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

REPORT ON THE RISKS IN THE BANKING SYSTEM OF THE REPUBLIC OF NORTH MACEDONIA IN 2023

April 2024

Contents

I. Summary

In 2023, the environment the banks operate in was characterized by a gradual inflation slowdown, which was still above the historical average, a stable foreign exchange market and slow economic growth. At the same time, the risks arizing from the environment and the uncertainty related to their materialization endure and are mainly related to the external environment. In such circumstances, the growth of the banking system assets accelerated, thus improving the risk exposure indicators. In 2023, the global economy faced several challenges, such as the consequences of the tightening of the monetary policies of the central banks of the leading economies, the temporary concern about the stability of the banking systems in the USA and Europe, the further military actions in Ukraine, and later the tensions in the Middle East, as well. In such conditions, both ECB and FED continued to normalize monetary policy and raise policy rates on multiple occasions, which almost halved inflation rates in the euro area and the US compared to 2022. The international environment affected the domestic economy and consequently, the National Bank response to the monetary policy did not differ significantly from the course of the policies of the most influential central banks. The cycle of monetary policy tightening continued also in 2023, when the policy rate increased on six occasions for a total of 1.55 pp to the level of 6.30% The monetary policy was even more underpinned by the changes in the reserve requirement, aimed at encouraging saving in denars, and for the purpose of adequate changes in the banks' interest rate policy. In line with the monetary changes, macroprudential measures were adopted, regarding the quality of the credit demand from natural persons and countercyclical capital buffer rate, thus strengthening even more the banking system. In 2023 as well, the risk exposure indicators of the banking sector were stable and improved further**,** while the stress tests indicated a solid capacity to mitigate the possible shocks. However, the environment remained vague, mainly under the influence of adverse external factors, especially accentuated by geopolitical turmoil. Hence, there is a need for further prudent risk monitoring and policy conduct in order to preserve the banking sector stability in the following period.

In 2023, the increase in the banks' balance sheet intensified up to the level of 9.1%. The reason for the annual growth were higher deposits of the non-financial entities, the capital and the reserves (because of retained earnings from 2022 and new share issues) and the earnings realized in 2023. Deposits recorded a strong annual growth that reached 9.2%, contributed mostly by the household deposits, with the corporate deposits also contributing to more significant growth acceleration. In terms of the currency structure of deposits, the annual growth of denar deposits is several times higher, compared to the increase of foreign currency deposits. Favorable structural changes in savings are evident, in terms of both currency and deposit maturity. In conditions of growing returns and stable expectations, long-term deposits grew as well, after their long-lasting decrease, so their annual rate reached the record high of 25.7% in the last decade. The National Bank took several measures for such structural changes, mainly through the reserve requirement instrument, which stimulate saving in domestic currency. As for the assets of the banking system, more significant growth accounted for the liquid assets, with the loans also registering an increase (4.3%), but substantially slower compared to the previous year. The slowdown in credit activity was less pronounced in household loans, which contributed the most to the annual growth of total loans to non-financial entities.

The solvency of the banking system improved. In 2023 the capital adequacy ratio reached levels which are the highest since 2007, and at the end of the year, it equaled 18.1%, which is more by 0.4 pp compared to 31.12.2022. Analyzing the use, around 35% of own funds of the banking system accounts for capital buffers or are "free" above the required minimum level, which the banks may use to deal with different challenges in the downward movements during economic cycles and in crisis conditions. The conducted stress testing shows that the banking system is resilient to the simulated shocks.

For the purpose of further strengthening of the banking system resilience, in the absence of materialization of risks to the balance sheets of banks and solid profitability, during 2023 the National Bank increased the level of countercyclical capital buffer that banks are supposed to maintain, on several occasions. Since 1 August 2023, the countercyclical capital buffer of banks has equaled 0.5%, starting from January 2024 this rate equals 0.75%%, 1% from July 2024, 1.25% as of November 2024 and 1.5% as of January 2025. By increasing the capital requirements, the banks are expected to retain the trend of improvement of the banking system solvency in the following period, as well.

Liquidity indicators improved in 2023 and remained satisfactory. The liquid assets of the banking system registered a solid two-digit growth of 15.3% in 2023, thus enabling better indicators for monitoring and assessing the liquidity. Thus, liquid assets account for 31.8% of total banks' assets (30% as of 31.12.2022), while the coverage of short-term liabilities and household deposits with liquid assets amounts to 52.3% and 65.3%, respectively (as of 31.12.2022, these indicators equaled 47.7% and 61.1%, respectively). The liquidity coverage ratio of the banking system equals 263.5%, which is significantly higher than the regulatory minimum (100%), thus confirming the satisfactory volume of liquidity available to the Macedonian banking system. The stress test results indicate satisfactory resilience of the banking system to the assumed extreme, individual and combined liquidity outflows.

The quality of banks' loan portfolio is solid. In 2023, the non-performing loans of non-financial entities increased minimally (0.2%), reducing further their share in total loans, and at the end of the year it reduced to the historical minimum of 2.8% (first reached in March 2023 year). By sector, the non-performing corporate loans registered a decrease (of -2.8%), so at the end of the year their share in the total loans dropped to the historical minimum, at 3.7%. The annual decline in non-performing corporate loans mostly results from the mandatory write-offs of these loans carried out during the year, and a solid amount of collateralized property for the default claims was foreclosed, thus preventing more significant growth of total non-performing corporate loans in 2023. In the households' credit portfolio, the non-performing loans recorded moderate growth (3.4%), for the third year in a row, but in conditions of further solid growth of loans to this sector, the share of non-performing loans in total loans remained at the same level as in the previous year (1.9%). The growth of non-performing loans to households mainly results from loans intended for financing the consumption of natural persons, and to a lesser extent, from the growth of non-performing loans intended for the purchase of real estate and retailers.

On 1.7.2023, the implementation of the macroprudential measures to limit the TDTI ratios[1] (to 55% and 50%, depending on whether they are denar or foreign currency loans) and LTV ratios[2] (85%, when approving new or increasing the existing exposure secured with real estate) commenced. The undertaken borrower-based macroprudential measures aimed

[1] TDTI indicates the ratio between repayment of liabilities based on loans and natural persons' income on a monthly basis.
[2] LTV indicates the credit exposure to borrower-to-value of real estate pledged.

at preventing excessive debt of certain natural persons. This prevented accumulation of systemic risks in the household segment and real estate market, which could be materialized as loan losses with banks. The banks are cautious and apply lower indicators than the prescribed ones.

Since the beginning of 2024, new Decision on the methodology for credit risk management has entered into force, which provides for further harmonization with the new regulatory requirements that are applied in the European Union, and contribute to further strengthening of the stability of the banking system. The Decision prescribes a new method of determining the non-performing credit exposures, strengthens the criteria for monitoring and control of the quality of the banks' credit portfolio and improved the rules for credit exposure restructuring. Methodological changes in determining of the non-performing loans may lead to their growth, at least in the initial period after the implementation of the Decision, which is more an effect of the different approach in determining the non-performing status (counting the days of delay), than of the changed creditworthiness of the clients. That is why it is important for borrowers to be aware of these regulatory changes, in order to be orderly in servicing their liabilities and not to make their borrowing from the banks more difficult in the future.

In 2023 the presence of currency component (foreign currency and FX clause) in banks' balance sheets registered a decrease amounting to 42.4% in assets and 41.2% in liabilities at the end of the year. These changes are also supported by the amendments to the reserve requirement, which were aimed at increasing denarization, which registered positive trends[3]. **The exposure of the banking system to currency risk is at a level which is significantly lower than the regulatory limit of 30% of own funds and as of 31.12.2023 equals 10.7%.**

The banks' exposure to interest rate risk in the banking book is within the prescribed limit (20%) and as of 31.12.2023 equals 9% of own funds, which is an annual decline of 1.1 percentage point. The increase in the interest rates elevates the importance of banks' exposure to indirect credit risk arising from the high shares of the loans with variable and adjustable interest rate in the credit portfolio. However, banks have been relatively cautious, gradually increasing the interest rates on loans, which prevented a more significant materialization of credit risk in 2023, as a result of higher interest-based debt of the clients.

In 2023, the profitability of the domestic banking system improved. Amid growth in interest rates and interest bearing assets, the higher profit (by 47.8% in comparison with the previous year) conditioned by the increased net interest income, the growth of which was supported by the interest income from almost all sectors. A slight contribution to the profit growth was made by higher net commission income. The rates of return on average assets and average equity and reserves equal 2.0% and 16.1%, respectively, which is a better performance compared to last year (1.5% and 12.2%, respectively). The main expenditure items of the banks recorded an increase in 2023, especially with operating costs (increase of 14.6%), with moderate increase of 3.2% also being recorded in impairment cost.

[3] In 2023, the reserve requirement rate from liabilities in foreign currency increased from 19% to 21%, and the share of the reserve requirement in euros that is met in euros increased from 75% to 81%. The reserve requirement rate on liabilities in denars with FX clause was also increased from 50% to 100%, thus in accordance with the change, banks will fulfill the reserve requirement, calculated from these liabilities, in euros. These changes in the reserve requirement, aimed at encouraging the saving in denars, and for the purpose of appropriate changes in the interest rate policy of the banks.

In general, the banking sector preserved its stability and operating security also in 2023, registering improved solvency and liquidity and good credit portfolio quality. Stress-tests confirm the system's resilience to shocks, which is further strengthened with the macro-prudential measures adopted. However, the environment remains vague, with the risks to the world and domestic economy on short and medium run still persisting. Hence, further caution is needed, especially in the monitoring and management of credit risk, the importance of which is getting higher in conditions of uncertain environment and tight financial conditions. The National Bank closely monitors all events and is ready to take all necessary measures within its competence, when needed.

II. Structure of the banking system

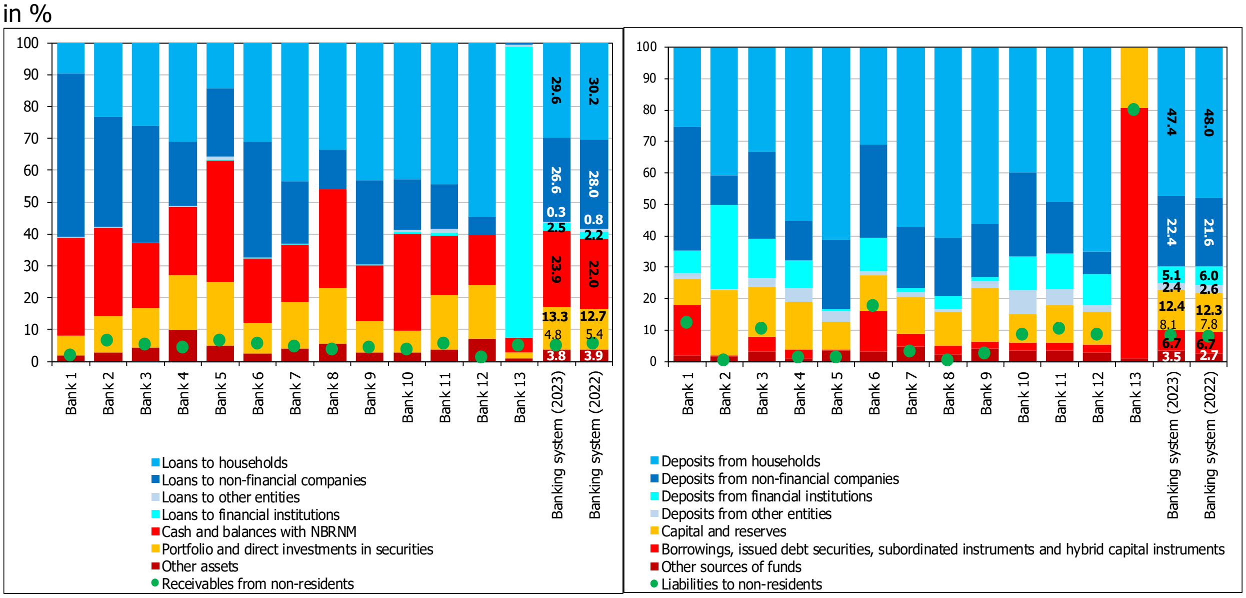
1. Structure of the banking system

1.1. Main features of the business models of banks

Accepting deposits and granting loans are the core activities of the Macedonian banking system. Thus, in 2023 total deposits accounted for 77.4% in total liabilities, while total loans accounted for 59.1% in total assets. Household deposits are the most important source of funding for banks, with a share of 47.4% in the total liabilities of the banking system, which is by 0.6 pp less compared to 31.12.2022. Bank-by-bank analysis showed that household deposits are the most important source of funding in ten banks, in one bank the share of household and corporate deposits is almost equal, in one bank corporate deposits prevail, while one bank does not accept deposits at all and uses credit lines from international financial institutions as sources of financing.

On the assets side, loans to non-financial sector had the largest share of 56.6%, which registered a decrease of 2.5 pp compared to 31.12.2022. Household loans have a slightly higher share (29.6%) compared to loans to non-financial corporations (26.6%)[4]. Analyzed by bank, household loans significantly prevails in six banks, while this is the case with corporate loans in two banks, four banks have similar share of loans to both sectors, while in one bank loans to domestic banks prevail. The following important assets segment are the liquid assets.

Chart 1
Structure of assets (left) and liabilities (right) of banks and the banking system as of 31.12.2023*
in %



Source: National Bank, based on the data submitted by banks.
* The order of banks is random.

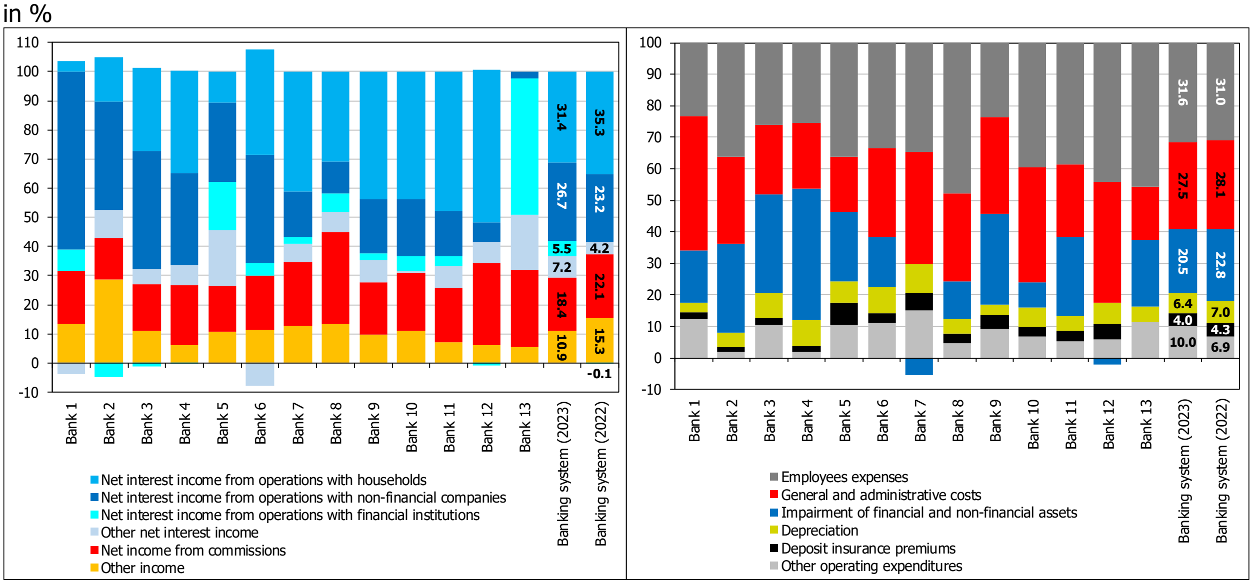
Net interest income prevails in the structure of total banks' income, which corresponds to the banks' traditional business model. Their share equals 70.7%, which is 8.1 pp more than in 2022. On the other hand, due to the increase in the share of this item, the share of net income from commissions, which is 18.4%, recorded a decrease of 3.7 pp, while other

[4] For the purposes of this analysis, loans are calculated on a net accounting basis (after impairment and accumulated depreciation).

incomes recorded a decrease of 4.4 pp and make up 10.9% of total revenues. Within the net interest income, the largest portion (31.4%) accounts for net interest income generated from households, while the income generated from enterprises accounts for 23.2%. The ratio of these two categories of net interest income with banks to certain extent corresponds with the ratio of loans share approved to these two groups of borrowers. Therefore, the net interest income based on working with households is significantly higher in six banks, net interest income from working with enterprises prevail in four banks, two banks have similar net interest income ratio with both bases, while in one bank the net interest income from working with financial institutions prevails in total income.

In the expenditures at the level of the banking system three items prevail. The share of employee expenses was the highest (31.6%), followed by general and administrative expenses (27.5%), and impairment of financial and non-financial assets (20.5%).

Chart 2
Structure of total income (left) and total expenditures (right) of banks and the banking system of 31.12.2023*
in %



Source: National Bank, based on the data submitted by banks.
* The order of banks is random.

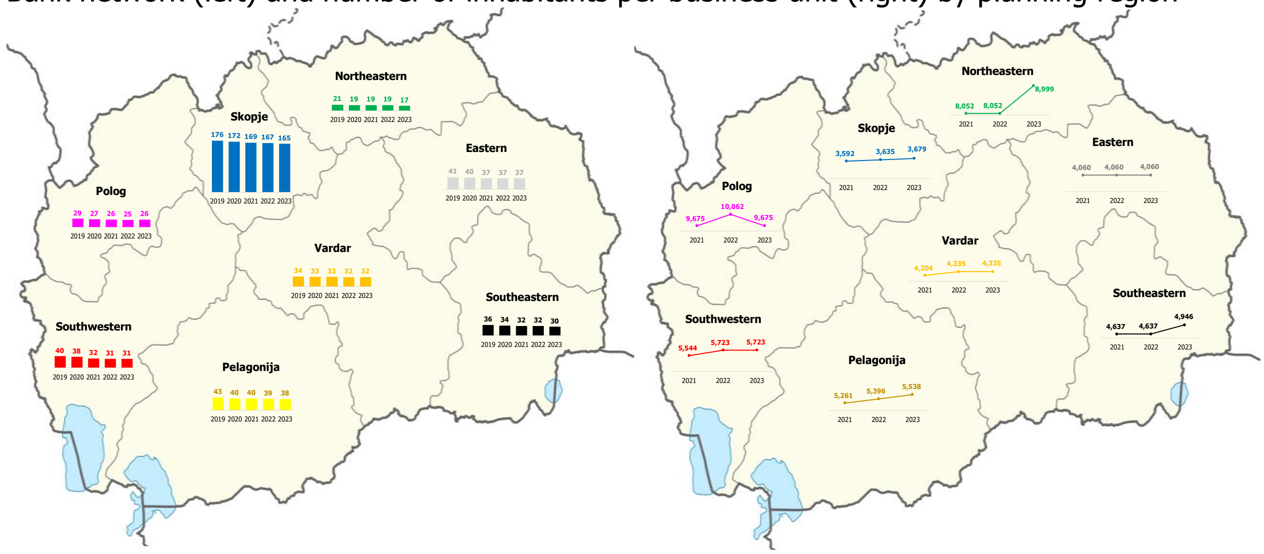
1.2. Number of banks and access to banking services

As of 31.12.2023 the Macedonian banking system consists of fifteen depository institutions, i.e. thirteen banks and two savings houses[5], without changes compared to the previous year.

[5] The share of savings houses in total assets of depository financial institutions (banks and savings banks) is 0.3%, in total loans of non-financial entities 0.4%, and of total household deposits 0.2%. Given the minor share of savings houses in the total banking system, they are subject to analysis only in the Reports on the Financial Stability of the Republic of North Macedonia, while the analysis in this report covering only the bank.

The banking network is spread across almost all cities in the country and consists of 376 business units[6]. The total number of business units continued to decline and decreased by 6 units compared to the previous year, which is an equal change in all planning regions in the country. Most of the business units (43.9%) are in the Skopje region, with the easiest physical access to banking services[7], while the most restricted access to banking services was registered in the Southeastern and the Polog Region. At the same time, a more pronounced deterioration of access to banking services has been registered in the Northeastern and Southeeastern Regions, while access in the Polog Region is improving compared to the previous year. However, it should be taken into consideration that the physical access is only one measure of the total access to banking services since banks offer on-line services, as well. The text in the box indicates that the share of payment accounts providing on-line banking services (insight into statements and/or payments) is growing, although the share of accounts that are actively used for these purposes has decreased.

Chart 3
Bank network (left) and number of inhabitants per business unit (right) by planning region



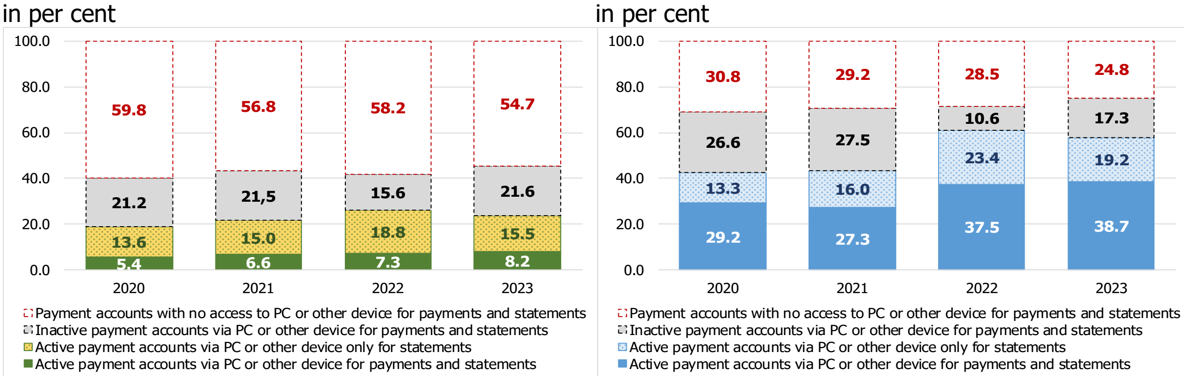
Source: National Bank, based on data submitted by banks and the State Statistical Office according to official data of the 2021 census.

An analysis of the prevalence of electronic banking
The application of digital technologies in the bank operations contributes to the expansion of the range of products and services and their greater availability to the bank customers. Such changes can probably be in relation with the dynamics of reducing the number of banks' business units. The purpose of this analysis is to indicate the prevalence of electronic banking and its distribution by region. At the same time, as a measure for electronic banking, active payment accounts were taken, which enable natural and legal entities to have insight into the statements and make payments.

[6] The number of business units includes the banks' windows and branches of the banks, including the banks' main office.
[7] The physical access to banking services is measured by the number of persons per business unit, whereby the higher amount indicates more restricted access, while the lower amount indicates easier access.

The number of active payment accounts via personal computer (PC) or other device for payments and statements of natural persons at the end of 2023 recorded a growth of 12.6% on an annual basis, which is a result of the increased number of accounts used for making payments, while previously used only for reviewing the statements. Analyzed by region, the annual growth rates of the number of active accounts of natural persons through PS or other device for payments and statements are similar everywhere and range from 11.1% in the Southwestern to 14.8% in the Southeastern Region. In the structure of the total payment accounts of natural persons, the share of accounts where there is no access via PS or another device for payments and statements decreases by 3.5 pp, but the level of 54.7% is still high.

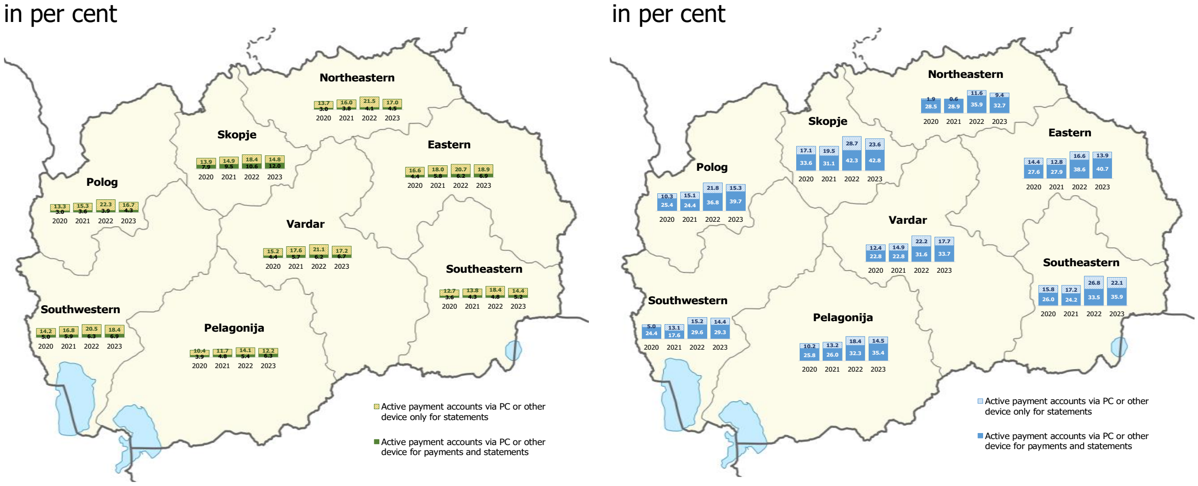
Chart 4
Payment accounts structure of natural person (left) and legal entities (right)
in per cent



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

An increase also occurs in the number of active payment accounts through PS or another device for payments and statements of legal entities, but at a lower annual growth rate of 6.3% at the end of 2023. The analysis of the annual change in the number of active accounts of legal entities through PS or another device for payments and statements indicates the highest growth in the Polog and Pelagonia Regions (by 13.3% and by 10.9%, respectively), while a decrease was observed in the Northeastern and Southwestern Regions (by 9.2% and by 2.0%, respectively). Compared to natural persons, the share of legal entities' payment accounts with no access via PS or another device payments and statements is almost twice as low, which during 2023 decreased further by 3.7 pp to the level of 24.8%.

Chart 5
Shares in the number of active payment accounts via PC or other device of natural persons (left) and legal entities (right)
in per cent | in per cent



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

A decrease in the share of the number of active payment accounts via PS or other device of natural persons in the total number of payment accounts at the end of 2023 has been registered in all regions. The most pronounced drop in share occurs in the Polog Region (21.0% on 31.12.2023 as opposed to 26.2% on 31.12.2022). The Skopje Region has the highest share of 26.8%, while the lowest participation of 18.5% has been recorded in the Pelagonia Region. Regarding the accounts used for payments in addition to reviewing statements, the differences are more noticeable and the Skopje Region stands out with a share of 12.0%, followed by the Southwestern and Eastern Regions with 6.9% each, and the share is the lowest in the Polog Region with 4.3%.

At the end of 2023, a decrease in the share of the number of active payment accounts via PS or another device has also been registered with the legal entities in all regions. At the same time, the largest decrease of 5.4 pp was registered in the Northeastern Region, the share of which of 42.1% is the lowest by region. On the other hand, the Skopje Region has the highest share with 66.4%. Among active payment accounts used for making payments in addition to viewing statements, the share by region ranges from 29.3% in the Southwestern to 42.8% in the Skopje Region.

1.3. Employment in the banking system

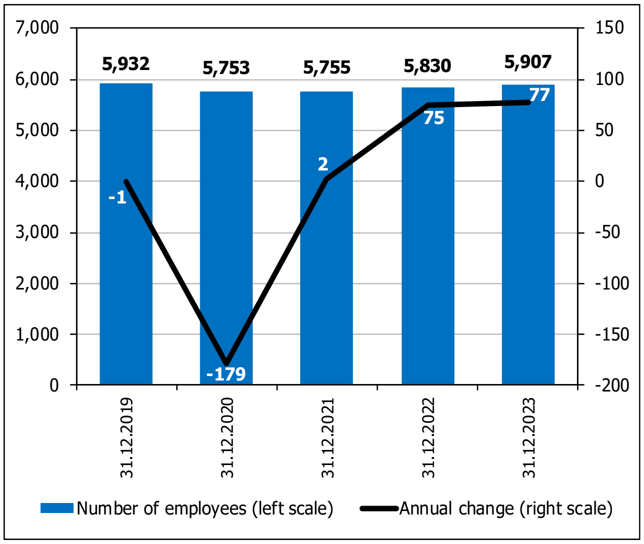
The number of employees in the banking system as of 31.12.2023 equaled 5,907 thus registering and increase of 77 individuals compared to the previous year. According to the level of education, the qualification structure of employees improved, thus the share of employees with at least university degree equaled 86.6%, which is higher by 0.7 pp annually.

Banking system productivity[8] has increased, due to the higher growth of the assets than the number of employees. All analyzed banks registered increased productivity,

[8]The productivity of the banking system is measured by the total assets per employee, with the higher amount indicating higher productivity, while the lower amount indicating lower productivity.

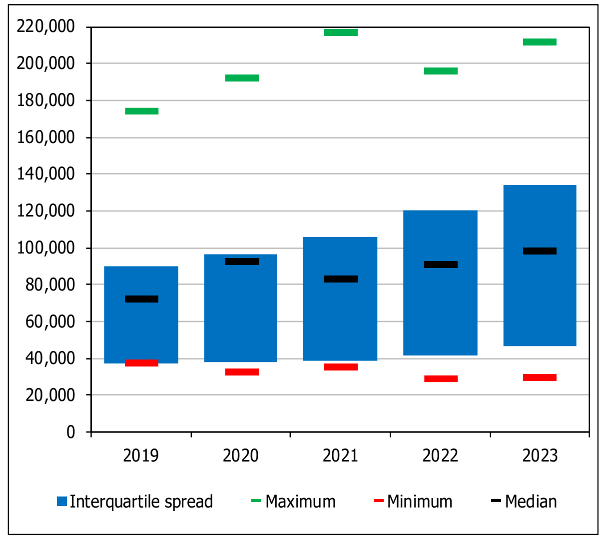
half of which registering double-digit growth rates. The differences in the productivity among banks remain significant and vary from Denar 29.4 million in the bank with the lowest productivity to Denar 211.6 million per employee in the bank with the highest productivity.

Chart 6
Number of banking system employees



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

Chart 7
Assets per employee*
in thousands of denars



Source: National Bank, based on the data submitted by banks.
*The DBNM is not included in the analysis due to the type of its operations.

1.4. Ownership structure and concentration of the banking system

Banks with dominant foreign ownership prevail in the structure of the major balance sheets items of the banking system in 2023. Nine out of thirteen banks are in predominant foreign ownership, five of which are subsidiaries of foreign banks. Foreign-owned banks have the most pronounced share in loans to non-financial entities (83.1%), which is increase of 1.1 pp compared to the previous year. As for the rest of the balance sheet items of the banking system, a more significant growth of 1.1 pp was recorded in capital and reserves, with a decrease of 1.5 pp being recorded in the share of the foreign-owned banks in the financial result.

Table 1
Structure of the number of banks and major balance sheet items by banks' majority ownership as of 31.12.2023
in millions of denars and in %

Type of ownership	Number of banks	Capital and reserves		Assets		Loans to non-financial sector		Deposits from non-financial sector		Total revenues		Financial result	
		Amount	In %	Amount	In %	Amount	In %	Amount	In %	Amount	In %	Amount	In %
Banks in dominant ownership of foreign shareholders	**9**	**72,137**	**77.6%**	**543,286**	**72.8%**	**366,043**	**83.1%**	**381,981**	**70.8%**	**27,115**	**76.2%**	**10,707**	**74.9%**
- subsidiaries of foreign banks	*5*	*63,305*	*68.1%*	*453,717*	*60.8%*	*310,604*	*70.5%*	*320,851*	*59.5%*	*23,000*	*64.6%*	*9,453*	*66.1%*
- Austria	1	10,808	11.6%	94,848	12.7%	67,398	15.3%	58,600	10.9%	3,692	10.4%	1,462	10.2%
- Bulgaria	1	1,307	1.4%	12,377	1.7%	7,511	1.7%	9,174	1.7%	455	1.3%	54	0.4%
- Greece	1	22,258	24.0%	131,762	17.6%	94,229	21.4%	99,235	18.4%	7,920	22.3%	3,470	24.3%
- Slovenia	1	13,546	14.6%	116,581	15.6%	77,824	17.7%	91,365	16.9%	6,067	17.0%	3,217	22.5%
- Turkey	1	15,386	16.6%	98,149	13.1%	63,643	14.4%	62,477	11.6%	4,866	13.7%	1,250	8.7%
- other banks in dominant foreign ownership	*4*	*8,832*	*9.5%*	*89,569*	*12.0%*	*55,439*	*12.6%*	*61,131*	*11.3%*	*4,115*	*11.6%*	*1,254*	*8.8%*
- Bulgaria	2	3,987	4.3%	31,075	4.2%	18,972	4.3%	21,412	4.0%	1,792	5.0%	482	3.4%
- Germany	1	4,019	4.3%	49,526	6.6%	31,103	7.1%	33,061	6.1%	1,858	5.2%	616	4.3%
- Switzerland	1	827	0.9%	8,968	1.2%	5,364	1.2%	6,658	1.2%	465	1.3%	156	1.1%
Banks in dominant ownership of domestic shareholders	**4**	**20,773**	**22.4%**	**203,454**	**27.2%**	**74,517**	**16.9%**	**157,621**	**29.2%**	**8,476**	**23.8%**	**3,588**	**25.1%**
- private ownership	*3*	*17,233*	*18.5%*	*184,980*	*24.8%*	*74,288*	*16.9%*	*157,621*	*29.2%*	*8,241*	*23.2%*	*3,497*	*24.5%*
- state ownership	*1*	*3,540*	*3.8%*	*18,473*	*2.5%*	*229*	*0.1%*	*0*	*0.0%*	*235*	*0.7%*	*92*	*0.6%*
Total:	**13**	**92,910**	**100.0%**	**746,739**	**100.0%**	**440,560**	**100.0%**	**539,602**	**100.0%**	**35,590**	**100.0%**	**14,296**	**100.0%**

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

Financial institutions prevail in the ownership structure of banks by closely two thirds (65.7%). Their share in the capital and the reserves of the banking system as of 31.12.2023 increased by 1.3 pp. This increase is due to the reduced share of the non-financial legal entities by 0.5 pp, natural persons by 0.4 pp and the government sector by 0.3 pp.

At the end of 2023, the cumulative share of the foreign shareholders in the capital and reserves of the banking system equaled 73.5%, which is by 1.1 pp higher compared to the end of 2022. Most of the shareholders come from the EU (55.5%). By country, the largest share in the total capital and reserves accounts for Greece (22.1%), Türkiye (16.5%), Slovenia (12.8%) and Austria (11.3%).

Chart 8
Ownership structure of capital and reserves of the banking system
in %

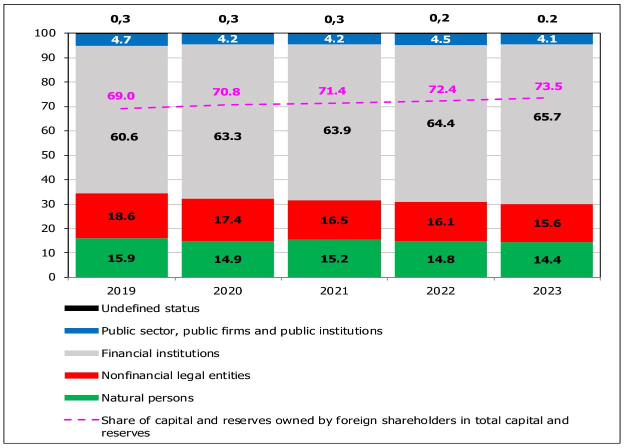
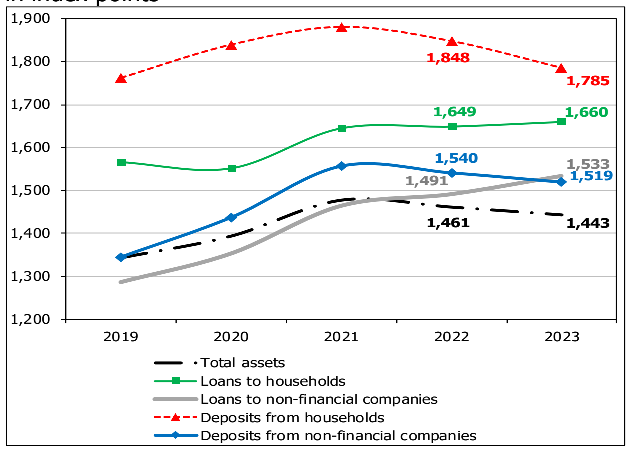


Chart 9
Herfindahl index
in index points



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

The bank activities in 2023 were more concentrated in lending, as opposed to the reduced concentration in deposits and total assets. Regarding household deposits, the value of this index reduced **within acceptable values**[9] of the Herfindahl index [10], which include all other activity categories.

The concentration indicators in the banking system point to slight annual changes in the three and the five largest banks. The decrease in the share of the three largest banks in total assets and banking activities with households is more pronounced, as well as in the financial result and total income, and e increase in the share of the five largest banks in lending activity.

Table 2
Indicators of concentration of major balance sheet positions in the three and the five largest banks
in %

Position	31.12.2023		31.12.2022	
	CR3	**CR5**	**CR3**	**CR5**
Total assets	55.2	81.0	56.5	81.5
Loans to households	62.0	84.1	61.3	83.6
Loans to non-financial companies	52.8	82.3	51.7	81.0
Deposits from households	68.0	85.5	70.1	86.1
Deposits from non-financial companies	54.6	81.5	54.4	83.2
Financial result	71.8	90.8	72.6	91.0
Total revenues	59.2	83.2	60.4	82.6

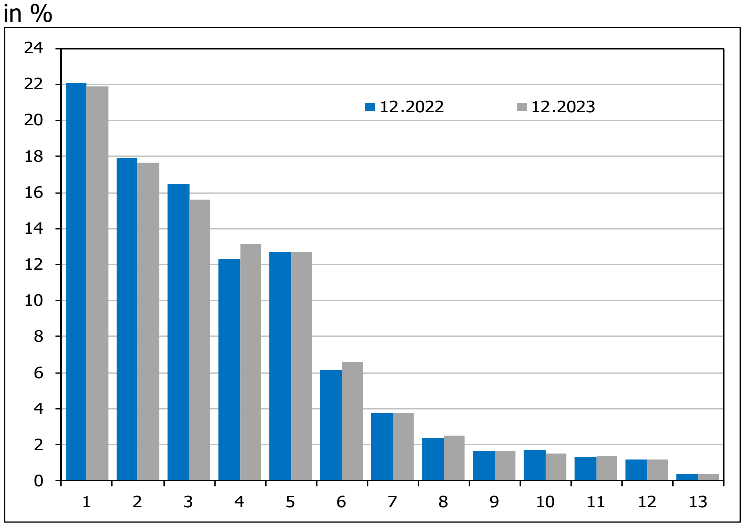
Source: National Bank, based on the data submitted by banks.

[9] The level of concentration is considered acceptable when the index ranges from 1,000 to 1,800 points.

[10] The Herfindahl index is calculated according to the formula $HI = \sum_{j=1}^{n} (S_j)^2$, where S is the share of each bank in the total amount of the analyzed category (e.g., total assets, etc.), where n denotes the total number of banks in the system.

The difference between individual banks by the asset volume will remain substantial. The spread between the bank with the highest (21.9%) and the bank with the lowest share (0.4%) in the total assets of the banking system remained almost unchanged compared to 2022. The five largest banks with cumulative share of 81% are the only ones with double digit share in total assets, while the five smallest banks have individual market share below 2%, while their cumulative share equals 6.1%.

Chart 10
Share of individual banks in the total assets of the banking system
in %



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

III. Bank risks

"Heat" map outlining the stability of the Macedonian banking system

Indicators on banking system risk exposures	Last 10 years (1.1.2014 - 31.12.2023)*						Last 5 years (1.1.2019 - 31.12.2023)**				
	31.12.2022	31.3.2023	30.6.2023	30.9.2023	31.12.2023		31.12.2022	31.3.2023	30.6.2023	30.9.2023	31.12.2023
Insolvency risk											
Capital and reserves / assets											
Capital adequacy ratio											
Tier 1 ratio											
Net-NPLs (non-financial sector) / regulatory capita											
Credit risk											
Default rate of credit exposure to non-financial sector											
Restructured and prolonged loans to non-financial companies and households / loans to households and non-financial companies											
Non-performing loans / total / total loans (non-financial sector)											
NPL coverage ratio											
Impairment losses (balance-sheet) / total credit exposure											
Impairment losses (income statement) / total loans to non-financial sector											
Liquidity risk											
Liquid assets / total assets											
Liquid assets / short-term liabilities											
Loans / deposits											
Liaquid assets / household deposits											
Market risks and indirect credit risk											
Open FX position / regulatory capital											
Net weighted position / regulatory capital											
Loans with currency component / total loans											
Loans with variable and adjustable interest rates / total loans											
Profitability											
ROAA											
Net-interest income / average assets											
Operating expenses / total income											
Impairment losses (income statement) / net-interest income											

Legend (percentile ranks):

0-10 percentiles		Historically high level of risk - the realized level of risk is among the 10% worst realized levels in the last 5/10 years
10-20 percentiles		Realized level of risk is between 10% and 20% worst realized levels in the last 5/10 years
20-40 percentiles		Realized level of risk is between 20% and 40% worst realized levels in the last 5/10 years
40-60 percentiles		Realized level of risk is between 40% and 60% worst (best) realized levels in the last 5/10 years
60-80 percentiles		Realized level of risk is between 20% and 40% best realized levels in the last 5/10 years
80-90 percentiles		Realized level of risk is between 10% and 20% best realized levels in the last 5/10 years
90-100 percentiles		Historically low level of risk - the realized level of risk is among the 10% best realized levels in the last 5/10 years

* The affiliation to the percentile range is determined on the basis of quarterly data set for the indicators in the last 10 years (from 1.1.2014 to 31.12.2023).
**The affiliation to the percentile range is determined on the basis of quarterly data set for the indicators in the last 5 years (from 1.1.2019 to 31.12.2023).

The banking system stability heat map includes five components: insolvency risk, credit risk, liquidity risk, market risks and profitability. For each component, a sum of the normalized values of selected indicators is calculated, by using the method of a so-called empirical normalization on quarterly data set covering the last ten (1.1.2014 - 31.12.2023) and the last five years (1.1.2019 - 31.12.2023). Afterwards, taking into account the calculated aggregate values for each component, its affiliation to appropriate percentile range has been determined (seven percentile ranges are introduced), for each date. Each percentile rank has its own color, and the spectrum of colors varies from green (that, in historical sense, corresponds to lower levels of risk) to red (that, in historical sense, corresponds to higher levels of risk). The preparation of the presented "heat" maps takes into account 22 indicators, arranged by component:

The "heat" map indicators are analyzed in a historical context, i.e. the colors for each indicator on a given date are determined comparatively, taking into account the movement of the indicator in the past 5 or 10 years. The red shades of certain indicators should not be interpreted relative to the present significant vulnerability of the system which can cause systemic instability, but only that these indicators of certain quarterly dates from 2023 reached levels that are slightly weaker compared to the movements in the last 5 or 10 years.

The banking system solvency improved also in 2023 and reached its historic high. Thus, at certain quarterly dates from 2023, all analyzed indicators of insolvency risk reached the historical peak levels analyzed for the last five and ten years, and at the end of the year, almost all indicators of this risk are in the "green zone".

Liquidity risk indicators improved in 2023 and at the end of the year, almost all indicators are in the "green zone". After the reduction of liquid assets in 2022 and the first quarter of 2023, the deposit activity intensified, which, given the loan growth slowdown, enabled a more significant increase in liquid assets in 2023 and improvement of liquidity risk indicators.

Credit risk exposure indicators remained at a low historical level and almost ended the year in the *green zone*. At the end of 2023, the indicator of the share of non-performing loans in total loans dropped to the historically lowest level, similar to the indicator of the average riskiness of credit exposure.

Among the indicators of market risks and indirect credit risk, only the share of the open foreign currency position in own funds recorded an annual increase and as of 31.12.023 it is in the "red zone". Despite the increase, the level of this indicator is significantly below the prescribed limit. The other indicators of this component improved on an annual basis or remained at a relatively similar level as on 31.12.2022.

Profitability indicators are at a historically high level, analyzed for the last five and ten years. Thus, all indicators of this component are in the "green zone", on the particular quarterly dates of 2023.

Further in the Report, the movements of the indicators for the exposure of the individual risks are explained in detail.

1. Credit risk

In 2023, despite the vague environment and the tightening of financial conditions, the credit portfolio quality of the Macedonian banking system remains solid. Non-performing loans remained almost unchanged on an annual basis, that is, they grew by only 0.2%. At the same time, the banks continue to provide credit support, but twice as slowly as compared to the previous year, with the rate of non-performing loans reducing to the historically lowest level of 2.8%. By sector, the non-performing household loans have been increasing, although the rate of the non-performing loans remains stable (1.9% as of 31.12.2023). In the same period, the non-performing corporate loans recorded a decline (which is more noticeable in the activities of "wholesale and retail trade" and "transport and storage"), thus reducing their share in total loans at the end of 2023 to the level of 3.7%. In addition to the stable level of non-performing loans, the relatively high coverage of these loans with impairment for anticipated credit losses has been maintained. In fact, the non-provisioned part of the non-performing loans occupies only 3.8% of own funds and a quarter of the realized profit for 2023, which limits the potential risks for the solvency of the banking system in the event of the assumed total default of non-performing loans.

In the rest of the analyzed credit portfolio aspects, no significant signs of quality deterioration have been observed. Transition rates from risk category "A" to risk categories "B" and "C with regular status" decreased in 2023. A slight annual deterioration is observed in the share of regular credits where there is a delay of at least one overdue contractual obligation in the total regular credits of non-financial entities, which reached a level of 8%, against 7.7% at the end of 2022. Prolonged and restructured loans, which are mainly part of the corporate credit portfolio, have registered a growth slowdown and decrease, respectively, and do not represent a significant source of risk of more pronounced deterioration in the credit portfolio quality of the domestic banking system, due to their relatively low share in total loans (4.1% and 1.9%, respectively as of 31.12.2023). At the end, the results of the credit risk stress-test simulations indicate satisfactory resilience of the banking system to relatively extreme deteriorations of the credit portfolio risk. However, as a result of the risks related to the uncertain and changing environment, as well as the maintenance of tight monetary policy and worsening global financial conditions, banks should remain vigilant in determining the expected credit losses and in general, in managing the credit risk.

From 1.7.2023, the application of macroprudential measures for the quality of natural persons' credit demand began, which limited the amount of the DSTI indicators[11] (to 55% when approving a loan in denars and 50% when approving a loan with a foreign currency component) and LTV[12](85 % when approving a loan secured by real estate). The undertaken measures affect the natural persons' credit demand quality, aimed at preventing excessive debt of individual natural persons in conditions of increase in the price level and interest rate growth. These measures prevent accumulation of systemic risks in the household segment, which could be materialized in form of loan

[11]TDTI indicates the ratio between repayment of liabilities based on loans and natural persons' income on a monthly basis.
[12]LTV indicates the credit exposure to borrower-to-value of real estate pledged.

losses with the banks. The bank data show that the level of the applied amount of DSTI and LTV indicators is relatively prudent and as of 31.12.2023 they are 34.3% and 67%, on average, respectively.

Since the beginning of 2024, new Decision on the methodology for credit risk management[13] has entered into force, which makes further harmonization with the new regulatory requirements that are applied in the European Union, and contribute to further strengthening of the stability of the banking system. The Decision prescribes a new method of determining the non-performing credit exposures, strengthens the criteria for monitoring and control of the quality of the banks' credit portfolio and improves the rules for credit exposure restructuring. The methodological changes in determining the non-performing loans[14] will contribute to their growth, at least in the initial period after the implementation of the Decision, which is rather an effect of the different approach in determining the non-performing status (counting the days of delay), than of the changed creditworthiness of the customers. That is why it is important for borrowers to be aware of these regulatory changes, in order to be orderly in servicing their liabilities and not to make their borrowing from the banks more difficult in the future.

1.1. Materialization of credit risk in banks' balance sheets

In 2023, total non-performing loans to non-financial sector increased minimally by 0.2% (or by Denar 27 million)[15], as opposed to the decline in the previous year. Moreover, most of the banks registered an annual increase in non-performing loans. In addition to such slight annual movements in the level of the non-performing loans, **it is necessary to constantly and carefully monitor the creditworthiness of customers, especially those who are currently highly indebted and are more sensitive to changes in the environment.**

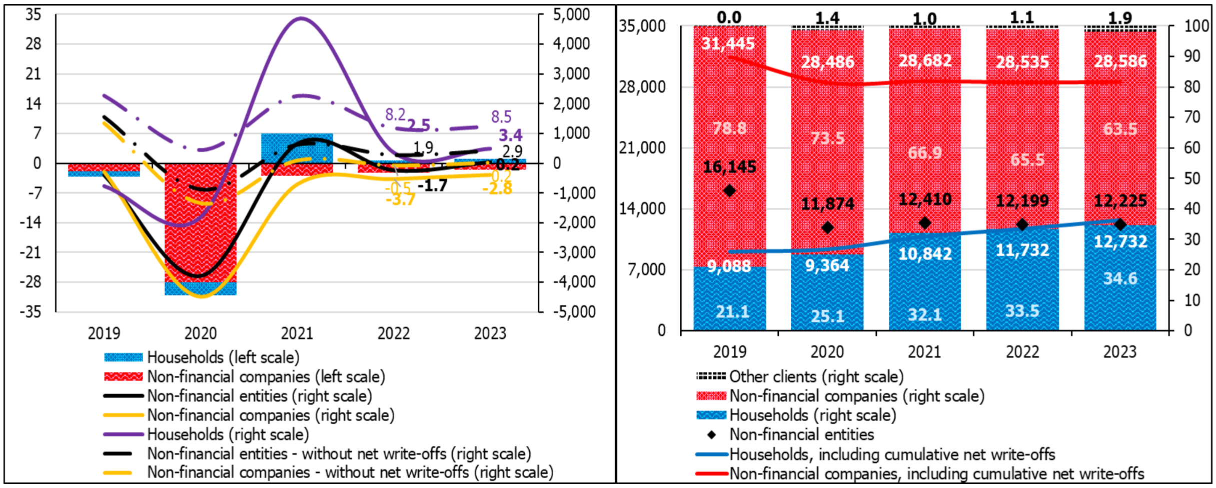
[13] Available at: https://www.nbrm.mk/content/Regulativa/Odluka_metodologija_%20za_krediten_rizik_nova.pdf

[14] The first single effect in January 2024 is increase in the non-performing loans by about 12% on both, annual and monthly basis.

[15] Isolating the effect of net write-offs, non-performing loans to non-financial sector registered a growth of 2.9% (or by Denar 1,158 million).

The term *mandatory write-offs* refers to the amount of write-offs reduced by the collection of previous write-offs. In accordance with the regulation as of mid-2019, each bank has been required to write-off credit exposures where twelve months have passed from the date when the bank was obliged to make full impairment, or allocate special reserve. In the period from 2016 to 1 July 2019, banks were required to write-off credit exposures where twenty-four months have passed from the date when there was an obligation for full impairment, or allocation of special reserve.

Chart 11
Annual growth of non-performing loans of non-financial entities (left) and amount and sectoral structure of non-performing loans (right)
in millions of denars and in %

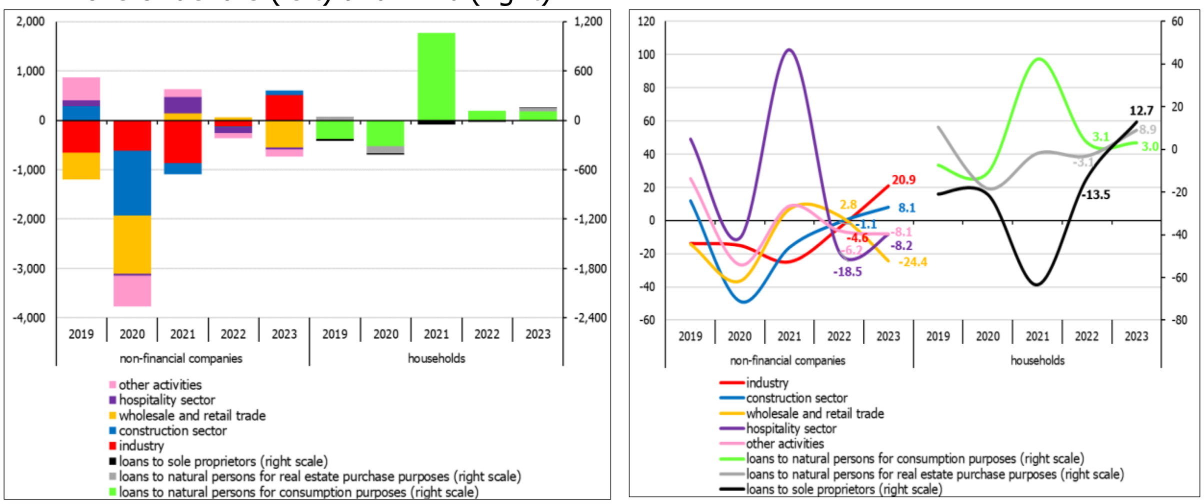


Source: The National Bank and the Credit Registry based on data submitted by banks.
Note: Dashed lines present the non-performing loans by excluding the effect of all mandatory write-offs. Starting from December 2019, the data also contains the collected compulsorily written-off loans.

For a third consecutive year, certain increase in the non-performing loan portfolio of households was recorded. The growth of non-performing loans to households is similar to the previous year and equals about Denar 140 million (i.e. 3.4%)[16] and almost entirely stems from non-performing loans to natural person for consumption financing[17]. Also, non-performing loans to natural person for financing the purchase of residential and commercial properties increased by 8.9% (or Denar 34 million) in 2023, with an increase in non-performing loans to retailers (by around Denar 3 million).

[16] If the effect of mandatory net write-offs is excluded, the non-performing household loans record an annual growth of 8.5%, which is slightly higher compared to the previous year (8.2%).
[17]Non-performing loans for consumption financing increased by 3%, or by Denar 111 million. This resulted mainly of the growth of non-performing consumer loans, which increased by Denar 117 million, given a small growth of Denar 18 million in other credit products (car and other loans), while the non-performing loans in allowed overdrafts on payment accounts and loans based on credit cards decreased by Denar 24 million.

Chart 12
Distribution of the annual absolute growth (left) and relative growth (right) of non-performing loans to non-financial corporations by selected activities, and to households by credit products
in millions of denars (left) and in % (right)



Source: National Bank's Credit Registry, based on data submitted by banks.
Note: The term "construction sector" includes construction, and real estate activities, the term "catering", refers to accommodation facilities and food services activities, while the term "loans to natural persons for financing consumption", refers to consumer loans, overdrafts, credit cards, car loans and other loans to natural persons. The term "consumer financing loans" includes consumer loans, car loans, overdrafts on payment accounts and loans based on credit cards and other loans.

As opposed to households sector, the non-performing loans to corporate sector[18] in 2023 decreased by 2.8%, i.e. by Denar 220 million.[19]. Most of the economic activities registered a decrease in the non-performing loans, with the exception of the activity "industry", "construction" and "agriculture", with the largest driver for the annual decline being the "wholesale and retail trade" activity (Denar 549 million, or by 24.4%) and "transport and storage" (Denar 209 million, or by 33%).

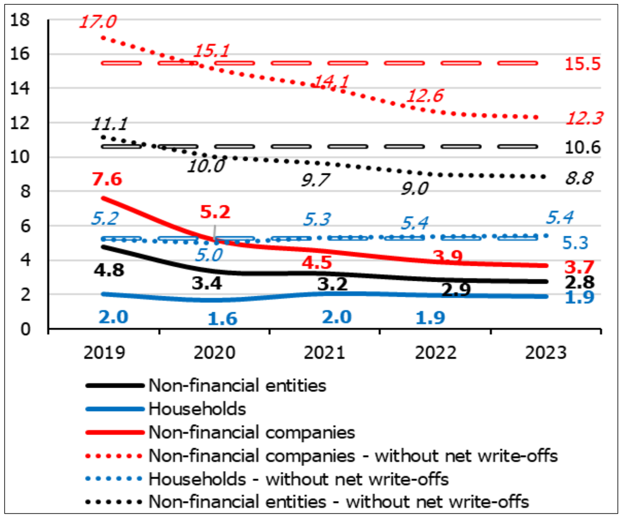
The mandatory write-offs of the non-performing loans also affected the movements of these loans in 2023. In 2023, mandatory write-offs in the amount of Denar 1,906 million were made, which is very similar to last year (Denar 1,951 million), thus practically writing off 15.6% of the non-performing loans at the end of 2022. By sector, for the second year in a row, the banks write off the households' non-performing loans more than to the non-financial corporations (57.8% share in total mandatory write-offs).

The collection of non-performing loans by the means of foreclosure had a significant role in the prevention of substantial growth of the non-performing loans in 2023. Namely, in the last quarter of the year, a significant amount of claims on a major client

[18] Despite the reduction, the corporate non-performing loans still dominate the total non-performing portfolio with a share of 63.5% at the end of 2023 (65.5% in 2022).
[19] If exclude the effect of the mandatory net write-offs, non-performing corporate loans will register minimal annual increase of 0.2%.

received a non-performing status[20] and was subsequently closed by foreclosure. The amount of foreclosed assets during 2023 (Denar 3,680 million) accounted for 28.4% of the non-performing exposure at the end of 2022, which is much more compared to last year (when it equaled 3.3% of non-performing exposure at the end of 2021).

Chart 13
Rate of non-performing loans to non-financial entities and by sector
in %

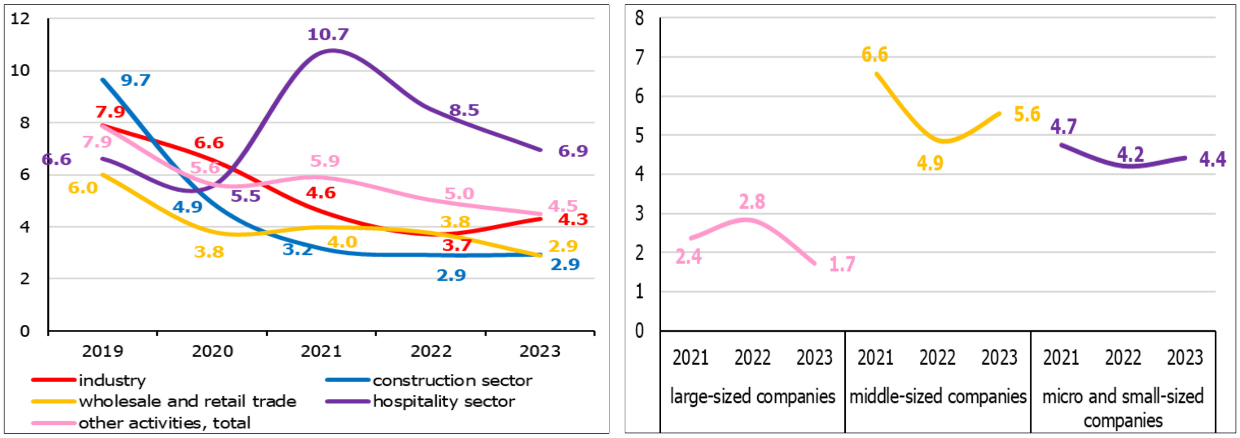


Source: National Bank's Credit Registry, based on data submitted by banks.
Note: The dashed lines show the ten-year averages of the non-performing loans rate (left) and the rate of non-performing exposure (right), calculated by excluding the cumulative effect of all mandatory write-offs and the cumulative collection of previous write-offs (starting from December 2019). Ten-year averages are calculated using quarterly data set.

The minimal growth in non-performing loans in 2023, amid further, but slower increase in the bank activities compared to the previous year[21], led to reduced rate of non-performing loans to the record low of 2.8%, which is lower by 0.1 pp compared to 2022. The rate of non-performing loans also decrease if we exclude the effect of the mandatory net write-offs (8.8% at the end of 2023 and 9% in 2022), which is a record low compared to the rates registered in the last ten years and is below its ten-year average of 10.6%.

[20] In case it was not collected, this new non-performing loan would have increased the corporate sector's non-performing loan ratio by just over 1 pp.
[21]Total loans of the non-financial entities increased by 4.3% annually (10.1% in 2022).

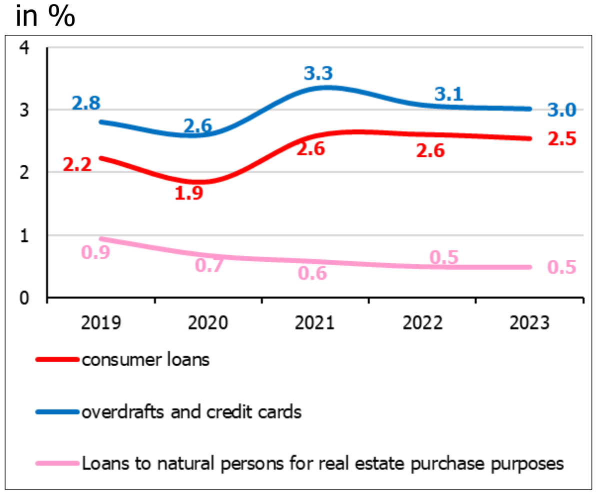
Chart 14
Rate of non-performing loans of non-financial corporations, by activity (left) and by size of borrowers (right)
in %



Source: National Bank's Credit Registry and the National Bank data submitted by banks, upon special request of the National Bank.

Observed by sector, decline in the rate of non-performing loans in 2023 was recorded only with the corporate sector, by 0.2 pp (from 3.9% to 3.7%).[22]. The decrease in the non-performing loans rate was registered in most of the important prevailing activities of the non-financial corporations, except industry, which increased moderately to 4.3% (3.7% in 2022). From the aspect of the size of the non-financial corporations[23], in 2023, the rate of non-performing loans registered a decrease with large companies, as opposed to increase in medium-size, small-size and micro enterprises.

Chart 15
Rate of non-performing loans by credit product to natural persons
in %



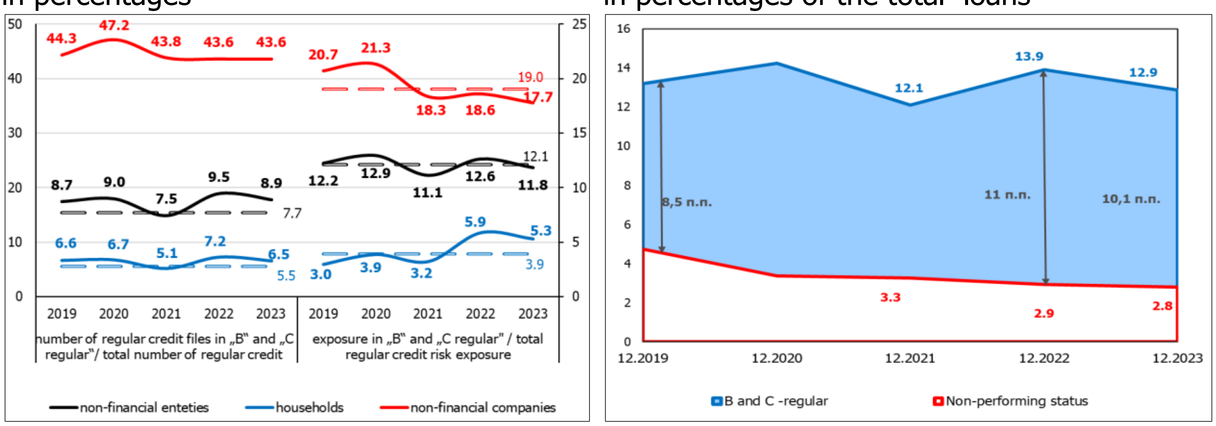
Source: National Bank's Credit Registry, based on data submitted by banks.

[22] If exclude the effect of the mandatory net write-offs, the rate of non-performing loans in this sector also decreasec and it equals 12.3%, which is below its ten-year average (15.5%).
[23] The criteria for classification of entities into large, medium, small and micro traders are defined in Article 470 of the Law on Trade Companies.

Unlike the corporate sector, the rate of the non-performing loans of households sector remained unchanged on an annual basis and equaled 1.9% at the end of 2023[24]. This indicator decreased in most credit products, with the lowest rate of non-performing loans still being registered in loans for purchase of real estate.

The analysis of the exposure to credit risk, in addition to the trends of the non-performing loans encompass several aspects of the credit portfolio, which in 2023 mainly, do not provide a basis for a significant deterioration in its quality in the future. Thus, useful early warning indicators, in relation to the credit risk, are the indicators that the banks use to monitor the assessed level of risk within the credit exposure with regular status. In 2023, the share of regular status exposure that has a lower credit quality[25] (classified in risk categories "B" and "C regular") in the total regular credit exposure to non-financial entities decreased from 12.6% to 11.8%, which is registered in both sectors (the participation in exposure to the household sector decreased by 0.6 pp, and in non-financial companies by 0.9 pp). However, this indicator in the households portfolio is still higher than its average for the last ten years.

Chart 16
Early warning indicators for the level of risk within the regular credit exposure of banks to non-financial entities (left) and the gap between regular loans in risk categories "B" and "C" and non-performing loans*, shown by their share in total loans (right)
in percentages
in percentages of the total loans

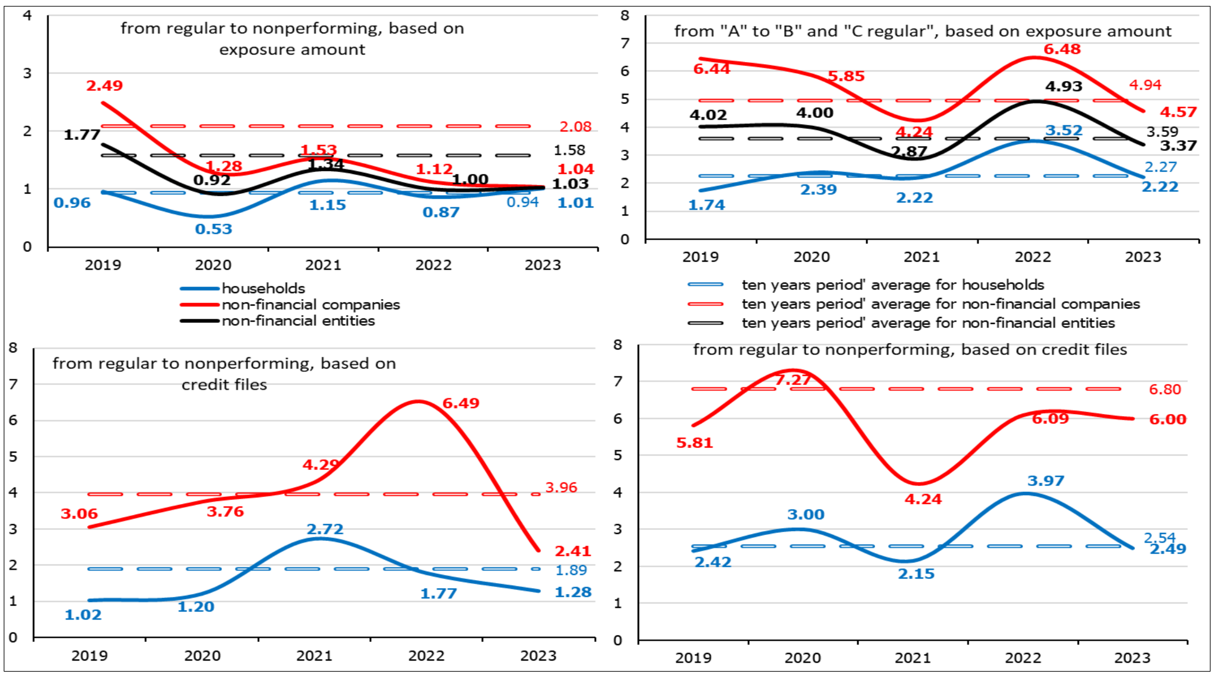


Source: National Bank's Credit Registry, based on data submitted by banks.
Note: The dashed line represents the ten-year average of the indicators calculated using quarterly data
*Regular loans classified in B and C risk categories and non-performing loans, are approximation of the so-called group 2 and 3 loans according to IFRS 9, respectively.

[24] When exclude the effect of the mandatory write-offs, the rate of the non-performing loans to households equals 5.4%, which is almost equal to its ten-year average.
[25]Credit risk exposures which according to the regulations are classified in the risk categories *B and C regular,* can be considered as approximation of exposures which in compliance with IFRS 9-financial instruments are included in the so-called group 2 of financial assets which are considered to have deteriorated credit quality, after initially recognizing the accounting records, but have no objective signs of impairment and inclusion in the so-called group 3 of financial assets yet.

The annual migration rates within the regular credit exposure also registered a decrease in 2023.[26]. The migration rates within the regular credit exposure (transition from risk category A to categories B and C-regular) in 2023 went down and were below their ten-year average. This shows that, within the regular loan portfolio, banks have registered credit risk reduction, i.e. they have estimated that there is a certain improvement in the creditworthiness of credit agreements that form the preforming credit exposure after the exposure was approved. Also the annual migration rates from regular to non-performing exposure are mostly below their ten-year average. The only exception to this is the migration rate from regular to non-performing exposure among households, which in 2023 recorded growth, which slowed down and is minimally above its ten-year average.

Chart 17
Annual trasition rates
in %



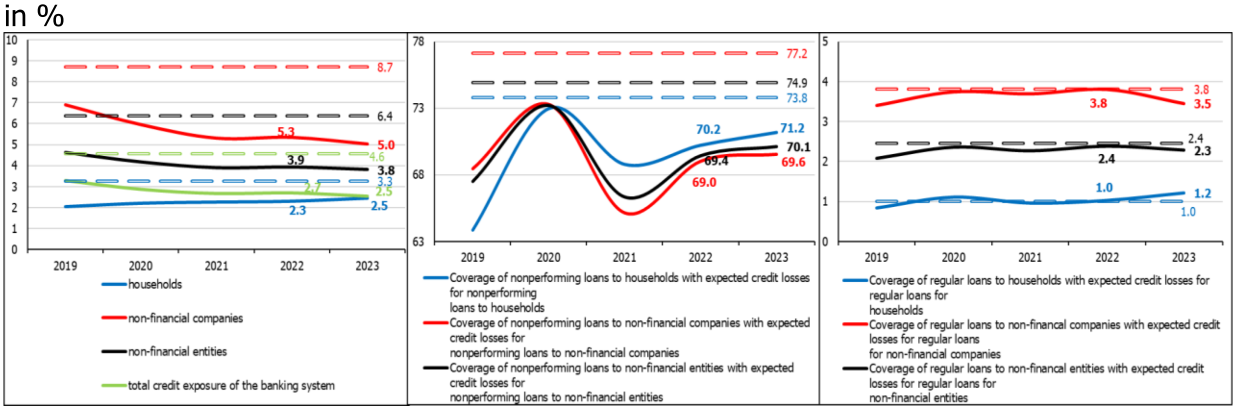
Source: National Bank's Credit Registry, based on data submitted by banks.
Note: The dashed lines represent the ten-year average of the migration rate which is calculated on the basis of the quarterly frequency of the relevant annual migration rates . The calculation of the migration rates by number of agreements does not show the rates of total non-financial entities, since they are almost identical to the migration rates of households, which is due to the predominant share of this sector in the total number of credit agreements in the banking system (93.7% at the end of 2023, i.e. 93.4% at the end of 2022).

[26]The annual migration rates are calculated by the amount of exposure and number of credit agreement at the end of each year for the following calendar year, as follows: from regular to non-performing status and from risk category "A" to risk categories "B" and "C with regular status". Migration rates can be considered as a type of approximation for default rates.

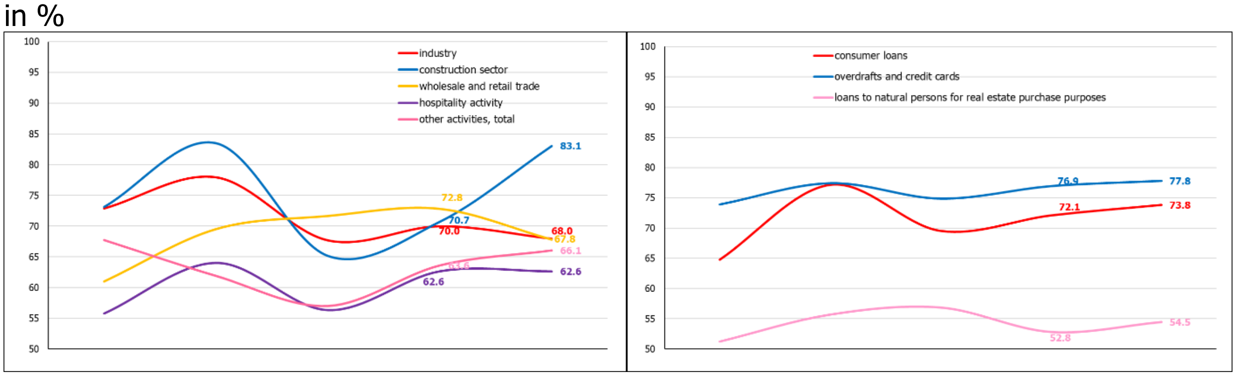
The banks maintain high coverage of non-performing loans with allocated impairment. Namely, 70.1% of the gross amount of non-performing loans are covered by impairment, which is an increase of 0.7 pp compared to the previous year.

Banks maintained almost the same coverage of total regular loans with impairment. Thus, at the end of 2023, the expected credit losses determined for regular loans of non-financial entities are at the level of 2.3%, which is less by 0.1 pp compared to the end of 2022. This decrease results entirely from the corporate sector, while a small increase in expected credit losses is observed for households, both for regular and non-performing loans. Banks continue to identify higher risks from the corporate sector as the expected credit losses for regular loans to non-financial corporations are more than three times higher than for households, both for the end of 2023 and for the average of the past ten years. Analyzed by activity, the expected credit losses (as a percentage of regular loans) at the end of 2023 are the highest for the regular loans for the construction sector (4.2%), and the lowest for "wholesale and retail trade" (2, 9%), while the largest annual fall (by 2.7 pp) in expected credit losses is observed in the hospitality industry. In household credit products, expected credit losses have increased within regular consumer loans and overdrafts and credit cards, while coverage with housing loan write-offs is the lowest (these loans tend to be of the best quality) and has not changed.

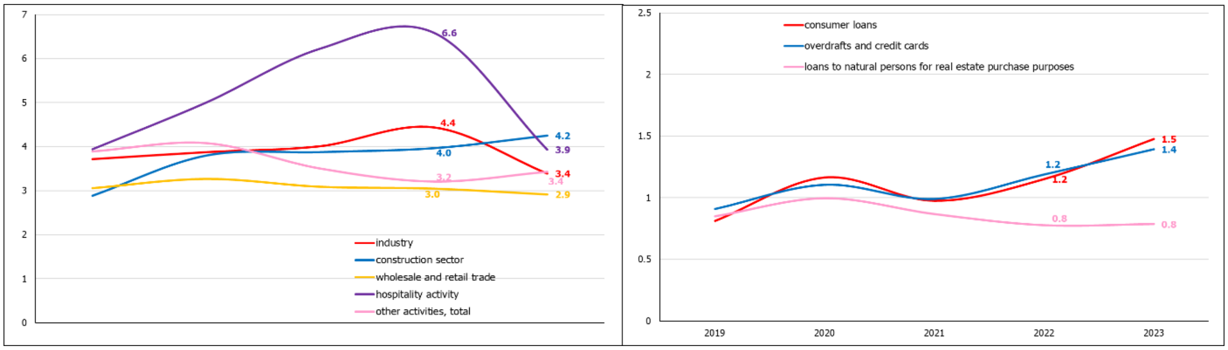
Chart 18
Expected credit loses::
- by sector for the total (left), non-performing (middle) and regular loans (right)
in %



- for the non-performing loans for selected activities of the non-financial corporations (left) and credit product with households (right)
in %



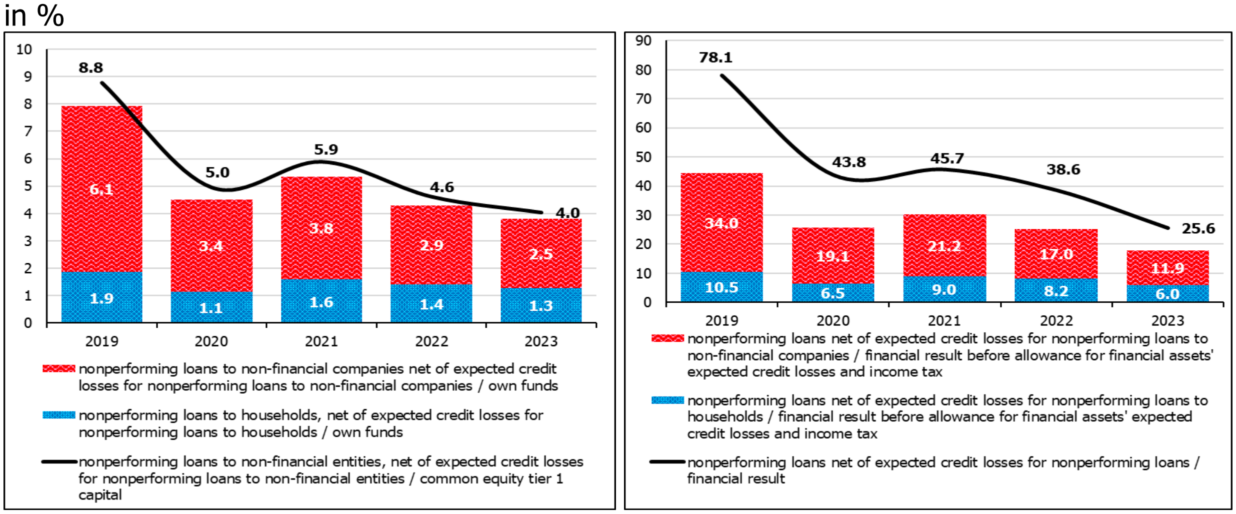
- for the regular loans for selected activities of the non-financial corporations (left) and credit product with households (right)
in %



Source: National Bank's Credit Registry, based on data submitted by banks. Note: The dashed lines in the charts on the left are the ten-year average of the coverage of non-performing and regular impaired loans, calculated based on the annual frequency of the data.

The high coverage of non-performing loans with impairment reduces the banks solvency risks in case of assumed full default of these loans. Namely, the non-provisioned amount of non-performing loans, i.e. the volume of unexpected credit losses on this basis is low and has a limited impact on the solvency of the domestic banking system, as it occupies only 3.8% of own funds and 4% of the regular basic capital at the banking system (compared to last year they improved by 0.5 and 0.6 pp, respectively). In addition, the possible additional cost of fully covering non-performing loans with impairment would only take one fourth of the realized profit for 2023. This means that even in the case of such an extreme assumption of full provisioning of the current level of non-performing loans, the solvency and profitability of the banking system would not be jeopardized, i.e. the stability of the banking system would not be threatened.

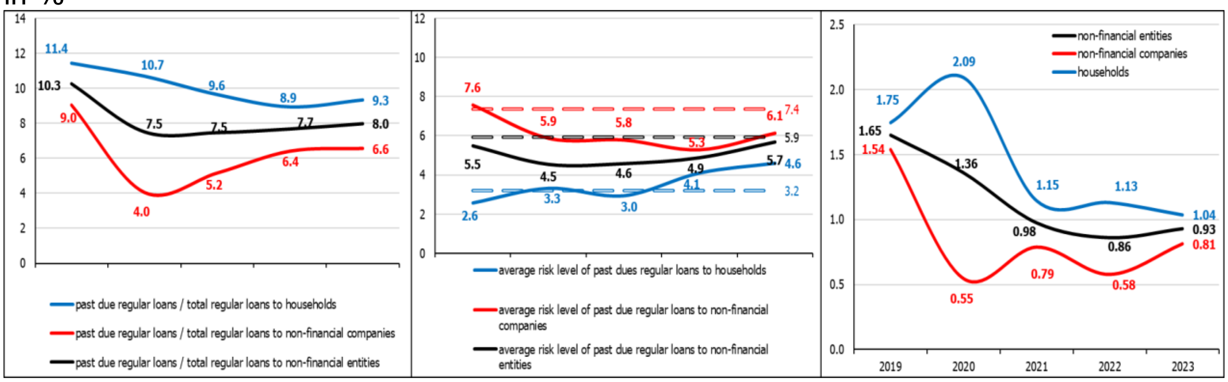
Chart 19
Relative importance of the part of non-performing loans that is not covered by impairment relative to own funds and common equity Tier 1 capital (left) and financial result (right)
in %



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

Another indicator of the quality of the banks' credit portfolio is the share of loans with at least one overdue contractual liability. This indicator shows the possibility for credit quality deterioration in the short term. Loans where the delay is longer than 31 days[27] and up to 90 days constitute only 0.9% of regular loans. The banks ensure better coverage of these loans with impairment compared to the total regular credit portfolio.

Chart 20 Relative importance of overdue regular loans (left), average riskiness of overdue regular loans (middle) and share of overdue regular loans over 31 days in total regular loans (right)
in %



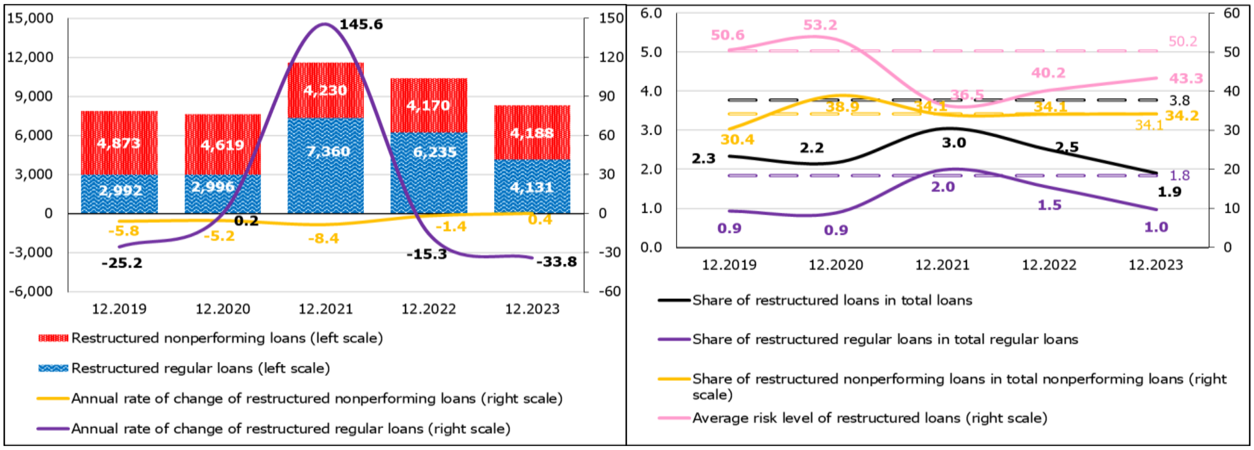
Source: National Bank's Credit Registry, based on data submitted by banks. Note: The dashed line represents the ten-year average level of risk calculated using annual frequency of data

Another segment of the credit portfolio that imposes a need for more careful monitoring is restructured loans, because restructuring is usually performed on claims from customers with deteriorated financial standing and need to adjust their credit burden. After the initial high growth of restructuring in the pandemic 2021, in 2023, restructured regular loans decreased significantly (down by 33.8%), while restructured non-performing loans increased slightly (increase of 0.4%). Analyzed by sector, non-financial corporations have the largest share in the structure of the restructured credit portfolio with 92.8%[28].

[27] The loans with a delay of more than 31 days can be the main source of the future growth of non-performing loans (if this delay continues), considering that loans with a delay of more than 90 days are classified as non-performing loans.

[28] As of 31.12.2023, the share of restructured loans in credit portfolios of non-financial legal entities and households was 3.6% and 0.3%, respectively.

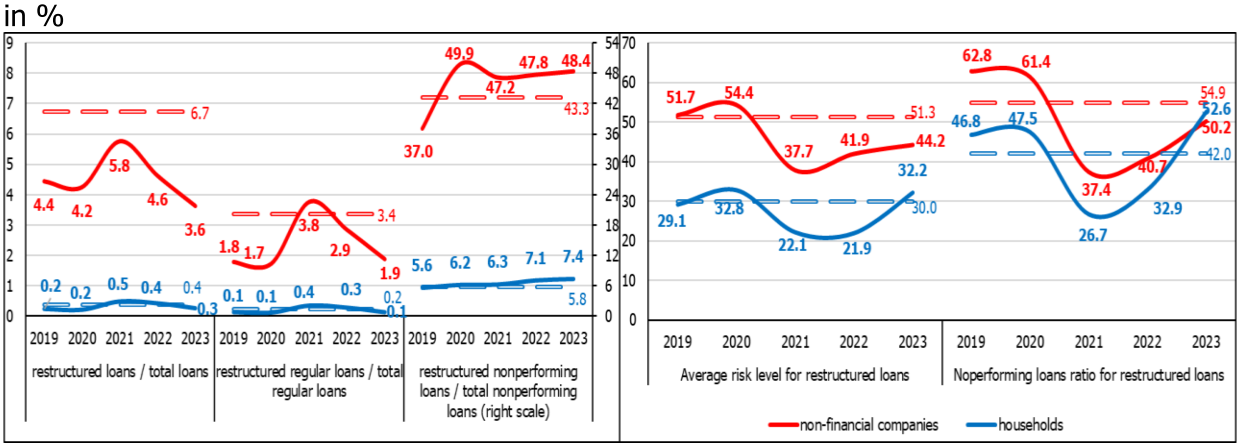
Chart 21
Absolute amount of annual growth (left) and restructured loans of the non-financial entities (right)
in millions of denars and in %



Source: National Bank's Credit Registry, based on data submitted by banks. Note: The dashed line represents the ten-year average of the indicators of relative significance of the restructured loans calculated by using quarterly frequency of data

The share of restructured loans in total and regular loans is very small and it further decreased in 2023, equaling 1.9% and 1%, respectively. Banks find these loans as loans at higher risk, so allocate higher expected credit losses for them. Thus, the coverage of regular restructured loans with impairment in 2023 is 21.6% and is significantly higher than the coverage of total regular loans, which is 2.3%[29]. In contrast, the coverage of non-performing restructured loans with separate provisions (of 64.8%) is similar to the coverage of total non-performing loans (of 70.1%).

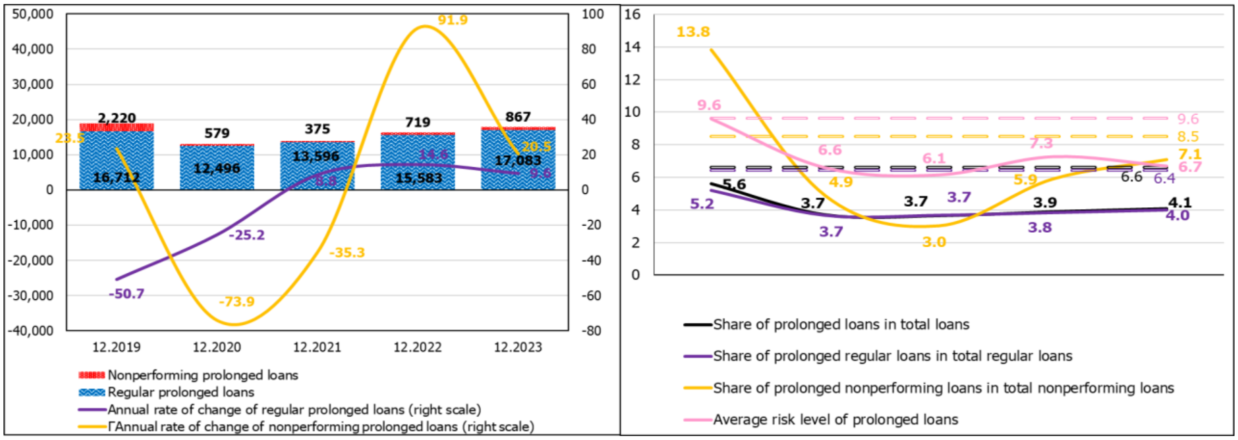
Chart 22
Indicators of relative significance (left) and riskiness of the restructured loans by sector (right)
in %



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

[29] 21.2% and 2.4%, respectively at the end of 2022.

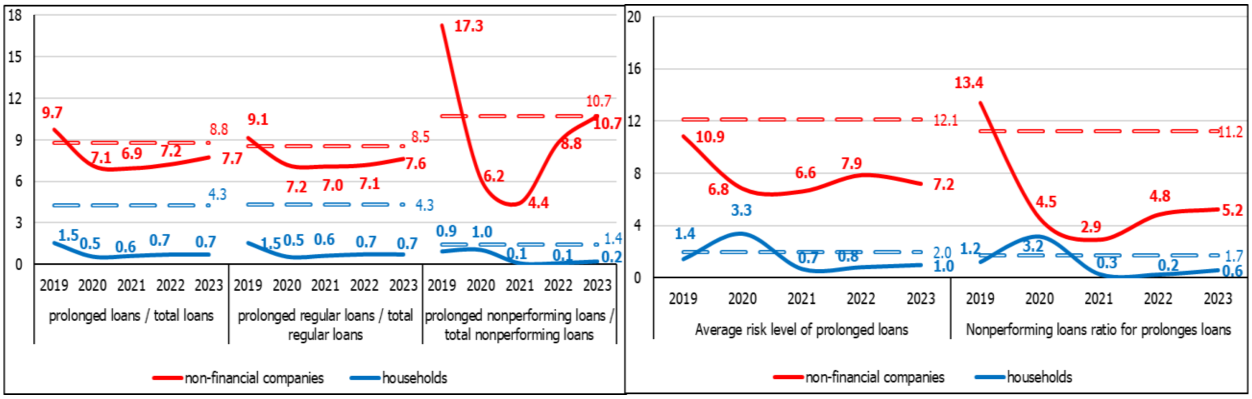
Chart 23
Absolute amount and annual growth (left) and indicators of the relative importance of extended loans to non-financial entities (right)
in millions of denars and in %



Source: National Bank's Credit Registry, based on data submitted by banks. Note: The dashed line represents the ten-year average of the indicators of relative significance of the prolonged loans calculated by using quarterly frequency of data

Usually, the maturity can be prolonged for clients with no financial difficulties and is carried out for the purpose of credit renewal, or harmonization the maturity with the framework for a certain business venture or the like. The prolongation of loans may be a possible source of risk, especially if it is used as a way to facilitate the financial burden of non-financial companies that have no sustainable operating cash flows or have difficulties in maintaining their competitive ability on the market. **In 2023, there is a slowdown, but the growth of prolonged loans is still in double digits.** Thus, total prolonged loans increased by 10.1%, that is Denar 1,647 annual, which is less in both absolute and relative amount compared to the end of 2022 (increase of 16.7% and Denar 2,332 million). Their structure is unchanged, i.e. regular prolonged loans still prevail (95.2% share), while by sector, the loans extended to non-financial corporations are more often prolonged (a share of 91.4%). **The share of the prolonged loans in the banks' total credit portfolio is not large currently, which limits the possible side effects of materialization of this risk.**

Chart 24
Indicators of relative significance (left) and riskiness (right) of the prolonged loans, by sector
in %

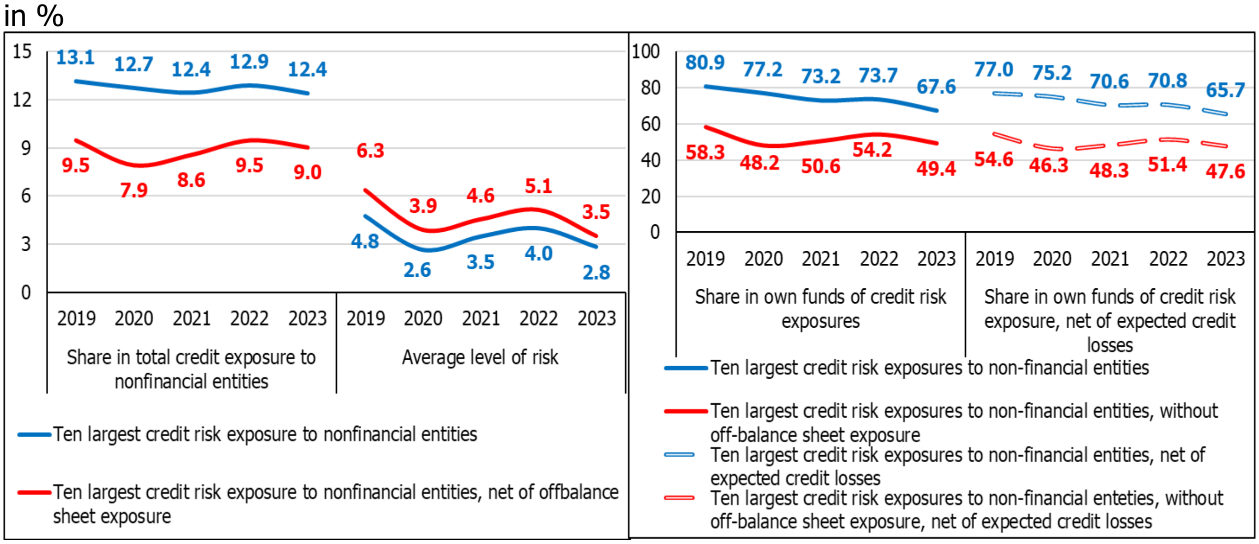


Source: National Bank's Credit Registry, based on data submitted by banks. Note: The dashed line represents the ten-year average of the indicators of relative significance of the prolonged loans calculated by using quarterly frequency of data

In 2023, banks assessed a lower credit risk from extended loans compared to the previous year, which is higher compared to the total regular credit portfolio. Thus, the average riskiness of the extended loans of the entire non-financial sector is 6.7%, it records an annual decrease of 0.6 pp and is lower than its ten-year average (9.6%).

The exposure of the banking system to credit risk is also analyzed in terms of the exposure concentration, which can significantly affect the volume and the speed of credit risk materialization. In 2023, most indicators of exposure concentration registered a decrease on an annual basis. Namely, the share of the ten largest exposures of each bank to non-financial entities in the total exposure to credit risk and in own funds equals 12.4% and 67.6%, which is a decrease of 0.5 and 6.1 pp compared to 2022, respectively.

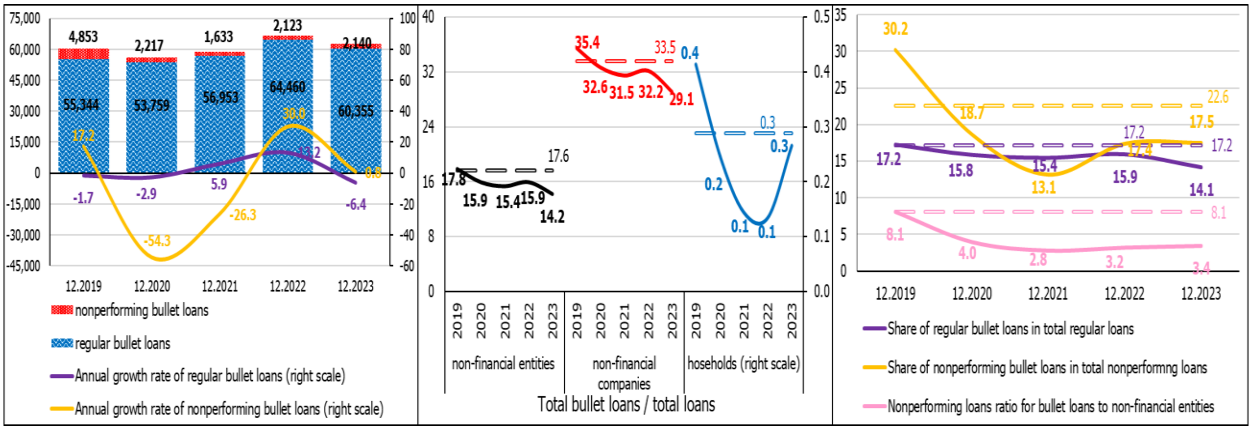
Chart 25
Indicators of the concentration of credit risk exposure to non-financial entities
in %



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

An annual drop is also observed in the average risk level of the ten largest exposures, as well as in the share of their non-provisioned part in own funds.

Chart 26
Bullet loans - absolute amount and annual growth (left), share in total loans by sector (middle) and indicators of their relative importance (right)
in millions of denars and in %

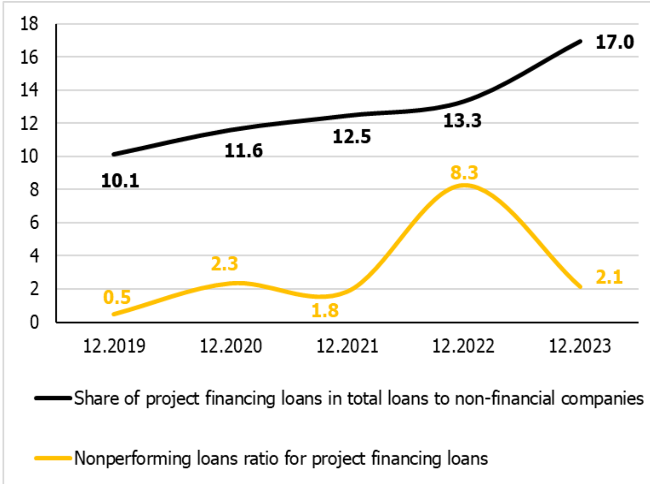


Source: National Bank's Credit Registry, based on data submitted by banks.
Note: The dashed line represents the ten-year average of the indicators of relative significance of the bullet loans calculated by using quarterly frequency of data

Loans where the user's requirement for a single repayment of the loan principal is agreed can also be a potential source of credit risk materialization. These loans has been fully granted to non-financial corporations[30], which take almost one third of the total loans and 26.5% of the non-performing loans. In 2023, in contrast to last year's growth, the bullet loans of the non-financial corporations fell by 6.6%, while the rate of non-performing loans amounted to 3.4% and recorded an increase of 0.2 pp compared to 2022 (whose driver was the borrowers from the industry sector). The average level of riskiness of banks' exposure based on such credit products is still at the level of 3.5% and is similar to the average riskiness of the entire corporate credit portfolio.

[30] At the end of 2023, the share of the non-financial corporation in the total loans that include contractual bullet payment, equals 99%, while the share of the households is only 1%.

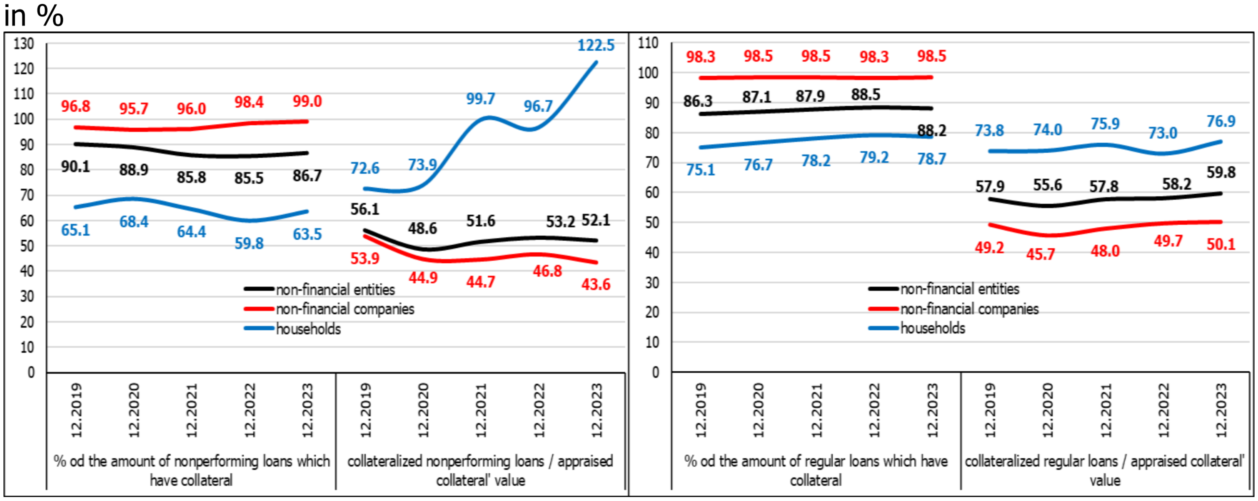
Chart 27
Indicators of non-financial corporations' loans for project financing
in %



Source: Data submitted by banks upon a special request of the National Bank

The loans granted for project financing, are also a potential source of unexpected credit losses, because their quality primarily depends on the scope and the realization dynamics of the forecasted cash flows of the projects financed by such loans. Beneficiaries of such loans are non-financial corporations, primarily in "industry" and "construction sector", which together comprise 75.5% of all loans granted for project financing. The importance of the loans approved for project financing for the total banks' credit portfolio to non-financial corporations is getting bigger in the past few years, and in 2023, more significant increase in this share is observed up to 17% (13.3% on 31.12.2022). The quality of this portfolio is improving, with a rate of non-performing loans registered in recent years moving around 2%.

Chart 28
Share of collateralized non-performing loans (left) and regular loans (right), by sector
in %

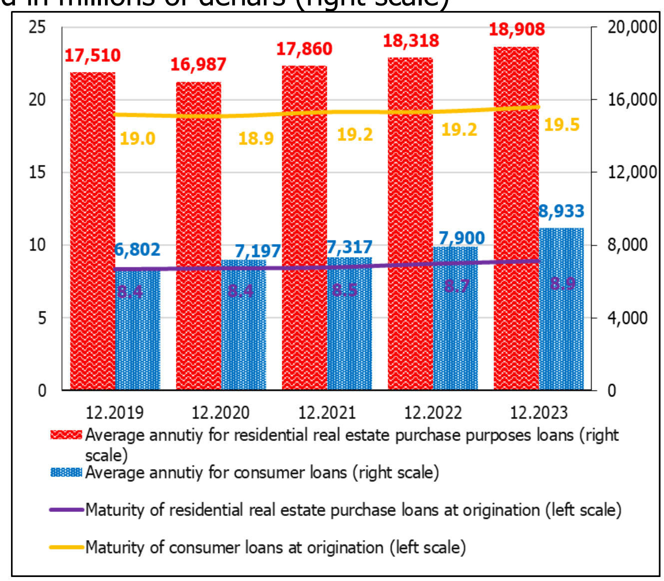


Source: National Bank's Credit Registry, based on data submitted by banks.

Loans approved by banks have a relatively high degree of coverage with a certain form of collateral, as a guarantee for the loan repayment in future. At the end of 2023, 86.7% of the non-performing loans and 88.2% of regular loans are collateralized. Analyzed by sector, the level of coverage with collateral is higher in the loan portfolio of non-financial corporations, where it reaches 99%, while in the case of households, the percentage of collateralized loans is lower (78.7% for regular and 63.5% for non-performing loans) mainly due to consumer loans.[31] In the middle of 2023, implementation of the macroprudential measures for the credit demand quality commenced, with one of the measures prescribing the maximum value of the correlation between the natural person's borrowing and the value of the pledged real estate at 85%. Banks are cautious, so that as of 31.12.2023 this ratio for the newly approved loans to natural persons secured by real estate is 67% on average (69.6% for housing loans and 59.5% for consumer mortgage loans).

Within the macroprudential measures, the maximum amount of the monthly debt repayment was determined according to the monthly income of a natural person (DSTI indicator), equaling 55% and 50% depending on whether the loan is approved in denars or with a currency component. Banks apply a cautious approach in lending from the aspect of this indicator, as well, which is 34.5% on average. The package of macroprudential measures also includes limit of the maximum maturity of housing loans to 30 years and mortgage consumer loans to 20 years. The average weighted maturity[32] of the newly extended housing loans stretched minimally relative to 2022 to 19.5 years.

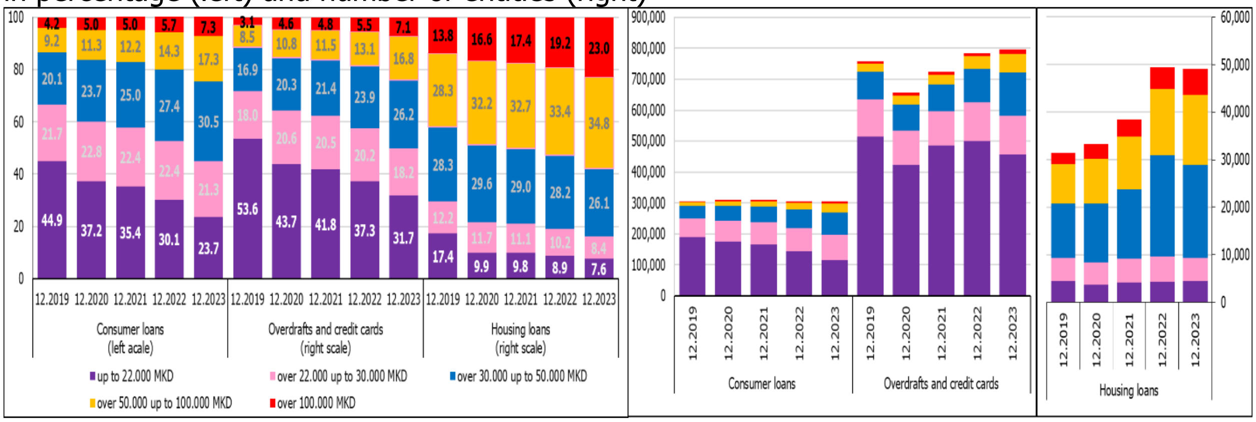
Chart 29
Average weighted maturity at the time of approval and average amount of the annuity per borrower for loans for the purchase of residential property and for total consumer loans in years (left scale) and in millions of denars (right scale)



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

[31] At the end of 2023, two-thirds of the loans for financing consumption are collateralized, which is significantly less compared to the loans for the purchase of real estate, where almost the entire loan amount is backed by collateral.
[32] The share of each bank in the principal amount at the end of the year is taken as a weight when determining the average maturity of loans at the level of the banking system.

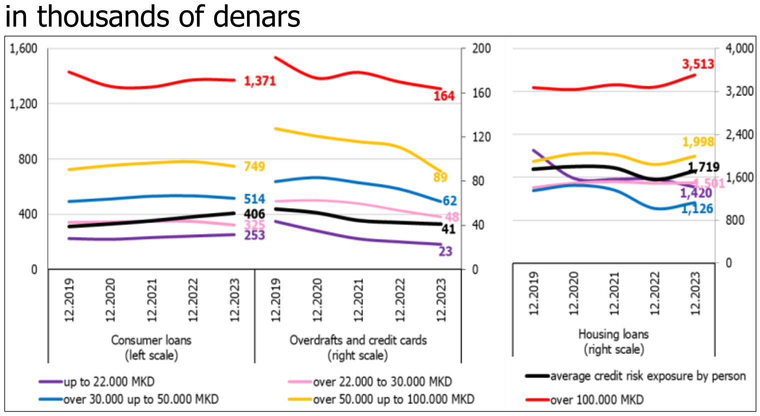
Chart 30
Structure of credit risk exposure for selected credit products of natural persons according by monthly income (left) and by number of credit users (right)
in percentage (left) and number of entities (right)



Source: data submitted by banks on a special request of the National Bank

In the structure of banks' exposure to households by the amount of monthly income of credit users, the differences by individual credit products are still pronounced. Namely, the most "qualified" for loans for purchase of residential property are usually the borrowers with a higher monthly income, that is, a monthly income of over Denar 50,000 and a share of 57.8%. On the other hand, regarding more financially vulnerable borrowers, i.e. those with monthly income below Denar 30,000, more common are consumer loans, with a share of 44.9%, and at the same time, half of the allowed overdrafts and credit cards account are precisely to these lower income clients. However, on an annual basis, the share of households with an income up to Denar 30,000 registers a declining trend in each of the credit products, at the expense of the increase in the share of individuals with an income of over Denar 50,000.

Chart 31
Average exposure by entity for selected credit products
in thousands of denars



Source: data submitted by banks on a special request of the National Bank

The average level of credit exposure of the banks per individual varies depending on the type of credit product, with the loans for the purchase of residential property being the highest, while the number of users of these loans is the lowest.

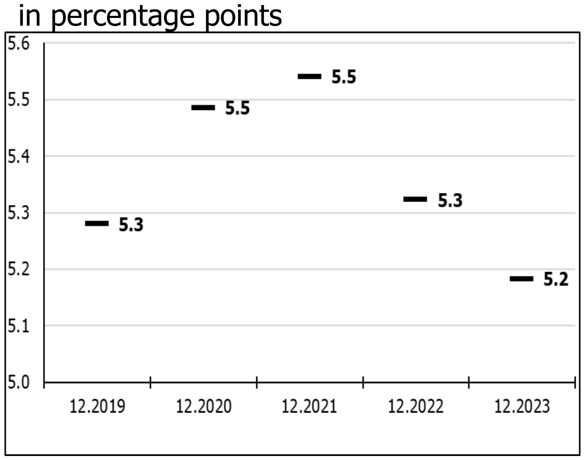
1.2. Stress-testing of the resilience of the banking system to increased credit risk

At the end of 2023, the results of the simulations of the resilience of the banking system at higher credit risk show a solid ability of the domestic banking system to deal with hypothetical shocks resulting from increased credit risk.

In case of extreme simulation for a migration of 30% of the credit exposure to non-financial corporations, from the current to the next two higher risk categories, the capital adequacy ratio of the banking system is reduced by 5.2 pp compared to the initial level, i.e. from 18.1% to 12.9%, which is minimally better result compared to the previous year, when the decrease equaled 5.3 pp compared to the initial level.

Chart 32
Decrease in the capital adequacy ratio at simulation of gradual deterioration of the quality of the bank exposure to credit risk to non-financial entities from the current, to the following two risk categories

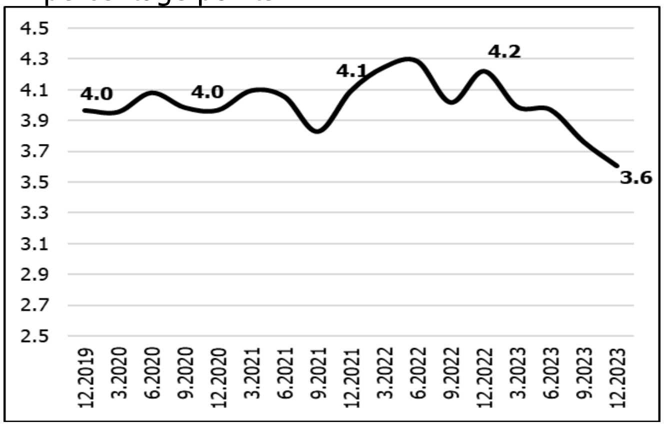
in percentage points



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

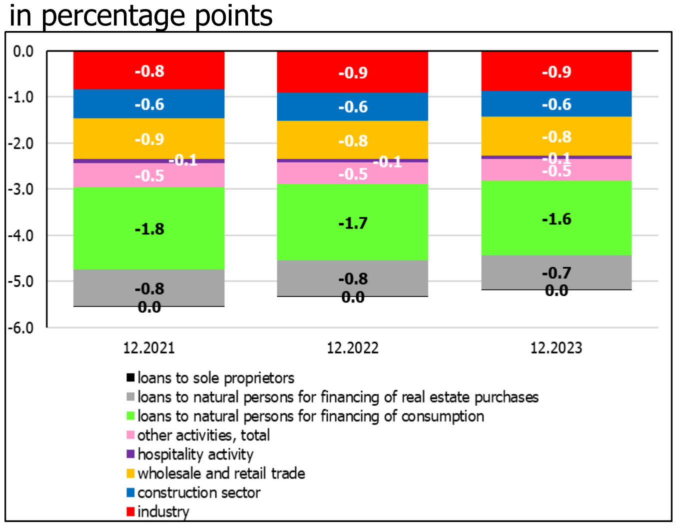
Simulated **materialization of concentration risk in the credit portfolio,** amid assumed migration of the ten largest clients from non-financial sector of each bank, from the risk category (mostly A), to risk category B- non-functional, reduces the capital adequacy ratio of the banking system by 3.6 pp from the initial 18.1% to 14.5%, which is better result compared to last year. The reduced capital adequacy ratio amid such scenario would range from 1.3 pp to 6.2 pp, whereby it would not drop below 8% in any of the banks.

Chart 33
Decrease in the capital adequacy ratio at the level of the banking system in case of materialization of exposure concentration risk to non-financial entities
in percentage points



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

Chart 34
Contribution of individual predominant activities of the non-financial corporations and household credit products in the decrease in the capital adequacy ratio in the simulation of gradual deterioration of the quality of credit risk exposure
in percentage points



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

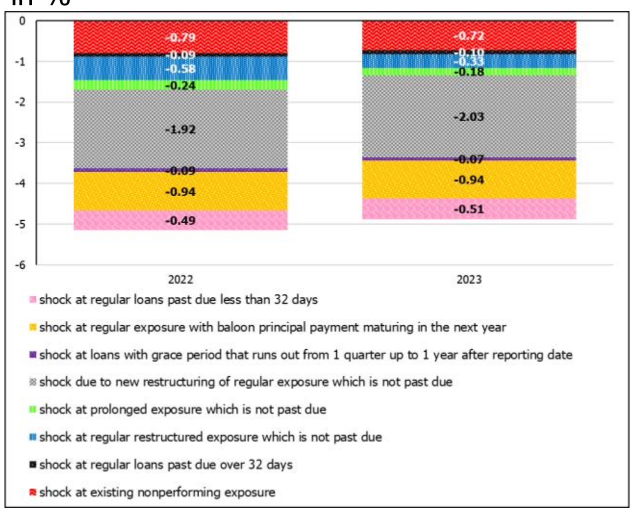
The banking system resilience is also examined by extreme simulation based on a combination of eight[33] hypothetical shocks of worsening of the quality of the

[33]The eight hypothetical shocks of risk exposure to non-financial entities for each bank are as follows: 1.Complete default of the current non-performing credit exposure; 2 part of the regular loans with a delay in repayment that exceeds 32 days receive non-performing status. The part that receives non-performing status is determined in the amount of the ten-year average of the exposure transition rate from risk category B and C regular to risk category B non-performing, D and E with each bank; 3. total regular restructured exposure without current delay in the repayment of liabilities receives a non-performing status; 4. new restructuring of regular credit exposure without a current delay in repayment of liabilities, reduced credit exposure with residual maturity falling due next year. The scope of new restructuring shall be based on 2* the ten-year average of the exposure transition rate from A risk category to B and C regular, with each bank individually; 5part of the loans with an approved grace period that expires within a period of one quarter to one year after the reporting date receives non-functional status. The share that receives a non-performing status is

credit portfolio to the non-financial sector. The shocks refer to different exposure segments determined according to certain characteristics that determine its degree of riskiness (non-performance, delay in meeting monetary obligations, restructuring, prolongation, approved grace period and agreed bullet payment). Moreover, in the case of some of the shocks for the credit portfolio quality, the determining of the intensity of the simulated shock is related to the historical dynamics of the migration rates of the corresponding exposure, that is, with their ten-year average.

Chart 35
Distribution of the decrease in the capital adequacy ratio at the level of the banking system by shock

in %



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

In case of this extreme simulation, the capital adequacy of the banking system does not reduce below the prescribed minimum. Upon this simulation, the capital adequacy ratio reduces by 4.9 pp, to 13%[34](by 5.1 pp i.e. from 17.6% to 12.4%, respectively at the end of 2022. The shocks would cause absorption of 27.3% of the initial capital adequacy ratio, which is less compared to the end of the previous year (29.3% of the initial capital adequacy ratio). The capital adequacy ratio was affected the most by the assumed new restructuring of the credit risk exposure which the bank would perform on regular exposures without current delay in repayment of liabilities (contribution of 41.5% in the capital adequacy reduction), followed by the worsened quality of the credit exposure with an agreed bullet payment falling due next

determined in the amount of the 2*ten-year average of the migration rate of the exposure from the risk categories "A", "B" and "C regular" to the risk categories "B non-performing", "G" and " D" at each bank, separately; 6. a part of the prolonged exposure that currently has no delay in servicing the liabilities receives a non-performing status, and this part is determined in the amount of the 2*ten-year average of the migration rate of the exposure from the risk categories "A", "B and "C regular" in risk categories "C non-performing" "G" and "D" at each bank, separately; 7. part of the regular, non-restructured and non-prolonged credit exposure that currently has no delay in the servicing of the liabilities and where bullet payment has been agreed and which is due in the following year, receives a non-performing status. The part that receives non-performing status is determined in the amount of the sum of the 2*ten-year average of the amount exposure transition from risk category A into risk categories B non-performing, C and D in each bank individually and the 2*ten-year average of the amount exposure transition from risk category A into risk categories B and C regular, in each bank individually; and 8. part of the regular loans where there is a delay in repayment of up to 32 days increase the period of delay by more than 32 days. The part that increases the delay period is determined in the amount of the ten-year average of the transition rate of the exposure from risk category A to B and C regular with each bank.
The coverage with impairment with each of the eight shocks is the same as before the shock.
[34]The initial capital adequacy ratio of the banking system is without DBNM AD Skopje, which is excluded from this simulation

year (contribution of 19.2%) and total default of the current non-performing exposure (contribution of 14.8%)[35].

An analysis of the banking system to climate-related risks[36]

Climate-related financial risks refer to the set of potential risks that may result from climate change and that could potentially impact the safety and soundness of individual financial institutions and have broader financial stability implications for the banking system.[37] In the context of the banking system, climate risks refer to the probability of loss in bank operations due to events caused by climate change. These risks can be divided in two groups as follows: 1) physical risks and 2) transition risks. Physical risks arise from weather conditions and natural disasters, while transition risks arise from changes in policies, regulation and technologies due to the transition to a low-carbon economy.

Given the increasing importance of climate change in the analysis of the resilience of the financial system, this analysis aims to assess the exposure of the banking system to climate-related risks (physical risks and migration risks). The exposure to physical risks is assessed on the basis of the geographical spread of customers and the real estate that is pledged as security for the bank loans, and the exposure to transition risks through the credit exposure of the banking system to customers from climate-sensitive activities[38].

Credit exposure to natural persons at the end of 2023 recorded a growth of 6.4% on an annual basis. At the same time, from the aspect of the residence of natural persons, increased credit exposure was observed in all regions, except for the Polog Region (decrease of 5.4%), with the highest annual growth rate occurring in the Northeastern Region of 23.6%. The highest share in the credit exposure structure is the exposure to natural persons from the Skopje Region (47.7%), followed by the exposures to persons from the Pelagonija Region (10.1%) and the Southwestern Region (9.0%).

Regarding the location of the real estate pledged as security for the natural persons' loans, as of 31.12.2023, the largest share accounts for the loans that are secured by real estate in the Skopje Region (61.4%), followed by the loans secured by real estate in the Southwestern Region (9.3%). The dynamics of the change in share in the last five-year period indicates that there are no significant changes in the structure, so the most pronounced increase in share in the period 2019-2023 has been registered in the Skopje Region by 0.7 pp, while the most noticeable decrease in the same period has been recorded in the Southeastern Region by 0.9 pp.

[35] The quality of the credit exposure where there are new restructurings within the regular exposure where there is currently no delay and the quality of the credit exposure where there is an agreed bullet payment and which is due in the coming year show a certain deterioration, while the full default of the current non-performing exposure shows minimal improvement, so their contribution to the reduction of the capital adequacy ratio compared to 2022 increased by 4.1 pp and 0.9 pp, that is, it decreased by 0.6 pp, respectively.

[36] The term "climate-related risks" refers to the total risks in society and the ecosystem arising from the climate change, but in this analysis it is used in the context of the financial sector and has the same meaning as the term "climate-related financial risks".

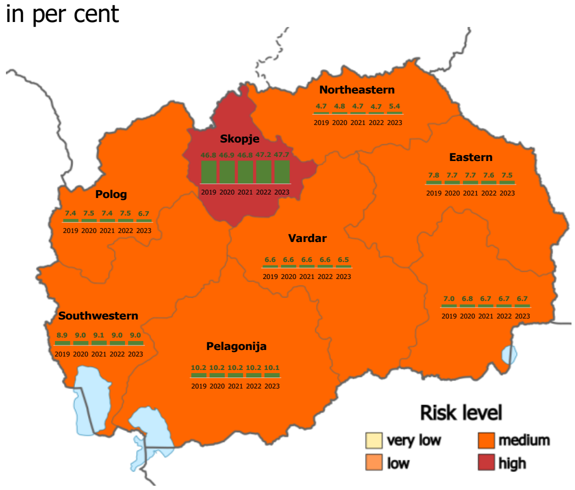
[37] BIS (2020). *Climate-related financial risks: a survey on current initiatives*. ISBN 978-92-9259-375-9 (online).

[38] Climate Policy Relevant Sectors are sectors that are considered important in the implementation of climate policy and are determined based on the classification made by Battiston, S., Mandel, A., Monasterolo, I., Schütze, F., & Visentin, G. (2017). A climate stress-test of the financial system. *Nature Climate Change*, 7(4): 283–288. https://doi.org/doi:10.1038/nclimate325.

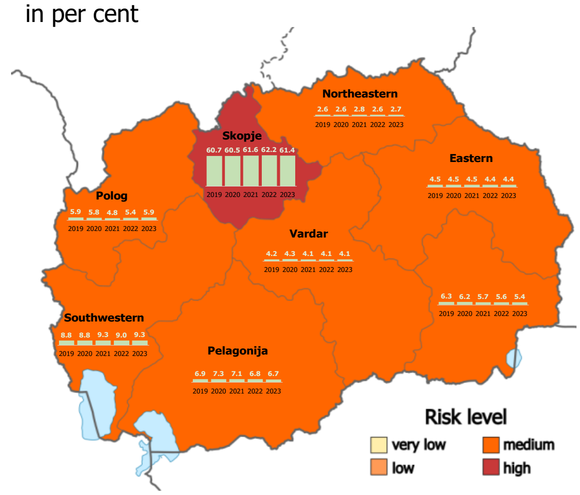
Chart 36

Structure of the banks' credit exposure to natural persons by region[39] where the natural persons are residents (left) and structure of the natural persons' loans collateralized with real estate by region where the real estate is located (right)[40]

in per cent



in per cent



Source: National Bank's Credit Registry and the data submitted by banks.

Credit exposure to non-financial corporations at the end of 2023 recorded a growth of 3.6%. At the same time, the growth is mainly due to the increase in exposures to companies located in the Northeastern (8.1%) and Polog Regions (8.0%), with the most noticeable drop being registered in the exposure to companies in the Vardar Region (14.0%). Within the credit exposure structure, the Skopje Region prevails with 56.8%, followed by the Pelagonia Region with 7.7%.

The analysis of the location of the real estate taken as collateral for the loans of non-financial corporations indicates that, as of 31.12.2023, the largest share of 53.5% accounts for the real estate in the Skopje Region, which represents an increase by 4.8 pp compared to 31.12.2022, followed by real estate in the Southeastern Region with a share of 8.6%. Increased share on an annual basis, except for the Skopje Region, was registered in the Polog Region as well, while other regions registered a decrease.

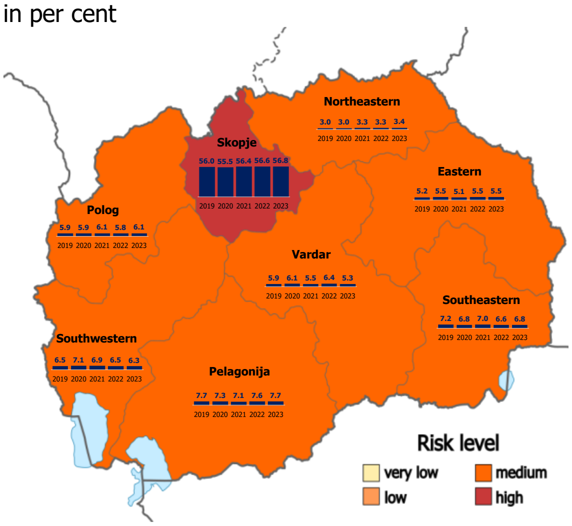
In the last five-year period, the structure by region does not show major changes, but a slight increase is observed in the Skopje Region and a slight decrease in the Southeastern Region.

[39] The structure of credit exposure does not include exposures to residents whose address of residence is not known and to non-residents, which are insignificant (0.4% to other residents and 0.04% to non-residents).

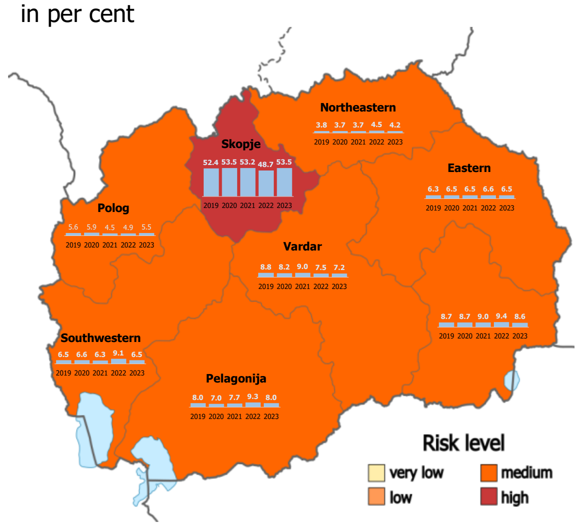
[40] The degree of risk by region is determined on the basis of the reference value, which is calculated as an average of the degrees of risk for the cities located in that region. For each city, the degree of risk represents a weighted average of the individual degrees of risk for four types of natural disasters, namely: 1) river floods, 2) urban floods, 3) wildfires and 4) extreme heat. Default values for different degrees of risk are 1 for very low, 2 for low, 3 for medium and 4 for high risk. The weights are determined based on the participation of the frequency of occurrence of each natural disaster in the total number of disasters in the period 2004 – 2023. If the reference value for the region is from 1.00 to 1.74, then the risk is very low; if it is from 1.75 to 2.49, then the risk is low; if it is from 2.50 to 3.24, then the risk is medium; and if it is 3.25 to 4.00 then the risk is high.

Chart 37
Structure of banks' credit exposure to non-financial corporations by region[41] where the company's main office is located (left) and structure of loans to non-financial corporations collateralized with real estate by region where the real estate is located (right)[40]

in per cent



in per cent



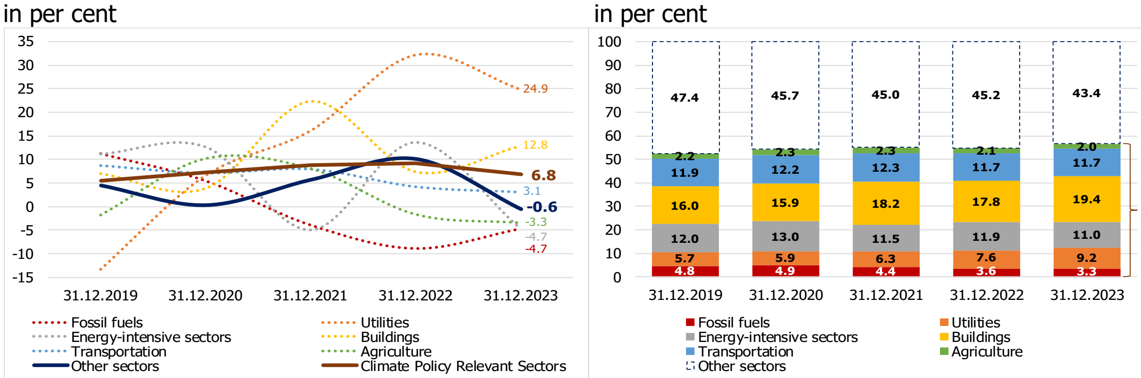
Source: National Bank's Credit Registry and the data submitted by banks.

In 2023, credit exposure to non-financial corporations from Climate Policy Relevant Sectors (CPRS) recorded a growth of 6.8%, while exposure to other sectors decreased by 0.6%. Such movements contributed to increase the share of exposure to CPRS in the total credit exposure to 56.6% on 12.31.2023, which accentuate[42] the importance of these sectors in credit risk management at banks. Within the climatic sectors, the most noticeable growth occurs in the exposure to customers in the sector of utility services (24.9%), while the largest decrease is among customers in the production and service sectors related to solid fuels and in energy-intensive sectors (from 4.7%). Reducing the participation of energy-intensive and sectors related to solid fuels in the period 2019 – 2023 is particularly important for the transition to energy production from renewable sources and improving energy efficiency, which are important goals in creating a sustainable and green economy, as well as in the fight to mitigate the effects of climate change. Of the CPRS, the exposure to customers in the buildings sector has the highest share in the total credit exposure (19.4%) and has a growing tendency, so in the period 2019 – 2023 it has increased by 3.4 pp. However, the highest growth in the last five-year period by 3.5 pp was recorded at the utility services (mainly to customers from the electricity production business).

[41] The structure of credit exposure does not include exposures to resident non-financial corporations whose address of residence is not known and to non-residents, which are very low (0.3% to other residents and 1.8% to non-residents).
[42] For comparison, the share of credit exposure to CPRS was 47.4% on 31.12.2019 and 54.8% on 31.12.2022.

Chart 38
Growth rates of the banks' credit exposure to CPRS and other (less relevant) sectors (left) and structure of credit exposure by sector (right)

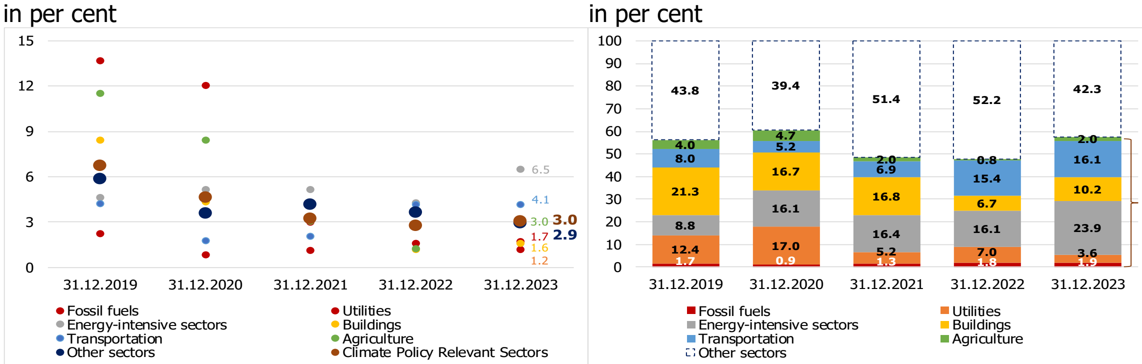
in per cent | in per cent



Source: Credit Registry of the National Bank.

Chart 39
Rates of share of the non-performing in the total credit exposure of banks to CPRS and other (less relevant) sectors (left) and structure of the non-performing exposure by activity (right)

in per cent | in per cent



Source: Credit Registry of the National Bank.

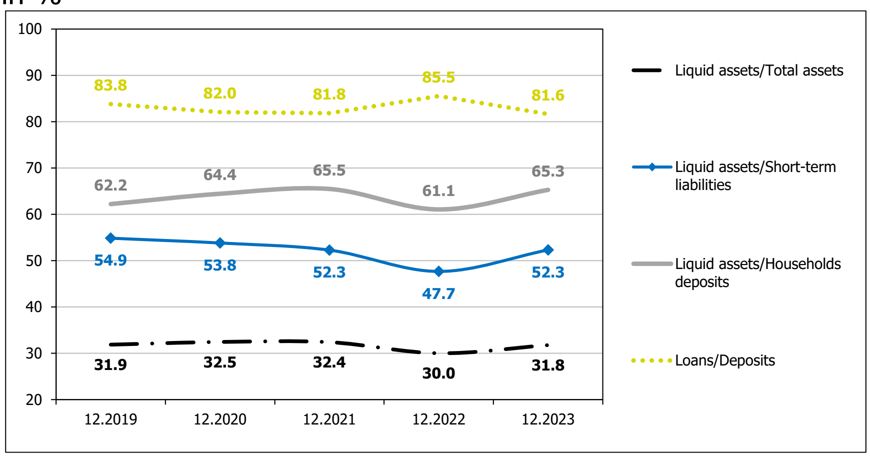
The banks' non-performing exposure to CPRS at the end of 2023 accounts for 3.0% of the total credit exposure, which is minimally higher than the share of non-performing exposure to other (less climate policy relevant sectors) by 2.9%. Within individual CPRS, energy-intensive sectors (6.5%) have the highest rate of non-performing exposure, followed by the transport sector (4.1%). As of 31.12.2023, the non-performing exposure to CPRS has the largest share of 57.7% in the structure of the total non-performing exposure, which represents an increase by 9.9 pp compared to 31.12.2022 (it should be noted that these shares in the period 2019 – 2023 are characterized by higher variability than shares in the structure of the total credit exposure). In the absence of better quality data, the climate risks are analyzed by using the available data from supervisory reports, which is why it is not possible to accurately determine the impact of climate risks on changes in non-performing exposures in CPRS, i.e. whether and to what these risks affected the amount of non-performing loans.

2. Liquidity risk

2.1. Liquidity indicators

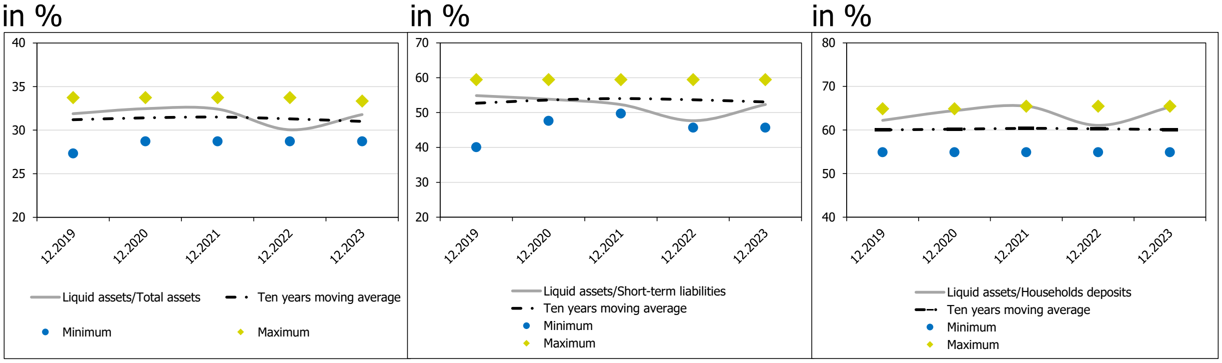
In 2023, the increase in liquid assets of the banking system contributed to better liquidity indicators, the level of which is within the usual satisfactory levels and are above their ten-year average. Therefore, 31.8% of the liquid assets account for the total bank's assets, enabling a solid coverage of short-term liabilities and household deposits with liquid assets (of 52.3% and 65.3%, respectively[43]).

Chart 40
Liquidity indicators of the banking system
in %



Source: National Bank, based on the data submitted by banks.
Note: The calculation of liquidity ratios of the banking system does not include resident interbank assets and liabilities.

Chart 41
Liquid assets / total assets (left), liquid assets / short-term liabilities (middle) and liquid assets / households deposits (right)
in % in % in %



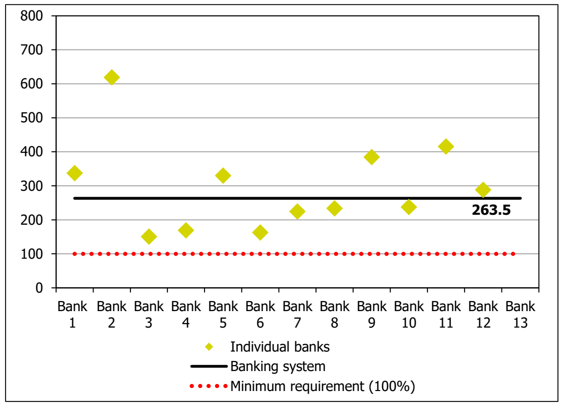
Source: National Bank, based on the data submitted by banks.

The liquidity coverage ratio of the banking system equals 263.5%, which is significantly higher than the regulatory minimum (100%[44]), thus confirming that there is sufficient liquidity available to the Macedonian banking system. Bank-by-bank analysis shows that the liquidity coverage ratios range from 150.8% to 1132.0% (with a median of 288.4%), which also indicates acceptable liquidity risk frames to which banks are exposed and their of stable liquidity management.

Chart 42

Liquidity coverage ratio, as of 31.12.2023

in %



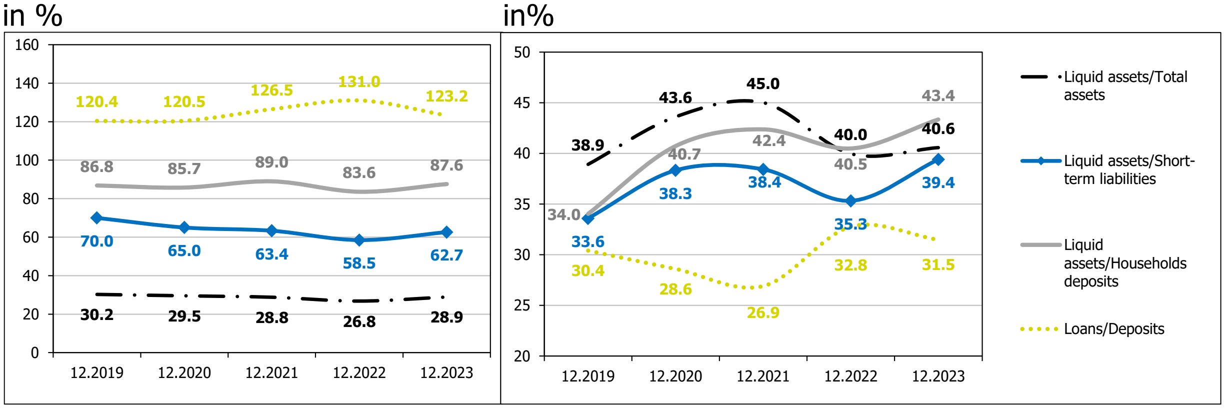
Source: National Bank, based on the data submitted by banks.

According to the currency features of liquid assets and liabilities, in 2023, both denar[45] and foreign currency liquidity indicators improved. However, denar liquidity indicators registered greater improvement, amid annual increase of denar (by 17.3%) than currency liquid assets (by 11.5%). Also liquidity indicators remain at a higher level compared to the foreign currency liquidity indicators, due to the higher structural share of liquid assets in denars in total liquid assets of banks.

Chart 43

Banking system liquidity ratios by currency-denar (left) and foreign currency (right)

in % in%



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

[43] Analyzed by bank, as of 31.12.2023, the share of liquid in total assets ranges between 22.5% and 50.1%, with a median of 31.1% (December 2022: between 22.3% and 49.2%). The coverage of short-term liabilities with liquid assets ranges between 37.3% and 80.4%, with a median of 57.2% (December 2022 between 34.6% and 64.2%), and the coverage of household deposits with liquid assets ranges between 39.8% and 126%, with a median of 74.8% (December 2022: between 35.5% and 105.0%). The Development Bank of North Macedonia AD Skopje is excluded from this analysis.

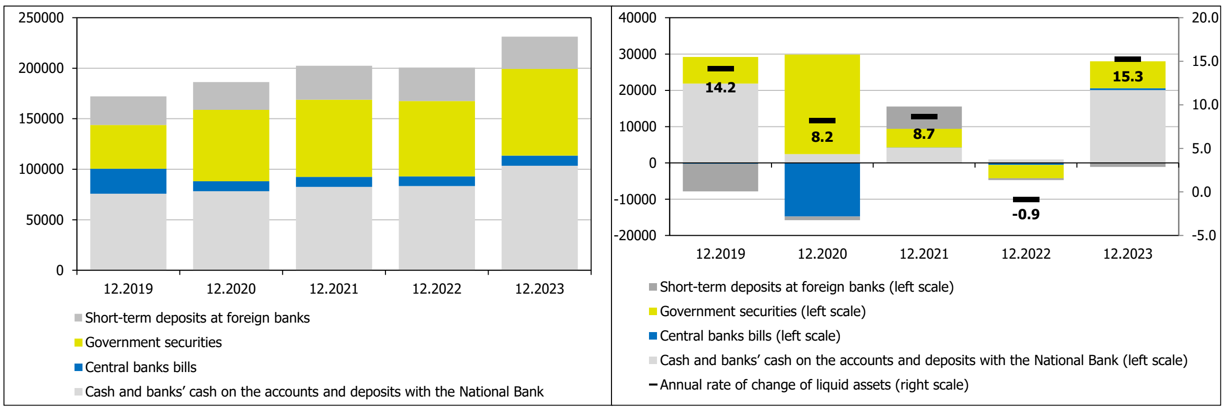
[44] In addition to cumulative basis, banks are required to determine and monitor a liquidity coverage ratio for each currency that is significant to the bank (each currency whose share of the bank's total balance sheet liabilities is at least 5%). Thus, the minimum level of liquidity coverage ratios by currency is not prescribed. As of 31 December 2023, the liquidity coverage ratios for the two significant currencies, euros and denars, were 104.4% and 302.1%, respectively.

[45] Claims and liabilities with FX clause are considered as denar claims and liabilities, since their cash flow is in denars.

2.2. Dynamics and composition of liquid assets

At the end of 2023, liquid assets[46] of the banking system amounted to Denar 231,198 million. At further, also accelerated deposit growth (9.2% in 2023, as opposed to 5.4% in 2022), the **liquid assets of the banking system registered substantial increase of 15.3%, i.e. Denar 30,638 million.** Analyzed by financial instruments that make up liquid assets,

Chart 44
Liquid assets, structure (left) and growth (right)
in millions of denars | in millions of denars and in %



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

the increase was mostly pronounced in banks' placements in deposit facilities up to seven days with the National Bank (which increased by almost seven times, i.e. by Denar 31,580 million), as opposed to the fall in the bank placements in overnight deposit facilities with the National Bank (of Denar 18,990 million, or 44.1%[47]). A significant increase was also recorded in the bank placements in government securities (placements in treasury bills of Denar 3,751 million, or 22.9%, placements in government bonds of Denar 3,677 million, or 6.7% and placements in foreign government securities of Denar 3,772 million, or 116.7%). The bank placements in CB bills grew by Denar 482 million, or by 5.1%[48], while the assets on the denar account with the National Bank decreased by Denar 168 million, or 1%. Also, a decrease has been registered in the bank assets on correspondent accounts and short-term deposits placed in foreign banks[49]. In contrast, the amount of the foreign currency payment account at the National Bank recorded an increase

[46] The liquid assets encompass: 1) assets and claims on the National Bank, which include cash, assets on the accounts of banks with the National Bank, deposit facility with the National Bank and CB bills; 2) short-term deposits with foreign banks, including the assets of the banks on their correspondent accounts abroad and 3) the carrying amount of the investments in securities issued by central governments, i.e. government securities issued by the Republic of North Macedonia and issued by foreign countries. For the purposes of analyzing the liquidity, assets and liabilities in denars with foreign exchange clause are considered denar assets and liabilities.
[47] In the 2023, the National Bank continues to tighten monetary policy, which started since the end of 2022, by actively managing liquidity through the interventions on the foreign exchange market, and from April last year by increasing interest rates. Namely, the interest rates on deposit facilities and seven-day deposits increased on several occasions during 2023, by a total of 1.55 pp, to the level of 4.20% and 4.25%, respectively. In the first quarter of 2024, the National Bank assessed that the current monetary policy setup is adequate to the conditions in the economy and made no additional changes in its setting.
[48] In 2023, the interest rate on treasury bills increased six times by a total of 1.55 pp, thus reaching 6.3% (adequate to the conditions in the economy, the policy rate was kept at the level of 6.3% also in the first quarter of 2024). The offered amount of CB bills remained unchanged at Denar 10,000 million.
[49] Decrease in the bank assets on the accounts with foreign banks by Denar 6,616 million or by 41.0%, while the short-term term deposits of the banks placed in foreign banks by Denar 5,492 million or by 32.6%.

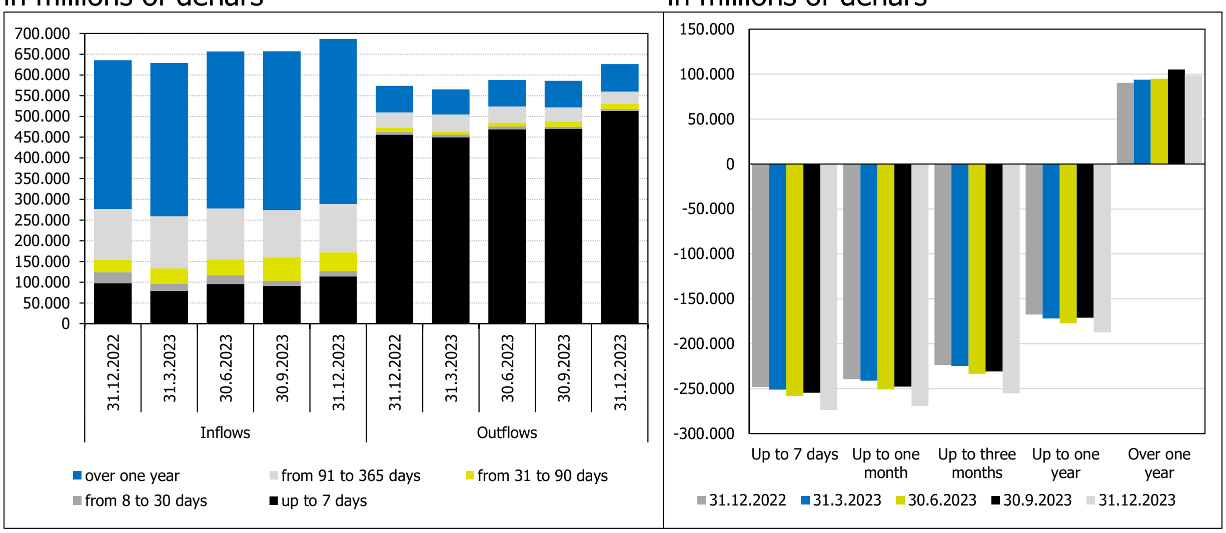
of 6,560 million denars, or by 117.1%, which is mostly related to changes in the reserve requirement instrument[50].

2.3. Maturity structure of the contracted inflows and outflows of bank's assets and liabilities

As of 31.12.2023, the agreed inflows of banks distributed in the period over one year and the agreed outflows of banks distributed in the period up to seven days prevail in the maturity structure of banks' inflows and outflows. The largest difference (gap) between the banks' inflows and outflows is registered in the timeframe of up to seven days (negative gap) and over one year (positive gap), which results from the inclusion of liabilities on demand and without a maturity in the maturity segment up to seven days, and due to claims based on loans and advances included in maturity segments over one year (long-term loans at the level of the banking system cover more than 80% of total loans to non-financial entities). Relative to the assets of the banking system, the cumulative gap up to seven days and cumulative gap to one year equal 36.7% and 25.1%, respectively.

Chart 45 Maturity structure of inflows and outflows of balance sheets assets and liabilities (left) and cumulative gap between agreed inflows and outflows, including the cumulative amount of unencumbered assets (right)

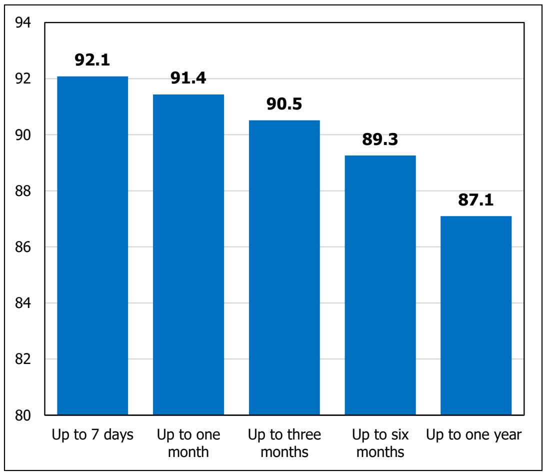
in millions of denars / in millions of denars



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

[50] In 2023, the reserve requirement rate from liabilities in foreign currency increased from 19% to 21%, and the share of the reserve requirement in euros that is met in euros increased from 75% to 81%. Also, the rate for liabilities in denars with currency clause increased from 50% to 100%.

Chart 46
Expected deposit stability, according to the remaining period to maturity, as of 31.12.2023
in %



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

The banks expect that deposits will remain stable, since they are the main source of funding of their activities. In accordance with the depositors' behavior, banks assessed that the largest part of the agreed cash inflows and outflows (or 87.1%) based on deposits will not be realized by depositors in the next twelve months.

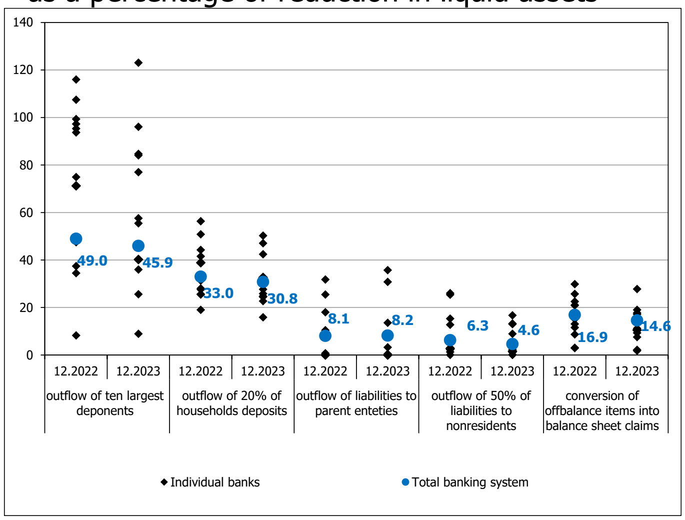
2.4. Stress-simulations for liquidity shocks

As of 31.12.2023, the results of the conducted stress simulations for liquidity shocks show solid capacity of the banking system, with sufficient liquid assets to respond appropriately to the simulated cash outflows. The resilience of the Macedonian banking system to liquidity shocks is confirmed by the results of all individual simulations of liquidity shocks, with the liquid assets being fully used (or 104.2% as of 31.12.2023) only in case of significantly extreme simulation of liquidity shock, which covers combined outflows[51] of funds from banks on several bases. Considering the extremity of assumption, for the purpose of this simulation, the usual coverage of liquid assets is extended with other financial instruments[52] owned by banks, for which it is estimated that banks will quickly and easily collect or turn into cash. In such case, the simulation of combined assumed shocks shows that the liquid assets of the banking system have the capacity to cover all assumed outflows.

At individual simulations of liquidity shocks, the high level of liquidity that Macedonian banks have at their disposal provides settlement also of all assumed, individual, extreme liquidity outflows. The sharpest drop in liquid assets occurs amid outflow simulation of deposits of the ten largest depositors, and the importance of this simulation to individual banks is different, given the differences in the degree of concentration of deposits. On the contrary, simulated materialization of reputation risk and loss of confidence of the population in the banks represented by an outflow of 20% of household deposits shows a greater similarity in the results for individual banks, thereby confirming the importance of public confidence in the banking system. At assumed migration of certain off-balance sheet liabilities of banks into on-balance sheet liabilities[53], the banks would spend around 15% of their liquid assets. The small share of liabilities to non-residents, as well as to parent entities in the structure of the total sources of funding for banks, causes moderate impact of the shocks associated with them on the overall result of this simulation.

Chart 47
Contribution of individual combined shocks to the decline in the liquid assets in the simulation of a combined liquidity shock

as a percentage of reduction in liquid assets



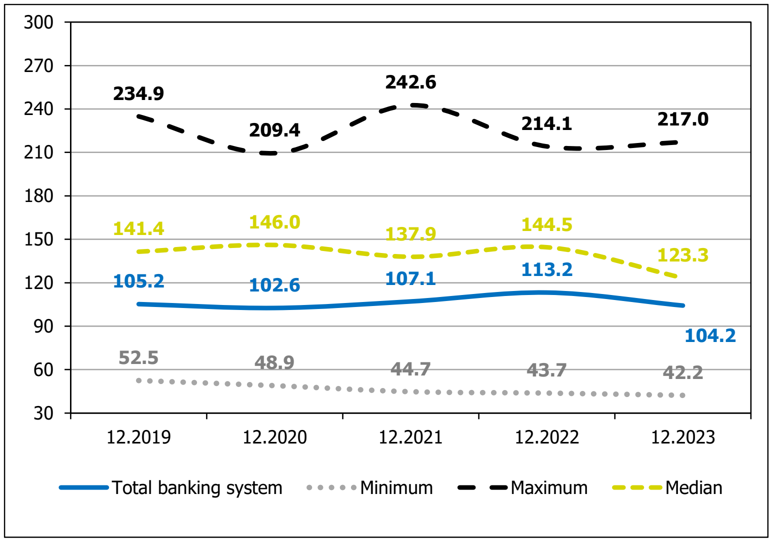
Source: National Bank, based on the data submitted by banks.

[51] The simulation assumes outflow of: deposits of the ten largest depositors, 20% of household deposits, liabilities to parent entities (liabilities on subordinated instruments and hybrid capital instruments are excluded from the simulation as, according to the regulations for calculating capital adequacy, their repayment is regulated), 50% of the liabilities to non-residents (excluding liabilities to non-resident parent entities of banks which are already covered by one of the previous simulations) and conversion of certain off-balance sheet liabilities of the banks (uncovered letters of credit, irrevocable credit lines and unused limits based on credit cards and approved overdrafts on transaction accounts) into balance sheet claims. The simulations of liquidity shocks exclude the Development Bank of North Macedonia AD Skopje.

[52] Financial instruments that comprise liquid assets, also include the following financial instruments: assets in the guarantee fund in KIBS, long-term deposits in foreign banks, money market instruments issued by foreign non-government issuers, loans with contractual residual maturity of up to 30 days and the effect of reducing the reserve requirement for foreign currency liabilities of banks, which is allocated in foreign currency due to the simulated outflow of households' foreign currency deposits.

[53] Outflow is assumed as a result of the migration of some off-balance sheet liabilities of the banks (uncovered letters of credit, irrevocable credit lines and unused limits based on credit cards and approved overdrafts on transaction accounts) into on-balance sheet claims.

Chart 48
Reduction in liquid assets after the simulation of combined liquidity shocks (after all shocks)



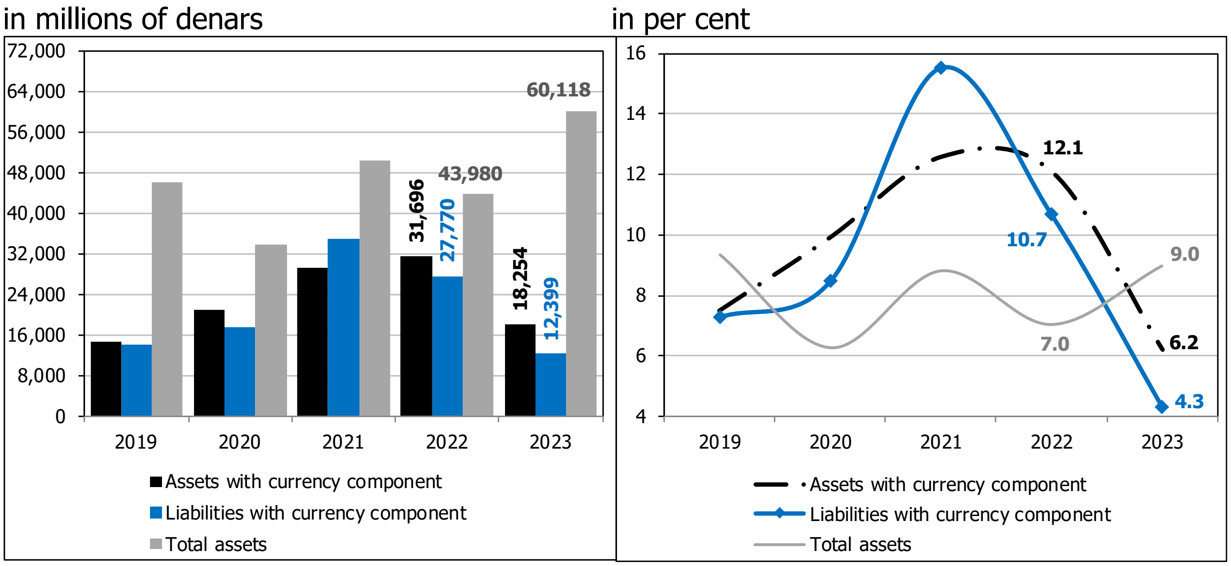
Source: National Bank, based on the data submitted by banks.

3. Currency risk

The direct exposure of the banking system to the currency risk at the end of 2023 increased, which is mirrored through the increased gap between assets and liabilities with a currency component and the open foreign currency position in relation to own funds. The widening of the gap is mainly a result of the higher asset growth with a euro component, to which the assets of the foreign currency accounts at the National Bank (the payment account and the reserve requirement)[54], as well as lending in euros and denars with a euro clause, had the biggest contribution. The aggregate foreign currency position of all banks is below the prescribed limit of 30% in relation to own funds, and all banks have a long foreign currency position.

The indirect exposure of the banking system reduced, which is reflected through the lower share of loans with a currency component in the banks' total credit portfolios. At the same time, such reduction is exclusively a result of the decreased share of loans to non-financial corporations, while the share of household loans continues to grow. The implementation of the strategy of a stable exchange rate is important for mitigating the currency risk the banks' customers are exposed to, and thus to the indirect currency risk of the banks.

Chart 49
Annual growth of total assets, assets with currency component and liabilities with currency component, in amounts (left) and in percentage (right)*

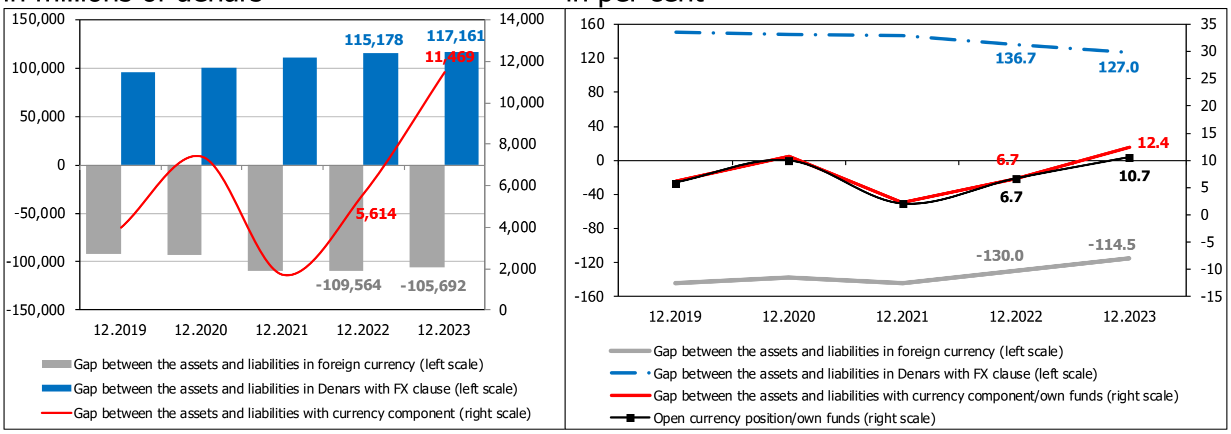


Source: National Bank, i.e. the report on open currency position based on data submitted by banks.
* The assets are on a net basis, reduced by the impairment of claims that are classified in risk categories C, D and E, in accordance with the regulations on currency risk management. DBNM is not included in the analysis, because pursuant to the legislation, the regulations for the open foreign exchange position do not apply to the DBNM.

[54] In 2023, the reserve requirement rate from liabilities in foreign currency increased from 19% to 21%, and the share of the reserve requirement in euros that is met in euros increased from 75% to 81%. Also, the rate for liabilities in denars with a currency clause increased from 50% to 100%. These changes in the reserve requirement are aimed at encouraging the saving in denars.

The positive gap between assets and liabilities with a currency component at the end of 2023 significantly widened and amounted to Denar 11,469 million, which is an increase of more than double compared to 31.12.2022 when it amounted to Denar 5,614 million. The widening of the gap is due to the higher assets growth (of Denar 18,254 million or by 6.2%)[55] than the increase in the liabilities (of Denar 12,399 million or by 4.3%)[56]. At the same time, the negative gap between assets and liabilities in foreign currency narrowed, while the positive gap between assets and liabilities in denars with a foreign exchange clause widened. Such movements indicate an increase in the banks' direct exposure to currency risk. Also, the ratio of the open foreign currency position[57] and own funds, which is 10.7% increase compared to the previous year and exceeds its ten-year average, but is significantly below the prescribed limit of 30%.

Chart 50
Structure of the gap between assets and liabilities with currency component (left) and share of the assets and liabilities with currency component in own funds (right)
in millions of denars in per cent



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

The increase in assets and liabilities with a currency component slowed down significantly compared to the previous year and is lower than the growth of total assets, which accelerated and is an indicator of a reduction in the euroization of the banks' balance sheets. As a result, the share of the assets with a currency component decreased by 1.1 percentage points, and of liabilities with a currency component by 1.9 percentage points.

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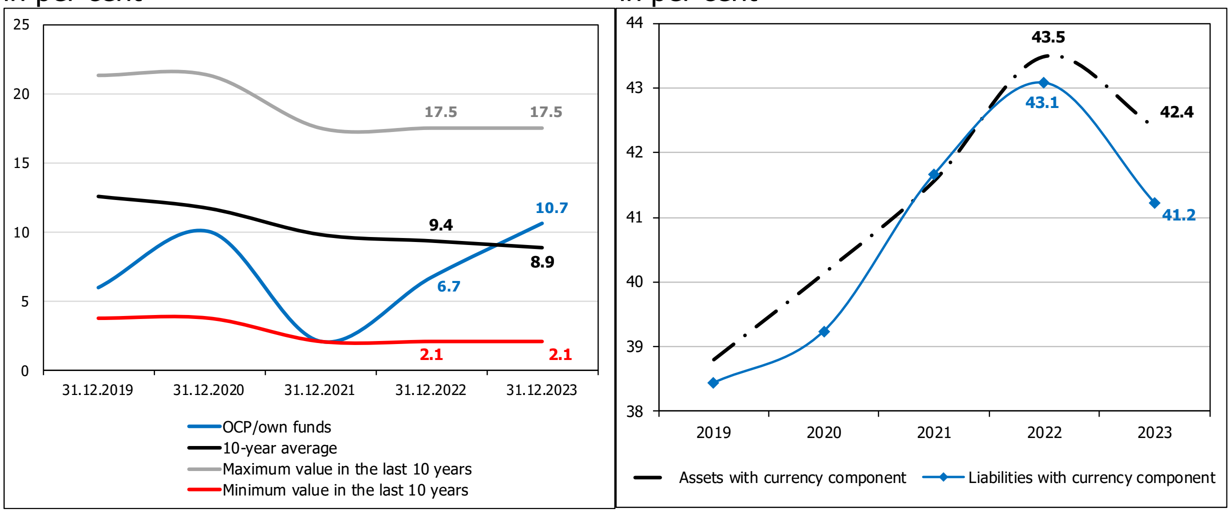
[55] The increase in assets with a currency component mainly stems from the growth of the assets on the foreign currency accounts with the National Bank (payment account and reserve requirement) by Denar 14,714 million, loans with a currency component by Denar 3,942 million (of which, loans in denars with a foreign exchange clause by Denar 3,335 million and loans in foreign currency by Denar 607 million), with the placements in debt instruments issued by foreign central governments by Denar 1,476 million also registering a growth.

[56] The increase in liabilities with a currency component is largely due to the growth of foreign currency deposits of natural persons by Denar 6,267 million, the funds on payment accounts and other short-term liabilities by Denar 4,078 million, as well as to liabilities based on banks' loans in foreign currency by Denar 2,336 million.

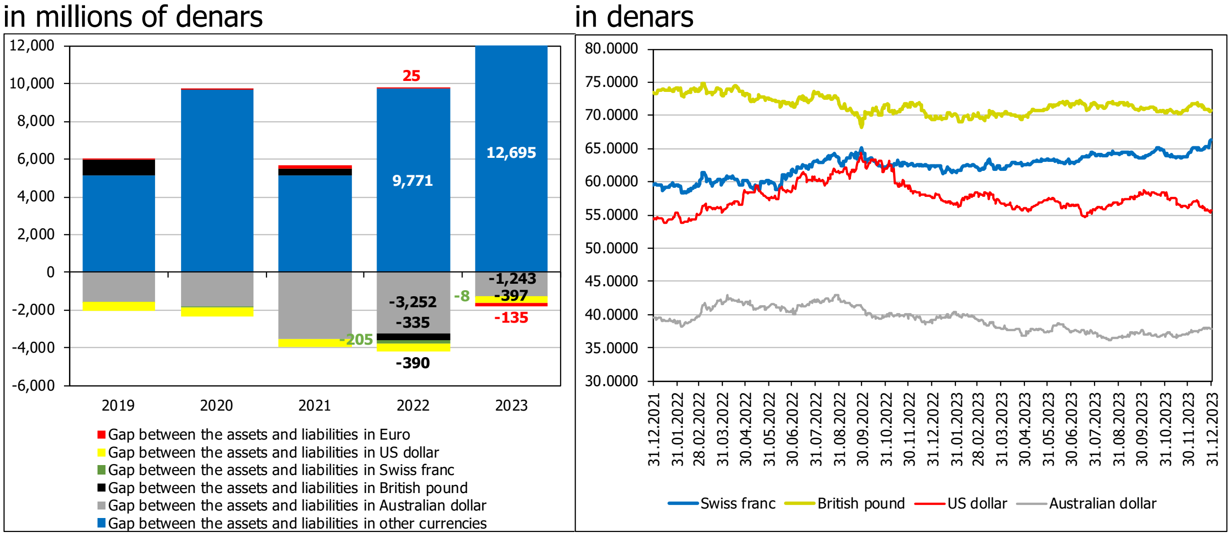
[57] The calculation of the open currency position, in addition to the gap between the on-balance sheet assets and liabilities with currency component, also includes the gap between the off-balance sheet assets and liabilities with currency component.

Chart 51
Ten year average, minimum and maximum of the OCP / own funds ratio (left) and share of assets and liabilities with currency component* in the total banks' assets (right)
in per cent in per cent



Source: National Bank, based on the data submitted by banks.
* Within the assets, claims are shown on a net basis i.e. adjusted for the impairment. The analysis does not include DBNM.

Chart 52
Structure of the gap between assets and liabilities with currency component, by currency (left) and movement of the denar against the US dollar, Swiss franc, British pound and Australian dollar (right)
in millions of denars in denars



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

By currency, the widened positive gap is mainly a consequence of the long position in euros (including positions with a foreign exchange clause), and is also supported by the significantly narrowed negative gap between the positions in US dollars and the gap in Swiss francs, which from negative turned positive. As of 31.12.2023, the gap between assets and liabilities with a euro component amounted to Denar 12,695 million, which has widened by Denar

2,923 million or by 29.9%, compared to the end of the previous year. This widening is the result of the higher growth of assets than the growth of liabilities in this currency[58]. The foreign currency position with a dollar component is still short, but it shows a significant narrowing (by Denar 2,009 million or by 61.8%), which results from the significantly higher assets growth compared to liabilities[59]. The value of the US dollar has stabilized during 2023, but is still above the long-term average. The foreign currency position in Swiss francs is long in the conditions of a significant growth of assets in this currency, while the positions in British pounds and Australian dollars are short[60]. All other currencies register a short currency position.

Table 3
Currency structure of assets and liabilities with currency component
in per cent

Currency	31.12.2022		31.12.2023	
	Assets	Liabilities	Assets	Liabilities
Euro	91.2	89.6	90.5	89.8
US dollar	5.9	7.1	6.5	7.1
Swiss franc	1.2	1.3	1.5	1.4
Australian dollar	0.5	0.6	0.4	0.5
British pound	0.5	0.6	0.5	0.5
Other	0.7	0.8	0.6	0.7
Total	**100.0**	**100.0**	**100.0**	**100.0**

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

The euro dominates the currency structure of assets and liabilities at the end of 2023. This is reflected by the fact that even 99.9% of loans with a currency component and 87.8% of deposits with a currency component are in this currency. Hence, the implementation of the policy of a stable nominal exchange rate of the denar against the euro remains a significant factor for mitigating the banks' currency risk.

The indirect exposure of the banking system to currency risk as of 31.12.2023 reduced, which can be perceived through the lower share of the loans with a currency component in the banks' credit portfolios. At the end of 2023, the share of the loans with a currency component in the total loans equaled 42.2%, which is by 1.0 percentage points less compared to the end of 2022. Such decrease is caused by the decrease in the share of these loans to non-financial corporations (by 2.2 percentage points), while the share of the loans with a currency component of households registered an increase (by 0.8 percentage points).

[58] Assets with a euro component increased by Denar 14,443 million, or by 5.4%, which is mostly due to the assets growth in foreign currency accounts at the National Bank (the payment account and the reserve requirement in euros), by Denar 14,714 million, with loans with a euro component also registering an increase. Liabilities with a euro component grew by Denar 11,520 million, or by 4.5%, and mainly results from the increase in the natural persons' euro deposits by Denar 6,955 million, and the growth is also registered in the funds on payment accounts and other short-term liabilities, liabilities based on loans etc.

[59] Assets with a dollar component increased by Denar 2,879 million, or by 16.6%, and the growth is mostly due to increased dollar deposits with other banks and financial assets held up to maturity. Liabilities with a dollar component increased by Denar 870 million, or by 4.2% as a result of the increased funds on payment accounts and the increased deposits of non-residents.

[60] The foreign exchange position in Swiss francs has changed from short to long, and the positive gap between assets and liabilities amounts to Denar 557 million. The negative gap with the British pound has narrowed almost entirely and amounts to Denar 8 million, while the Australian dollar has registered a minimal expansion and amounts to Denar 397 million.

Table 4
Distribution of banks by share of open currency position, by currency and the aggregate currency position in own funds*

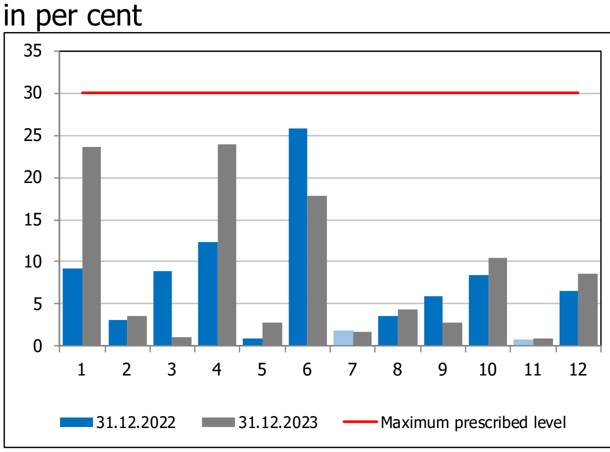
Items	Number of banks												
	Open currency position by currency/own funds												Aggregate currency position/own funds
	Euro		US dollar		Swiss franc		British pound		Australian dollar		Other		
	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	
under 5%	6	1	9	3	8	3	9	2	5	3	9	3	7
from 5% to 10%	2												1
from 10% to 20%	1												2
from 10% to 20%	2												2
over 30%													

Source: National Bank, based on the data submitted by banks.
* Banks that have no assets and liabilities in individual currencies are not taken into account, so the sums do not correspond everywhere to the total number of analyzed banks.

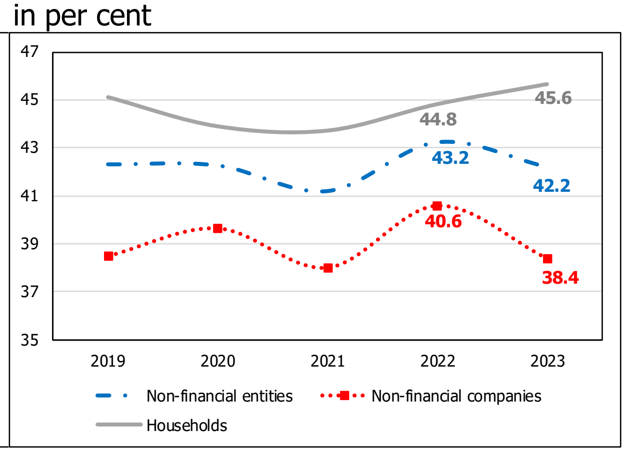
The aggregate currency position relative to own funds ratio by bank at the end of 2023 registered an increase, but all banks complied with the prescribed limit of 30%. All banks register long currency position, while the aggregate currency position and own funds ratio ranged from 0.9% to 23.9%.

Chart 53
Aggregate currency position to own funds ratio, by bank* (left) and loans with currency component to total loans ratio (right)

in per cent



in per cent

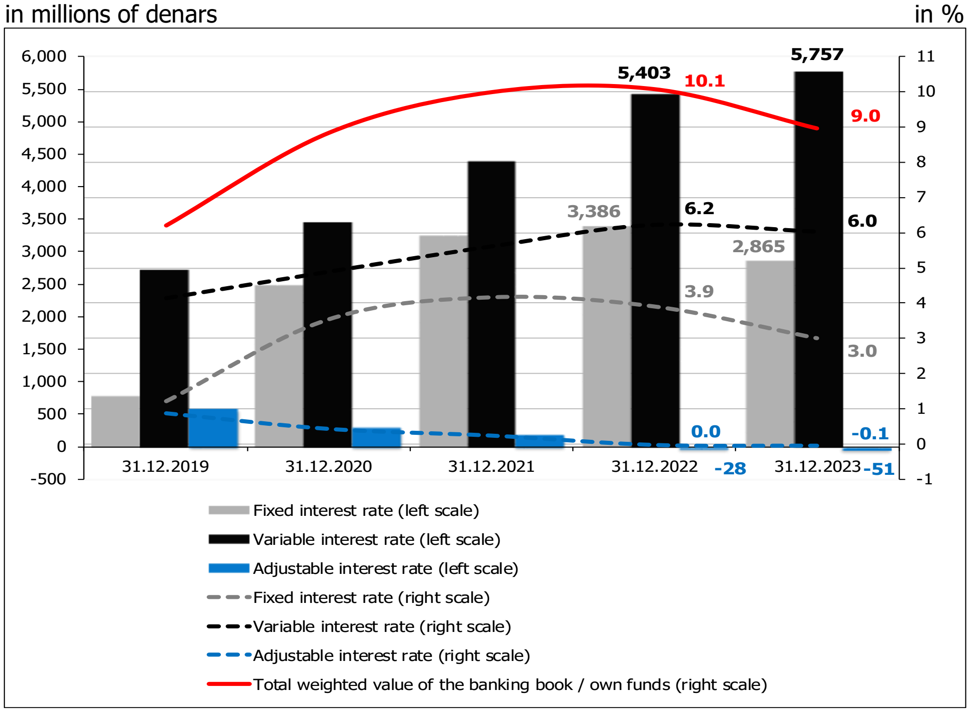


Source: National Bank, based on the data submitted by banks.
* Columns with lighter shades refer to the banks that have a short foreign currency position, but are shown in absolute value. The analysis does not include DBNM.

3. Interest rate risk

The exposure of the banking system to the interest rate risk arising from the performance of basic banking activities is moderate and further decreased in 2023. The reduction can be perceived through the reduction of the ratio between the weighted value of the portfolio of banking activities (determined by applied standard interest rate shock[61]) and own funds, to the level of 9%, which is more than twice lower than the prescribed threshold. The significant presence of the loans with variable and to a lesser extent, with adjustable interest rates[62] emphasizes the importance and the need for cautious exposure of the banking system to increase in the interest rate risk.

Chart 54 Total weighted assets of the banking book*, by interest rate type, in absolute amount (left scale) and relative to own funds (right scale)

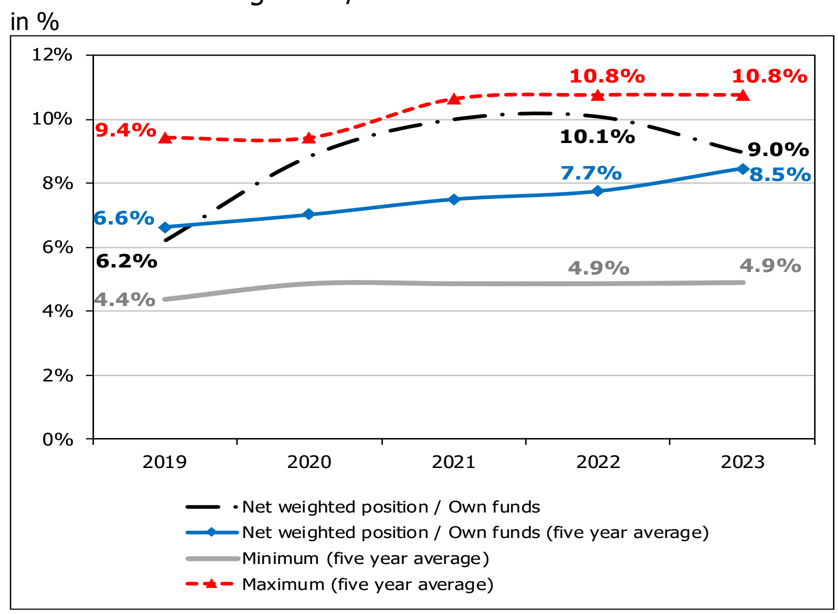


Source: National Bank, based on the data submitted by banks.
*The total weighted value of the banking book denotes the potential loss of the economic value of this portfolio, amid assumed unfavorable interest shock of ±2 pp.

[61]In accordance with the regulation, the banks' exposures to interest rate risk which arises from the banking activities, is monitored through the gap of the interest sensitive assets and liabilities (mainly loans and deposits), to which the interest rate shock for simultaneous change of interest rates by ± 2 pp is being applied. The interest sensitive assets and liabilities are distributed in time zones according to the period in which the interest rate change will occur. At the same time, the positions with fixed interest rates are distributed in time zones according to the maturity period, with variable interest rates according to the interest rate reassessment period and with adjustable interest rates according to the probability and frequency of the interest rate change. The further each of these time zones, the higher the effect of the simulated interest rate shock, i.e. the higher the percentage which weights the amount of interest sensitive assets and liabilities. Specificity has been observed in loans with combined interest rates (fixed interest rate for a certain period, followed by variable interest rate), which are distributed in time zones according to the actual maturity of annuities in the period of the fixed interest rate (for the amount which is actually due in that period), while the rest of the amount to which the variable interest rate will be applied, is presented in the appropriate time zones according to the period of interest rate reassessment. In the end a net amount of the weighted interest sensitive assets and liabilities is determined, which according to the regulations is called the weighted value of the banking book and determines the change in the economic value of this portfolio, amid assumed interest rate shock of ±2 pp.
[62]Adjustable interest rate is the interest rate that changes unilaterally, upon bank's decision.

The total weighted value of the banking book registered an annual fall of 2.2%, or by Denar 189 million, reaching a level of 9% of the own funds of the banking system (10.1% at the end of 2022). Analyzing by bank, this ratio ranges from 1.7% to 14.5%, which is below the level of the prescribed 20%[63]. By type of interest rate, the fall arises from the decrease in the weighted values of the portfolios with fixed and with adjustable interest rate increased (by Denar 521 million, or by 15.4% and by Denar 23 million, or by 82.3%, respectively). In contrast, the weighted value of the portfolio with variable interest rate registered an annual increase of Denar 355 million, or by 6.6%. These changes show that in a period when interest rates rise, the banks reduce the use of fixed interest rates, at the expense of a greater use of variable rates, with the period of application of the fixed interest rate in contracts with a combined interest rate (fixed so variable) also being shortened.

Chart 55
Total weighted value of the banking book / own funds



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

In 2023, the realized level of the total weighted value of the banking book / own funds ratio further exceeded the calculated average of this indicator for the last five years, but is smaller compared to the maximum level registered in the last five years[64].

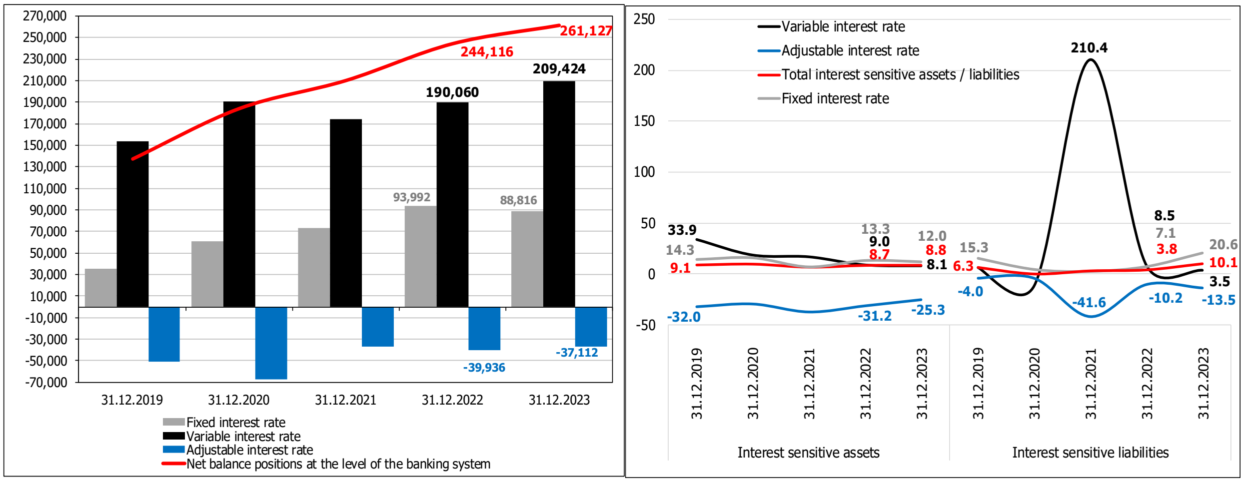
[63] According to the regulation, when total weighted value of the banking book to own funds ratio exceeds 20%, the bank is required to propose measures to reduce this ratio, and the National Bank may also require allocation of appropriate amount of capital for covering the interest rate risk.

[64] Data on the bank exposure and the banking system to the interest rate risk are available since 2010.

Chart 56

Interest-sensitive assets and liabilities by type of interest rate, gap (left) and annual growth (right)

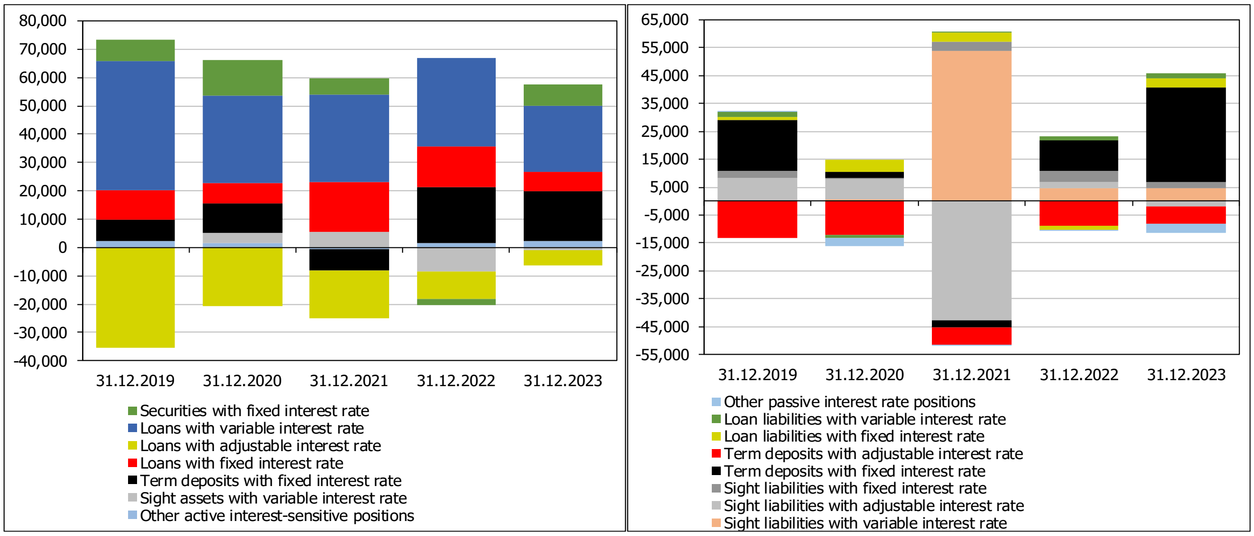
in millions of denars in %



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

In 2023, the total gap, i.e. the net non-weighted position between interest-sensitive assets and liabilities, registered an annual growth of 7%, or by Denar 17,012 million. The growth is mainly due to the annual changes in the gap between the positions with variable interest rate. The positive gap between assets and liabilities with variable interest rate widened on an annual basis (by Denar 19,364 million, or by 10.2%), mostly due to the increased placements in loans (by Denar 23,236 million), with this type of interest rates. In contrast, the positive gap between assets and liabilities with a fixed interest rate narrowed (by Denar 5,177 million, or by 5.5%), mostly due to the growth of liabilities based on time deposits (by Denar 34,138 million), despite the increase in placements in short-term time deposits (by Denar 17,535 million), debt securities (by Denar 7,663 million) and placements in loans (by Denar 6,941 million). The negative gap between assets and liabilities with adjustable interest rate registered an annual narrowing (of Denar 2,825 million, or by 7.1%), mostly due to the smaller reduction of placements in loans (by Denar 5,476 million), amid a larger decrease in liabilities on the basis of term deposits (by Denar 6,246 million) with this type of interest rate.

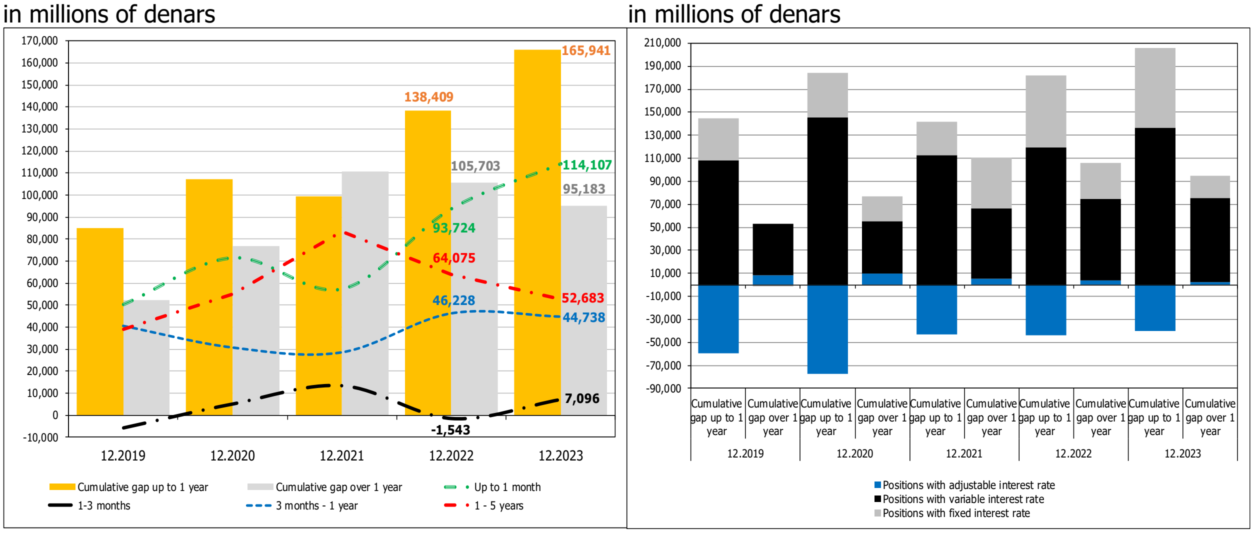
Chart 57
Annual growth of interest sensitive assets (left) and liabilities (right), by type of instrument and type of interest rate



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

Analyzed by timeframe until the next interest rate revaluation, in 2023, the largest contribution to the widening of the total gap between interest-sensitive assets and liabilities was made by the gap up to 1 year (growth of Denar 27,532 million). This widening is mainly due to the increase in the placements in loans with a variable interest rate and placements in short-term term deposits with a fixed interest rate. Significant change, but in the opposite direction (decrease of Denar 11,392 million), was registered in the gap between the positions where the time period until the next interest rate revaluation is from 1 to 5 years, which is mostly a consequence of increased liabilities on the basis of term deposits with fixed interest rate.

Chart 58
Asset-liability gap, by period until next interest rate revaluation (left) and gap structure by interest rate type (right)

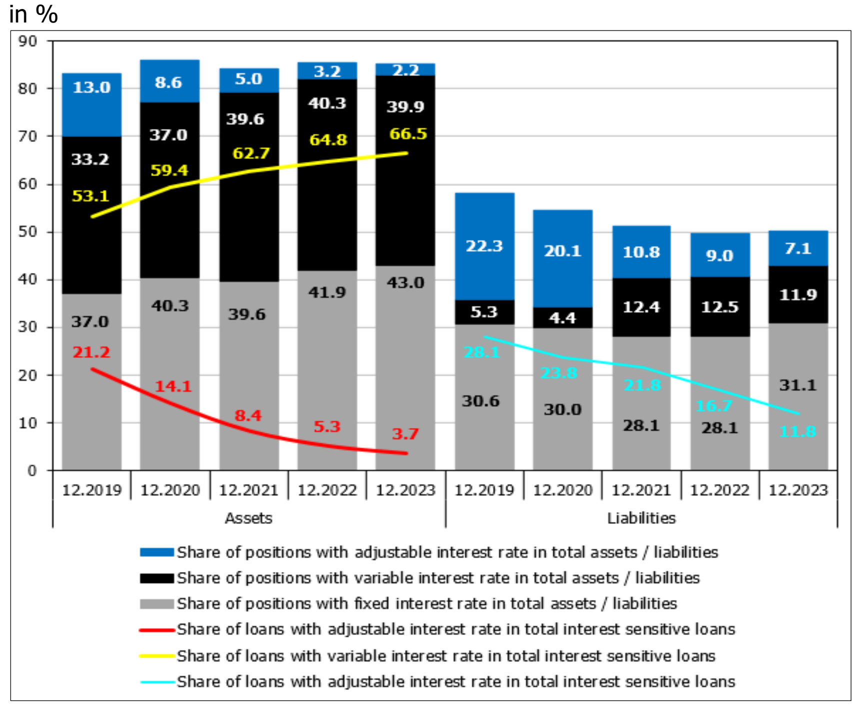


Source: National Bank, based on the data submitted by banks.

The indirect exposure to interest rate risk, which arises from the presence of loans with variable and adjustable interest rates, remains significant. As of 31.12.2023, the cumulative share of these loans in the total loans is 70.2% (70.1% as of 31.12.2022), whereby 66.5% of the total loans have variable interest rate, while 3.7% are with adjustable interest rate. It should be borne in mind that in accordance with regulations, in the interest rate risk reports, the amount of all positions (including loans) that are envisaged to be regulated by a different type of interest rate in different timeframe to maturity, is distributed depending on the type of interest rate that will apply in the corresponding time period. Thus, as of 31.12.2023, 16.3% of total loans for the purposes of these reports, are shown as loans with variable interest rate, in the respective future time bucket which is envisaged to be regulated by variable interest rate, although they are currently regulated by fixed interest rate[65].

The share of the positions with adjustable interest rate has been decreasing in 2023. Thus, the share of the adjustable interest rate in interest-sensitive assets decreased from 3.2% at the end of 2022, to 2.2% at the end of 2023, while in interest-sensitive liabilities, from 9.0% as of 31.12.2022, to 7.1% as of 31.12.2023.

Chart 59
Assets and liabilities structure, by type of interest rate



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

For more details about the structure of interest-sensitive items of the banks see Annexes to this Report.

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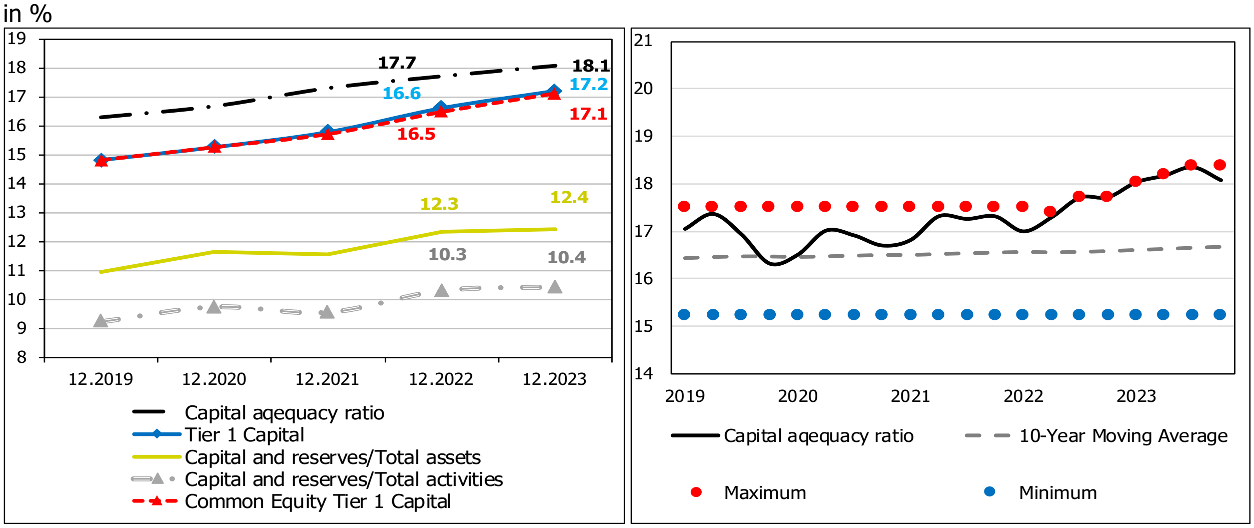
[65] Or in other words, as of 31.12.2023, for about 50% of the amount of loans, a variable interest rate is applied, while for the remaining about 16.3% (up to the presented 66.5% as of 31.12.2023), a fixed interest rate is currently applied, which during the lifespan of the loans (usually after several years) will be replaced by a variable adjustable interest rate.

4. Insolvency risk

The banking system ended 2023 with higher solvency and capitalization indicators, compared to the previous year. The higher growth of the banks' own funds relative to the risk exposure led to a better solvency position, and thus better capacity of banks to deal with unexpected losses. The capital adequacy ratio in 2023 reached levels that are the highest since 2007, and at the end of the year it was 18.1%. The growth of own funds is mostly due to the reinvested and retained earnings from the previous year and issue of common shares, while the growth of the risk weighted assets was mostly concentrated in the credit risk weighted assets. Analyzed by purpose, in 2023, a part of the free own funds was used to meet the minimum capital requirements to cover the risks and the counter cyclical capital buffer, the application of which started from 1 August 2023. With this buffer we act preventively and further strengthen the domestic banks' capital. About 9% of the own funds remain free and together with the capital buffers occupy about 35% of the total own funds of the banking system and can be used to deal with various challenges and intensity. This is indicated by the conducted stress testing of the banking system resilience to the simulated shocks with extreme assumptions, showing increased resilience of the banking system compared with the previous year. This is especially important taking into consideration the domestic and external environment, which remains vague. In such circumstances, the solvency of the banking system, which is at a satisfactory level, significantly mitigates the negative effects of potential risk materialization.

4.1. Solvency and capitalization ratios of the banking system

Chart 60
Indicators of solvency and capitalization of the Macedonian banking system (left) and capital adequacy ratio (right)
in %



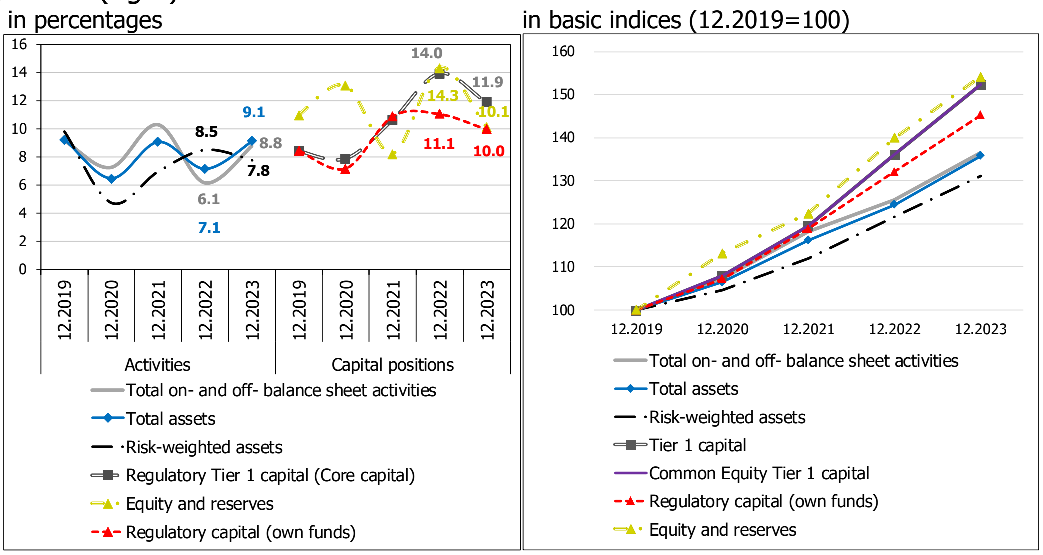
Source: National Bank, based on the data submitted by banks.

In 2023, the banking system maintained its high capitalization and stable solvency position. On an annual basis, the capital adequacy ratio increased by 0.4 pp, to the level of 18.1%, which is above the calculated ten-year average of this ratio (16.7%) and is slightly at the level of the maximum registered in the past ten years (18.4% in the third quarter of 2023). An annual increase of 0.6 pp was also registered in the Tier I capital ratio and the Common Equity Tier I capital ratio, which as of 31.12.2023 equal 17.2% and 17.1%, respectively and are significantly higher than the prescribed minimum of 6% and 4.5%, respectively (only one bank has issued Additional Tier 1 capital instruments). The share of capital and reserves in total assets and the ratio between capital and reserves and total activities of the banking system increased by 0.1 percentage point and at the end of the year equaled 12.4 and 10.4, respectively. The improved solvency and capitalization indicators is mainly due to the higher annual growth of capital positions compared to the growth of banks' activities, mostly as a result of recapitalizations and retained profits during the year. In addition, own funds, the Tier I capital and the capital and reserves registered a solid annual growth of 10%, 11.9% and 10.1%, respectively, which is faster compared to the growth in the risk weighted assets, the on-balance sheet assets and the total bank activities (on-balance sheet and off-balance sheet), which recorded a growth of 7.8%, 9.1% and 8.8%, respectively. Consequently, the average debt ratio for 2023 (calculated as the ratio between core capital and total balance sheet and off-balance sheet exposure) also improved, which is 11.7%[66] and has increased by 0.7 pp compared to 2022.

The trend analysis of the numerator and denominator of the solvency indicators of the banking system solvency ratios points to the conclusion that the upward movement of solvency indicators mainly results from the pronounced growth of the most quality layer of own funds, the Common Equity Tier 1 capital. In the recent years, more pronounced upward trend in capital positions especially in the Common equity Tier 1 capital was registered, the growth of which entirely levels up with the growth of the Tier 1 capital. On the other hand, the growth trend of assets, total balance and off-balance sheet activities as well as risk-weighted assets is more moderate, which contributes to strengthening of the banking system solvency.

Chart 61

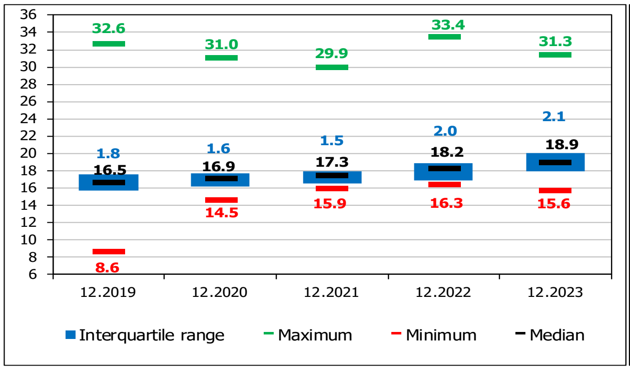
Annual growth in solvency ratio components (left) and trend of numerator and denominator of solvency ratios (right)

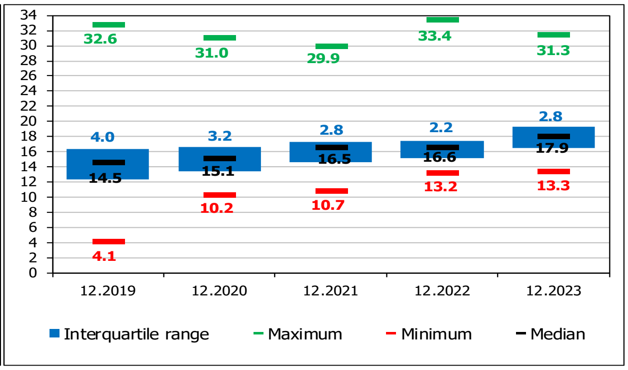


Source: National Bank, based on the data submitted by banks.

[66] The average leverage ratio calculated for the first half-year of 2023 equals 11.6%, while 11.8% for the second half of the year.

Chart 62
Measures for capital adequacy ratio distribution (left) and Tier 1 capital ratio (right) in the banking system
in %



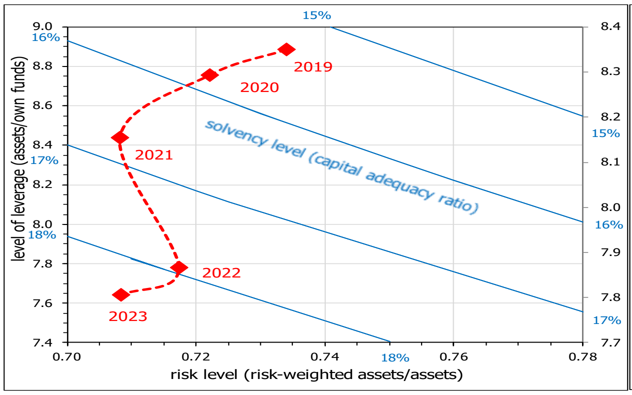


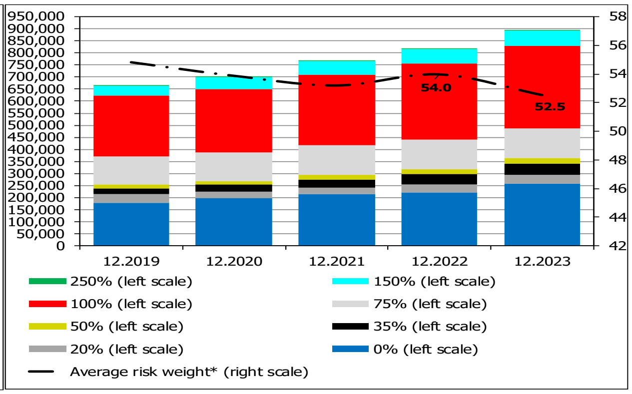
Source: National Bank, based on the data submitted by banks.

Analyzed by bank, the capital adequacy ratios of most banks remained the same or recorded a minimal annual increase. In 2023, there was an increase in the median value of the capital adequacy ratio and the Tier 1 capital ratio at a level of the banking system, reaching the highest level in the past five years. Analyzed by bank, in 2023 capital adequacy ratios and core capital ratios are at levels well above the prescribed legal minimum, but also above the total minimum capital requirements (including pillar 2 capital requirements and capital buffers) and indicate a stable solvent position of the entire banking system.

The breakdown of the capital adequacy ratio into its components indicates a simultaneous more pronounced reduction of the assets / own funds ratio (indicator for a reduced level of leverage) and more moderate decrease in the share of the risk weighted assets in the total assets (indicator for the level of risk of the activities of the banking system), which increased the capital adequacy ratio in 2023.

Chart 63
Leverage, risk and solvency of the banking system (left) and amount of total on-balance sheet and off-balance sheet exposure, by risk weights (right)
in times and in % | in millions of denars | in %

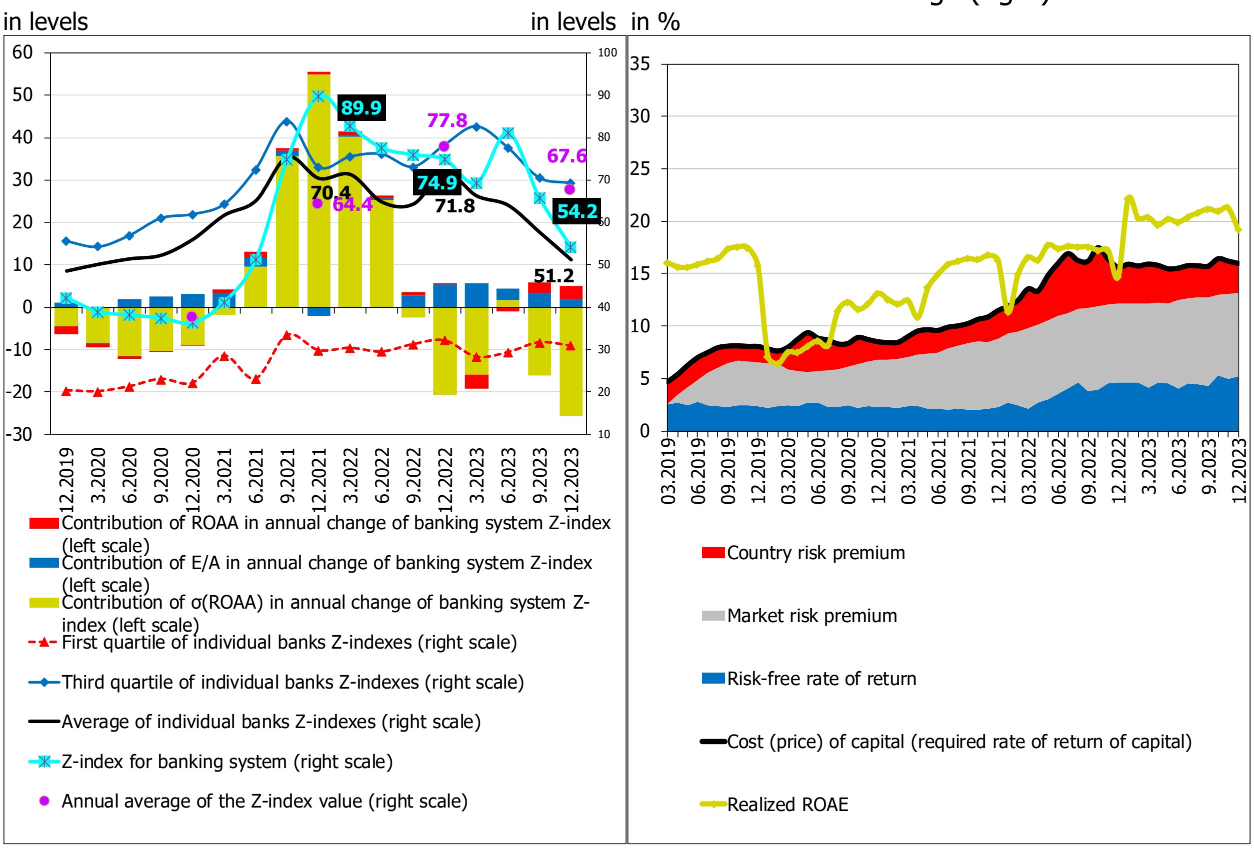




Source: National Bank, based on the data submitted by banks.
Note: The average risk weight is calculated as a ratio between risk weighted assets and total banking system balance and off-balance sheet exposure.

The total risk weighted assets decelerated the annual growth to the level of 7.8% (8.5% in 2022) or by Denar 38,181 million, mostly due to the growth of the credit risk weighted assets, of Denar 25,736 million, or by 5.8%. In 2023, claims with a risk weight of 0% (mainly claims on central governments and central banks) recorded the greatest growth (Denar 35,387 million, or by 15.9%) in the total balance sheet and off-balance sheet exposure of the banking system. Among the claims with higher risk weightings, the highest growth (Denar 22,214 million, or by 7%) was registered in claims with a risk weight of 100% (mostly claims on other companies) and claims with a risk weight of 35% (claims covered with residential buildings), which increased by Denar 6,065 million, or by 14.5%. **Such movements contributed to lowering the average level of bank risks** (as measured by the credit risk-weighted assets to total on-balance and off-balance sheet exposure ratio) by 1.5 pp, up to 52.5%.

Chart 64
Z-index (left) and level and structure of the cost (price) of equity capital of the banks whose shares are listed on the official market of the Macedonian Stock Exchange (right)



Source: National Bank, based on the data submitted by banks.
* Upward movement of the Z-index indicates smaller variability, and thus lower risk level.

The comprehensive analysis of the Macedonian banking system by using the Z-index, the CAPM and the Altman Z-score indicates a stable solvent position of the system.

The stability of the banking system, measured by the so-called Z-index[67], is at a relatively stable level. Although the value of this index is decreasing (which essentially indicates higher risks), its value is still extremely high, but it has decreased from the previous year. Namely, on average, it requires a negative shock of at least 51.2 standard deviations from the rate of return on average assets, compared to the previous year (71.8 standard deviations in 2022), to fully exhaust the capital potential of the banking system. The decrease in the value of the Z-index is due to the greater growth of the denominator (the standard deviation of the rate of return on average assets) in relation to the growth of the numerator (the return on average assets and the share of capital and reserves in assets). The increase in the standard deviation of the rate of return on average assets, for its part, is due to the more pronounced growth of the banks' financial results in the third and fourth quarter of 2023, compared to previous quarters. Hence, if the annual average of the quarterly values of the Z-index is taken, the effect on its value is almost by twice less negative, compared to the previous year.

The expected rate of return to investors in the shares of banks, calculated by applying the so-called CAPM[68], on a sample of seven banks whose shares are listed on the official market, registered slight annual increase. Namely, the cost of equity capital, calculated using this model, increased by 0.4 pp, of level of 16%, at the end of 2023. The rate of return on capital, registered by the banks included in the analysis, during and at the end of 2023, exceeded the level of the required rate of return on shares and recorded an annual increase of 4.5 pp. The higher required rate of return from the shares of the banks results entirely from the increased market risk premium, which like the expected rate of return, increased by 0.4 pp on an annual basis. The increase in this premium resulted from the greater growth of the market yield in relation to the risk-free yield rate, especially towards the end of the year. Taking into account the significant portion of the banks in MBI-10 index structure, this movement was largely conditioned by the movement of the share prices of the banks, the prices grew substantially with the publication of their semiannual financial reports, with solid achievements in terms of profitability at moderate risks and possibility of future dividend payment. Regarding the other components of the required rate, the annual reduction of 0.6 pp in the weighted country risk premium was offset by an identical growth in the risk-free rate of return in conditions of prolonged monetary tightening and consequently increased rates of return on government bonds traded on the stock market.

The higher realized rate in relation to the required rate of return in 2023 reflected in the price-to-book ratio, which for two of the three largest banks in the system had an upward trend, while for one of these banks the downward trend continued as last year. In conditions of increase in the general level of prices and growth in interest rates, investors mainly resort to shares issued

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[67] The Z-index is calculated as follows: Z=(ROAA+E/A)/(σ(ROAA)), where ROAA is the rate of return on assets, E is equity and reserves, A is assets and σ(ROAA) is the standard deviation of the rate of return on assets, calculated for the last three years. The formula shows that this measure as such, combines several indicators: banks' profitability indicator (ROAA) risk indicator (σ(ROAA)) and banks' soundness and solvency measure (E/A). Calculated as such, the Z-index measures the bank's "distance" from full depletion of its capital potential, expressed in number of standard deviations from the rate of return on assets and as such, it is a measure of the banks' capacity to absorb losses. Higher levels of this index indicate lower risk levels and higher overall stability of the banks. The Z index is usually presented in a logarithmic form (natural logarithm of the previously given formula), but it is easier to interpret and more indicative when presented in levels.

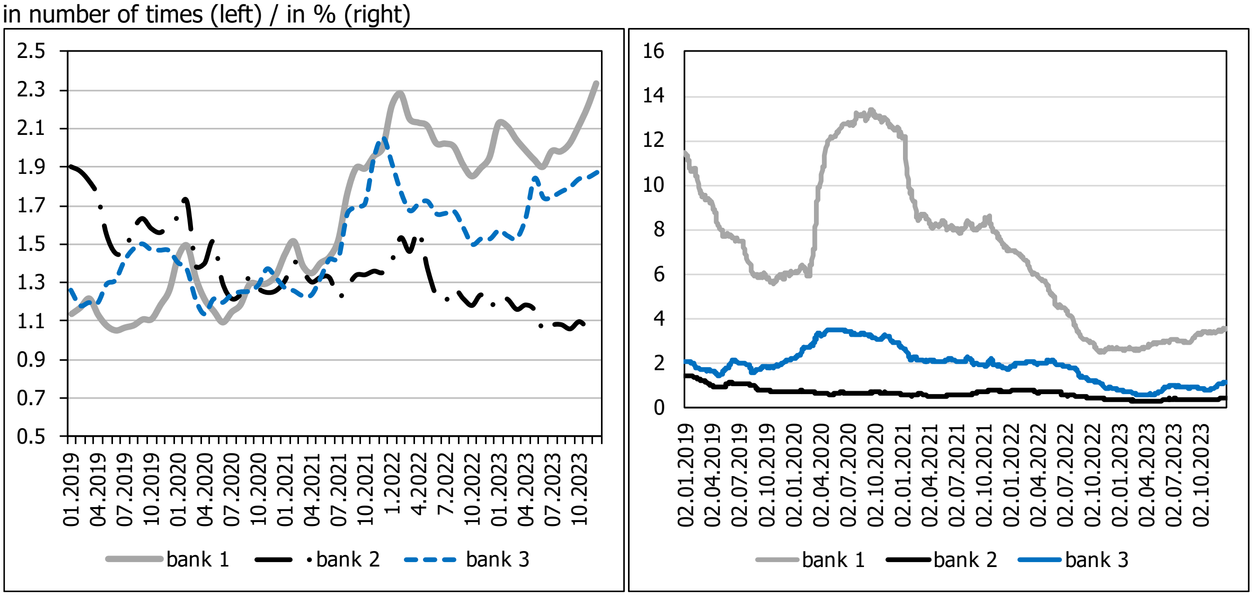
[68] Calculated using the so-called Capital-Asset Pricing Model (CAPM), where the price of equity is the sum of: 1) risk free yield rate (determined as the average of the yields to maturity of bonds listed on the Macedonian Stock Exchange), 2) the product of beta coefficient per share and the difference between the market rate of return and risk free rate on return (or premium market risk) and 3) the premium for country risk (defined as the difference between the yields of the Macedonian Eurobonds and comparable German bonds). Market risk premium is calculated as the average premium for market risk for each bank, weighted by the size of their assets and by using 10-year moving window for the average market yield (yield of MBI-10 index).

by banks as an investment that is expected to remain stable and less sensitive to macroeconomic developments (value stocks). Consequently, the purchase of banks' shares amid a limited volume of traded shares exerted an upward pressure on the prices relative to the book value.

Chart 65

Price-to-book ratio for the shares (left) and percentage of turnover ratio for the previous one-year period (right), for the three largest banks in the system

in number of times (left) / in % (right)

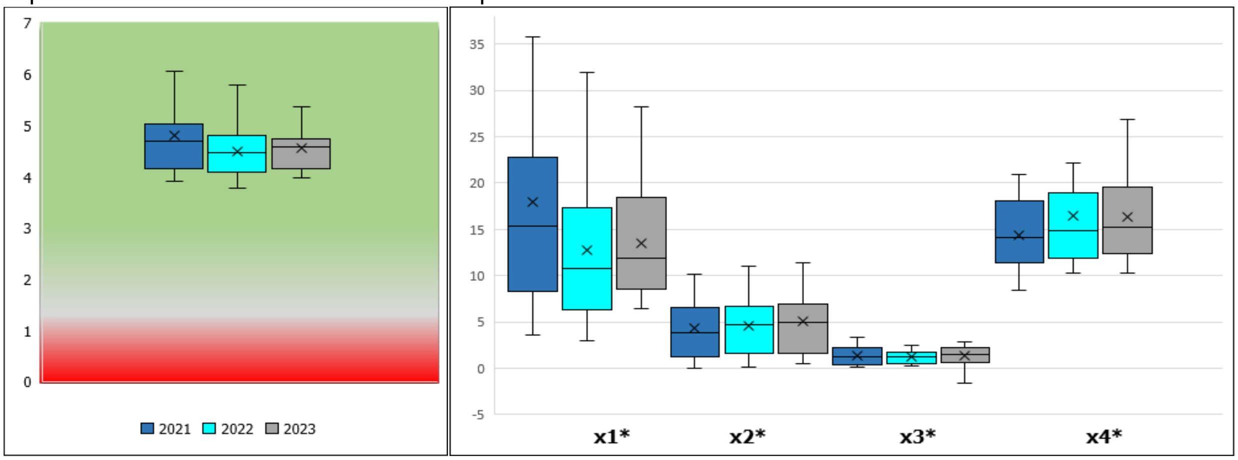


Source: National Bank, based on the data submitted by banks.

The analysis of the Macedonian banking system by using the Altman Z-score[69] suggests that the system is within a safe zone, i.e. the insolvency risk is at a very low level. The median and average value of the score in 2023 registered a slight increase, but are still at a high level of 4.57 and 4.56 respectively (4.47 and 4.49 in 2022) and well over the minimum threshold of the green zone of 2.6. Analyzed by components of the rating calculation formula, the median and average value of each indicator recorded an increase. An exception is the average value of the indicator for the ratio between capital and reserves and total liabilities, which shows minor decrease.

[69] The Altman Z-score is an often used tool in corporate finance, with the help of which one can predict the probability that a firm will go into bankruptcy within two years. The Z-score uses values from the income statement and the balance sheet to measure the financial status of the company. The initial formula underwent a series of changes in order to respond to different types of business models. The analysis of the individual banks uses the following formula that is applicable to a general business model company and to developing markets (Altman Z-score): $Z'' = 3.25 + 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4$. More information on the model is given in the paper from the original author on the following link (p.19) The coefficients for each indicator are derived by analyzing the movements of these indicators for relevant samples of solvent and insolvent companies, taking into account the sector and size (assets) of companies. The indicators in the analysis are adjusted to match the characteristics of the banks. Considering the business model, the "RBSM" AD Skopje is exempted from the analysis. The Z-score is calculated for each bank and a median and average value of the score at a level of the system is obtained. The interpretation of the obtained results has also changed over the years, and the analysis uses the interpretation according to (Altman E. I. 2006) according to which: $Z > 2.6$ (safe zone, small probability of insolvency), $1.1 < Z < 2.6$ (grey zone, it requires an additional analysis to determine the accuracy), $Z < 1.1$ (distress zone, there is strong probability of insolvency) A similar analysis has also been made in a recent study on the assessment of some of the banks in the Indian banking system. For more details, please visit the following link.

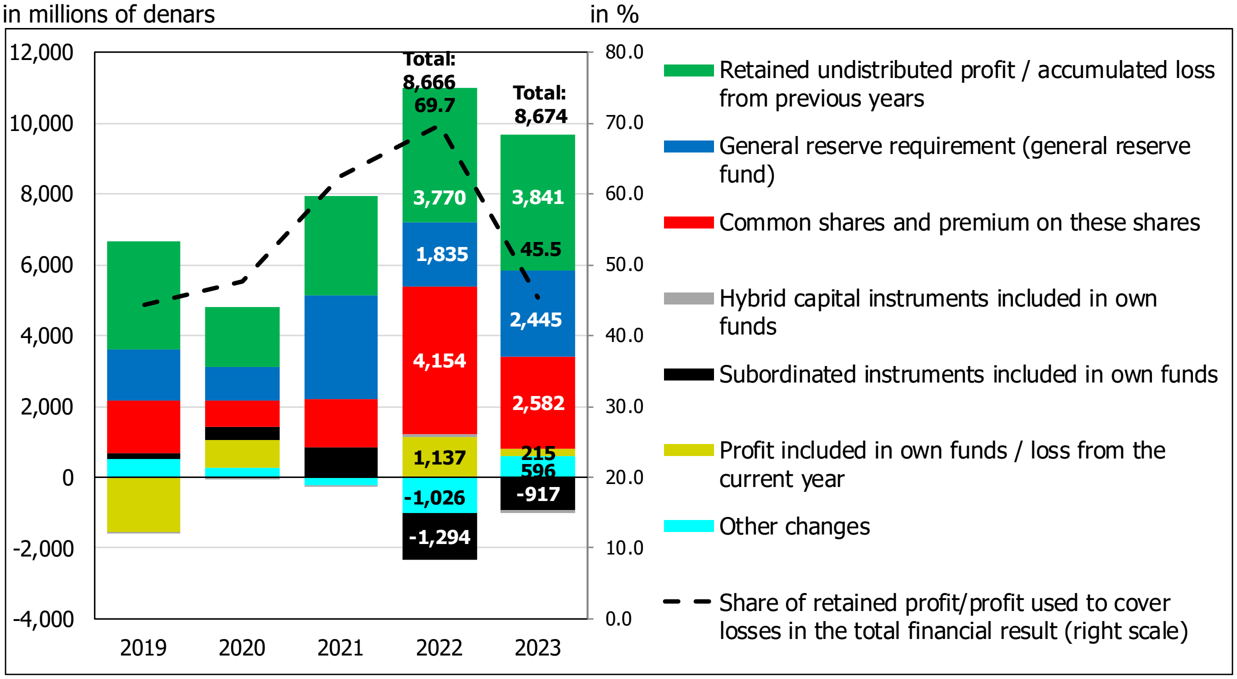
Chart 66
Altman Z-score at a level of a banking system (left) and analysis of the measures of dispersion of the components of the Altman Z-score (right)
in points in percent



Source: National Bank, based on the data submitted by banks.
* The average value is marked with X, while the median value is marked with the middle horizontal line within the column. The column indicates the interquartile difference, i.e. the dispersion of half of the indicator values for the banks in the system. The left chart is colored in accordance with the zones of the score (the green color indicates a safe zone). Individual indicators are calculated as follows: **x1** = (high-quality liquid assets - net cash outflow in the next 30 days) / total assets, **x2** = retained earnings / average assets, **x3** = income from regular activities / average assets and **x4** = capital and reserves / total liabilities.

4.2. Quality of own funds of the banking system

Chart 67
Structure of annual changes in own funds
in millions of denars in %



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

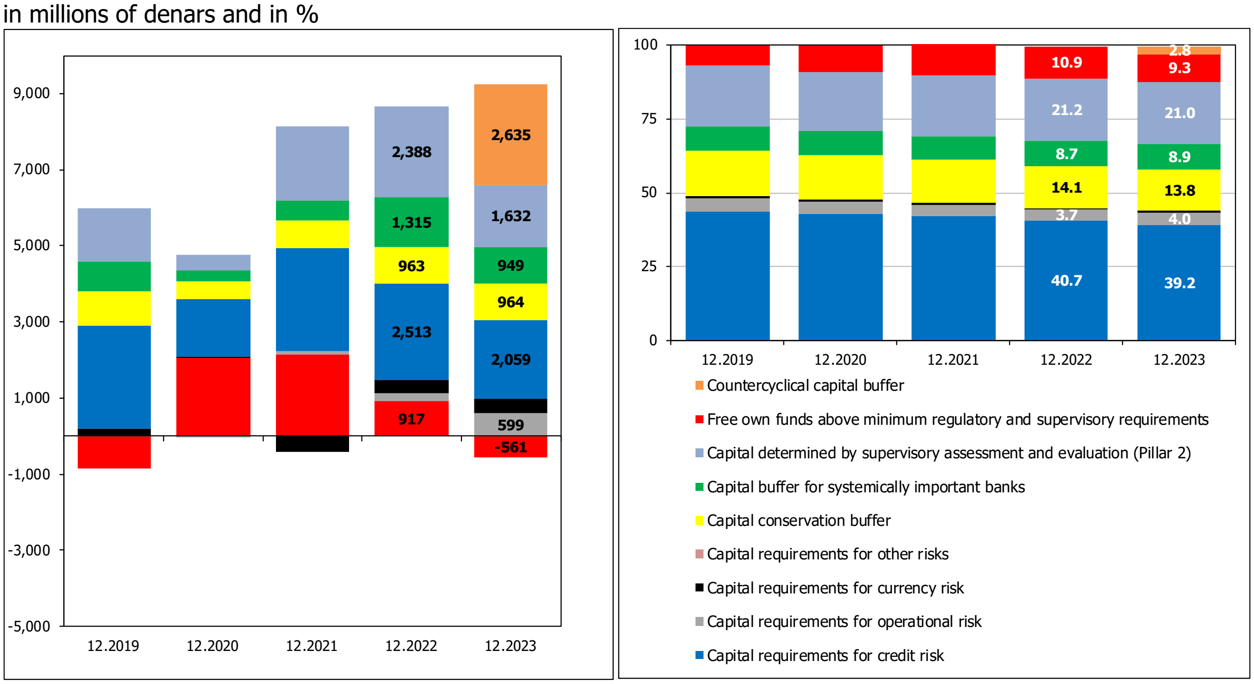
The structure of the own funds at a level of the banking system shows that the sector has high-quality capital positions, which provide it with satisfactory resilience to potential stressful scenarios. At the end of 2023, the highest-quality buffer of the own funds of the banking system (the Common Equity Tier I capital) accounts for 94.7% of the total own funds, the Additional Tier I capital accounts for only 0.5% of the own funds of the banking system, while the Tier II capital makes up 4.8%.

In 2023, the own funds of the banking system registered annual growth of Denar 8,674 million, or by 10% (11.1% in 2022). The largest contribution to the growth of own funds in 2023 was made by the retained and reinvested earnings registered in the previous year, the issue of new common shares (by one large bank[70], one medium-size bank[71] and one small bank[72]), and retention of earnings for the current year (by one large bank). At the beginning of the year, one small-size bank [73] made a transformation of a hybrid instrument (loan) into common shares. Decrease was also registered in subordinated instruments (in part due to reduction of the accounting value because of entering the last five years to maturity and early payment of a subordinated loan of one large bank), with the other changes registering a positive sign (as a result of the changes in the fair value of the instruments held as available for sale and are appropriately reflected in revaluation reserves). For more details about the level of own funds by group of banks see annexes to this report.

Chart 68

Structure of annual growth (left) and balance (right) of own funds, by the requirement for covering risks and for maintaining the required capital buffers

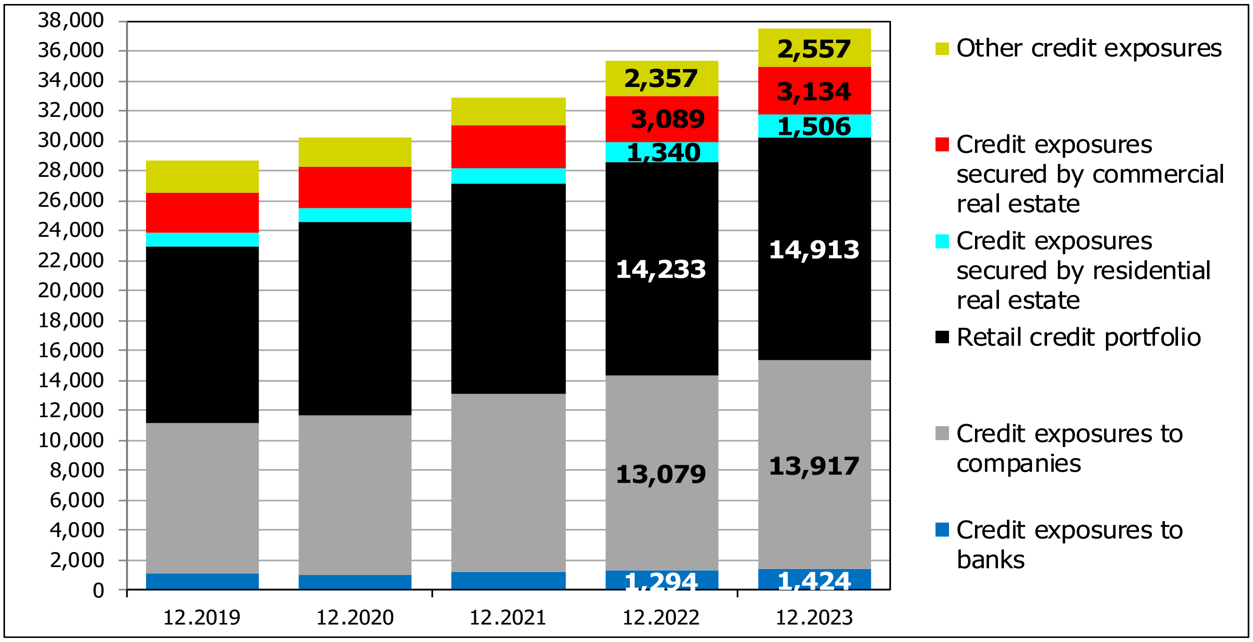
in millions of denars and in %



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

[70]For more information visit: MI July 2023 стр. **8.**
[71]For more information visit: Notification
[72]For more information visit: MI April 2023 стр. **8.**
[73]For more information visit: DECEMBER 2022 стр. **11.**

Chart 69
Stock and structure of capital requirements for credit risk, by category of exposure
in millions of denars



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

Analyzed by their purpose, almost all components of capital requirements registered an annual growth. Capital requirements for covering risks (from pillar 1) increased by Denar 3,054 million, or by 7.8% and as of 31.12.2023, they account for 44.2% of the total own funds of the banking system (45.1% as of 31.12.2022). The annual growth of capital requirements for covering risks mostly results from the increase in capital requirements for credit risk, mostly from banks' activities with companies (claims on other companies), as well as claims based on retail loan portfolio (mainly households). The highest rise in 2023, in the amount of Denar 4,549 million, or 23%, was registered in the capital buffers[74], which take 25.5% of the total own funds (22.8% as of 31.12.2022). Analytically analyzed, the countercyclical capital buffer, the implementation of which, i.e. requirement for its introduction, commenced on 1 August 2023[75], contributed the most to the increase in the capital buffers (Denar 2,635 million), with nearly equal absolute increase in the capital conservation buffer and capital buffer for systemically important banks (Denar 964 and 949 million, respectively). With the introduction of the rate of the counter cyclical capital buffer for the bank exposures in the Republic of North Macedonia of 0.5%, preventive actions are taken, strengthening further the capital strength of the domestic banks, primarily in relation to the risks arising from the external environment, the growth of the general level of prices, as well as the growth of interest rates and housing prices, in conditions of

[74] Out of the four capital buffers specified by the Banking Law, in 2023, all banks were required to meet the capital conservation and the countercyclical capital buffer (since August 2023), while six banks, which in 2022 were identified as systemically important banks, are also required to meet an appropriate rate of capital buffer for systemically important banks. Also, in April 2023, during the regular annual calculation for the purposes of identifying systemically important banks, seven banks were identified that should comply with the capital buffer for systemically important banks by 31 March 2024. For more details, please visit the following link.

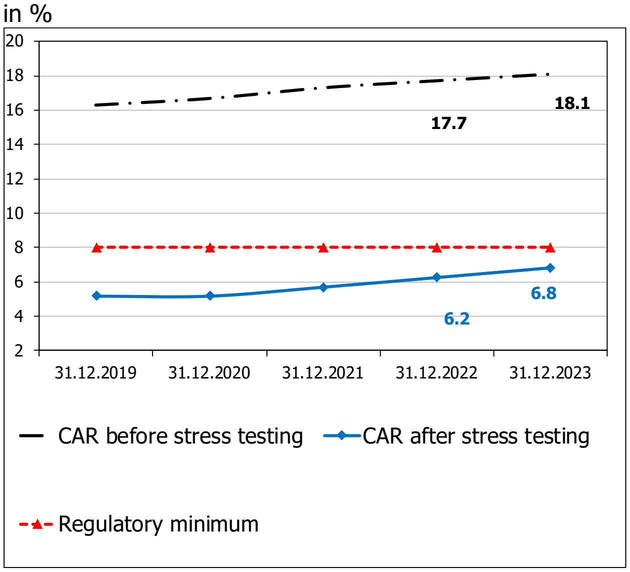
[75] The Decision on introducing a countercyclical capital buffer of 0.5% starting from 1 August 2023 was adopted a year earlier. Also, during 2023, the National Bank Council adopted a decision on introducing a countercyclical capital buffer of the banks for the exposures in the Republic of North Macedonia, while the rates for this capital buffer are 0.75% with application from April 1 to June 30, 2024, 1% from July 1 to October 31, 2024, 1.25% from November 1 to December 31, 2024 and 1.5% from January 1 to March 31, 2025. For more details on the decisions on countercyclical capital buffer visit the following link.

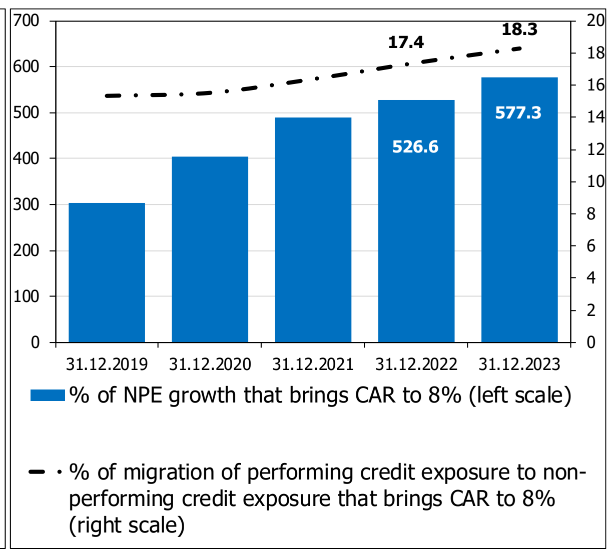
favorable performance of the banking system The amount of the capital supplement determined by the supervisory assessment (pillar 2) registered an annual increase of Denar 1,632 million, or by 8.9% and accounts for 21% of the total own funds of the banking system. The higher capital requirements in 2023 were fulfilled by using part of the free own funds, above the necessary regulatory and supervisory requirements, which recorded an annual decrease of Denar 561 million, or by 5.9% and reduced the share to 9.3 % in total own funds (10.9% as of 31.12.2022). For more details on the capital requirements for covering risks and on the capital adequacy ratio, by group of banks, see annexes to this Report.

4.3. Stress-testing of the banking system resilience to hypothetical shocks

The banking system shows a satisfactory level of resilience to the conducted regular simulated shocks, which assume extreme materialization of the credit risk (in combination with materialization of the currency and/or the interest rate risk). The results of the simulation for simultaneous materialization of credit, currency and interest risks indicate an increased resilience of the banking system compared to 31.12.2022, which is mainly due to the higher initial capital adequacy rate, before the shocks. The capital adequacy ratio of the banking system after the shocks decreases from 18.1% to 6.8% (from 17.7% to 6.2% in 2022).

Chart 70
Results of the stress test simulation[76] (left) and deterioration of credit exposure quality to reduce the banking system capital adequacy to 8% (right)
in %





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

[76] Stress-testing includes simulation of simultaneous materialization of credit, currency and interest rate shocks, through:
- deterioration of the quality of credit exposure to non-financial entities, assuming a migration of 20%, 25% and 30% of the credit exposure to the non-financial sector of A, B and C-performing risk categories, respectively, to C-non-performing, D and E, where the migrated exposure is distributed equally (33.3% each) to the weaker risk categories, while maintaining the same percentage of coverage with impairment;
- growth of exposure to financial entities which is non-performing by 100%, at the expense of reducing the exposure in A risk category;
- depreciation of the denar against the euro by 30%; and
- growth of lending and deposit interest rates from 1 to 5 pp;

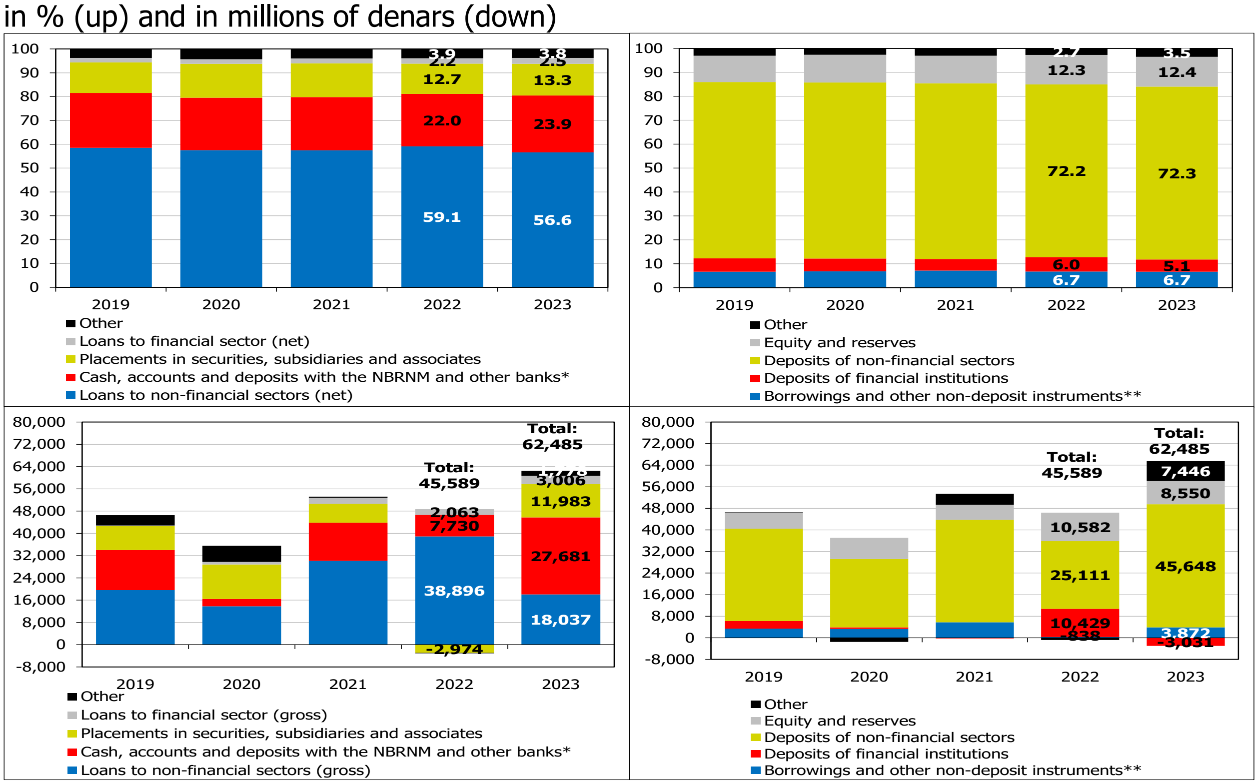
IV. Major balance sheet changes and profitability of the banking system

1. Bank activities

The balance sheet of the banking system recorded accelerated growth in 2023. Analyzing the sources of funds, deposits of non-financial entities, the capital and the reserves, as well as earnings in 2023 made the greatest contribution to the annual growth. Household deposits had a slightly larger contribution to the annual growth of total deposits, although the growth of corporate deposits accelerated more significantly. From the aspect of deposit currency, the annual growth of denar deposits is several times higher compared to the increase of foreign currency deposits. With a further decline in short-term deposits, long-term deposits recorded a high percentage annual growth and, compared to demand deposits, contributed slightly more to the annual growth of total deposits.

In the assets of the banking system, liquid assets recorded a more significant growth, with the loans also registering an increase, but significantly slower compared to the previous year. The slowdown in credit activity was less pronounced in household loans, which contributed the most to the annual growth of total loans to non-financial entities.

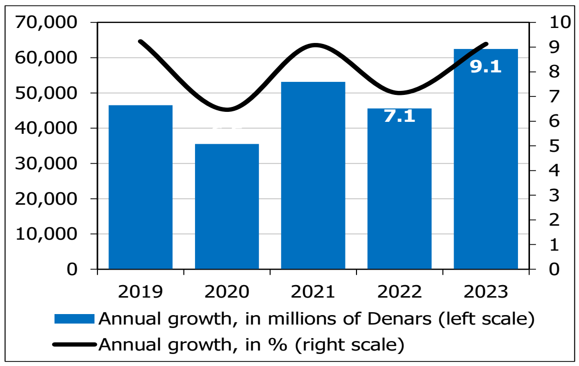
Chart 71
Structure of the assets (up left) and liabilities (top right) and structure of the annual changes of the assets (bottom left) and liabilities (bottom right) of the banking system in % (top) and in millions of denars (bottom)
in % (up) and in millions of denars (down)



Source: National Bank, based on data submitted by banks.
Note: * Cash, accounts and deposits with the NBRNM and other banks also include the assets in the guarantee fund of KIBS, as well as the reserve requirement in foreign currency;
** Other issued non-deposit instruments include issued subordinated and hybrid capital instruments.

In 2023, the balance sheets of the banking system increased by Denar 62,485 million, or by 9.1%, which means faster growth compared to the previous year (7.1%). The reason for the annual growth were higher deposits of the non-financial entities, the capital and the reserves (because of retained earnings from 2022 and new share issues) and the earnings realized in 2023. In terms of assets, banks significantly increased their liquid assets (primarily, deposit facilities at the National Bank, placements in domestic and foreign government securities and funds on the foreign currency payment account at the National Bank), as well as placements in loans to non-financial entities, but at a slower pace compared to the previous year.

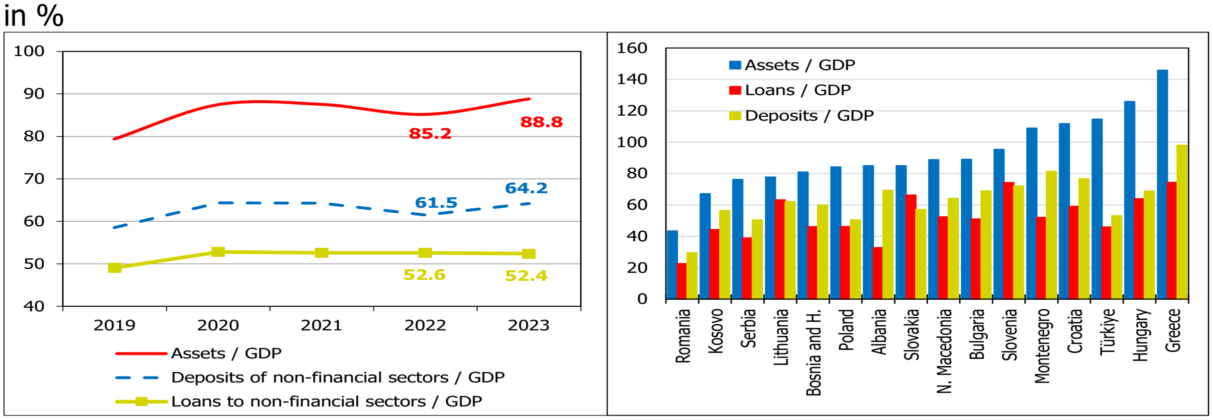
Chart 72
Assets of the banking system
in millions of denars and in %



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

Amid accelerated growth of bank assets, financial intermediation indicators recorded a certain increase in 2023. The comparative analysis with other countries of Central and Southeast Europe indicates an improvement in the level of financial intermediation in our country, which is still relatively moderate.

Chart 73
Financial intermediation in the Republic of North Macedonia (left) and by country (right)
in %

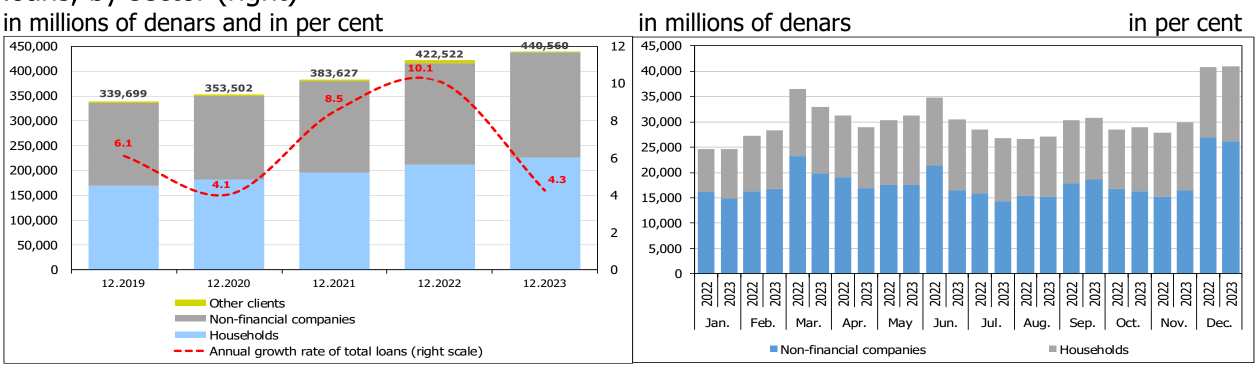


Source: The National Bank and the SSO, based on data submitted by banks, the IMF and the websites of the individual central banks.

1.1. Loans to non-financial entities[77]

The banks' lending to non-financial sector grew in 2023, but slowly compared to the preceding year. In 2023, the total loans to non-financial sector increased by Denar 18,037 million, or by 4.3%. At the same time, about 80% of the annual growth of credit activity is a result of the increased lending to households, where the slowdown in growth was smaller than in lending to enterprises. The slowed credit growth occurs in conditions of an increase in the interest rates and a general net tightening of credit conditions and, at the same time, a net reduced credit demand[78]. Bank-by-bank analysis indicates that the increase in lending was registered by seven out of twelve banks[79], with the intensified lending by large banks being the main driver.

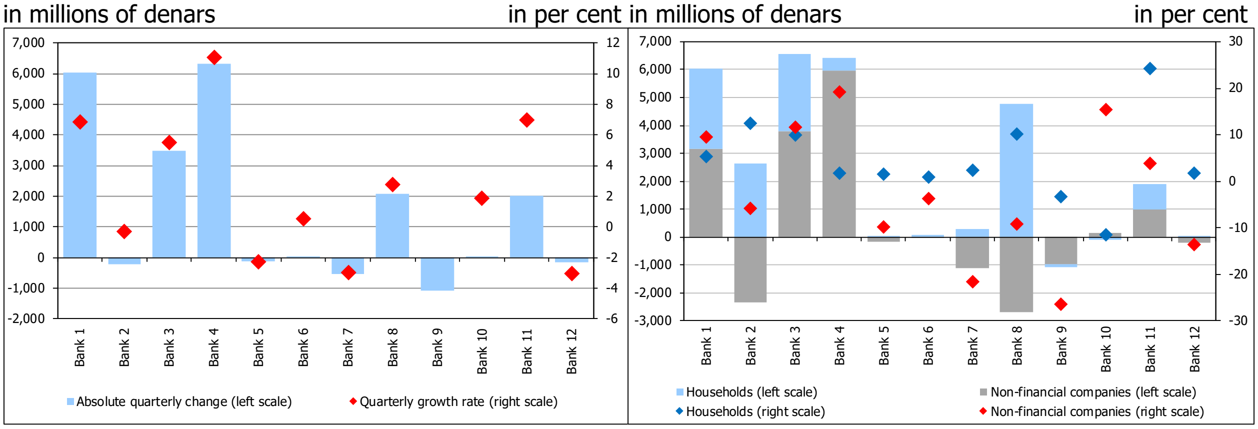
Chart 74
Credit amount and annual growth rate of the non-financial entities (left) and newly approved loans, by sector (right)



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

The volume of newly approved loans to the non-financial sector[80] in 2023 declined by 1.7% after the high double-digit growth in the previous year. The drop is due to the decrease in the newly approved corporate loans (by 5.4%), while the newly approved household loans recorded an increase (by 3.8%). The reduced new lending to enterprises in 2023 can be linked to last year's increased liquidity needs of the corporate sector due to growing energy prices in 2022.

Chart 75
Annual growth of total loans to non-financial entities (left) and of loans to non-financial corporations and households (right), by bank
in millions of denars in per cent in millions of denars in per cent



Source: National Bank, based on the data submitted by banks.
Note: DBNM is not included in the analysis.

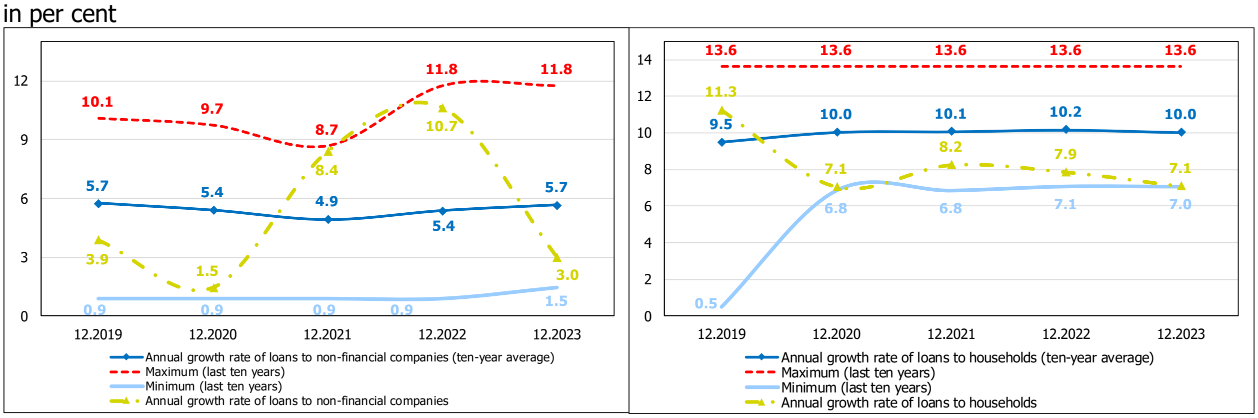
Corporate loans registered a significant slowdown in growth in 2023 after the significant growth in the previous two years. As of 31.12.2023, the total corporate loans grew by Denar 6,574 million or by 3.2%[81] compared to the end of the previous year (increase of Denar 21,595 million or by 11.8% in 2022). The increase in loans is driven by the high growth of lending to the energy sector (by 44.8%)[82] and to the construction sector (by 7.5%), but on the other hand it is limited by the decline in loans to the production of metals, machines, tools and equipment (by 9.3%), to the food industry (by 2.4%) and to wholesale and retail trade (by 1.5%). The slow growth of corporate loans occurs in conditions of a net tightening of credit conditions throughout the year, and this is particularly pronounced in terms of interest rates, non-interest income and collateral requirements, as well as a significant net reduction in the credit demand compared to 2022. However, the expectations for the first quarter of 2024 point to a net easing of the conditions for lending to enterprises with a stronger net increase in credit demand.[83]

Analyzed by the size of the non-financial corporations[84], the largest share accounts for the loans of large companies (36,0%), which increased compared to the end of the previous year, while the share of loans of micro enterprises (7.6%) is the lowest and registers a decrease, which

[77] Loans to non-financial entities include loans to resident and non-resident non-financial entities, including loans to private and public non-financial companies, central government, local government, non-profit institutions serving households (loans to other clients), sole proprietors and natural persons (loans to households).
[78] Consistent with all four credit activity surveys released in 2023, net tightening is seen in the conditions for lending to both enterprises and households, while the demand for loans in both sectors records net decrease (the only exception is the small net increase in credit demand of enterprises in the Survey of credit activity for the second quarter of 2023). The basic interest rate of the National Bank increased from 4.75% at the end of 2022 to 6.30% at the end of 2023.
[79] The DBNM AD Skopje is not taken into account.
[80] For the purpose of the analysis of the newly extended loans, the non-financial sector includes only legal entities and households, while it excludes other clients due to large fluctuations of newly approved loans.
[81] Excluding the effect of net write-offs, the annual growth rate equaled 3.0% (10.7% as of 31.12.2022).
[82] The measure of the National Bank for exemption from the reserve requirement for loans for the construction of new facilities or for increasing the installed power of existing facilities for the domestic production of electricity from renewable sources also has a certain contribution to this growth.
[83] Source: Lending Surveys in the first, second, third and fourth quarter of 2023.
[84] The criteria for Classification of entities by size (into large, medium, small and micro) are defined in Article 470 of the Law on Trade Companies. Data on the structure of corporate loans by size (and crosswise, by size and customer activity) were obtained from banks upon a special data request.

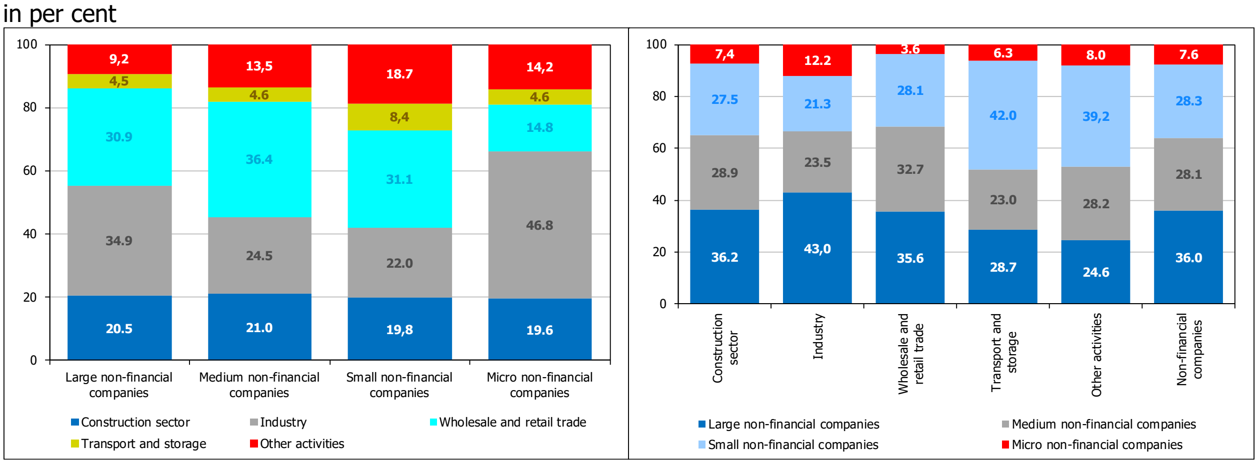
is partially a result of the higher amounts of loans of larger enterprises. In terms of the clients' activity, the largest share accounts for the corporate loans dealing with industry (32.4%), wholesale and retail trade (27.7%) and enterprises in the construction sector (19.9%).[85]

Chart 76
Ten-year moving average of annual growth rates of loans to non-financial corporations (left) and household loans (right)
in per cent



Source: National Bank, based on the data submitted by banks.
* Note: Excluding the effect of all mandatory write-offs made in the period 1.1.2016 - 31.12.2023. Starting from December 2019, the data also contains collected compulsorily written-off loans.

Chart 77
Structure of loans to non-financial companies by individual activities and by size of the company
in per cent



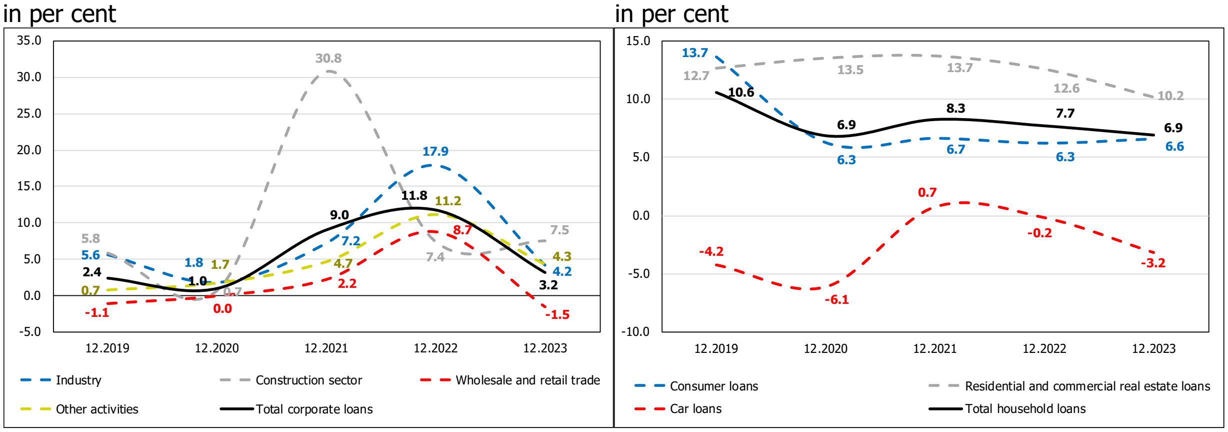
Source: Data submitted by banks on a special data request.

In 2023, credit support is also provided to households, but at a slower pace, although the slowdown is significantly more moderate compared to corporate lending. The total household loans in 2023 increased by Denar 14,649 million, or by 6.9%[86] (increase of Denar 15,167 million, or by 7.7% as of 31.12.2022). This growth rate is below the average and is at the level of the minimum growth rate in the last ten-year period. Similar to lending to companies, a net tightening of credit conditions and a net decrease in credit demand

[85] Source: National Bank's Credit Registry based on data submitted by banks.
[86] Excluding the effect of net write-offs, the annual growth rate increased and equaled 7.1% (7.9% as of 31.12.2022).

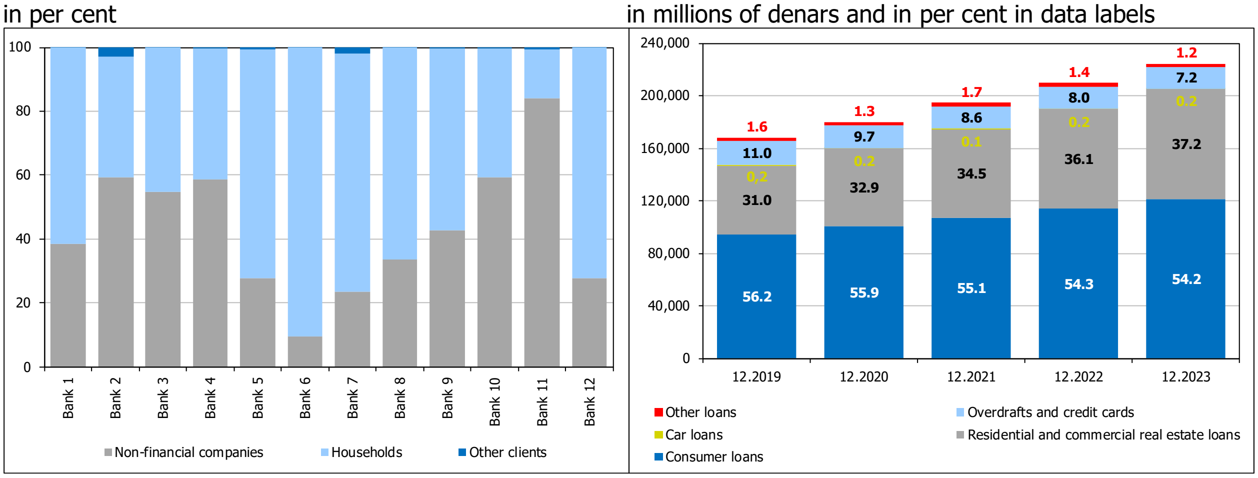
can be observed during 2023. Expectations for developments in the first quarter of 2024 contribute to a moderate net easing of credit conditions and some net increase in credit demand.[87]

Chart 78
Annual growth rate of corporate loans (left) and household loans (right)
in per cent in per cent



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

Chart 79
Sectoral structure of loans to non-financial entities, by bank (left) and structure of loans to natural entities, by product (right)
in per cent in millions of denars and in per cent in data labels



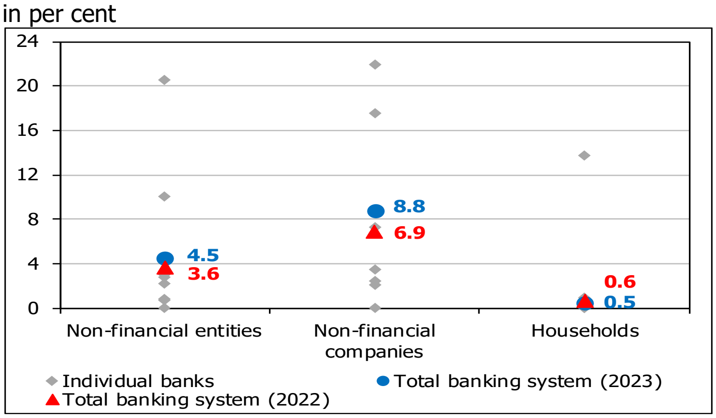
Source: National Bank's Credit Registry based on data submitted by banks.

Due to such movements, the share of household loans in the structure of loans to the non-financial sector is 51.3%, which is an increase by 1.3 pp compared to the end of 2022, while the share of corporate loans is 48.1%, which represents a decrease by 0.5 pp.[88] By the type of credit products, loans to natural persons intended to finance consumption account for 62.8%, which includes the share of 54.2% of consumer loans, while loans for residential and business premises account for 37.2% of the total structure of loans to natural persons. The ratio of shares between consumer and housing loans continues to narrow due to the faster growth of housing lending

[87] Source: Lending Survey in the first, second, third and fourth quarter of 2023.
[88] The share of loans to other customers from the non-financial sector at the end of 2023 is 0.6% and is significantly lower than at the end of 2022 when it was 1.4%.

(annual growth of 10.0% of housing loans compared to the growth of 6.6% of consumer loans as of 31.12.2023).

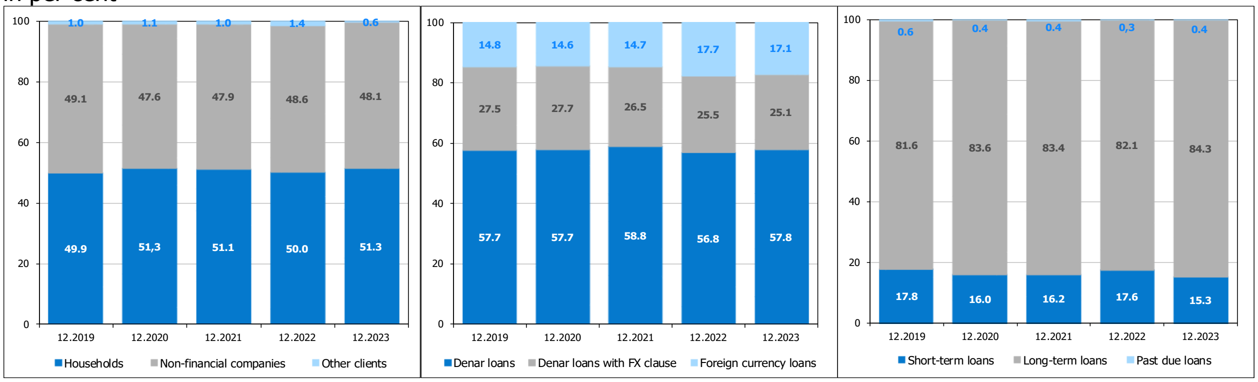
Chart 80
Share of "green" loans in the total loans to non-financial entities and by individual sectors, by individual bank



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

Green loans[89] continued to grow at an accelerated pace during 2023, which contributed towards an increase in their share in banks' credit portfolios, but it remains low and equals 4.5%[90]. During 2023, total green loans increased by Denar 4,474 million, or by 29.1%, which is exclusively due to the high growth of green lending to enterprises by 32.4%, while green credits to households decreased by 6.4%.

Chart 81
Structure of total loans, by sector (left) and currency (middle), and structure of regular loans, by maturity (right)



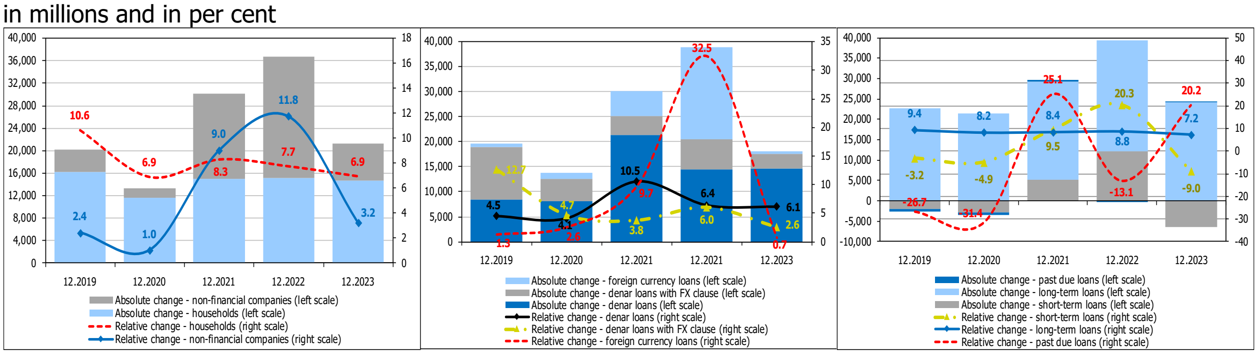
Source: National Bank, based on the data submitted by banks.
Note: Non-performing loans are not included in the chart on the right.

[89] For the purposes of this report, "green" loans denote loans that are intended to improve the energy efficiency of the households and the corporate sector; loans for support of the investments in green technologies, materials and solutions; loans for support of investments in renewable energy sources, control and prevention of pollution, protection of the environment, mitigation of the risks from climate changes, etc.
[90] Two banks, out of twelve analyzed banks, as of 31.12.2023 have no "green loans" in the portfolio. In the banks that have approved such loans, two banks register a two-digit share of green loans in total loans, while the share by bank ranges from 0.1% to 20.5%. Analyzed by sector, the share of green loans in total loans by individual banks is between 0.001% and 21.9% in corporate loans, i.e. between 0.0% and 13.8% in household loans.

The analysis of loans by currency indicates a slow growth in denar loans and loans with a currency component, while slightly over 80% of the growth of total loans to non-financial entities is the result of the increase in denar loans. Compared to the end of 2022, denar loans increased by Denar 14,714 million, or by 6.1%[91], while loans with a currency component grew by Denar 3,324 million, or by 1.8%[92]. Within the currency structure, the largest share of 57.8% accounts for denar loans, which increased by 1.0 pp on annual basis. Within loans with currency component, the share of denar loans is higher (25.1%) compared to foreign currency loans (17.1%).

According to the loan maturity[93], the increase in loans mainly results from the growth of long-term loans, while short-term loans show a decrease. As of 31.12.2023, long-term loans increased by Denar 24,186 million, or by 7.2% (increase of Denar 27,151 million, or 8.8% as of 31.12.2022), and short-term loans decreased by Denar 6,469 million, or by 9.0% (increase of Denar 12,174 million, or by 20.3% as of 12.31.2022). In the term loan structure, the share of long-term loans grew to 84.3% at the expense of the reduced share of short-term loans to 15.3%. Due loans have also registered growth, but their movements are quite variable because of their insignificant amount[94].

Chart 82
Annual credit growth, by sector (left), currency (middle) and maturity (right)
in millions and in per cent



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

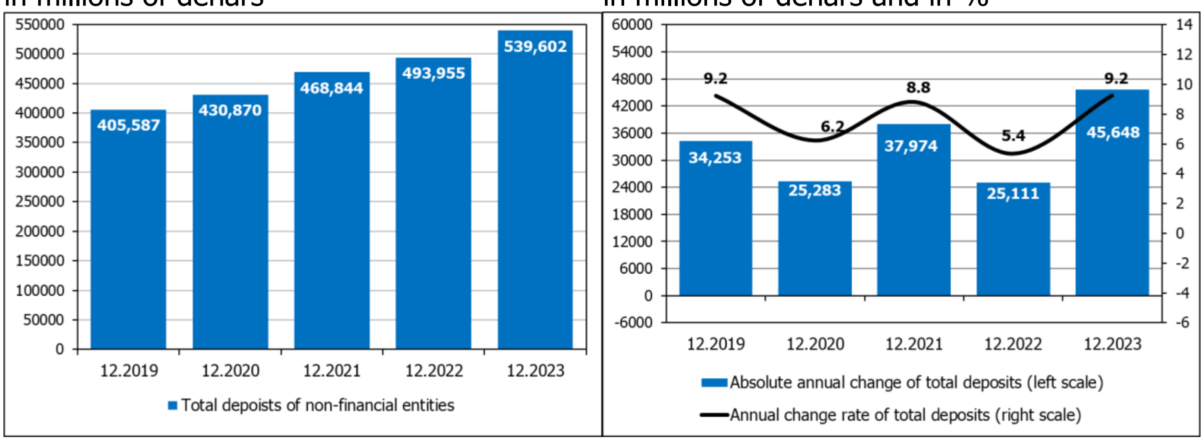
[91] The annual growth of denar loans to non-financial sector is due to higher corporate loans by Denar 8,579 million, or by 7.0%, and household loans by Denar 6,210 million, or by 5.3%, while loans to other clients decreased by Denar 75 million, or by 5.4%.
[92] The increase in the loans with a currency component to non-financial sector on an annual basis results from the reduced denar loans with FX clause by Denar 2,788 million, or by 2.6%, as well as to the increase in the foreign currency loans by Denar 535 million, or by 0.7%. The increase in denar loans with FX clause is fully due to the growth in household loans (of Denar 6,204 million, or by 7.7%), while decrease was registered in corporate loans (of Denar 3,262 million, or by 12.5%), and loans to other clients (of Denar 154 million, or by 17.7%). The growth of foreign currency loans is a result of the increased higher household loans (by Denar 2,235 million, or by 15.9%) and corporate loans (by Denar 1,257 million, or by 2.2%) amid a large drop in foreign currency loans to other clients (by Denar 2,957 million, or by 79.6%).
[93] The analysis of maturity structure excludes non-performing loans.
[94] The due loans make up 0.4% of total regular loans.

1.1. Deposits of non-financial entities

In 2023, deposits from non-financial entities recorded an accelerated growth of Denar 45,648 million, or by 9.2% (in 2022, they increased by Denar 25,111 million, or by 5.4%).

Analyzed by sector, the annual deposit growth is mostly conditioned by the households sector, which on an annual basis increased by Denar 25,730 million, or by 7.8%, which represents an accelerated growth compared to the previous year when they recorded a growth of Denar 19,385 million, or by 6.3%. At the same time, deposits from this sector have the highest share in the banks' deposit base (65.6%). Deposits from non-financial corporations also recorded a significant acceleration of the annual growth, which reached Denar 19,553 million, or 13.2% (the growth in 2022 equaled Denar 5,354 million, or 3.8%).

Chart 83
Balance (left) and change (right) of deposits of non-financial entities
in millions of denars / in millions of denars and in %

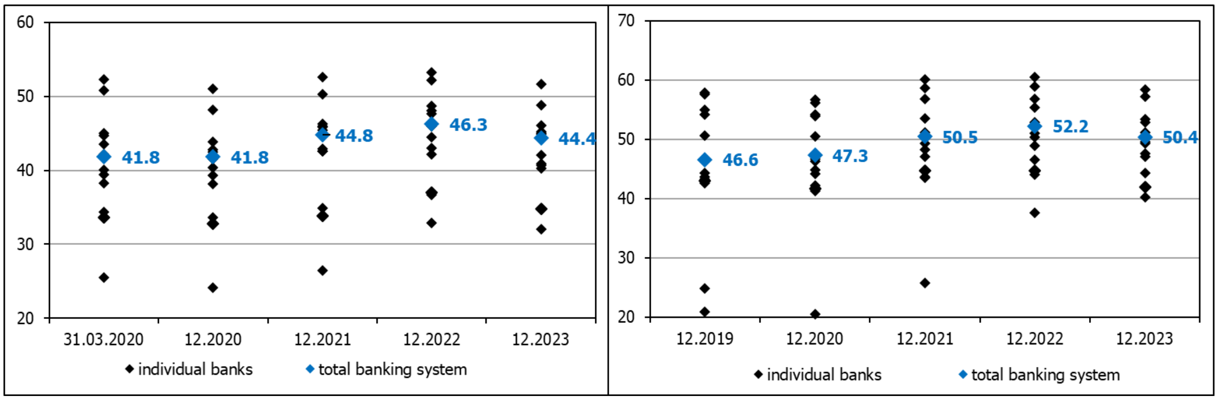


Source: National Bank, based on the data submitted by banks.

Deposit base denarization is present also in 2023. Thus, analyzed by currency, the growth of denar deposits had the largest contribution to the annual increase in total deposits of non-financial entities. The annual growth of these deposits amounts to Denar 34,551 million, or by 13% (Denar 6,888 million, or 2.7% in 2022), which contributed with 75.7% to the annual growth of total deposits from non-financial entities. Denar deposits from the household sector registered an annual growth of Denar 18,648 million, or by 11.9% and have the largest contribution to the growth of denar deposits (54.0%). Enterprises also recorded a significant growth in denar deposits, of Denar 15,666 million, or by 15.8% and contributed with 45.3% to the growth of denar deposits. Such changes in the currency inclinations of depositors to keep their funds in denars, in addition to higher yields and stable expectations, were also encouraged by the measures taken by the National Bank, mainly through the reserve requirement, which encourage savings in domestic currency.

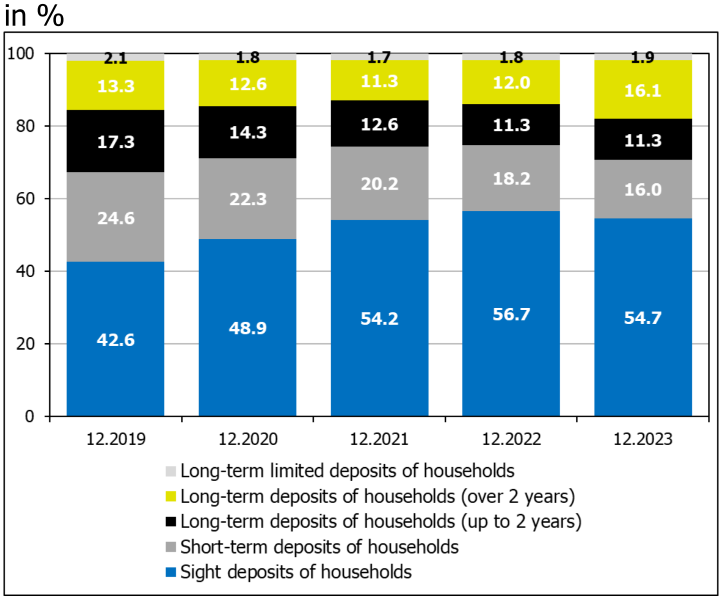
As opposed to the accelerated growth of denar deposits, foreign currency grew at slower pace (their annual growth slowed down from 8.7% or Denar 18,382 million in 2022, to the level of 4.8% or Denar 11,064 million in 2023). Thus, their share in the structure of total deposits decreased from 46.3% in 2022 to 44.4% in 2023, against the increased share of Denar deposits (from 53.6% as of 31.12.2022 to 55.5 % as of 31.12.2023).

Chart 84
Share of total foreign currency deposits in total deposits of the banking system (left) and of the foreign currency household deposits in total household deposits (right)
in %



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

Chart 85
Maturity structure of household deposits
in %



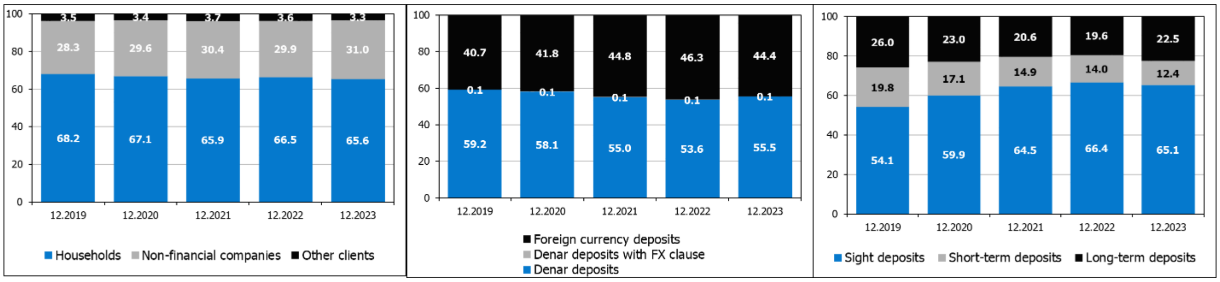
Source: National Bank, based on the data submitted by banks.

There were favorable changes in terms of deposits maturity also in 2023. Thus, long-term deposits recorded the highest annual growth rate in the past ten years (25.7% or Denar 24,816 million)[95], which exceeded the growth of demand deposits (7.0% or Denar

[95]The annual increase in long-term deposits arises from the growth in both denar (by Denar 13,394 million, or 28.2%) and foreign currency deposits (by Denar 11,365 million, or 23.1%).

23,001 million), with a further decline in short-term deposits (in 2023 they decreased by 3.1% or Denar 2,169 million).

Chart 86
Structure of total deposits, by sector (left), currency (middle) and maturity (right)
in %

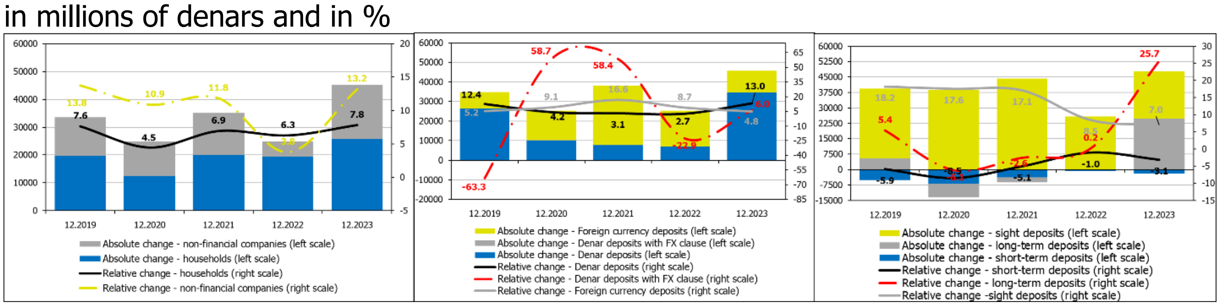


Source: National Bank, based on the data submitted by banks.

The high annual growth of long-term deposits, in conditions where there are still higher yields and stable expectations, caused a more significant increase (of 2.9 pp) in the structural participation of long-term deposits in total deposits (to the level of 22.5%), due to of the reduced participation of demand deposits and short-term deposits. Still, demand deposits have the highest structural share of 65.1% (66.4% as of 31.12.2022).

Analyzed by sector, the largest share (85.6%) in the annual growth of long-term deposits is held by long-term deposits from households (both in foreign currency and in denars), which grew by Denar 21,240 million (or by 25.7%). Thus, long-term deposits increased the structural share in total household deposits, by 4.2 pp, to the level of 29.3%. However, also among households, demand deposits have the highest structural share in total deposits (54.7% as of 31.12.2023, against 56.7% as of 31.12.2022).

Chart 87
Annual deposit growth, by sector (left), currency (middle) and maturity (right)
in millions of denars and in %

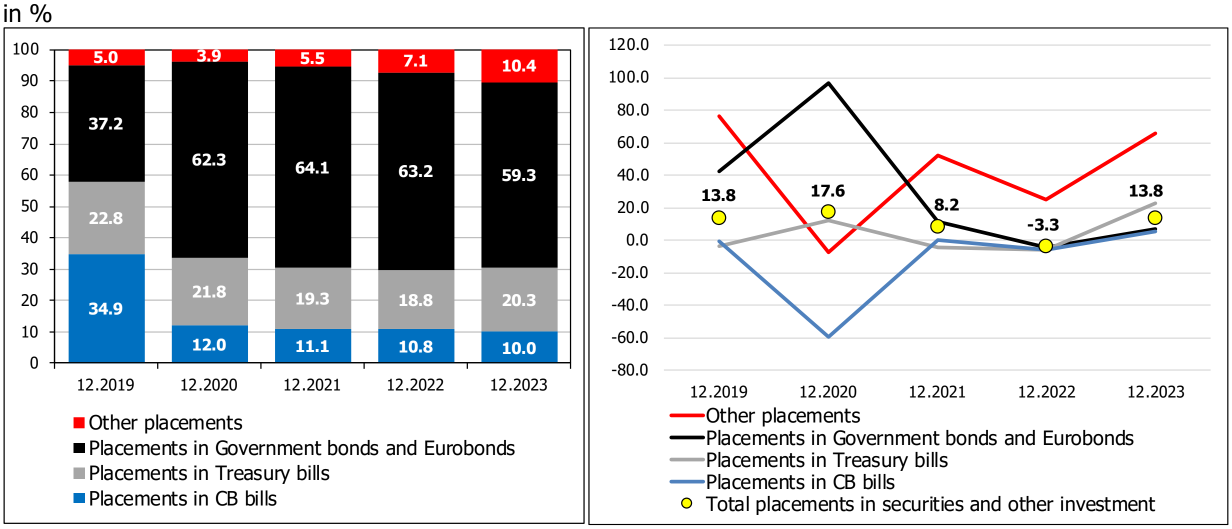


Source: National Bank, based on the data submitted by banks.

1.1. Other activities

After the last year decrease, the banks' placements in securities, subsidiaries and associates[96] registered an increase in 2023, by Denar 11,983 million (or by 13.8%), slightly increasing their share in total banks' assets to 13.3% (12.7% at the end of the previous year). The largest growth rate was registered in other bank investments in securities, which grew by Denar 4,073 million or 66%, mostly due to placements of two large banks in bills and bonds issued by foreign central governments. High rise of about 23% (Denar 3,751 million) was registered also in the investments in treasury bills. Placements in government bonds registered lower annual growth rates of Denar 3,677 million or 6.7%, while banks' investments in CB bills registered a slight increase of Denar 482 million or 5.1%.[97]. Hence, the structure of investments in securities is almost unchanged, with a reduced, but the largest share of placements in domestic government bonds and Eurobonds of 59.3% (63.2% as of 31.12.2022), while the remaining investments recorded an increased share in securities reaching 10.4% (7.1% as of 31.12.2022).

Chart 87
Structure (left) and annual growth (right) of investments in securities, subsidiaries and associates
in %



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

On the assets side, the placements with banks and other financial institutions (accounting for 7.3% of the total assets of the banking system) in 2023 increased by Denar 1,971 million, or 3.7%. Such increase is mostly due to the increase in domestic loans[98] of Denar 2.298 million, or 15.7%. Accounts and deposits in domestic banks in the amount of Denar 130 million (term deposits in foreign currency from three small banks) recorded a lower annual growth of 7.4%. Accounts and deposits in foreign banks recorded a more significant drop in absolute amount of Denar 1,120 million, or by 3.2%, primarily due to the reduced amounts of

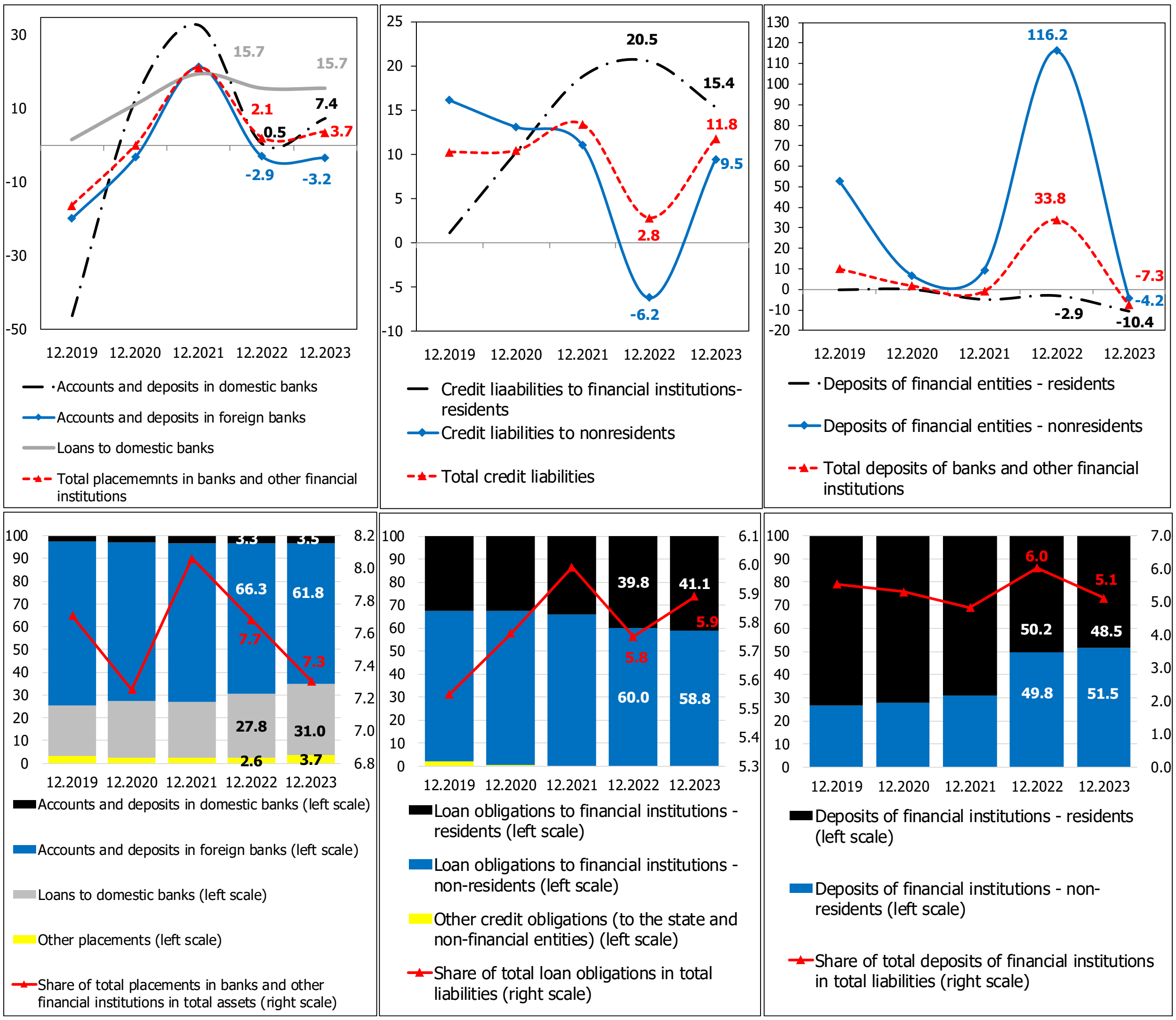
[96] The analyses of these investments are based on their net book value.
[97] At the CB bills auctions held in 2023, the offered amount of CB bills remained the same, i.e. Denar 10,000 million, while the demand has increased during the year and (starting from September auction), reaching the level of the amount offered. During 2023, the National Bank continued to increase the interest rate, whereby the interest rate on CB bills increased by 1.55 pp up to the level of 6.30%.
[98] The annual increase in the loans of the domestic banks almost fully arise from the increase in long-term banks' loans in foreign currency with maturity of over two years with the DBNM AD Skopje.

funds on correspondent accounts in foreign banks. Despite the decline, accounts and deposits in foreign banks continue to have the highest share in total bank placements and other financial institutions.

Chart 88

Annual growth (top) and structure (bottom) of the claims on financial institutions (left), loan liabilities (middle) and deposits of financial institutions (right)

in %



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

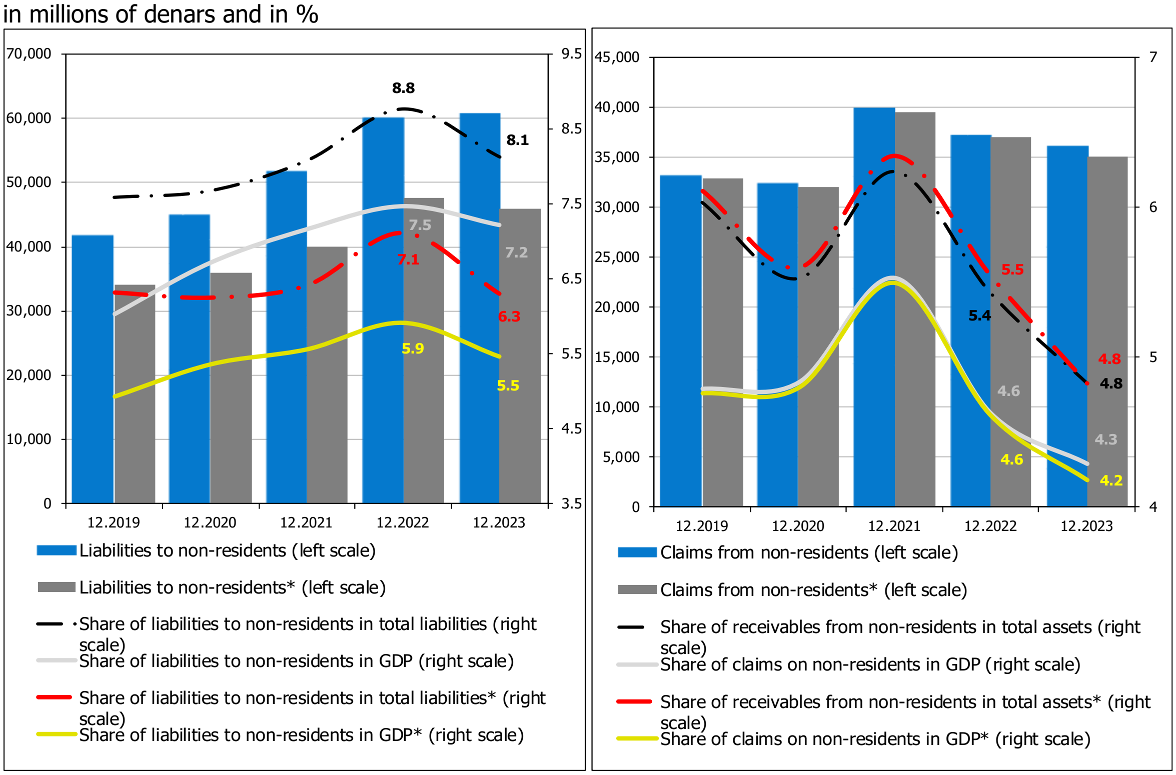
On the liabilities side, the total banks' loan liabilities (which account for 5.9% of total banking system's liabilities) increased by Denar 4,634 million, or 11.8%, annually, which is almost the the equal result of the increased liabilities based on loan to residents and non-resident financial institutions[99]. Within the structure of the banks' total liabilities based on loans, the liabilities based on loans to non-resident financial institutions prevail. **Deposits from**

[99] They are liabilities based on foreign currency borrowings of "RBSM" AD Skopje to international financial institutions and with two to five-year maturity and maturity exceeding five years, which are then placed through the other commercial banks in the system, and on that basis the commercial banks record liabilities to "RBSM" AD Skopje.

banks and other financial institutions, registered a decrease, and thus remain a moderate source of banks' financing, **accounting for 5.1% of total liabilities of the banking system.** The annual decrease in the deposits of banks and other financial institutions of Denar 3,031 million (by 7.3%) largely results from the decrease in the deposits of non-resident financial institutions (of Denar 2,162 million, or 10.4%), with the largest drop being registered in pension funds' deposits (Denar 2,992 million). Deposits from non-resident financial institutions, which at the end of 2023 account for 51.5% of the total deposits from banks and other financial institutions, recorded a far smaller annual decline, of Denar 869 million, or of 4.2%.

The scope of the banking system activities with non-residents is constantly very limited. As in the previous year, as of 31.12.2023, at the level of the system, the banks owe[100] more than they claim on non-residents, given minimal increase in the liabilities and decrease in claims. Namely, domestic banks' liabilities to non-residents registered slight annual increase (of Denar 678 million, or 1.1%), and their share in total banking system liabilities reduced to 8.1%[101] at the end of 2023. The annual increase almost entirely results from increased liabilities on long-term foreign currency loans to non-resident financial institutions. Regarding the bank claims on non-residents, annual decrease of Denar 1,094 million, or by 2.9% was registered, mostly due to the lower balances on the corresponding accounts.

Chart 89
Liabilities to (left) and claims on (right) non-residents
in millions of denars and in %

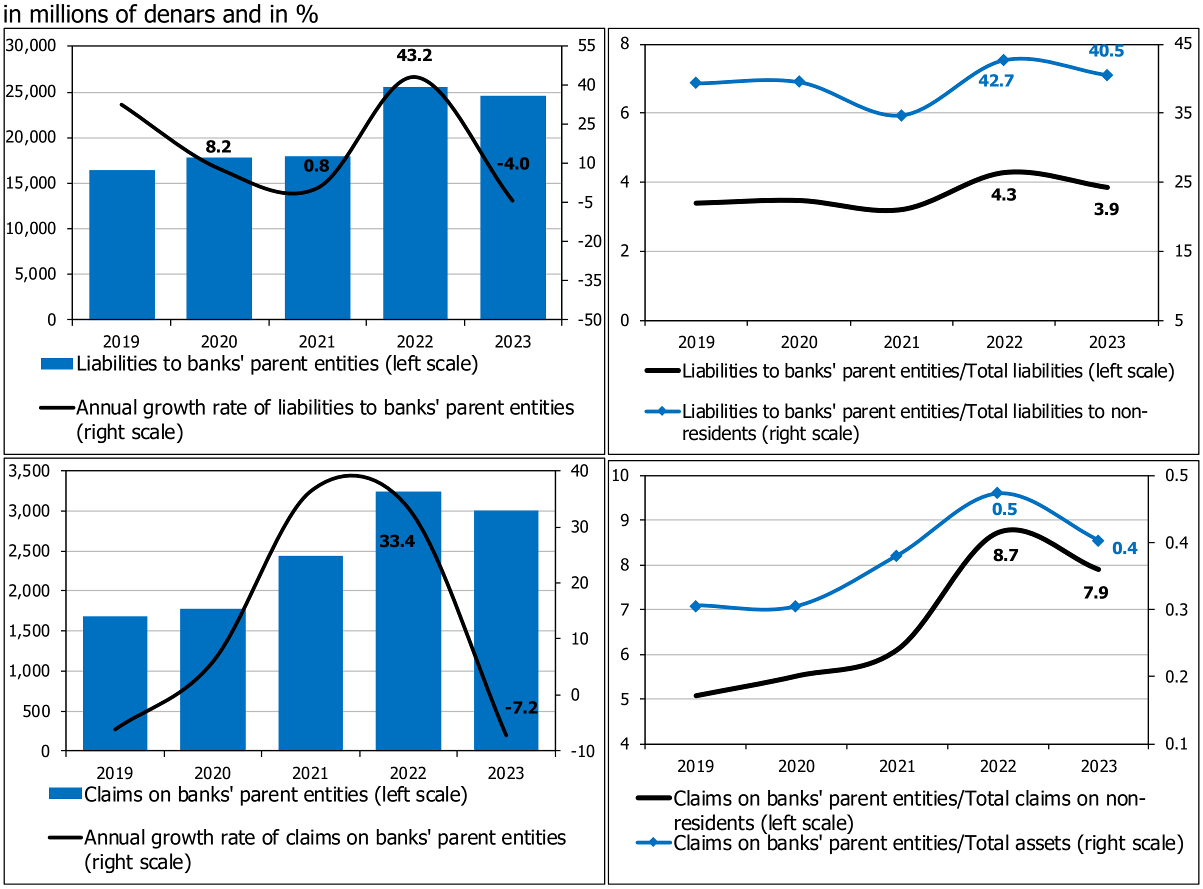


Source: National Bank, based on the data submitted by banks.
*Without DBNM AD Skopje

[100] As of 31.12.2023, seven of thirteen banks owe more than they claim on non-residents.
[101] If DBNM AD Skopje is excluded from the analysis, the share of liabilities to non-residents in total liabilities equals 6.3%.

Liabilities to banks' parent entities registered a decrease, but do not represent a significant source of financing to domestic banks' activities. In 2023, banks' liabilities to their parent entities decreased by Denar 1,023 million (or 4%), which was mostly due to the decrease in the liabilities based on subordinated instruments to parent entities (and their connected persons/entities). Consequently, the share of banks' liabilities to parent entities (including subordinated liabilities and hybrid capital instruments) in total liabilities of the domestic banking system, and in liabilities to non-residents decreased to 3.9% and 40.5%[102], respectively. Claims on parent entities also registered a minimal annual decline of Denar 232 million or 7.2%, thus reducing further its share in total asset to the level of 0.4% (0.5% as of 31.12.2022) and claims on non-residents to 7.9% (8.7% as of 31.12.2022).

Chart 90
Liabilities to (top) and claims on (bottom) banks' parent entities
in millions of denars and in %



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

[102] As of 31.12.2022, these shares equaled 4.3% and 42.7%, respectively.

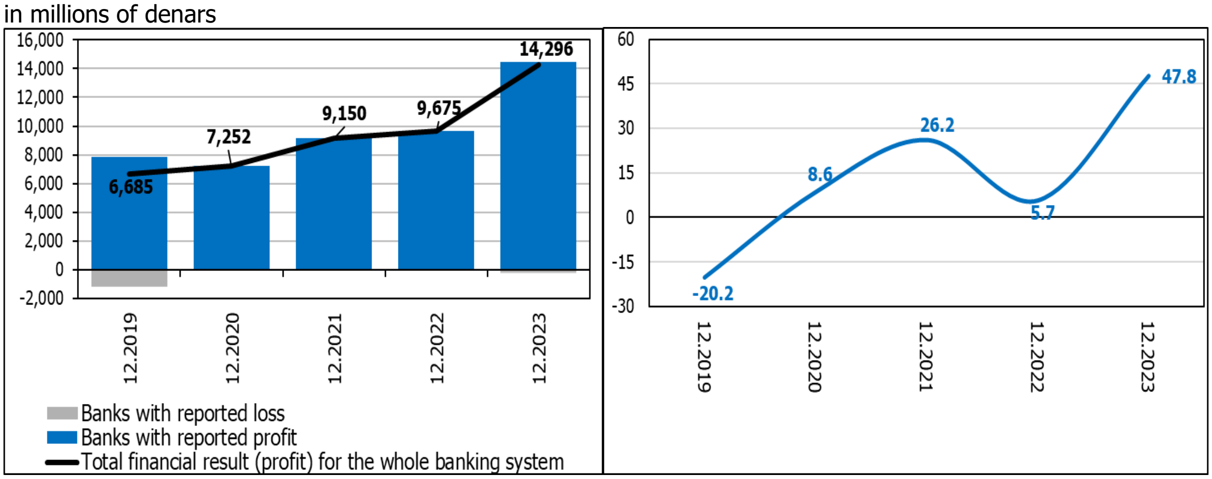
2. Profitability

In 2023, the domestic banking system substantially increased the profit compared to the previous year. Amid growth in interest rates and interest bearing assets, the higher financial result was conditioned by the increased net interest income, the growth of which was supported by the interest income from almost all sectors. A slight contribution to the profit growth was made by higher net commission income. The expenditures grew on all grounds. The accelerated profit growth positively affected the basic operational profitability and efficiency ratios of the banking system. Interest rates on both, loans and deposits, registered an increase in 2023, but the increase in the spread is small and equaled 0.1 pp.

2.1. Banking system profitability and efficiency ratios

In 2023, the banking system generated profit of Denar 4,296 million, which is by Denar 4,621 million or 47.8% higher compared to the previous year. Higher net interest income was the main generator of the profit growth (increase of Denar 7,493 or 47.8%) with a positive, yet significantly lower contribution from net fee and commission income (the increase of which equals Denar 319 million or 5.1%).[103] The main expenditure items of the banks recorded an increase in 2023, mostly in operating expenses (growth of Denar 1,962 million, or 14.6%), whose growth almost doubled compared to 2022 (growth of Denar 976 million, or 7.8%). With the increase in profit, the profit tax also increased (by Denar 664 million), and a moderate growth of Denar 137 million (or of 3.2%) was also recorded in the impairment cost. Analyzed by bank, all banks, except one small-size bank, registered positive financial operating result.

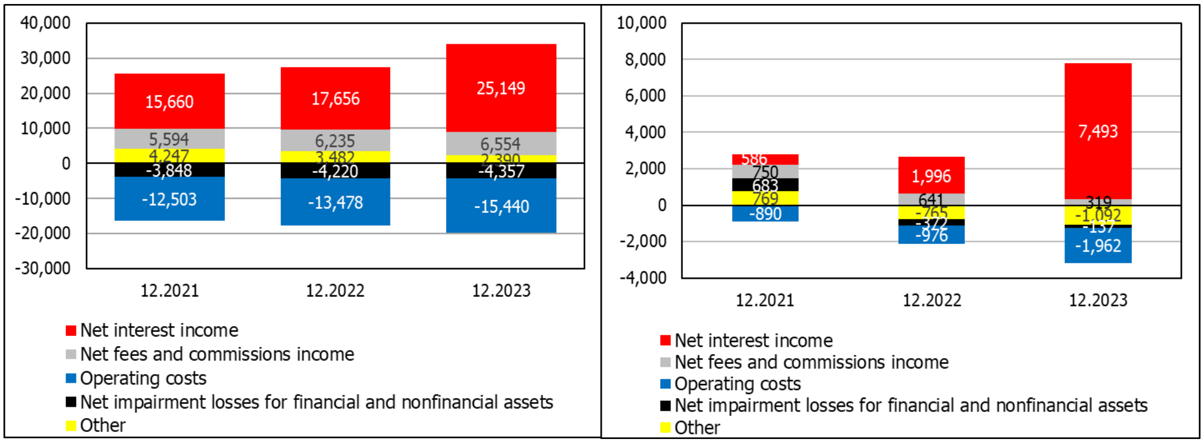
Chart 91
Movement of the total profit of the banks (left) and annual growth (right)
in millions of denars



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

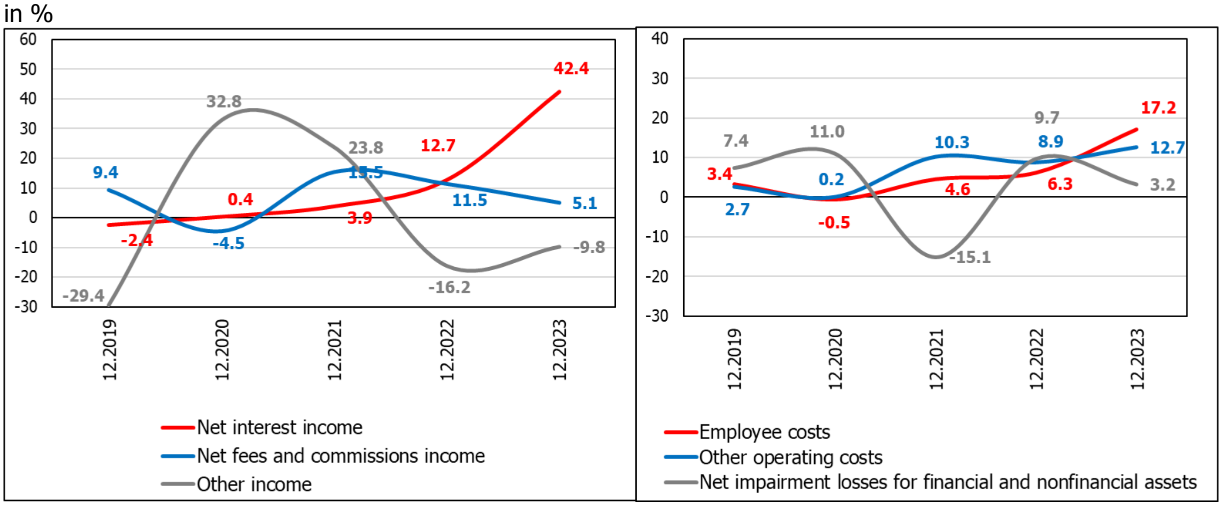
[103] Fees and commission for payment services, lending and vault operations of banks generate most (68.1%) of total net income from fees in 2023 (60.4% in 2022). On the other hand, the largest contribution to the annual growth of the net income from commissions and fees was made by the commissions collected based on the payment transaction abroad, the growth of which exceeds the growth of the total net income from commissions, given the simultaneous net income from commissions based on banks' card operations.

Chart 92
Contribution to the formation of profit (left) and to the profit growth (right) of banks
in millions of denars



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

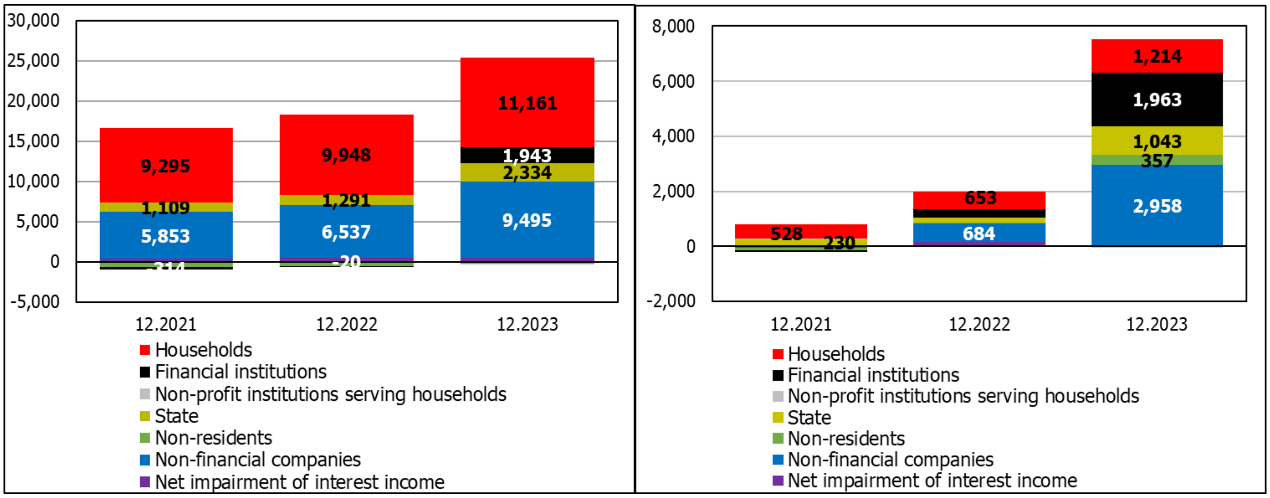
Chart 93
Annual growth rate of the main income (left) and expenditure items (right) of banks
in %



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

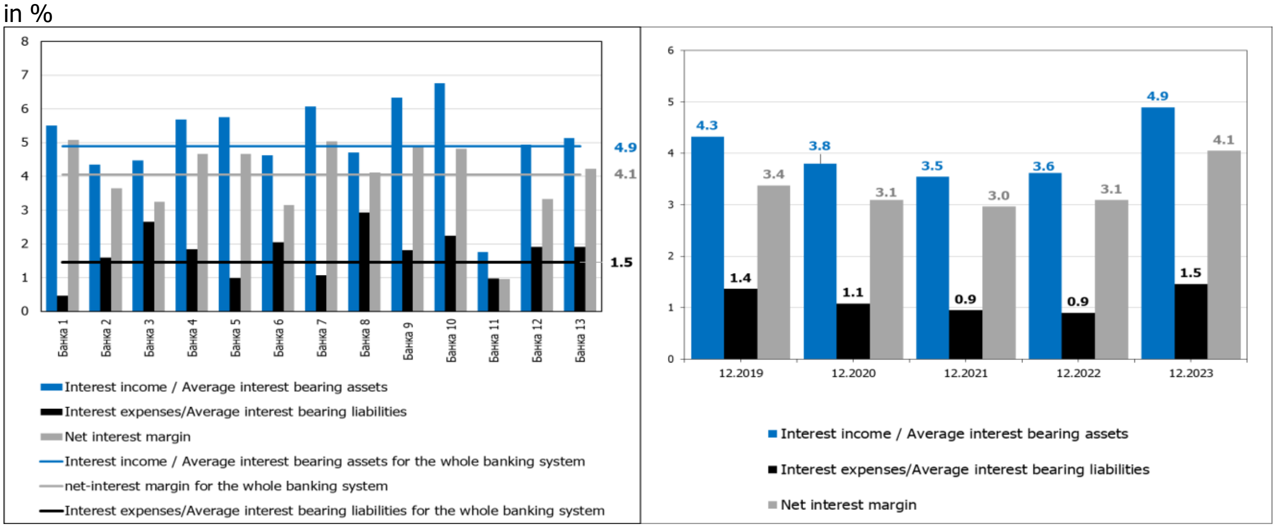
Higher net interest income of banks is based on higher interest income (by Denar 9,711 million or 47.0%), compared to the growth of interest expenses (by Denar 2,219 million or 73.9%). Moreover, net interest income grew in almost all sectors amid higher growth of interest income compared to the growth of interest expenditures. The greatest contribution to the formation of net interest income (44.4%) was made by the financial intermediation with households while the greatest contribution to the growth of net interest income was made by the net interest income from non-financial corporations (39.5%). Net interest income from non-financial corporations and households increased annually by Denar 2,958 million, or 45.3% and Denar 1,214 , million or 12.2%, respectively. Relatively high increase in the net interest income is is also observed from the activities of banks with financial institutions and the Government.

Chart 94
Net interest income by sector, structure (left) and contribution to the growth (right)
in millions of denars



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

Chart 95
Net interest margin as of 31.12.2023, by bank (left)* and of the banking system (right)
in %



Source: National Bank, based on the data submitted by banks.
* Indicators of the banking system are shown in lines.

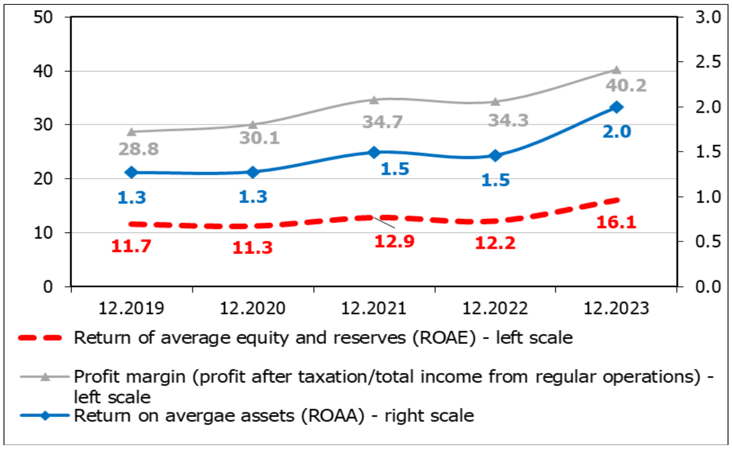
After the several year consecutive decrease, the net interest margin grew (by 1 pp) in 2023 reaching a level of 4.1%. The widening of the net interest margin results from the far faster growth of net interest income (42.4%) compared to the increase in average interest-bearing assets (8.8%).

The accelerated profit growth in 2023 had a positive impact on the main profitability ratios[104] of the banking system. Compared to end of the last year, the rate of return on

[104] Profitability and efficiency ratios of the banking system and bank groups are presented in the Annexes to this Report.

average equity and the rate of return on average assets increased by 3.9 and 0.5 pp, respectively, while the profit margin increased by 5.9 pp.

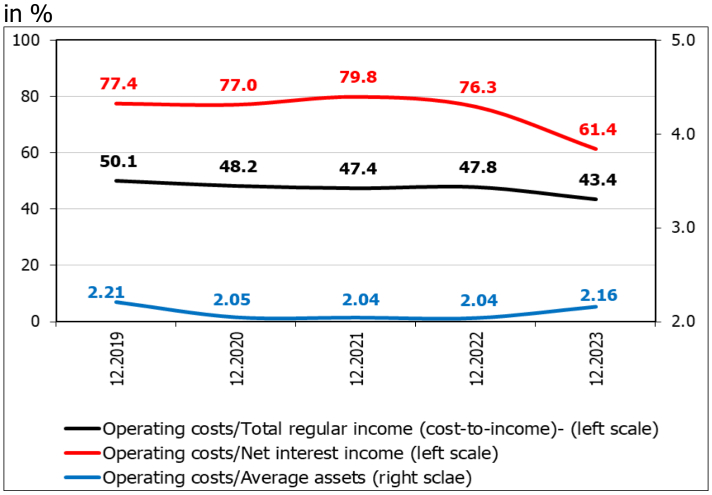
Chart 96
Rates of return on average assets (ROAA) and on average equity (ROAE) and profit margin
in %



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

The operational efficiency indicator of the banking system improved, with the exception of one indicator, which deteriorated minimally. The operating costs to interest income ratio, as well as operating costs to total regular income ratio significantly improved, by 14.9 and 4.4 pp, respectively, due to the faster growth of net interest income (42.4%) and total regular income (26.2%)[105] compared to the increase in operating costs (14.6%)[106]. The operating costs to average assets ratio slightly increased by 0.12 pp.

Chart 97
Operational efficiency ratios
in %



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

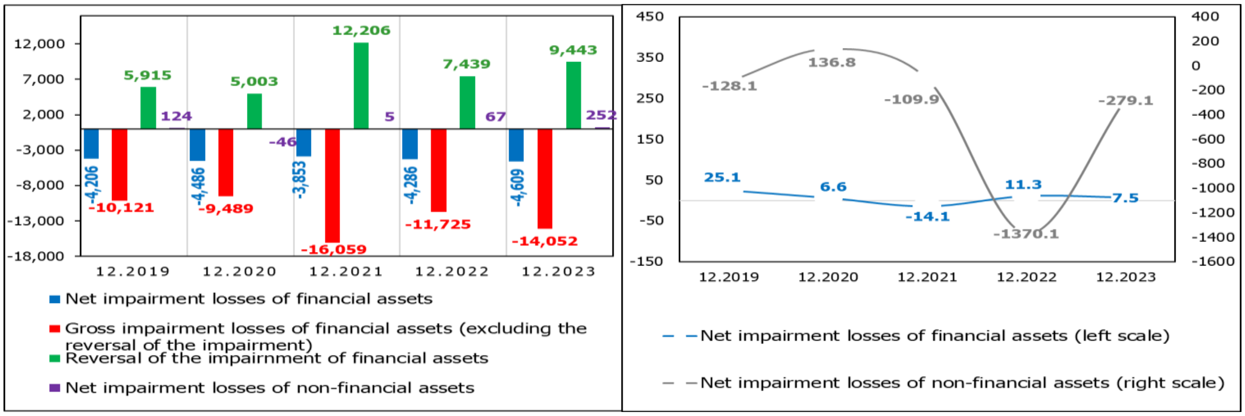
[105]The increase in regular income was determined by the increase in net interest income (by Denar 7,493 million, or 42.4%) and net fee and commission income (by Denar 319 million, or 5.1%).

[106] In 2023, the operating costs increased by Denar 1,962 million (or by 14.6%), primarily employee expenses (by Denar 985 million or by 17.2%) and general and administrative costs (by Denar 644 million or 12.4%).

Chart 98

Impairment cost for financial and non-financial assets (left) and their annual change (right)*

in millions of denars in %



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

* The amount for the net impairment of non-financial assets is small, so any change in these assets causes large shifts in annual growth rates.

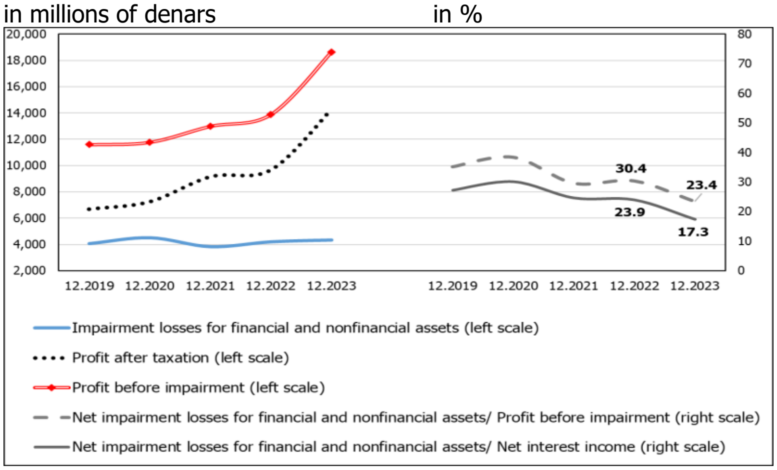
As of 31.12.2023, the impairment costs of financial assets (on a net basis) increased by Denar 323 million, or by 7.5%, while the same costs of non-financial assets are treated as an income item[107], which grows by Denar 185 million. The increase in impairment costs of financial assets was mainly driven by the higher increase in the gross impairment costs of loans and placements on individual basis (by Denar 2,037 million, or 19.9%), compared to the increase in the released impairment of these loans and placements (by Denar 1,679 million, or 26.7%).

The decrease in net impairment of non-financial assets on one hand results from the lower gross costs of these assets (by Denar 90 million) and on the other hand from larger release of impairment of non-financial assets (by Denar 96 million).

Chart 99

Impairment costs to gain and to net interest income ratios

in millions of denars in %



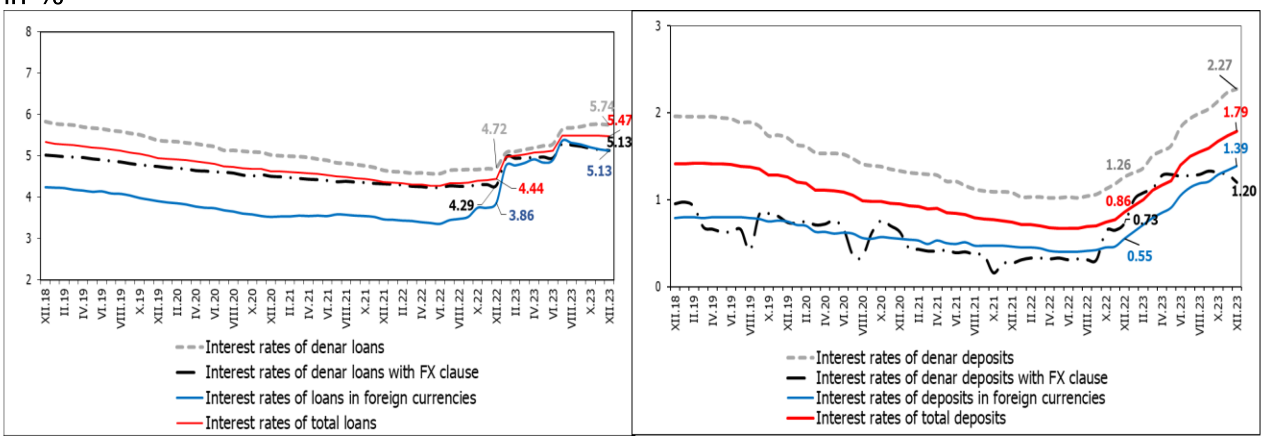
Source: National Bank, based on the data submitted by banks.

[107] In 2023, more impairment costs for the value of non-financial assets were released by the banks than they made new ones, and so the costs of non-financial assets have the treatment of an income item at the end of the year.

2.2. Movements in interest rates and interest rate spread

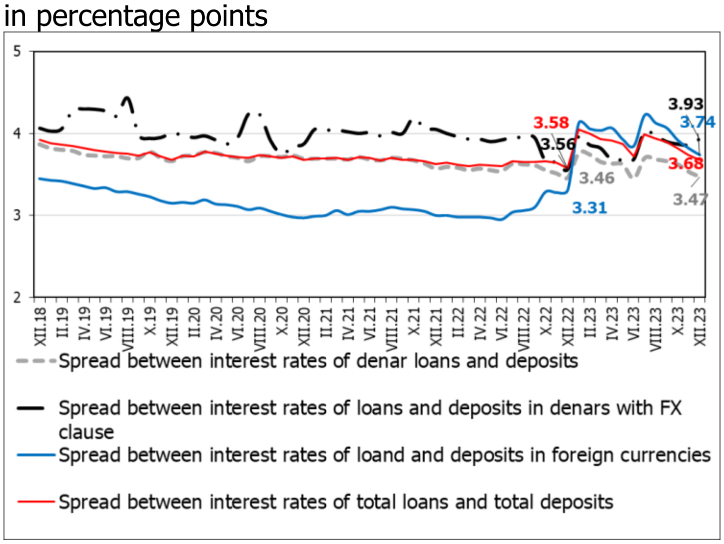
At the end of 2023, the total interest rate on loans and deposits amounted to 5.47% and 1.79% respectively, which is an increase of 1.03 and 0.93 pp compared to the end of the 2022 (which corresponds to the annual growth of 23.2% for loans and 90% for deposits), when they equaled 4.44% and 0.86%, respectively. The interest rate spread widened, due to the faster growth in lending interest rates, relative to the growth in deposit interest rates. The spread between the total interest rate on loans and the total interest rate on deposits as of 31.12.2023 equaled 3.68 pp, compared to 3.58 pp at the end of the third quarter of 2022.

Chart 100
Lending (left) and deposit interest rates (right)
in %



Source: National Bank.

Chart 101 Interest spread
in percentage points



Source: National Bank.