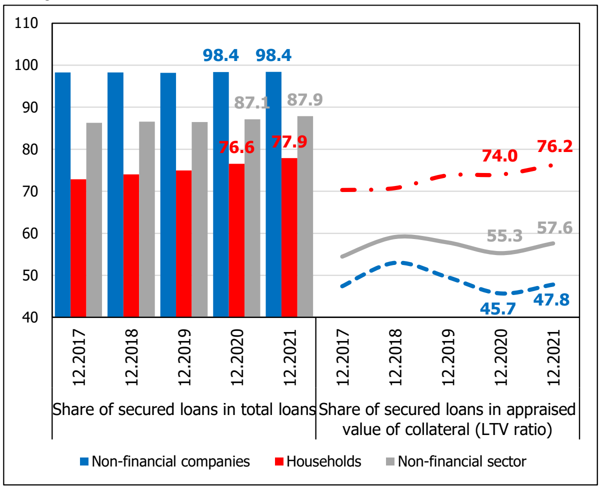
in %



Source: National Bank, based on data submitted by banks.

Chart 96 Shares of collateralized loans in total loans and indicator for the ratio between the amount of collateralized loans and the estimated value of the collateral

in %



Source: National Bank, based on data submitted by banks.

relatively more favorable interest rates on denar deposits.

In 2021, the credit risk registered certain materialization, as measured by the movements of non-performing loans and their share in total loans. Such movements mainly result from the loans whose payment has previously been temporarily deferred due to the pandemic, but the intensity of the materialization of the credit risk, on this basis, remained under control and was lower than expected (if one takes into account the relatively high volume of loans that have been granted some easing in the repayment due to the covid crisis[130]). Despite the annual growth of non-performing loans to non-financial entities, by 4.5%, their share in total loans decreased. Observed by sector, the annual growth of non-performing loans was concentrated in household loans, which increased by 33.8% (these are loans that have previously been granted easing in the repayment due to the covid crisis), while non-performing corporate loans decreased by 5% due to the banks' intensified collection activities. The coverage of total non-performing loans with impairment remained above 66%. Hence, the negative effects of the possible complete default on non-performing loans on the capital positions are potentially small and at worst they would "spend" 5.3% of total own funds of the banks.

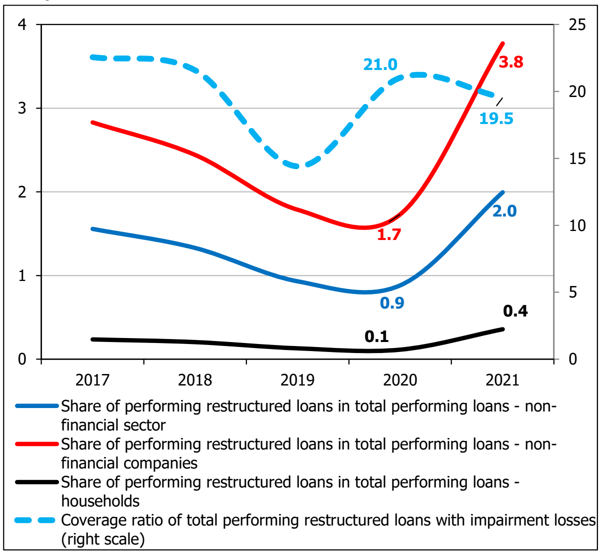
The materialization of the credit risk poses a danger to banks' solvency, in situation when there is enhanced migration of the regular loans to non-performing loans. However, the analyses show that it takes rather extreme migration of 16.4% from regular to non-performing credit exposure to the non-financial sector, for the capital adequacy ratio of the banking system to reduce to 8%[131]. For illustration, the percentage of migration of the regular to a non-performing credit exposure (for a period of one year) was 1.2% for 2021, while

[130] The measures for easing of the repayment of loans due to the covid crisis covered 46% of the regular loans to non-financial entities (34% of the regular household loans and 57.2% of the regular corporate loans). In addition, for some of these loans, the measures for easing of the repayment were applied also for the second time (to 7.8% of the regular loans to non-financial entities, for 5.5% of the regular household loans and for 10.4% of the regular corporate loans).

[131] Conducting this simulation assumes that the new impairments would be treated as unrecognized impairments, which is a rather conservative assumption, whose application contributes even more to reducing the capital adequacy ratio.

Chart 97 Shares of regular restructured loans in total regular loans and their coverage with impairment

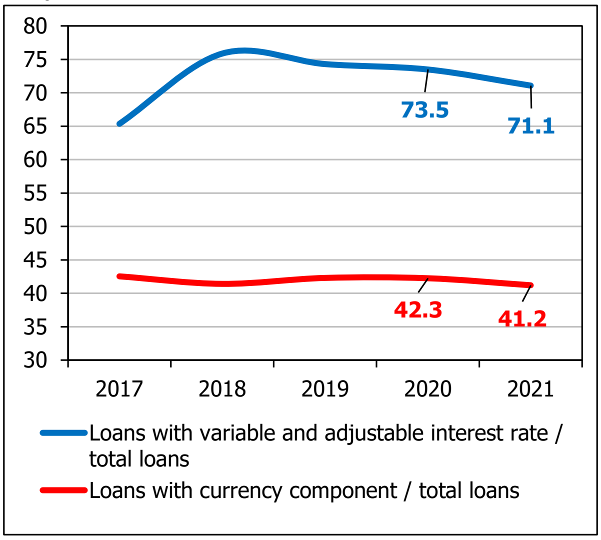
in %



Source: National Bank, based on data submitted by banks.

Chart 98 Banking system exposure to indirect credit risk, from loans with currency component and loans with variable and adjustable interest rate

in %



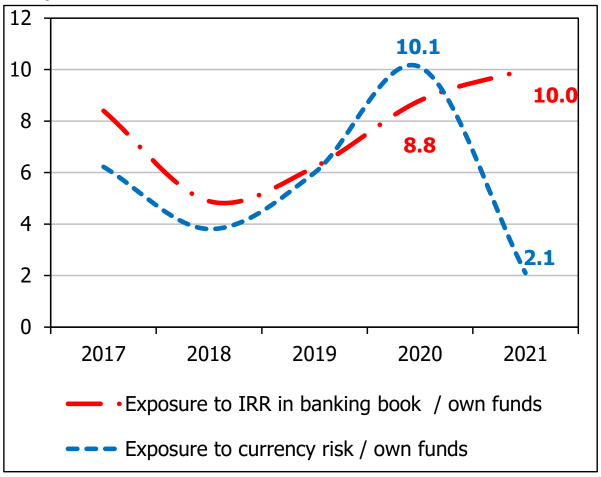
Source: National Bank, based on data submitted by banks.

the average of this percentage, calculated for the last 13 years, is 2.1% (the maximum realized amount for this percentage, for the same period, is 4.4% and was registered for the period from 30.6.2008 to 30.6.2009). In addition, a relatively significant part of the banks' credit portfolio is secured by some type of collateral, whose estimated value significantly exceeds the amount of loans for which the collateral is established. Thus, in case of default on loans, the collateral could be used as a secondary source of repayment. On the other hand, household loans are usually approved to clients with a regular monthly income, who receive their salary through the payment accounts opened in the banks from where they use the loans. Thus, borrower's wage can be considered a relatively high-quality "collateral" for the bank. Moreover, according to the banks' internal acts, the maximum allowed ratio between the liabilities based on the loans of the client and their monthly income ranges from 50% to 80%. For the loans approved in most of 2021[132], the indicator for the ratio between the liabilities based on the loans of the clients and their monthly income averages around 40%, although there are major differences among individual banks. However, in conditions of increased uncertainty and complicated environment in which banks operate, in the next period one can expect materialization of the credit risk in the banks' portfolios, i.e. migration of the regular to non-performing loans. The expectations for reduced quality of credit demand, given the normalization of the monetary policy both globally and domestically, will probably influence the tightening of the credit standards of banks, which may in turn affect the dynamics of credit growth. In 2021, loans to non-financial entities grew significantly faster, to a level of 8.5% (4.1% for 2020).

[132] Data are collected on the basis of a special letter sent to the banks and refer to the first nine months of 2021.

Chart 99 Banking system exposure to currency risk* and interest rate risk in the banking book**

in %



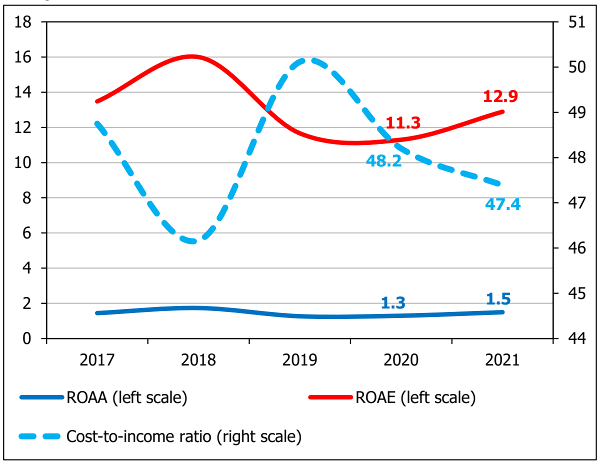
Source: National Bank, based on data submitted by banks.

*The currency risk exposure is measured through open foreign exchange position, which is a gap between on- balance and off-balance sheet assets and liabilities with currency component

**Exposure to interest rate risk is measured through weighted value of banking book, which denotes potential loss of economic value of this portfolio, amid assumed unfavorable interest shock of ±2 percentage points.

Chart 100 Selected profitability indicators

in %



Source: National Bank, based on data submitted by banks.

Banks usually make efforts to ease the credit conditions and to prevent or to reduce the migration of the regular to non-performing loans by restructuring the loans for those borrowers where a deteriorating financial position is noticed (or there are signals for deterioration in their financial position). In 2021, regular restructured loans registered a more significant growth, which was more pronounced in the first half of 2021 and results from the loans restructured due to the deteriorating financial position of the clients as a result of the corona-crisis. Namely, after the longer period of constant reduction of regular restructured loans, first in 2020 these loans registered a small growth (of 0.2%), and in 2021 they increased by 145.6%. Almost 90% of the annual growth of regular restructured loans was concentrated in the portfolio of corporate clients. Despite the significant growth of regular restructured loans, their share in the total regular loans amounts to 2% and for the time being they do not represent a significant risk factor due to their insignificant amount. Although in the last quarter of 2021, regular restructured loans grew at a significantly slower pace, and in the first quarter of 2022 they registered a decline, however in the next period they can increase again, given the deteriorating environment in which borrowers operate.

The banks' indirect exposure to credit risk, which arises from the presence of loans with currency component and loans with adjustable and variable interest rate, is significant. Banks' exposure to credit risk which arises from the exposure of their clients to interest rate risk becomes important with the increase in interest rates, in conditions of normalization of monetary policy both globally and domestically. Namely, the increase in interest rates on loans increases the burden for servicing of debt of borrowers which can adversely affect their creditworthiness. Banks' exposure to credit risk, which in turn arises from the exposure of their clients to currency risk, is limited due to the implementation of the strategy of a stable exchange rate.

The banking system's exposure to currency risk and interest rate risk in the banking book equal 2.1% and 10% of own funds, respectively, which remains acceptable and far below the prescribed limits.

The profitability indicators of the banking system improved. In 2021, banks increased their profit, which was generally due to most of the income and expenditure items in the income statement. Namely, the growth of the profit primarily stems from the increase in the income from collected previously written-off claims, but a significant contribution was also made by net commission income, net interest income, and the reduced impairment costs. Given these developments, the rates of return on average assets and average equity and reserves increased, while the net interest margin minimally decreased, but is still at a solid level of 3%. Only operating costs made a slightly more significant negative contribution to the changes of profit, given the growth of these costs. However, in conditions of faster growth of total income, the indicator for the ratio between operating costs and total income further improved. Developments from the beginning of 2022 are expected to have an unfavorable influence on the banks' profitability. The possible slowdown or reduction in banks' activities, accompanied by the potentially deteriorated creditworthiness of the clients will affect adversely both banks' revenues and expenditures, primarily impairment costs, which can also reduce the profit of the banking system.

Stress testing of the banking system of the Republic of North Macedonia using scenario analysis

Stress-test of the banking system was conducted in May 2022 using scenario analysis, which simulates extreme, but theoretically feasible shocks in the macroeconomic environment, in order to assess the capacity for management and resilience of the banking system to shocks. For the purposes of this stress-test, two stress-scenarios were made, with a different level of extremity, which are hypothetical and assume significant negative deviations of the economic activity of the country from the regular forecasts, i.e. they assume extreme, slightly plausible, but theoretically feasible events. For comparison, below, there are main assumptions and results of the stress-scenarios, but also of the baseline and alternative macroeconomic scenario[133], which cover the forecasts for the future, more or less, expected developments in the economy. All scenarios have a horizon of two years, 2022 and 2023.

Table 8 Baseline and adverse macroeconomic scenario for the conduct of the stress test

in %

Macroeconomic variables	Past dynamics					Baseline macroeconomic scenario		Alternative macroeconomic scenario		Adverse scenario no. 1 - stagflation and slow economic recovery		Adverse scenario no. 2 - sharp and deep stagflation	
	2017	2018	2019	2020	2021	2022	2023	2022	2023	2022	2023	2022	2023
Real GDP growth	1.1	2.9	3.9	-6.1	4.0	2.9	3.6	2.1	1.8	-4.5	1.8	-9.5	-9.3
Real personal consumption growth	2.1	3.7	3.5	-4.6	5.0	2.6	3.8	1.7	2.4	-3.1	0.4	-5.9	-13.8
Real gross-investments growth	-2.2	1.7	8.7	-16.1	9.2	15.0	7.0	14.0	3.5	4.6	0.6	-5.8	-13.8
Real exports growth (products and services)	8.3	12.8	8.9	-10.9	12.3	5.0	5.4	4.9	2.6	-5.8	2.6	-16.6	-16.3
Real imports growth (products and services)	5.2	10.7	10.1	-10.9	13.9	6.8	5.3	6.2	2.5	0.0	1.9	-8.8	-15.1
Unemployment rate	22.4	20.7	17.3	16.4	15.7	14.6	12.5	14.9	13.9	17.3	16.3	19.9	22.8
CPI - annual cumulative growth	1.4	1.5	0.8	1.2	3.2	8.8	3.0	10.1	4.1	13.7	7.9	13.7	7.9
Real disposable income growth	4.5	5.5	5.4	-2.3	9.7	-0.2	3.8	-2.1	1.3	-9.2	7.7	-13.6	-7.2
Employment rate	44.1	45.1	47.3	47.1	47.3	47.7	48.9	47.5	48.1	46.2	46.8	44.7	43.1
Annual growth of loans to private sector	5.4	7.3	6.0	4.7	8.3	7.7	7.7	9.1	7.0	2.6	3.6	6.2	-5.4

Source: National Bank calculations.

The first stress-scenario assumes stagflation in 2022, with a slow recovery of the economy in the next, 2023. Namely, in the first year, GDP registers a real fall of 4.5%, amid decline in private consumption and exports of goods and services, due to reduced domestic and foreign demand. Despite the recession developments in the economy, the inflation rate would register growth and would reach 13.7%. The labor market conditions deteriorated, which is manifested by the growth of the unemployment rate (up to 17.3%), i.e. decline in employment and disposable income (real annual fall of 9.2%). In 2023, a certain economic recovery is assumed, although slower, which is seen through an increase in GDP of only 1.8%, amid stagnant growth of all GDP components. The inflation rate in 2023 is lower compared to the previous year, but it is still maintained at a relatively high level of 7.9%. The labor market conditions improved, but the unemployment rate (16.3%) is still above the level registered in 2021.

The second, even more extreme, stress-scenario assumes a sharp recession in two consecutive years, given the maintenance of the inflation rates at a high level.

The results of the conducted stress test[134] indicate a generally satisfactory resilience of the banking system to macroeconomic shocks. Thus, in the first stress scenario (assumed stagflation with slow recovery), the non-performing loans of the banking system grow by 71.5% in 2022 and by additional 23.7% in 2023 (cumulatively, for both years, these loans increase by 112.1%). Moreover, at the end of 2022, the share of non-performing loans in total loans reached a level of 5.4%, while in 2023 this share mounted to a level of 6.4%[135]. Also in both years, the banking system operates at a loss, which accounts for 3.2% of the average assets for 2022 and for 0.3% in the average assets for 2023. The capital adequacy ratio in 2022 decreases to a level of 13.5%, and in 2023 it falls to 12.7%. Finally, the indicator for the share of liquid assets in short-term liabilities falls to a level of 40.3%, while the coverage of household deposits with liquid assets of the banking system declines to 47.8%.

[133] The main assumptions and forecasts in the baseline and alternative macroeconomic scenario are presented and described, in more details, in the Quarterly Report of the National Bank, from May 2022 (Istrazuvanje_Kvartalen_izvestaj_maj_2022.pdf (nbrm.mk)).

[134] More details about the methodology of preparation of the stress tests applied by the National Bank can be found on the following website: http://www.nbrm.mk/WBStorage/Files/WebBuilder_FSR_MKD_2015_Prilog1.pdf.

[135] The determination of the amount of non-performing loans and their shares in total loans does not take into account the possible mandatory write-offs of non-performing loans, which would be conducted in 2022 and 2023.

In the second stress-scenario (assumed sharp and prolonged stagflation), the capital adequacy ratio of the banking system reduces to 10.8% in 2022 and drops below 8% in 2023, to a level of 5.8%. Non-performing loans, on a cumulative basis, grow by 144.8%, so that the indicator for the share of non-performing loans in total loans reaches a level of 7.9%, at the end of 2023. Similar to the first stress-scenario, also in both years the banking system operates at a loss, but in this scenario it is much higher and reaches 4.9% and 4.1% of average assets in 2022 and 2023, respectively. However, this is a rather extreme and slightly plausible scenario, that our economy has not faced before, at least in the recent history.

Chart 101 Achieved and forecasted levels of the share of non-performing loans in total loans to non-financial entities (left) and the rate of return on average assets (right)

in % in %

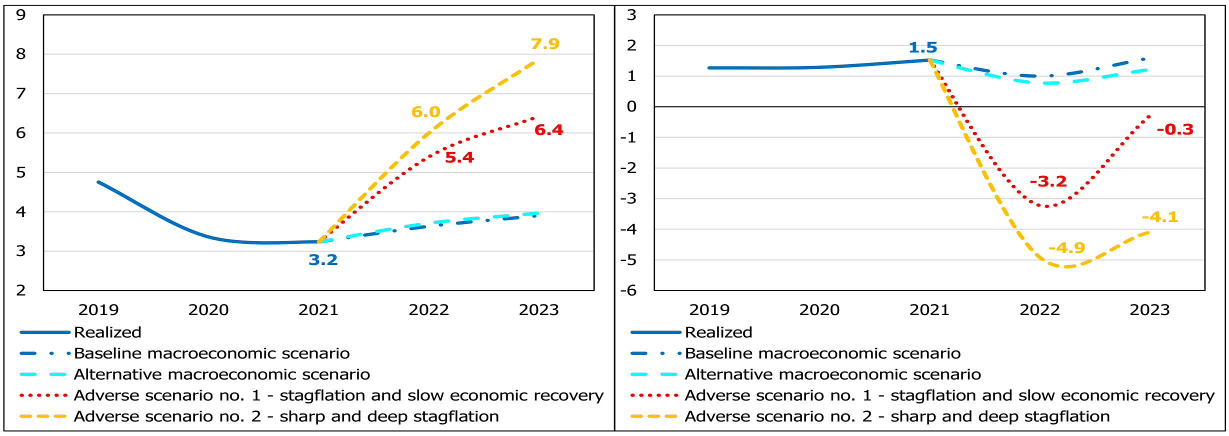
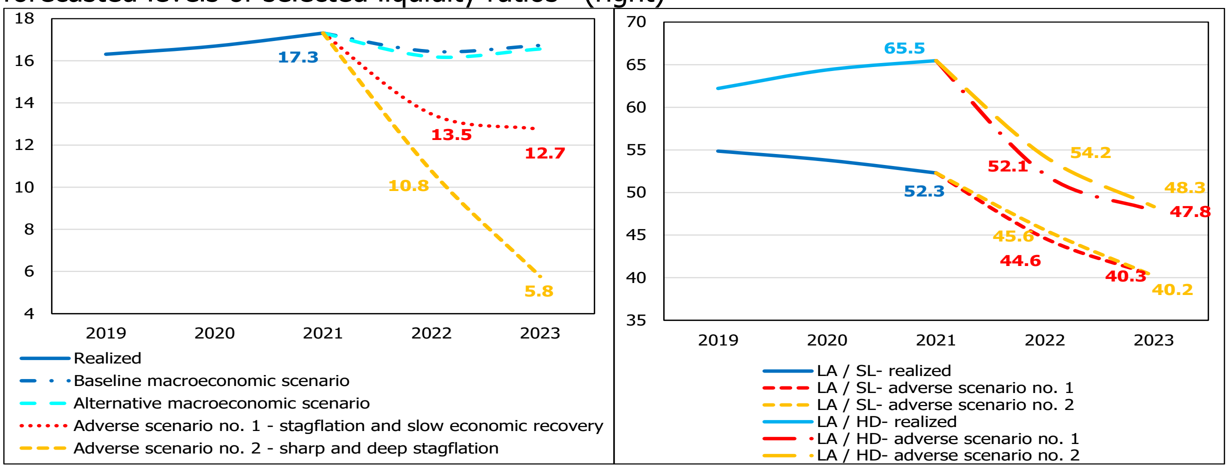


Chart 102 Achieved and forecasted levels of the capital adequacy ratio (left) and achieved and forecasted levels of selected liquidity ratios* (right)



Source: National Bank calculations

*LA / SL - liquid assets / short-term liabilities; LA / HD - liquid assets / household deposits.

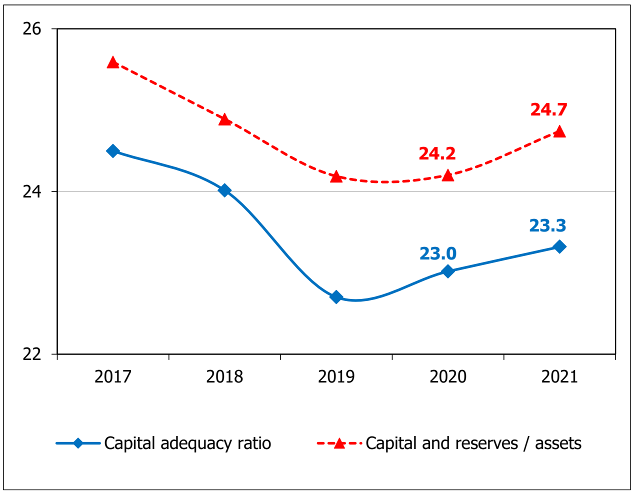
2.3.2. Savings houses

Savings houses are deposit-taking institutions, whose share in the financial system of the Republic of North Macedonia, according to the scope of activities they perform, is very small[136]. They cover a certain segment of the credit market that has more difficult access to financing from banks, thus enabling a higher level of financial inclusion in the economy. Savings houses collect deposits from individuals, which is why their performances, and above all their reputation, are important for the overall financial stability. The risk of materialization and spillover of risks is low, primarily due to the small volume of savings houses' activities and deposit insurance, as well as due to their satisfactory solvency and liquidity. There is certain worsening in the quality of the credit portfolio and growth of non-performing loans, which results from the loans that have been granted easing in the repayment for the purpose of easier dealing with the negative effects of the pandemic. The unfavorable developments in 2022, related to the pandemic and the war in Ukraine, the disturbance of the global supply chains, the higher prices of energy, the higher interest rates, the increased inflation rate, represent a risk for a possible future growth of non-performing loans and weaker performances in deposits of savings houses.

In 2021, the solvency of both savings houses was maintained at a high level. The capital adequacy ratio slightly improved compared to the previous year, mainly due to the growth of own funds (primarily due to reinvestment of profits from 2020), amid almost unchanged amount of risk weighted assets. The capital adequacy ratio of both savings houses is above the regulatory requirement of at least 20%[137]. **Amid moderate reduction of the liquid assets in 2021 (by Denar 8 million or by 3%), some of the liquidity indicators slightly decreased but are at a satisfactory level and improved compared to the pre-pandemic period.** The reduction of the liquid assets is mostly a consequence of the fall in deposits (by Denar 21 million or by 2.1%) and loan liabilities (by Denar 23 million or by 4.9%), so that savings houses are also the only segment in the financial system that showed a reduced volume of activities in 2021 (the assets of savings houses decreased on an annual basis by Denar 32 million or by 1.5%). The share of liquid in total assets is at a significantly lower level compared to banks, which results from the specificities in savings houses' operations (e.g. the possibility of collecting deposits only from natural persons, the limited choice for investments in liquid financial instruments, etc.). But, on the other hand, the short-term liabilities are fully covered with liquid assets, which results from the predominant orientation of depositors in savings houses to save on longer terms[138]. In addition, the quality of loans and the regular provision of cash inflows on the basis of their repayment is also an especially important prerequisite for maintaining appropriate liquidity in savings houses, given the relatively high share of the credit portfolio in the assets of savings houses (82.6% in savings houses, versus 59.6% in banks).

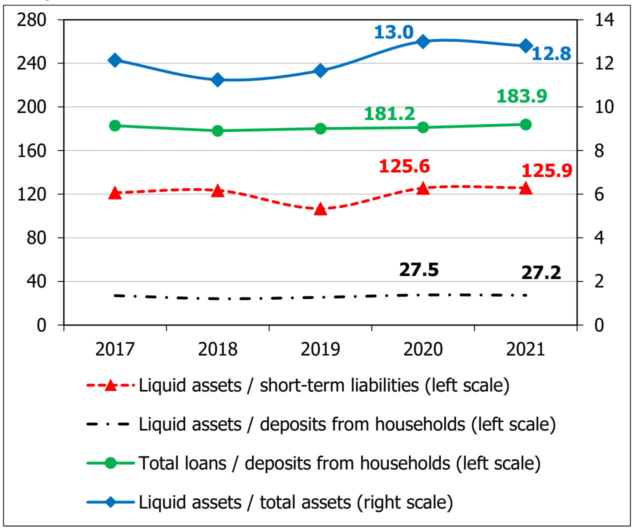
[136] More details in the section concerning the Financial System Structure of this Report.
[137] The minimum regulatory capital requirement for savings houses (20%) is significantly higher than that for banks (8%).
[138] Almost 90% of deposits invested in savings houses are long-term deposits.

Chart 103 Solvency indicators of savings houses
in %



Source: National Bank, based on data submitted by the savings houses.

Chart 104 Liquidity ratios of savings houses
in %



Source: National Bank, based on data submitted by the savings houses.

In savings houses, there is constantly a very high loan to deposit ratio, whereby except by deposits, the credit activity is also financed by the capital of savings houses, but also by loans. A slightly more significant reduction of deposits and liquid assets has also been noted in the first months of 2022.

Credit risk is the most significant risk savings houses are exposed to. Given the fact that the lending to savings houses is mostly aimed at natural persons[139] (95.1% of loans to savings houses), consequently the credit risk due to default on claims is dispersed among many users and at smaller amounts. The savings houses are not carriers of the payment operations, so they have no insight into the payment accounts of the borrowers, nor can they track the salary inflows of their (potential) clients. The level of materialization of the credit risk, as measured by the share of non-performing loans in total loans to non-financial entities is low, although compared to 2020 it deteriorated due to the growth of non-performing household and corporate loans (by Denar 15 million or by 26.2%). The growth results from the loans that have been granted some easing in the repayment (predominantly grace periods) for the purpose of easier dealing with the negative effects of the pandemic, almost entirely from the households. The growth of non-performing loans at a similar pace as in 2021, continued also in the first months of 2022.

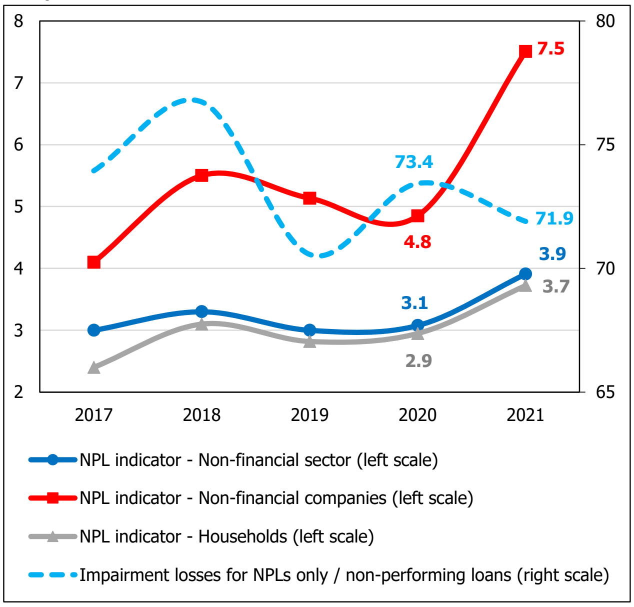
The high coverage of non-performing loans with impairment for them, enables, given an assumption of a complete default on these loans, the use of only 3.6% of the own funds of savings houses, which would marginally reduce the capital adequacy (by 0.9 percentage points).

Profitability indicators of savings houses remained at a similar level as in 2020. In

[139] In 2021, total household loans increased by 1.4% (0.4% in 2020).

Chart 105 Rate of non-performing loans in total loans and coverage of non-performing loans with impairment for them

in %

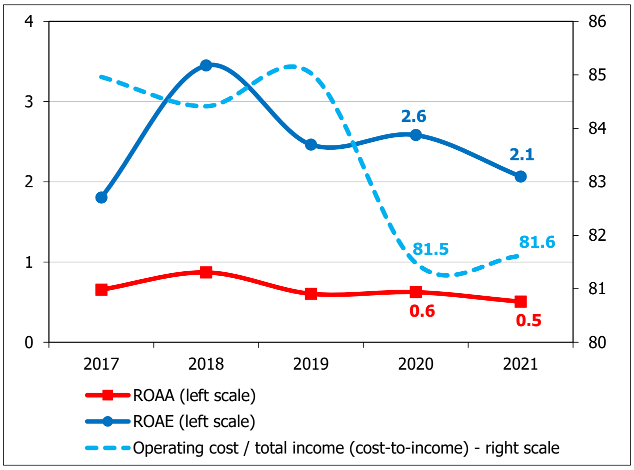


Source: National Bank, based on data submitted by the savings houses.

The high growth of the corporate rate is due to the very small share of corporate lending in savings houses.

Chart 106 Selected profitability indicators

in %



Source: National Bank, based on data submitted by the savings houses.

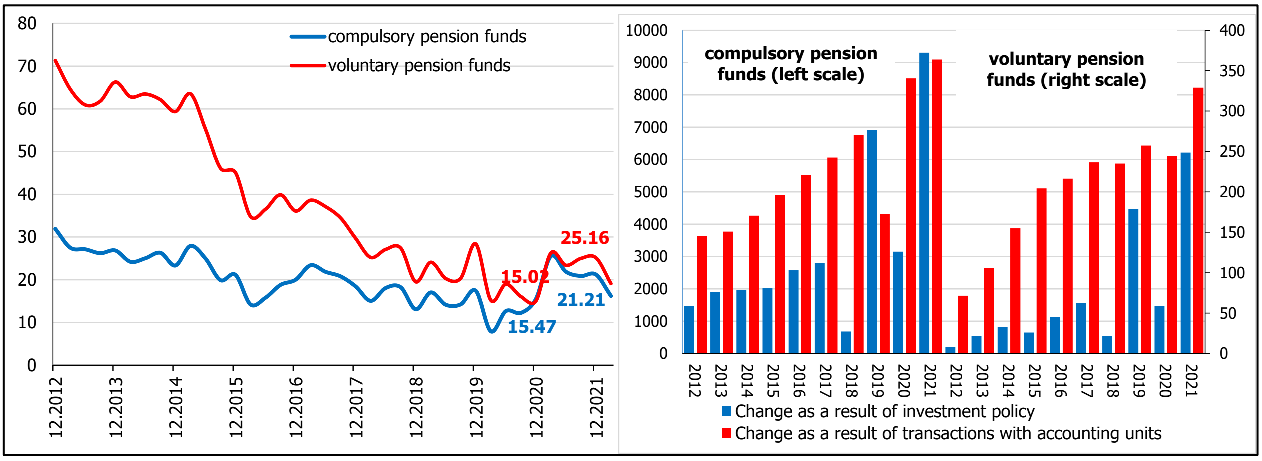
2021, savings houses had a lower profit compared to the previous year, which largely stems from the reduced net interest income (by 9.3%), and to a lesser extent it is a consequence of the growth of impairment costs (10.7%). The ratio between net interest income and average assets of the savings houses (7.8% for 2021) is by three times higher than the banking system, which is important in the profit creation process. But the wider net interest spreads are signal also for significantly lower competitiveness of the savings houses compared to banks, which also restricts the opportunity for stronger growth of their activities, coupled with the stricter regulatory requirements for savings houses. Savings houses have relatively low operational efficiency, reflected by the relatively high level of the indicator for the ratio between operating costs and total income (81.6% as of 31.12.2021). The new Law on Payment Services and Payment Systems (with application from 1.1.2023) provides for an opportunity, in addition to banks, for other institutions to offer payment services, that will meet the required conditions, prescribed by this Law. Thus, savings houses can expand the scope of activities, in the segment of payment services, which in turn would represent an additional source of (non-interest) income.

2.4. Fully funded pension insurance

The domestic private pension funds continued to gradually accumulate funds for account of their members, which continued to strengthen their relative importance within the domestic financial system. At the end of 2021, the total assets of the domestic pension funds equal Denar 108.7 billion and account for about 15% of the gross domestic product. The mandatory pension funds have a dominant place in both the structure of assets and in their growth and structural changes. The structure of the assets of the private pension funds and its allocation by certain asset classes registered no major changes in 2021, so the portfolio of debt financial instruments still covers around two thirds of the assets of mandatory and slightly over 60% of voluntary pension funds. The credit risk, including the high concentration of the portfolio of debt financial instruments, and the risk of price changes in the global capital markets for the portfolio of equity financial instruments, remain the most important risks for the domestic private pension funds. The annual rates of return on pension funds registered an improvement in 2021 compared to the previous year, but the real return for a period of seven years declined. The acceleration in inflation and the gradual strengthening of inflation expectations point to fundamental changes in the investment environment and pose a greater challenge for the pension companies for the further maintenance of a satisfactory real return on the assets of their members. The nominal rates of return on pension funds will be influenced by the changes in the monetary policies of the most important central banks in the world and the developments on the global financial markets, which registered increased volatility in the first half of 2022, with noticeable corrections of the most important global stock exchange indices.

The total assets in the system of the private fully funded pension insurance in 2021 increased by 21.3%[140], i.e. by Denar 19.1 billion and represent about 15% of the gross domestic product. Given the obligatory membership of new employees, the relative size and the growth of the assets of the private pension funds is concentrated in the mandatory private pension funds, which account for about 97%, of both the amount of the assets of the system of the private fully funded pension insurance and of their total growth. Net assets of the private pension funds are almost equal to the total assets, which results from the symbolic amount of their liabilities[141]. Unlike the past decade, when as a rule the larger share in the growth of the net assets of the mandatory pension funds resulted from the net inflows due to the paid-in contributions[142] (which actually represent most of the transactions with the accounting units), in 2021 a higher contribution to the increase in the net assets was registered in the achieved result from the asset management and investment[143]. Unlike this, in the voluntary pension funds also in 2021 the increase in the net assets is largely due to the payments of contributions, i.e. to the effects of the transactions with the accounting units.

Chart 107 Annual growth rate of assets of private pension funds (left) and structure of absolute growth of net assets of private pension funds (right)
in % and in millions of Denars



Source: internal National Bank calculations based on MAPAS data.

The domestic population has a relatively weak interest in using the voluntary fully funded pension insurance. The number of the members in the mandatory pension funds in 2021 increased by 3.9% and covers 32.7% of the total active population, i.e. 69.2% of the number of employees[144]. On the other hand, although the number of the members in the voluntary pension funds registered a slightly more dynamic growth of 6.6% in 2021 compared to the members of the mandatory pension funds, which corresponds with the commencement of operation of a new voluntary pension fund[145], however the voluntary pension insurance covers only 1.5% of the active population and 3.5% of the number of employees.

The structure of the assets of the private pension funds and its allocation by certain asset classes registered no major changes in 2021. According to the existing legal limitations, also in 2021, the mandatory pension funds continued to follow the established strategic allocation between equity and debt financial instruments in ratio 30% : 70%, while the voluntary pension funds in ratio 35% : 65%[146]. In 2021, there was a slight increase in the share of equity financial instruments in the structure of the pension funds' assets, which mainly results from the trend of rising prices in the global capital markets. The current strategic allocation of the

[140] In 2021, the assets of mandatory pension funds grew by 21.2% (15.5% in 2020), while the assets of voluntary pensions funds increased by 25.2% (15.0% in 2020). The total contributions paid to private pension funds in 2021 equal Denar 10,088 million (Denar 9,565 million in 2020), i.e. 1.39% of the estimated GDP (1.45% of GDP in 2020). From these contributions, only 4.0% were paid into voluntary pension funds (3.3% in 2020).

[141] At the end of 2021, the net assets of the mandatory private pension funds equal Denar 105.6 billion, which represents 99.86% of their total assets, while the net assets of the voluntary private pension funds equal Denar 2.9 billion, which represents 99.85% of their total assets.

[142] An exception to this trend was registered in 2019, caused by the changes in the legislation in terms of the criteria for membership of certain categories of insurees in the system of the mandatory pension funds, due to which there were higher outflows of funds from the mandatory pension funds to the government pension and disability insurance fund.

[143] In 2021, the effects of the asset management and investment contributed with 50.6% to the total annual change in mandatory pension funds (26.2% in 2020), i.e. 43.1% in voluntary pension funds (19.4% in 2020).

[144] For more detailed information on the structural features of pension funds in terms of households see Indicators of the Membership in Private Pension Funds, below.

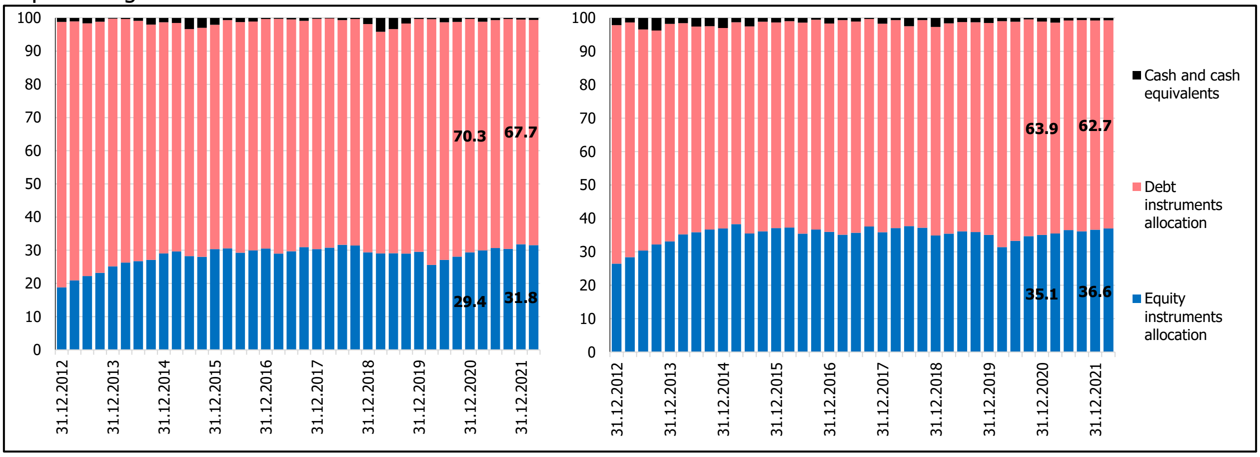
[145] In March 2021, a third voluntary private fully funded pension fund (Triglav Open Voluntary Pension Fund) started operating.

[146] In addition to equity and debt financial instruments, the claims of the pension funds and the funds in the bank that performs the function property custodian, form a special "residual" category, which has a symbolic share in the total assets and does not change the general levels set for the strategic allocation of funds.

assets of the domestic mandatory pension funds points to a relatively conservative investment approach, especially if one takes into account the age profile of the membership, whose average age is around 36.

Chart 108 Structure of assets by classes of assets of mandatory (left) and voluntary (right) pension funds

as percentage of total assets



Source: Internal National Bank calculations based on MAPAS data.

The strategic allocation by asset classes, except that it determines the expected return, also determines the nature of the investment risks that pension funds are exposed to, as well as the factors that determine the realized return on pension funds. In equity financial instruments, the performances depend primarily on the systemic market risk, and to a lesser extent, on idiosyncratic elements related to the investments in specific shares and valuations of a specific issuer. **Within the individual asset classes, the portfolio of equity financial instruments of the pension funds was dominated by the foreign investment funds that invest in shares[147].** Foreign investment funds investing in shares are in the form of so-called ETF - Exchange traded funds and at the end of 2021, they account for 77.9% and 64.0% of the total portfolio of equity financial instruments of the mandatory and voluntary pension funds, respectively[148] and register an annual increase in the share by 3.4 and 3.3 percentage points, respectively. The key characteristic of such instruments compared to direct investments in foreign or domestic shares is that they offer diversification of the idiosyncratic risk of investing in instruments from an individual issuer, because the exchange traded funds, by their design and characteristics, represent a diversified basket of different equity financial instruments[149]. However, the systemic risk associated with investments in equity financial instruments, which arises from the general market developments, remains an integral part of the portfolio even when the market exposure is established through exchange traded funds.

[147] For more detailed information on the structure of the assets of the pension funds by asset classes and by individual financial instruments see Aggregated balance sheet of private pension funds, with investment structure by asset class and Structural features of investments of private pension funds, below.

[148] The share of investments in foreign investment funds that invest in shares in the total assets at the end of 2020 amounted to 21.9% in mandatory and 21.3% in voluntary pension funds, and compared to the end of 2019, these shares were higher by 1.1 and 1.0 percentage points, respectively.

[149] Often, the investment mandate of the exchange traded funds is a replication of a specific stock exchange index and in that case, its basket of equity financial instruments is composed of the financial instruments that are included in such index in the same proportion as they are present in the index. Because of this, such exchange traded funds that have an explicit mandate to follow a specific stock exchange index actually replicate the return that such index brings for any defined time horizon.

The structure of the portfolio of debt financial instruments is predominated by the investments in domestic government bonds, followed by deposits in domestic banks. The domestic government bonds at the end of 2021 participate in the total portfolio of debt financial instruments with 88.4% in the mandatory pension funds and 79.6% in the voluntary pension funds[150] and compared to the end of 2020 they register an increase in the share of 3.5 and 4.0 percentage points, respectively. In contrast, in 2021, the share of deposits in domestic banks in the total portfolio of debt financial instruments decreased from 14.1% to 10.1% in the mandatory, i.e. from 22.2% to 18.1% in the voluntary pension funds[151]. The other debt instruments[152] have a minor share in the structure of debt financial instruments portfolio.

The relatively favorable developments on the global financial markets during 2021 improved the rates of return[153] on domestic pension funds. The annual weighted nominal rate of return on mandatory pension funds at the end of 2021 amounted to 9.28% and is by 5.98 percentage points higher compared to 2020. In the voluntary pension funds, the annual weighted nominal rate of return at the end of 2021 amounted to 10.29% and is by 7.68 percentage points higher compared to the end of 2020. The improvement in 2021, although at slightly slower pace due to the initial signs of acceleration in inflation in 2021, was also present in the real annual rates of return on pension funds. On the other hand, **monitoring the movement of the rates of return on pension funds realized for relatively longer periods (seven-year rates of return reduced annually), shows a relative stability of the nominal rates of return, but also an initial trend of decrease in the real rates of return**. The nominal rates of return, calculated for a seven-year period and reduced annually, at the end of 2021 amounted to 5.98% for the mandatory and 5.86% for the voluntary pension funds, and compared to the end of 2020 they increased by 0.39 and 0.29 percentage points, respectively. In contrast, the real rates of return calculated for a seven-year period and reduced annually have been declining for the second consecutive year and at the end of 2021 they amounted to 4.58% and 4.42% for the mandatory and for the voluntary pension funds, respectively, and registered an annual fall of 0.34 and 0.47 percentage points, respectively. Given the gradual acceleration in inflation in 2022, in the forthcoming period one can also expect continuation of the trend of reduction of the real rates of return on pension funds, which will adversely affect the financial assets of the households as the end owner of these assets.

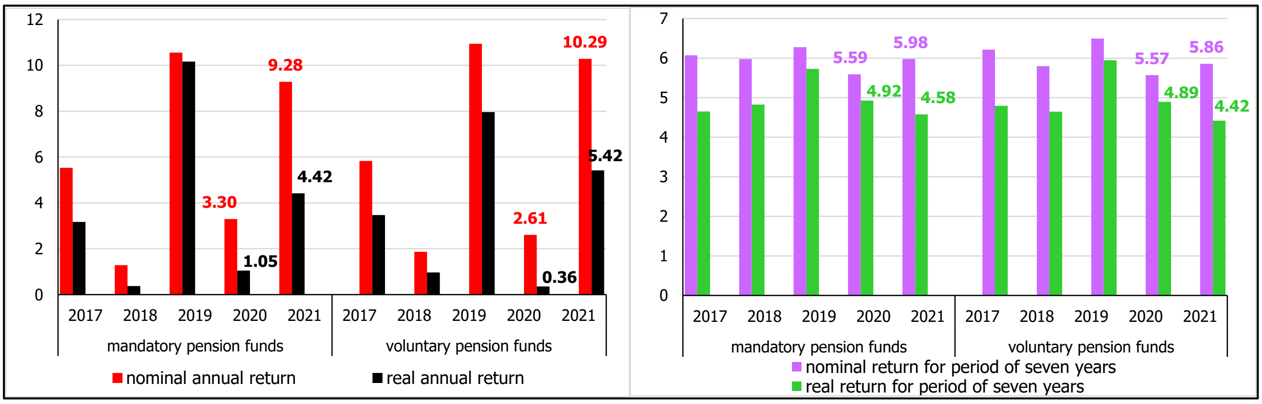
[150] The share of the domestic government bonds in the total assets of the pension funds at the end of 2021 was 59.8% in the mandatory pension funds (growth of 0.1 percentage point compared to 2020) and 49.9% in the voluntary pension funds (growth of 1.6 percentage points compared to 2020).

[151] The share of deposits in domestic banks in the total assets of pension funds at the end of 2021 amounts to 6.8% in the mandatory pension funds (an annual decrease of 3.1 percentage points) and 11.4% in the voluntary pension funds (an annual decrease of 2.8 percentage points).

[152] Other types of debt instruments are consisted of domestic corporate bond, foreign investment funds that invest in bonds and domestic investment funds that invest in money market instruments, which at the end of 2021 account for about 1.6% of the structure of the portfolio of debt financial instruments.

[153] For more detailed information on the rates of return on mandatory and voluntary pension funds see Rates of return on private pension funds, reduced annually and calculated for different time intervals, below.

Chart 109 Dynamics of annual (left) and seven-year (right) nominal and real rates of return on pension funds
in %

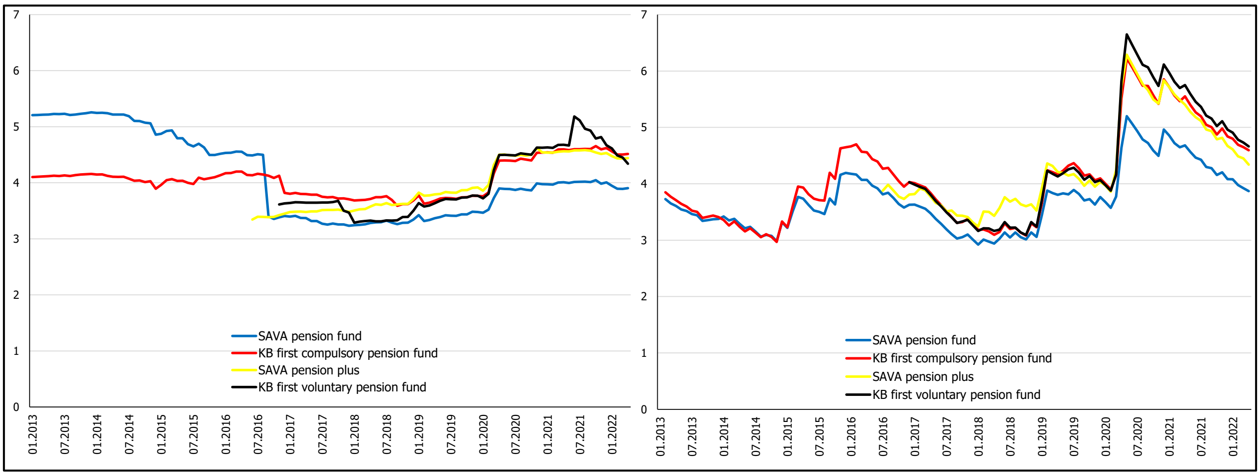


Source: Internal National Bank calculations based on MAPAS data and data from audited financial statements on mandatory and voluntary pension funds. The seven-year rates of return are reduced annually.

The historical volatility of the nominal rates of return[154] **during 2021 on mandatory pension funds generally showed a stable movement at a relatively low level**[155]**,** while the voluntary pension funds registered a trend of reduction. The relatively modest historical volatility of the pension funds' return rate largely stems from the structure of financial instruments owned by domestic pension funds, which are largely in the form of debt instruments. **Volatility in global capital markets, present since the beginning of the year, can reflect on the portfolio of equity instruments of pension funds and increase the historical volatility of the rates of return in the period ahead.**

[154] For the purposes of this analysis, the historical volatility of the return of domestic pension funds is estimated using stochastic models based on a monthly series of returns expressed in logarithmic form, using a simple average of changes in the value of the accounting unit of pension funds and using an exponentially weighted moving average where recent observations have a larger weight in the calculation process, where the calculation for domestic pension funds uses the value of this weight of 0.94 following the example of JP Morgan's RiskMetric.
[155] As an illustration, the usual market volatility of stock exchange indices ranges from around twenty points, while the individual shares may register a significantly higher volatility.

Chart 110 Dynamics of historical volatility of the returns of domestic private pension funds calculated by applying an ordinary average for 84 months (left) and by applying an exponential weighted moving average for 84 months (right), annually
in %



Source: internal National Bank calculations based on MAPAS data. For one of the mandatory pension funds, the historical volatility of the return has not been calculated because it has not been operating for 84 months.

Table 9 Distribution of the rate of return on assets of private pension funds, by asset classes
in %

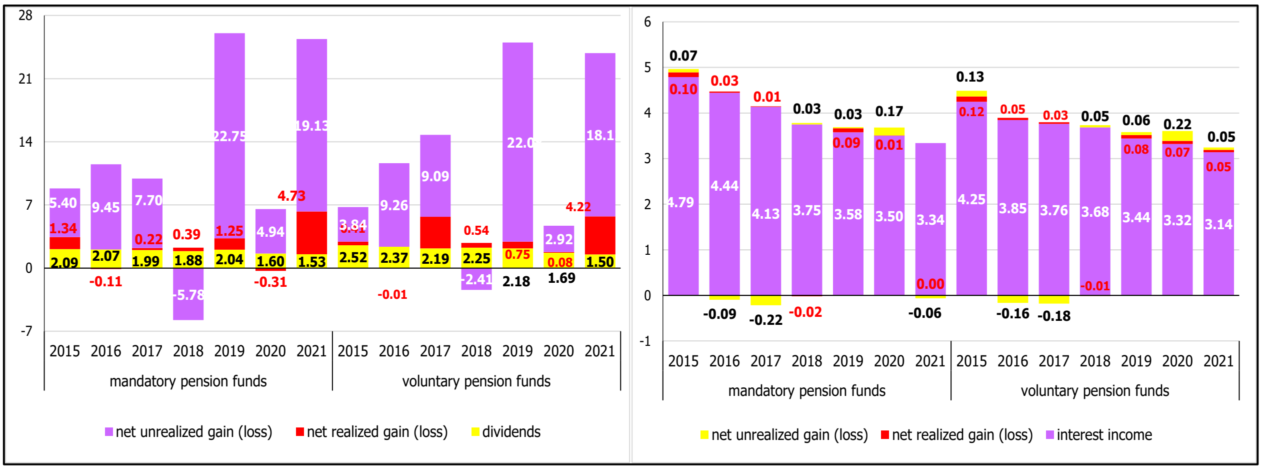
Contribution to pension funds' ROAA by asset classes	Mandatory pension funds					Voluntary pension funds				
	2017	**2018**	**2019**	**2020**	**2021**	**2017**	**2018**	**2019**	**2020**	**2021**
contribution to ROAA of the portfolio of equity instruments	2.99	-1.08	7.60	1.74	7.75	4.17	0.14	8.88	1.59	8.58
contribution to ROAA of the portfolio of debt instruments	2.73	2.58	2.53	2.62	2.26	2.27	2.30	2.25	2.34	2.05
effect on ROAA by cash and cash equivalents	0.00	0.03	0.02	-0.05	0.01	-0.02	0.00	0.02	-0.05	0.01
negative effect on ROAA by fund management costs	-0.42	-0.42	-0.35	-0.36	-0.37	-1.04	-1.05	-1.05	-1.05	-0.95
Net income/ Average assets of pension funds	**5.30**	**1.10**	**9.81**	**3.96**	**9.65**	**5.39**	**1.39**	**10.11**	**2.83**	**9.69**

Source: Source: Internal National Bank calculations based on MAPAS data and data from audited financial statements on mandatory and voluntary pension funds.
Note: The contribution to the formation of the return on assets is calculated in relation to the average assets of the pension funds, which are calculated as an average for a subsequent twelve-month period (so-called TTM trailing twelve months), by using a series of quarterly data. The effect of the revaluation of financial instruments, recognized by fair value through the other comprehensive income, is not included in the calculation of the return rate.

Net profit of pension funds in 2021 amounted to Denar 9,312 million for mandatory and Denar 248 million for voluntary pension funds, respectively, and compared to 2020 it increased by 195% and 321%, respectively[156]. Generator of the annual growth of net profit were unrealized and realized capital gains from equity financial instruments. The growth of net profit of pension funds in 2021 also increased the **rate of return on average assets, from 3.96% to 9.65% in mandatory pension funds, i.e. from 2.83% to 9.69% in voluntary pension funds.**

[156] For more detailed information on the structure of the financial result of the pension funds see Aggregate Income Statement and Report on Change of Assets of Private Pension Funds, below.

Chart 111 Distribution of the return of the individual asset classes by respective components that contribute to its formation, the portfolio of equity financial instruments (left) and the portfolio of debt financial instruments (right)
in %



Source: Internal calculations of the National Bank, based on data published by MAPAS and data from audited financial statements of mandatory and voluntary pension funds.
Note: Interest income also includes the effect of depreciation of the discount or premium from debt securities.

The increase in the rates of return on pension funds in 2021 mostly resulted from the performances of the portfolio of equity financial instruments. The rates of return on the portfolio of equity financial instruments in 2021 amounted to 25.40% in the mandatory (6.23% in 2020) and 23.84% in the voluntary pension funds (4.69% in 2020), while in the portfolio of debt instruments they were significantly lower: 3.28% in the mandatory (3.68% in 2020) and 3.25% in the voluntary pension funds (3.6% in 2020). Moreover, **about three quarters of the rate of return of the portfolio of equity instruments in 2021 results from the net unrealized capital gain**, **while in the portfolio of debt financial instruments generator of the return, same as in the past years was interest income primarily from government securities, and to a more modest extent from deposits**. It is noticeable that the rates of return of the portfolio of equity financial instruments, except that they are higher on average, also have a significantly greater volatility compared to the rates of return of the portfolio of debt financial instruments. At the same time, the reduction of the interest rates in the country in the past years also contributed to the continuous decrease in the rate of return of the portfolio of debt instruments of pension funds.

The trend of increase in the rates of return on equity instruments, at the expense of the decline in the rates of return in debt instruments in 2021, was also registered in the most important types of financial instruments in which the pension funds' assets are allocated. The rates of return on investments in foreign equity financial instruments and investments in domestic shares in 2021 were significantly higher compared to the rates of return on investments in domestic government securities and deposits.

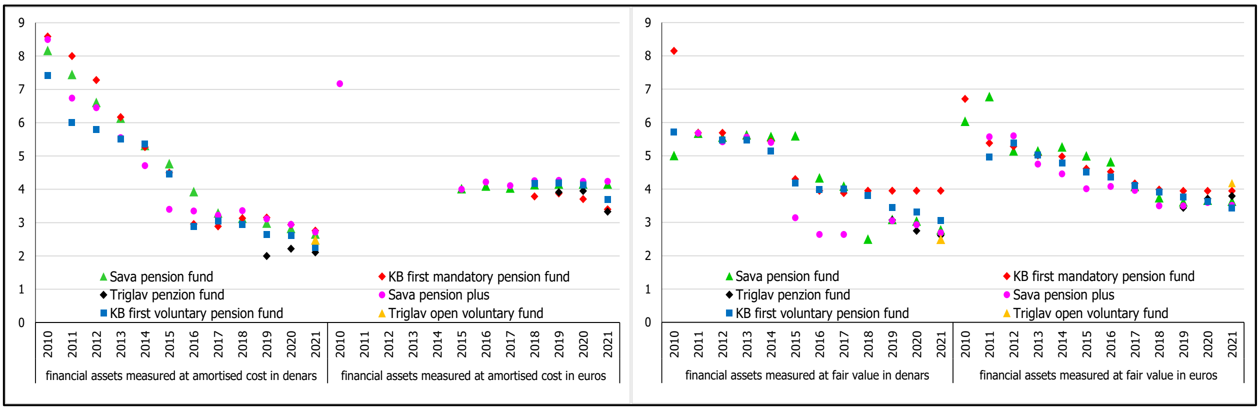
Table 10 Rates of return on the most important types of financial instruments in which private pension funds invest
in %

Rate of return	Mandatory pension funds					Voluntary pension funds				
	2017	2018	2019	2020	2021	2017	2018	2019	2020	2021
domestic treasury securities	4.12	3.95	3.84	3.88	3.43	3.84	3.97	3.74	3.87	3.35
deposits at domestic banks	3.04	3.00	2.81	2.78	2.61	3.06	3.11	3.34	3.14	2.54
domestic shares	27.36	18.34	27.04	7.17	26.67	22.61	21.49	21.87	0.36	18.83
foreign equty instruments	7.95	-6.03	25.92	6.13	25.28	8.14	-6.15	25.98	6.07	25.30

Source: Internal calculations of the National Bank, based on data published by MAPAS and data from audited financial statements

The low interest rates in the domestic financial market can limit the expected rates of return on this portfolio in the next years, and accordingly, the nominal and real return on pension funds. Large part of the portfolio of debt financial instruments[157] of the private pension funds is with a fixed rate of return (over 98.5%) which practically means that most of the yield that will be borne by the debt portfolio in the future is pre-determined. This is also perceived by the trend of gradual reduction of the effective rates of return of the portfolio of debt financial instruments, which comparatively are slightly higher in those instruments that are recognized at amortized cost value and in the instruments that are denominated in euros. The higher effective rates of return on debt instruments in euros compared to the instruments in denars can be explained by the fact that most of the government bonds in denars with euro clause have higher coupon interest rates compared to the other debt instruments, which also correspond to their larger average maturity.

Chart 112 Effective interest rates on debt financial instruments, by currency and by individual pension fund, for those that are recognized at amortized cost value (left) and for those that are recognized at fair value (right)
in %

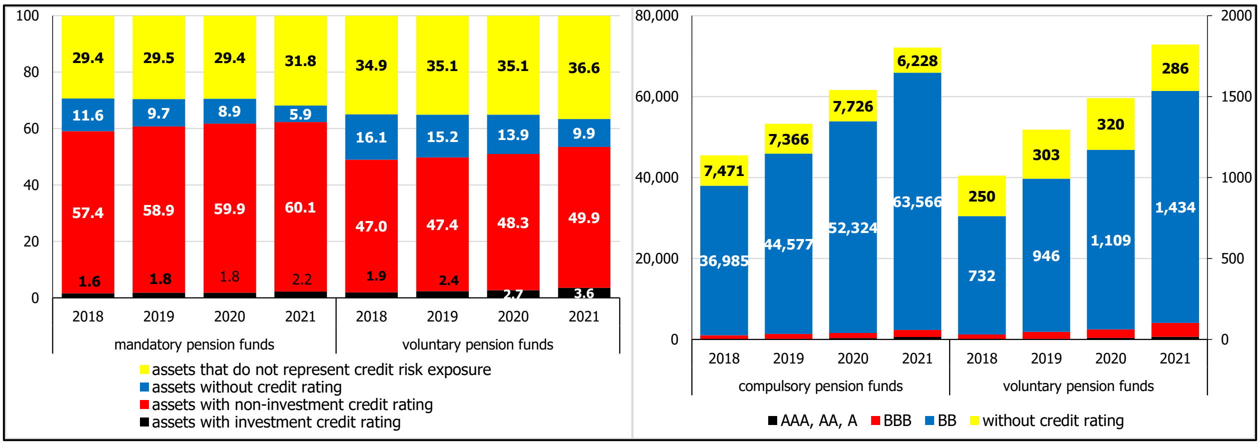


Source: Disclosures in audited financial statements of private pension funds.

The direct exposure of pension funds to liquidity risk is extremely low, primarily due to the fact that they still collect funds for the relatively young membership and have insignificant outflows for payments to retired members. The modest need for liquidity made pension funds also in 2021 continue **increasing the residual maturity of their debt portfolio, thus taking growing exposure to risk of future changes in interest rates**. For illustration, the average weighted maturity of the portfolio of government securities, as individually the most important component of the portfolio of debt financial instruments, at the end of 2021, by individual pension fund ranged from 11.3 to 17.8 years.

Credit risk also in 2021 is the most important risk the domestic pension funds are exposed to. At the end of 2021, 68.2% and 63.4% of the total assets of mandatory and voluntary pension funds, respectively, are invested in financial instruments with a certain level of credit risk exposure, within which debt financial instruments with non-investment credit rating prevail. Namely, at the end of 2021, debt financial instruments with non-investment credit rating account for 88.1% and 78.7% of the assets that bear credit risk exposure in mandatory and voluntary pension funds, respectively[158]. These assets with non-investment credit rating comprise the financial instruments issued by issuers with credit rating of BB[159], whereby by individual financial instruments most of this exposure results from investments in domestic government bonds. Assets with investment credit rating have a modest share in the structure of total assets and are largely due to investments in deposits in one domestic bank with BBB- credit rating and to a lesser extent to investments of foreign investment funds that mostly invest in debt instruments.

Chart 113 Structure of pension fund assets by credit risk (left) and allocation of pension fund assets that bring credit risk exposure according to the credit rating of the assets issuer (right)
in millions and in %



Source: National Bank calculations based on MAPAS disclosures, audited financial statements of the funds and publicly available data on the credit rating of financial assets issuers.
Note: Equities are assets that do not represent credit risk exposure. All instruments that imply credit risk exposure are classified according to the credit rating of their issuer or creditor obtained by the international credit rating agency Fitch. The credit rating of investments in foreign investment funds that invest in debt instruments was determined using a look-through approach.

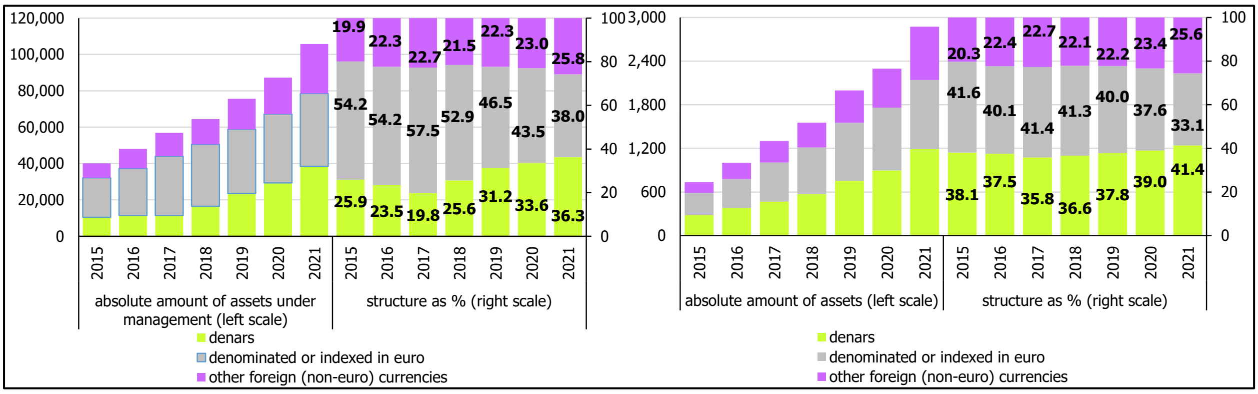
When assessing the credit risk that domestic pension funds are exposed to, one should take into account also the absence of satisfactory diversification of the portfolio of debt financial instruments[160]. Namely, the portfolio of debt financial instruments of the domestic pension funds shows an extremely high geographical concentration. Almost 99%

[157] Instruments recognized at amortized cost value, with a share of 59.5%, dominate in the structure of the portfolio of debt financial instruments of mandatory pension funds. In voluntary pension funds, most of the portfolio of debt financial instruments is composed of instruments that are recognized at fair value (around 57%). Changes in market interest rates or in other risk factors have a different influence on these two components of the portfolio of debt financial instruments - in the instruments that are recognized at amortized cost value, the changes in interest rates have no effect on the profit and loss account of the pension fund, while in the debt instruments that are recognized at fair value, the changes in interest rates will have an effect either on the profit and loss account or on the other comprehensive income of the pension fund.
[158] This represents about 60% of the total assets of the mandatory pension funds and about 50% of the total assets of the voluntary pension funds.
[159] According to the credit rating categorizations of the international credit rating agencies S&P and Fitch.
[160] For more detailed information on the concentration of assets by pension fund see Indicators of the Concentration of Assets of Private Pension Funds, below.

of the debt instruments are investments in instruments issued by resident debtors, which means that almost the entire portfolio of debt instruments is influenced by identical risk factors, primarily the credit risk of the country, the movement of interest rates in the domestic economy and the inflation expectations. In addition, pension funds also have a high concentration in terms of the relative share of the exposure by individual issuer of debt financial instruments. Thus, the exposure to the government in the form of domestic government securities constitutes 88.4% and 79.6% of the total portfolio of debt financial instruments of the mandatory and voluntary pension funds, respectively. Unlike the portfolio of debt financial instruments, in the portfolio of equity financial instruments there is a more moderate concentration by individual issuer. Given that investments in equity financial instruments are mainly through foreign exchange traded funds, this portfolio registers a higher concentration by individual instrument compared to the portfolio of debt financial instruments. However, such concentration is partly mitigated when one will take into account the manner in which exchange traded funds are constructed, which practically provides substantial diversification of the exposure to equity financial instruments by individual issuer of the instrument. The portfolio of equity instruments of the domestic pension funds is also characterized by the so-called home bias, which is especially noticed in the voluntary pension funds. In practice, this bias contributes to a significantly higher share of investments in the domestic capital market, compared to its relative importance within the global market of equity financial instruments.

Chart 114 Currency risk exposure of domestic mandatory (left) and voluntary (right) pension funds

in %



Source: Internal National Bank calculations based on regular periodic data disclosures by pension companies.

Domestic pension funds have a significant exposure to currency risk, which registers a decrease in 2021. This decrease is due to the decline in the share of the exposure that is denominated or indexed in euros, based on the investments in the foreign financial markets and the investments in domestic government bonds. These changes led to an increase in the share of denar assets in the total assets of pension funds at the end of 2021 by 2.7 and 2.4 percentage points in the mandatory and voluntary pension funds, respectively. However, given the current policy of maintaining a fixed exchange rate of the Macedonian denar against the euro by the National Bank, the essential exposure to currency risk for pension funds stems from their exposure to other foreign currencies, primarily the US dollar, which registered an annual increase in the share in 2021. This growth is due to both the positive financial market developments in 2021 and to the trend of strengthening of the US dollar against the euro[161], and accordingly, the Macedonian denar.

2.5. Insurance sector[162]

During 2021, the insurance sector fully recovered from the negative impacts of the pandemic and maintained its high solvency, which is in the basis of its stability. The structure of the investments of the insurance companies is still predominated by the domestic investments in liquid and less risky instruments, which limits the exposure to market risks from the investment. This conservative approach of investment of the insurance companies is a good basis for preservation of their solvency, especially in the current context of high global uncertainty and volatility in the foreign financial markets which is reflected on the valuation of the financial assets. The development of the Russian-Ukrainian war has no significant direct impact on the domestic insurance sector, which has no direct exposure to risks to both countries, neither on the basis of investment, nor on the basis of business cooperation. However, indirect influences are possible through the price increase and the deteriorated economic performances which can be reflected through increased costs for damages and possibly worsened insurance affordability provided that risks remain over a longer period. This would increase the pressure on the insurance sector profit, which records a deterioration in 2021, mainly in the non-life insurance segment. On the other hand, the change in the interest rate cycle is a positive risk factor, given the normalization of the monetary policy both globally and domestically, which can increase the return on investment and contribute to the profitability of the insurance sector.

During 2021, the insurance sector registered growth in activities that exceeded the pre-pandemic level in both insurance segments. Thus, the insurance sector overcame the pandemic shock, which was mainly reflected through reduced demand for insurance policies in the previous year. The new investments in insurance policies were largely directed towards non-life insurance (annual growth of GWP[163] of 15.6%), whose activities in 2020 were more affected by the limitations related to the health crisis. The historically highest growth of the number of concluded life insurance contracts should also be noted, which contributed to growth of the premium (by 15%) and further increase in the importance of life insurance to the domestic insurance market[164].

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161 The exchange rate of the US dollar against the euro during 2021 appreciated from about 1.23 at the end of the previous 2020, to about 1.13 at the end of the year, which practically meant appreciation of the US dollar against the Macedonian denar in accordance with the middle exchange rate of the National Bank by 8.23%, i.e. from 50.2353 as of 31.12.2020 to 54.3736 as of 31.12.2021.

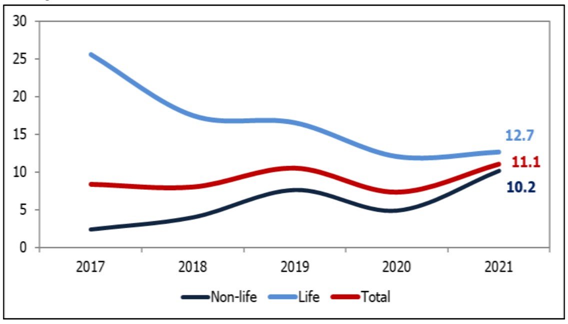
162 The analysis of the insurance sector is in accordance with the data submitted by the Insurance Supervision Agency of the RNM in May 2022.

163 Gross written premium.

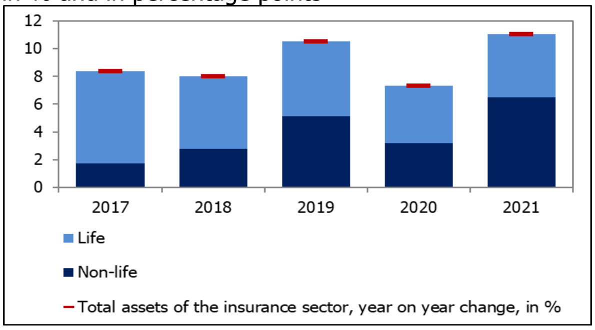
164 The domestic insurance sector is traditionally dominated by non-life insurance with a share in total assets and total GWP of the sector of 63.4% and 82.8%, respectively in 2021. However, the growth of life insurance has been continuously increasing the share of this segment and in 2021 it accounts for 36.6% of total assets and 17.2% of total GWP, compared to 26% and 14.8%, as was the share in total assets and total GWP, respectively, in 2016.

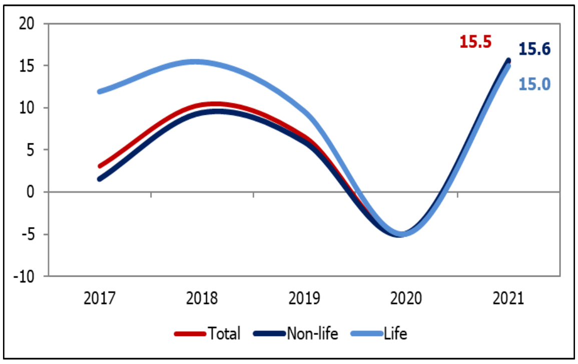
Chart 115 Annual growth rates and contribution to the annual growth of assets (up) and GWP (down) of the insurance sector

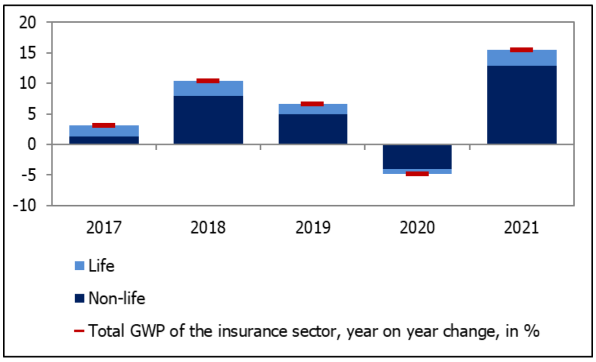
in %



in % and in percentage points



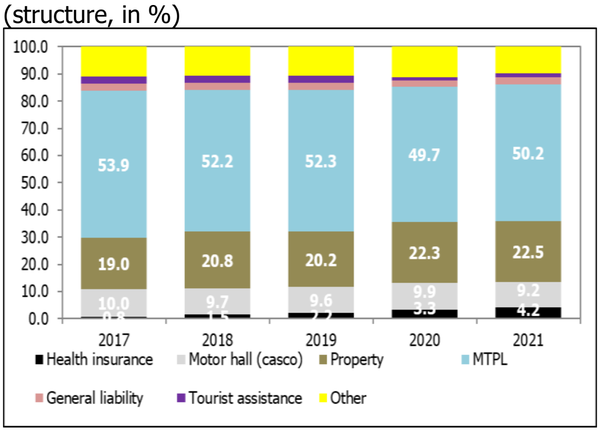


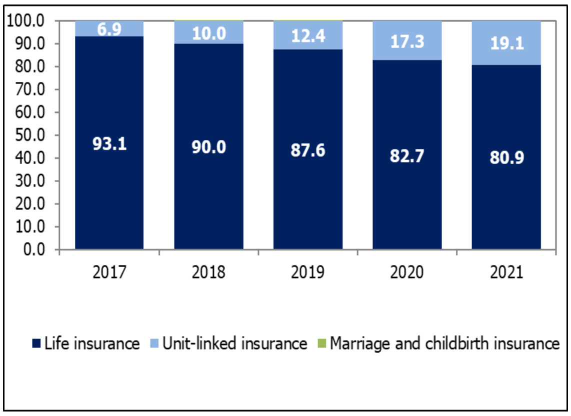


Source: National Bank, based on data from the Insurance Supervision Agency.

Within non-life insurance, the trends of increased demand for optional insurance classes from the pandemic year of 2020 continued, primarily in the field of property insurance and private health insurance. The property insurance made the largest contribution to the growth of optional insurance during the year, strengthening its significance as the largest voluntary insurance class among all non-life insurances. The second largest contribution was made by the private health insurance, which is the fastest growing insurance product since the beginning of the crisis. Travel insurance registered an expected high growth, among other classes of voluntary insurance, given the easing the containment measures for travel restrictions in the previous year. On the other hand, after a three-year solid growth, in 2021, the gross written premiums decreased in the class of loan insurance, which remains the smallest class in the structure of voluntary insurances. Following the decrease in the previous year, affected by the containment measures, the auto liability insurance grew again and remained a class with the highest share in the total sale of non-life insurance policies. **In the life insurance segment,** record performances with almost tripled number of concluded contracts on an annual basis were registered in 2021, which is the highest increase since the establishment of the life insurance market in 2005. This growth is largely due to tying up the newly issued bank loans with life insurance, with an increase also in banking insurance as a sales channel for life insurance policies. The insurers' investments throughout 2021 were largely aimed at classical life insurance, which covers term insurance and endowment insurance**.** At the same time, the growth of unit linked insurance, in which the investment risk is on the burden of the insured, continued and further strengthened. The share of this class of insurance in 2021 reached 19.1% in the total GWP of life insurance compared to 17.3% in the previous year. Compared to the period of five years ago, the unit linked insurance accounted for only 4.4% of the total GWP of life insurance, which is a sufficient indicator of the relatively high interest for this class of insurance in recent years. The unit linked insurance is a high potential product for higher returns on assets invested in investment funds units. At the same time it includes risk of loss of the invested assets due to financial market volatility that affects the value of units. For greater protection of insurers and other users of insurance, at the end of 2022, the competent regulator (Insurance Supervision Agency-ISA) adopted a Life Insurance Regulation related to investment fund units[165] when the insured takes the investment risk, that strengthens the provisions which apply to informing the insured users of this type of insurance product and generally, increasing the transparency when investing in unit linked life insurance. This contributes to more informed decisions made by the insured in terms of financial investments, which is an important prerequisite for responsible investment and risk management in all circumstances, especially in the current context of high global uncertainty and financial market volatility.

Chart 116 Gross written premiums, by non-life (left) and life (right) insurance classes
(structure, in %)



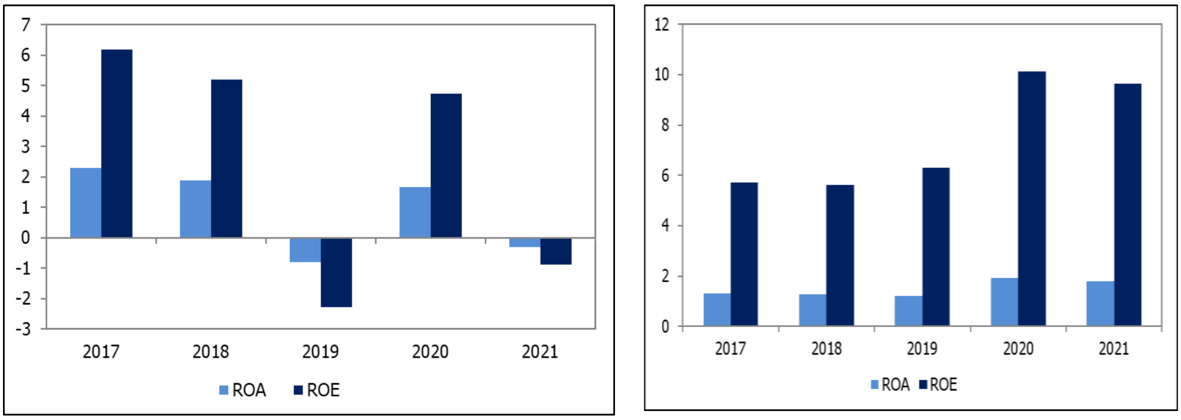


Source: National Bank, based on data from the Insurance Supervision Agency

The growth of activities in 2021 also affected the expenditures, through growth in both, payment of claims and operating costs. This contributed to deteriorated financial performances, primarily in the non-life insurance segment. Five out of the total eleven non-life insurance companies ended 2021 with operating loss, which contributed **to an operating loss in the total non-life insurance segment** and negative rates of return on assets and equity of -0.3% and -0.9%, respectively. **The life insurance segment continued to operate at a profit** and registered rates of return of assets and equity of 1.8% and 9.6% respectively, which are moderately lower compared to the previous year (1.9% and 10.1%, respectively in 2020).

[165] Pursuant to this rulebook, all insurance corporations that sell unit linked products shall submit a document with key information to each potential insuree, on the basis of which one will decide whether to invest in this insurance product. It is a unified document that contains information on the levels of risk of possible loss of invested funds, product expectations, as well as average historic monthly yields of the open-end investment fund. The insured will be informed of the terms and consequences of the premature termination of the investment agreement. The seller will also present all one-time, periodical, repetitive, occasional and unforeseen costs charged to the insured. Moreover, the insurance seller will be required to inform the insured of the right to file a complaint i.e. appeal to the ISA. For more details about this regulation see the "Official Gazette of the Republic of North Macedonia No. 109/22 or on the website of the ISA. The regulation shall enter into force at the beginning of October 2022

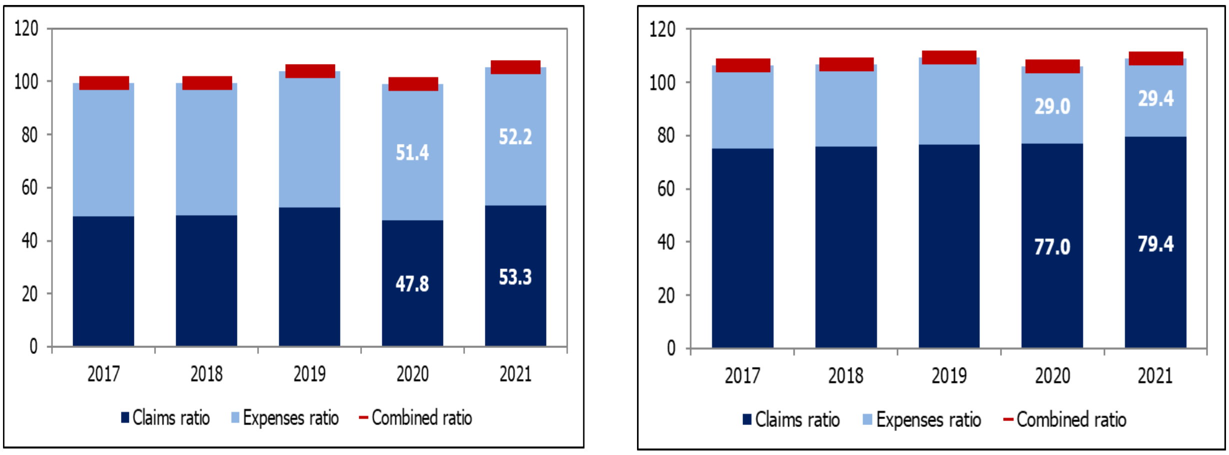
Chart 117 Profitability indicators of the domestic insurance sector
in %
Non-life
Life



Source: National Bank, based on data from the Insurance Supervision Agency

The growth of gross liquidated damages in non-life insurance is mostly due to the higher level of claims paid for auto liability insurance, which is the largest insurance class. The highest growth in the value of paid claims is registered on the basis of private health insurance, which is the fastest growing insurance product since the beginning of the pandemics. Growth is also registered in the claims paid with the largest voluntary insurance class-the property insurance. In such conditions the claims ratio[166] in non-life insurance increased to 53.3%, which is the highest level in the last five years. **Growth in claims is also registered in life insurance,** where the claims ratio increased from 77% in 2020 to 79.4% in 2021. Claims paid on the basis of classical life insurance remain dominant in the structure of gross liquidated claims, although growth is also registered in claims based on life insurance when the investment risk is on the burden of the insured (unit linked insurance).

Chart 118 Technical ratios of the domestic insurance sector
in %
Non-life
Life



Source: National Bank, based on data from the Insurance Supervision Agency

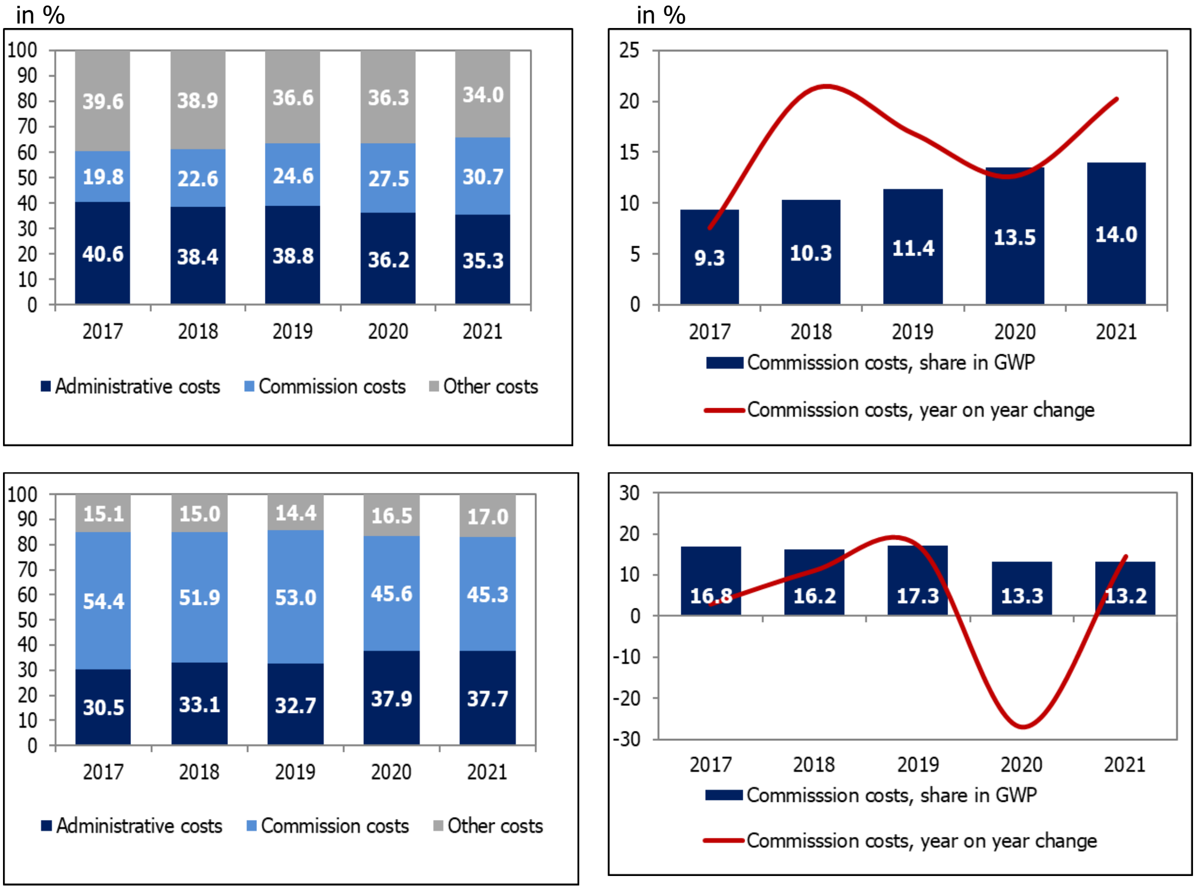
[166] The claims coefficient is calculated as the ratio between damages inflicted in the period and net - premium written.

Operating costs continued to grow in 2021, which further worsened the already low operational efficiency of the insurance sector. Within their framework, the growth of commission costs, which in 2021 reached 14% of total GWP of non-life insurance (13.5% in the previous year) is high again. Thus, they increased the non-life insurance cost ratio[167], which in 2021 equaled 52.2% (51.4% in the previous year). In 2021, the life insurance cost ratio equaled 29.4% (29% in the previous year) amid stable movements in commission costs compared to the total GWP (share of 13.2%). **The improvement of operational efficiency remains an important priority for the insurance sector, primarily in the field of non-life insurance and especially in the current context of pronounced risks from the macroeconomic environment, the materialization of which could disrupt the ability of the sector to create operating profit.**

Higher inflation is a possible risk factor for the insurance sector profitability, which together with the growth of activities of insurance companies, could increase the scope of claims that arise from the insurance agreements. Amid price growth, damage costs could be higher than those the companies expected and took into account when creating technical reserves. The risks are higher to the insurance classes that have stronger market competition, which increases the insurance costs. Insurance companies could face higher costs for claims that arise from the rapid growth of certain insurance products, such as private health insurance. If the higher inflation remains for a longer period, it could reduce the affordability of household insurance and corporate insurance with adverse impact on the number of new and possible termination of the already existing insurance agreements. Terminated agreements ratio for non-life insurance in the past three years remained at a low and stable level of around 0.6% of the total number of concluded insurance agreements. In the area of life insurance, the ratio of terminated and purchased agreements in 2021 reduced to 13.7%[168] (compared to 20-21% in the previous two years).

[167]The cost ratio is the ratio between insurance implementation cost and net premium. The combined ratio represents the sum of the cost ratio and the claims ratio.
[168]The higher rate of terminated and purchased insurance agreements is partly due to the possibility for a premature purchase of the life insurance policies, whereby the purchase value of the policy is paid in favor of the insurance user.

Chart 119 Structure of administrative costs and insurance implementation costs (left) and commission costs (right) of non-life insurance (up) and life insurance (down)

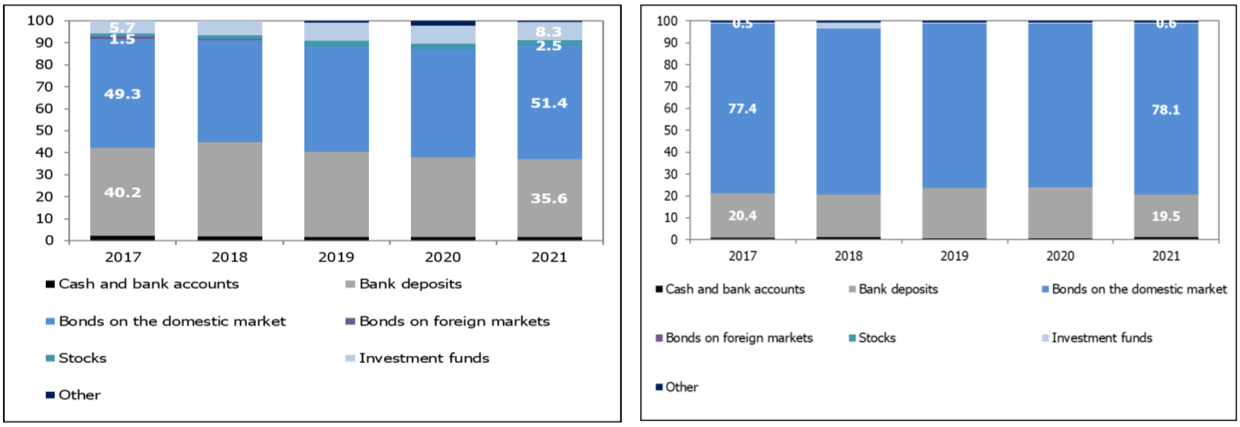


Source: National Bank, based on data from the Insurance Supervision Agency

On the other hand, the change in the interest rates cycle, given the normalization of the monetary policy both globally and domestically, could positively contribute to the insurance sector profitability by increasing the investment returns. The domestic insurance sector traditionally applies a conservative investment strategy with a predominant share of investments in fixed income domestic financial instruments. Such structure of investments remained throughout 2021, with a share of investments in domestic government securities and bank deposits of 87% of the total non-life insurance investments, i.e. 97.6% of the life insurance investments. In conditions of maintaining low interest rates for a long period, certain redirecting towards alternative financial instruments was registered in the past few years, primarily by the non-life insurance companies, which invested part of their funds in investment fund units and in equity securities. However, the share of these riskier classes of instruments remains low and equals 10.8% of the total non-life insurance investments, which indicates low exposure of insurance companies to market risk. The exposure to international financial markets is also low, with a share of investments in foreign financial instruments of 2.3% in non-life insurance, while there are almost no investments in foreign financial instruments in life insurance.

Chart 120 Investment of technical and mathematical provisions
(structure in %)

Non-life Life

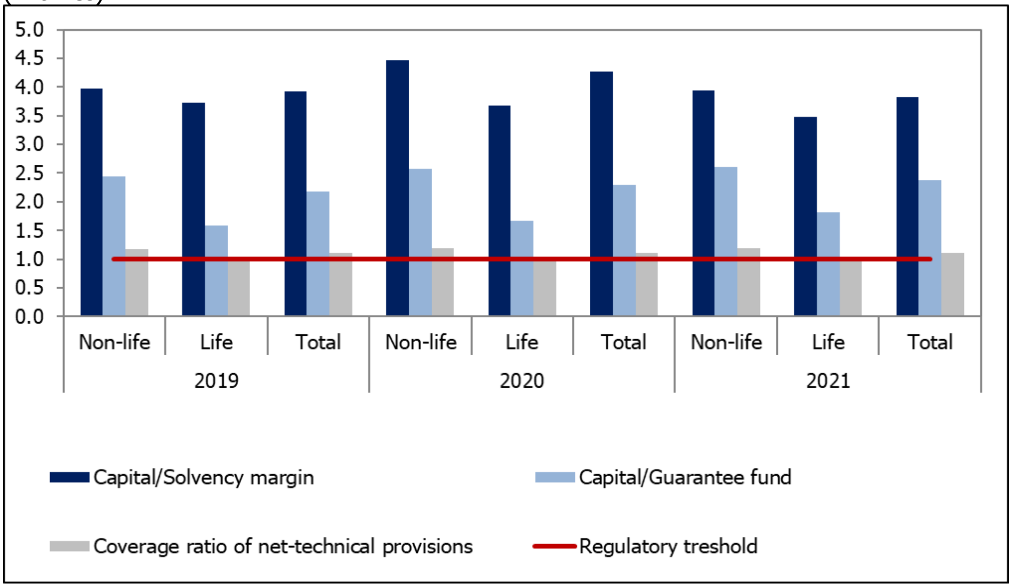


Source: National Bank, based on data from the Insurance Supervision Agency

Amid pronounced risks from the macroeconomic environment, it is important that the insurance sector solvency remains adequate, which ensures resilience to shocks and guarantees its stability. The level of insurance sector solvency exceeds the minimum requirement by multiple times, by 3.9 times in non-life insurance and by 3.5 times in life insurance. Insurance companies also maintain adequate coverage of the guarantee fund[169] with capital and net technical provisions by investing in permitted asset categories. Taking into account the importance of maintaining a sound solvent position in the following period, at the beginning of 2022, the ISA issued a recommendation[170] to all insurance companies that ended the previous 2021 with operating profit, to reinvest the profits in insurance activity or to increase the companies' reserves. The ISA recommends the companies, which planned payment of dividend to shareholders, to keep the assets and potentially use them to cover the contingent and unexpected operating liabilities by the end of 2022. For further maintenance of the insurance sector stability, it is especially important to harmonize the domestic legislation with the European Solvency II Directive as soon as possible, which will contribute to improving the risk management and further strengthening of the solvency of the domestic insurance sector.

[169] Pursuant to Article 77 of the Law on Insurance Supervision, the guarantee fund consists of items included in the calculation of the insurance company capital which consists of core and additional capital, calculated in accordance with the Law. The guarantee fund must not be lower than one third of the solvency margin requirement, calculated in accordance with the Law. In addition to this provision, the insurance company guarantee fund minimum requirement is set between Euro 2 and Euro 4.5 million, depending on the class of insurance and the scope of activities performed by the company.
[170] The recommendation is in line with the decision of the Council of Experts of the ISA at the session held on 10 March 2022. For more details visit:https://aso.mk/aso-osiguritelnite-drushtva-dobivkata-za-2021-godina-da-ja-vlozhat-vo-dejnosta-osiguruvanje-ili-da-ja-chuvaat-vo-rezervi/

Chart 121 Coverage ratios of the insurance companies solvency margin and technical provisions requirements
(in times)



Source: National Bank, based on data from the Insurance Supervision Agency

2.6. Financial leasing

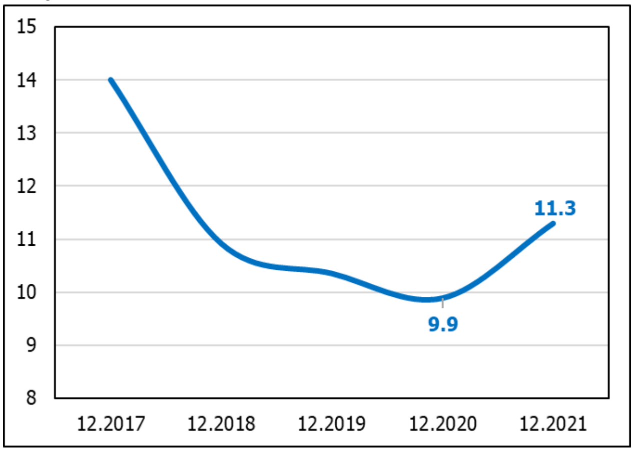
The leasing sector has a minor role and importance to the domestic financial system[171], due to both the small volume and the weak connection to the other segments of the financial system, so it is not a significant risk channel to other financial system segments. Its small impact on financial stability is also seen in the low share of household and corporate debt to leasing companies regarding the total debt of these two sectors[172]. In 2021, the leasing companies continued to grow, but at a slower pace compared to the previous year. The credit risk is the most important risk in the operation of these companies, while most credit risk indicators improved in 2021. However, despite the low and declining share of active lease agreements with non-performing status (where the delay of repayment is longer than 90 days), still, a fair part of the portfolio of lease agreements is paid with certain time delay. Thus, amid still high uncertainty about the duration of the pandemic and the economic consequences, the consequences on the quality of the leasing credit portfolio are also uncertain. Namely, the deteriorated environment for all market participants, including leasing companies, as a result of the pandemic, and amid further complicated environment due to the energy crisis, price pressures and expectations for slower economic growth, will probably cause increased materialization of the credit risk exposure in the following period. Moreover, adverse impact on the car market in 2021 is possible, which could negatively affect the demand for services of leasing companies given their preference for car leasing. During 2021, the coverage of short-term liabilities with short-term assets which potentially exposes the leasing sector to a higher level of liquidity risk, while the capitalization rate, as equity and reserves to total assets ratio, increased due to the faster growth of equity and reserves relative to the growth of assets. Leasing companies report a short currency position, the level of which is significant in terms of equity and reserves and almost all lease agreements are in denars with a foreign exchange clause, which underlines the importance of the policy of de facto peg of the denar to the euro for the stability of these institutions, for maintaining the amount of companies' liabilities as well as minimizing a possibly higher credit risk. The leasing companies' profitability ratios improved in 2021, primarily due to non-recurring income (based on write-off of loan liabilities in one leasing company).

The capitalization ratio[173] of leasing companies, as equity and reserves to total assets ratio, increased (by 1.4 percentage points), compared to 2020, ending the downward movement in the last three years of the analyzed period. The growth of this indicator mainly stems from the rapid relative growth of equity and reserves (23.5%), compared to the growth of assets (8.1%[174]). Around 50% of the profit in 2020 was reinvested in these companies' equity and reserves.

[171] For more details see Financial System Structure of this Report.

[172] The corporate debt based on lease agreements accounts for 1.5% of total debt of this sector, while the household debt based on lease agreements makes up 0.9% of the total household debt.

Chart 122 Equity and reserves to total assets ratio
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

The capitalization ratio[175] of leasing companies, as equity and reserves to total assets ratio, increased (by 1.4 percentage points), compared to 2020, ending the downward movement in the last three years of the analyzed period. The growth of this indicator mainly stems from the rapid relative growth of equity and reserves (23.5%), compared to the growth of assets (8.1%[176]). Around 50% of the profit in 2020 was reinvested in these companies' equity and reserves.

During 2021, the coverage of short-term liabilities with short-term assets reduced, potentially exposing the leasing sector to a higher level of liquidity risk. Thus, the liabilities with original maturity up to one year exceed the assets with original maturity up to one year, for more than 50%, while in 2020 these liabilities were covered threefold with assets with original maturity up to one year. Such change in short-term assets to short-term liabilities ratio stems from the significant growth in short-term liabilities primarily based on loans from parent entities of easing companies. On the other hand, analyzed by residual contractual maturity, gap between assets and liabilities in almost all maturity buckets[177] is positive, and has a positive impact on the liquidity risk exposure. Having in mind that around 75% of the leasing companies assets are claims on customers, the liquidity of these companies is largely conditioned by the success in claim collection.

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[173] There is no special regulations for leasing companies to maintain a certain capitalization or solvency rate, but only a regulatory requirement for a minimum amount of share capital for incorporation of a financial lease provider, of Denar 6 million (the share capital of a leasing company may not fall below this amount).

[174] In 2020 the assets growth amounted to 11.3%. In 2021, one company made an ownership transformation (the ownership was transferred from a foreign financial institution to a domestic natural person), therefore significantly decreasing the activities compared to the previous years (i.e. in 2021, this company concluded only four leasing agreements)

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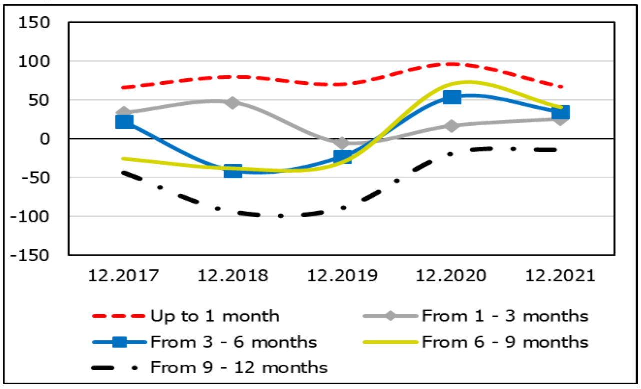
[176] In 2020 the assets growth amounted to 11.3%. In 2021, one company made an ownership transformation (the ownership was transferred from a foreign financial institution to a domestic natural person), therefore significantly decreasing the activities compared to the previous years (i.e. in 2021, this company concluded only four leasing agreements)

[177]The gap between assets and liabilities with residual maturity of up to twelve months is an exception, which remained negative in 2021, keeping the same level of the previous year.

Chart 123 Financial asset/liability gap to total financial assets, by maturity bucket, according to the contractual residual maturity
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

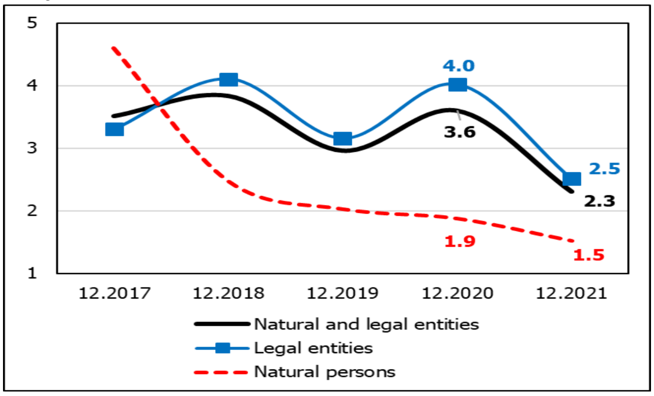
In the structure of the leasing companies' liabilities, the share of liabilities to connected entities prevails with 77.9%[178]. The liabilities to domestic banks are less represented (they account for 5.5% of total liabilities, which is lower compared to 2020).

In 2021, leasing companies increased their profit range based on net interest income. The derived interest rate[179] on loan liabilities was 1.4%[180] for 2021, which indicates a use of relatively cheap sources of funds (at least with respect of interest rate[181]). On the other hand, the derived interest rate[182] earned by leasing companies from the concluded lease agreements was 5.0%[183] for 2021.

Credit risk is the major risk the leasing companies are exposed to throughout their operations. Value of the active lease agreements that are charged with a delay longer than 90 days in total value of all active lease agreements decreased by 1.3 percentage points[184] and at the end of the year it amounted to 2.3%[185]. This results from the significant growth in the value of active lease agreements by 78.8%[186] (in 2020, it equaled 3.5%). The indicator for the share of canceled[187] lease agreements in the current year in the value of active lease agreements at the end of the previous year increased[188] which is due to the growth of this indicator among legal entities - leasing users. The impairment cost of lease agreements in the

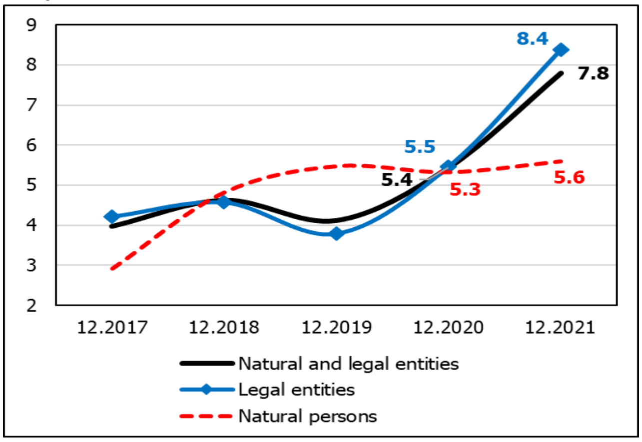
[178]In 2020, this share equaled 39.9%. At the end of 2021, the liabilities to foreign banks were completely absent in the balance sheets of leasing companies, compared to 31.12.2020, when they accounted for 43% of total liabilities.
[179] Ratio between interest expenses in 2021 and the average stock of loan liabilities of leasing companies.
[180]In 2020, this interest rate equaled 1.8%.
[181] There are no data on commission and fee expenses incurred on loan liabilities, which could raise the accrued cost rate for funding sources significantly above the set interest rate expense.
[182] Ratio between interest income for 2021 and the average amount of claims on lease agreements.
[183]In 2020, this interest rate equaled 4.9%.
[184]The value of active lease agreements not collected in the period of up to 30 days, from the maturity date, have a significant share in total value of all active lease agreements (55.3%).
[185]In 2021, the value of active lease agreements collected with delay of more than 90 days, increased by 21%.
[186]In 2021, the active lease agreements equaled denar 9.224 million, while in 2020 they amounted to denar 5,158 million.
[187]Over 78% of the value of canceled lease agreements results from the agreements concluded with legal entities.
[188]In 2021, this indicator equaled 7.8% and is by 2.4 percentage points higher compared to the same indicator in 2020 when it amounted to 5.4%

Chart 124 Value of active lease agreements with clients uncollected for longer than 90 days from the due date to total value of active lease agreements
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

Chart 125 Value of canceled lease agreements in the current year to value of active lease agreements at the end of the previous year
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

income statements of leasing companies is lower compared to the previous year, whereby the share of this cost in total financial result of the leasing sector was halved (from nearly 25% in 2020 to 11.8% in 2021).

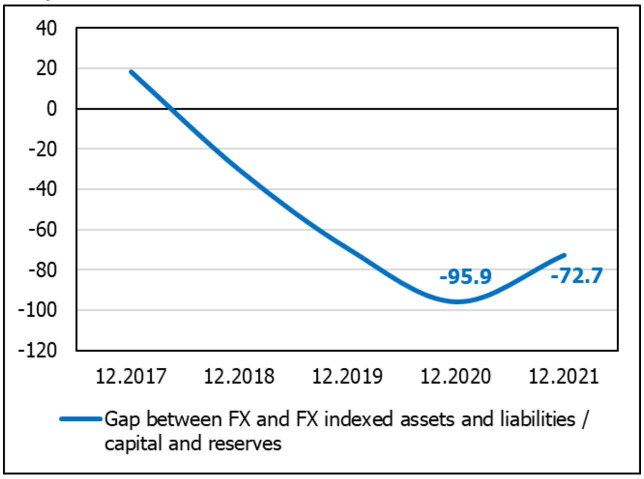
Leasing companies are exposed to currency risk, due to the asset-liability gap with currency component in their balance sheets. Aggregately, they have a short currency position, which exposes them to a risk of decrease in the value of denar against the euro. In 2021, the companies' asset-liability gap with currency component narrowed minimally[189], but the faster growth of capital positions led to a significant decrease in the share of the currency gap in equity and reserves by 23 percentage points. In the portfolio of active lease agreements almost all agreements (99%) are in denars with foreign exchange clause, which exposes the leasing companies to a credit risk, amid possible materialization of the currency risk their clients are exposed to.

The leasing companies' profitability ratios improved in 2021 as well. The higher profit, compared to the previous year, was conditioned by the higher growth of total income compared to the growth of operating costs. The growth of income mostly results from the actual write-off of loan liabilities in one company[190], with certain contribution of the net interest income and operating leasing income.

[189]The narrowing arises from the higher growth in the assets with currency component (by denar 347 million) relative to the increase in liabilities with currency component (by denar 309 million).
[190]It is the company that made an ownership transformation in 2021.

Chart 126 Financial asset/liability gap with a currency component to equity and reserves

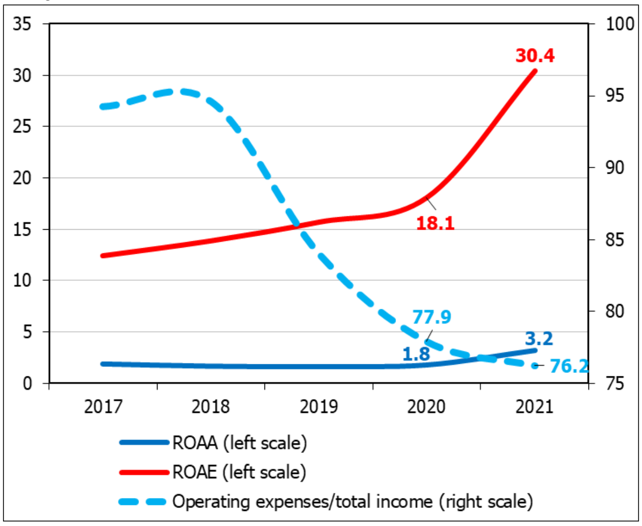
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

Chart 127 Selected profitability indicators

in %



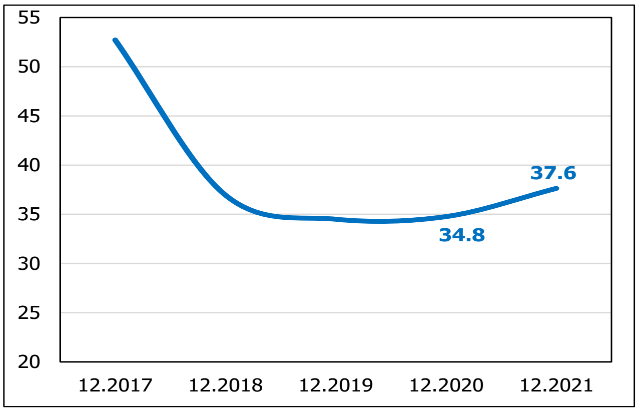
Source: National Bank calculations, based on data submitted by the Ministry of Finance

2.7. Financial corporations

Financial corporations represent a small, yet dynamic segment of the financial system. With their lending activity they contribute towards greater financial inclusion for certain categories of unbanked natural persons and legal entities or have urgent and short-term need for assets. In 2021, financial corporations registered accelerated growth compared to the previous year, while the interest in incorporating new financial corporations remains. However, despite the rapid growth, they remain at the margins of the financial system. The debt they claim on households and the corporate sector is still of small relative importance, as measured by the share in total debt or total assets of both non-financial sectors. However, the risk of possible over-indebtedness and even unsustainable indebtedness of certain household segments or legal entities should be born in mind, on the one hand due to the high prices (especially high other fees) that some financial companies charge on approved loans, but also due to the fact that financial corporations most probably provide access to loans for clients with poorer creditworthiness, that have difficulties qualifying for loans from deposit financial Institutions. The financial companies' solvency is solid, the capitalization is by more than four times higher than required. The financial companies' exposure to liquidity risk is under control, but it largely depends on the success in claim collection according to the agreed dynamics. The indicators for financial companies' exposure to credit risk deteriorated, as a relatively large part of the loan portfolio is non-performing or collected with a certain time delay. This creates significant costs for financial companies, which in turn may be the reason for embedding high risk premiums in loan product prices. Taking into account the further complicated environment and pronounced risks resulting thereof, there is a risk of further growth of non-collectible claims and deteriorated credit risk indicators. Financial corporations register high short currency position, which underlines the importance of the policy of de facto peg of the denar to the euro for the maintenance of the level of their liabilities. The financial corporations' profitability registered a significant improvement in 2021.

The financial corporations are one of the most dynamic segments of the financial system. In recent years, the number and assets of this financial sector segment, have constantly increased[191], but without significant changes in the relative importance to the financial system, i.e. they remain at its margins. The relatively high services prices charged by financial corporations, and the expectation of high profit margins[192] are one of the most important reasons for the high interest in this market segment, which is one of the largest by number of financial institutions (right after the insurance-brokerage companies segment). Financial corporations are mainly focused on the market segments that have urgent need of short-term assets, but also on unbanked clients who have difficulties meeting the stricter credit standards of banks and savings houses. Some financial corporations apply an aggressive marketing approach in finding new customers, operate on-line and take advantage of new digital technology developments, offering customers easy, simple and fast loan approval procedures. Financial corporations incorporate high risk premiums in the prices of their products, due to the risks arising from the fast service to customers with weaker creditworthiness and without conducting comprehensive credit analysis, which significantly raises the total price they charge from the borrowers. Although aggregately, loans granted by financial corporations constitute a minor part of the total household debt and their financial assets[193], however, there is still a risk of over-indebtedness of certain household segments and legal entities, which cannot be assessed due to unavailability of data on the total debt of individual natural persons to all creditors. The latter becomes especially important, given the fact that most probably a fair part of the expensive loans to financial corporations are aimed at segments with poorer creditworthiness or higher indebtedness, including natural persons who do not qualify for a loan from a bank or savings house, or their indebtedness to deposit financial institutions reached the maximum allowed level according to the prudent standards of these institutions.

Chart 128 Equity and reserves to total assets ratio
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

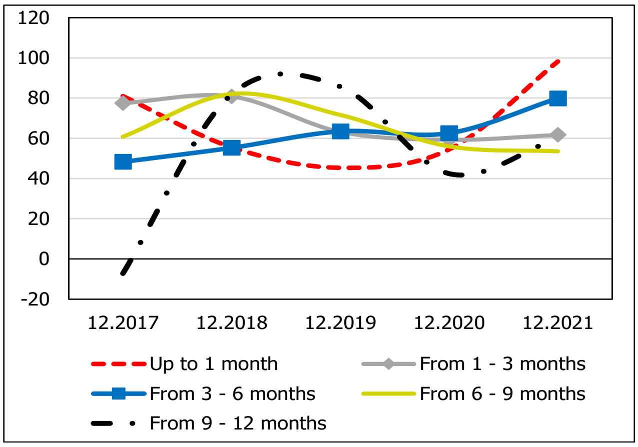
The capitalization ratio of financial corporations, as equity and reserves to total assets ratio, increased (by 2.9 percentage points), compared to 2020, mainly due to the rapid growth of equity and reserves (denar 701 million or by 42.7%) compared to the growth of assets (denar 1.502 or by 31.8%). Financial corporations' claims on loans, guarantees, factoring and credit cards are 2.1 times higher than equity and reserves (2.7 times in 2020), while the requirement for this ratio is 10 times.

Liquidity risk exposure ratios improved in 2021. Analyzed by original contractual maturity, assets with original maturity up to one year are 2.7 times higher than the liabilities with original maturity up to one year (this ratio was 2.3 times at the end of 2020). Thereby, the most liquid part of the financial corporations' assets (cash and cash equivalents) covers 21.3% of total short-term liabilities. Analyzed by the contractual residual maturity, in all analyzed maturity buckets up to one year, the assets/liabilities gaps are positive, which indicates solid liquidity of the financial corporations, assuming that claim collection and liabilities payment follows the

[191] In 2021, the assets of financial corporations increased by 31.8% (14.7% in 2020), while the number of corporations increased by two (in 2020, the number of corporations increased by three).
[192] In 2021, the profit margin of financial corporations was 22.5%, which is much higher compared to the profit margin of savings houses 5.1%), but is below the profit margin of leasing companies (27.5%) and the banking system (34.7%).
[193] The household debt to the financial corporations accounts for 1.4% of their financial assets.

Chart 129 Financial asset/liability gap to total financial assets, by maturity bucket, according to the contractual residual maturity

in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

agreed dynamics and scope. Having in mind that 93% of the financial corporations assets are claims on customers, the liquidity of these companies is largely conditioned by the success in claim collection as agreed. Most of the liabilities or 47.9% are liabilities to connected entities, followed by the liabilities to foreign banks, with a share of 14.6%, while liabilities to domestic banks are insignificant.

The derived rate of interest expenses made by the companies to settle liabilities to creditors is 6.8% for 2021[194], which, given the historically low interest rates seems relatively high and probably reflects the significant risks that financial corporations take in their activities, but the income generating motive within the related entities is not excluded. In contrast, the derived rate of interest income[195] earned by financial corporations is 16.6% for 2021, and 54.5% if the commissions and fees income is added.

Credit risk is the major risk the financial corporations are exposed to throughout their operations. Almost 60% of the claims of financial corporations are collected with a certain time delay[196], whereby the share of claims on active agreements with customers charged with a delay of more than 90 days in total claims[197] increased[198] and reached 27.4%. Hence, not only are financial corporations inherently exposed to credit risk, but also the level of risk materialization is quite high, which may be the reason for embedding high risk premiums in the price of their services as compensation for the high costs caused by the materialization of risks. Thus, in 2021, amid annual growth of 52.5%, the impairment cost is almost identical to the

[194] The rate of interest expenses on liabilities settlement is the ratio between the interest expenses in 2021 and the average stock of financial corporations' liabilities.

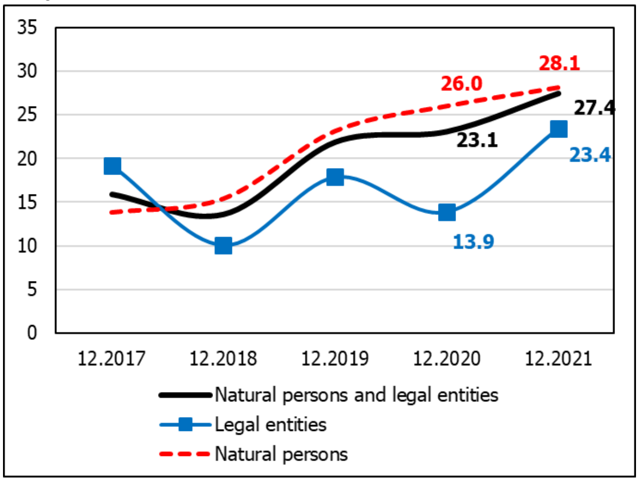
[195] Calculated as the ratio between interest income for 2021 and the average amount of claims on active contracts of financial companies.

[196] In 2020, this share equaled 80%.

[197] In 2021, total claims based on active lease agreements of financial corporations increased by 39.6% (31.1% in 2020). Furthermore, this growth results only from claims based on active contracts of natural persons, since the claims based on active contracts of legal entities decreased. As of 31.12.2021, 86.1% of claims based on active contracts of financial corporations are on natural persons (76% as of 31.12.2020). The corporate debt to financial corporations accounts for 0.2% of total debt, while the household debt to this sector of the financial system constitutes 2.5% of the total household debt.

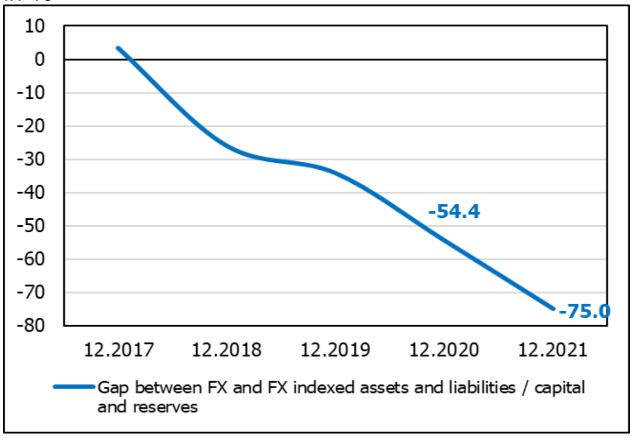
[198] This growth mostly results from the growth of non-collectible claims on natural person (annual growth of 71.1%).

Chart 130 Claims based on active contracts with customers not collected for more than 90 days on any basis, from the due date, to total claims
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

Chart 131 Financial asset/liability gap with a currency component to equity and reserves
in %

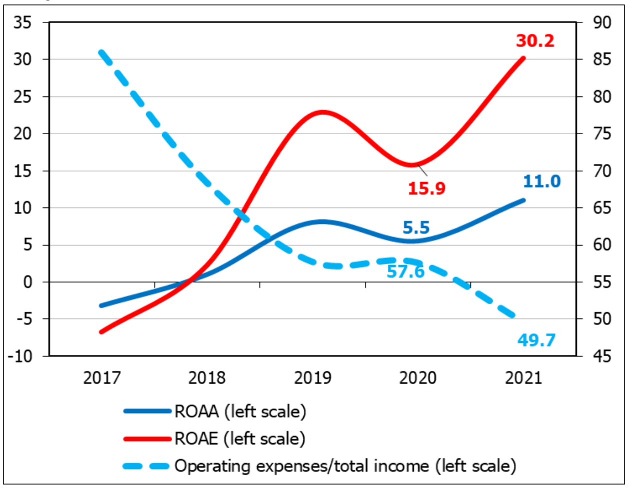


Source: National Bank calculations, based on data submitted by the Ministry of Finance

amount of profit in the income statements of financial corporations, i.e. it accounts for 98.9% of the profit of this segment[199].

[199] In 2020, with annual growth of 56.3%, the impairment cost exceeded the amount of profit in the income statements of financial corporations and reached about 160% of the profit of financial corporations.

Chart 132 Selected profitability indicators
in %



Source: National Bank calculations, based on data submitted by the Ministry of Finance

Financial corporations are exposed to currency risk due to the asset-liability gap with currency component in their balance sheets. Financial corporations have short currency position, which accounts for underlines the importance of the policy of de facto peg of the denar to the euro. In 2021, the negative asset-liability gap with currency component has widened in this segment, which mostly results from the increase of liabilities to non-residents (mainly foreign connected parties).

The significant growth of the profit of financial corporations in 2021 enabled a very high return on assets and invested capital and reserves Net profit of this companies increased annually by around 2.5 times, which mainly results from the growth of commission and fee income (by denar 736 million or by 65%), and the growth of net interest income (by denar 208 million or by 92.7%).

2.8. Open-end funds[200]

Open-end investment funds are one of the fastest growing segments of the financial system in 2021, but still constitute a relatively small segment of the overall financial system[201] and do not pose a significant threat to financial stability. Investments of certain types of domestic investors in these funds (primarily non-financial legal entities and natural persons) are quite small compared to the total assets at their disposal on an aggregate basis. Hence, any problem in investment funds operations (insolvency of funds, high downward correction of property value, etc.) would not

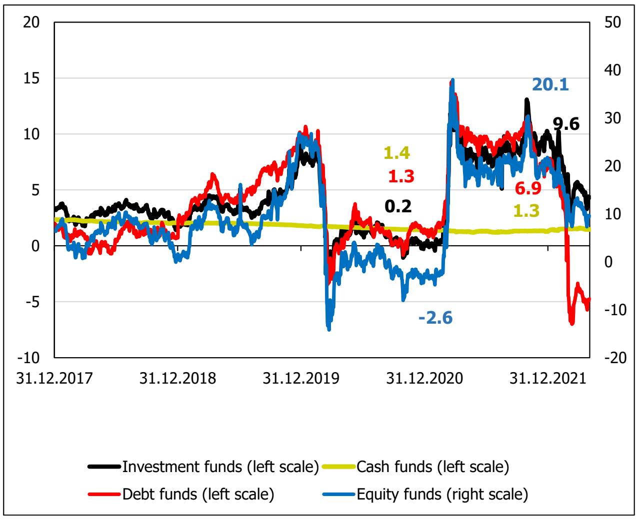
[200] In our country, there are also private investment funds and fund management companies. Pursuant to the Law on Investment Funds (Official Gazette of the Republic of Macedonia No. 12/2009, 67/2010, 24/2011, 188/2013, 145/2015, 23/2016 and Official Gazette of the Republic of Macedonia No. 31/2020, 150/2021 and 288/2021), these financial institutions in the Republic of North Macedonia are exempted from reporting to the Securities and Exchange Commission. In addition, these financial institutions are not subject to any control or supervision by the Securities and Exchange Commission. Hence, given the lack of data on private investment funds, this report addresses only open-end investment funds which in the text below are referred to as investment funds or only funds.

[201] For more details see Financial System Structure of this Report.

have significant knock-on adverse effects on domestic entities (on an aggregate basis), which are investors in these funds. Despite the prolonged pandemic, in conditions of relaxed monetary policy, the return rates of investment funds recorded increased volatility and, in general, a strong upward trend in 2021. The equity funds, which ended the year with high positive annual rates of return, especially stood out. Most funds' assets are invested in deposits in domestic banks and (mostly domestic) debt securities, which as instruments with fixed income usually carry lower risks, but also lower rates of return, on average. Hence, the domestic banks stability and liquidity, the interest rates movement primarily in the domestic economy, as well as the sustainability and efficiency of public finance and debt management of our country are key factors for stability, liquidity and performance of open-end investment funds. The search for higher rates of return conditioned the growth of the share of placements in equity instruments in the total assets of investment funds in 2021. Moreover, the expectations for higher interest rates (amid high inflation), as well as global disturbances on the supply side and the unfavorable global business environment, reinforced by the commencement of the war conflict in Ukraine, increase the exposure of the investment funds to the risk of downward correction of the prices of securities they invested in.

Chart 133 Annual rates of return on investment funds

in %

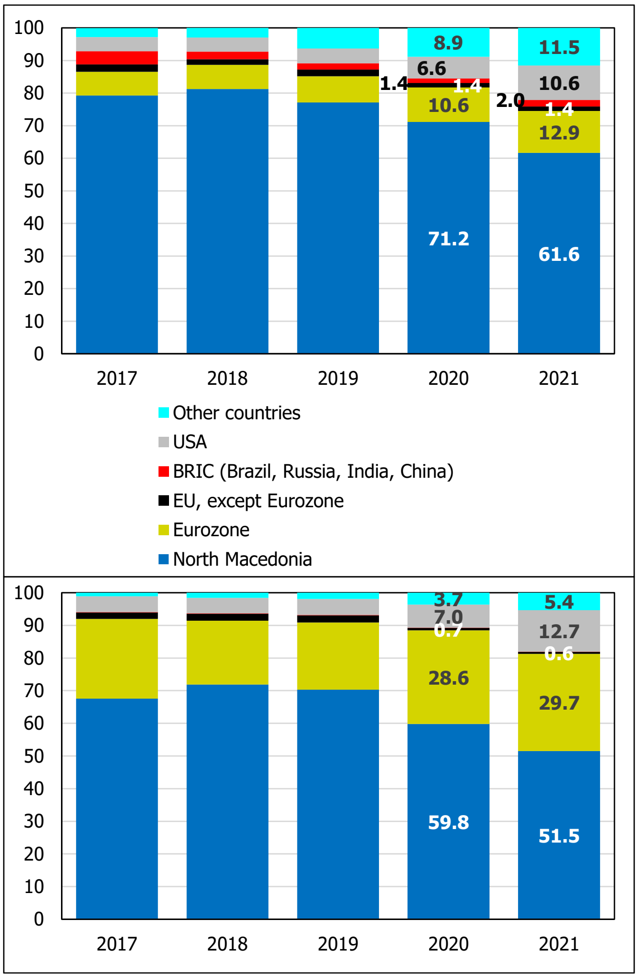


Source: National Bank calculations, based on data from the website of the Macedonian Stock Exchange and SEC.

Despite the prolonged uncertainty related to the pandemic, amid low interest rates, the annual investment funds' return rates[202] registered a pronounced upward trend in 2021. The largest growth of annual rates of return was observed in funds that invest in equity assets, where the cyclical movement of rates of return was most pronounced. Thus, the annual rate of return of these funds as of 31.12.2021 was deep in the positive zone, increasing from -2.6% at the end of 2020, to 20.1% as of 31.12.2021. The annual rate of return of the debt funds registered a less pronounced, yet significant growth of 1.3% (as of 31.12.2020) to the level of 6.9% at the end of 2021. Amid declining interest rates, the annual rate of return on cash funds slightly decreased, so that at the end of 2021 this rate equaled 1.3%. Aggregately, the annual rate of return of all investment funds climbed to 9.6% at the end of 2021 (from 0.2% as of 31.12.2020). However, the uncertain component of the capital markets came to the fore again with the commencement of the Russian military invasion of Ukraine at the end of February 2022, which caused sharp decline

[202] The annual rate of return of investment funds (for all or certain types) is calculated as a weighted average of the annual rates of growth in the price of unit certificates of the funds. The share of net assets of each fund in the total net assets of all funds is used as a weight.

Chart 134 Structure of the assets of open-end investment funds, by country of origin of the instrument issuer (up) and by country of instruments trade (down)
in %



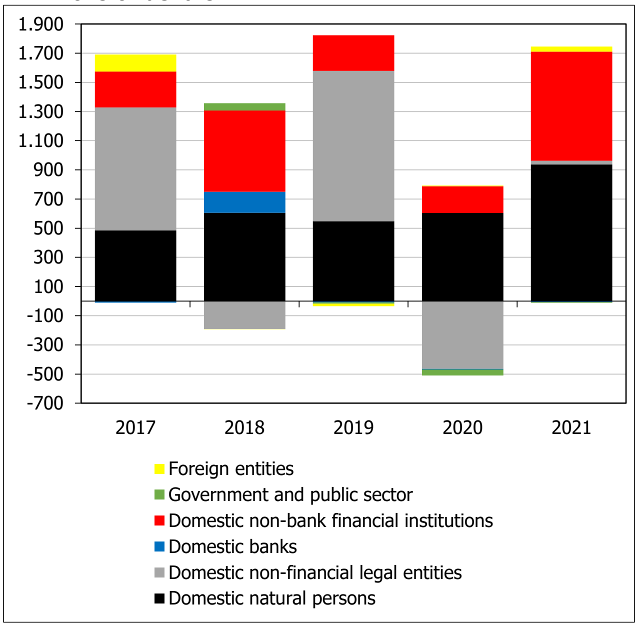
Source: National Bank calculations, based on data from the SEC website.

in returns of the funds. The most pronounced decline was registered in debt funds, given the share of instruments with direct or indirect relation with Russian issuers in their portfolio and restrictions against Russia imposed by the capital markets, which led to sales of positions due to the fear of further capital losses. Observing the structure of the assets of open-end investment funds, by country of origin and country of trade, the share of instruments from Russia and Ukraine at the end of 2021 is minor and equals around 1.2% and 0.3%, respectively.

Placements in instruments issued by domestic issuers and traded on the domestic market, still prevail in the structure of total assets of investment funds, with a share of 61.6% and 51.5%, respectively, but a downward trend is registered at the expense of investment in foreign equity securities. Hence, developments in the domestic economy and the performances and activities of the issuers of domestic financial instruments (above all, banks and the government) are of utmost direct importance for the performance and risk exposure of open-end investment funds. Next in importance and size are placements of investment funds in financial instruments issued by issuers coming from the euro area (12.9%), i.e. instruments that are traded on the euro area markets (29.7%). All of this, coupled with monetary policy tightening, energy crisis and shocks on the supply side globally, is expected to bring downward correction of returns, especially those who mostly invest in equity securities. In conditions of high inflation rate of 8.8% (March 2022), real return rates of funds are low, even negative and do not enable maintenance of the investors' purchase power, which could affect their interest to invest in funds, at least in the short term.

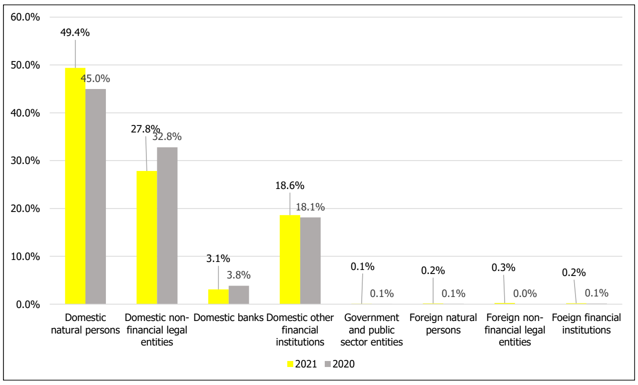
Most of the net assets of investment funds (99%) are owned by domestic entities, mostly natural persons, followed by non-financial legal entities and non-

Chart 135 Structure of net inflows from transactions with unit documents
in millions of denars



Source: National Bank calculations, based on data submitted by SEC.

Chart 136 Ownership structure of unit documents
in %



Source: National Bank calculations, based on data submitted by SEC.

banking financial institutions. In 2021, on a net basis[203], domestic natural persons and non-banking financial institutions made most of the investments in the funds, while domestic non-financial legal entities and foreign entities made a modest contribution to net inflows in the funds.[204] Other types of entities reported insignificant net sales of unit certificates in 2021. Such movements did not cause significant change in the ownership structure of the unit certificates in the investment funds.

On an aggregate basis, investments of certain types of domestic investors in funds are quite small, compared to the total assets at their disposal[205]. Hence, aggregately, any problem in investment funds operations (insolvency of funds, high downward correction of property value, etc.) would not have significant knock-on adverse effects on domestic entities that invest in these funds.

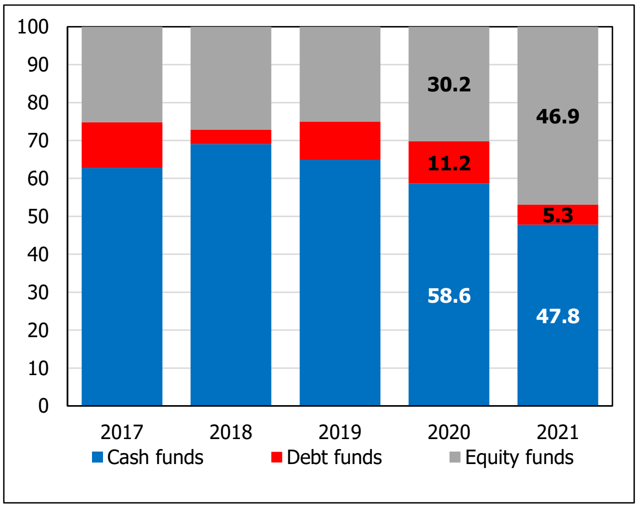
[203] It refers to the value of the purchased unit certificates in the investment funds less the value of sold unit certificates in the investment funds.

[204] In 2021, the net assets of investment funds increased by Denar 2,513 million or by 28.1% (3.7% in 2020). Thus, 69% of the net asset growth (or Denar 1.735 million) are net inflows from unit certificates, and the remaining 31% (or Denar 778 million) are a result of management and (returns on) investments in assets.

[205] Investments of domestic non-financial legal entities and domestic natural persons in mutual funds account for less than 1% of the assets of the domestic corporate sector and of the financial assets of the households, respectively. Investments of non-banking financial institutions in investment funds made up less than 1.5% of the assets of non-banking financial institutions.

Chart 137 Structure of open-end investment funds property, by their investment strategy

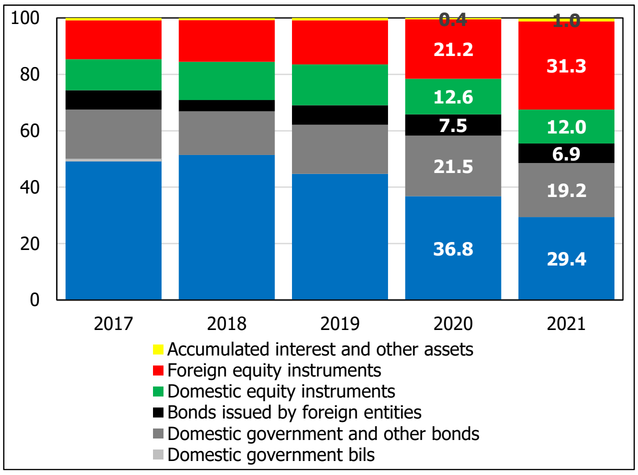
in %



Source: National Bank calculations, based on data submitted by SEC.

Chart 138 Structure of open-end investment funds property, by type of instrument

in %



Source: National Bank calculations, based on data submitted by SEC.

Making analysis according to the investment strategy and policy of each fund, the upward trend of equity funds' assets intensified in 2021[206]. Although the largest part of the assets still accounts for cash funds, there was a growth of 16.7 percentage points in the share of equity funds[207]. Amid low interest rates on bank deposits and debt securities, and historic high levels on global stock market, the investors' attention was drawn towards the funds that mostly invest in equity securities and consequently achieve higher returns. As a result, there was almost an equalization of investors in the funds that prefer to invest in low risk and highly liquid assets

[206] Cash funds' assets registered annual growth of Denar 231 million, or 4.4%. On the other hand, the equity funds' assets increased by Denar 2,686 million or by 99.03%, while the debt funds' assets decreased by Denar 392 million, or by 39.0%.

[207]Domestic natural persons and non-financial legal entities mostly "entered" equity funds.

(cash funds) and those with greater propensity to take risk (equity funds)[208]. However, analyzed in the short and medium term, given the current macroeconomic developments (high inflation and expected increase in interest rates), during 2022 a trend of gradual reduction of the share of equity funds, and increasing relative importance of the debt and cash funds is expected. However, all of this could be realized if the funds successful manage the duration risk and manage to quickly direct the assets to new instruments with higher returns and/ or instruments that provide protection from high inflation risk.

In the context of market developments, changes were also registered in the structure of total investment funds' assets, with the highest individual share of foreign equity instruments. Investments in fixed-income instruments still dominate the total assets of investment funds, despite the declining trend. Thus, in 2021, the share of fixed-income instruments decreased by 10.3 percentage points, thus continuing the existing trend of decline in the share of these instruments in the assets of investment funds (decline of 18.9 percentage points in the last five years). However, the investment funds assets are predominated by fixed-income instruments with predetermined dynamics of payment accounting to 55.5%, which primarily enable maintenance of the value of invested assets and efficient management of the investors' cash (in terms of achieving an optimal rate of return on highly liquid investment assets). Such an investment strategy corresponds to lower risk levels taken by such investments and subsequent generation, on average, of lower rates of return (compared, for example, to the potential rates of return on investments in equity instruments). Among the fixed-income instruments, the largest was the share of cash and deposits within the domestic banks (sight and short-term deposits), accounting to 29.4%. Hence, apparently, domestic banks' stability and liquidity and interest rates on deposit products are a key factor for the stability, liquidity and performance of the open-end funds, given the high share of investments in bank deposits. However, in the past, the relative importance of cash and deposits within domestic banks was steadily declining, which, on the one hand, is due to the growth of assets of equity funds, and on the other hand, arises from changes in investments of cash funds, which in search for higher returns are reoriented to placements in bonds, primarily domestic government bonds (as of 31.12.2021, 19.2% of the investment funds' assets were invested in domestic government bonds). This could undergo a change with the expected trend of increasing interest rates on bank deposits. The high individual share of investments in domestic government bonds emphasizes the importance of sustainability and efficiency in the public finance and debt management in our country.

Amid falling interest rates, some investors are determined to take greater risks and invest in funds whose investments, by rule, carry a higher risk (which materialized in 2020), as well as opportunity for higher rates of return (present in 2019). Thus, **in 2021, enhanced growth trend of the share of placements in equity instruments in the total assets of investment funds was registered.** At the end of the year, investments in equity instruments reached 43.3% in the total funds' assets, which is more by 9.5 percentage points compared to 31.12.2021. Thus, placements in foreign equity instruments fully conditioned the growth of the share of equity instruments in the total investment funds' assets. However, the expectations for inflation and increased interest rates on bank deposits and newly issued bonds in the global markets could increase the returns of cash and debt funds, and contribute to decline in returns of equity funds.

[208] The outflows from the cash funds result from the sale of unit certificates by domestic non-financial legal entities.

III. ANNEXES

Cyber security in the financial system with reference to the National Bank's activities

The risk of accidental or deliberate disruption to financial institutions' IT systems has long been recognized by the industry and regulators, so until recently it was treated as one of several sources of "operational risks". The concept of operational risk, according to the Basel II regulations for banks in the early 2000s, was a catch-all category for risks arising from "inadequate or failed processes, people, and systems or from external events", including fraud, legal risks, systems interruptions, terrorist attacks, employment practices, workspace safety, accounting errors, etc. (BCBS, 2004).

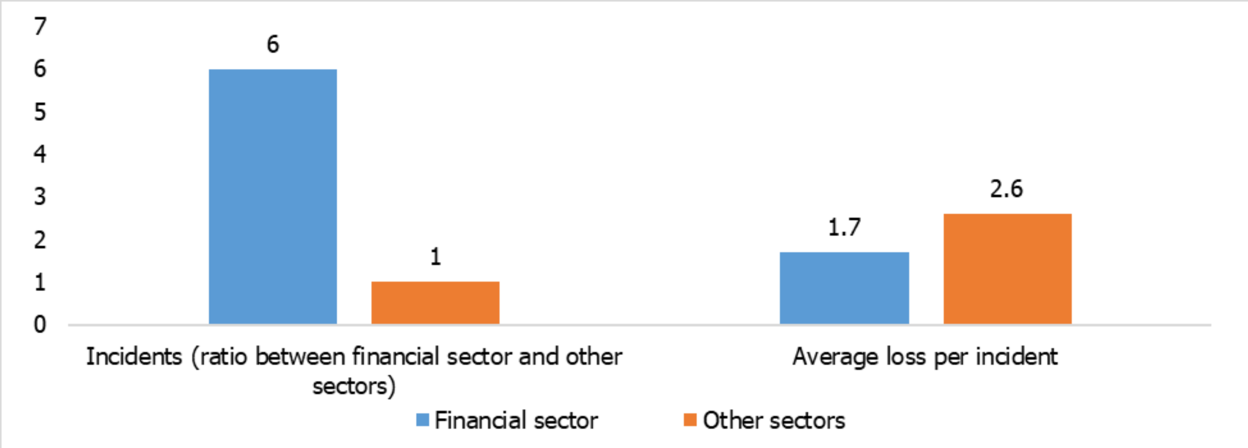
In order to become more familiar with certain aspects of cyber security in the financial institutions (primarily banks) and information about the situation in our country, the text further overviews the international initiatives on dealing with cyber risks, as well as activities continuously undertaken by the National Bank to strengthen the banking system resilience to this type of risks.

Globally, the need to strengthen the cyber security is particularly intensified with the increase in the number of cyber attacks in the financial sector institutions from 2016 onwards. According to the Boston Consulting Group (BCG, 2019), the financial sector institutions are 300 (three hundred) times more likely to be targets of cyber-attacks during the year compared to institutions offering other types of services[209]. Such findings are related with digital transformation and changes in the business model of the financial institutions and traditional banking services, the application of advanced fintech solutions and increased dependence on IT outsourcing. The exposure of financial sector institutions to cyberattacks additionally increased during the global pandemic, with the shift to remote working and home-based work, whereby the employees working from home were frequently targets of attack, unlike before, when the attackers were focused on the banks' clients-legal entities and natural persons. In such conditions, the number of identified digital security attacks significantly increased within months (from fewer than 5.000 per week in February 2020 to more than 200.000 per week in late April 2020)[210].

Within financial institutions, the banks usually have the most publicly available products and services, making them particularly exposed to risk of cyber attacks. The attackers' motives are generally not limited to making profit, but they also aim at disruption of the Bank's reputation, causing non-function of certain banking service, disruption of cash flows in the financial system, etc.[211]. According to the research by the Bank of International Settlements (BIS 2020), which analyzes the drivers of the cyber attacks, the frequency of incidents in the financial sector is 6 (six) times higher compared to incidents reported in other sectors. Such perception is drawn on the grounds of database with more than 100.000 incidents reported in all sectors in the period 2002-2019. However, the average loss per incident in the financial sector (US Dollar 1.7 million) is lower compared to the loss per incident registered in other sectors (US Dollars 2.6 million). This conclusion is associated with greater investments of financial institutions in IT security, due to the established regulation, in comparison to other sectors.

[209] Boston Consulting Group (2019). Global Wealth 2019: Reigniting Radical Growth.
[210] "Covid-19 and cyber risk in the financial sector", BIS Bulletin No.37, January 2021.
[211] "The drivers of cyber risk", Bank of International Settlements, May 2020.

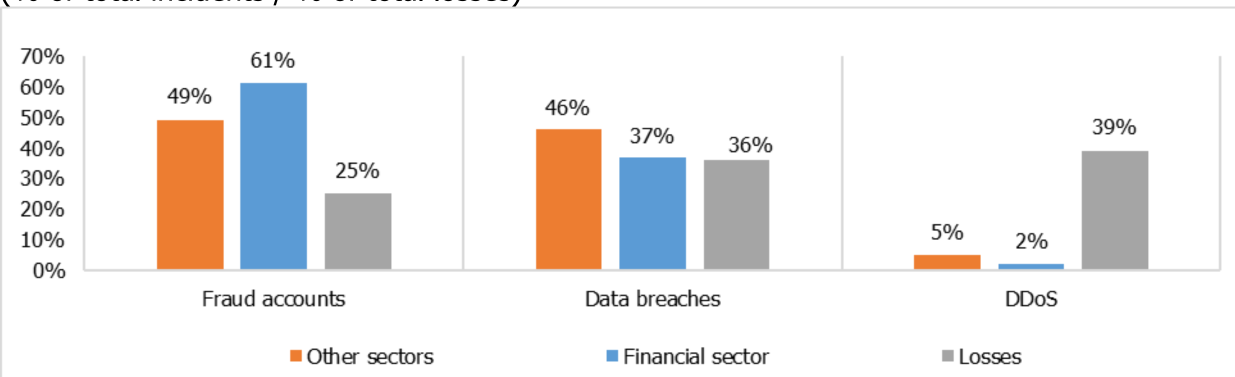
Chart 139 Financial sector incidents-to-other sectors incidents ratio and amount of average losses per incident (in millions of Dollars) in the period 2002-2019.



Source: "The drivers of cyber risk", Bank of International Settlements, May 2020

According to the BIS analysis, the following three types of incidents mostly occur: 1) fraud accounts, 2) data breaches, and 3) Distributed Denial of Service - DDoS. The first type of incidents mostly occurred in financial institutions (61% of the total number of incidents reported) compared to 49% in institutions from other sectors, where they occurred in a form of violating the privacy of an account, by using the so-called method of phishing, however, the first type of incidents generally caused the lowest losses (25% of total losses reported). The second type of incidents are rare (37% in the financial sector and 46% in other sectors), yet they led to larger losses (36% of total losses reported), while the third type of incidents is very rare (2% in financial sector and 5% in other sectors), but losses of this type of incidents were significant (39% of total losses reported) Chart 130).

Chart 140 Frequency of various types of security incidents and losses resulting from them (% of total incidents / % of total losses)



Source: "The drivers of cyber risk", Bank of International Settlements, May 2020

The analysis also tries to assess whether the possibility of loss, as a result of the cyber event, is directly dependent on the company's size, the connection with other institutions and the use of cloud services. The authors observed that the possibility of loss from cyber incidents is generally higher among institutions in other sectors compared to the financial institutions. Moreover, the probability of loss is higher in companies with higher income. Furthermore, due to the greater interconnectedness of institutions, the possibility for incident spillover (i.e. one incident causing multiple incidents in several different institutions at the same time) is higher in financial institutions compared to institutions in other sectors, whereby the more institutions are connected to a single cyber event, the greater the losses. At the same time, the financial institutions that use cloud services have significantly lower the losses from cyber-attacks compared to institutions in other sectors, whereas such conclusion is generally associated with the lower percentage of financial institutions that use this service.

The increased number of cyber attacks in the past period led to number of regulatory initiatives by various standard-setting bodies and institutions that deal with cyber risks. At the international level, the G-7 finance ministers and central bank governors issued a set of non-binding *Fundamental elements of cyber security for the financial sector,* with the aim of helping banks tailor their cyber-security approaches to their operational and regulatory environment[212]. The Financial Stability Board (FSB) included in its 2017 work plan[213] the need to monitor the cyber-risk arising from finantial technology (fintech) and to identify supervisory and regulatory issues from a financial stability perspective. The FSB`s report for the July 2017 G20 Humburg Summit[214], places the need to mitigate the adverse impact of cyber-risk on the financial stability among the top three priority areas for future international cooperation. In June 2016, the Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO) issued *Guidance on cyber resilience for financial market infrastructures*[215]. In April 2016, the International Association of Insurance Supervisors (IAIS) published a document to raise the awareness among insurers and supervisors of the cyber risk-related challenges[216]. In December 2018, The Basel Committee on Banking Supervision (BCBS) published a document with various practices for cyber resilience[217]. In March 2022, the European Systemic Risk Board (ESRB) announced the start of the review of the macro-prudential measures framework, which includes measures and activities to protect from hybrid risks, among which the risk of cyber attacks, in an early stage.

Hence, there is a growing number of central banks that include the strengthening of the cyber risk management in their strategic goals. Activities undertaken by the central banks generally aim to: 1) strengthen the banking sector resilience to cyber attacks through a partnership with the private sector, 2) exchange information about the threats and digital security incidents in order to improve the coordination and communication, 3) improve the existing regulation for IT risk management, in line with the emergence of new threats/risks. Jurisdictions that have most progress and specific regulatory and supervisory initiatives on banks' cyber-risk include Hong Kong, Singapore, the United Kingdom and the US.[218].

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212 Group of seven (G7), 2017, "G7 Fundamental Elements of Cybersecurity for the Financial Sector", available athttp://www.mef.gov.it/inevidenza/documenti/PRA_BCV_4728453_v_1_G7_Fundamental.pdf

213 Financial Stability Board (FSB), 2017, "Financial Stability Implications from FinTech: Supervisory and Regulatory Issues that Merit Authorities' Attention "available at http://www.fsb.org/wp-content/uploads/R270617.pdf

214 Financial Stability Institute (FSI), 2017, "Regulatory Approaches to Enhance Banks' Cyber-security Frameworks," FSI Insights on Policy Implementation No. 2, Bank for International Settlements, available at https://www.bis.org/fsi/publ/insights2.pdf

215 CPMI-IOSCO Guidance (June 2016), "Guidance for Cyber Resilience for Financial Market Infrastructures," Bank for International Settlements, available at: https://www.bis.org/cpmi/publ/d146.pdf

216 International Association of Insurance Supervisors, 2017, Fintech Developments in the Insurance Industry, available at: https://www.iaisweb.org/uploads/2022/01/Report_on_FinTech_Developments_in_the_Insurance_Industry.pdf

217 Basel Committee on Banking Supervision (BCBS), 2018, "Cyber resilience: range of practices", available at: https://www.bis.org/bcbs/publ/d454.pdf

218 Financial Stability Institute, 2017, "Regulatory approaches to enhance banks' cyber-security frameworks", available at: https://www.bis.org/fsi/publ/insights2.pdf

The cyber-security situation in the Western Balkans economies generally reflects the global trends[219]**.** Amid rising digitalization of processes especially driven by the pandemic, the number of reports on security incidents in the region increased. The attacks are becoming more sophisticated, with better adjustment of the malicious content to local languages and involvement of the regional context. Currently, the computer crime is considered the main threat, whereby the most common types of attacks are the Ransomware, Phishing, and to a certain extent Distributed Denial of Service - DDoS.

The National Bank carefully monitors the activities related to direct and indirect damages from organized cybercrime and, in accordance with the legal powers[220]**, continuously undertakes activities to strengthen the banking system resilience and prevent materialization of these risks.** Recognizing the challenges related to cybercrime, the National Bank took over the leading role in building awareness and culture for cyber-risk management. In 2016, the National Bank **prepared a specially designed tool for assessment of cybercrime-related risks and introduction of adequate level of readiness with banks.** The National Bank's initiative is a result of the need to help banks measure their exposure to potential digital threats and to strengthen the capacity for protection against cyber attacks[221]. By using this tool, banks have designed strategies, policies and procedures to defend against this type of attacks. In this period, **industry standards to defend against cyber-threats were introduced, of which the security standard in the area of SWIFT payments is required from all banks participating in the payment system**[222]**.**

For the purpose of following the threats from the digital space the National Bank in 2018 made **amendments to the bylaws in the part of information security standards.** The amendments aim to upgrade the information security process of the commercial banks by incorporating the best practices determined by the European regulatory bodies. These practices include establishing specialized systems with banks for monitoring anomalies in the clients' behavior in modern channel systems, determining and establishing limits on electronic orders (daily and monthly limits, as in payment cards) and introducing sophisticated systems for monitoring the latest zero-day attacks. The activities for strengthening the banking system's resilience to cyber attacks were particularly intensified after the outbreak of the global pandemic.

Observing the trend and good practices of other EU central banks, in December 2021 the National Bank established an **"Information Systems Supervision Office" as a special organizational unit within the Supervision Sector.** This initiative aimed to strengthen the capacities, enhance the specialized approach and coordination of supervisory activities in the area of on-site supervision, off-site monitoring and banking regulations in the field of information system security.

During 2022, given the indications and recommendations of the international financial regulators on the increase of this risk, the National Bank **intensified and prioritized the activities to achieve and maintain the target level of preparedness for cyber-attacks.** Increased

[219] Cybersecurity Ecosystem Report, Western Balkans: Emerging Cyber threats, (March 2022), PricewaterhouseCoopers

[220] Pursuant to the Law on the National Bank (Official Gazette of the Republic of Macedonia No. 110/21), the National Bank provides unimpeded functioning of the payment system in the country Also, the National Bank establishes, registers and oversees the safety, soundness and efficiency of payment, settlement and clearing systems. At the same time, the National Bank has supervisory competences over the operations of the payment systems, as well as supervisory competences over the banks and the other entities providing payment services in the country.

[221] The tool is available at the National Bank website, on the following link: https://www.nbrm.mk/alatki.nspx

[222] SWIFT Customer Security Programme (CSP) in 2016.

vigilance and intensive IT system monitoring, raising the awareness of employees and suppliers about the increasingly frequent cyber threats and consistent compliance with the measures for information system security will be the focus of the institutions in the forthcoming period. The enhanced mutual coordination is especially important in this regard, through the Information Security Commission at the Macedonian Banking Association (MBA), by holding regular meetings, exchanging useful information about security incidents and monitoring the current situation.

Hence, the conditions in terms of materialization of cyber threats in the financial system of RNM are stable, with only few significant security incidents reported to the National Bank[223]. The banks report the digital security incidents (at the highest level) to the National Bank, including those that are not directly connected to cyber attacks. The incidents are also registered in the National Center for Computer Incident Response (MKD-CIRT), within the Agency for Electronic Communications[224]. According to the annual information of the responsible services in domestic banks, 2020 registered a growth in cyber-attacks[225] compared to the previous year. The most frequent registered attacks among Macedonian banks in the past period are as follows: 1) Phishing, to access client's account, his personal data or access codes of employees through earmarked campaigns towards certain banks received via e-mail and/ or social networks, 2) Distributed Denial of Service - DDoS, by disabling the remote connection of clients/ employees to the bank's systems and 3) change in the payment instructions (change in the recipient's account, after sending the order/ change of IBAN in foreign exchange payments). However, these attacks caused insignificant material financial damage.

Overall, the cyber-threats and vulnerabilities are evolving fast, as are the best practices and technical standards for their resolution. The structure of the financial sector also changes over time, with the occurrence of new types of entities, products and services, which more often rely on third parties service providers. In the period ahead, the National Bank will continue to actively monitor both regional and global trends and will respond preventively in order to minimize the systemic risks to the financial system.

The impact of the COVID-19 pandemic on the domestic corporate sector-current conditions and possible vulnerabilities for the coming period

The occurrence of the COVID-19 pandemic was a shock of unprecedented proportions which affected all areas of activities, including activities in the domestic corporate sector. The pandemic reduced the sales income and deteriorated the corporate sector profitability and also pronounced the already existing vulnerabilities in its individual segments. The support of the policies was especially important in this regard, through an extensive fiscal and monetary stimulus, which contributed to easier overcoming of the consequences of the pandemic and limited the risks to the financial stability. However, certain activities were more affected than others, and the recovery, although comprehensive, is slower in certain segments of the corporate sector. The new environmental risks related to the war in Ukraine and risks related to inflation

[223] Ransom DDoS, Ransomware.
[224] For more detailed information see https://mkd-cirt.mk/
[225] The National Center for Computer Incident Response MKD-CIRT registered 1.443 security incidents in 2020 compared to 1.060 in 2019.

and economic growth, are a possible vulnerability source for the domestic corporate sector that could spill over to credit institutions and affect financial stability.

In this article we analyze the domestic corporate sector, with reference to the conditions and existing vulnerabilities before the pandemic, their change due to the shock, as well as current environmental risks and challenges important for the corporate sector operations and for maintaining financial stability.

The domestic corporate sector faced the pandemic in a generally good condition, which did not create significant risks to the domestic corporate sector operations. The period before the pandemic was marked with growth in income and strengthened profitability, which positively contributed to solvency and sustainability of the corporate sector debt. Amid improved profitability, the ability of the corporate sector for regular servicing of liabilities enhanced, due to the low interest rates environment, which kept the corporate sector debt financing costs relatively low. In the years before the pandemic, the total corporate indebtedness ratio slightly declined and in 2019 amounted to 47.2%, while the share of the interest-bearing debt in total corporate sector assets remained at a relatively low and stable level of around 22%. The corporate debt grew in the pre-pandemic period, and its relative indebtedness (as measured by the share of total debt in GDP) moderately increased and equaled to 66% of GDP in 2019 (64% of GDP in 2014). The liquidity of the corporate sector remained at a stable, yet traditionally low level, which is partly due to irregularity in performing debt-creditor relations. Although, in the years before the pandemic, the improvement of the financial discipline was evident, nevertheless, the delayed execution of obligations remained a practice of the domestic corporate sector, making the low liquidity one of the points of possible vulnerability to pandemic shock. Micro-enterprises, which before the pandemic were in the group of entities with the highest indebtedness with lower liquidity and poorer operational efficiency, as well as operating losses, showed the largest vulnerability.

Chart 141 Indicators for the performance of corporate sector, by year

Note: Dashed lines present the indicator average for the period 2014 - 2021
Source: Central Registry of the Republic of North Macedonia.

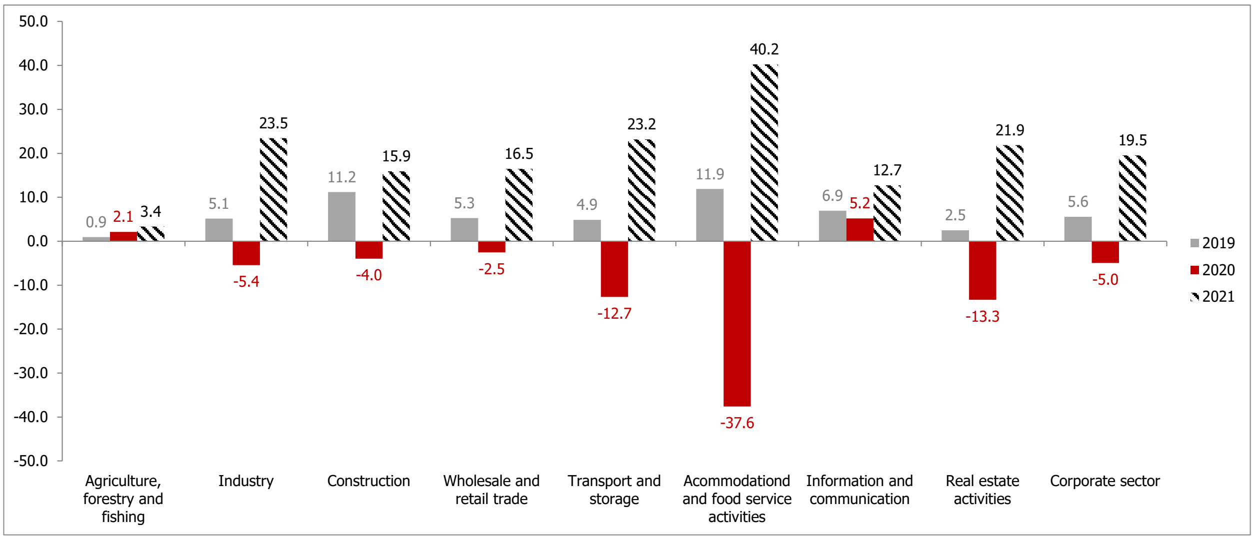
The pandemic shock strongly affected corporate activities. The adverse effects were felt through a decline in revenues and deteriorated profitability, registered in almost all activities and corporate groups of entities. Given that pandemic was initially reflected through liquidity shock, the swift and decisive policy response through extensive fiscal[226] and monetary[227] stimulus which mitigated the liquidity shock pressure and prevented its spillover to the solvency of the corporate sector, was crucial. This reduced the possibility for credit risk materialization in the balance sheets of domestic creditors, mainly banks. The corporate sector liquidity remained stable, despite the deterioration of operational efficiency amid increased delays in collection of claims and payment of liabilities. Total debt of the corporate sector remained stable, although the deteriorated profitability moderately worsened the indicators for the ability to settle corporate liabilities. However, analyzed by activity and groups of entities, there is different extent of vulnerability to the pandemic shock.

[226]For more information about the adopted fiscal measures visit: https://vlada.mk/ekonomski-merkicovid19
[227]For more information about the measures of the National Bank in response to the COVID-19 crisis visit: https://www.nbrm.mk/kovid-19-odgovor-na-narodnata-banka.nspx

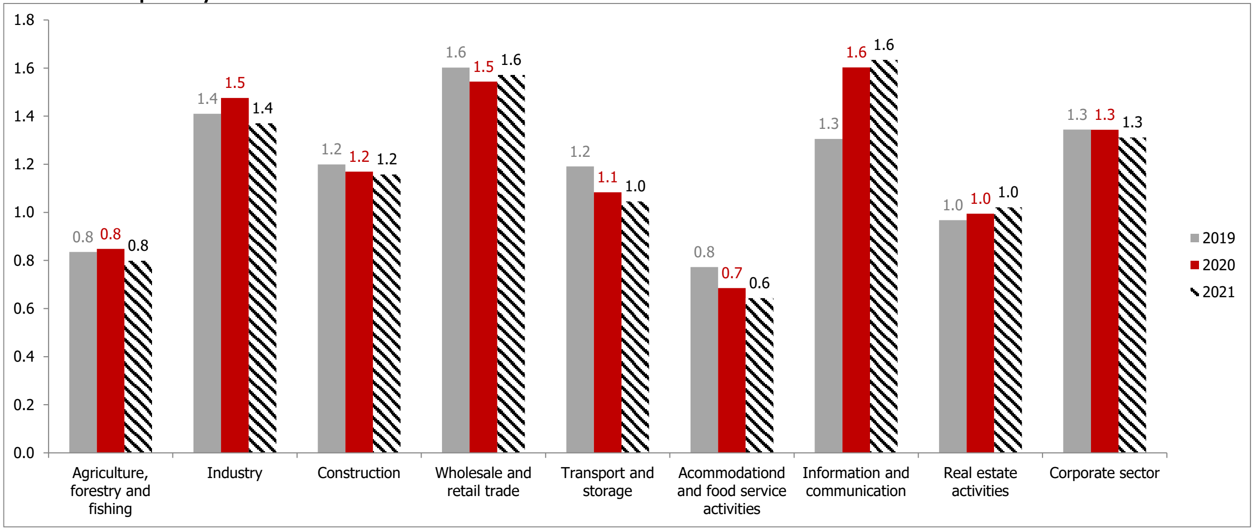
Analyzed by activity, the service companies were most affected. The catering industry suffered the worst consequences due to the introduced preventive measures and special work protocols in conditions of pandemic, which resulted in double-digit decline in sales income and historic deterioration of profitability. The deteriorated liquidity raised the needs for financing, which caused a high growth of total indebtedness of the catering services to a level of 60.2% of total assets in 2020 (compared to 54.5% in the previous year). The level of indebtedness, as debt-to-equity ratio (financial leverage), also increased to 2.5 which is the highest among corporate activities. There was also a significant deterioration of sales in administrative and professional and scientific services and transport and storage activities, which registered deteriorated profitability, but still managed to generate operating gain. Industry, trade activity and construction, as leading activities within the domestic corporate sector, were also affected by the pandemic, although the effects on them were relatively more moderate. Growth in sales income in the pandemic year was registered only in the agriculture, forestry and fishing and information and communication activities. The activity information and communication registered improved operating profitability and reduced the level of total indebtedness, while the level of indebtedness as debt-to-equity ratio (financial leverage) remained stable and among the lowest corporate activities.

Chart 142 Corporate sector performance ratios, by activity:

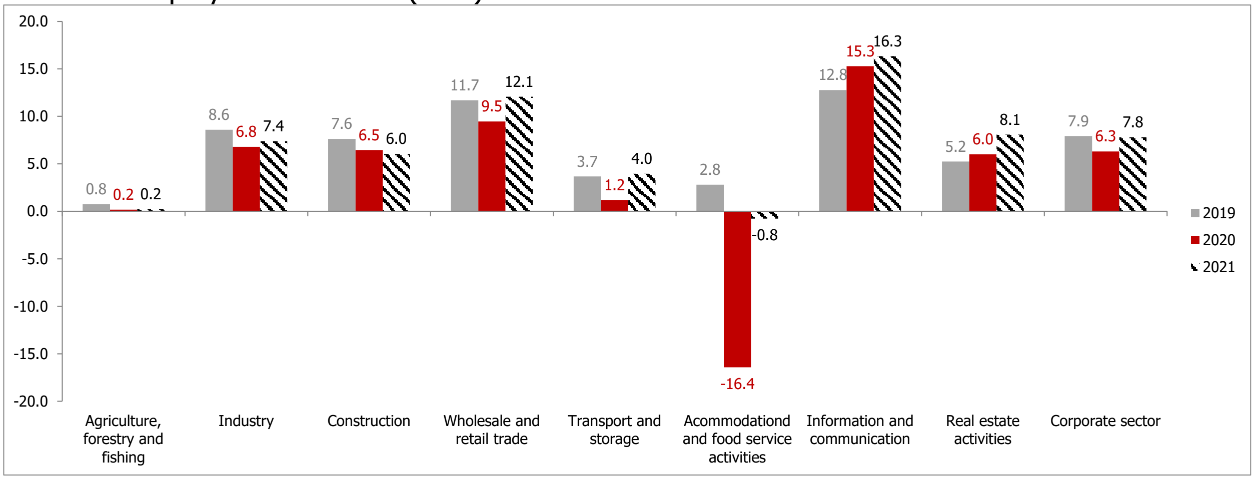
- sales income



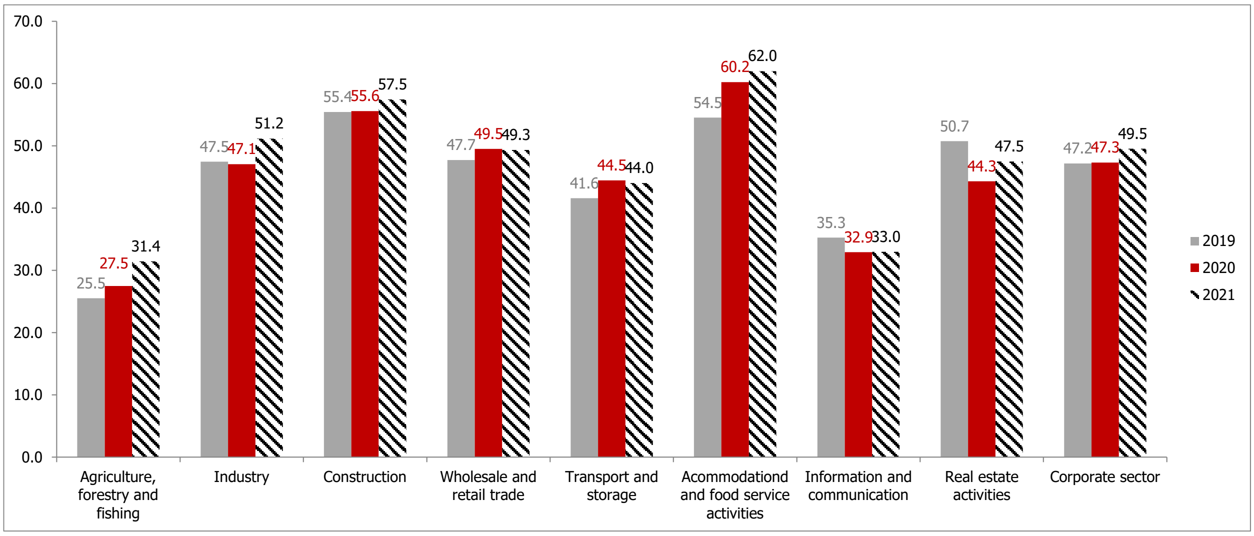
-current liquidity



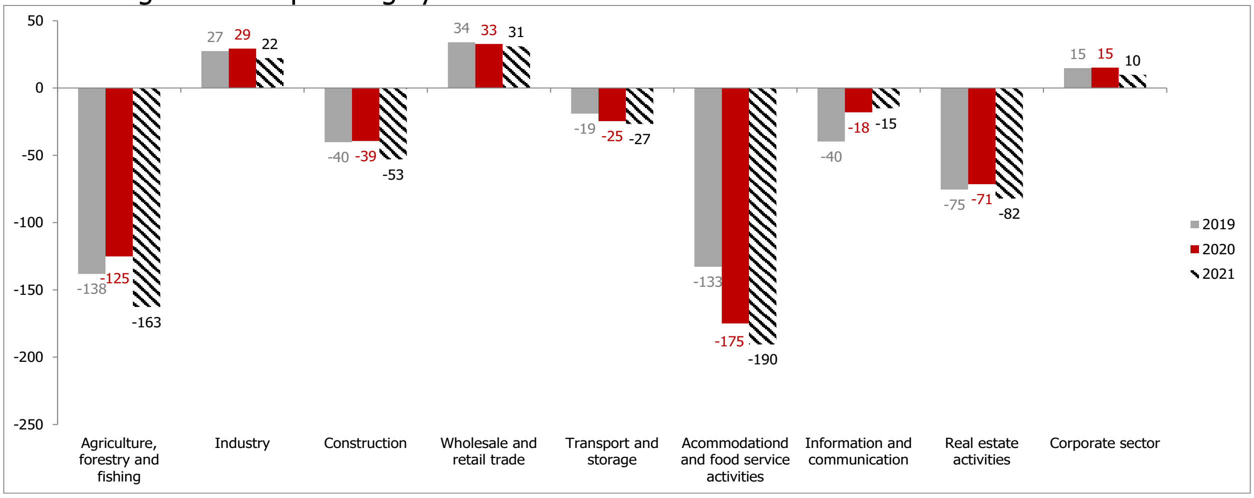
-return on equity and reserves (ROE)



- Total indebtedness



- length of net operating cycle

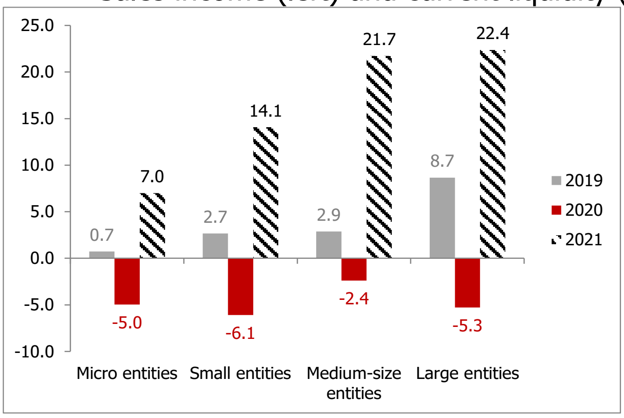


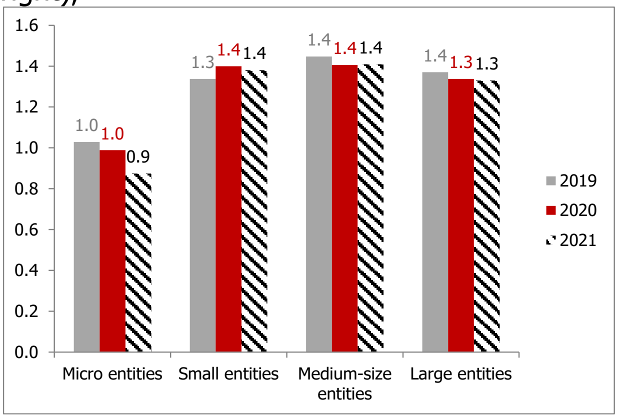
Source: Central Registry of the Republic of North Macedonia.

Analyzing the size of corporate entities, the indicators show that micro entities are most affected, which was expected, given that these entities are the most vulnerable to risks in all operating segments, and also have the most limited access to financing from the banking sector. The pandemic significantly enhanced the negative financial result, which is a feature of the micro entities' operations. The total indebtedness in 2020 remained stable, yet relatively high at around 65% of total assets of micro entities, but it significantly increased in the following year to a level of around 73%. There were similar developments in the leverage level indicator as debt-to-equity ratio (financial leverage), which could indicate high dependence of the micro entities on the fiscal measures to support the companies' operations during the pandemic, the withdrawal of which raised the needs for debt financing. Small and medium-sized enterprises dealt with the pandemics relatively better, and maintained stable liquidity position and relatively stable level of total indebtedness during 2020.

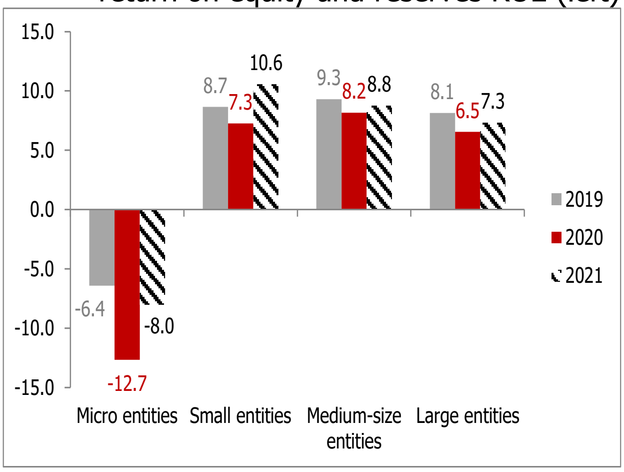
Chart 143 Corporate sector performance ratios, by size:

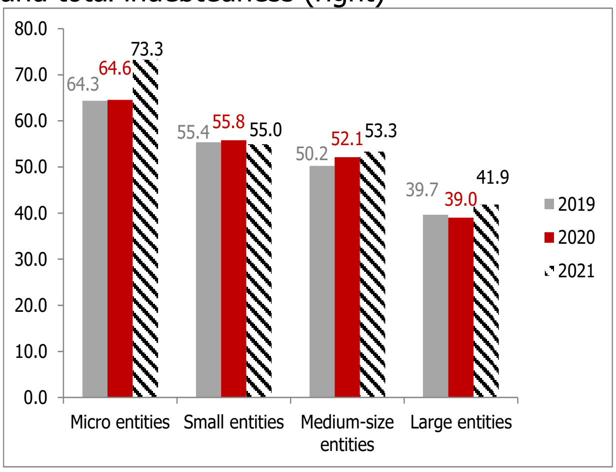
- Sales income (left) and current liquidity (right),



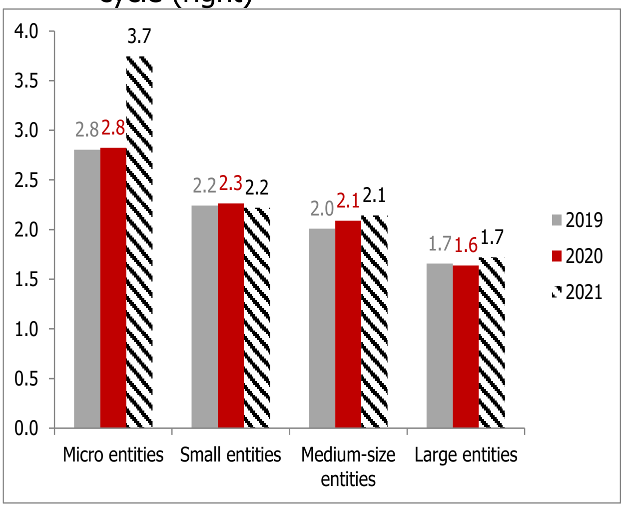


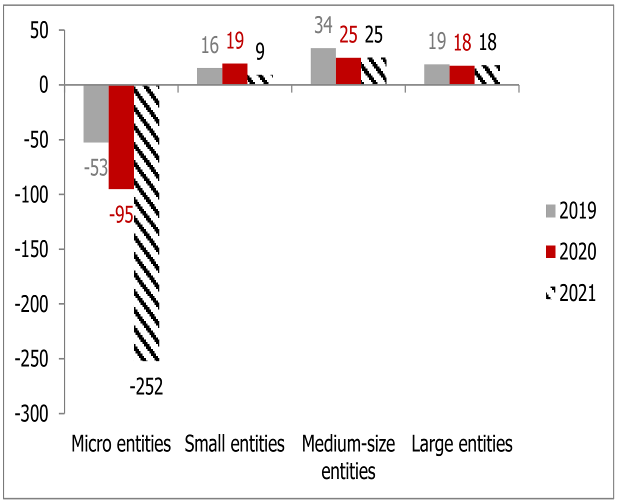
- return on equity and reserves ROE (left) and total indebtedness (right)





- Leverage level as debt-to-equity ratio (financial leverage)-left and length of net operating cycle (right)

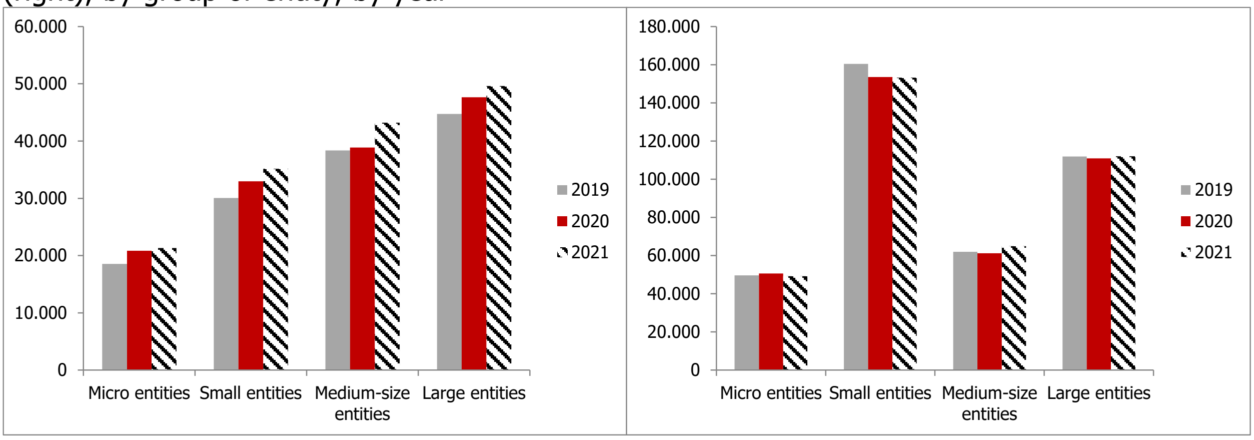




Source: Central Registry of the Republic of North Macedonia.

The recovery from the pandemic was relatively quick and started already in 2021, with the economic recovery and relaxation of the restrictive measures. The corporate sector in 2021 registered a high growth in sales income and improved the profitability, which almost reached the pre-pandemic level. Operational efficiency also improved, while total indebtedness slightly increased. **However, the catering and micro entities, as the most affected by the crisis continue to show vulnerabilities in their operation.** Although they showed significant growth of revenues, which in the corporate sector was the highest in catering, however, it failed to compensate the losses from the pandemic. Catering services and micro entities continued to register negative financial result, although improved compared to the previous year. Total indebtedness continued growing, and was particularly pronounced in micro entities. The level of total indebtedness of micro entities is almost two times higher compared to the indebtedness of large entities and by 1.5 times compared to the overall corporate sector. The catering services debt indicator exceeds the indebtedness of the total corporate sector by 1.2 times. Such conditions, amid negative financial result, increase the risks to the sustainability of debt of micro entities and catering companies.

Chart 144 Average month gross wage by employee (left) and average number of employees (right), by group of entity, by year



Source: Central Registry of the Republic of North Macedonia.

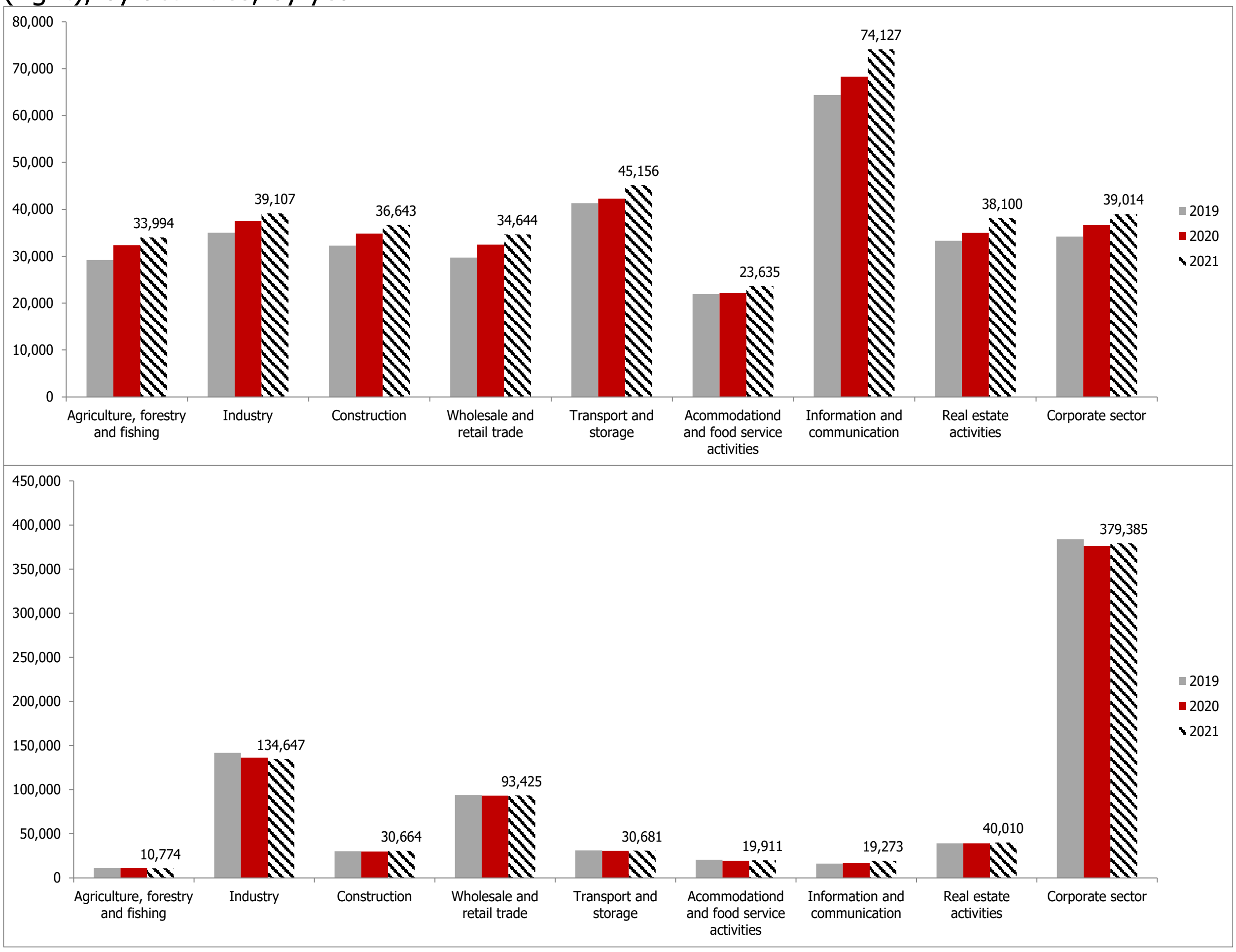
Despite the deteriorated operating results, the pandemic had limited effects on the labor market. According to the annual accounts data, the number of employees moderately decreased in 2020, and was mainly concentrated in small entities. In micro entities, the pandemic had delayed effects on the employment, which increased in 2020, followed by a decrease in the number of employees in 2021. Analyzed by activity, the data from the annual accounts show that in 2020 the highest decline in employment was registered in industry, followed by catering. The number of employees in catering services increased in 2021, while the industry continued to decrease, although at a slower pace. Data on the average monthly gross wages in the corporate sector show its increase, in the years before, during and after the pandemic, registered in all groups of entities. The growth in wages was supported by the increase in the legally determined minimum wage[228], increase in contribution rates[229], as well as the effect of the introduced

[228] The growth of wages is partly due to the increase in the minimum wage (during 2019, the minimum wage was increased twice, in April and December, followed by an increase in July 2020 and in April 2021), according to the regular adjustment to the increase of the average wage paid in the country in the previous year, consumer prices index and real growth of GDP (with one third of the increase in each indicator, respectively).

[229] The rates at which contributions are paid in 2019 increased to 18.4% for compulsory pension and disability insurance and 7.4% for compulsory health insurance (previously these rates were 18% and 7.3%, respectively).

government measures to subsidize the contributions due to increased wages in the private sector[230]. In terms of size, the largest growth in the average gross wage per employee in the corporate sector in 2020 was visible in micro entities, which according to the data from the annual accounts equaled 12.4% (5.8% in the previous year), while in 2021 it significantly decelerated to a modest 2.2%. The average monthly gross wage registered a growth in all corporate sector activities in the period after the pandemic, yet the highest growth in 2021 was visible in catering (specifically in activities related to real estate; professional, scientific and technical activities; administrative and auxiliary services) and information and communication.

Chart 145 Average month gross wage by employee (left) and average number of employees (right), by activities, by year



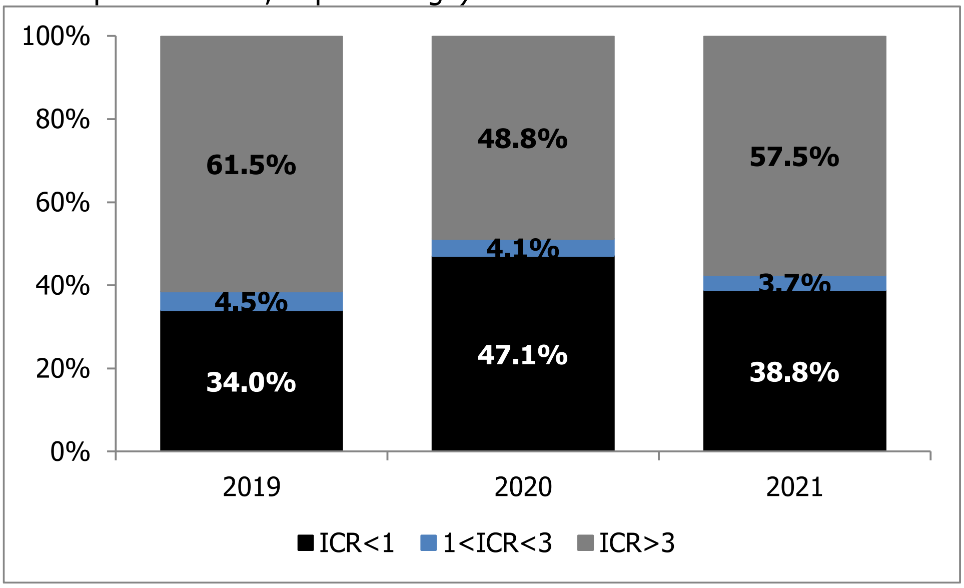
Source: Central Registry of the Republic of North Macedonia.

In the context of financial stability, the main risks that the corporate sector poses to the banking sector refer to its ability to regularly service debt, which is crucial for the corporate debt risk and sustainability assessment. One of the leading indicators for monitoring the changes in the corporate sector creditworthiness is the interest coverage ratio-ICR. The IMF has defined vulnerability thresholds for this ratio, according to which the debt risk

[230]On 14 November 2019, the Assembly of the Republic of North Macedonia adopted the Law on subsidizing contributions from compulsory social insurance due to wage increase (official Gazette of RNM No. 239/2019) which started to be enforced with the payment of the November wage, and includes subsidizing contributions to increase the net wage from a minimum of Denar 600 to a maximum of Denar 6000 per month per insuree, for the private sector employees.

is assessed[231]. The analysis of this indicator according to the IMF vulnerability thresholds shows that most of the companies from the domestic corporate sector, or a total of 57.5% in 2021, have the adequate capacity to service debt. However, there is a deterioration due to pandemics and growth of companies with high-risk debt from 34% in 2019 to 47.1% in 2020. With the economic recovery and improved profitability, the share of high-risk companies in 2021 decreased, yet remained at a relatively high level of 38.8%, which exceeds the pre-pandemic level. Such conditions indicate risks related to debt sustainability of these corporate clients, which is the reason for banks' greater caution in credit risk management in the following period.

Chart 146 Financial expenses coverage ratio, by year
(The share of companies with the defined thresholds ratio in total number of active companies in the corporate sector, in percentage)



Source: Central Registry of the Republic of North Macedonia and National Bank calculations.

The risks are more pronounced in the current conditions of high uncertainty in the surrounding, which mainly results from the development of the war in Ukraine and the effects on the inflation and economic activity. Moreover, in conditions of normalization of the monetary policy in domestic and global frameworks, the exposure to interest rate risk increases. The vulnerability is more pronounced for companies with weaker balance sheets and higher level of indebtedness, which lack capacity to absorb the possible shocks from the environment.

[231]The IMF has defined vulnerability thresholds for this ratio, according to which ICR>3 is considered a low risk, 1<ICR<3 a moderate risk and high risk when ICR<1. IMF Global Financial Stability Report: Vulnerabilities in a Maturing Credit Cycle, April 2019.