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

REPORT ON RISKS IN THE BANKING SYSTEM OF THE REPUBLIC OF NORTH MACEDONIA IN THE FIRST QUARTER OF 2022

June 2022

Contents

I. Summary

In the first quarter of 2022, the environment in which the domestic banking system operates became even more complexed, with the outburst of the conflict between Russia and Ukraine, whose adverse effects have already been felt in the international and domestic environment. The unfavorable environment had a corresponding negative impact on the dynamics of the banking system activities, which as in previous crisis episodes, successfully dealt with the challenges. Deposits of non-financial entities declined quarterly by 3%, which is partly due to seasonal factors in this part of the year. However, the developments in deposits in the first quarter of 2022, primarily the decline in March, was strongly affected by the negative effects of the war between Russia and Ukraine and the disrupted global supply chains, which conditioned higher costs for domestic companies and more pronounced psychological pressures on the households driven by the negative news spread about the future dynamics of inflation rates. The households' preference for foreign currency deposits is still high, which is evident from the growth in foreign currency deposits in this sector, in all maturity segments. The decline in deposits of non-financial entities was in line with the decrease in banks' liquid assets, having no significant effect on the lending activity of the banking system. Thus, the placements in loans to non-financial entities continued to grow firmly (2.7%), similar to the previous quarter. Most of the quarterly growth of loans was aimed at the corporate loans, mostly short-term, although the household loans increased as well.

The solvency of the banking system remained at a stable level. The capital adequacy ratio decreased quarterly by 0.3 percentage points, to the level of 17%, due to the rapid quarterly growth of risk weighed assets, compared to the increase in own funds. The growth of own funds is mostly due to the retained earnings, while the increase in the risk weighted assets was mostly pronounced in the credit risk weighted assets. Over 90% of the own funds account for the Common Equity Tier I capital, which represents the highest-quality segment of the banks' regulatory capital. Analyzed by purpose, around half of own funds account for capital allowances determined according to the supervisory assessment of the capital buffers or are "available", over the minimum level, which is particularly important amid downward change of the economic cycle in conditions of crisis, when these layers of own funds could be used to meet different challenges. The conducted stress testing of the banking system resilience to the simulated shocks shows satisfactory resilience.

The liquidity indicators remain satisfactory. In the first quarter of 2022, the banking system liquid assets declined quarterly by 7.7%, which caused certain decrease in liquidity indicators as well. However, they still point to a proper liquidity risk management of banks, confirmed by the relatively stable share of liquid assets in the total bank assets (30.1%) and the coverage of short-term liabilities and household deposits with liquid assets, which also remained at a satisfactory level (of 48.2% and 61.2%, respectively). The Liquidity Coverage Ratio of the banking system equals 255.2%, which is more by 2.5 times compared to the regulatory minimum (100%) and confirms the sufficient amount of liquidity available to the Macedonian banking system. The results of the stress tests indicate satisfactory resilience of the banking system to the assumed extreme, individual and combined liquidity outflows.

In the first quarter of 2022, non-performing and regular restructured loans to non-financial entities decreased. Thus, non-performing loans to non-financial entities decreased on a quarterly basis and their share in total loans decreased to the record low of 3.1%. From a

sectoral point of view, the quarterly decline in non-performing loans was concentrated in corporate loans, which decreased by 5.1%, while non-performing household loans increased by 4.2%. Non-performing to total loan ratio decreased to the historically lowest level of 4.1% in the corporate loan portfolio, while in the loan portfolio composed of households it slightly deteriorated by 0.1 percentage points and reached 2.1% as of 31.3.2022. Regular restructured loans decreased quarterly, following the significant increase during 2021, thus their already low share in total regular loans to non-financial entities slightly decreased and as of 31.3.2022 reduced to 1.9%.

In the first quarter of 2022, the domestic banking system reported higher profit (of 32.6%), compared to the same period last year. The increased profit results from the lower impairment costs and the growth of both net non-interest and net interest income. The ratios of return of average assets and average equity improved, compared to the first quarter of 2021 and reached levels of 1.6% and 14%, respectively. The operational efficiency indicators slightly deteriorated, amid increase in the operating costs of 11.6%, compared to the same period last year.

The banking system's exposure to currency risk and interest rate risk in the portfolio of banking activities increased and amounted to 3.9% and 10.6% of own funds, respectively, which is within the prescribed limits. The currency position of the banking system went from long to short, which has been unusual for the domestic banking system so far. Such movements mostly stem from the rapid quarterly growth of liabilities with Euro-component (mostly due to foreign currency deposits), compared to the growth of assets with Euro-component, thus the gap between assets and liabilities has almost been eliminated. The increasing exposure of the banking system to interest rate risk is mostly due to the changes in interest-sensitive positions of banks with variable interest rates, where the placement in loans increased, followed by redistribution towards blocks with slightly longer residual maturity until the next interest rate reassessment, while liabilities on demand with variable interest rate decreased.

The uncertainty about the further course of the events related to the coronavirus which is still present, the increased prices of energy and the fragmented and disturbed supply chains due to the conflict in Ukraine, and the tough restrictive measures introduced in China, are the most important risk factors that will affect the future growth pace of economic activity and the banking system' activities. The National Bank, as before, closely monitors all events and is ready to take all necessary measures within its competence, when needed. Thus, in the second quarter of the year, the need for monetary reaction was perceived, given the prolonged price pressures due to the long-term and faster growth of import prices and the created inflation expectations. In April and May, the National Bank increased the interest rate on CB bills on two occasions by 0.25 percentage points, to the level of 1.75%. Moreover, given the increased preference to save in foreign currency, as well as the unfounded speculations about the stability of the denar, the National Bank took targeted measures, i.e. made changes to the reserve requirement, in response to such tendencies. The reduction of the reserve requirement rate from denar liabilities (from 8% to 6.5%) and the simultaneous increase in the reserve requirement rate from foreign currency liabilities (from 15% to 16.5%), which will apply from June this year, aims to change the currency structure of deposits in the banking system, which is also in line with the Strategy for supporting denarization of the domestic economy.

II. Structure of the banking system

1. Number of banks and ownership structure of the banking system

As of 31.3.2022, the number of banks in the Republic of North Macedonia remained unchanged compared to the previous quarter and equaled thirteen banks. Nine banks are in predominant foreign ownership, five of which are subsidiaries of foreign banks.

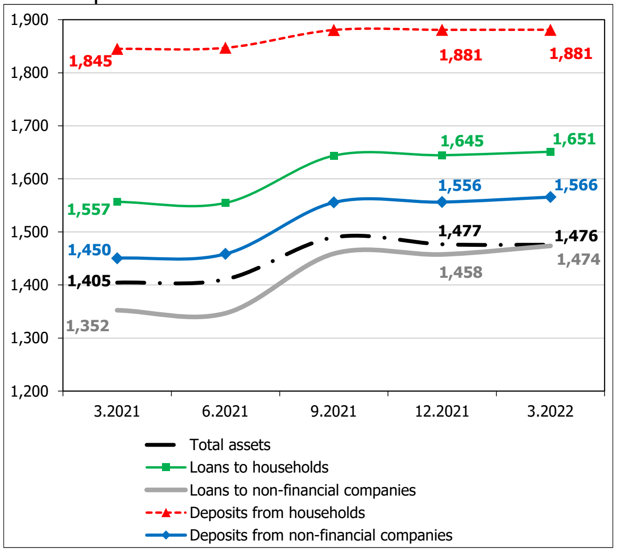
Table 1
Structure of major balance sheet positions, by banks' majority ownership (as of 31.3.2022)
in millions of denars and in %

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**	**57,797**	**75.4%**	**453,520**	**71.3%**	**322,272**	**81.8%**	**313,154**	**68.9%**	**20,320**	**74.2%**	**6,987**	**70.7%**
- subsidiaries of foreign banks	*5*	*50,935*	*66.5%*	*378,873*	*59.6%*	*268,745*	*68.2%*	*265,088*	*58.3%*	*17,425*	*63.7%*	*6,497*	*65.7%*
- Austria	1	8,111	10.6%	74,038	11.6%	55,638	14.1%	43,608	9.6%	3,166	11.6%	918	9.3%
- Bulgaria	1	1,242	1.6%	11,277	1.8%	7,431	1.9%	7,846	1.7%	397	1.5%	35	0.4%
- Greece	1	17,338	22.6%	114,221	18.0%	82,795	21.0%	84,237	18.5%	5,858	21.4%	2,636	26.7%
- Slovenia	1	13,913	18.2%	106,774	16.8%	71,418	18.1%	84,007	18.5%	5,222	19.1%	2,391	24.2%
- Turkey	1	10,331	13.5%	72,564	11.4%	51,464	13.1%	45,391	10.0%	2,783	10.2%	517	5.2%
- other banks in dominant foreign ownership	*4*	*6,861*	*9.0%*	*74,647*	*11.7%*	*53,527*	*13.6%*	*48,065*	*10.6%*	*2,895*	*10.6%*	*490*	*5.0%*
- Bulgaria	2	3,315	4.3%	28,321	4.5%	19,601	5.0%	19,693	4.3%	1,437	5.2%	218	2.2%
- Germany	1	2,901	3.8%	38,626	6.1%	28,614	7.3%	22,912	5.0%	1,097	4.0%	169	1.7%
- Switzerland	1	645	0.8%	7,700	1.2%	5,312	1.3%	5,460	1.2%	361	1.3%	102	1.0%
Banks in dominant ownership of domestic shareholders	**4**	**18,830**	**24.6%**	**182,448**	**28.7%**	**71,540**	**18.2%**	**141,547**	**31.1%**	**7,057**	**25.8%**	**2,895**	**29.3%**
- private ownership	*3*	*15,954*	*20.8%*	*168,215*	*26.5%*	*71,497*	*18.2%*	*141,547*	*31.1%*	*6,932*	*25.3%*	*2,860*	*28.9%*
- state ownership	*1*	*2,876*	*3.8%*	*14,233*	*2.2%*	*43*	*0.0%*	*0*	*0.0%*	*125*	*0.5%*	*35*	*0.4%*
Total:	**13**	**76,626**	**100.0%**	**635,968**	**100.0%**	**393,812**	**100.0%**	**454,700**	**100.0%**	**27,377**	**100.0%**	**9,881**	**100.0%**

Source: National Bank, based on the data submitted by banks.
*Total income and financial result are calculated for the last twelve months (31.3.2021-31.3.2022).

Banks with predominant foreign ownership continue to have the largest share in the structure of major balance sheets positions of the banking system. The changes compared to the previous quarter are minimal. The share of banks in foreign ownership in the total loans to non-financial sector continues to be the most pronounced (81.8%).

Chart 1
Herfindahl index
in index points



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

The Herfindahl index[1], for individual categories of bank activities, registers no significant changes in the first quarter of 2022. In all remaining categories of activities, the Herfindahl index is **within the acceptable values[2]**, except in the household deposits, where it is above the acceptable level of 1800 index points (which was exceeded in the third quarter of 2020).

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

Position	31.03.2022		31.12.2021	
	CR3	CR5	CR3	CR5
Total assets	57.9	81.0	58.0	81.0
Loans to households	61.5	83.3	61.2	83.1
Loans to non-financial companies	51.2	79.4	50.3	78.8
Deposits from households	70.9	85.7	71.0	85.8
Deposits from non-financial companies	55.3	83.3	54.8	84.0
Financial result*	75.8	90.4	76.4	90.5
Total revenues*	60.6	82.4	61.9	82.1

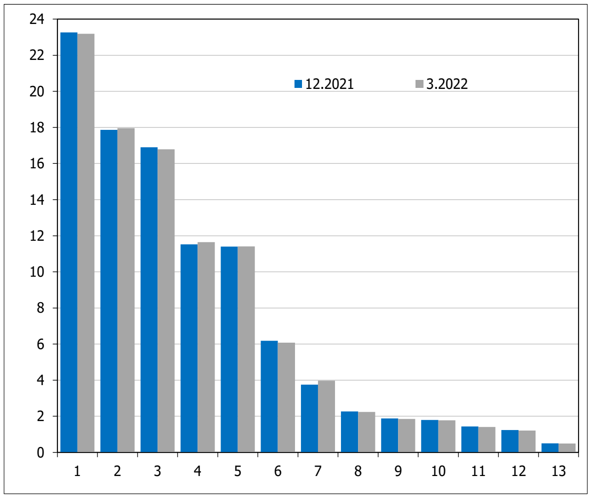
Source: National Bank, based on the data submitted by banks.
*Total income and financial result are calculated for the last twelve months (31.3.2021-31.3.2022).

The share of the three and the five banks which dominate the individual banks' balance sheets positions slightly changed, excluding the three banks with the largest share in deposits of non-financial corporations (whose share decreased by 1.3 percentage points in one quarter) and loans to non-financial corporations (whose share increased by 0.9 percentage points).

---

[1] 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, total deposits, etc.), where *n* denotes the total number of banks in the system.
When the index ranges from 1,000 to 1,800 points, the concentration ratio is considered to be acceptable.

Chart 2
Share of individual banks in the total assets of the banking system
in %



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

The difference in the size of banks according to the amount of their assets remains high, whereby the spread between the bank with the highest market share (23.2%) and the bank with the lowest market share (0.5%) slightly decreased on a quarterly basis by 0.1 percentage points. Observed by bank, market share registered minor changes.

III. Bank risks

1. Credit risk

In the first quarter of 2022, the environment in which banks operate was additionally disrupted, primarily due to the war between Russia and Ukraine and the deepening of the energy crisis, which pose additional challenges to the economic recovery from the uncertain health crisis caused by COVID-19, which is still present. In such conditions, the quality of credit portfolio was maintained. The rates of non-performing loans reduced to the historical bottom of 3.1%, which is lower compared to the pre-pandemic period. The improved rate of non-performing loans resulted from the enhanced activities of banks for collection of "bad" loans and from mandatory write-offs of claims, which reduced the non-performing loans quarterly. Analyzing sectors, there was a decrease in corporate non-performing loans, thus the non-performing-to-total loans ratio in this sector dropped to its record low of 4.1%, while non-performing household loans increased and their share in households' portfolio reached 2.1%.

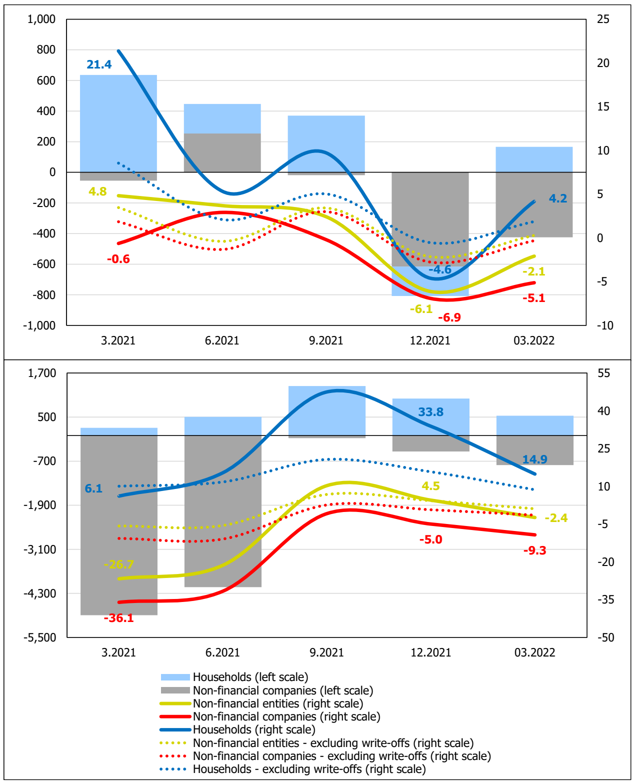
Coverage of non-performing loans with impairment for them is maintained at a relatively high level which, together with the satisfactory volume and quality of the own funds, limits the negative effects on the banks' solvency of a possible complete default on these loans. The results of stress testing confirm the resilience of the banking sector to the simulated credit risk shocks.

The restructuring dominated in the first quarter of 2021, followed by a significant slowdown in the growth of these loans, while in the first quarter of 2022 they declined and so far do not represent a significant risk factor for deterioration in the quality of the loan portfolio. However, there is a greater emphasis on risks to domestic and international environment from series of disruptions of the vital strands for smooth functioning of the economic system, especially pronounced since early 2022, amid high uncertainty about the duration of the war and the emergence of a new autumn wave of pandemics. Therefore, there are particularly pronounced challenges from the possible intensification of the restructuring, due to appropriate adjustment of credit standards towards the changed financial conditions of customers, as well as the growth of non-performing loans.

1.1 Materialization of credit risk in banks' balance sheets

In the first quarter of 2022, total non-performing loans to non-financial sector decreased by 2.1% (or by denar 258 million).

Chart 3
Quarterly (up) and annual (down) growth rate of non-performing loans to non-financial entities
in millions of denars in %



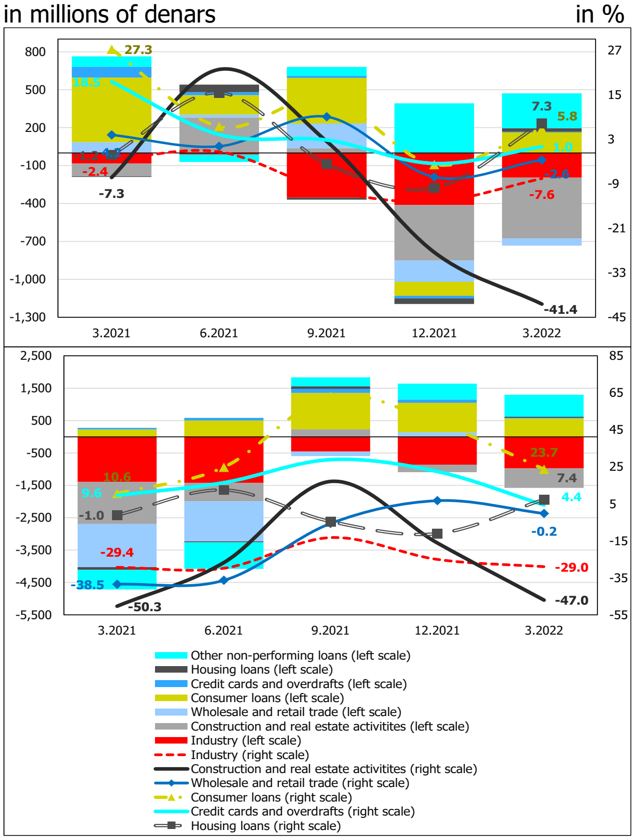
Source: National Bank, based on the data submitted by banks.
Note: The lines with dots show the growth of non-performing loans by excluding the effect of all mandatory write-offs made in the period 1.1.2016 - 30.3.2022. Starting from December 2019, the data also contains the collected compulsorily written-off loans.

The decrease in non-performing loans mostly stems from the mandatory write-offs of claims, as well as of collections[3]. As of 31.3.2022, the temporary freezing of repayments due to the pandemic expired in almost all loans with approved grace period (99.9%), thus repayments of all loans should be carried out according to regular, agreed credit terms. In the first three months of 2022 there is no irregular repayment of these liabilities by customers (credit risk materialization of corona-loans was mostly pronounced in the first half of 2021), yet transfers of these loans to non-performing occur. Despite the fact that the environment in which the domestic banking system operates becomes even more complex, primarily due to the Russia-Ukraine war, the adverse effects of the disruptions on the energy market, as well as the uncertainty around the COVID-19 pandemic, which is still present, in the first quarter of 2022 there are no signs of a serious risk materialization in the banking system loan portfolio.

The decrease in the volume of non-performing loans in the first quarter of 2022, mainly originates from their decrease with enterprises.[4] Non-performing corporate loan portfolio decreased by 5.1%, or by denar 424 million[5]. The corporate loan portfolio registered a heterogeneity in the trend of non-performing loans in certain economic activities. The quarterly decrease was mostly driven by construction, including activities related to real estate, which was mostly due to the collection of claims. There was a narrowing of the volume of non-performing

[3]Isolating the effect of net write-offs, non-performing loans to non-financial sector registered a minimal growth of 0.3%
[4]Non-performing corporate loans prevail in the total non-performing portfolio with a share of 64.8%.
[5] Isolating the effect of mandatory net write-offs, non-performing corporate loans decrease by 0,3%.

Chart 4
Quarterly (up) and annual (down) growth rate of non-performing loans, by activity (non-financial corporations) and by credit product (households)
in millions of denars in %



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

loans of clients that perform economic activity in agriculture, forestry and fishing, due to written-off claims with one client. Non-performing loans of clients in industry and wholesale and retail trade decreased as well. In contrast, there was a significant increase in non-performing loans in transport and storage, which fully results from one client. The new non-performing loans arise mainly from loans that have been granted a pandemic moratorium. As of 31.3.2022, such non-performing loans account for 18.9% of total non-performing corporate loans.

Non-performing household loans increased by 4.2% or Denar 167 million (as opposed to the previous quarter when they decreased by 4.6% or Denar 192 million)[6]. The growth of non-performing loans to households is almost entirely attributed to non-performing consumer loans, which increased by 5.8% or Denar 162 million, with an increase of Denar 28 million, or 7.3% in non-performing claims for the purchase and renovation of residential property. Expanded volume in this category was registered in car loans and credit cards. The decrease in non-performing loans was registered in loans for purchase and renovation of commercial properties, overdrafts, retailers and other loans. The new non-performing loans of households mostly come from clients whose loan repayments were temporarily "frozen" due to the pandemic. As of 31.3.2022, these non-performing loans account for 58.0% of the total non-performing loans to households.

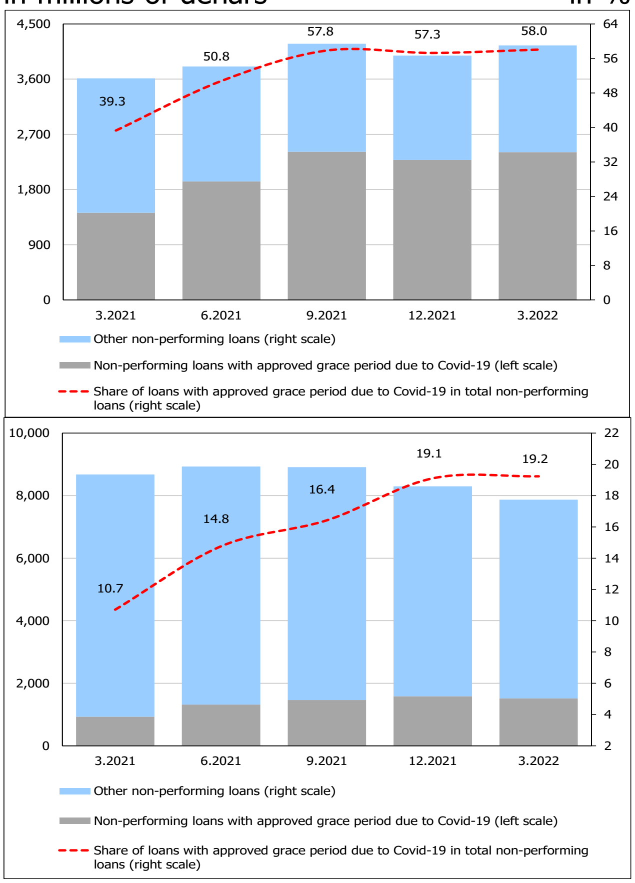
Given the slower credit support by banks and reduced volume of non-performing loans, their share in total loans remained almost unchanged, i.e. improved by 0.1 percentage points compared to 31.12.2021. Consequently, the share of non-performing loans in total loans of the non-financial sector was reduced

[6]If we exclude the effect of mandatory net write-offs, the growth of non-performing household loans decreases and amounts to 1.9%.

to the historically lowest level of 3.1%[7]. **In the corporate loan portfolio, the non-performing loans rate decreased by 0.4 percentage points, reaching the new historical bottom of 4.1%[8].** Observing individual activities, there is an improvement in this rate in almost all activities except the economic activity transport and storage (growth in non-performing loans rate by 4.6 percentage points to 9.8%). The highest non-performing loan rate is still recorded in activities that were most affected by the COVID-19 pandemic, (such as transport, catering, arts, entertainment and recreation and other service activities).

Chart 5 Non-performing loans to households (up) and non-financial corporations (down) and the share of non-performing loans with a grace period due to COVID-19 in total non-performing loans of the relevant sector

in millions of denars in %



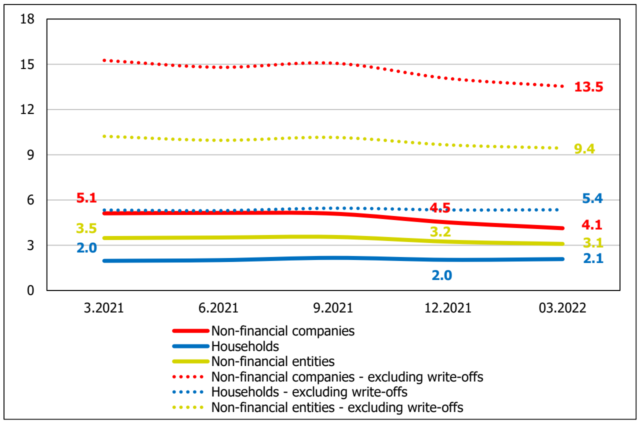
Source: National Bank's Credit Registry based on data submitted by banks.

---

[7]Without the effect of the mandatory net write-offs, the share of non-performing to total loans equals 9.4%, which is the lowest rate in the past decade.

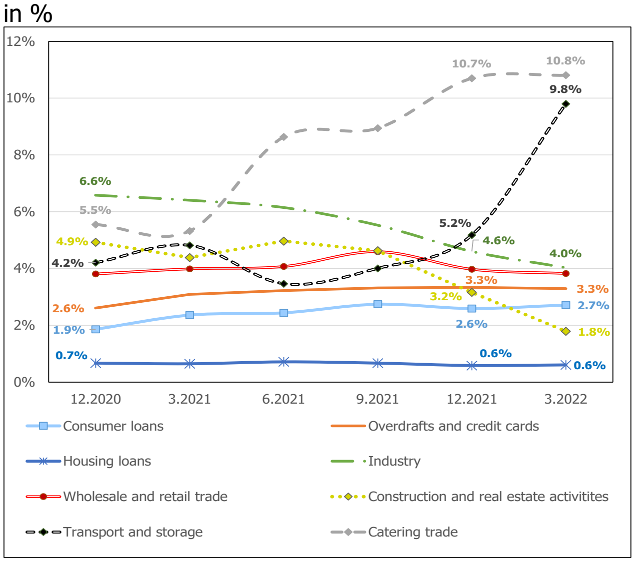
[8]Excluding the effect of the mandatory write-offs, the share of non-performing to total corporate loans equals 13.5%.

Chart 6
Rate of non-performing loans of non-financial corporations, by sector
in %



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

Chart 7
Rate of non-performing loans, by activity and credit product
in %

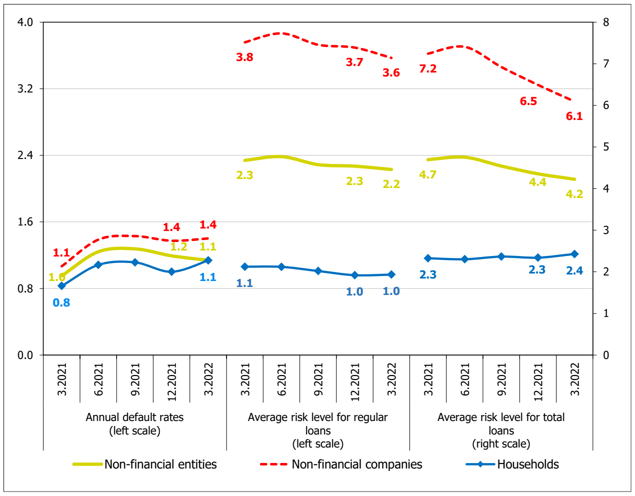


Source: National Bank's Credit Registry based on data submitted by banks.

The share of non-performing to total household loans at the end of the first quarter of 2022 equals 2.1%, which is minimally higher by 0.1 percentage point than the previous quarter[9]. Analyzed by individual purposes, this rate is the highest in the overdrafts of transaction accounts and credit cards (3.3%, which is unchanged compared to the previous quarter) and consumer loans (2.7%, with a slight quarterly increase of 0.1 percentage points).

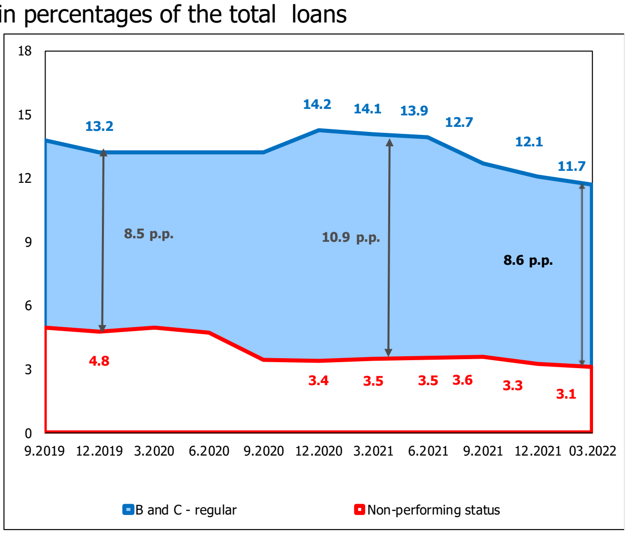
[9]Without the effect of the mandatory net write-offs, the rate of non-performing household loans amounts to 5.4% which is below the 10-year moving average, which equals 5.6%.

Chart 8
Annual rates of default and average risk level of performing and total loans, by sector
in %



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

Chart 9
Gap between regular loans in risk categories B and C and non-performing loans*
in percentages of the total loans

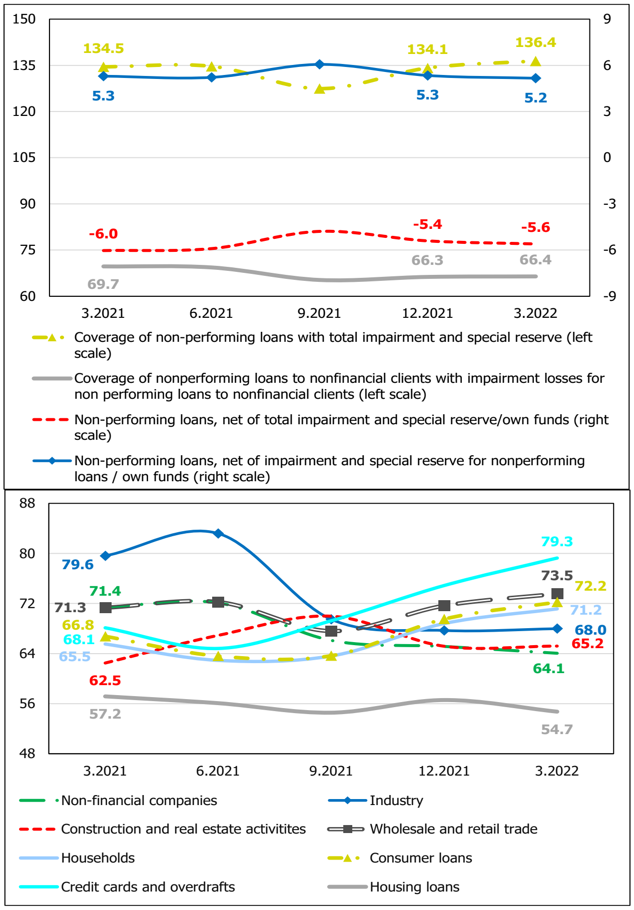


Source: National Bank's Credit Registry based on data submitted by banks.
*Regular loans classified in B and C risk categories and non-performing loans, are approximation of the so called group 2 and 3 according to IFRS 9, respectively.

The annual default rate of regular loans to overall non-financial sector was almost unchanged in the first quarter of 2022, same as in legal entities, unlike the minimal worsening in households. The growth of this rate in households mainly resulted from the increased transition to non-performing status of loans that were eased due to COVID-19. On the other hand, the banks didn't increase the average provisioning (average risk level) of regular household loans, which remained at the same level as of 31.12.2021, while regular corporate loans and non-financial sector slightly decreased.

The favorable movements in the quality of credit portfolio are confirmed with the narrowed gap between regular loans with significantly increased credit risk according to IFRS 9 and damaged loans (non-performing loans). This tightening is mostly due to the decrease in the share of regular loans in credit risk category B, as well as decreased non-performing loans. With the termination of the regulatory relief due to COVID-19 by late 2020 and early 2021, there was a certain reallocation among regular loans, from risk category A to the next two risk categories (B and C), as an approximation of loans with significantly increased credit risk according to IFRS 9. Their share in total loans to non-financial entities increased by 14.2% as of 31.12.2020, which widened the gap between these loans and non-performing loans in 2020. During 2021, this gap gradually narrowed, which continued in 2022 and as of 31.3.2022 reduced to 8.6 percentage points.

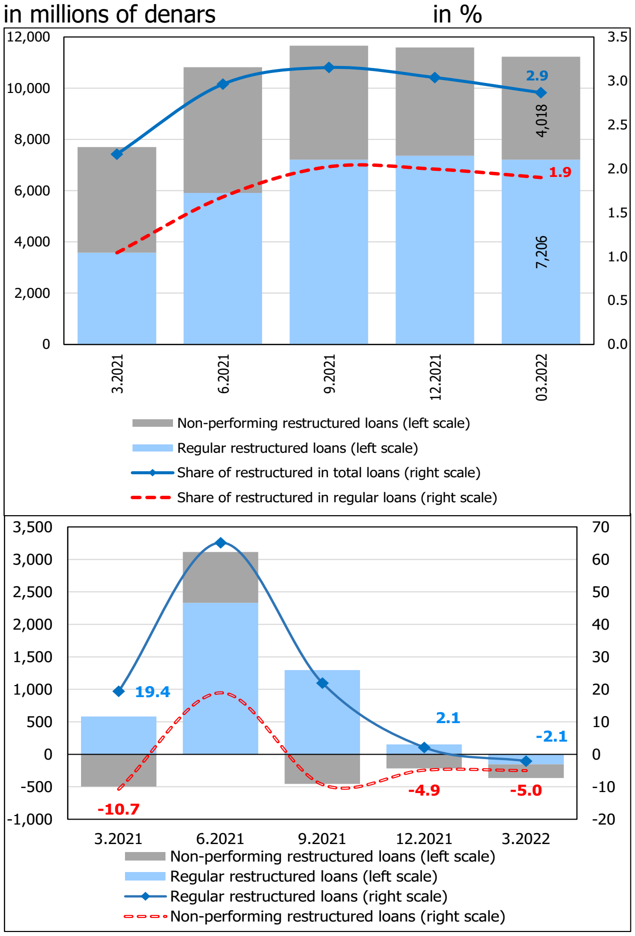
Chart 10
Coverage of non-performing loans with impairment (up) and by activity and credit product (down)
in %



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

The negative effects of the possible complete default on non-performing loans, i.e. the volume of unexpected losses on this basis, have a limited impact on the solvency of the banking system. The coverage ratio of non-performing loans with impairment in the first quarter of 2022 registered a slight increase of 0.1 percentage points compared to the previous quarter and amounted to 66.4%. The solid coverage was coupled with the low share of the non-provisioned amount of non-performing loans in total loans of the banking system, of 5.2%. Thus, even amid assumption of complete default of non-performing loans, the banking system solvency will not be jeopardized.

Chart 11 Restructured loans of non-financial entities (up) and their quarterly growth (down)



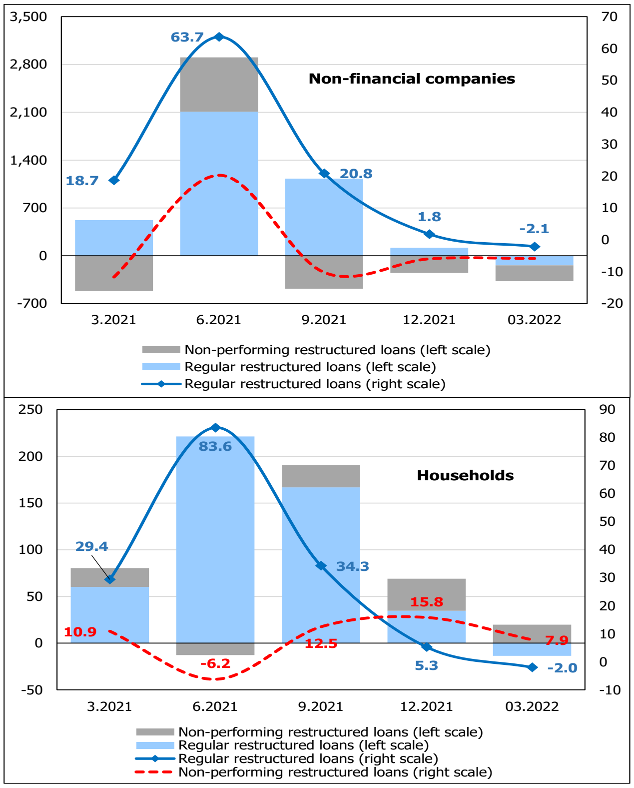
Source: National Bank's Credit Registry based on data submitted by banks.

Restructured loans, by their nature, are loans that need to be followed more closely, because the restructuring is performed on customer claims who have deteriorated financial condition. Restructured loans are a possible factor for growth of non-performing loans, if the restructuring does not achieve the expected goals of adjusting the credit burden to the financial condition of the client. After the fast growth of regular restructured loans in the first half of 2021, the growth of these loans significantly decelerated in the second half of 2021, while they declined in the first quarter of 2022. Currently, regular restructured loans **have a small share in total regular loans of banks,** which amounted to 1.9% at the end of the first quarter of 2022, as a decrease of 0.1 percentage point on a quarterly basis. Regular restructured loans recorded quarterly decrease of 2.1%, or Denar 154 million. The higher inherent risk from the restructured loans is also perceived through the higher average reserve of the regular restructured loans which is 19.7%, as opposed to 2.2% for the total regular loans. The coverage of non-performing restructured loans with separate provisions is similar to the coverage of total non-performing loans.

Similar trend was also registered in restructured loans to certain financial sectors (quarterly decrease of 2.1% or Denar 140 million in corporate and 2.0% or Denar 14 million in household loans). The sector *construction* together with the economic activity in the field of real estate with a high 86.0% has the largest contribution to the quarterly narrowing of the volume of restructured loans, while at the same time a large share of 68.4% in reducing the level of restructured non-performing loans, compared to 31.12.2021. Regarding households, housing and consumer loans are the main drivers of

Chart 12 Quarterly change of restructured loans, by individual sectors

in millions of denars in %

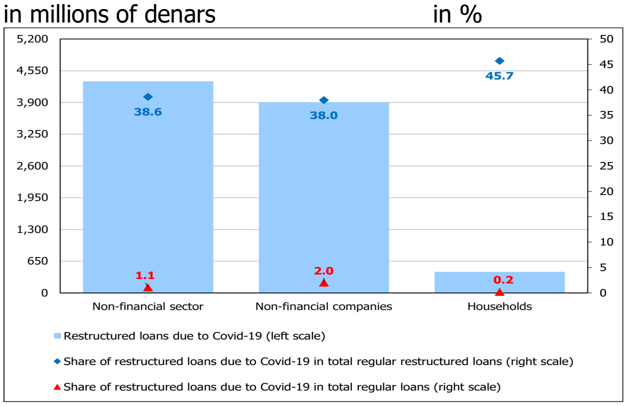


Source: National Bank's Credit Registry based on data submitted by banks.

Chart 13

Restructured loans due to COVID-19 as of 31.3.2022, by individual sectors

in millions of denars in %



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

the quarterly decline[10] of regular restructured loans.

The share of restructured regular loans to total regular loans is not high and amounts to 3.5% and 0.3%, respectively, in corporations and households.

Loans which after the COVID-19 reliefs were restructured due to COVID-19[11], fully contributed to the growth of restructured loans throughout the entire 2021. As of 31.3.2022, they accounted for 38.6% of total restructured loans[12], yet only 1.1% in total loans.

Restructuring is mainly present in non-financial corporations, as they account for about 92% of the entire restructured loan portfolio.

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

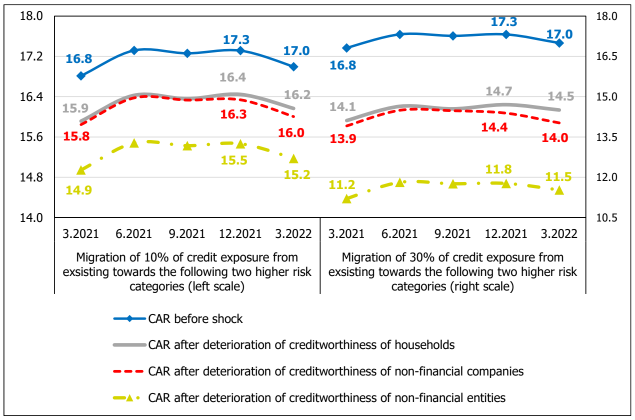
The results of stress testing confirm the resilience of the banking system to the simulated credit risk shocks. The capital adequacy ratio of the banking system does not go below 8% in individual hypothetical simulations. In case of

[10]Almost three quarters of the annual growth of regular restructured loans results from consumers loans, which entirely contribute to the annual growth of non-performing restructured loans.

[11]Corporate loans are predominant in the loans that are restructured due to corona crisis, with a share of 90.0%.

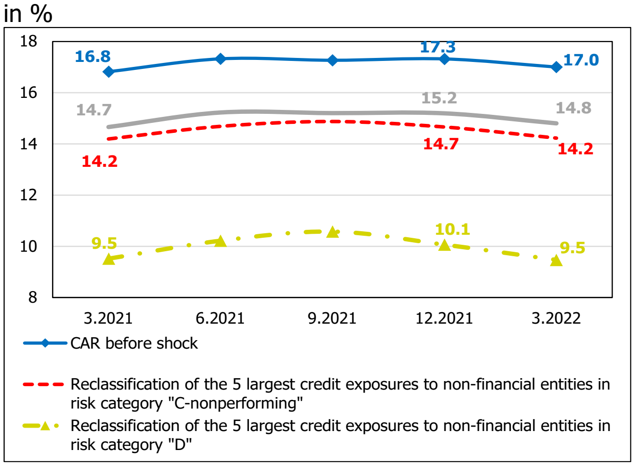
[12]Observed by individual sectors, loans that are restructured due to COVID-19 accounted for 45.7% and 38.0% of restructured household and corporate loans, respectively.

Chart 14
Capital adequacy ratio before and after hypothetical shocks of selected segments of credit exposure
in %



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

Chart 15 Effects on the capital adequacy ratio from reclassification of the largest credit exposures to non-financial entities (including the related parties) in a higher risk category
in %



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

the most extreme, but less possible simulation for a migration of 30% of the credit exposure to non-financial corporations, from the existing to the next two higher risk categories, the capital adequacy ratio of the banking system is reduced by 5.5 percentage points compared to the initial level of capital adequacy ratio (which is identical result to the one on 31.12.2021). Observing individual activities in the corporate sector, amid such simulation, the decline in capital adequacy would be most affected by the worsened creditworthiness of the clients from industry, followed by wholesale and retail trade, while by individual credit products for natural persons, the capital adequacy would be adversely affected by the deteriorated quality of consumer loans, followed by loans for the purchase and renovation of residential property.

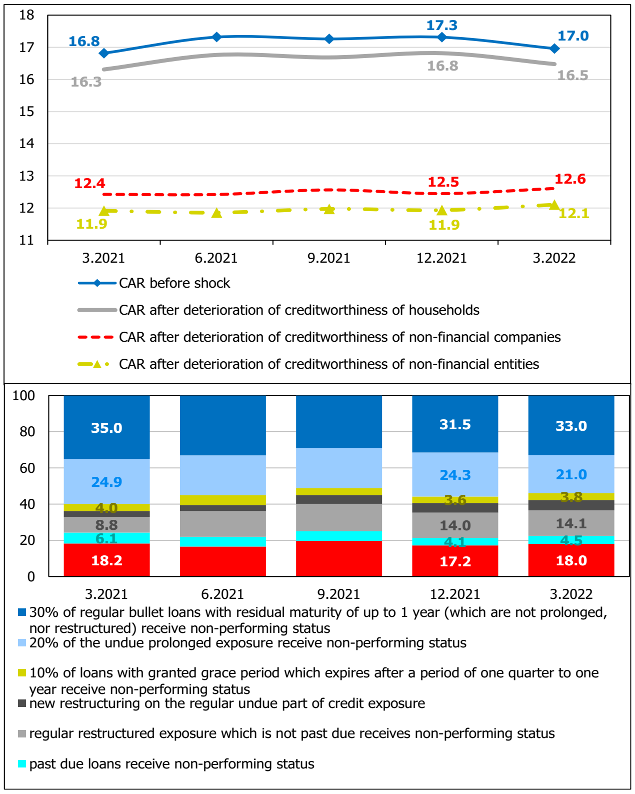
The results of the stress test simulations for the concentration in the loan portfolio towards the non-financial sector slightly worsened compared to the end of 2021, which results from the decreased capital adequacy before the simulations, and partly from the increased concentration in the loan portfolio[13].

The banking system resilience is also examined by extreme simulation based on a combination of seven hypothetical shocks of worsening of the quality of the credit portfolio to the non-financial sector[14]. Even in case of this extreme simulation, the capital adequacy of

[13] On quarterly basis, the five and ten largest exposures to the non-financial sector increased by 8.0% and 7.2%, respectively, while own funds increased by 0.8%. This contributed to increasing the share of the five and ten largest exposures to the non-financial sector in own funds to 49.7% and 77.8%, respectively on 31.3.2022 (compared to the shares of 46.4% and 73.2%, respectively on 31.12.2021).
[14] The seven hypothetical shocks are the following: 1. complete default on the existing non-performing loans; 2. the total past due loans receive non-performing status; 3. the total regular undue restructured exposure receives non-performing status; 4. banks carry out new restructuring of the regular undue part of the credit exposure which according to the volume correspond with the amount of restructured exposures which received a non-performing status, from the previous item; 5. 10% of loans with granted grace period which expires after a period of one quarter to one year receive a non-performing status; 6. 20% of the undue prolonged exposure receives a non-performing status; 7. 30% of regular bullet loans with residual maturity up to one year (which are not prolonged, nor restructured) receive a non-performing status.

Chart 16 Capital adequacy ratio before and after hypothetically combined shocks of various credit exposure segments (up) and contribution of individual shocks to the reduction of the capital adequacy ratio (down)

in %



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

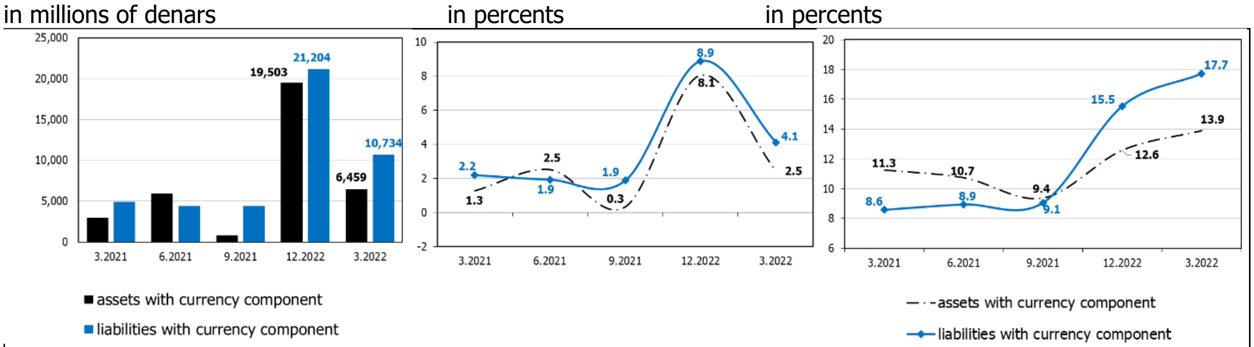
the banking system does not come below the prescribed minimum. Upon this simulation, the capital adequacy ratio reduces by 4.9 percentage points to 12.1%, which is an improved result compared to the end of the previous quarter (5.4 percentage points and 11.9%, respectively). The highest effect on the capital adequacy ratio is that of the assumed deterioration in the quality of bullet loans, which contributes to 33.0% of the total reduction of capital adequacy amid combined shock. In addition, the effect of the hypothetical worsening of the quality of prolonged loans (accounting for 21.0% of the total reduction of the capital adequacy ratio of the banking system) is also significant, as well as the assumed complete default on non-performing loans of the non-financial sector (18.0% of the total decline in capital adequacy in the combined shock). An increased contribution is registered in the assumed acquisition of non-performing status of regular restructured loans (14.1% of the total reduction of capital adequacy as of 31.3.2022).

2. Currency risk

In the first quarter of 2022, the exposure of the banking system to currency risk registered a certain increase, yet it remained at a relatively low level. The gap between assets and liabilities with currency component and the open currency position expanded and increased its share in total own funds of the banking system. Moreover, the currency position of the banking system went from long to short, which has been unusual for the domestic banking system so far. Such movements mostly stem from the rapid quarterly growth of liabilities with Eurocomponent (mostly due to deposits), compared to the growth of assets with Eurocomponent, which has almost eliminated the gap between assets and liabilities in this currency. The increase in euro and denar savings with Euroclause, which started with the outburst of the pandemic, continues as a result of the uncertainties caused by the Russia-Ukraine war. Analyzed by individual bank, as of 31.3.2022, all banks were in line with the prescribed limit of 30% for the aggregate currency position to own funds ratio.

The share of loans with currency component, albeit with a mainly downward trend, remains relatively high, which indirectly exposes banks to the currency risk their clients are exposed to. The implementation of the strategy for maintaining a stable exchange rate of the denar against the Euro, the threat of materialization of indirect currency risk is minor, given that more than 99% of the loans with currency component are nominated in euros or in denars with Euroclause.

Chart 17
Quarterly (left and middle) and annual (right) growth of total assets and of assets and liabilities with currency component *



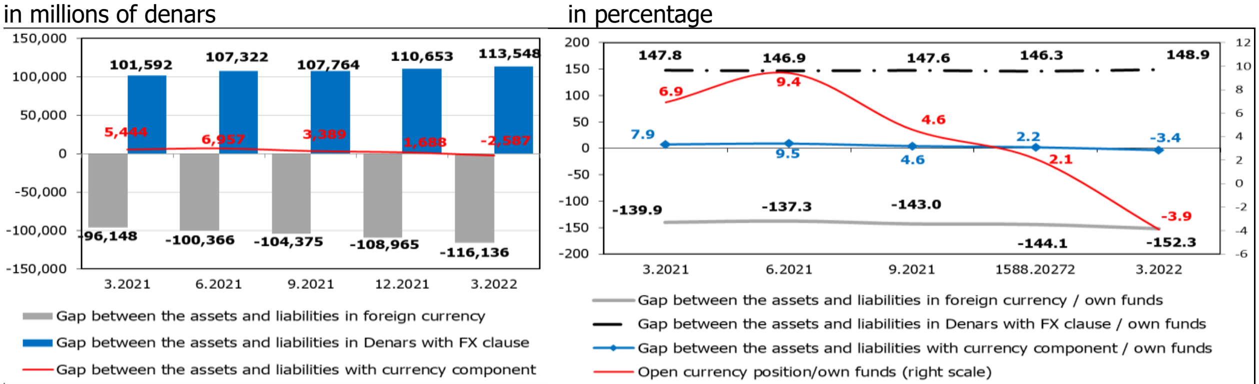
Source: National Bank, i.e. the report on open currency position based on data submitted by banks.
* The assets are on a net basis, reduced by the impairment of claims that are classified in risk categories "C", "D" and "E", in accordance with the regulations on currency risk management. DBNM is not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

In the first quarter of 2022, the gap between assets and liabilities with currency component widened and went to negative, which resulted from the faster growth in liabilities (which increased by Denar 10,734 million, or 4.1%)[15] compared to assets (which increased by

[15]The growth of liabilities with currency component was mostly conditioned by foreign currency deposits to non-residents (by Denar 6,958 million) and to natural person (by Denar 2,026 million), as well as the increase in current accounts of natural person, by Denar 3,808 million. On the other hand, the foreign currency loans decreased by Denar 1,144 million.

Denar 6,459 million, or 2.5%)[16] with currency component. This negative gap amounted to Denar 2,587 million and compared to own funds equaled 3.4% (as of 31.12.2021, the gap between assets and liabilities was positive and amounted to 2.2% of own funds). The open currency position to own funds ratio amounted to 3.9% (and the open currency position[17] is negative) which is lower than the calculated ten-year average (8.0%) for this ratio.

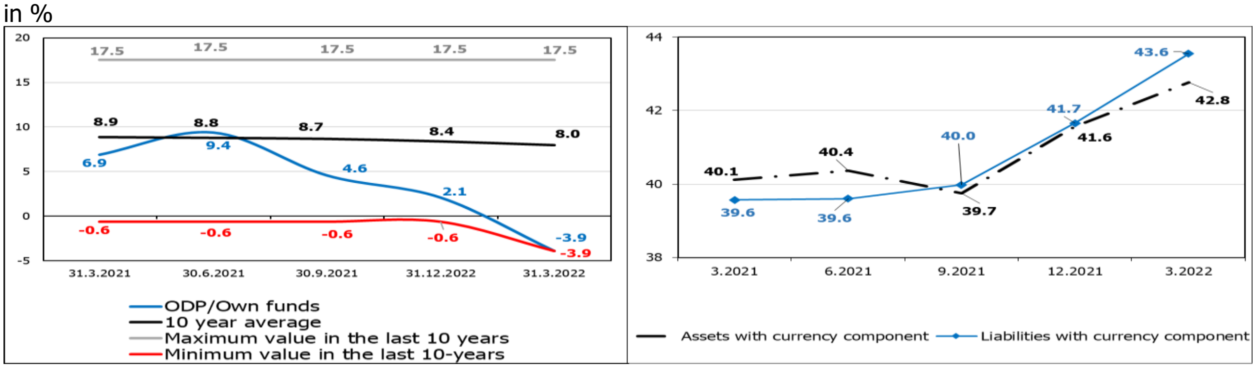
Chart 18
Structure of the gap between assets and liabilities with currency component (left) and share of the assets and liabilities with currency component in own funds (right)
in millions of denars in percentage



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

The increase in assets and liabilities with currency component, amid quarterly decline in total assets i.e. liabilities (by 0.4% or Denar 2,433 million), caused a growth in the share of assets and liabilities with currency component to total assets, i.e. liabilities of banks by 1.2 and 1.9 percentage points, respectively.

Chart 19
Ten year average and minimum and maximum of the OCP/own funds ratio (left) and share of the assets and liabilities with currency component * in the total banks' assets (right)
in %



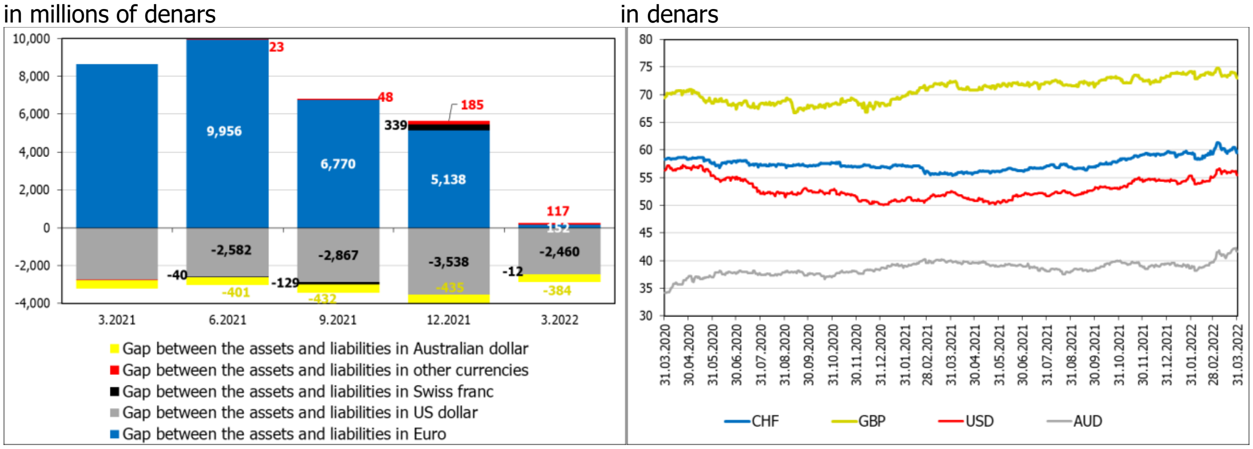
Source: National Bank, based on the data submitted by banks.
*Within the assets, claims are shown on a net basis i.e. adjusted for the impairment. The analysis does not include DBNM AD Skopje.

---

[16]The quarterly increase in assets with currency component was due to the quarterly increase in loans by Denar 5,075 million (of which Denar 3,435 million are denar loans with FX clause), as well as the increase in term foreign currency deposits in other banks by Denar 4,683 million. The increase in foreign currency cash by Denar 1,361 million had a certain impact, as well as mandatory foreign currency deposits with the National Bank by Denar 1,179 million. On the other hand, the current foreign currency accounts in foreign banks and the foreign currency accounts in NBRNM decreased by Denar 5,491 million and Denar 1,180 million, respectively.
[17] 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 20
Dynamics and 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.

Analyzed by currency, the positive gap between assets and liabilities in euros and Euroclause significantly declined (by Denar 4,986 million, or 97%), amid simultaneous decrease in the negative gap between US dollar and denar positions with US dollar clause (by Denar 1,078 million or 30.5%). The narrowing of the gap between assets and liabilities in euros and Euroclause was due to the faster growth of liabilities (by 4.4% or Denar 10,192 million)[18] compared to the increase in assets in this currency (by 2.2% or Denar 5,206 million)[19], while the decrease in the negative gap between the US dollar and denar positions with US dollar clause resulted from the faster growth of assets (by 10.8% or Denar 1,664 million)[20] compared to the increase in liabilities in this currency (by 3.1% or Denar 586 million)[21]. The negative gap between assets and liabilities with dollar component exposes the banking system to risk of increase in the value of the US dollar against the euro. In the first quarter of 2022, the value of the dollar and other currencies against the euro and consequently against the Macedonian denar, increased.

[18]The growth of liabilities in euros and Euroclaues mostly results from foreign currency deposits to non-residents by Denar 6,952 million and to natural persons by Denar 2,026 million, as well as the increase in current accounts of natural person, by Denar 3,283 million. On the other hand, loans in euro and Euroclause decreased by Denar 1,144 million.
[19]The increase in assets with Eurocomponent was mostly due to the quarterly increase in loans by Denar 4,739 million (of which Denar 3,097 million are in euros, and Denar 1,643 million are in denars with Euroclause), as well as the increase in term foreign currency deposits in other banks by Denar 1,094 million. The Report on currency risk exposure by position showed an increase in the position cash, cash equivalents, gold and precious metals, by Denar 1,444 million.
[20]The quarterly growth of assets in US dollars and denars with US dollar clause results from the quarterly increase in term foreign currency deposits by Denar 2,343 million, amid quarterly decline in the position cash, cash equivalents, gold and precious metals from the Report on currency risk exposure by position, by Denar 1,023 million.
[21]The position current accounts and other short-term liabilities in dollars and denars with US dollar clause increased by Denar 610 million.

Table 3

Currency structure of assets and liabilities with currency component

in %

Currency	31.12.2021		31.3.2022	
	Assets	**Liabilities**	**Assets**	**Liabilities**
Euro	90.7	89.3	90.4	89.5
US dollar	5.9	7.3	6.3	7.2
Swiss franc	1.5	1.3	1.2	1.2
Australian Dollar	0.5	0.7	0.6	0.7
British pound	0.6	0.6	0.6	0.6
Other	0.9	0.8	0.8	0.8
Total	**100.0**	**100.0**	**100.0**	**100.0**

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

As of 31.3.2022, the share of currency component loans in total loans to the non-financial sector increased by 0.2 percentage points, to the level of 41.4%, mainly due to the increased share of these loans with non-financial corporations. The share of loans with currency component in total household loans decreased by 0.1 percentage points. Maintaining a stable nominal exchange rate of the denar against the euro is a key factor for maintaining low probability of materialization of the indirect currency risk the banks are exposed to, given that more than 99% of the loans with currency component are denominated in euros or in denars with Euroclause.

Table 4

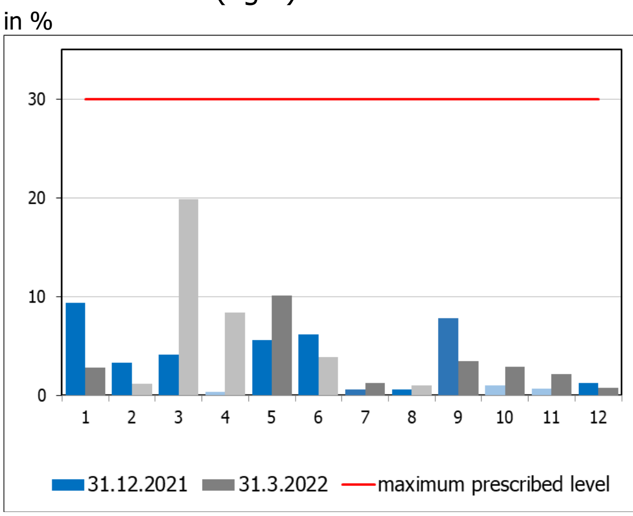
Distribution of banks by share of open currency position, by currency and the aggregate currency position in own funds

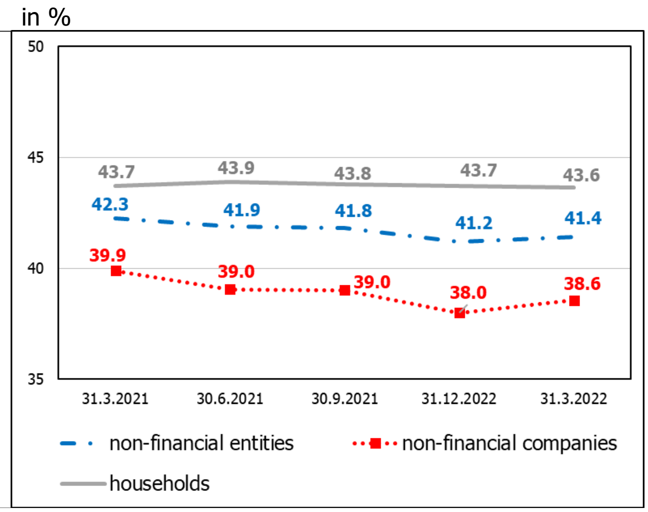
Items	Number of banks										
	Open currency position by currency / own funds										Aggregate currency position / own funds
	Euro		US Dollar		Swiss franc		Australian Dollar		Other		
	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	
under 5%	6	3	7	5	6	5	8		10	2	9
from 5% to 10%	1	1							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

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

As of the analyzed dates, the aggregate currency position to own funds ratio of banks was significantly lower than the prescribed limit of 30%. As of 31.3.2022, seven banks had a long foreign currency position, as opposed to five banks that registered a short foreign currency position.

Chart 21
Aggregate currency position to own funds ratio, by bank* (left) and loans with FX component to total loans ratio (right)





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 shown in absolute value.

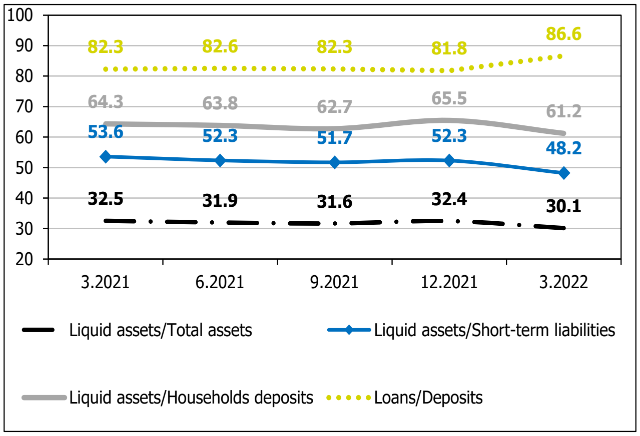
3. Liquidity risk

In the first quarter of 2022, the environment in which banks operate became further complexed with the outbreak of the Russia-Ukraine war, besides the uncertain environment caused by the protracted pandemic, disrupted supply chains and raising prices. Facing numerous challenges, Macedonian banks maintained a stable and solid liquidity position, as one of the main pillars of the overall banking system stability. In the first quarter of 2022, despite the decrease in total liquid assets of banks, they retained a solid volume, thus the liquidity risk remained within acceptable frames, without significant liquidity pressures with banks. Thereby, the indicators for liquidity monitoring and evaluation, albeit slightly decreased, remained on a stable and satisfactory level. Analyzing currency, in this quarter, the denar liquidity indicators have significantly worsened, which was in line with the significant decline in denar liquid assets, associated with the increase preference of depositors to hold deposits in foreign currency. As before, the cumulative gaps between the agreed cash inflows and outflows of up to 1 year are negative, but banks expect a relatively high level of deposit stability, as the main source of their finance. The results of the stress tests indicate satisfactory resilience of the banking system to the assumed extreme, individual and combined liquidity shocks.

Despite the absence of factors on the demand side and downward risks to economic growth, the need for monetary response was seen at the beginning of the second quarter, given the prolonged price pressures due to the long-term and faster growth of import prices and subsequent transfer effects in many price categories and created inflation expectations. Thus, in April and May, the National Bank on two occasions increased the interest rate on CB bills by 0.25 percentage points, to the level of 1.75%. The amount of the CB bills supply remained unchanged, i.e. Denar 10 billion. Moreover, given the increased propensity to save in foreign currency, as well as the unfounded speculations about the stability of the denar, the National Bank took targeted measures, i.e. made changes to the reserve requirement, in response to such tendencies. The reduction of the reserve requirement rate from denar liabilities (from 8% to 6.5%) and the simultaneous increase in the reserve requirement rate from foreign currency liabilities (from 15% to 16.5%), which will apply from June this year, aims to change the currency structure of deposits in the banking system, which is also in line with the Strategy for supporting denarization of the domestic economy.

Chart 22 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.

3.1. Liquidity indicators

In the first quarter of 2022, amid decrease in liquid assets of the banking system, the liquidity indicators registered certain worsening. However, they still point to a proper liquidity risk management of banks, without liquidity pressures, which is confirmed by the relatively stable share of liquid assets in the total bank assets and the coverage of short-term liabilities and household deposits with liquid assets, which also remained stable (of around 50% and above 60%[22], respectively). The loan to deposit ratio of the banking system is also stable, although in the first quarter of 2022 it slightly increased, to a level slightly higher than 85%. The Liquidity Coverage Ratio of the banking system equals 255.2%, which is by 2.5 times higher than the regulatory minimum (100%[23]) and confirms the satisfactory volume of liquidity available to the Macedonian banking system. Bank-by-bank analysis shows that the liquidity coverage ratios range from 131.2% to 1044.5% (with a median of 270.6%), which further indicates acceptable liquidity risk frames to which banks are exposed and their stable liquidity management.

Observing the currency features of liquid assets and liabilities, in the first quarter of 2022, denar liquidity indicators registered a slightly more pronounced decrease compared to the foreign currency liquidity indicators[24], given the more pronounced quarterly decline in denar liquid assets (which cause 94.3% of the decline in liquid assets[25]). However, Denar liquidity indicators

[22] Analyzed by bank, as of 31.3.2022, the share of liquid in total assets ranges between 9.3% and 50.2%, with a median of 24.6% (March 2021: between 19.6% and 51.7%). The coverage of short-term liabilities with liquid assets ranges between 34.8% and 71.8%, with a median of 42.8% (March 2022: between 40% and 68.8%), and the coverage of household deposits with liquid assets ranges between 39.8% and 100.9%, with a median of 61.7% (March 2022: between 35.4% and 84.9%). The Development Bank of North Macedonia AD Skopje is excluded from this analysis.

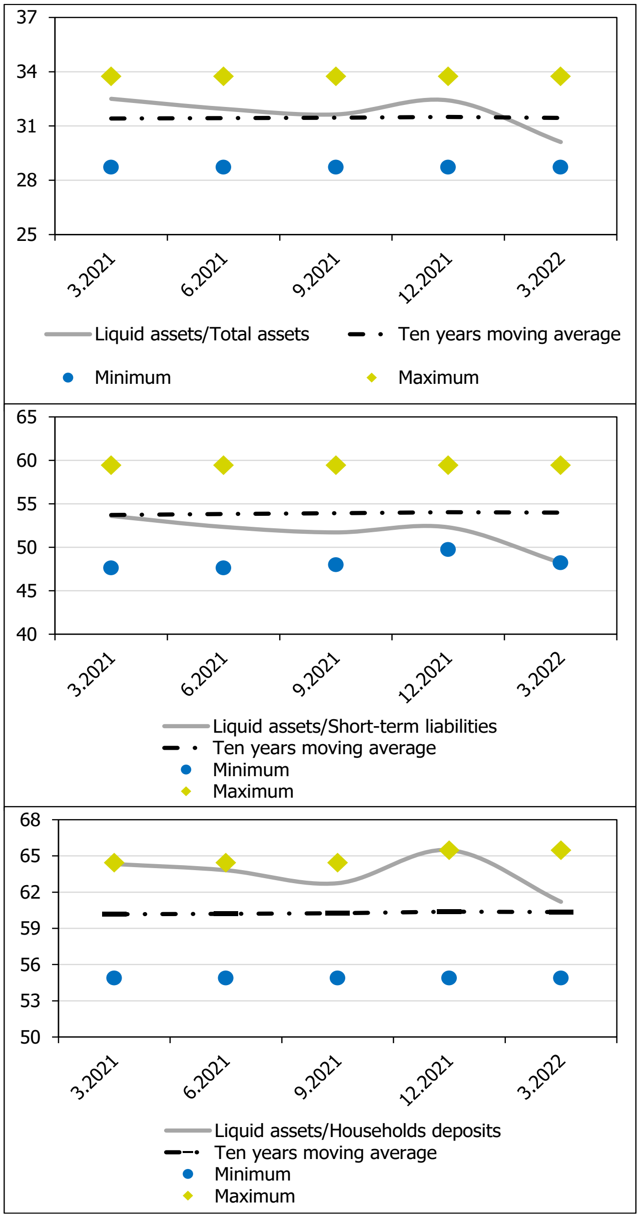
[23] Besides accumulatively, banks are required to determine and monitor a liquidity coverage ratio for each currency that is significant to the bank (each currency whose share of the bank's total balance sheet liabilities is at least 5%). Thus, the minimum level of liquidity coverage ratios by currency is not prescribed. As of 31 March 2022, the liquidity coverage ratios for the two significant currencies, euros and denars, were 109.6% and 264.4%, respectively.

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

[25] Amid decline in the banks' deposit potential, liquid assets decreased, with the largest decline in banks' placements in overnight deposit facilities with the National Bank and assets on corresponding accounts in foreign banks.

Chart 23 Liquid assets/total assets (top), liquid assets/short-term liabilities (middle) and liquid assets/household deposits (bottom)

in %



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

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. The risks arising from the lower foreign currency liquidity indicators are mitigated by high denar liquidity and the possibility to provide foreign currency liquid assets[26], if necessary.

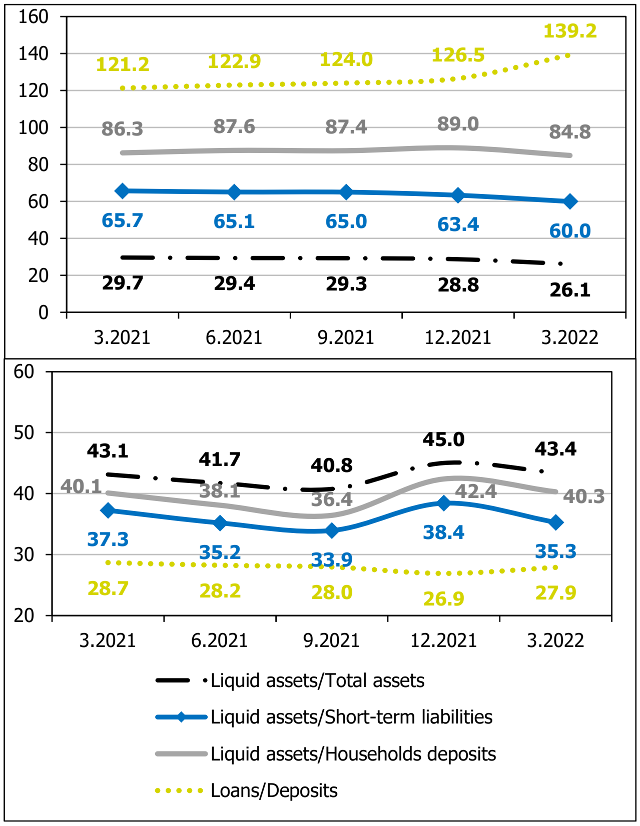
3.2. Dynamics and composition of liquid assets

At the end of the first quarter of 2022, liquid assets[27] of the banking system amounted to Denar 186,763 million, which is a decline 7.7%, or Denar 15,597 million compared to the end of 2021. Compared annually, the liquid assets also registered a decline, yet slower (by Denar 2,218 million, or 1.2%). Analyzing financial instruments that make up liquid assets, the largest quarterly decrease was registered in placements of banks in overnight deposit facilities with the National Bank (by Denar 14,180 million, or 40.4%), with a significant decrease in banks' assets on corresponding accounts in foreign banks (by Denar 5,803 million or 24.9%). At the same time, banks' placements in CB bills also decreased by Denar 862 million, or by 8.6%. Increase is only registered in banks' investments in securities, namely government bonds (by Denar 955 million, or 1.7%) and government bills (by Denar 203 million, or 1.2%).

[26] Bank can provide the necessary foreign currency liquid assets at any time, through the National Bank interventions on the foreign exchange market. In addition, the European Central Bank (ECB) decided to extend the validity of repo line granting the National Bank access to euro liquidity for the first time in August 2020, with adequate collateral. The deadline for application of the repo line, worth up to Euro 400 million, has been extended to January 2023. Thus far, the National Bank has not used funds from the approved repo line.

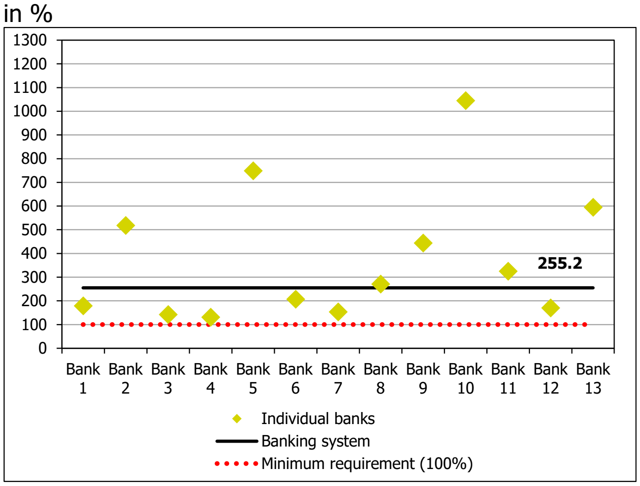
[27] The liquid assets encompass: 1) assets and claims on the National Bank, which include cash, assets on the accounts of banks with the National Bank, deposit facility with the National Bank and CB bills; 2) short-term deposits with foreign banks, including the assets of the banks on their correspondent 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.

Chart 24
Banking system liquidity ratios according to currency structure, Denars (top) and FX (bottom)
in %



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

Chart 25
Liquidity coverage ratio, as of 31.3.2022
in %



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

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

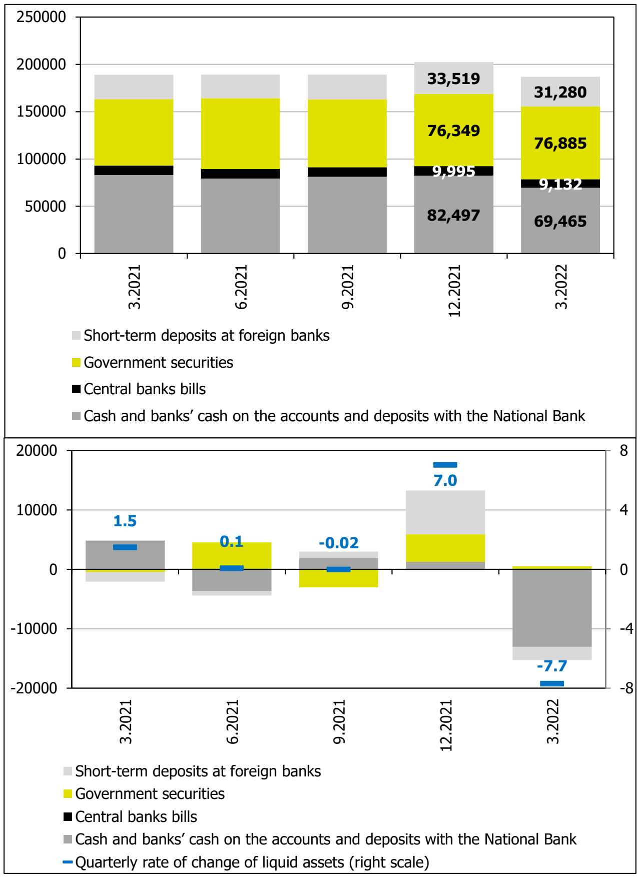
As of 31.3.2022, the agreed inflows of banks distributed in the period over one year and the agreed outflows of banks distributed in the period up to seven days prevail in the maturity structure of banks' inflows and outflows. The largest difference (gap) between the banks' inflows and outflows is registered in the time periods 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, i.e. due to claims based on loans and advances included in the 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). These gaps in relation to the assets of the banking system are 36.9% (the cumulative gap up to 7 days) and 25.6% (the cumulative gap up to 1 year).

In the first quarter of 2022 as well, the banks expect maintenance of the deposit stability as the main source of funding for their activities. At the end of the first quarter of 2022, according to the depositors' behavior, the banks expect that in the next 12 months 84.1% of deposit-based contractual outflows will not be realized by the depositors. Stable deposits remained dominant, despite high uncertainty caused by numerous risk factors (Russia-Ukraine war, disrupted supply chains, energy crisis, increased primary commodity prices, further course of the pandemic etc.).

3.4. Stress-simulations for liquidity shocks

On 31.3.2022, the results of the conducted stress simulations for liquidity shocks show solid capacity of

Chart 26
Liquid assets, structure (top) and growth (bottom)
in millions of denars and in %



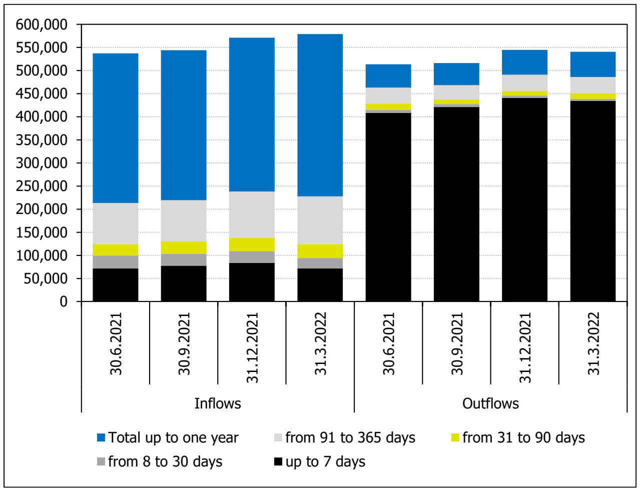
Source: National Bank, based on the data submitted by banks.

the banking system, i.e. it has sufficient liquid assets to respond appropriately to the individual 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 (121.1% on 31.03.2022) only in case of significantly extreme simulation of liquidity shock, which covers combined outflows[28] 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[29] owned by banks, for which it is estimated that banks will quickly and easily collect or turn into cash. In such a case, amid combination of the assumed shocks, it would take less, i.e. 105.4% of the available liquid assets to cover the liquidity outflows, according to the expanded definition.

At individual simulations of liquidity shocks, the high level of liquidity which Macedonian banks have at their disposal provides settlement also of all assumed, individual, extreme liquidity outflows. The sharpest drop in liquid assets occurs in case of an outflow of the deposits of the ten largest depositors[30], but the importance of this simulation to individual banks is different, given the differences in the degree of deposits concentration. On the contrary, simulated materialization of reputation risk and loss of confidence of the population in the banks represented by an

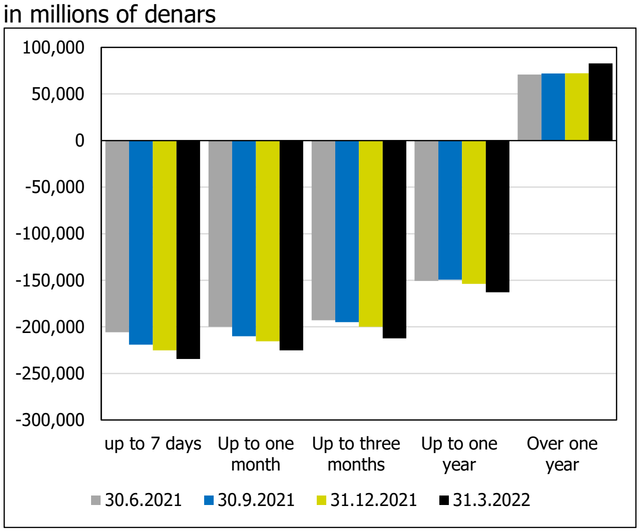
[28] The simulation assumes outflow of: deposits of the ten largest depositors, 20% of household deposits, liabilities to parent entities (liabilities on subordinated instruments and hybrid capital instruments are excluded from the simulation as, according to the regulations for calculating capital adequacy, 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.
[29] 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.
[30] In case of assumed individual liquidity shock which includes full outflow of deposits of the ten largest depositors, in accordance with the changes in the regulations for liquidity risk management, the input data in the simulation refers to the deposits of the ten largest depositors, instead of the previous coverage of the twenty largest depositors (before 30.6.2021).

Chart 27
Maturity structure of inflows and outflows of balance assets and liabilities
in millions of denars



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

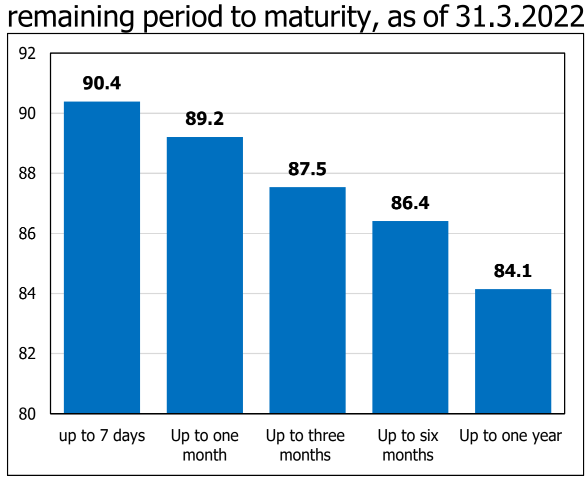
Chart 28
Cumulative gap between the agreed inflows and outflows, by including the cumulative amount of unencumbered assets
in millions of denars



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

outflow of 20% of household deposits shows a significantly greater similarity in the results for individual banks, thereby confirming the importance of deposits to the financing of the banks' activities. In the case of assumed conversion of certain off-balance sheet liabilities of the banks into on-balance sheet claims[31], the banks would spend slightly less than 20% of their liquid assets, which although less compared to the simulations of outflow of deposits[32], yet this assumed reduction in liquid assets can be considered significant. 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 31
Expected deposit stability, according to the remaining period to maturity, as of 31.3.2022



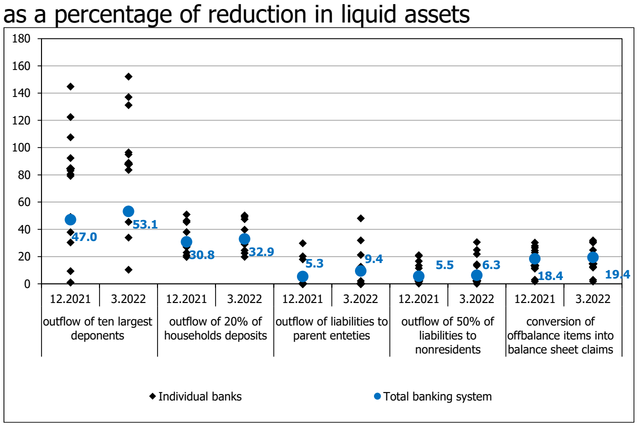
Source: National Bank, based on the data submitted by banks.

[31] 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.
[32] During a simulation of outflow of deposits of the ten largest depositors, the liquid assets of the banking system are reduced by 53.1%, while in case of assumed outflow of 20% of the household deposits, liquid assets are reduced by 32.9%.

Chart 29

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

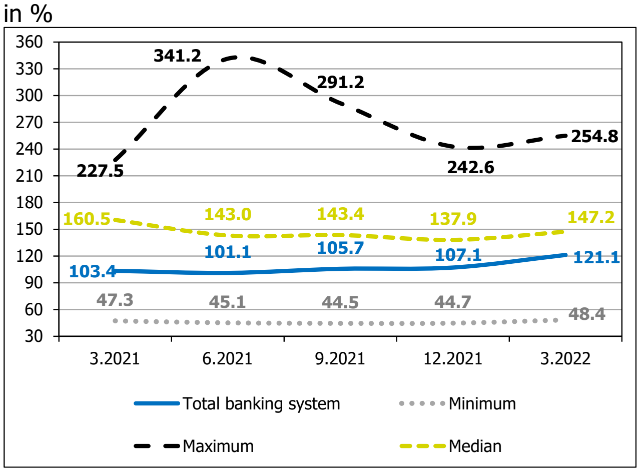


Source: National Bank, based on the data submitted by banks.

Chart 30

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

in %



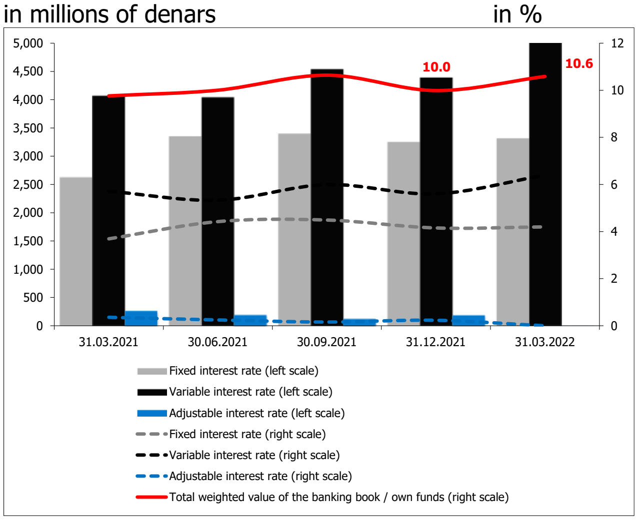
Source: National Bank, based on the data submitted by banks.

4. Interest rate risk

In the first quarter of 2022, the exposure of the banking system to the interest rate risk in the banking book increased, due to the growth of the weighted value of the banking book, which increased its share in own funds. The increasing exposure of the banking system to interest rate risk is mostly due to the changes in interest-sensitive positions of banks with variable interest rates, where the placement in loans increased, accompanied by redistribution towards blocks with slightly longer residual maturity until the next interest rate reassessment, while liabilities on demand with variable interest rate decreased. In addition, the weighted value of the banking book with fixed interest rate increased quarterly, due to increased placements in debt securities and partly in loans, with longer residual maturities amid decline in deposits with the National Bank with this type of interest rates. The total (non-weighted) gap is positive, which, on an aggregate basis, exposes the banking system to interest rate risk, which, in conditions when the period of low interest rates is over, is less possible. On the other hand, in such conditions, banks are indirectly exposed to interest risk, which would turn into interest rate risk exposure of their clients, due to high share of loans with variable and adjustable interest rates.

Chart 32 Total weighted assets of the banking book*, by interest rate type, in absolute amount (left scale) and relative to own funds (right scale)

in millions of denars in %



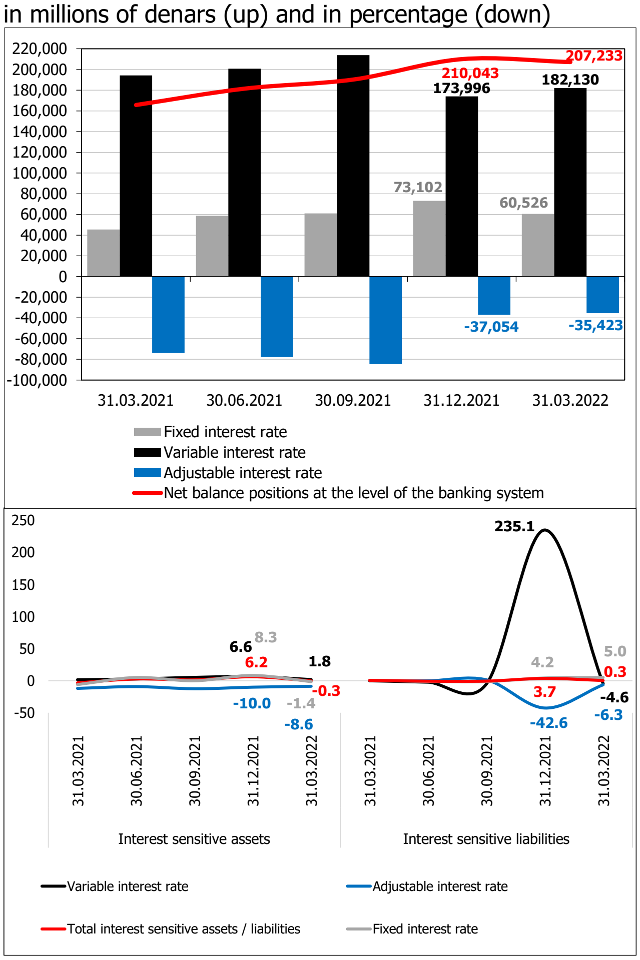
Source: National Bank, based on the data submitted by banks.

*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 percentage points.

The total weighted assets of the banking book registered a quarterly increase of Denar 538 million, or 6.9%. This, amid slower growth of own funds (of 0.8%), increased the weighted value of the banking book to own funds ratio by 0.6 percentage points, to the level of 10.6%. At the same time, the level of this ratio, used to measure the exposure of the banking system to the interest rate risk in the banking book, exceeded even more the level of the average calculated for the last 10 years (6%) and became equal to the calculated maximum value, for the last 10 years. Analyzed by bank, this ratio ranges from 0.9% to 16.8%, and is below the level of the prescribed threshold of 20.0%[33]. Analyzing the type of interest rate, the quarterly growth of the total weighted value of the banking book mostly results from the increase in the weighted value of the portfolio with variable interest rate (Denar 660 million or 15.1%) and partially from the growth of the portfolio with fixed interest rate (Denar 63 million or by 1.9%). The growth of the weighted value of the portfolio with

[33] 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 in the banking book.

Chart 33
Interest-sensitive assets and liabilities by type of interest rate, gap (up) and quarterly growth (down)
in millions of denars (up) and in percentage (down)

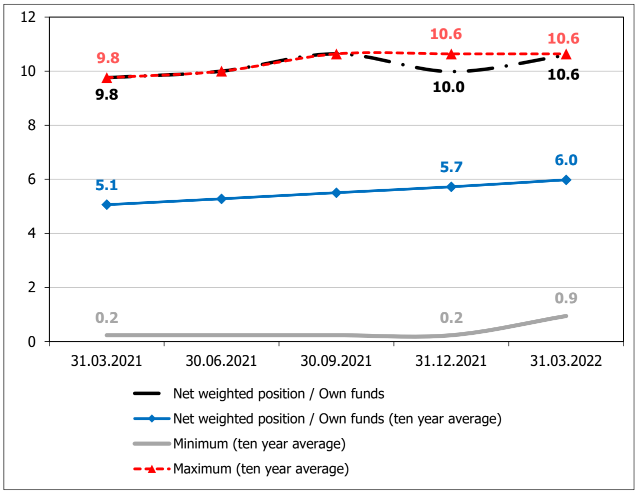


Source: National Bank, based on the data submitted by banks.

variable interest rate is due to the increase in the gap between the asset and liabilities items with this type of interest rate amid simultaneously redistribution in the structure of the gap, from the blocks with shorter (up to one month) to the blocks with longer residual maturity (3 - 6 months). Such changes in the gap with variable interest rates mostly result from the changes in the placements in loans and liabilities on demand with this type of interest rate. The growth of the weighted value of the portfolio with fixed interest rate, amid significant narrowing of the (positive) gap with this type of interest rate, results from the redistribution in the structure of the gap, from the blocks with shorter maturity (up to 1 month and from 3 to 6 months) to the blocks with longer maturity (from 6 to 12 months, from 2 to 3 years and from 5 to 7 years), mostly due to the increased placements in debt securities and partly in loans, with longer residual maturities, amid simultaneous decline in placements in deposits with the National Bank. In contrast, the weighted value of the portfolio with adjustable interest rate decreased (by Denar 185 million or by 101.4%) and on 31.3.2022 amounted to only Denar 3 million. The decrease in the weighted value of this portfolio, amid narrowed negative gaps with this type of interest rates, results from the higher decline in term deposits compared to the reduced placements in loans with this type of interest rate.

The total gap between the interest-sensitive assets and liabilities declined quarterly by 1.3%, or Denar 2,810 million. This was mostly due to the narrowing of **the positive gap between positions with fixed interest rate** (by 17.2% , or by Denar 12,575 million), mostly as a result of the reduced placements in term deposits with this type of interest rate (deposit facilities with the National Bank). **The negative gap between assets and liabilities with adjustable interest rate** narrowed (by Denar 1,631 million or 4.4%), mostly due to reduced placements in loans and reduced term deposits,

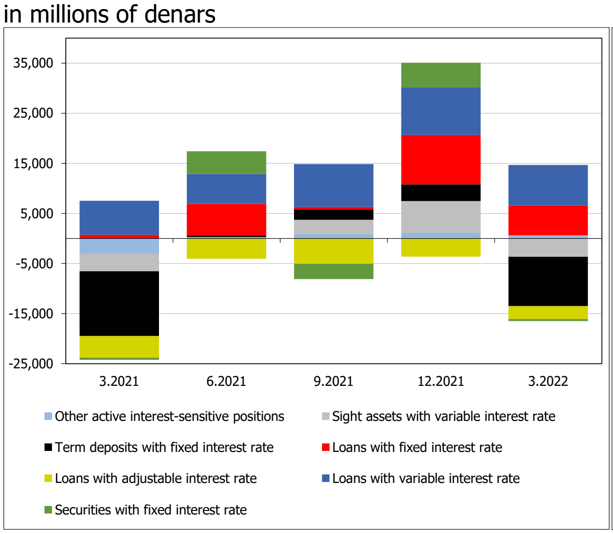
Chart 34
Net weighted position / own funds
in %



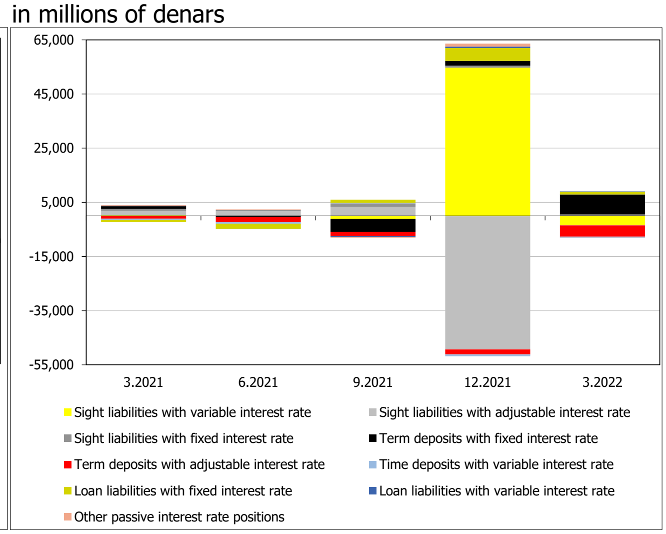
Source: National Bank, based on the data submitted by banks.

with this type of interest rates. **The positive gap between assets and liabilities with variable interest rate** widened by Denar 8,134 million, or by 4.7%, which results from the quarterly increase in the placements in loans with variable interest rate.

Chart 35
Quarterly changes of the interest sensitive assets (left) and liabilities (right), by type of instrument and type of interest rate
in millions of denars



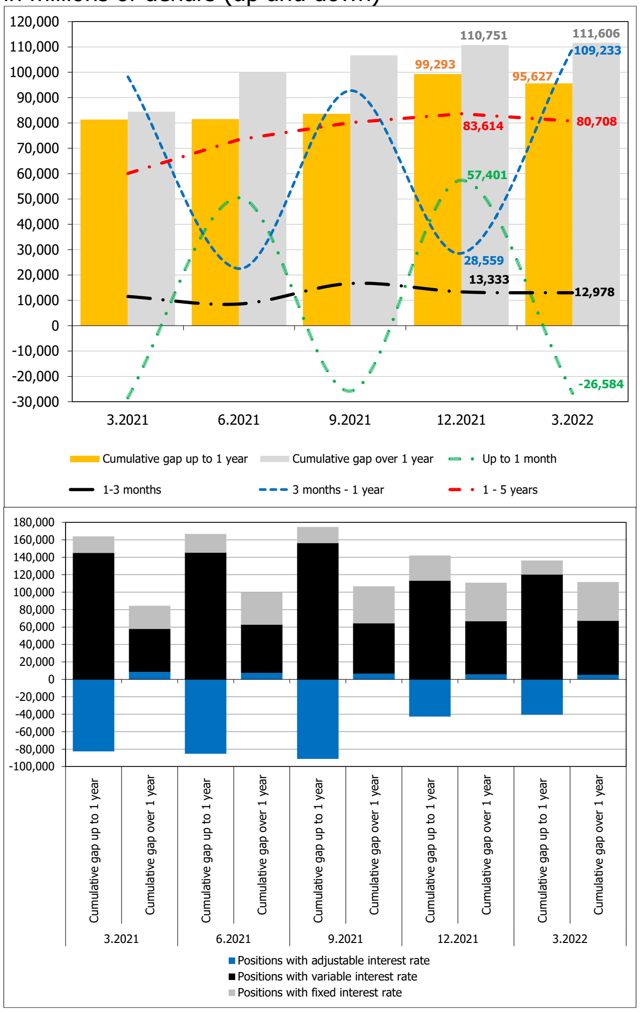
in millions of denars



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

Analyzing the time period until next interest rate revaluation, the tightening of the total gap between the interest-sensitive assets and liabilities is due to the tightening of the gap up to 1 year, by Denar 3,666 million. The narrowing of the gap between interest-sensitive asset and liabilities items up to 1 year is mostly due to

Chart 36 Asset-liability gap, by period until next interest rate revaluation (up) and gap structure by interest rate type (down)
in millions of denars (up and down)

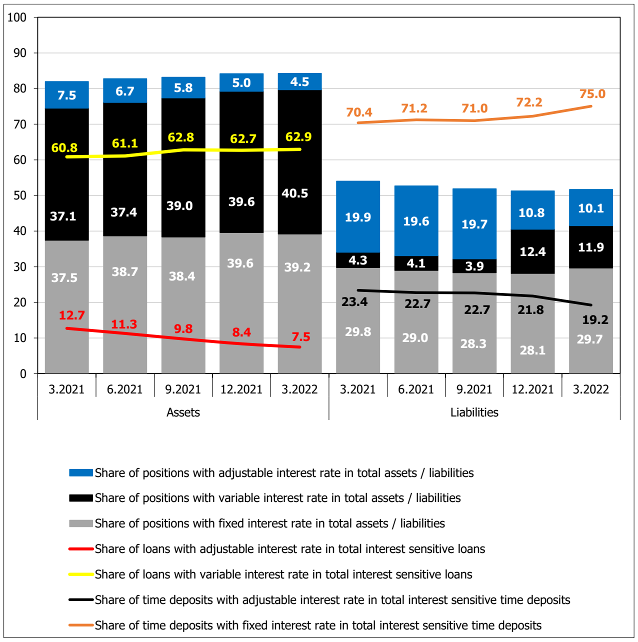


Source: National Bank, based on the data submitted by banks.

the reduced placements in term deposits with fixed interest rate. At the same time, the gap over one year slightly grew, which is mostly conditioned from the increase in the placements in loans with variable interest rate.

The indirect exposure to interest rate risk, which arises from the presence of loans with adjustable and variable interest rates, remains significant. As of 31.3.2022, the cumulative share of these loans in the total loans is 70.4% (decrease of 0.7 percentage points compared to 31.12.2021), whereby 62.9% of the total loans have variable interest rate, while 7.5% are with adjustable interest rate. This exposes banks to indirect credit risk from their clients' exposure to interest rate risk.

Chart 37
Structure of assets and liabilities, by type of interest rate
in %



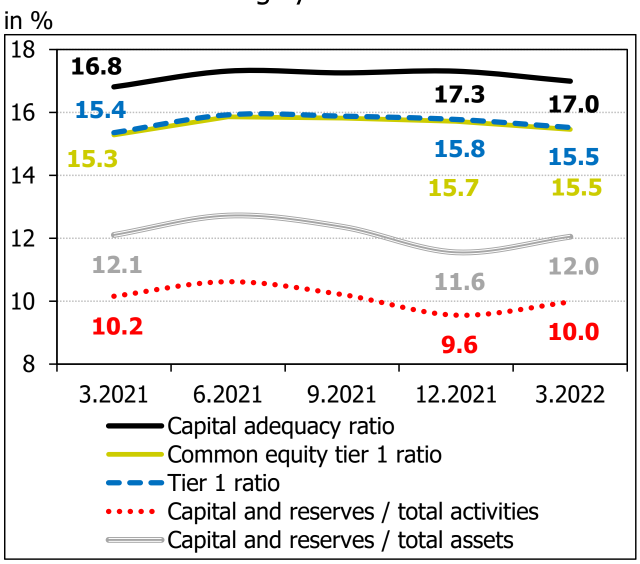
Source: National Bank, based on the data submitted by banks.

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

5. Insolvency risk

The solvency and capitalization indicators of the banking system registered divergent, yet relatively modest quarterly changes. The divergent movements of the analyzed indicators resulted from major differences between quarterly growth rates of own funds, on one, and capital and reserves, on the other hand, which mostly resulted from the differences in the amount of retained profit in both categories of capital positions. The capital adequacy ratio decreased quarterly by 0.3 percentage points, to the level of 17%, due to the rapid quarterly growth of risk weighed assets, compared to the increase in own funds. The growth of own funds is mostly due to the retained earnings, while the increase in the risk weighted assets was mostly pronounced in the credit risk weighted assets. Analyzed by purpose of own funds, all capital buffers and requirements, including capital supplement determined by the supervisory assessment and evaluation, registered a quarterly growth, which was covered by available own funds. Almost 53% of the banking system's own funds account for the capital supplements determined according to the supervisory assessment of the capital buffers or are free above the necessary regulatory and supervisory requirements and are especially important amid crisis episodes, when they can be used as a tool to deal with challenges of different nature and intensity. The conducted stress testing of the banking system resilience to the simulated shocks shows satisfactory resilience.

Chart 38
Indicators of solvency and capitalization of the Macedonian banking system

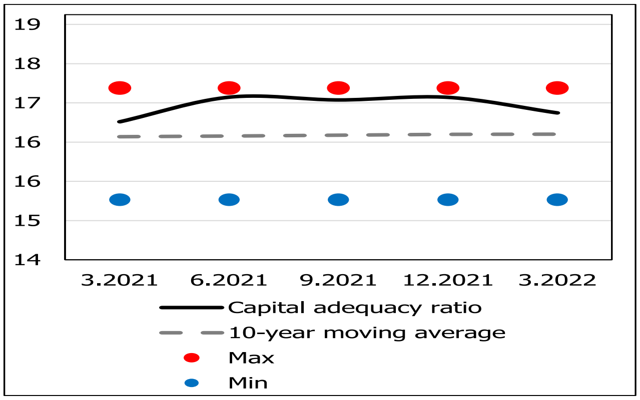


Source: National Bank, based on the data submitted by banks.

5.1. Solvency and capitalization of the banking system

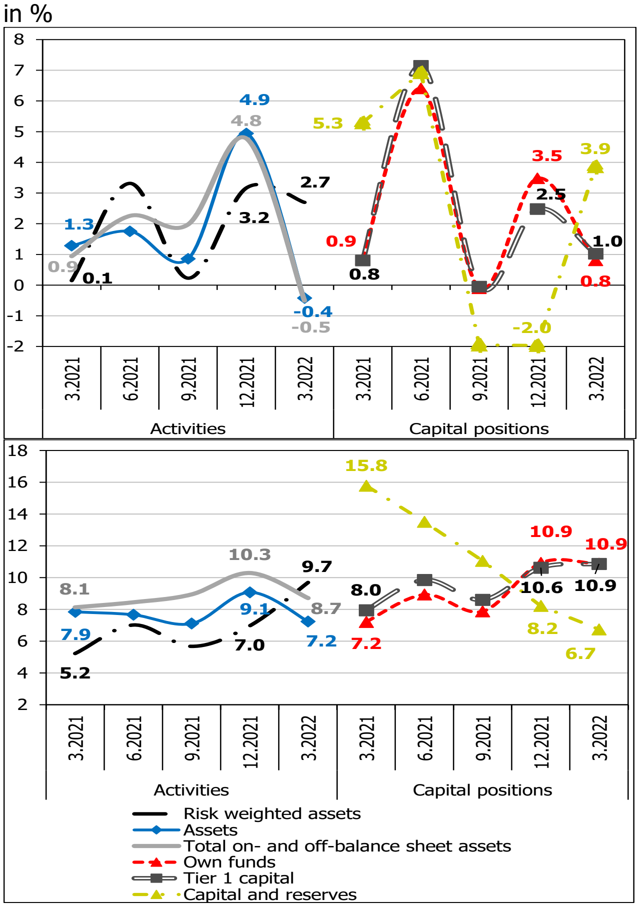
The solvency and capitalization indicators of the banking system registered divergent movements in the first quarter of 2022. On a quarterly basis, the capital adequacy ratio dropped by 0.3 percentage points, to the level of 17%, which is above the calculated ten-year average of this ratio (16.5%), but below the maximum registered in the past ten years (17.5%). The interest rates of the Common Equity Tier 1 capital equaled 15.5% (a decrease of 0.2 and 0.3 percentage points, respectively), while the share of capital and reserves in total assets and total on-balance and off-balance sheet activities of banks increased by 0.4 percentage points and reached 12% and 10%, respectively. The divergent movements of the analyzed indicators result from major difference between quarterly growth rates of own funds and capital and reserves. The growth of capital and reserves accelerated quarterly reaching 3.9%, while own funds were almost unchanged (increased by only 0.8%), which mostly results from the different amounts of retained profit in

Chart 39
Capital adequacy ratio
in %



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

Chart 40
Quarterly (up) and annual growth rates (down) of solvency indicator components
in %



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

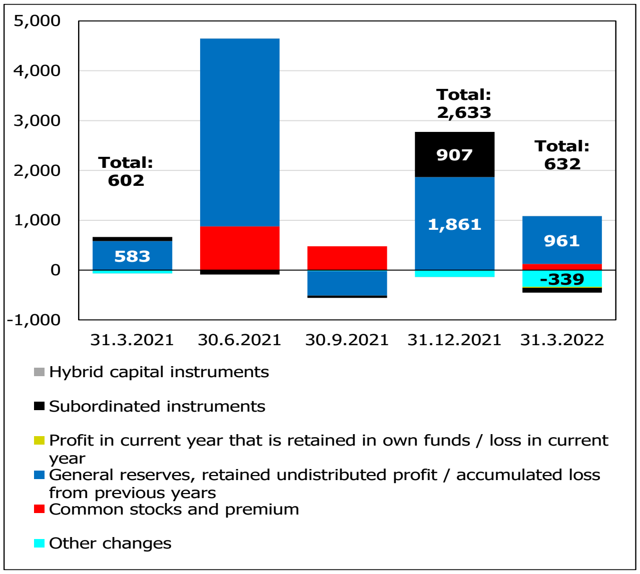
both categories of capital positions[35]. On the other hand, assets and total on-balance and off-balance sheet activities registered a quarterly decline, of 0.4% and 0.5%, respectively, while risk weighted assets further increased, yet slower compared to the previous quarter (growth of 2.7%).

5.2. Quality of own funds of the banking system

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 the first quarter of 2022, the highest-quality buffer of the own funds of the banking system (the Common Equity Tier 1 capital) accounted for 91% of the total own

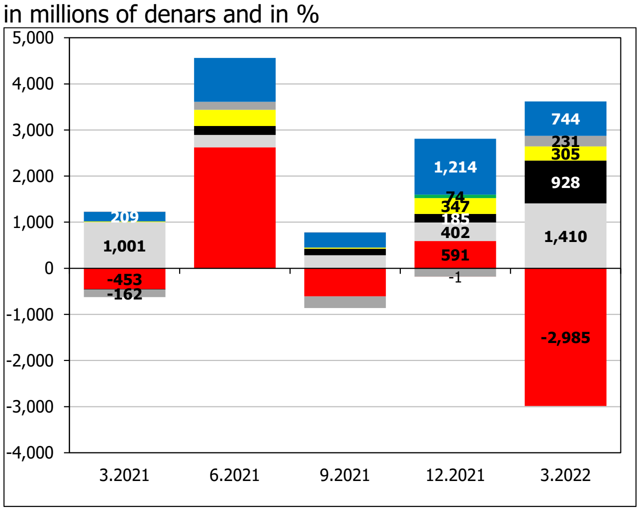
[35]Own funds retain only the limited part of the profit for distribution to shareholders, while the capital and reserves retain profits available for future distribution to shareholders as well.

Chart 41
Structure of the quarterly growth of own funds
in millions of denars
in %



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

Chart 42
Structure of quarterly growth (up) and balance (down) of own funds, by the requirement for covering risks and for maintaining the required capital buffers
in millions of denars and in %

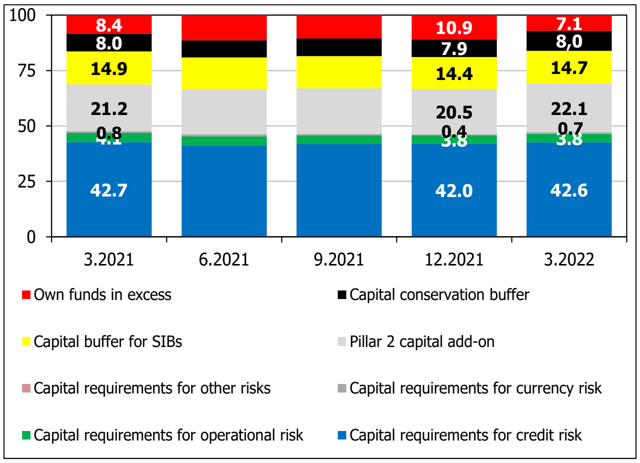


funds, the Additional Tier 1 capital accounted for only 0.4% of the banking system's own funds, while the Tier 2 capital made up 8.7%.

In the first quarter of 2022, own funds of the banking system grew by Denar 632 million, or by 0.8%, which is slower compared to the previous quarter (3.5%), and very similar to the growth (0.9%) registered in the first quarter of 2021. In the first quarter of 2022, the largest contribution to the growth of own funds was made by reinvestment of banks' profit from the previous year. For more details about the level of own funds by group of banks see annexes to this report.

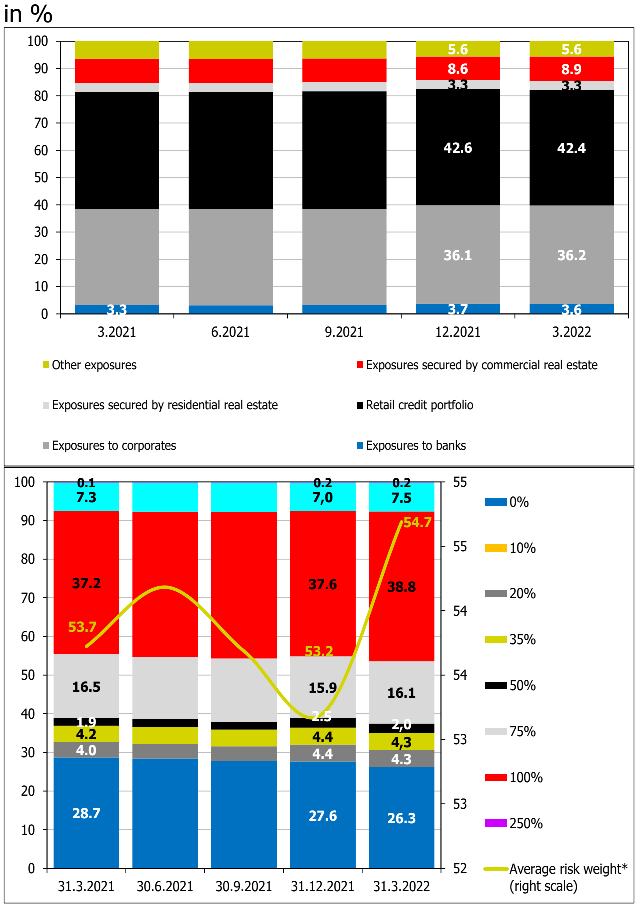
Analyzed by purpose of own funds, all capital buffers and requirements, including capital supplement determined by the supervisory assessment and evaluation, registered a quarterly growth, which was covered by available own funds. Capital requirements for covering risks (from pillar 1) increased by Denar 975 million, or by 2.7%, and as of 31.3.2022, they account for 47.1% of the total own funds of the banking system (46.2% as of 31.12.2021). The quarterly increase of capital requirements for risks coverage mostly results[36] from the increase in capital requirements for credit risk coverage (by Denar 744 million), mostly from banks' activities with corporations and households, which amid decline of liquid assets (activities with risk weight of 0%) increased the average level of bank risks[37], by 1.5 percentage points, to the level of 54.7%. Capital buffers[38] (for capital conservation and for systemically important banks) increased by Denar 1.233 million, or by 7.0%, on a quarterly level, and at the end of the first quarter of 2022 account for 23.8% of the total own funds of the banking system. The amount of the capital supplement determined by the supervisory grade and

[36]Solid growth of Denar 231 million was registered in capital requirements for covering currency risk, due to increased aggregate currency position in the first quarter of 2022.
[37]Calculated as a ratio between credit risk weighted assets and total balance sheet and off-balance sheet exposure of banks
[38] From the four capital buffers specified by the Banking Law, in the first quarter of 2022, all banks were required to meet the capital conservation buffer, while banks that are identified as systemically important banks, are also required to meet an appropriate rate of capital buffer for systemically important banks. More on systemically important banks on the following link: Skopje, 11 (nbrm.mk).



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

Chart 43 Structure of capital requirements for covering credit risk, by category of exposure (up) and total on-balance and off-balance exposure, by risk weights (down).
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.

evaluation (pillar 2) registered a quarterly increase of Denar 1,410 million, or 8.8% and accounted for 22.1% in the total own funds of the banking system. The increase in capital buffers and the capital for covering risks resulted from the use of available own funds, above the necessary regulatory and supervisory requirements, which declined quarterly by Denar 2,985 million, or 34.8% and their share on a quarterly basis decreased by 3.8 percentage points, to 7.1% of total own funds.

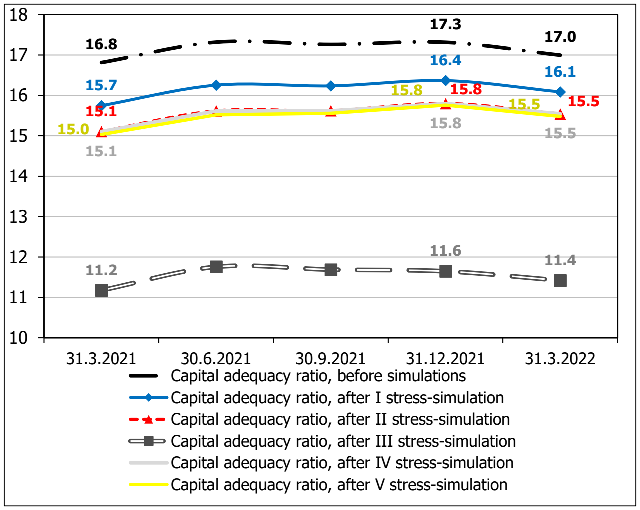
For more details on the capital requirements for covering risks and on the capital adequacy ratio, by group of banks, see annexes to this Report.

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

The banking system shows a satisfactory resilience to the conducted regular simulated shocks, which assume extreme materialization of the credit risk (isolated, or in combination with materialization of the currency and/or the interest rate risk). The results of the regular stress-testing in March are slightly weaker compared with 31.12.2021, mostly due to the lower initial level of the capital adequacy ratio before the shocks. The capital adequacy of the banking system does not fall below 8% in any of the simulations, although individual banks reveal hypothetical need for recapitalization in the simulated extreme shocks.

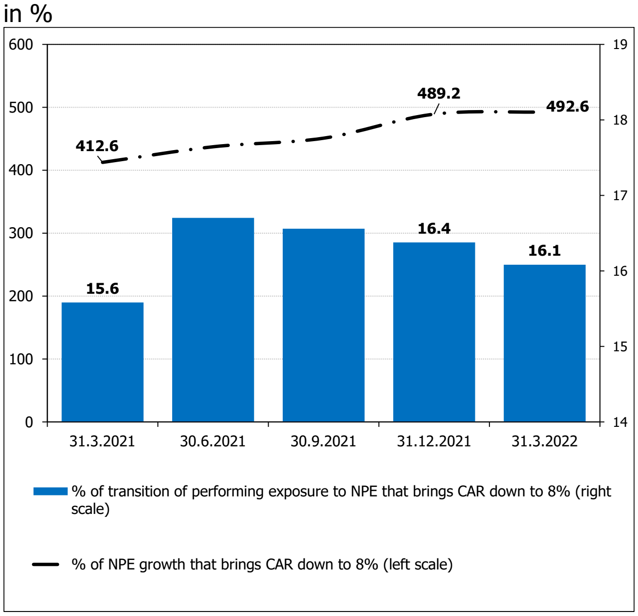
Hypothetical shocks on the part of the credit risk had the greatest impact on the solvency of the banking system. The results of the reverse stress test show that it takes growth of 492.6% of non-performing loan exposure migration of 16.1% from regular to non-performing loan exposure for the capital adequacy of the banking system to drop to 8%. However, these are rather extreme and less likely simulations, especially in the short term, given that in the

Chart 44
Results of stress-test simulations
in %



Source: National Bank, based on data submitted by banks[34].

Chart 45
Necessary deterioration of the quality of credit exposure to cause a decline in the capital adequacy of the banking system to 8%
in %



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

first quarter of 2022, only 0.3% of the regular credit exposure to non-financial sector received a non-performing status. At the same time, the non-performing credit exposure to non-financial entities decreased by 2.1%. However, banks and their clients still face numerous challenges. Besides the adverse effects of the health crisis, which are still present, the risks associated with the disturbances in the global value chains, the growth of energy prices and inflation rates were also pronounced, while from the first quarter of 2022 the geopolitical risks the Macedonian economy is exposed to tightened as well. In such conditions, the solvency of the banking system is at a satisfactory level and significantly mitigates the negative effects of possible materialization of risks of any nature.

[34] Stress testing includes the following simulations:
I: Increase in non-performing loan exposure to non-financial entities by 50%;
II: Increase in non-performing loan exposure to non-financial entities by 80%;
III: Migration of 10% of the regular to a non-performing credit exposure to non-financial entities;
IV: Increase in non-performing loan exposure to non-financial entities by 80% and increase in interest rates from 1 to 5 percentage points;
V: Increase in non-performing loan exposure to non-financial entities by 80%, depreciation of the Denar exchange rate by 30% and increase in interest rates from 1 to 5 percentage points;

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

1. Bank activities

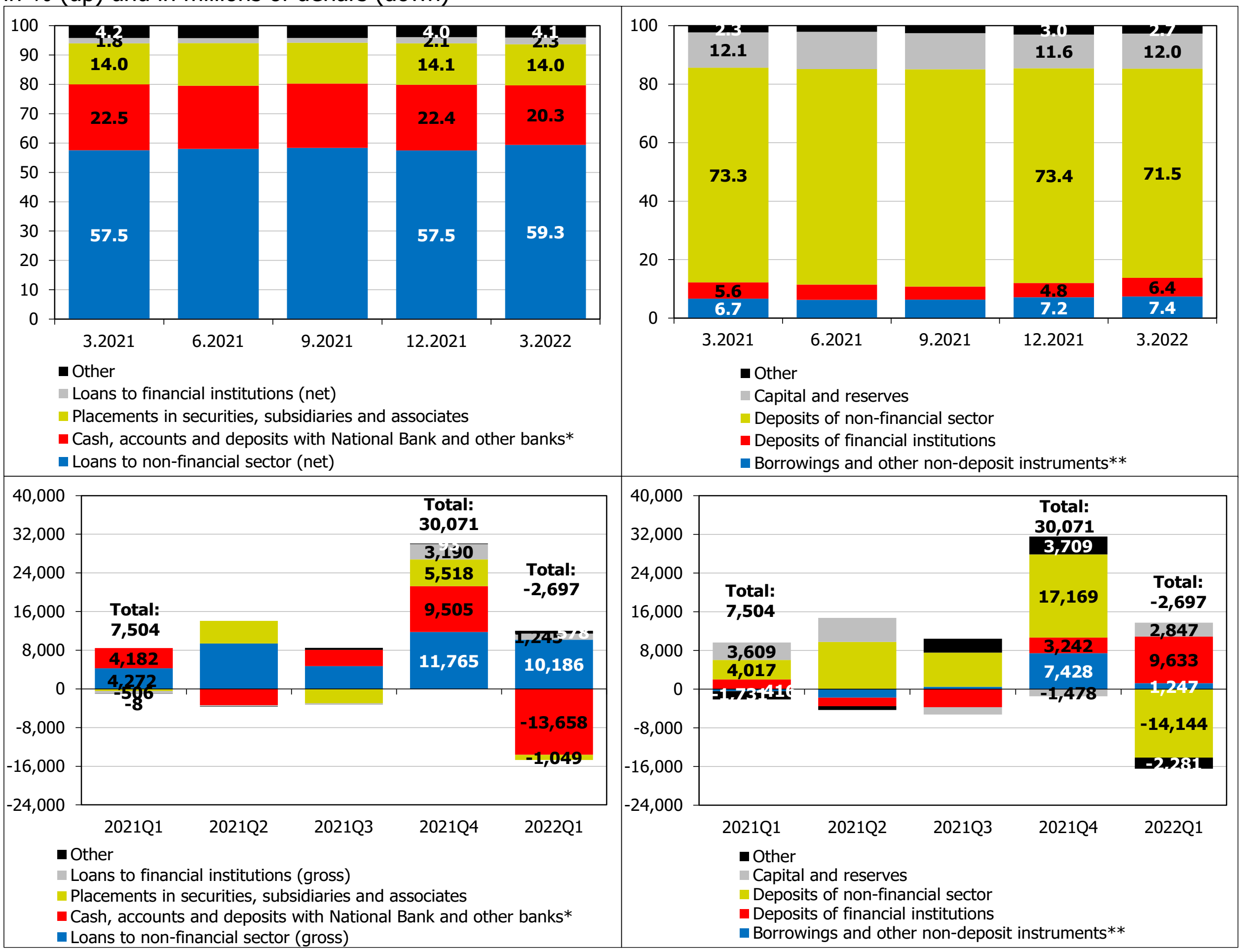
In the first quarter of 2022, the banking system balance sheet decreased, which in addition to the seasonal factors in this part of the year, is largely a result of negative effects of the war between Russia and Ukraine and disrupted supply chains.

Analyzing the sources of funds, deposits registered a quarterly decline in corporations and households, as major sector depositors in the banking system, in both total demand deposits and total term deposits, of both sectors. The households' propensity for foreign currency deposits is still high, which is seen through the growth in foreign currency deposits of this sector, in all maturity segments. In the structure of corporate deposits, growth was noted only in the short-term foreign currency deposits. Other liabilities items of the banking system registered an increase, which was mostly pronounced in deposits of financial institutions, capital and reserves and liabilities based on loans.

The decline in deposits of non-financial entities was in line with the decrease in banks' liquid assets, having no significant effect on the lending activity of the banking system. Thus, the placements in loans to non-financial entities continued to grow firmly, at a similar pace to the previous quarter. Most of the quarterly growth of loans was aimed at the corporate loans, mostly short-term, although the household loans increased as well.

The environment in which the domestic banking system operates became even more complexed, with the outburst of the conflict between Russia and Ukraine, whose adverse effects have already been felt in the international and domestic environment. In addition, the uncertainty about the further course of the events related to the coronavirus pandemic remains, which together with fragmented and disturbed supply chains, due to the conflict in Ukraine and the tough restrictive measures introduced in China, are the most important risk factors that will affect the future growth pace of economic activity and the banking system' activities.

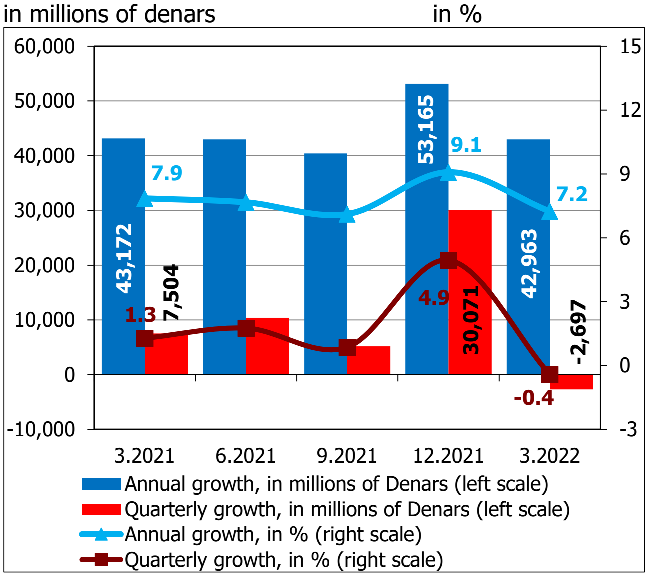
Chart 46
Structure of the assets (up left) and liabilities (up right) and structure of the quarterly changes of the assets (down left) and liabilities (down right) of the banking system
in % (up) and in millions of denars (down)



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 the first quarter of 2022, the balance sheet of the banking system went down by Denar 2,697 million, or 0.4%. Such quarterly decline was mostly conditioned by the decrease in deposits of non-financial entities, which is partly due to common seasonal factors in this period of the year. However, the developments in deposits in the first quarter of 2022, primarily the decline in March, was strongly affected by the negative effects of the war between Russia and Ukraine, the more expensive energy and the disrupted global supply chains, which

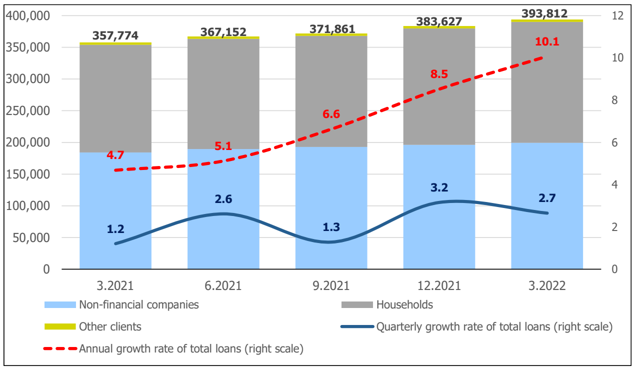
Chart 47
Assets of the banking system



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

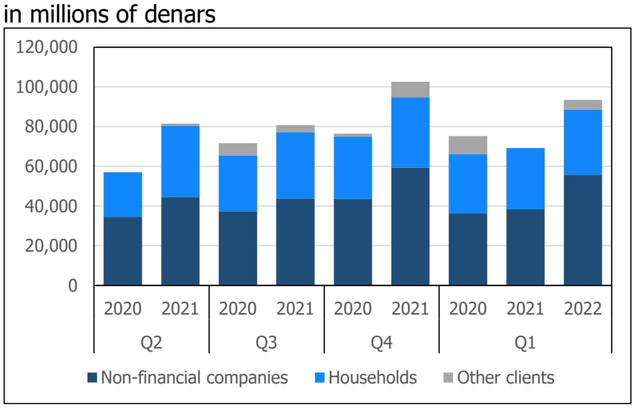
conditioned higher costs for domestic companies and more pronounced psychological pressures on the households driven by the negative news spread about the future dynamics of inflation rates. Other items of the banking system liabilities registered an increase, mostly pronounced in deposits of financial institutions (primarily of banks' parent entities), capital and reserves (to retain the profit in part of the banks) and liabilities based on loans (repo transactions concluded with the central bank and between two domestic banks). The decline in the source of financing based on deposits of non-financial entities was cushioned by the decrease in banks' liquid assets, with the largest decline in deposits with the National Bank and assets on corresponding accounts in foreign banks. The placements in loans to non-financial entities continued to grow firmly, at a similar pace to the previous quarter.

Chart 48
Amount of loans to non-financial entities
in millions of denars



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

Chart 49 New loans by individual sectors
in millions of denars



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

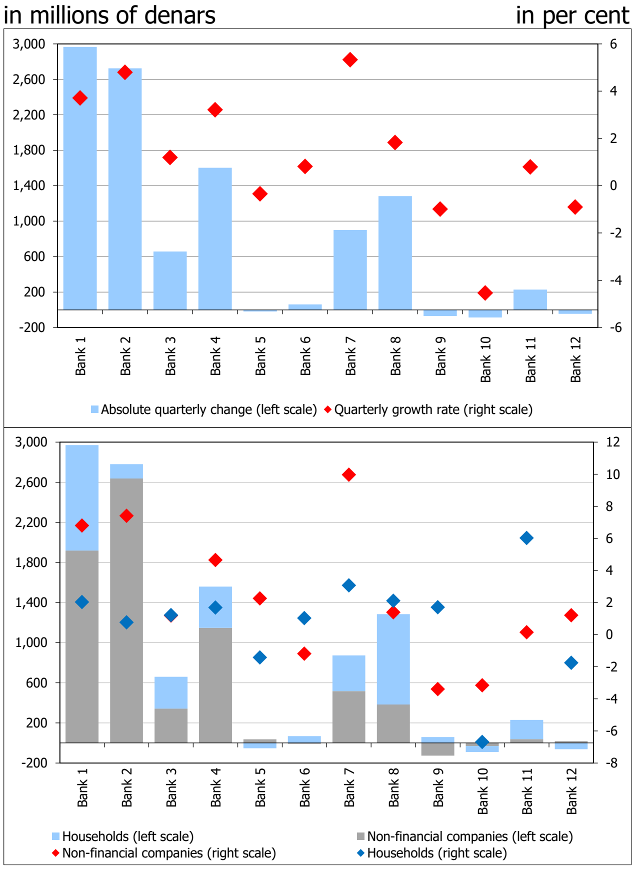
1.3 Loans to non-financial entities[39]

In the first quarter of 2022, the lending activity of banks played an important role in the support of the economy, especially of the corporations amid uncertainty in the domestic and foreign environment due to the escalation of geopolitical tensions in an ambiance of further adjustable nature of the National Bank's monetary policy and the sound domestic banking system. In the first quarter, the lending to non-financial sector increased by Denar 10,186 million, or by 2.7%, which is a slowdown compared to the previous quarter (3.2%). The slowdown in the quarterly credit growth rate mainly results from corporate lending, which is a common seasonal effect in this part of the year. On the other hand, according to the Lending Activity Survey results in the first quarter of 2022, banks reported stricter credit standards for corporate loans amid increased demand for loans from this sector.

Analyzed by individual banks, nine out of thirteen banks[40] realized intensified lending activity compared to the previous quarter. However, only four large banks accounted for 84% of the total quarterly growth of loans to non-financial entities.

[39] 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).
[40] The DBNM AD Skopje is not taken into account.

Chart 50 growth of total loans to non-financial entities (up) and of loans to non-financial corporations and households (down), by bank



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

The volume of new loans in the first quarter of 2022 significantly grew by around one third compared to the same quarter in 2021. Analyzed on a monthly basis, the whole first quarter of 2022 shows larger volume of new loans compared to the same quarter of the previous year in both segments of the credit portfolio. However, a significant increase was registered in newly granted corporate loans (by 44.8%) amid moderate growth of new household loans (by 6.9%).

The quarterly growth of credit activity mostly resulted from lending to non-financial corporations, although household loans increased as well.

Loans to non-financial companies increased by Denar 6,877 million, or by 3.7%, compared with the growth of 4.9% in the last quarter of 2021. The annual growth rate of corporate loans (excluding the effect of net write-offs) accelerated and equaled 11.1% (8.4% on 31.12.2021), which is a new maximum value of annual growth of corporate loans in the last 10 years.

The slowdown in the credit growth of non-financial corporations is common for this time of the year, yet it corresponds to the movements in this credit market segment, where there is a slight net tightening of the conditions[41] for granting corporate loans[42]. At the same time, in the first quarter of 2022, banks point to slight net increase in total demand for corporate loans compared to the previous quarter. In the second quarter of 2022, banks expect a slight net tightening of credit standards for corporate loans (lending to small and medium-sized corporations expects a slightly higher net tightening of credit standards) amid low net increase in demand for loans by corporations (corporate lending

[41] Analyzing the conditions for corporate lending, banks point to further net tightening in interest rates on loans, and in the collateral requirements. Significant net easing was registered in lending conditions "loan maturity"
[42] Source: Bank Lending Survey in the first quarter of 2022.

expects larger net decrease in demand for loans).

According to the economic activity of the clients, the structure of loans to non-financial companies is predominated by loans approved to clients from industry and wholesale and retail trade, each with about 30%. Analyzed by the size of non-financial corporations[43] as of 31.3.2022, slightly more than 30% of the approved corporate loans refer to large, medium-sized and small corporations.

The credit support to households retained its growth pace in the first quarter of 2022 amid growth of loans to this sector of Denar 3,326 million, or by 1.7% (the growth in the first quarter of 2021 amounted to Denar 3,263 million or 1.7%). The annual growth of household loans (excluding the effect of net write-offs) is unchanged (8.2%) compared to the previous quarter, whereby it is below the 10-year moving average of the annual growth rates of these loans for almost two years (on 31.3.2021 it amounted to 10.0%).

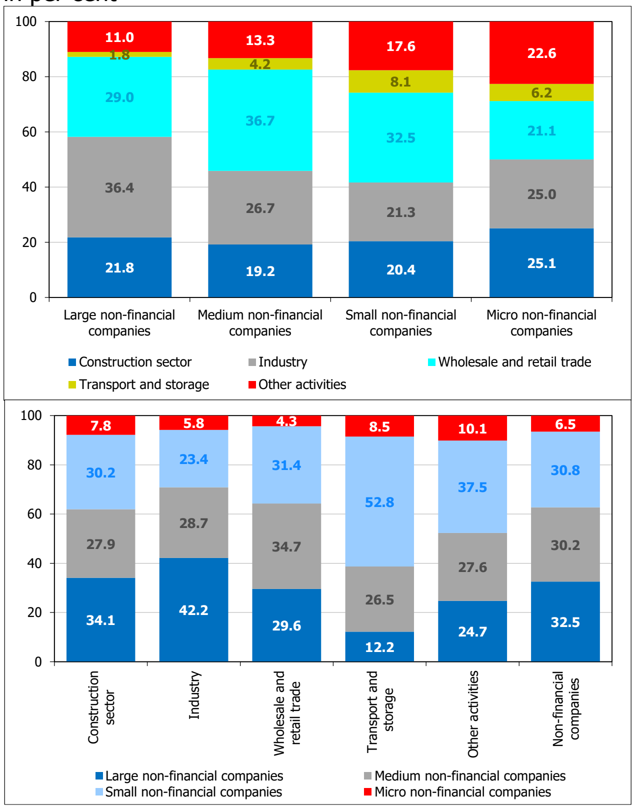
Chart 51
Ten-year moving average of annual growth rates of loans to non-financial corporations (up) and household loans (down)
in per cent

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 – 31.3.2022. Starting from December 2019, the data also contain collected compulsorily written-off loans.

[43] 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.

Chart 52 Structure of loans to non-financial companies by individual activities and by size of the company

in per cent



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

The credit growth in households reflects the increased demand for loans amid simultaneously eased credit standards. In the first quarter of 2022, banks point to more pronounced net easing of credit standards in housing and consumer loans to households[44]. On the demand side, banks point to more pronounced net increase in demand for total household loans, namely in all types of loans. In the next quarter, banks expect net easing of the credit standards[45] against the expectations for a net decrease in the demand for loans by households.

Household loans still dominate (50.7%) the total loans, which slightly decreased (by 0.4 percentage points) in the first quarter of 2022. By credit product, 64.9% of loans to natural persons are non-purpose loans to natural persons (consumer loans, overdrafts and credit cards and other loans).

Although there is an increasing interest of domestic creditors in financing green projects which have a positive impact on the environment, people's health and encourage the development of renewable energy sources, the share of these loans in the banking system credit portfolio is modest (although, in certain banks the share of green loans is higher). As of 31.3.2022, green loans[46] approved by banks account for 2.7% of the total loans to non-financial entities, with greater share of 4.9% in non-financial companies and only 0.7% in households.[47]

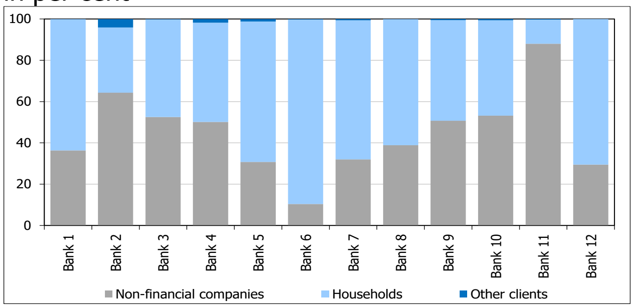
[44] In terms of individual credit conditions, there is a pronounced net easing in the interest rate on household loans, commissions on housing loans and loan maturity in consumer loans. Certain net tightening in housing and consumer loans was registered in the lending condition creditworthiness of borrowers.

[45] For the second quarter of 2022, banks expect further moderate net easing of credit standards in housing and consumer loans, and slight net tightening in the group of other loans.

[46] The term *green loan* refers to the manner of financing which allows the borrower to invest exclusively in projects with significant positive environmental impact and in projects that reduce the negative effects from climate changes. The green loans aim to (i) improve the energy efficiency of the households and the corporate sector; (ii) support the investments in green technologies, materials and solutions; iii) support investments in renewable energy sources, control and prevention of pollution, protection of the environment, mitigation of the risks from climate changes, etc. 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.

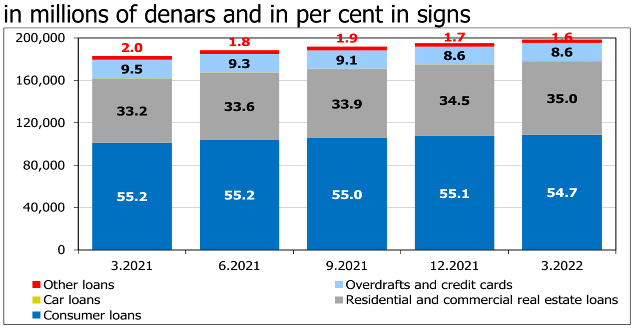
[47] Out of twelve analyzed banks, four banks have not approved green loans as of 31.3.2022. In the banks that have approved such loans, the share of green loans in total loans ranges from 0.1% to 20.1%. Observed by sector, the share of green loans in total loans by individual banks is between 0.03% and 20.1% in corporate loans, i.e. between 0.1% and 14.4% in household loans.

Chart 53 Sectoral structure of loans to non-financial entities, by bank
in per cent



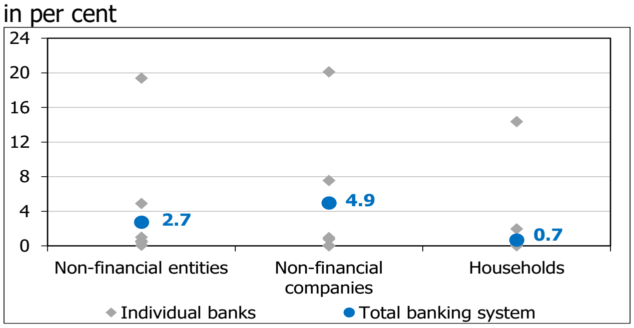
Source: National Bank based on the data submitted by banks.

Chart 54
Structure of loans to natural persons, by product
in millions of denars and in per cent in signs



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

Chart 55
Share of "green" loans in the total loans to non-financial entities and by individual sectors, by individual bank
in per cent

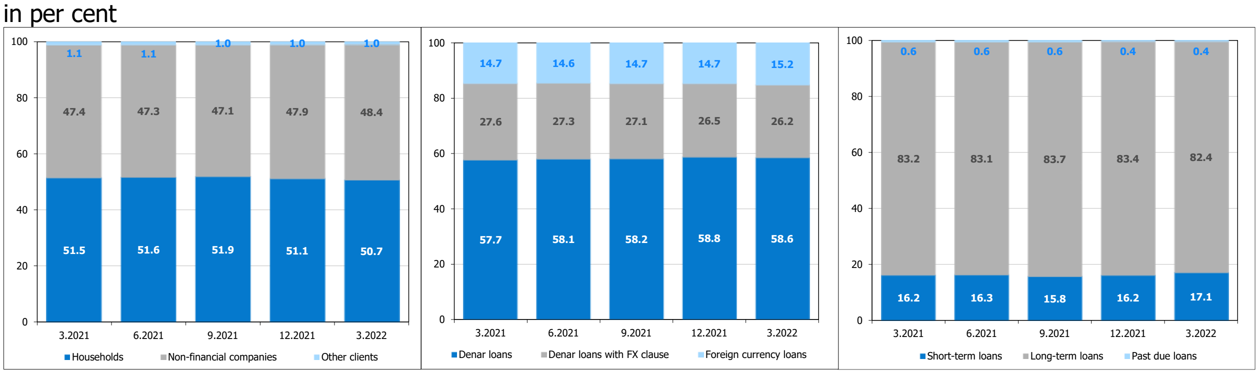


Source: National Bank based on the data submitted by banks.

In the first quarter of 2022, denar loans[48] made the largest contribution (51.1%) to the growth of total loans to non-financial entities, while the contribution of foreign currency loans[49] and denar loans with foreign currency clause[50] is significantly smaller (33.2% and 15.7%, respectively). The share of foreign currency loans in the currency structure of total loans increased by 0.5 percentage points at the expense of narrowing the share of denar loans and denar loans with foreign exchange clause by 0.2 and 0.3 percentage points, respectively.

[48] Denar loans increased quarterly by Denar 5.203 million (or 2.3%), mostly because of loans to non-financial corporations (growth of Denar 3.194 million, or 2.8%), and to a slightly lesser extent of the increase in household loans (of Denar 2.012 million, or 1.8%).
[49] Foreign currency loans increased quarterly by Denar 3,379 million, or 6.0%, primarily driven by corporate loans (growth of Denar 2,815 million, or 6.5%), as well as an increase in foreign currency loans to households and other clients (by Denar 533 million, or 4.6%, and Denar 31 million, or 2.1%, respectively).
[50] Denar loans with currency clause grew up quarterly by Denar 1,604 million, or 1.6%, namely, loans to non-financial corporations increased by Denar 869 million (or 3.3%), while household loans increased by Denar 781 million (or 1.1%).

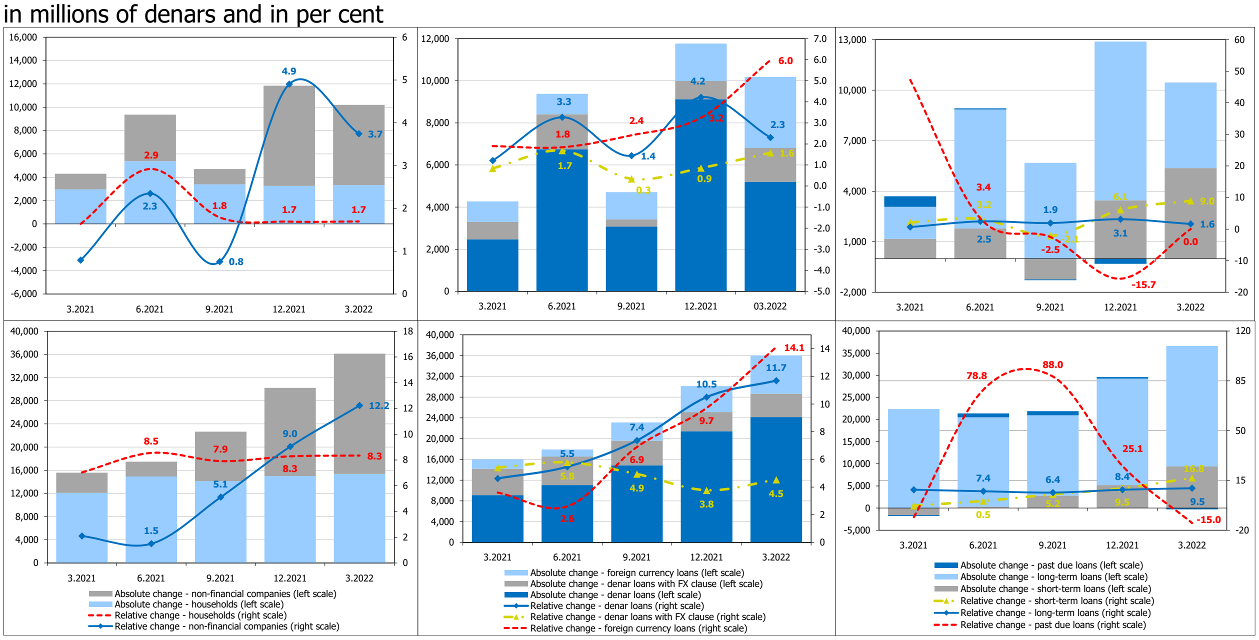
Chart 56
Structure of total loans, by sector (left) and currency (middle), and structure of regular loans, by maturity (right)
in per cent



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

In the first quarter of 2022, a decrease was registered in the maturity of the loan portfolio through an accelerated growth of short-term lending (by 9.0% or Denar 5,372 million) and slower growth of long-term lending (by 1.6% or Denar 5,071 million).[51] The growth of short-term loans is almost entirely due to the corporate sector credit activity, while the growth of long-term loans is almost equally due to corporate and household loans.

Chart 57
Quarterly (top) and annual (bottom) growth of loans, by sector, currency and maturity
in millions of denars and in per cent

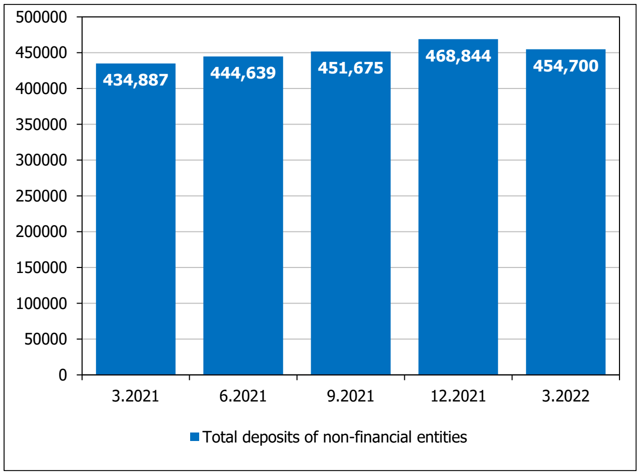


Source: National Bank based on the data submitted by banks.

[51] The analysis of maturity structure of loans excludes non-performing loans.

Chart 58 Stock of deposits of non-financial entities

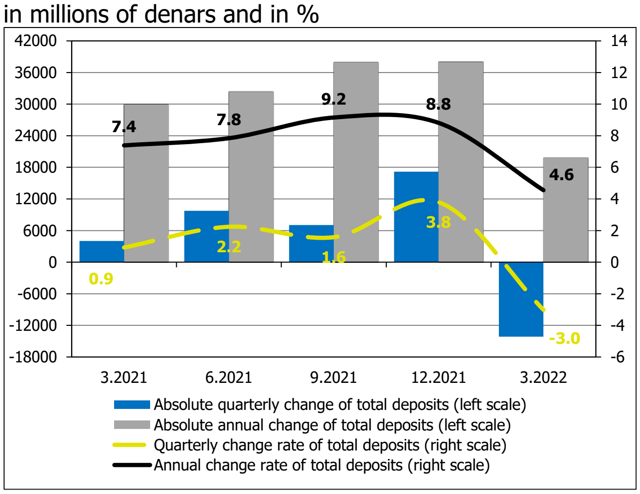
in millions of denars



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

Chart 59 Growth of deposits of non-financial entities

in millions of denars and in %



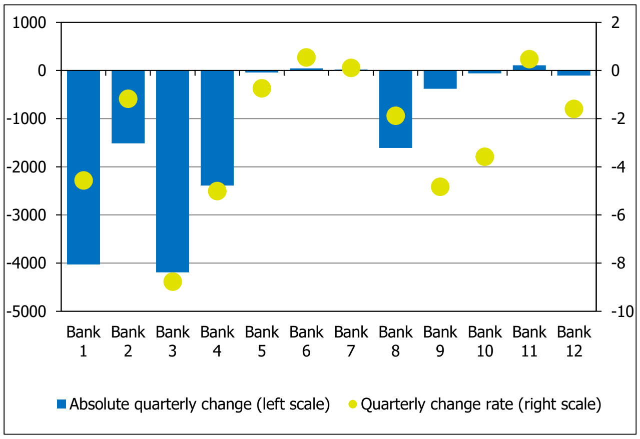
Source: National Bank, based on the data submitted by banks.

1.4 Deposits of non-financial companies

In the first quarter of 2022, deposits of non-financial entities declined (by Denar 14,144 million, or 3%), which is partly due to usual seasonal factors in this part of the year. At the same time, the development in deposits in the first quarter of 2022, primarily in March, was strongly affected by the negative effects of the war between Russia and Ukraine and the disrupted global supply chains, which conditioned higher costs for domestic companies and more pronounced psychological pressures on the households driven by the negative news spread about the future dynamics of inflation rates. However, annually, banks' total deposits increased, yet at a slower pace (with a growth rate of 4.6%, which is almost halved compared to the last quarter of 2021, when it amounted to 8.8%). Analyzed by bank, large banks almost entirely drive the quarterly decrease of deposits, and only two of them account for almost 60% of the total quarterly decline.

Households, as major depositor in the Macedonian banking system (share of 67.1% in total deposits as of 31 March 2022), in the first quarter of 2022, decreased their assets in banks by Denar 3,916 million, or 1.3% (increase of 2.6% in the last quarter of 2021). On the other hand, on an annual basis, household deposits in banks continued to grow (by Denar 11,364 million, or 3.9%), but at a slower pace compared to the last quarter of 2021.

Chart 60 Growth of deposits of non-financial entities, by bank
in millions of denars and in %



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

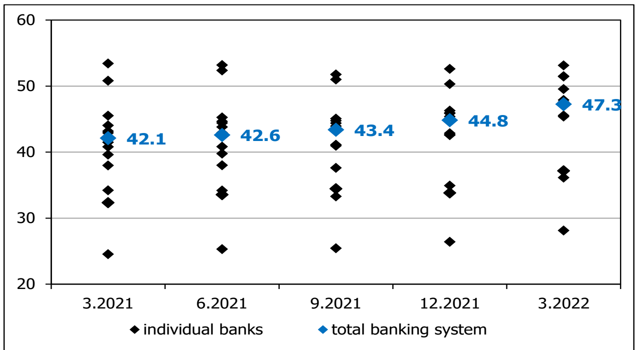
The energy crisis and the outbreak of the war in Ukraine negatively affected the behavior of **non-financial corporations**, which in 2022 decreased its deposits by Denar 10,654 million, or 7.5%, with a certain slowdown in their annual growth rate (4.7%) compared to the end of 2021 (when it equaled 11.8%), and compared to 31.3.2021 (12.9%). In addition to the aforementioned factors, the decrease in corporate deposits in the first quarter of 2022 is also affected by the usual seasonal factors, which is mostly reflected by variable and mostly downward movements of deposits for transaction purposes[52].

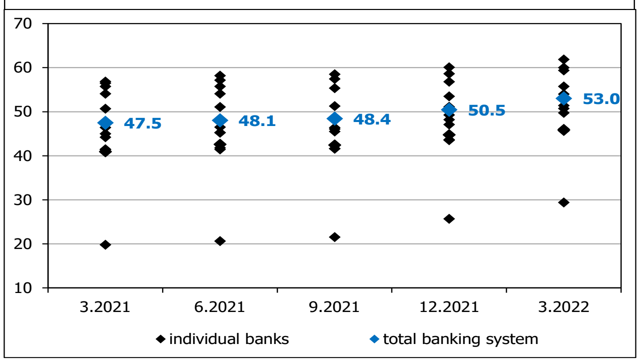
The prolonged uncertainty influenced by strong external shocks in the past two years slightly changed the currency and maturity preference of depositors to hold their deposits in banks, visible through the growth of foreign currency deposits and very short maturities.

Analyzing the **currency**, the quarterly decline in the deposit base was entirely driven by denar deposits, which in the second quarter of 2022 decreased by Denar 18.782 million, or 7.3%. The decrease in denar deposits is mostly due to the decrease in demand deposits, with nearly equal contribution of the deposits of both sectors (households and non-financial corporations)[53]. On the other hand, foreign currency deposits registered a quarterly increase of Denar 4,661 million, or 2.2%, which is a slowdown compared to the growth of the previous quarter (7.3%). The quarterly growth of foreign currency deposits reflects the increase in demand deposits, entirely due to the increase in these deposits with the household sector[54]. As a result, the share of denar deposits in total deposits decreased to

[52] More than 80% of corporate deposits are demand deposits, which contribute to the decrease in total corporate deposits with 89%. Long-term deposits also decreased by almost six times, compared to the decrease of demand deposits.
[53] The quarterly decrease in denar demand deposits of non-financial corporations was Denar 8,338 million, or 9.8%, while the quarterly decrease in denar household demand deposits amounted to Denar 6,270 million, or 6.9%.
[54] The quarterly increase in foreign currency household demand deposits was Denar 4,804 million, or 6.2%, while foreign currency demand deposits of non-financial corporations decreased by Denar 1,142 million, or 3.1%.

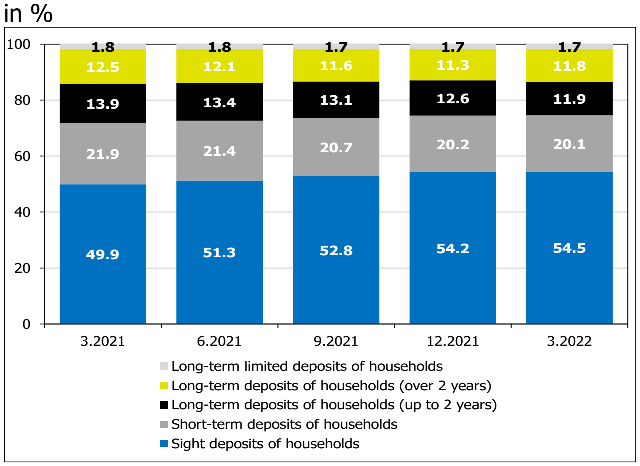
Chart 61 Share of total foreign currency deposits in total deposits of the banking system (top) and of the foreign currency household deposits in total household deposits (bottom)
in %





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

Chart 62 Maturity structure of household deposits
in %



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

52.6% at the end of the first quarter of 2022 (55% as at 31.12.2021), while the share of foreign currency deposits increased to 47.3 % (44.8% as at 31.12.2021).

Analyzing maturity, demand deposits made the largest contribution to the quarterly decrease in total deposit base by Denar 10,537 million, or 3.5%, which is almost entirely (90%) due to the decrease in deposits to non-financial corporations. Although significantly smaller, quarterly decrease was also registered in short-term deposits (by Denar 696 million[55], or 1%) and long-term deposits (by Denar 2,912 million, or 3%[56]). Given the increased preference to save in foreign currency, coupled with the unfounded speculations about the stability of the denar, **the National Bank took targeted measures, i.e. made changes to the reserve requirement, in response to such tendencies.** The reduction of the reserve requirement rate from denar liabilities (from 8% to 6.5%) and the simultaneous increase in the reserve requirement rate from foreign currency liabilities (from 15% to 16.5%), which will apply from June this year, aims to change the currency structure of deposits in the banking system, which is also in line with the national Strategy for supporting denarization.

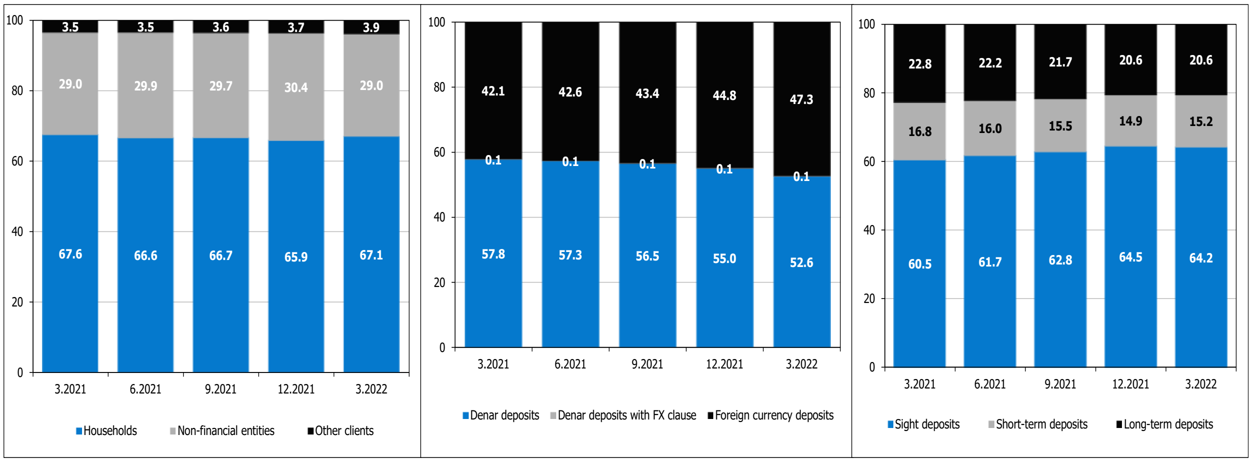
Analyzing household deposit **maturity**, in the first quarter of 2022, there was an increase in the structural share of demand deposits (from 54.2% as of 31.12.2021, to 54.5% as of 31.3.2022). An opposite trend was observed in short-term and long-term deposits, whose share in the maturity structure of household deposits, albeit minor, still continued to decrease (from 20.2% and 25.6% as of 31.12.2021 to 20.1% and 25.4% as of 31.3.2022, respectively).

---

[55] The absolute quarterly decrease in short-term deposits entirely reflects the decrease in household deposits of Denar 1,140 million, or 1.8% (fully denar deposits), while short-term deposit of non-financial corporations increase by Denar 441 million, or 7.1% (fully foreign currency deposits).

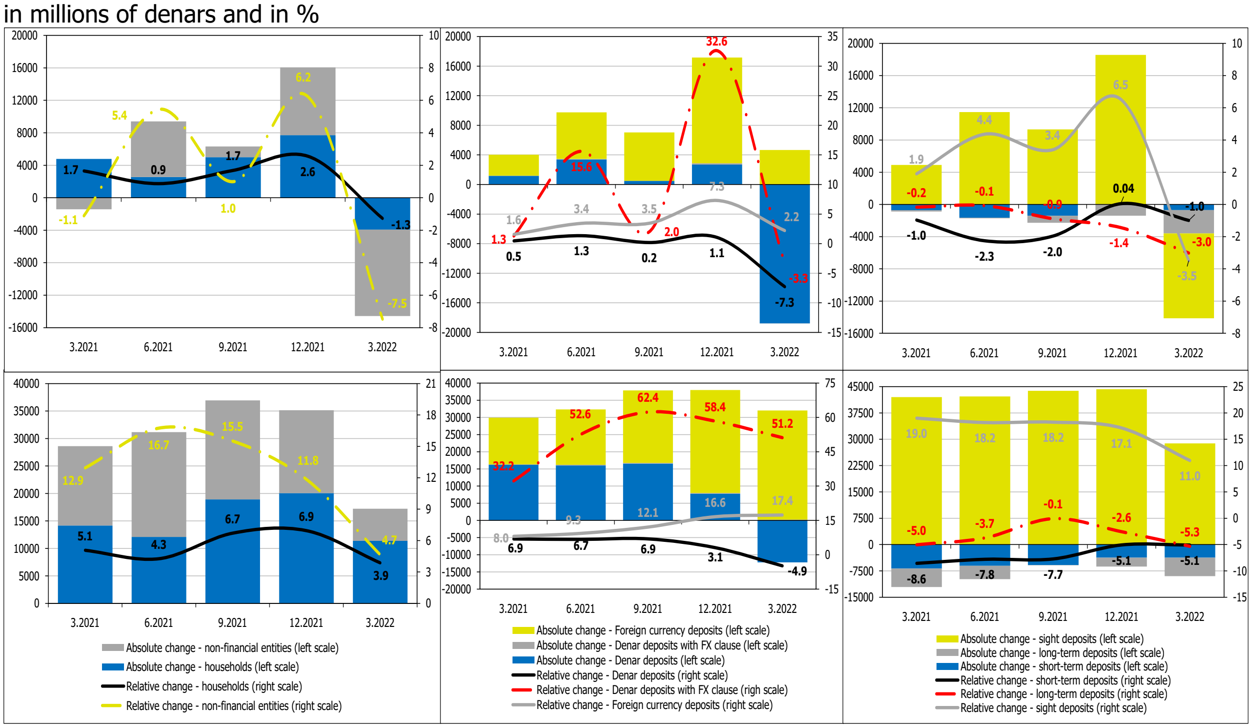
[56] Both sectors (households and non-financial corporations) almost equally contributed to the decrease in long-term deposits, with a decrease in households entirely due to denar deposits (by Denar 2,029 million, or 5%), while in non-financial corporations the decrease in foreign currency deposits dominates (by Denar 1,225 million, or 21.8%).

Chart 63 Structure of total deposits, by sector (left), currency (middle) and maturity (right)
in %



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

Chart 64 Quarterly (up) and annual (down) deposit growth by sector (left), currency (middle) and maturity (right)
in millions of denars and in %

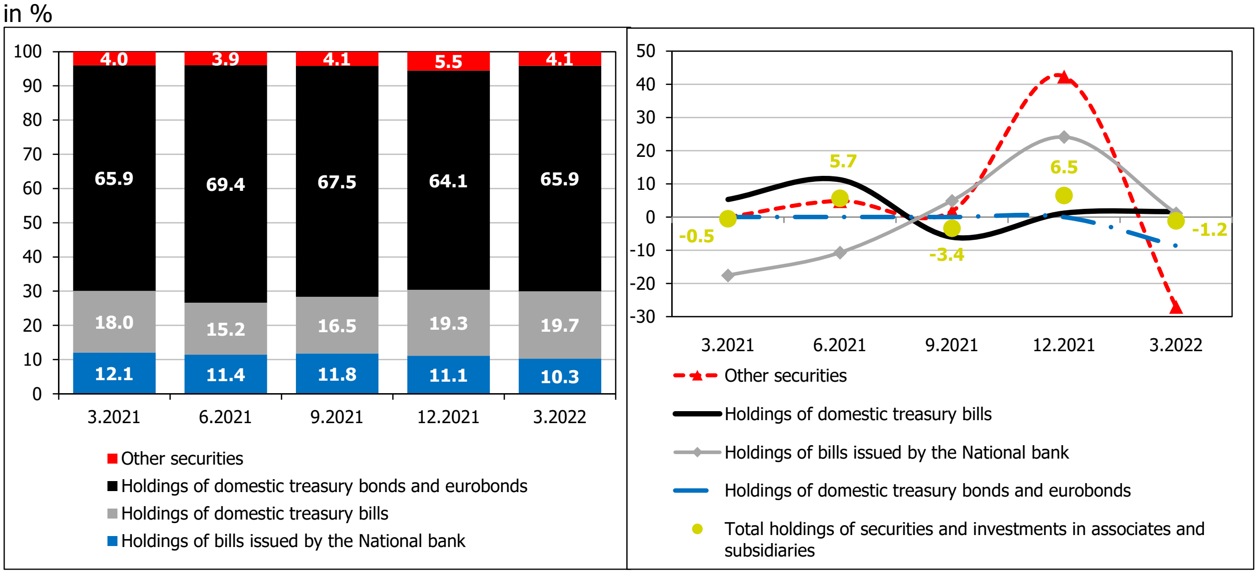


Source: National Bank, based on the data submitted by banks.

1.3. Other activities

In the first quarter of 2022, banks' investments in securities, subsidiaries and associates[57] decreased by Denar 1,049 million or 1.2%. The decrease in these investments was driven by banks' placements in debt securities issued by foreign countries (decline of Denar 1,208 million, or 65.6%)[58], the share of which in total investments in securities, subsidiaries and associates was fairly small and additionally reduced to only 0.7% (2% as of 31.12.2021). In addition, the National Bank placements in CB bills declined quarterly by Denar 862 million, or 8.6%. **The structure of total investments in securities, subsidiaries and associates is still dominated by placements in domestic treasury bonds and Eurobonds (65.9%).** These placements grew quarterly by Denar 955 million (or 1.7%), mostly due to increased investments in Eurobonds. Investments in treasury bills increased quarterly by Denar 203 million (or 1.2%), thus increasing their share in total investments in securities to 19.7%.

Chart 65
Structure (left) and quarterly rate (right) of investments in securities, subsidiaries and associates
in %



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

In the first quarter of 2022, the placements with banks and other financial institutions (which account for 8% of the total assets of the banking system) decreased by Denar 646 million, or 1.3%. Such decrease was driven by the decline in the assets of corresponding accounts in foreign banks.

Total **borrowings** (which account for 6.2% of the total banking system liabilities) increased quarterly by Denar 1,239 million, or 3.2%, mostly due to concluded repo transactions with the central bank (two large banks) and between two domestic banks.

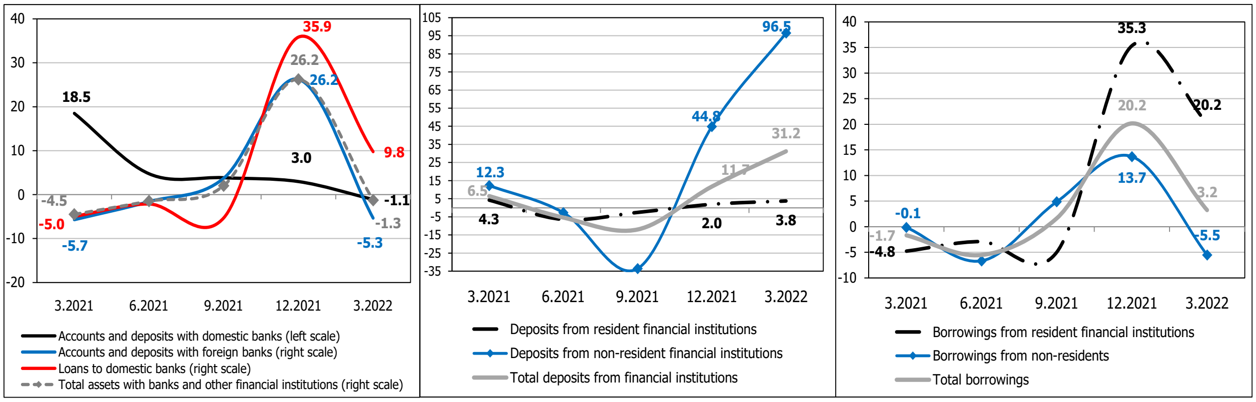
---

[57] The analyses of these investments are based on their net book value.

[58] These are investments in securities made by one bank in the previous quarter and were already liquidated in the first quarter of 2022.

Chart 66 Quarterly growth rate of claims on financial institutions (left), borrowings (right) and deposits of financial institutions (middle)

in %



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

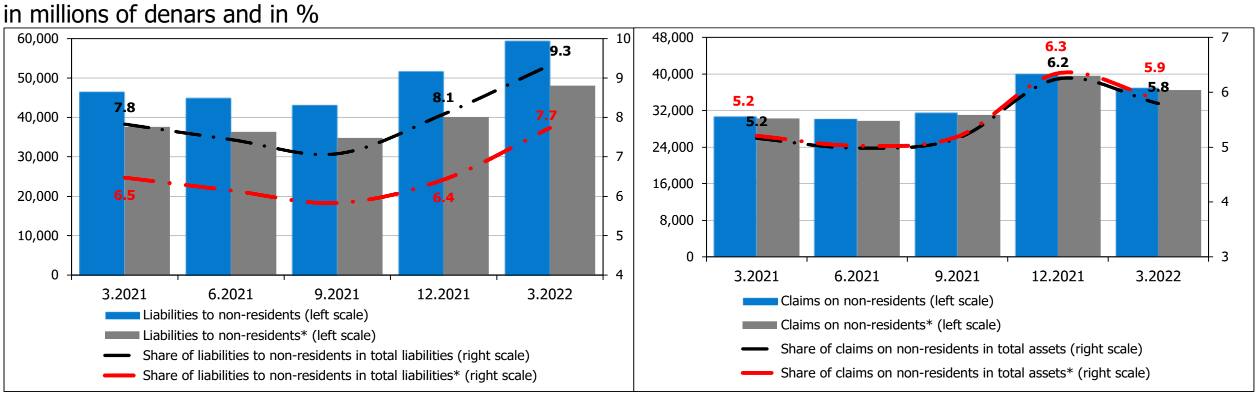
Deposits with banks and other financial institutions (which account for 6.4% of the total liabilities of the banking system) increased by Denar 9,633 million, or 31.2%. The increase in deposits of non-resident financial institutions (Denar 8,807 million) made the largest contribution to the growth of total deposits of financial institutions (primarily deposits of banks' parent entities).

The scope of banking system activities with non-residents is constantly small, with bank-to-bank differences. The banking system's liabilities[59] to non-residents exceed their claims. Domestic banks' liabilities to non-residents went up annually by Denar 7,698 million, or 14.9%, and their share in total banking system liabilities increased to 9.3%[60] (8.1% as at 31.12.2021). Such increase is due to the aforementioned growth of liabilities based on deposits of non-resident financial institutions. Bank's claims on non-residents (that account for 5.8% of total assets of the banking system[61]) decreased by Denar 3,021 million, or 7.6%, mostly due to the decrease in the assets on corresponding accounts in foreign banks.

Chart 67

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

[59] As of 31.12.2022, eight of thirteen banks use more than they place non-residents' funds.

[60] If DBNM AD Skopje is excluded from the analysis, the share of liabilities to non-residents in total liabilities would be 7.7%.

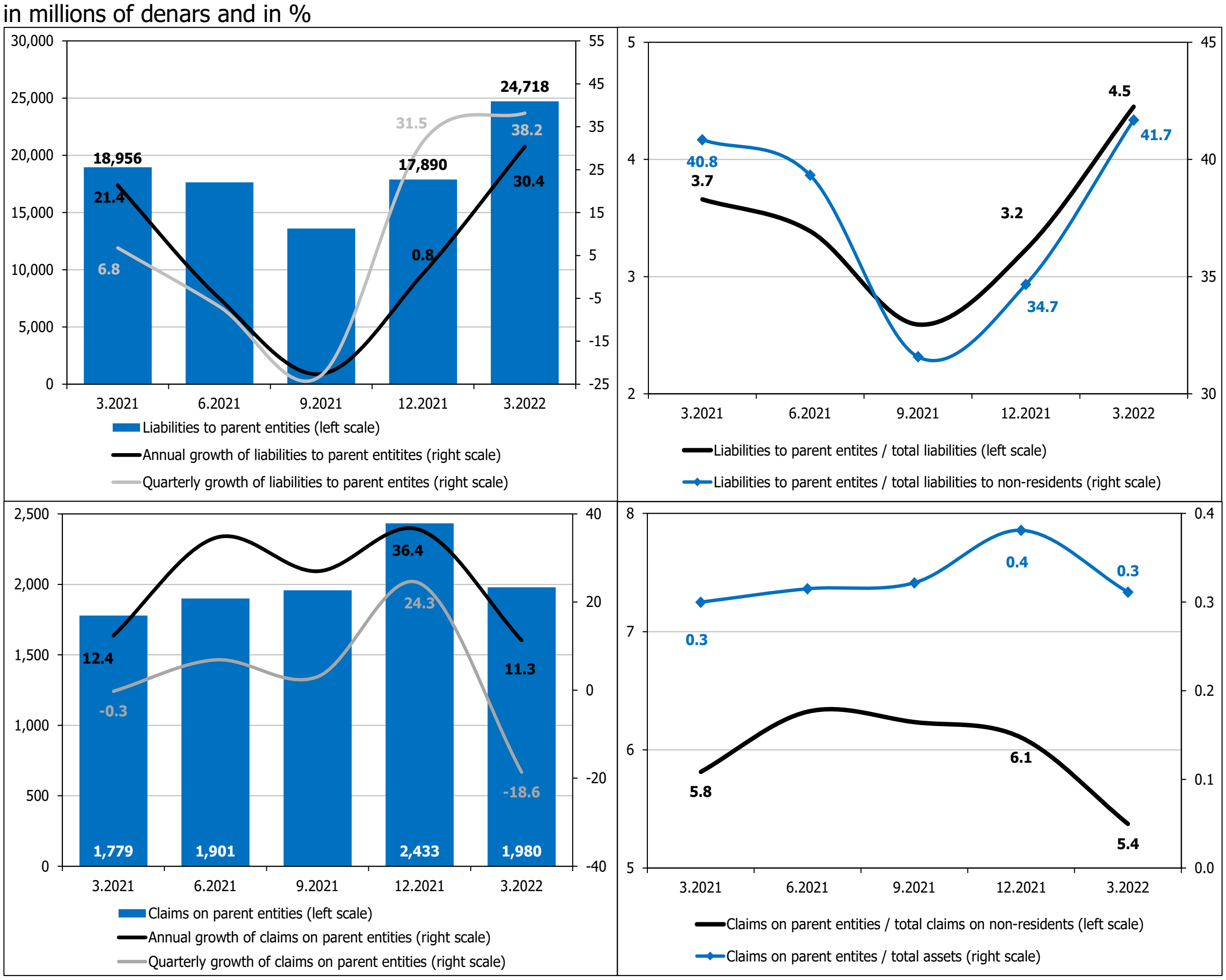
[61] The balance sheet claims of the banking system on customers from Russia and Ukraine make up only 0.04% of the total claims on non-residents (i.e. a share of 0.002% in the banks' assets).

Banks' liabilities to parent entities significantly grew in the first quarter of 2022. However, these liabilities are still not a significant source of financing the banking system' activities, although bank-to-bank differences are observed. In the first quarter of 2022, banks' liabilities to their parent entities increased by Denar 6,828 million (or 38.2%), in the form of short-term deposits. The high growth of liabilities to parent entities increased their share in total liabilities and liabilities to non-residents to 4.5% and 41.7%, respectively (as of 31.12.2021, these shares amounted to 3.2% and 34.7%, respectively). Claims on parent entities declined quarterly by Denar 454 million, or 18.6%. Hence, the shares of these claims in total assets and in claims on non-residents further decreased i.e. 0.3% and 5.4%, respectively as at 31.3.2022.

Chart 68

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.

2. Profitability

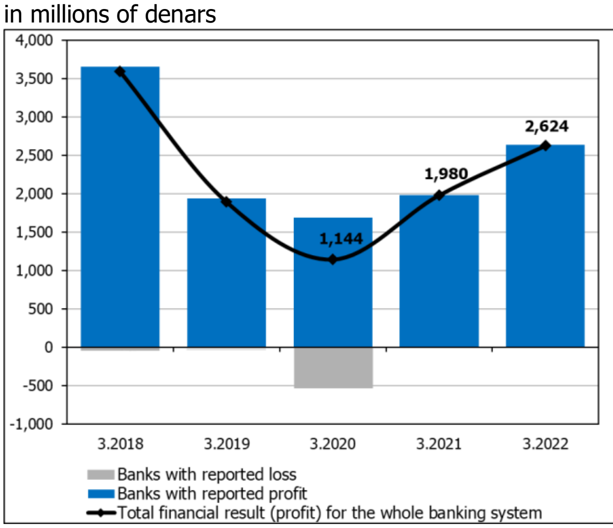
The banking system profitability ratios improved in the first three months of 2022, as a result of the higher profit, compared to the same period of the previous year.[62] The higher profit of the banking system results from the decrease of the net impairment costs and growth of net non-interest (net commission income and other regular income) and net interest income. Banks' operating expenses increased, thus negatively contributing to the annual growth of the profitability of the banking sector. The increase in these costs is mostly due to higher salary costs and increased general and administrative expenses of banks.

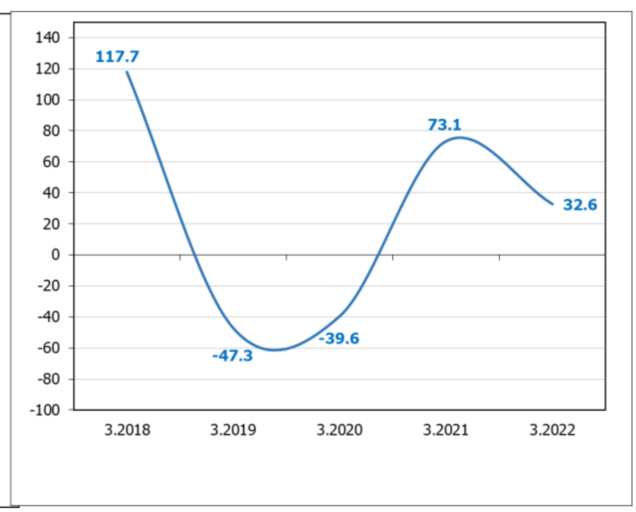
The downward trend in banks' lending and deposit interest rates continued in the first quarter of 2022. The interest rate spread between the weighted average interest rate on the outstanding amount of loans and deposits registered a slight annual decrease.

2.1 Banking system profitability and efficiency ratios

In the first quarter of 2022, the banking system generated operating profit of Denar 2,624 million, which is by 32.6% or Denar 645 million higher compared to the previous year. The higher profit resulted from lower impairment costs (by Denar 399 million, or 42.8%), from the increase in net interest income (by Denar 265 million, or 7.1%)[63] and net fee and commission income (by Denar 105 million, or 7.9%)[64], as well as from the increase in other regular income (by Denar 220 million or 30%)[65]. Only the operating costs had an adverse effect on the profit growth. They increased by Denar 336 million, or 11.6%[66]. **Bank-by-bank analysis shows that one medium-sized and one small bank registered operating loss, while other eleven banks reported positive financial result.**

Chart 69 Dynamics of the presented total profit of banks (left) and its annual change (right)
in millions of denars



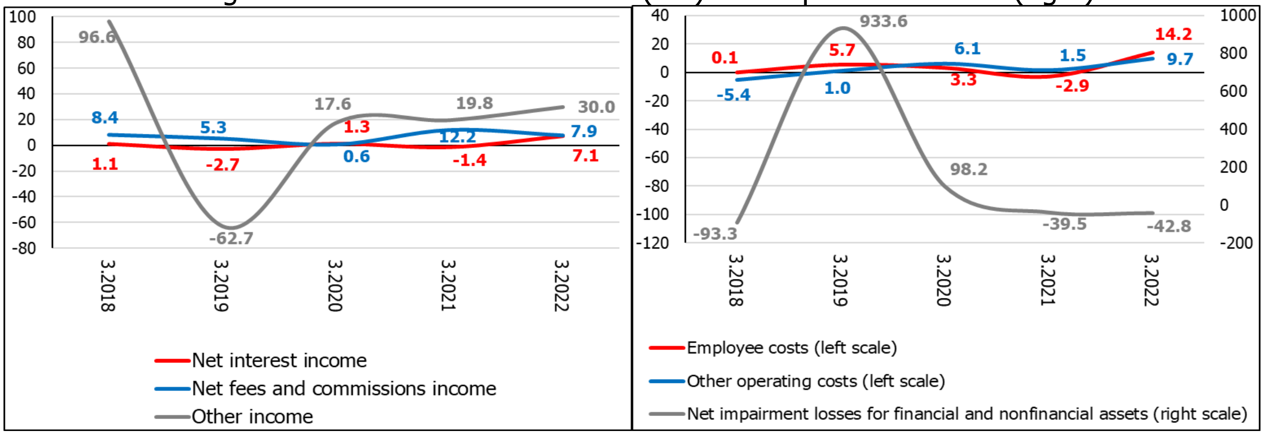


Source: National Bank, based on the data submitted by banks.

---

[62]All data in this section of the Report, derived from the banks' income statement (income, expenses, profit, loss, etc.) relate to the first three months of 2022, and their value is compared with the same period last year or another year. Data derived from the balance

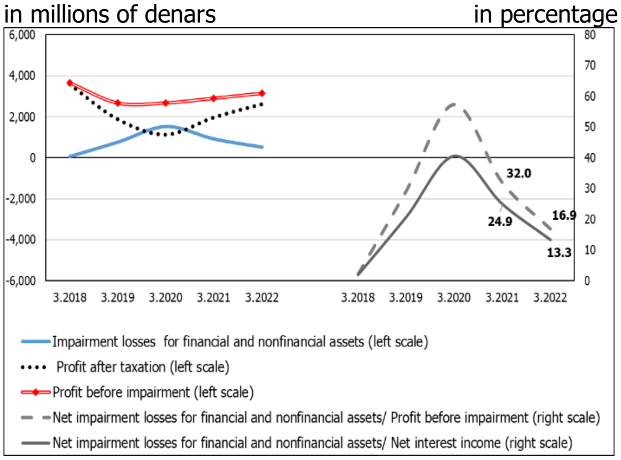
Chart 70 Annual growth rate of the main income (left) and expenditure items (right) of banks



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

Chart 71
Impairment costs to gain and to net interest income ratios

in millions of denars in percentage



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

The profit growth in the first quarter of 2022 improved the main profitability ratios of the banking system. The profit margin registered the largest increase of 7 percentage points which reflected the faster growth of profit (32.6%) compared to the growth of total income (10.2%), mostly due to the reduced net impairment costs. The growth of the rates of return on average equity and average assets was 2.7 and 0.3 percentage points, respectively. Thus, at the end of the first quarter of 2022, the rates of return on average assets and average equity and reserves equaled 1.6% and 14.0%, respectively.

In the first quarter of 2022, the downward trend of net interest margin halted and registered an increase of 0.1 percentage point. This growth of net interest margin resulted from the faster relative growth of net interest income (by 7.1% or by Denar 265 million), compared to the increase in the average interest-bearing assets (by 3.4% or Denar 16,944 million). The increase in net interest income was caused by the annual increase in interest income (of Denar 178

sheet (assets, loans, deposits, capital) or those related to the lending and deposit interest rates in this section are presented as an average of the first three months of 2022 which is compared with the average calculated for the first three months of 2021 or any other year. If calculated differently, it is emphasized in the text.

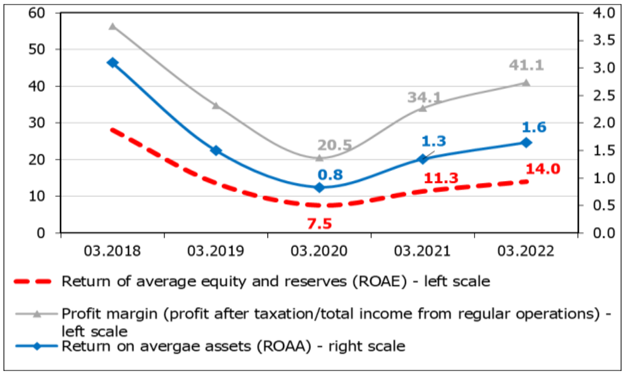
[63] The interest income increased by Denar 178 million or 3.9%, amid decrease in interest expenses of Denar 88 million, or 10.9%.

[64] Net fee and commission income increased due to the growth of fee and commission income of non-financial companies (by Denar 135 million), amid slight decline in fee and commission expenses (by Denar 13 million) in this sector.

[65] The net income from exchange differences (by Denar 133 million, or 56.6%) and the increased release of provisions for pensions and other benefits of employees (by Denar 99 million) made the largest contribution to the growth of other regular income.

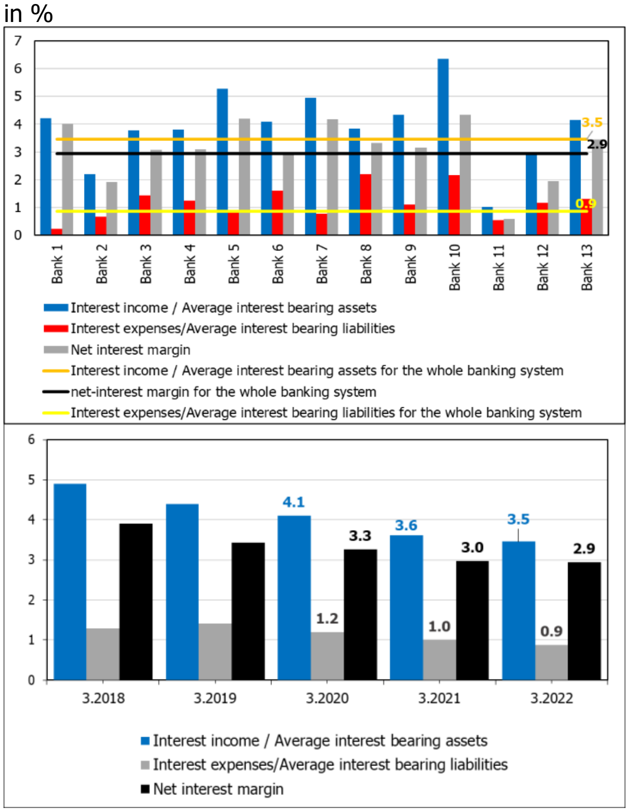
[66] Within the operating costs, the highest increase was recorded in wage costs (by Denar 175 million, or 14.2%) and general and administrative costs (by Denar 114 million or 11.1%).

Chart 72 Rates of return on average assets and on average equity and reserves and profit margin



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

Chart 73 Net interest margin by bank, as of 31.3.2022 (top) and of the banking system (bottom)



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

million, or 3.9%), amid decrease in interest expenses (of Denar 88 million or 10.9%).

The financial intermediation with households made the largest contribution to the formation (59.2%) and the growth of net interest income (52.7%). Net interest income from households increased annually by Denar 140 million, or by 6.3%, amid decline in interest expenses and increase in interest income with this sector[67]. **The net interest income from non-financial companies, which accounted for 37.4% of total net interest income, registered an annual increase of Denar 83 million, or 5.9%[68].** With a growth of Denar 17 million or 6.2%, net interest income from the government sector made the smallest contribution to the growth of total net interest income of banks, while in the credit-deposit activity with other sectors (financial institutions, non-profit institutions serving households and non-residents), the banking system reported net interest expenses.

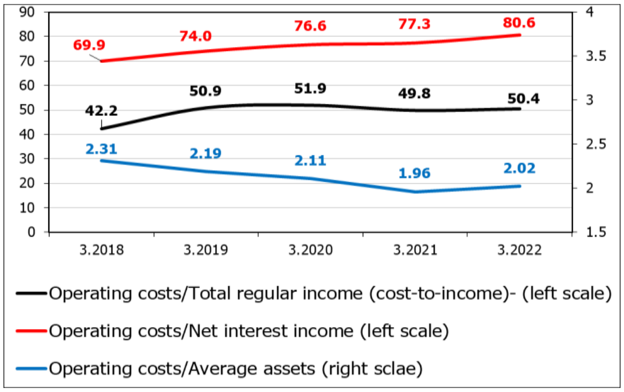
The banking system operational efficiency ratios are worsening, compared to the same period in the previous year. This is due to the faster relative growth of operating costs (of 11.6%) compared to the growth of total regular income (of 10.2%), average assets (of 8.2%) and net interest income (of 7.1%).

In the first three months of 2022, net impairment costs for financial and non-financial assets decreased by Denar 399 million, or 42.8%. The decrease in these costs was mainly driven by impairment of net financial assets (which fell by Denar 387 million, or 41.3%), reflecting both the reduced gross impairment of financial assets (of Denar 194

[67]In the first quarter of 2022, interest expenses of households decreased by Denar 99 million, or 29.2%, while interest income grew by Denar 41 million, or 1.6% compared to the previous year.

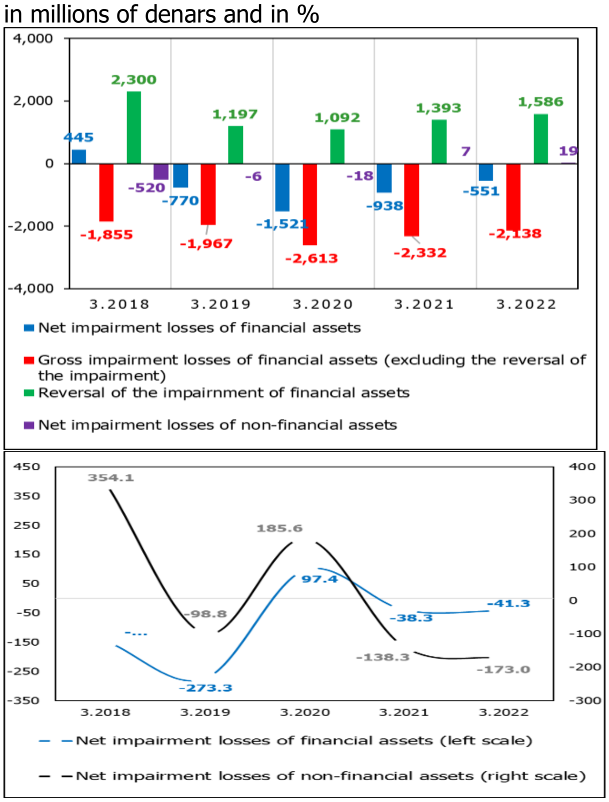
[68] The interest income from non-financial corporations increased by Denar 62 million or 4.1%, amid decrease in interest expenses of Denar 21 million, or 25.3%.

Chart 74 Operational efficiency ratios
in %



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

Chart 75 Impairment cost (top) and annual growth (bottom)
in millions of denars and in %



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

million)[69], and the larger reversal of impairment of financial assets (of Denar 193 million)[70].

In this quarter, similar to the previous year[71], net impairment costs of non-financial assets had a status of income item in the amount of Denar 19 million, and an annual growth of denar 12 million, due to the larger reversal of impairment of non-financial assets (by Denar 33 million), compared to the growth of gross impairment of these assets (Denar 21 million).

2.2 Movements in interest rates and interest rate spread

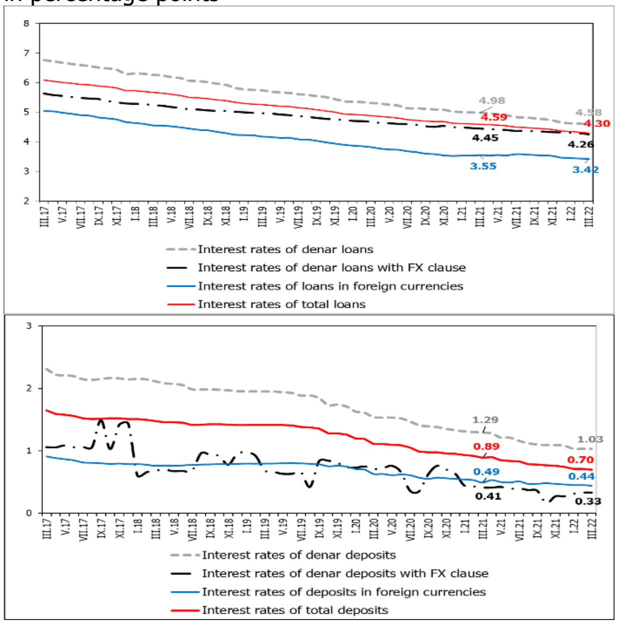
The downward trend in banks' lending and deposit interest rates continued in the first quarter of 2022. Compared to the same period last year, the decrease was more pronounced in interest rates on loans with a weighted average interest rate lower by 0.28 percentage points, while the weighted average interest rate of deposits decreased by 0.21 percentage points[72]. Analyzed by currency, more pronounced decline was registered in average denar interest rates, on both loans and deposits.

The stronger cut in lending interest rates compared to the deposit interest rates, at the end of March 2022, contributed to a slight downward trend in interest rate spreads. The interest rate spread between the weighted average interest rate on loans and deposits decreased slightly on an annual basis by 0.07 percentage points, so the weighted average interest rate spread for the first three months of 2022 equaled 3.6%.

[69]The decrease in the gross impairment of the financial assets was driven primarily by gross impairment of loans and placements, which decreased by Denar 264 million.
[70]The growth of impairment of financial assets was mostly generated by the growth of impairment of loans and placements, with an increase of Denar 174 million.
[71]In the first three months of 2021, net impairment of non-financial assets was positive as well, amounting to Denar 7 million.
[72]The text analyzes the average interest rates, calculated by the levels of interest rates at the end of each month of the year. The charts show the levels of interest rates at the end of individual months.

Chart 76 Lending (up) and deposit interest rates (down)

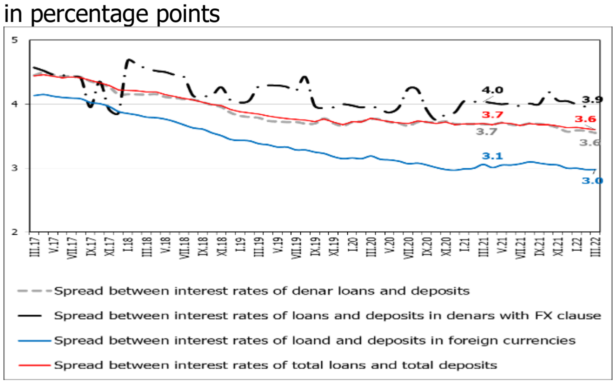
in percentage points



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

Chart 77 Interest spread

in percentage points



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

ANNEXES