National Bank of the Republic of North Macedonia
Financial Stability, Banking Regulations and Resolution Department

REPORT ON RISKS IN THE BANKING SYSTEM OF THE REPUBLIC OF NORTH MACEDONIA IN 2020

April 2021

Contents

I. Summary

In 2020, the banking sector faced number of challenges, yet showed appropriate preparedness for responding to risks. In conditions of a strong health and economic crisis, the banking system maintained its stability and contributed to mitigating the consequences of the COVID crisis, registering solid growth of activities. On one hand, this is a result of the public trust in the banking system, amid strong capital and liquidity positions with banks, but on the other hand, it arises from the National Bank's rapid reaction. Thus, the banks provided strong credit growth of 4.1%, supported by the further increase in deposits by 6.2%, and by the National Bank's monetary measures undertaken to release additional liquidity of banks in order to support the Macedonian economy. Influenced by the regulatory flexibility in the area of credit risk management, the banks enabled temporary delay of collection, which in the second quarter of 2020 (when it was initially approved) covered around 45% of the regular loan portfolio. In September 2020, amid prolonged pandemic, there was another, second offer for changing the contractual terms, covering around 7% of total loans. This eased the financial burden of a large number of borrowers in the banking sector, so they could easily deal with the negative effects of the health and economic crisis.

In 2020, the number of banks that make up the banking system in the Republic of North Macedonia decreased by one bank. Namely, in August 2020, the National Bank revoked the license of Eurostandard Bank AD Skopje, due to failure to fulfill minimum legal conditions for bank's operations. The bank's market participations in certain categories of banking system's balance sheets are between 1% and 2% and hence, the bankruptcy of the bank did not affect the other banks in the system.

The solvency of the banking system is improved. As of 31.12.2020, the capital adequacy ratio equaled 16.7%, which is by 0.4 percentage points higher compared to the end of 2019. The growth of own funds, primarily as a result of the reinvested earnings and the issue of new shares with two banks, made the largest contribution to the increase in the capital adequacy ratio. 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 use, more than half of own funds refer to Pillar 2 capital add-ons, capital buffers, or are "free" over the minimum supervisory and regulatory 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 stress testing of the resilience of the banking system and individual banks to simulated shocks shows improved resilience in 2020, compared to 2019.

In 2020, the banks' liquidity position further improved, due to the growth of liquid assets. Consequently, most of the indicators used to monitor and assess liquidity improved. The share of liquid in total assets increased by 0.6 percentage points, to a level of 32.5%, while the coverage of household deposits to liquid assets improved by 2.2 percentage points, reaching a level of high 64.4%. The results of the simulations of combined liquidity shocks confirm the satisfactory volume of liquid assets, which allowed banks to smoothly perform their business activities. They indicate an appropriate liquidity risk management by banks and a satisfactory resilience to the assumed extreme liquidity outflows.

In 2020, the indicators of the credit risk materialization improved. Namely, non-performing loans decreased by 26.5%, reducing their share in total loans by 1.4 percentage points, to a level of 3.4%. There was also a decline of non-performing corporate loans (-31.4%) and non-performing household loans (-12.6%). Therefore, the share of non-performing loans to companies in total corporate loans decreased by 2.5 percentage points, to a level of 5.2%, while the share of non-performing to household in total household loans decreased by 0.4 percentage points, to a level of 1.6%. The decrease of non-performing loans mostly stems from mandatory write-offs of fully impaired non-performing loans, and in some cases it is a result of collection, mostly through realization of collateral or through passing the debt to the guarantor. The National Bank's regulatory measures in the area of credit risk management contributed to a delayed and decelerated credit risk materialization, at least in the area of creating new non-performing loans. However, the grace period in almost 70% of the loans with eased contract terms expired as of 30.09.2020 and there was no significant growth of non-performing loans until the end of 2020. Having in mind the uncertainty about the duration of the consequences caused by the corona virus pandemic and the subsequent uncertainty over the clients' regular repayment of loans, we could expect possible credit risk materialization and growth in non-performing loans with banks in the next period, especially after the expiry of the grace periods approved for the second time (in September 2020). On 31.12.2020, 7.5% of the total performing loans remained in the grace period, which for more than 70% of them expires in March 2021.

In 2020, the domestic banking system achieved higher profit from its operation (by 8.5%), compared to the previous year. Analyzed by structure, the growth in the financial result is mostly due to the increase of the capital gain realized from the sale of foreclosures, as well as due to realized profits from collection of written-off claims. There was a certain, but relatively small influence of the decrease of operational costs and the growth of net interest income, over the growth of profit. Moreover, growth of impairment losses of financial and non-financial assets is registered, as well as decrease of income from commissions and fees (affected by the health crisis, the banks cut the commissions for part of their services, mostly those related to e-banking). The rate of return on average assets remained at the same level of 1.3%, same as in 2019, while the rate of return on average equity and reserves is slightly lower, amounting 11.3% on an annual basis. The possible realization of credit risk in the next period will increase the costs of impairment in the banks' balance sheets, which will also affect their financial result. In addition, the prolonged crisis and the consequences it caused, could lead to further decrease in the scope of activities and subsequently, decrease in the banking system's income.

The banking system's exposure to currency risk and risk from interest rate change in the portfolio of banking activities registered a certain annual increase to a level of 10.1% and 8.8% of own funds, respectively, which is still acceptable and way below the prescribed limits.

All indicators and findings pointed out in this report, confirm the high resilience of the banking sector to shocks and its potential to support the economic recovery in the following period. However, the uncertainty about the final overcoming of the health crisis and risks to the real sector and the banking system remain high. Therefore, in the beginning of 2021, the National Bank passed a temporary decision (valid not later than the end of the year) on limitation of the distribution and payment of dividends to bank shareholders. The measure is temporary and aims at further increase of the banking system resilience and stability, as well as providing further solid credit support for both citizens and corporate sector.

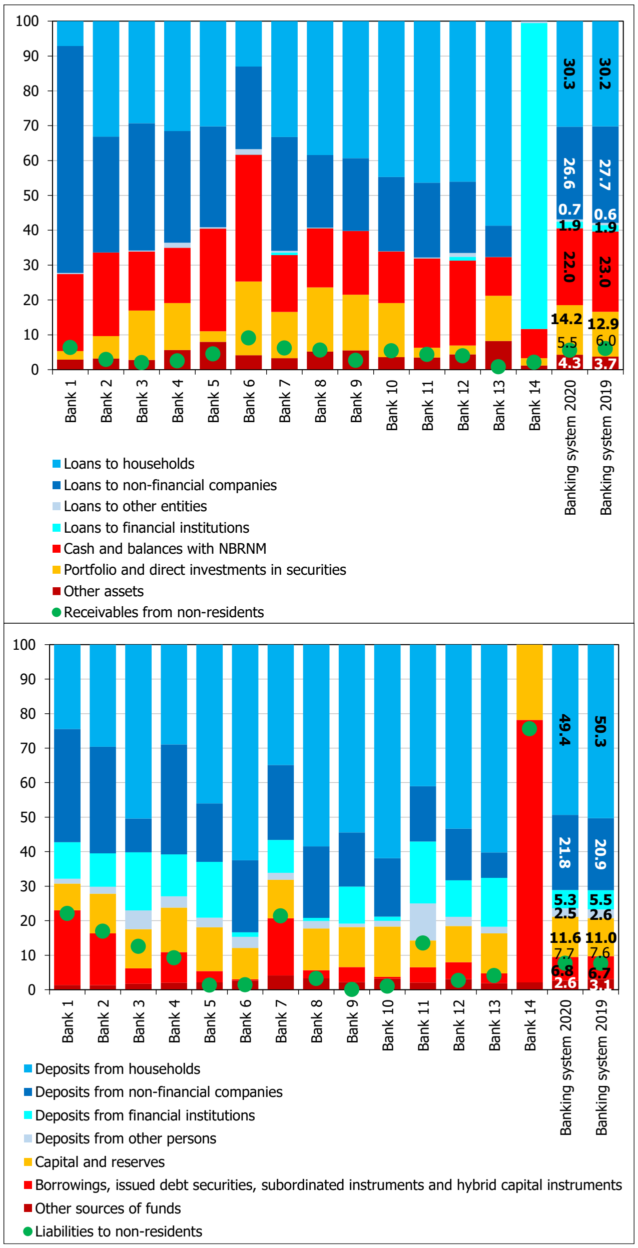
As always, the National Bank will continue with the monitoring of the developments and is prepared to undertake all necessary measures in its jurisdiction, in order to maintain and strengthen the stability and capacity of the banking system, so it could successfully meet the needs of the economy for rapid recovery from the corona crisis.

II. Structure of the banking system

1. Structure of the banking system

1.1 Main features of the business models of banks

Chart 1
Structure of the assets (up) and liabilities (down) of banks and the banking system, as of 31.12.2020
in %



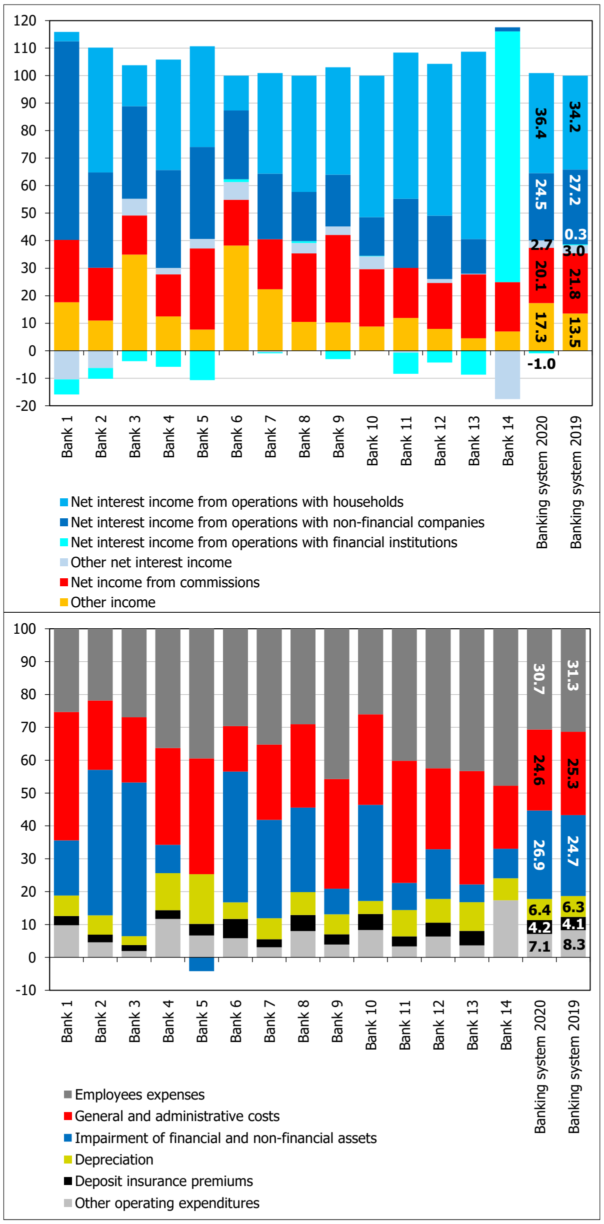
Source: National Bank, based on data submitted by banks.
The order of banks is random.

The main business model of the Macedonian banks, collecting deposits and approving loans, registered no significant changes in 2020. Household deposits, as the most important source of funding for banks, prevail in the total liabilities of the banking system, of 49.4% (which is by 0.9 percentage points less, compared with 31.12.2019). Analyzed by individual bank, household deposits have the highest share in the total sources of funds with ten banks. In three banks, the shares of deposits from households and from non-financial companies are almost identical, while the liabilities of one bank are predominated by the credit lines from the international financial institutions, which it places to end users through the other banks in the country.

Analyzing assets, the share of loans to non-financial sector (57.5%) is the highest, which is by 1 percentage point less compared to 31.12.2019. This year, same as the previous one, the share of household loans (30.3%) is higher, compared to loans to non-financial companies (26.6%), to total assets[1]. Analyzed by individual bank, three banks are more oriented towards lending to non-financial companies, and six banks lend more to the households. In four banks, the share of the lending to the two sectors is almost the same, and in one bank, loans to domestic banks prevail.

[1]For the needs of this analysis, the loans are calculated on net accounting bases (after impairment and accumulated amortization)

Chart 2
Structure of total income (top) and total expenditures (bottom) of banks and the banking system, in 2020
in %



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

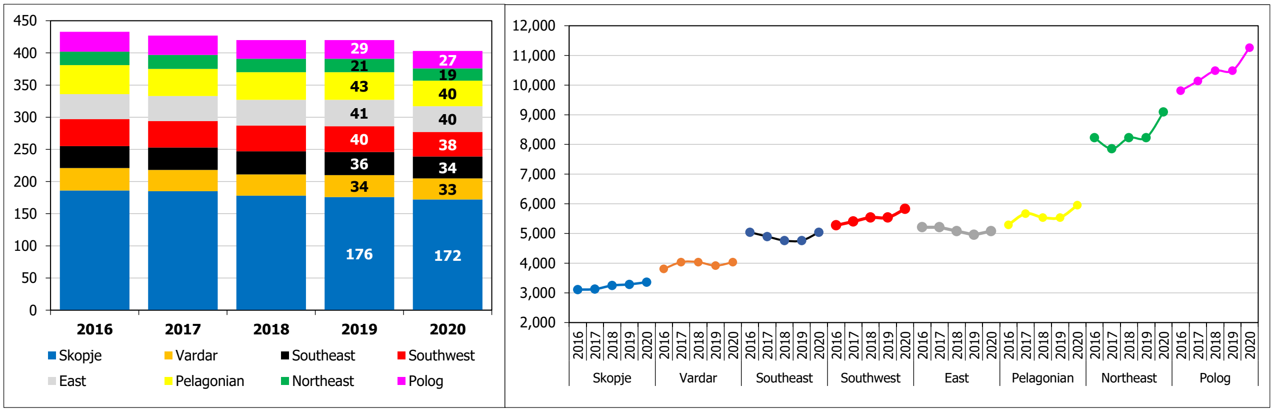
The structure of total banks' income corresponds to the application of the traditional business model. Thus, net interest income, with a share of 62.6% is the most important in the structure of total income, registering a decrease of their share by 2 percentage point compared to 2019. At the same time, net fee income decreased their share in total income, by 1.7 percentage points, and the share of other income increased by 3.7 percentage points. Similar to the structure of assets, the share of net interest income from the operations with households (36.4%) exceeded the share of net interest income from the operations with enterprises (24.5%) in total income.

Same as the last year, the most significant expenditures in the banking system are: Costs for employees (30.7%), followed by impairment of financial and non-financial assets (26.9%) and general and administrative costs (24.6%).

1.2 Number of banks and access to banking services

As of 31.12.2020, sixteen depository institutions operate in the Republic of North Macedonia, i.e. fourteen banks and two savings houses[2]. Compared to the previous year, the number of banks reduced by one[3], while the number of savings houses remained unchanged.

Chart 3
Bank network (left) and number of inhabitants per business unit (right), by region in the Republic of North Macedonia



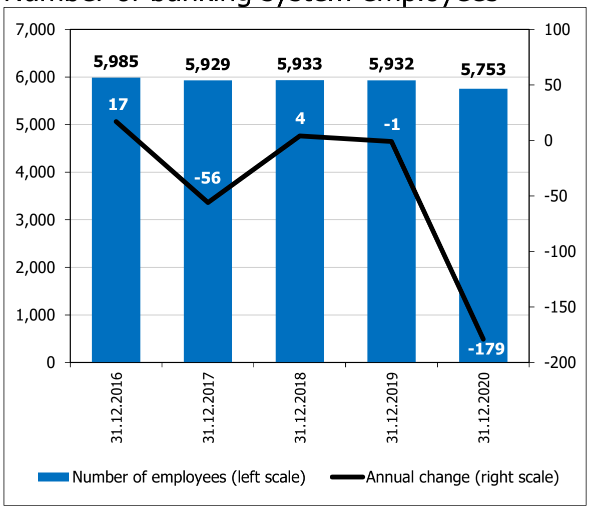
Source: The National Bank, based on data submitted by banks, State Statistical Office of the Republic of North Macedonia according to official data of the 2002 census.

The banking network is spread across almost all cities in the country and consists of 403 business units[4]. The total number of business units reduced by 17 compared to the previous year, mainly because one bank was excluded from the system. Almost half of the total number of business units (or 42.7%) are concentrated in the Skopje area, where the **access to banking**

[2] The share of savings houses in total assets of depository financial institutions (banks and savings banks) is 0.4%, in total loans to non-financial entities 0.5% and 0.3% of total household deposits. Given the insignificant share of savings houses in the total banking system, they are subject to analysis in the Reports on the Financial Stability of the Republic of North Macedonia.
[3] On 12 August, the Governor of the National Bank adopted a decision on revoking the license for founding and operating of Eurostandard Bank AD Skopje and opening the bankruptcy proceeding .
[4] The number of business units includes the headquarters of banks, but excludes banks' windows.

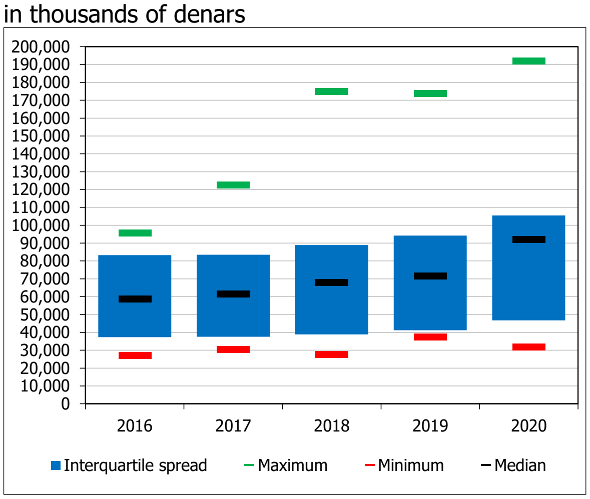
services, as measured by the number of inhabitants per business unit, is still the best. Improvement of the approach to banking services is expected by signing an agreement between one domestic bank and the Post Office of North Macedonia[5], according to which the Post Office reintroduced the window services (payment operations) on 1 March 2021.

Chart 4
Number of banking system employees



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

Chart 5
Assets per employee*
in thousands of denars



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

1.3 Employment in the banking system

In 2020, the number of bank employees insignificantly changed (increased by 179 persons) and equals 5,933. Qualification structure of employees in the banking sector registers a further improvement. The share of employees with at least university education continues to increase, reaching 83.9% of the total number of employees in the banking system, which is an annual growth of 1.9 percentage points.

The banks' productivity, measured by the size of assets created per employee is improved. This is visible in most banks, whereby there is significant differences in productivity of individual bank (from denar 31.8 million to denar 191.9 million assets per employee).

[5] Eurostandard Bank had this type of agreement with the Post until the revoking of the license for founding and operating.

1.4 Ownership structure and concentration of the banking system

As of 31.12.2020, the number of banks owned by foreign shareholders is ten, since it reduced by one[6] and the number of foreign banks subsidiaries (six), remained unchanged.

Table 1
Structure of the number of banks and major balance sheet positions, by banks' majority ownership (as of 31.12.2020)
in millions of denars and in %

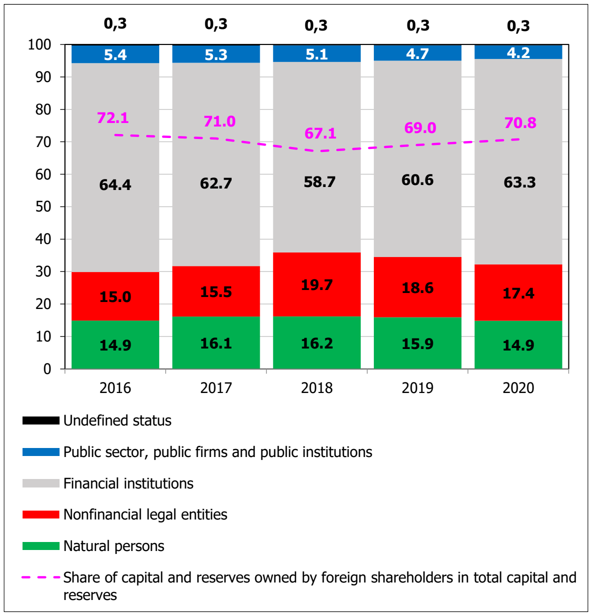
Type of ownership	Number of banks	Capital and reserves		Assets		Loans to non-financial sector		Deposits from non-financial sector		Total revenues*		Financial result*	
		Amount	In %	Amount	In %	Amount	In %	Amount	In %	Amount	In %	Amount	In %
Banks in dominant ownership of foreign shareholders	**10**	**51,145**	**75.0%**	**420,997**	**71.9%**	**286,138**	**80.9%**	**302,405**	**70.2%**	**17,673**	**73.4%**	**5,136**	**70.8%**
- subsidiaries of foreign banks	*6*	*45,089*	*66.1%*	*352,228*	*60.2%*	*236,894*	*67.0%*	*258,297*	*59.9%*	*15,041*	*62.5%*	*4,499*	*62.0%*
- Austria	2	8,139	11.9%	71,807	12.3%	50,638	14.3%	43,856	10.2%	2,634	10.9%	242	3.3%
- Bulgaria	1	1,224	1.8%	10,567	1.8%	7,246	2.0%	7,340	1.7%	387	1.6%	17	0.2%
- Greece	1	15,400	22.6%	106,028	18.1%	72,697	20.6%	85,372	19.8%	5,284	21.9%	1,980	27.3%
- Slovenia	1	11,709	17.2%	96,831	16.5%	62,013	17.5%	78,796	18.3%	4,508	18.7%	1,704	23.5%
- Turkey	1	8,617	12.6%	66,995	11.4%	44,299	12.5%	42,932	10.0%	2,228	9.3%	556	7.7%
- other banks in dominant foreign ownership	*4*	*6,056*	*8.9%*	*68,769*	*11.7%*	*49,244*	*13.9%*	*44,108*	*10.2%*	*2,632*	*10.9%*	*637*	*8.8%*
- Bulgaria	2	2,800	4.1%	26,513	4.5%	18,333	5.2%	18,682	4.3%	1,337	5.6%	387	5.3%
- Germany	1	2,717	4.0%	35,306	6.0%	26,104	7.4%	20,716	4.8%	987	4.1%	206	2.8%
- Switzerland	1	540	0.8%	6,950	1.2%	4,807	1.4%	4,710	1.1%	308	1.3%	44	0.6%
Banks in dominant ownership of domestic shareholders	**4**	**17,030**	**25.0%**	**164,504**	**28.1%**	**67,364**	**19.1%**	**128,465**	**29.8%**	**6,406**	**26.6%**	**2,116**	**29.2%**
- private ownership	*3*	*14,410*	*21.1%*	*152,506*	*26.0%*	*67,295*	*19.0%*	*128,465*	*29.8%*	*6,295*	*26.1%*	*2,084*	*28.7%*
- state ownership	*1*	*2,619*	*3.8%*	*11,997*	*2.0%*	*70*	*0.0%*	*0*	*0.0%*	*111*	*0.5%*	*32*	*0.4%*
Total:	**14**	**68,175**	**100.0%**	**585,501**	**100.0%**	**353,502**	**100.0%**	**430,870**	**100.0%**	**24,079**	**100.0%**	**7,252**	**100.0%**

Source: National Bank, based on data submitted by banks.
*Total income and financial result refer to 2020.

In 2020, the banks with mainly foreign ownership prevailed in most of the categories of activities, mostly pronounced in loans to non-financial entities (80.9%) and equity and reserves (75%). Regarding the previous year, there is a decrease of 3.3 percentage points in shares of banks with predominantly foreign ownership in total income of the banking system and increase of 2.3 percentage points in equity and reserves.

[6] The decrease in the number of banks with dominant foreign ownership is due to the revoking of the license for founding and operating of Eurostandard Bank, in August 2020.

Chart 6
Ownership structure of capital and reserves of the banking system
in %

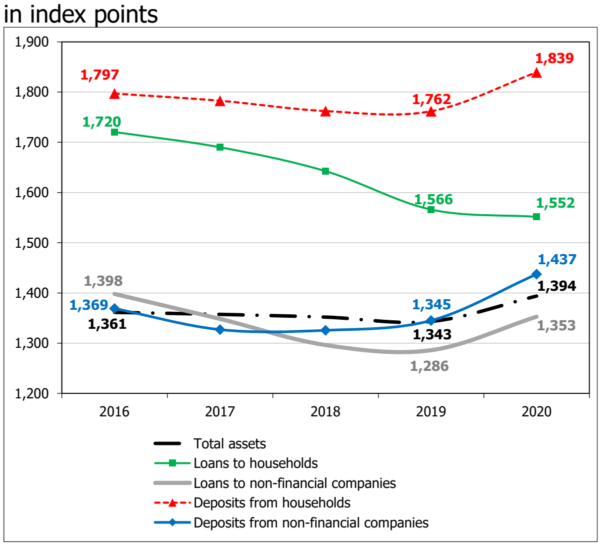


Source: National Bank, based on data submitted by banks.

In the ownership structure of domestic banks, the financial institutions prevail with two-thirds, the share of which in equity and reserves of the banking system increased by 2.7 percentage points in 2020. In contrast, the share of non-financial legal entities and natural persons decreased by 1.2 and 1 percentage points, respectively.

In 2020 there were no significant changes in the banks' ownership structure according to the geographical origin of foreign shareholders. Shareholders from EU still prevail, with highest share in total equity and reserves by shareholders from Greece (20.8%), Slovenia (15.2%), and Austria (11.5%). The share of shareholders from Turkey is also significant (12.6%).

Chart 7
Herfindahl index
in index points



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

A growth in concentration of banking activities was registered during 2020 according to Herfindahl index[7]. Namely, in comparison to the previous year, all index values register increase, except the ones for household loans. Analyzed by individual activity, the concentration registers significant increase in deposits from non-financial companies, by 92 index points and deposits from households, by 77 index points. The increase of Herfindahl indexes is mostly a result of the reduced number of banks by one but their values **remain within the acceptable levels[8].** The index for household deposits is an exception and shows moderately higher level of concentration.

[7] 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.
[8] When the index ranges from 1,000 to 1,800 points, the concentration ratio is considered to be acceptable.

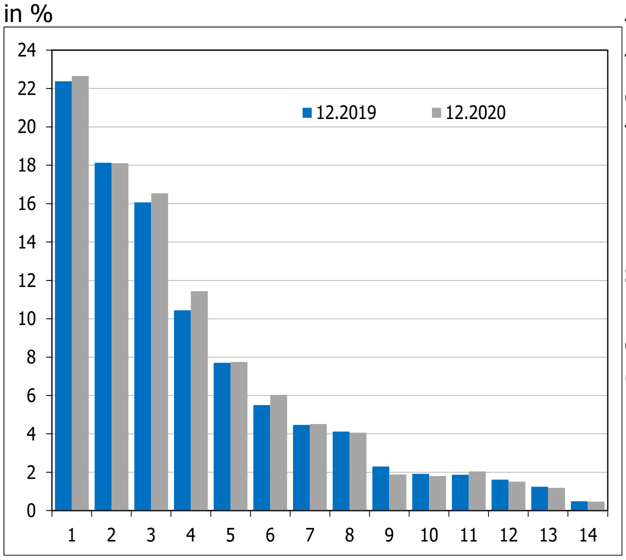
Table 2
Indicators of concentration of major balance sheet positions in the three and the five largest banks
in %

Position	31.12.2019		31.12.2020	
	CR3	CR5	CR3	CR5
Total assets	56.6	74.7	57.3	76.5
Loans to households	58.9	77.1	59.6	77.9
Loans to non-financial companies	48.6	73.5	49.6	76.5
Deposits from households	69.4	80.2	71.0	82.3
Deposits from non-financial companies	51.0	77.2	54.2	79.4
Financial result*	90.2	104.5	77.2	90.0
Total revenues*	60.9	77.6	62.9	78.6

Source: National Bank, based on data submitted by banks.
*Total income and financial result refer to 2020.

The indicators of share of three out of five largest banks in the banking system register moderate increase in individual activities, on an annual basis. The financial result indicators are an exception, where during 2020, the share of three and five largest banks reduced by 13 and 14.6 percentage points, respectively.

Chart 8
Share of individual banks in the total assets of the banking system
in %



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

The differences between banks in terms of their share in total assets of the banking system remain big. The spread between the bank with highest share (22.7%) and the bank with lowest share (0.5%) in total assets of the system is almost at the same high level as the last year (increased by 0.3 percentage points). Moreover, six banks have individual market shares lower than 2%. Analyzed by individual bank, five banks registered visible increase of the market share, while market shares of other banks remained almost the same or decreased. The share of three largest banks in the system increased by 0.7 percentage points, reaching a level of 57.3%.

III. Bank risks

Heat map for the stability of the Macedonian banking system

Indicators on banking system risk exposures	Last 10 years (1.1.2011 - 31.12.2020)*					Last 5 years (1.1.2016 - 31.12.2020)**				
	31.12.2019	31.3.2020	30.6.2020	30.9.2020	31.12.2020	31.12.2019	31.3.2020	30.6.2020	30.9.2020	31.12.2020
Insolvency risk										
Capital and reserves / assets										
Capital adequacy ratio										
Tier 1 ratio										
Net-NPLs (non-financial sector) / regulatory capita										
Credit risk										
Default rate of credit exposure to non-financial sector										
Restructured and prolonged loans to non-financial companies and households / loans to households and non-financial companies										
Non-performing loans / total / total loans (non-financial sector)										
NPL coverage ratio										
Impairment losses (balance-sheet) / total credit exposure										
Impairment losses (income statement) / total loans to non-financial sector										
Liquidity risk										
Liquid assets / total assets										
Liquid assets / short-term liabilities										
Loans / deposits										
Liaquid assets / household deposits										
Market risks and indirect credit risk										
Open FX position / regulatory capital										
Net weighted position / regulatory capital										
Loans with currency component / total loans										
Loans with variable and adjustable interest rates / total loans										
Profitability										
ROAA										
Net-interest income / average assets										
Operating expenses / total income										
Impairment losses (income statement) / net-interest income										

Legend (percentile ranks):

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

*The affiliation to the percentile range is determined on the basis of quarterly data set for the indicators in the last 10 years (from 31.12.2010 to 31.12.2020)
**The affiliation to the percentile range is determined on the basis of quarterly data set for the indicators in the last 5 years (from 31.12.2015 to 31.12.2020).

On this report's cut-off date, the indicators of insolvency risk are in the "green zone". Namely, the capitalization of the banking system is at relatively high historic level during most of 2020. Thus, usually, during the second and third quarter of the year, when banks reinvest the last year's profit, the solvency indicators reach slightly higher levels, while in the last quarter, in absence of more significant sources of increase of capital positions, amid usually more intensive activities by banks in this period of the year, these indicators slightly decrease.

The liquidity risk indicators registered volatile movements during 2020, yet remained in the "green zones" at the end of the year. In the first quarter of 2020, one part of the banks' liquid assets was used for lending to government, which under the usual simultaneous effect from the seasonal factors at this time of the year, caused a decrease in liquidity indicators. Moreover, in March and April 2020, there was an outburst of the corona virus pandemic, which in conditions of increased uncertainty and introduction of measures for limiting the spread of the virus, caused certain deceleration of banks' deposit activity, while part of the liquidity indicators remained in the "red zone" in this part of the year. As of June 2020, the deposit activity recovered from the initial shock, but the banks used most of the newly-collected deposits for credit support, keeping the liquidity indicators in the third quarter of 2020 at a similar level as before. Finally, in the last quarter of the year, the liquid asset of the banking system registered a high increase, with a strong positive effect on the liquidity indicators. On one hand, this arises from the usually solid deposit activity in the last quarter of the year (especially in December), as a significant source of liquid assets, and on the other hand from the collection of the previously mentioned loan to government and investment in government bonds, treated as liquid assets.

The indicators for credit risk exposure were at the historic low level at the end of the year, and part of them reached the historic minimum, during 2020. However, we should take into consideration the fact that during 2020, the National Bank undertook measures enabling the banks to approve temporary grace period in repayment of loans for most of the borrowers, in order to easily deal with the negative effects of the pandemic. Hence, the repayment of loans for most of the borrowers was "frozen" in one part of 2020, which enabled temporarily postponement and deceleration of the credit risk materialization, at least in the part of creating new non-performing loans. However, in a large part of the loans, the grace periods have already expired in 2020, and in the rest of them they will expire by the third quarter of 2021, after which the regular repayment of loans will continue. Hence, in the next period we could expect certain realization of the credit risk, shown through the increase in non-performing loans and increased impairment losses in the banks' balance sheets.

The profitability of the banking system in this crisis year is at a slightly lower level, however the banks still register positive financial result, i.e. they all finished the year with a profit. The analysis for the last five years show that this was one of the weaker years in terms of banks' profitable operations, after the historic maximum in the past years, especially in 2018. Consequently, most of the profitability indicators of the banking system finished the year in the "red zone".

The indicators of market risks are at a relatively high historic level, which is still satisfactory and within control. The indicators on the interest rate risk exposure grow, and are almost always far below the warning level. The currency risk exposure significantly grew in the last quarter of 2020, however far below the regulatory maximum. Traditionally, the indirect credit risk exposure has always been relatively high, while in 2020 the indicators of share of loans with currency component and loans with variable and adjustable interest rate in total loans remained at a relatively stable level.

The movements of the indicators for exposures to individual risks are explained in details further in the report.

The banking system stability heat map includes five components: insolvency risk, credit risk, liquidity risk, market risks and profitability. For each component, a sum of the normalized values of selected indicators is calculated, by using the method of a so-called empirical normalization on quarterly data set covering the last ten (1.1.2011 - 31.12.2020) and the last five years (01.01.2016 - 31.12.2020). Afterwards, taking into account the calculated aggregate values for each component, its affiliation to appropriate percentile range has been determined (seven percentile ranges are introduced), for each date, separately. Each percentile rank has its own colour, and the spectrum of colours varies from green (that, in historical sense, corresponds to lower levels of risk) to red (that, in historical sense, corresponds to higher levels of risk). The preparation of the presented "heat" maps takes into account 22 indicators, arranged by components.

1. Credit risk

In hard working conditions due to the pandemic, the credit risk to which the banks are being exposed, becomes even more significant. However, the materialization of the credit risk reduced in 2020 under the influence of many factors, which is perceived by lower level of non-performing loans. The reduction of non-performing loans is still influenced by the regulatory measure for mandatory write-off of fully provisioned non-performing loans. The dynamics of non-performing loans is also influenced by regulatory measures undertaken by the National Bank in the area of credit risk management, primarily the introduction of the possibility for temporarily delayed repayment of loans due to corona crisis. This measure led to a temporary delay of possible materialization of the credit risk in the banks' portfolios. In 2020, the non-performing loans decreased by 26.5%, reducing the rate of non-performing loans of the non-financial sector to a historic lowest level of 3.4%. In terms of sector, the decline in non-performing loans was more pronounced in corporate loans (-31.4%), but also in household loans (-12.6%). However, there was a certain materialization of the credit risk, primarily within the credit portfolio of non-performing loans, due to non-fulfillment of obligations by individual corporate clients in several activities. The share of non-performing loans in total loans to the non-financial companies registered an improvement by 2.5 percentage points and as of 31.12.2020 decreased to a historic lowest level of 5.2%. The ratio between non-performing and total loans to households also decreased to a new historic level of 1.6%.

The coverage of non-performing loans with impairment remained relatively high and increased in 2020 (73.2%), which along with the satisfactory volume and quality of own funds, limited the potential adverse effects on the banks' solvency from default of these loans.

With the regulatory changes, as of March 2020, the banks massively eased the credit burden to borrowers during April and May 2020, mainly by approving grace period of usually up to six months, when the negative effects of the corona crisis on the corporate sector and households were expected to be more pronounced (the easing covered around 40% of the credit portfolio). In September 2020, amid prolonged pandemic, the banks changed the contractual terms for the second time, but this time aimed at those categories of clients that are mostly affected by the crisis (persons that lost their jobs, encountered significant reduction in income, faced increased health treatment costs and similar). Having in mind the timely character of these measures, during 2021 we could expect a materialization of the credit risk and growth of non-performing, due to expiry of the grace period (mostly by March 2021 for natural persons and by October 2021 for legal entities), when the clients should start with the regular repayment of loans. Negative effects are mostly expected from clients with unstable/uncertain monthly income, as well as those whose income is related to activities mostly affected by the negative effects from the health crisis. There is a slight upward movement of non-performing loans with natural persons in January and February 2021, due to materialization of the credit risk from loans whose grace period expired in the last quarter of 2020. It should be taken into account that the grace period for most of these loans

expired by the end of 2020. Currently, the share of loans under moratorium is not very high at around 7.5% of total regular loans as of 31.12.2020.

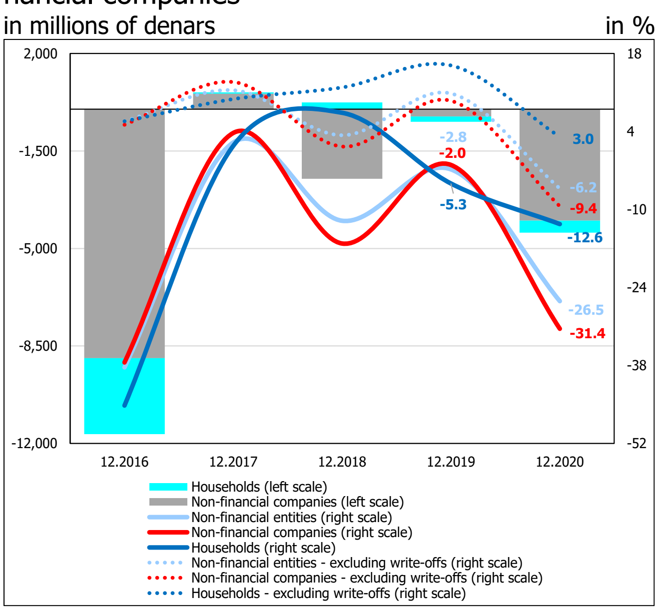
The effects from the measure for temporary eased criteria for obtaining non-performing status (threshold of 150 instead of 90 days for delayed payment) were rather small since this regulatory facilitation was rarely used. According to the regulation, the banks were allowed to recognize non-performing loans by the usual definition, with a monthly dynamics in the period 1.10.-31.12.2020, but most of them presented these loans as non-performing at one-time, even before December 2020.

1.1. Materialization of credit risk in banks' balance sheets

In 2020, total non-performing loans in non-financial sector reduced by 26.5% (or by Denar 4,271 million). The decrease of non-performing loans mostly stems from mandatory write-offs of fully provisioned non-performing loans[9], but in some cases due to collections (mostly through takeover of pledge and takeover of other person's debt).

At the same time, the effects from the measure for temporary eased criteria for obtaining non-performing status (threshold of 150 days instead of the usual 90 days for delayed payment) are rather small. Thus, in the period from 1 October to the end of 2020, the banks granted these loans a treatment of non-performing exposures and recognized the expected credit losses, respectively[10].

Chart 9
Annual growth of non-performing loans of non-financial companies



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

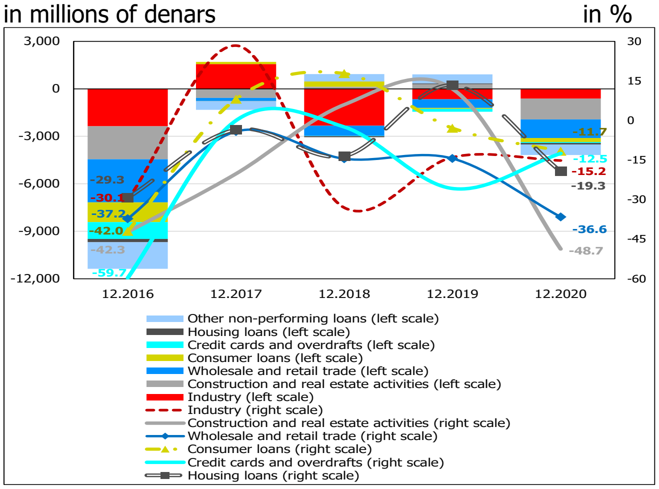
As pointed out, these loans are very small (0.1% of the regular and 2.3% of non-performing loans to non-financial sector as of 30.9.2020) compared to the total amount of non-performing loans.

The decrease in new non-performing loans in 2020 is partly due to approved moratorium for around 40% of loan portfolio of banks. According to data issued by banks, the grace period for most of these loans expired by the end of 2020, so the loans that are currently under moratorium (with unexpired grace period) are 7.5% of total loans and almost fully refer to loans for which the easing terms were approved in September 2020 (mostly for loans with second postponed repayment). This part of the credit portfolio will practically not be repaid until the end of the first quarter of 2021 for most of the loan portfolio to households, i.e by the third

[9] By excluding the effect from mandatory net write-offs, the non-performing loans in non-financial sector decreased by 6.2% in 2020 (as opposed to their growth of 10.8% at the end of the previous year).
[10] Most of the banks granted these loans a treatment of non-performing exposures at one-time, in October, while only small part of the banks introduced monthly dynamics by the end of the year.

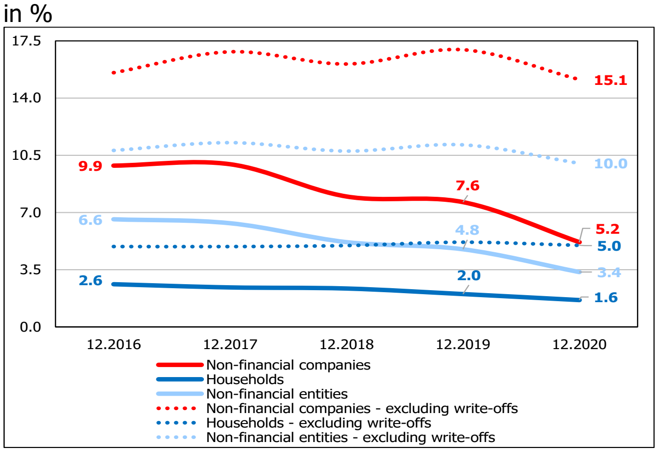
Note: The dotted lines show the growth of non-performing loans, excluding the effect of mandatory write-offs for the period 1.1.2016-31.12.2020. The data includes collected mandatory written-off loans as of December 2019.

Chart 10
Annual growth rate of non-performing loans, by activity (non-financial companies) and by credit product (households)
in millions of denars in %



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

Chart 11
Non-performing loans ratio for non-financial entities, by sector
in %



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

quarter of 2021 for most of the loans to enterprises.

The materialization of the credit risk in loans with expired grace period as of the end of September[11] 2020 (68.7% of regular loans with approved grace period due to corona crisis) is relatively low by the end of the year, which is reflected through the low repayment rate (only 0.5% of them became non-performing by the end of 2020).

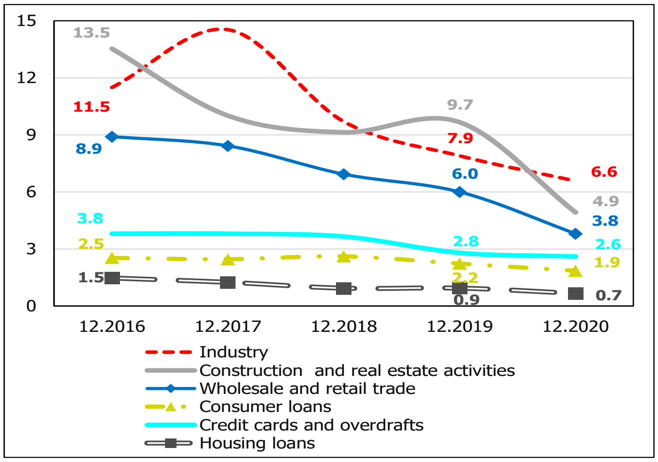
The decrease in volume of non-performing loans mainly results from their decrease in enterprises (by Denar 3.999 million, or by 31.4%)[12]. There is a decrease of non-performing loans in almost all economic activities, with a largest decline in clients from "industry", construction sector and trade.

However, there are new non-performing loans in individual activities and clients. In the industry for "metal production, machinery and tools and equipment", the activity related to water supply, waste management and remediation of environment and trade, new non-performing loans are mainly a result of default of several larger clients. Generally, **the creation of larger amounts of non-performing loans lacks**, mainly due to approved temporary moratorium for part of the loans (28.1%[13] of total corporate loans as of 31.12.2020 used this easing, whereby the share of loans with unexpired grace period in total corporate loans is 9.9%).

Non-performing loans to households decreased by 12.6%, or by Denar 430 million. Only small part of this decrease is a result of one bank leaving the system. Downward movement of non-performing loans to households is mainly due to mandatory write-

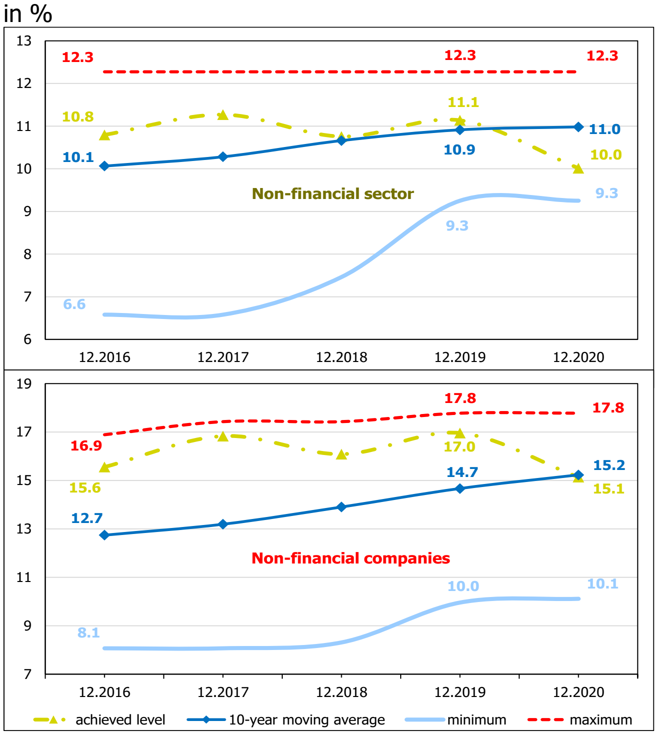
[11] The analysis of loans with expired grace period as of 30.09.2020, reflects the default of this loans in the forthcoming 90 days, once the repayment started, i.e their transition to non-performing loans by the end of the year.
[12] Without the effect of the net mandatory write-offs, non-performing corporate loans register an annual decline of 9.4% (as opposed to their growth of 9.5% by the end of 2019).
[13] Including the loans to enterprises with already expired grace period.

Chart 12
Non-performing loans ratio, by activity and credit product
in %



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

Chart 13
Non-performing loans ratio, 10-year moving average and maximum and minimum level, by individual sectors
in %

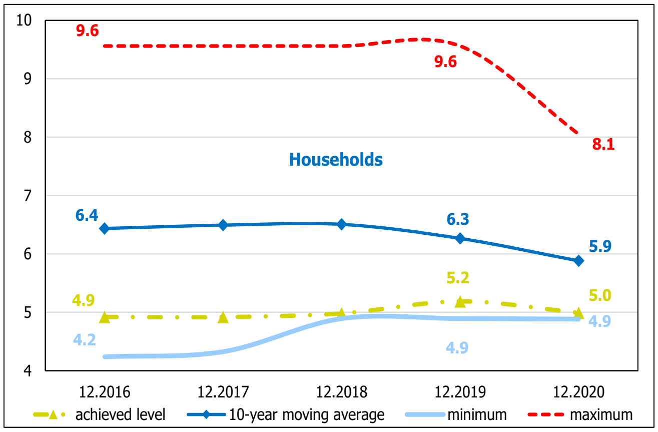


offs[14]. The main reason for downward movement of non-performing consumer loans are the mandatory write-offs (by Denar 247 million, or by 11.7%). Significant decline is also registered in non-performing housing loans (by Denar 93 million, or by 22.2%) and credit cards (by Denar 88 million, or by 21.0%). In this segment of the loan portfolio of banks, the creation of new non-performing loans is currently less pronounced, given that for around half of the loans to households as of 31.12.2020 a grace period[15] was granted due to COVID-19. If we exclude the loans with already expired grace period, the share of loans with unexpired grace period in total loans to households is significantly lower and is 5.3% as of 31.12.2020.

As a result of such movements, the quality of loan portfolio of banks, measured by share of non-performing to total loans in non-financial sector, improved by 1.4 percentage points in 2020. As of 31.12.2020, this rate reached historically lowest level of 3.4%[16].

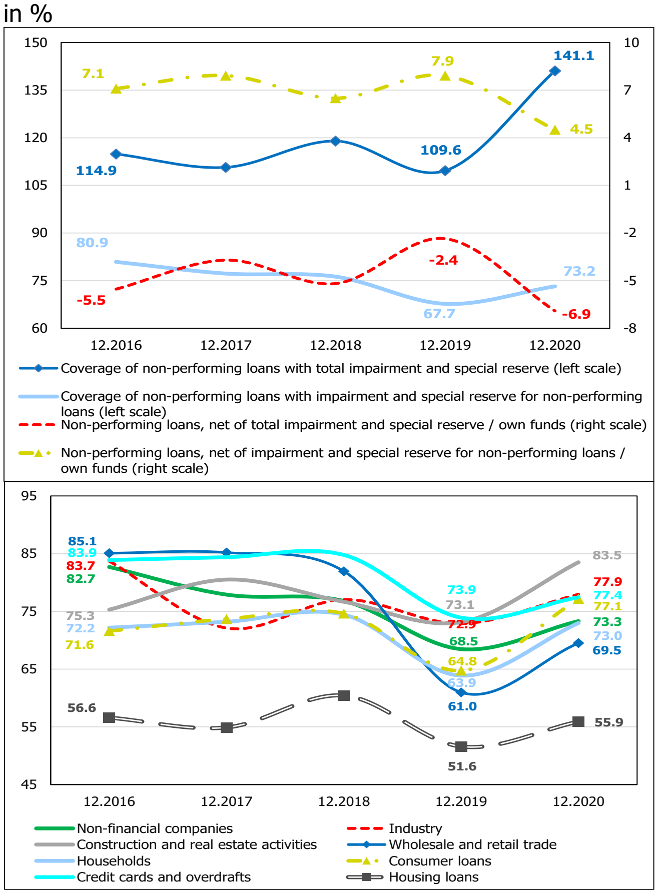
A slightly more pronounced improvement of the ratio between non-performing and total loans is registered **in the portfolio of non-financial companies**, and as of 31.12.2020, 5.2% of total loans are non-performing (decrease by 2.5 p.p. compared to the previous year). Analyzed by individual activities, the decrease of this indicator was most pronounced in the construction sector, where the rate of non-preforming loans was 4.9% (9.7% as of 31.12.2020), while the trade registered the lowest level of 3.8% (amid decline of 2.2 percentage points compared to the previous year). The rate of non-performing corporate loans (without the effect of net write-offs) is 15.1% and almost reached the level of this rate's 10 years moving average (15.2%), while with the reduction in 2020, it was drawn away from this

[14] If we exclude the effect of the net mandatory write-offs, then the non-performing loans to households register an increase of 3.0%, which is a significant deceleration compared to the growth in 2019 (15.9%).
[15] Including loans to households with already expired grace period.
[16] Without the effect of mandatory write-offs, the share of non-performing to total loans is 10.0% and is lower by 1.1 percentage points compared to the previous year, that is below the level of 10 years moving average (11.0%).



Source: National Bank, based on data submitted by banks.
* Note: The effect of all mandatory write-offs is excluded in the period 1.1.2016-31.12.2020. The data includes collected mandatory written-off loans as of December 2019.

Chart 14 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.

rate's maximum value for the last 10 years (17.8%).

In the loan portfolio of households, the share of non-performing loans in total loans decreased by 0.4 percentage point, to the new record low of 1.6%. This is a due to the decrease of "bad" loans, amid decelerated credit support in this sector. The rate of non-performing loans to households (without the effect of mandatory write-offs) is 5.0% and is almost equals the minimum value for the last 10 years (4.9%).

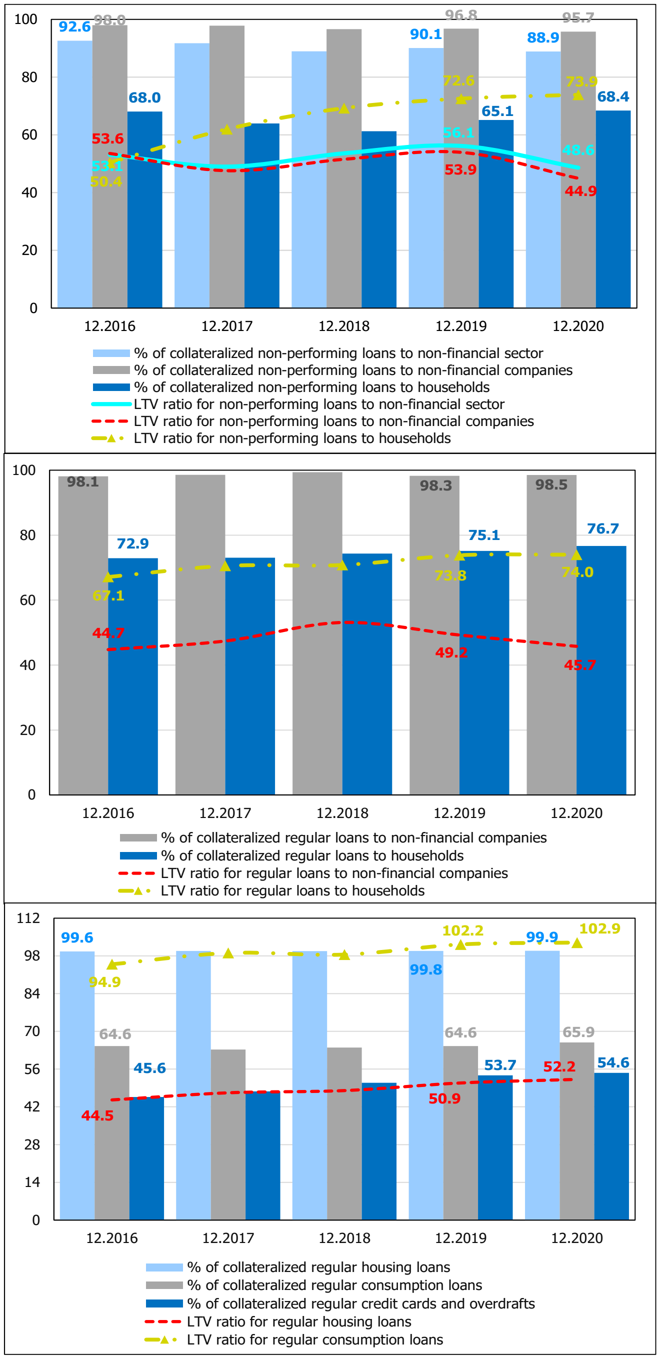
Loans to non-financial companies accounted for 73.5% of non-performing credit portfolio of banks, which is lower share compared to the previous year (78.8%). The largest part of non-performing corporate loans refers to "industry", trade and construction sector. The non-performing consumer loans dominate in the non-preforming portfolio to households.

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. Namely, a large portion of the non-performing loans are covered by impairment (73.2%), which is an increase compared to the previous year. The non-provisioned amount of non-performing loans is only 4.5% of own funds of the banking system and if we assume its full uncollectability, the solvency of the system would not be jeopardized.

Despite the high coverage of non-performing loans with impairment, the banks maintain high percentage of credit collateral, which is particularly pronounced in companies (there is a collateral for 95.7% of non-performing loans and 98.5% of regular corporate loans[17]). With a relatively conservative ratio between the credit amount and the assessed

[17] Mostly as equipment, machinery, production facilities, business and warehouse space and similar.

Chart 15
Non-performing loans (up) and regular loans (middle and down) for which collateral has been established and LTV ratio, by sector
in %



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

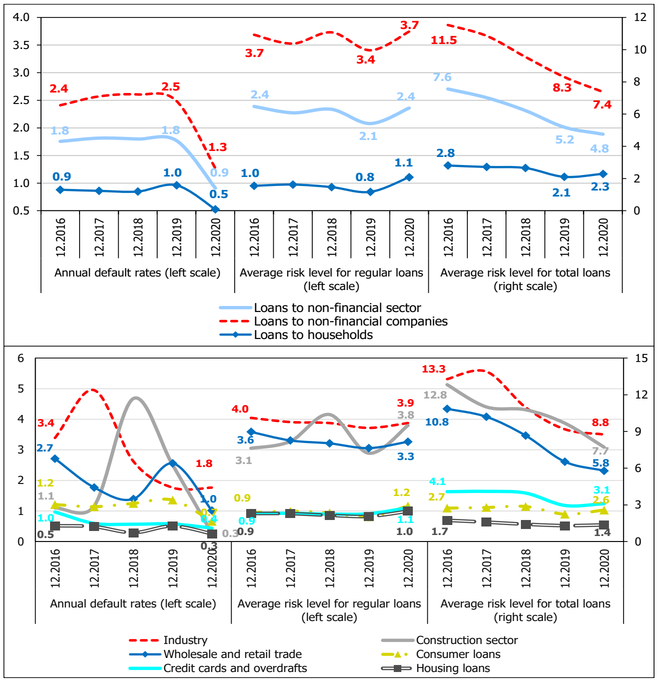
collateral value (which amounts 45.7% for the regular and 44.9% for the non-performing loans), banks collateralize the higher inherent risk from corporate lending.

The percentage of loan collateral in households is lower (76.7% for regular and 68.4% for non-performing loans), mainly because of the credit cards and overdrafts, as well as consumer loans. Namely, there is no collateral for about 34% of consumer loans. However, there is a so called executive clause[18] in a great deal of credit agreements, which enables the banks relatively quick collections of loans by selling collateral.

The annual default rate of regular credit exposure to non-financial sector and individually, to both its segments, significantly improved in 2020. Namely, the annual default rates decreased to almost twice as lower than the level in 2019. This is mainly due to the approved grace period to about 40% of loans to non-financial entities, where the clients practically have no obligation to repay the installments based on loans, which subsequently cannot acquire non-performing status. As it was pointed out, the shift to non-performing status (i.e the default rate) is also low for the part of loans with already expired grace period in September 2020. Yet, this does not lower the expectations that higher default rates from loans with approved grace period due to the crisis are possible in the period ahead, especially from loans which were subject to second change of contractual terms in September 2020 (for clients with more pronounced financial difficulties). The average level of risk for regular loans increased, mostly as a result of the loans with approved second grace period, whose average provision is higher compared to total loan portfolio (more details are given below, in the analysis of loans with approved grace period).

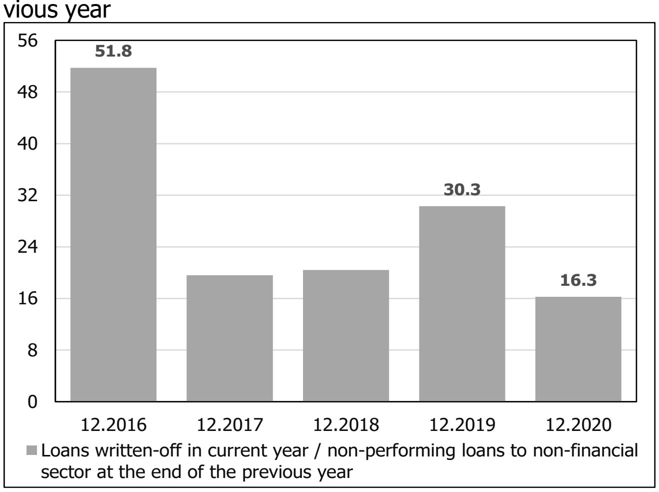
[18] According to the Law on Enforcement and the Law on Notarial Practice. The National Bank does not have any data on the amount of loans with such clause included in the agreements.

Chart 16
Annual default rates and average risk level of regular loans and total loans, by sector (up) and selected activities and credit product (down)
in %



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

Chart 17
Written-off non-performing loans
in percentage of non-performing loans at the end of the previous year

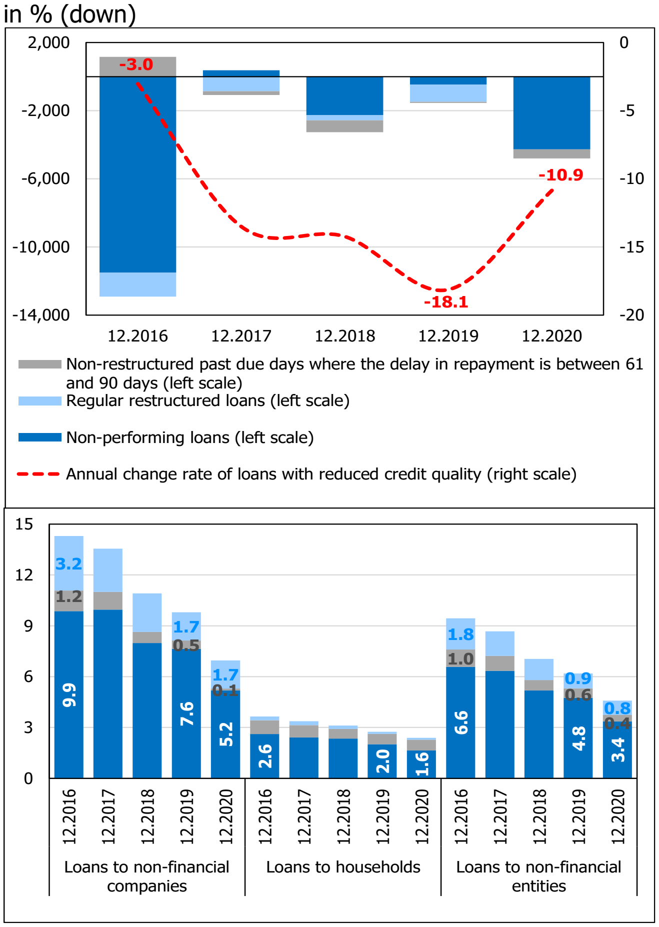


Source: National Bank, based on data submitted by banks.

In 2020, banks wrote off 16.3% of total non-performing loans at the end of the previous year. This amount of write-offs is two times lower compared to the previous year[19] and mandatory write-offs prevail. In terms of sector, around two thirds of total write-offs refer to non-financial companies. Mandatory write-offs of non-performing loans will continue in the next period, given the fact that as of 31.12.2020, 33.2% of non-performing loans are fully covered with impairment and will be written-off the next year at the latest, unless collected meanwhile.

[19] The provisions of the regulation which determine the mandatory write-off of fully provisioned claims for longer than one year, become effective from 1 July 2019, due to which the striking effect of this regulation was realized in the second half of 2019. Previously, the period of fully provision as a condition for mandatory write-off, was two years.

Chart 18
Non-performing loans and regular loans to non-financial entities with reduced credit quality, annual growth (top) and share in total loans to non-financial entities (bottom)
in millions of denars (up, left) in% (up, right)
in % (down)



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

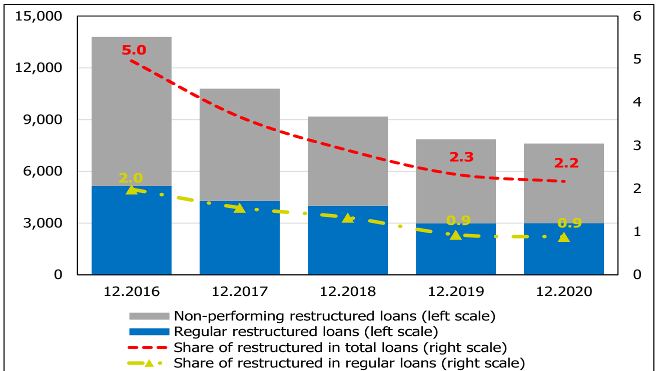
1.2 Potential sources of future credit risk materialization

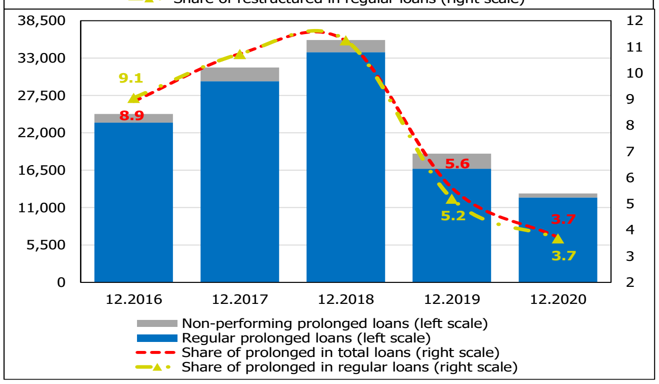
Regular loans with reduced credit quality[20], which can be source of new non-performing loans in the short-term, reduced by 10.9% in 2020. Their decrease is mainly a result of the approved grace period to around 40% of loans due to the pandemic, which are currently not treated as restructured. Moreover, **the share of loans with reduced credit quality in total loan portfolio is very small** and amounts to 1.2%. Therefore, only 1.3% of loans with delay from 61 to 90 days acquired non-performing status in January 2021[21].

[20] For the purposes of this analysis, regular loans with reduced credit quality include regular restructured loans and past due regular non-restructured loans where the delay of repayment is between 61 and 90 days (any further delay in the repayment of these regular loans for another 1-30 days would make them non-performing).
[21] As for households, this percentage is higher and amounts to 6.4%, while for the non-financial companies it amounts to 0.4%.

Chart 19 Restructured (top) and prolonged loans (bottom) to non-financial entities by status

in millions of denars in %





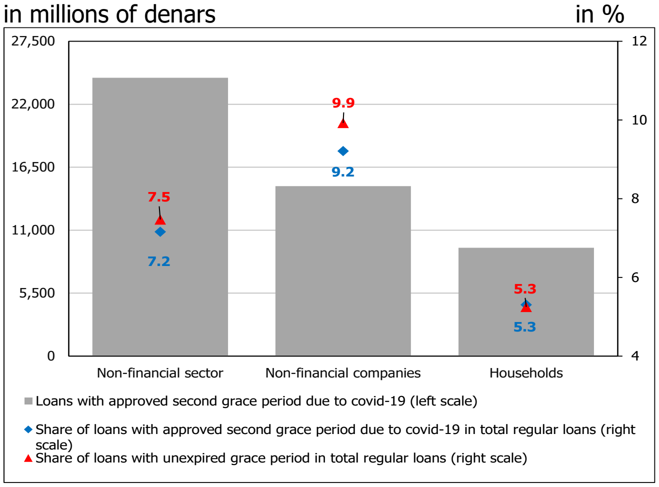
Source: National Bank's Credit Registry, based on data submitted by banks.

The share of restructured loans in total loans is also small and amounts to 2.2%. Almost entire restructured loan portfolio (around 95%) is consisted of legal entities, whereby the share of these loans in total corporate loans is not high and amounts to 4.2%.

The share of prolonged in total loans is also high and amounts to 3.7% which is a decrease compared to the previous year (when the share was 5.6%). Total prolonged loans decreased by Denar 5,857 million, or 30.9%. Legal entities prevail in the loan portfolio of prolonged loans (with a share of around 93%), with their share of 7.1% in total corporate loans.

Chart 20 Loans with approved second grace period due to COVID-19 on 31.12.2020, by sector

in millions of denars in %



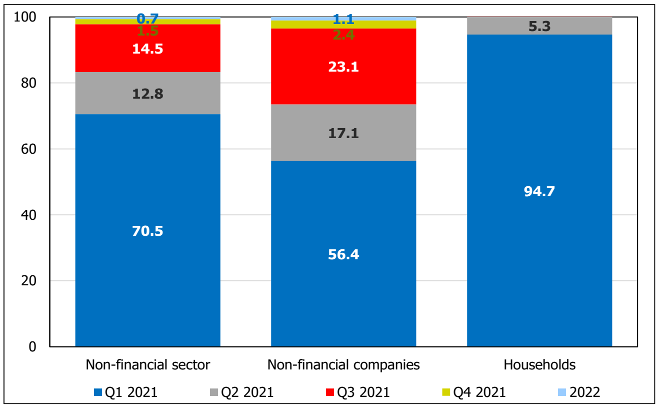
Source: National Bank's Credit Registry, based on data submitted by banks.

As previously pointed out, the repayment of most of the loans with eased credit conditions have already started, since the grace period expired as of 31.12.2020. As of 31.12.2020, the grace period is still not expired only for loans in the amount of Denar 25.362 million, or 7.5% of total regular loans in non-financial sector. Thus, about 60% of these loans refer to non-financial companies.

Data indicate that these loans generally refer to the ones that received second eased contractual terms by banks[22]. Due to the prolonged pandemic, in September 2020, in accord-

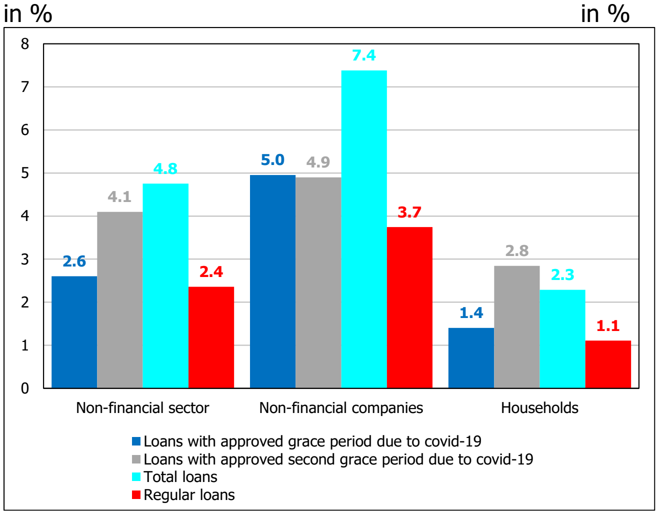
[22] The share of loans with unexpired grace period in total regular loans is close to share of loans with approved second grace period for total non-financial sector (7.2%) and companies (9.9%, as opposed to 9.2%), while in the household loan portfolio these two shares (of 5.3%) completely overlap. This indicates highest share of loans with approved second grace period in the structure of total loans with unexpired grace period as of 31.12.2020.

Chart 21
Structure of loans with unexpired grace period on 31.12.2020, by expiry of the approved grace period, by sector
in %



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

Chart 22
Average risk level of loans with approved grace period due to COVID-19 and total loans, by sector
in % in %



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

ance to the regulation, the banks provided second easing of the contractual terms, aimed at those clients mostly affected by the corona crisis. As a consequence of this, the amount of the second wave of easing of the contractual terms was significantly lower than the first one in April and May 2020[23].

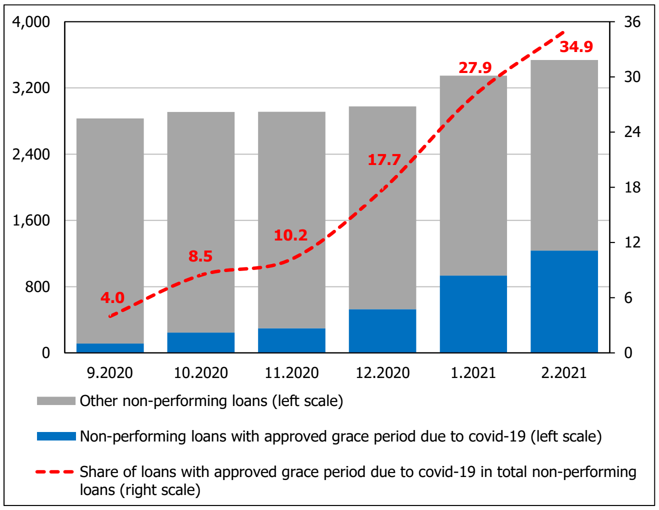
Analyzed by individual sectors, on 31.12.2020, the grace period for 9.9% of corporate and 5.3% of household portfolio has not expired yet. As for households, the grace period for 94.7% of these loans will expire in the first quarter of 2021. This is mainly due to the similar approach used by banks in easing the credit burden of natural persons, generally by approving grace period for up to six months.

On the contrary, for loans to non-financial companies with unexpired grace period as of 31.12.2020, the grace period expiry is prolonged until the end of 2022. Thus, in the first quarter of 2021, the grace period of around 56% of corporate loans will expire in the first quarter of 2021, 17.1% in the second quarter and in the third quarter of 2021 23.1% of loans to non-financial companies with unexpired grace period as of 31.12.2020. The grace period of only small part of these loans will expire in the last quarter of 2021 (2.4%) and in during 2022 (1.1%).

Loans with approved grace period, especially those with approved second grace period, are potential source of new non-performing loans, due to the uncertainty whether after the expiry of the grace period, these clients will be able to repay the loans regularly. Possible losses from these loans will be perceived during 2021. As for the households, a moderate increase of non-performing loans is already registered in the beginning of 2021 (which contributed to the growth of non-performing loans by about 0.2 percentage points). Such movements indicate the need for more careful monitoring of loans with eased terms due to

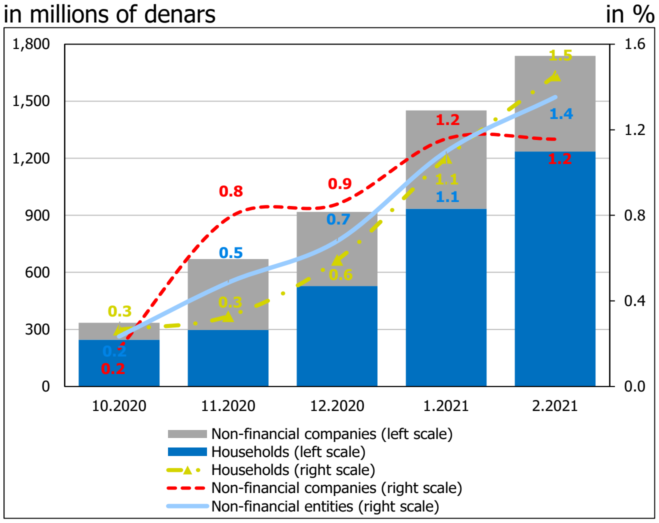
[23] About one half of the total loans portfolio of banks was covered with the first wave of easing of contractual terms, as of May 2020, i.e. 60% of the loans to households and one third of loans to corporate sector.

Chart 23
Non-performing loans to households and share of non-performing loans with approved grace period due to COVID-19 to total non-performing loans of the sector



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

Chart 24
Structure of non-preforming loans with approved grace period due to COVID-19 and rate of non-performing loans, by sector



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

COVID-19 and timely recognition of credit losses they caused.

The loans with approved grace period, especially those with approved second grace period were assessed as riskier by banks and consequently banks provided higher coverage with provisions, compared to total regular loans to non-financial sector and individual sectors. However, so far, as of 31.12.2020, they are with good quality, given that regular status is the basic requirement for the approval of grace period.

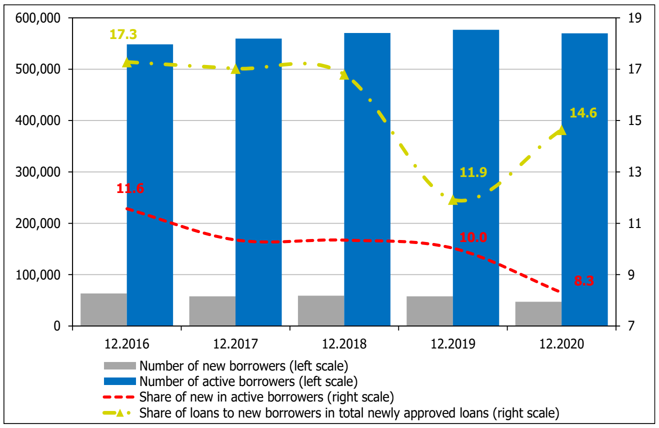
Certain structural features in households can be potential sources for new non-performing loans, besides the good quality and low realization of credit risk from banks' exposure to this sector.

Possible source of deterioration of the quality of households' portfolio is relatively high indebtedness in part of the current borrowers, where most of the newly approved loans are aimed. However, a larger growth in banks' new clients is registered in 2020, so 14.6% of the newly approved loans (11.9% in 2019) are approved to new borrowers[24]. Moreover, the new borrowers are more common in housing loans with 22.1%, while 10.4% of newly approved consumer loans in 2020 are aimed at new borrowers. It is worth mentioning that in conditions of particularly pronounced negative effects and pressures from the COVID-19 crisis, the demand for household loans significantly decreased. This adequately reflected on the volume of newly approved loans which is lower by around 20%, in comparison to

[24] The borrowers that are indebted to the banks at the end of the analyzed period and were not borrowers by the end of the previous year, which doesn't mean they were not borrowers during 2020 or before, are considered as new.

Chart 25
New borrowers of the household sector and share of loans to these clients in total newly approved loans to this sector

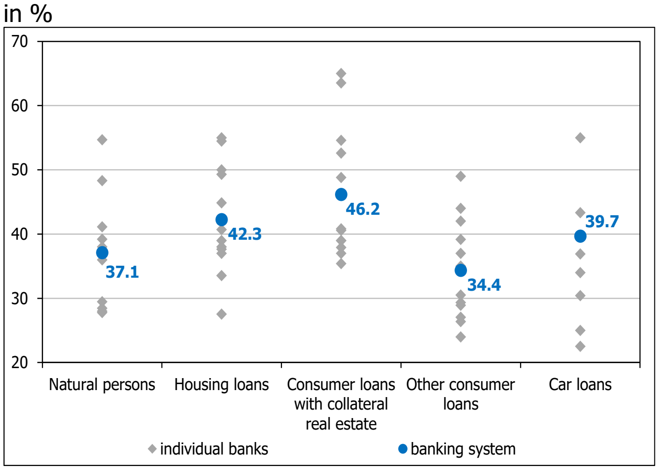
in number of clients in %



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

Chart 26
Average "DTI indicator" in the credit portfolio of individuals and individual credit products, by bank

in %



Source: National Bank's Credit Registry, based on data submitted by banks.
Note: The value of the banking system's indicator is calculated as an average of its values by individual bank.

the newly approved loans in this sector in 2019. Besides the lower volume of new loans, there is still a risk of the negative shock, caused by the current health crisis on the financial position of certain households segments and consequently, deterioration of their ability to repay the current loans. The uncertainty is particularly pronounced for employees from sectors that are mostly affected by the crisis, and will probably cause significant disruption of these clients' creditworthiness.

The maximum ratio between the clients' total monthly debt repayment and their monthly income (DTI indicator) is currently set at a level of 50% to 60% of the banks' internal acts. According to data on the end of 2020, the average DTI indicator on credit exposure of natural entities based on all credit products was relatively low and averaged 37% for all banks, and between 27.8% and 54.7% by individual bank. Analyzing individual credit products, the ratio between monthly liabilities of natural persons and overall monthly income, averaged the highest for consumer loans collateralized with real estate (46.2%) and housing loans (42.3%), and lower for the rest of consumer loans (34.4%). The favorable indicator for the ratio between the clients' total monthly debt repayment and their monthly income does not indicate clients' high indebtedness (although the level of the analyzed DTI indicator is higher for individual clients or groups of clients). This enabled banks to avoid taking excessive credit risk.

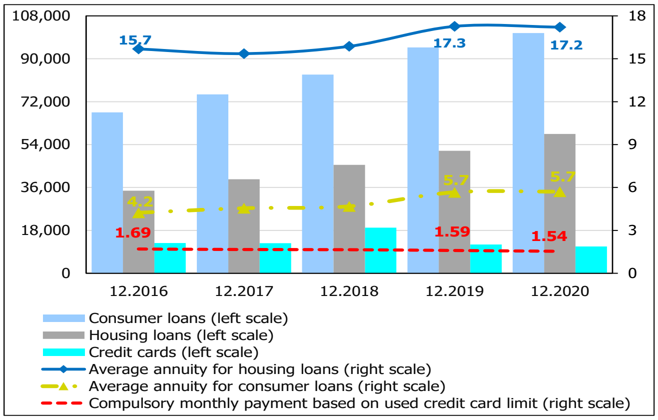
In order to fulfill the criteria for monthly debt repayment in terms of its monthly income, the households, primarily those with "weaker" creditworthiness, borrow on longer terms with possibility for debt repayment on several monthly installments.

Amid slight increase of the residual maturity of newly approved loans[25], **the monthly**

[25] The average maturity of newly approved housing loans is 20.4 years (20.1 year for 2019), and for the newly approved consumer loans 8.2 years (8.0 years in 2019).

Chart 27 Consumer, housing loans and credit cards, balance and average annuity

in millions of denars in thousands of denars

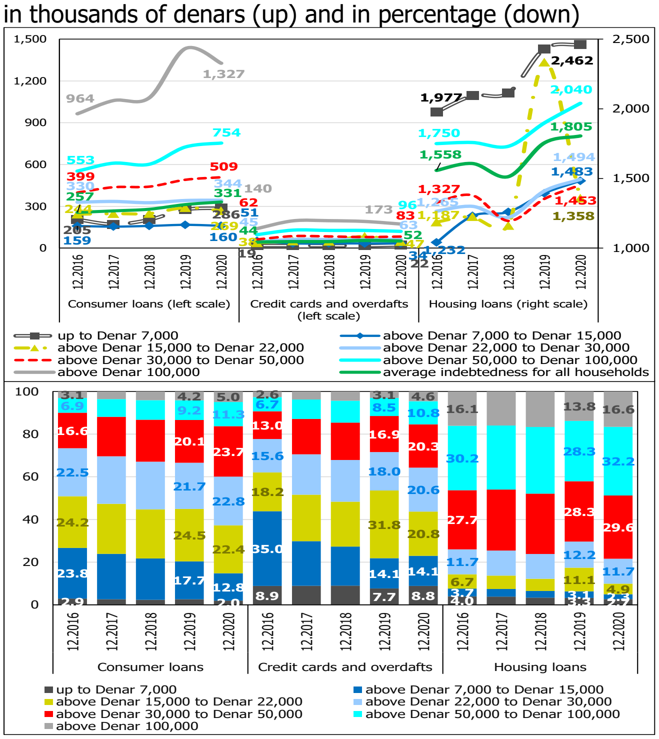


Source: National Bank's Credit Registry, based on data submitted by banks.

Note: For the needs of this analysis, the mandatory credit card monthly repayment is set on 5%, although certain banks might have different limits.

Chart 28 Average indebtedness by household (up) and structure of credit exposure (down) based on consumer, housing loans and credit cards and overdrafts of current accounts, according to the amount of monthly income

in thousands of denars (up) and in percentage (down)



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

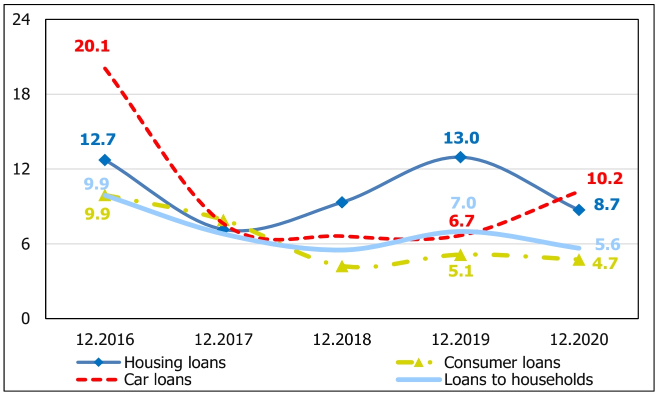
repayment liabilities by borrower, remains almost unchanged.

In 2020, positive changes in terms of the structure of credit exposure to households are registered, according to their monthly income. Namely, 37.2% of total credit exposure to households is concentrated in households with net-salary equal to or lower than the average net-salary in 2020 (46.7% as of 31.12.2019)[26]. According to the amount of monthly income, this category of borrowers has the lowest indebtedness per person. This indicates that risks from high indebtedness or over indebtedness which are usually more pronounced in natural persons with lower monthly income, are so far low. However, a possible shock on monthly incomes due to COVID-19 pandemic, especially in borrowers that realize their income from sectors with most pronounced negative economic effects from this pandemic, will reflect the creditworthiness of part of the households, causing increased realization of credit risk with banks.

The debt to households with net-salary equal to or lower than the average salary is mainly directed to consumers (consumer loans and credit cards and overdrafts of current accounts), while the housing loans are less common. Besides in total credit exposure, significantly decreased concentration of banks' exposure to persons with net-salary equal to or lower than the average salary, is also registered in individual products.

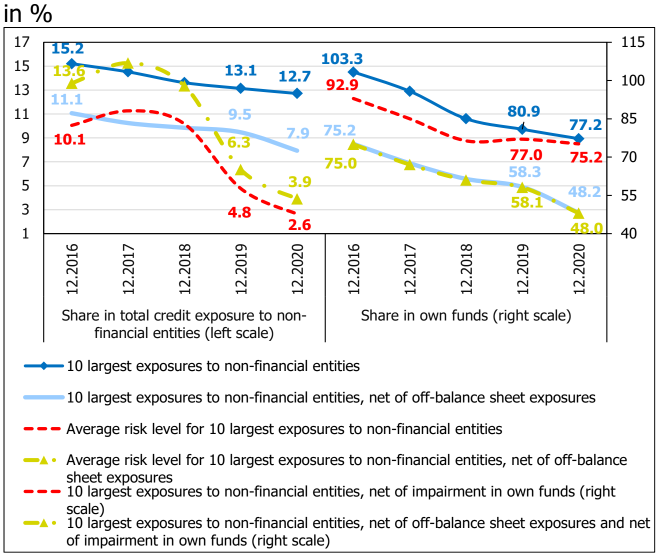
[26] The concentration of total credit exposures to households in persons with net-salary equal to or lower than the average salary declined i.e. registered positive changes throughout 2020.

Chart 29
Loans approved with exceptions in the portfolio of households and by individual credit products
in %



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

Chart 30
Concentration of credit exposure to non-financial companies
in %



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

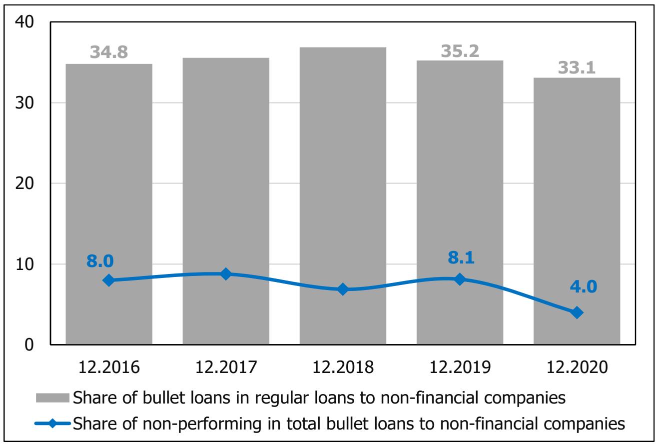
Loans approved with exceptions[27] from credit standards[28] could pose risk to the quality of household loan portfolio. However, currently, the share of loans approved with exceptions is relatively low and decreased in comparison to the previous year, for total loans to households and individual credit products.

The level of concentration is an important structural feature of loans to non-financial companies which may have an impact on the risk realizations related to this segment of banks' credit activity. The level of concentration of loans to companies, analyzed by individual activities, mostly correspond to structural features of domestic economy. About 80% of total loans to non-financial companies account for three sectors (industry, wholesale and retail trade, and construction and real estate activities), whose business performance are particularly important for the quality of the banks' loan portfolio. It is in the loan portfolio consisted of banks' client from these activities, that the shares of non-performing to total loans are the highest, for which the banks have also allocated the highest amount of impairment and thus provided the highest coverage with provisions (more details in the annexes to this report).

The share of the total amount of ten largest exposures of each bank to clients from non-financial sector is 12.7% in total credit exposure of the banking system (13.1% as of 31.12.2019). These loans account for 77.2% of banking system's own funds[29] (from 41.6% to 136.9% by individual bank[30]).

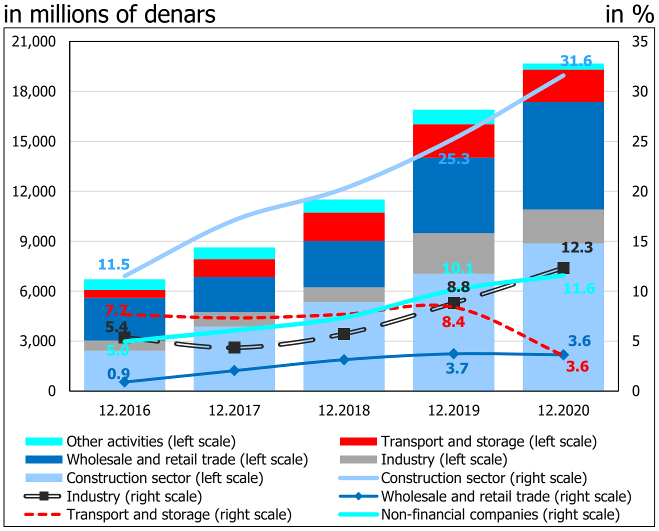
[27] According to the bylaw regulation on the credit risk management policy or other internal regulations for identifying, measuring, control and reduction and monitoring credit risk (rules, procedures etc.), which banks are required to introduce and apply, shall, inter alia, contain definition of allowed exceptions, approval procedure and definition of acceptable level of credit exposure approved with exceptions over a certain period. Also, the information system (reporting system) of the bank shall provide reports on credit exposures approved on the basis of exceptions defined in the bank's internal acts.
[28] The exceptions in approval of loans could be categorized as so called: "Commercial exceptions" which include the amount and type of interest rate, the loan's repayment period, client's age at application and deadline of the loan repayment, document needed etc. with which the banks compete with each other and so called "risky exceptions" including requirements for coverage of the monthly loan rate with monthly income of the borrower, ratio between the loan amount and estimated value of collateral, the approved loan amount etc.
[29] According to the regulation, the total amount of large exposures must not exceed eight times the amount of bank's own funds.
[30] The Development Bank of the Republic of North Macedonia AD Skopje is not included in determining the lowest and the highest share of 10 largest exposures in own funds by individual banks due to small direct credit exposure of this bank to non-financial sector.

Chart 31
Bullet loans to non-financial companies
in %



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

Chart 32
Loans to non-financial companies for project funding and their share in total loans for selected activities
in millions of denars in %



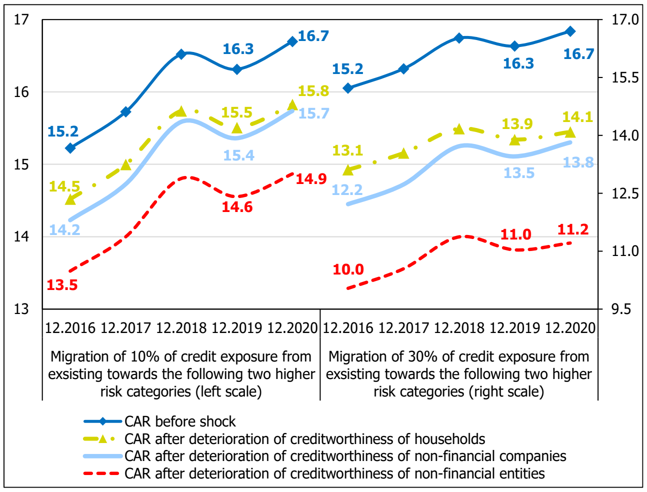
Source: National Bank's Credit Registry, based on data submitted by banks.

Therefore, on average, the banks have provisioned these exposures with 2.6% (4.8% as of 31.12.2019). The lower provision is a result of the changes in the structure of ten largest exposures in two banks. If ten largest exposures decrease for off-balance sheet exposure, then these exposures account for around 48.2% of own funds, for which the banks provided coverage with provisions of 3.9% (6.3% as of 31.12.2019).

Another feature of loans to non-financial companies which should be **carefully monitored, is the amount and quality of bullet loans.** The share of this loans in total loans to non-financial companies is relatively high (33.1%), yet lower compared to the end of 2019 (when it was 35.2%). The level of risk materialization from bullet loans improved compared to the previous year (share of non-performing loans in total loans reduced, from 8.1% to 4.0% as of 31.12.2020), due to more pronounced decrease in non-performing loans (by 54.1% or by Denar 2.609 million), mainly due to write-off, as well as due to collection or takeover of the debt. This is mostly pronounced with clients from construction, where the rate of non-performing loans decreased to 2.8% (11.1% as of 31.12.2019), compared to the amount of this indicator for total loans in construction (4.9%).

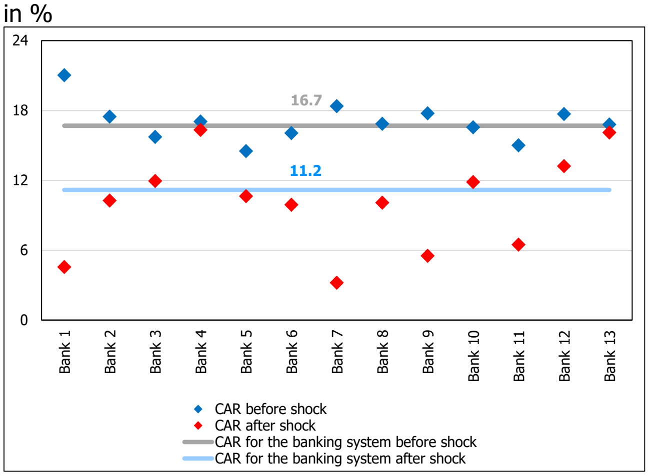
A possible risk for the quality of non-financial companies' credit portfolio are **loans approved for project funding**, whose quality is mostly conditioned by (non)realization of the projected cash flows from the projects funded, with the planned volume and/or dynamics. Loans approved for project funding account for 11.6% (10.1% as of 31.12.2019) in total credit portfolio of non-financial companies, whereby 45% of these loans are approved to clients from construction sector. Loans approved for project funding are more common in clients from construction sector and "industry". The quality of loans approved for project funding is good amid rate of 2.3% of non-performing loans at the end of 2020. Loans approved for project funding to

Chart 33
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 34
Capital adequacy ratio before and after hypothetical shock for non-repayment of loans with approved second grace period, by bank
in %



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

clients from "industry" are of lower quality (with a rate of non-performing loans of 4.2%).

Significant structural feature in both segments of non-financial sector which can be potential source of indirect credit risk is the high share of loans with currency component and loans variable and adjustable interest rate. The analysis of these aspects is provided in the sections discussing currency risk and interest rate risk in the banking book.

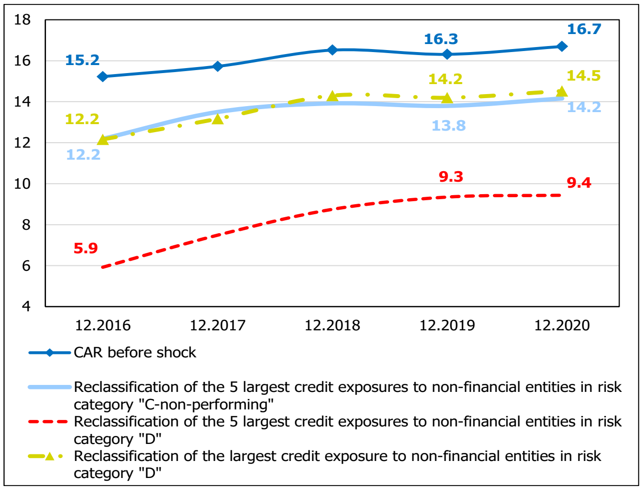
1.3. Stress-testing of the resilience of the banking system to increased credit risk

The results of stress-testing show that the banking system is more resilient to the simulated shocks compared to the previous year. The capital adequacy ratio of the banking system does not go below 8% in individual hypothetical simulations. In case of the most extreme, but the least probable simulation for 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 to 11.2% (by 5.5 percentage points compared to the initial level of capital adequacy ratio, which is almost identical result compared to previous year, when the decrease relative to the initial level was 5.2 percentage points). Analyzed by activity, the assumed deterioration of the quality of credit exposure in these activities with the highest total credit exposure has the greatest effect on the capital adequacy ratio. According to individual households' credit products, the biggest negative impact on the capital adequacy ratio has the hypothetical deterioration of the quality of consumer loans, as the most common credit product.

The results of the stress test simulations for the concentration in the loan portfolio towards the non-financial sector show that the banks are less sensitive to the realization of the concentration risk. The improvement in the results arise from

Chart 35 Effects on the capital adequacy ratio from the reclassification of the largest credit exposures to non-financial entities (including the connected parties) in a higher risk category

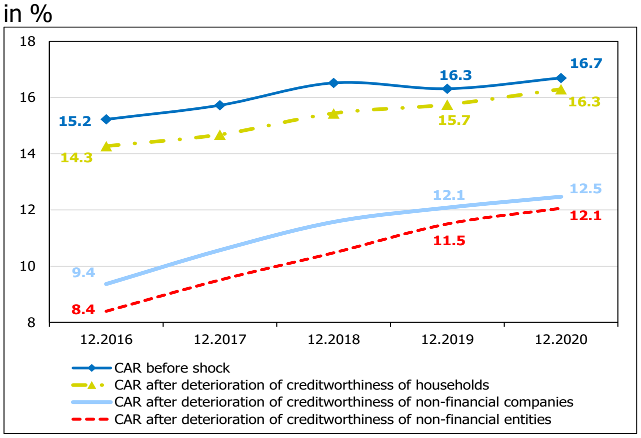
in %



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

Chart 36 Capital adequacy ratio before and after hypothetically combined shocks of various credit exposure segment (top) and contribution of individual shocks to the reduction of the capital adequacy ratio (bottom)

in %

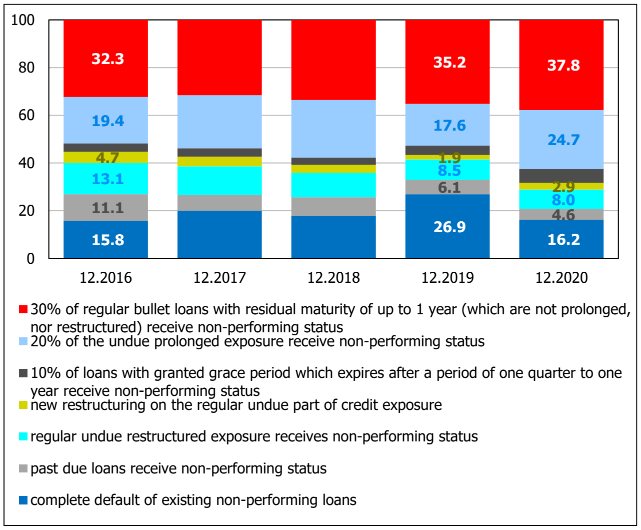


higher capital adequacy before the implementation of the simulations, which caused a decrease in the level of concentration in the loan portfolio of the non-financial sector[31].

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[32]. Also in case of this extreme simulation, the capital adequacy of the banking system did not reduce below the prescribed minimum. Upon this simulation, the capital adequacy ratio reduces by 4.6 percentage points, to 12.1%, which is a better result compared to the end of the previous year (4.8 percentage points and 11.5%, respectively). The highest effect on the capital adequacy ratio is that of the assumed deterioration in the quality of bullet loans, which contributes to almost 37.8% of the total reduction of capital adequacy amid combined shock. In addition, the impact of the hypothetical deterioration of the quality of extended loans (accounting for 24.7% of the total reduction of the capital adequacy ratio of the banking system) is significant, as well as the assumed full non-collection of the non-performing loans to the non-financial sector (16, 2% of the total decrease in capital adequacy in case of combined shock), despite the significantly reduced contribution compared to the previous year. There is a slight increase in the share of loans with approved grace period that expires after at least one quarter (from 3.9% of the total reduction of the capital adequacy ratio on 31 December 2019 to 5.7% on 31 December 2020, respectively), given the

[31] The annual growth of own funds was 7.2%, while the five and ten largest exposures to the non-financial sector increased by 1.8% and 2.3%, respectively. This contributed to reduced share of the five and ten largest exposures to the non-financial sector in own funds to 48.6% and 77.2%, respectively on 31 December 2020 (compared to the shares of 51.2% and 80.9%, respectively on 31 December 2019).

[32] 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.



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

approval of an additional grace period from September 2020 for selected categories of borrowers, which, however, was on a much smaller scale compared to the regulatory relief implemented in April and May 2020.

2. Liquidity risk

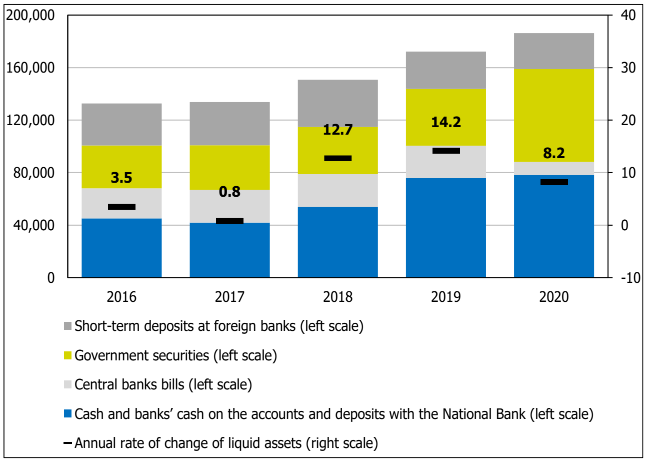
In 2020, Macedonian banks retained the stable and solid liquidity position, which is one of the main pillars of the stability of the banking system, especially important in crisis conditions, such as the current health and economic crisis caused by the coronavirus. In conditions of solid growth of the deposit potential, the total liquid assets increased in 2020, but at slower pace. The main driver of the annual growth of liquid assets were the increased placements of banks in domestic long-term government securities (placements in denar government bonds and Macedonian Eurobonds) and higher deposit facilities with the National Bank. The indicators through which liquidity is monitored and assessed remained satisfactory, exceeding the levels that correspond to the ten-year average. Analyzed by currency structure, foreign currency liquid assets almost completely determined the annual growth of total liquid assets, which due to slower growth of denar liquid assets, resulted in improved foreign currency liquidity indicators and at the same time, moderately deteriorated denar liquidity indicators. The gap widening between assets and liabilities by their residual contractual maturity in most maturity segments is evident. However, according to the banks' expectations, the cumulative gap between assets and liabilities in all maturity segments is positive, which points to the conclusion that banks expect to maintain deposit stability as the main source of financing their activities.

The vitality of the liquidity position is also proven by the results of the stress-tests of the resilience of the banking system to the individual presumed extreme liquidity outflows, which are better compared to the previous year.

The measures taken by the National Bank in the first half of 2020, during the outbreak of the pandemic in our country, contributed to creating liquidity in the system and supporting lending to the domestic economy by banks. The monetary measures were followed by the adopted measures for higher regulatory flexibility, which enabled the banks to temporarily delay the collection of loans, which eased the financial burden of a significant part of the borrowers in the banking sector, in order to easily overcome the challenges of the health and economic crisis.

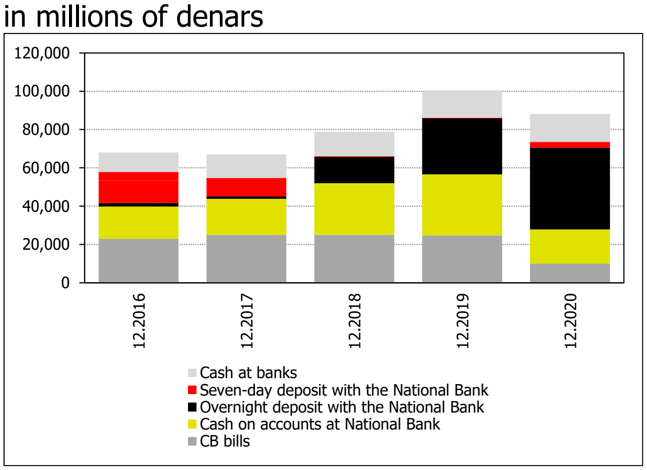
The operating framework of the monetary policy remains on a flexible basis, thus ensuring stable liquidity and balance in the foreign exchange market.

Chart 37
Liquid assets, structure and change
in millions of denars and in %



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

Chart 38
Assets and claims of banks from the National Bank, by instrument
in millions of denars



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

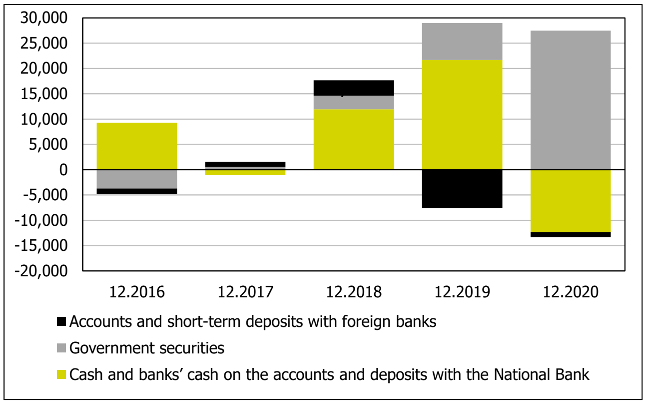
2.1 Dynamics and composition of liquid assets

At the end of 2020, the total liquid assets[33] of the banking system amounted to Denar 186,240 million and registered annual growth of 8.2% (or Denar 14,094 million), which is a slight slowdown, compared to the annual growth achieved in 2019. The bearer of the annual growth of liquid assets were primarily the increased placements in government securities, and the higher deposits with the National Bank, as well as the higher assets on the foreign currency account with the NBRSM had a certain contribution. On the other hand, placements in treasury bills, denar account funds with the National Bank, short-term deposits with foreign banks and denar and foreign currency cash (treasury) registered an annual decline.

In the structure of banks' liquid assets, as of 31 December 2020, the the banks' funds and assets of banks with the National Bank (including CB bills) remain dominant (a share of 47.4%) despite the significant annual decrease of Denar 12,348 million, or by 12.3%. Such decrease is result of the reduced CB bills placements (by Denar 14,755 million), as well as reduced balance on the denar account with the National Bank (a decrease of Denar 13,915 million, annually). Thereby, there is a significant increase of the banks' placements in overnight deposit facilities[34] with the Na-

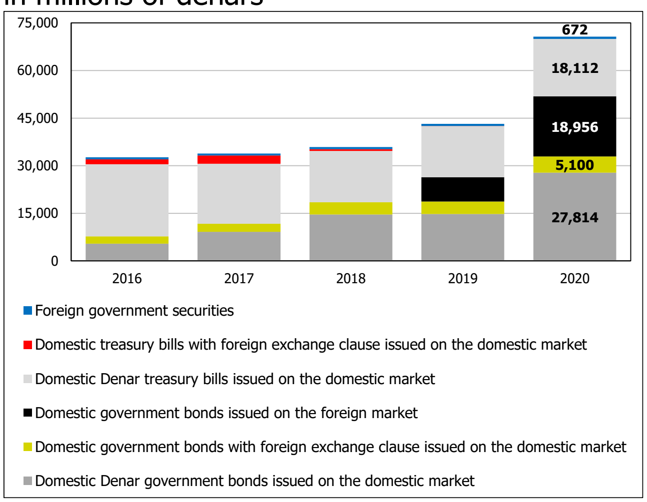
[33] The liquid assets encompass: 1) assets and claims on the National Bank, which include cash, assets on the accounts of banks with the National Bank, deposit facility with the National Bank and CB bills; 2) short-term deposits with foreign banks, including the assets of the banks on their correspondent 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.
[34] Pursuant to the regulations, the banks could place deposits with the National Bank every working day with a maturity of one business day (overnight) and once a week with a maturity of seven days. These deposits are placed without the possibility of early withdrawal. In 2020, the interest rates on these deposits remained unchanged (from the latest change in March 2018) and equaled 0.15% on overnight deposits and 0.30% on seven-day deposits.

Chart 39
Annual growth of liquid assets
in millions of denars



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

Chart 40
Banks' investments in domestic government securities
in millions of denars



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

tional Bank, given simultaneous minimal increase in the 7-day deposits, in the total amount of Denar 16,129 million.

During 2020, the National Bank made changes in the amount of the offered amount of CB bills that banks can deposit with the Central Bank (up to the level of Denar 10,000 million), at a fixed interest rate (which compared to the end of 2019 was reduced by a total of 0.75 percentage points[35]). With significant support the measures adopted by the National Bank provided, by ensuring monetary stimulus[36] and regulatory flexibility, the banks provided temporary deferral of loan repayment, providing also additional credit support to the economy, ensuring solid credit growth, amid strong and unpredictable health and economic crisis.

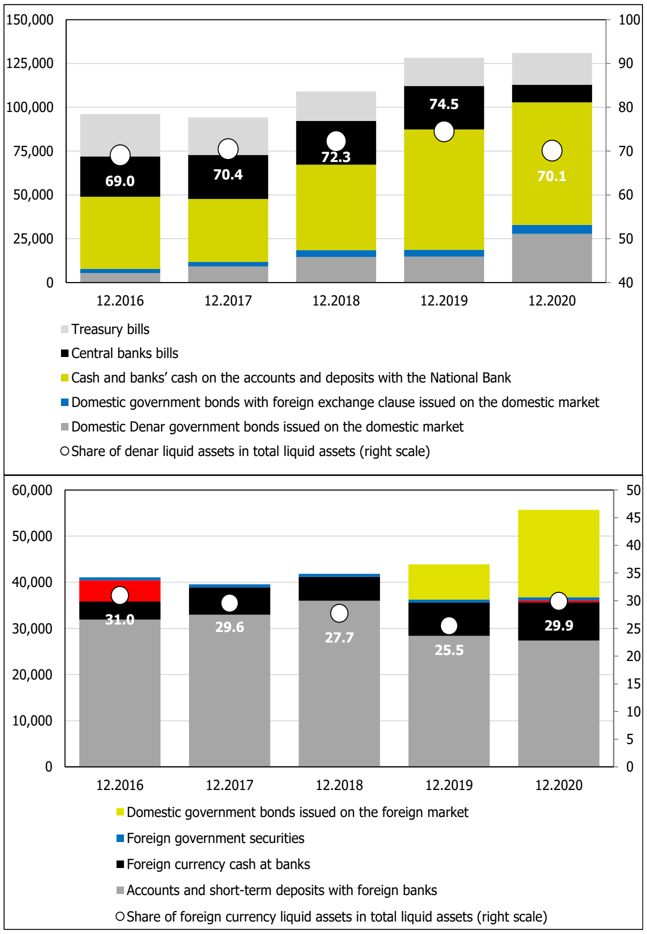
In the operational management of their liquidity, investments in government securities are an important alternative for banks, which during 2020 grew significantly and conditioned the annual growth of liquid assets. Namely, in 2020, investments in government securities increased by Denar 27,458 billion, or 63.6%. The largest share in this growth had the increased investments of banks in denar government bonds[37] (by Denar 13,023 million) and in Macedonian Eurobonds (by Denar 11,313 million). Thus, at the end of 2020, Macedonian government bonds further

[35] In 2020, the National Bank reduced the key interest rate in three occasions, in January, March and May, by 0.25 percentage points each, bringing this rate down to 1.5%. The changes in the interest rate on CB bills were followed by two changes in the amount of the offered CB bills, in April and May 2020, from Denar 8,000 and 7,000 million, to the level of Denar 10,000 million. In March 2021, in conditions of stable movements in the foreign exchange market and moderate inflation dynamics, and still present uncertainty about the health crisis and its impact on the recovery path of the economy, a decision was made to weaken monetary policy by reducing the key interest rate by 0.25 percentage points, at the historically lowest level of 1.25%.
[36] In addition to reducing the key interest rate and the supply of CB bills, the National Bank, in the second quarter of 2020, made changes in the reserve requirement thus reducing the basis for calculating the reserve requirement for the amount of bank loans granted by banks to companies in the sectors affected by the health crisis and expanded the scope of securities (including domestic government securities with the longest maturities, 15 and 30 years, and government-issued Eurobonds in international financial markets), to allow banks greater access to liquidity.
[37] During 2020, there were changes in the liquid assets, due to the approval of short-term credit for the Government approved by six banks in January, in the total amount of Denar 8,173 million (intended for repayment / refinancing of part of the long-term credit of the Government to international financial institution). This loan was repaid by the end of the year, after which the banks increased their investments in securities issued by the state.

strengthened their largest share in the structure of total government securities owned by banks (from 61% in 2019 to 73.4% in 2020), within which the most common are denar government bonds. **Placements in foreign government bonds issued by foreign countries remained almost the same and a modest share of only 1% in the total portfolio of government securities of banks.**

The banks increased their share also in the ownership structure of the total continuous government securities by 7.1 percentage points (from 32.6% as of 31 December 2019 to 39.7%[38] as of 31 December 2020).

Chart 41
Structure of denar (top) and foreign currency (bottom) liquid assets
in millions of denars and in %

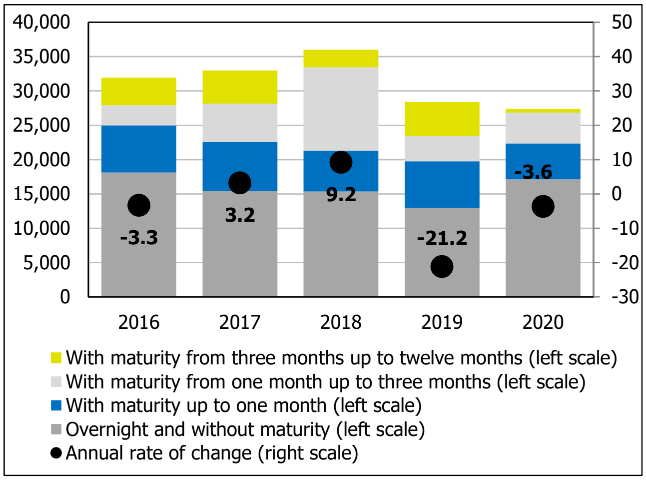


Source: National Bank, based on data submitted by banks.

At the end of 2020, the short-term assets placed in foreign banks further have the highest share in the foreign currency component in the liquid assets[39] of the banks (49.1%) despite the registered decrease on an annual basis. Their share in the foreign exchange liquid assets has been significantly decreasing (from the level of 64.7% in 2019) due to larger share of the bonds in the foreign currency assets. Short-term assets placed in foreign banks, compared to the previous year, are lower by Denar 1,015 million, or 3.6%, which is a smaller decline compared to the previous year[40]. However, with a share of 14.7% (16.5% on 31 December 2019), short-term assets placed in foreign banks represent a significant component of total liquid assets for the needs of liquidity and currency risk management, with most of them still being assets on the correspondent accounts of domestic banks abroad.

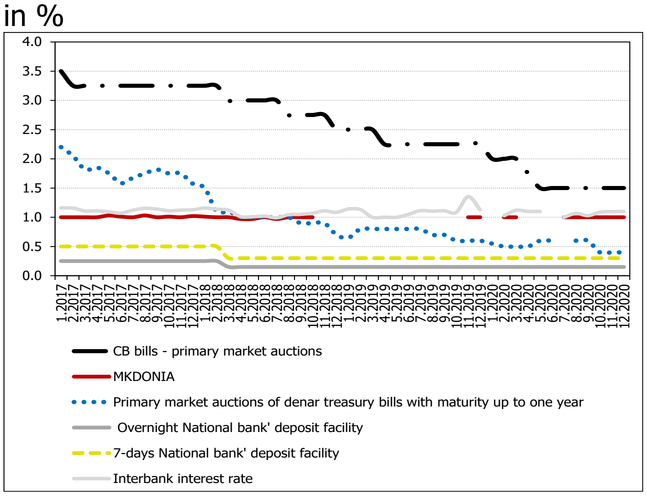
[38] Pension funds have the highest share in the ownership structure of continuous government securities, which on 31 December 2020 is 41.1% (42.1% on 31 December 2019).
[39] Foreign currency liquid assets comprise short-term deposits with foreign banks, including assets on corresponding accounts, investments in foreign government securities and domestic government eurobonds issued on foreign markets, foreign currency cash and foreign exchange account with the National Bank and placements of foreign currency deposits with the National Bank.
[40] For comparison, at the end of 2019, short-term assets invested in foreign banks registered an annual decrease of Denar 7,618 million, or by 21.2%.

Chart 42
Accounts and short-term deposits with foreign banks, structure and growth
in millions of denars and in %



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

Chart 43
Domestic interest rates
in %



Source: National Bank.
Note: From the beginning of November 2018 as of October 2019, as ewll as in January 2020, as well as in the second quarter of 2020, given the smaller number of reference banks that participate in the calculation of SKIBOR and MKDONIA and amid high denar liquidity, there were no transactions carried out on the interbank market for uncollateralized deposits which are used for calculation of MKDONIA.

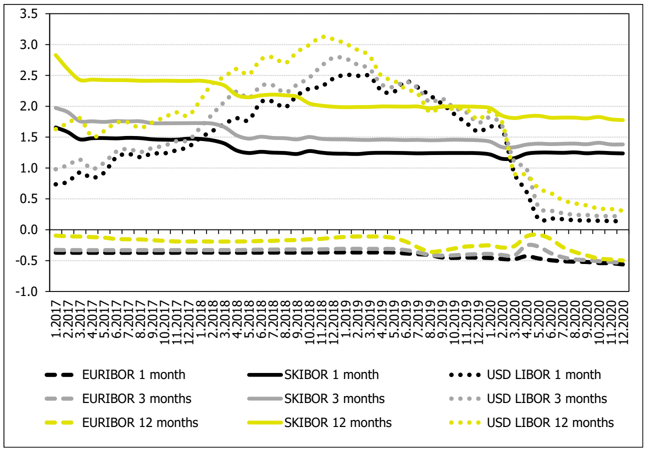
The distribution of liquid assets of banks by financial instruments is directly dependent on the yield they bring, which, in turn, primarily arises from movements in key interest rates. During 2020, despite several changes in the key interest rate of the National Bank from 2.25% to 1.5%, the indicative interest rates for interbank deposit trading (SKIBOR[41]) remained almost the same in the shorter terms, while the quarterly , six-month and twelve-month interest rates, and the interbank interest rate on the deposit market remains stable. The interbank interest rate of all transactions (MBKS[42]) is stable and within the average for the year it equaled 1.1% (which remained unchanged level compared to the last year).

In 2020, monetary policy in developed countries was stimulating, in order to mitigate the negative effects of the pandemic, mainly through unconventional measures to create liquidity and support lending.

Regarding the interest rate policy, in March, the FED lowered the interest rate in two occasions by a total of 150 basis points, reducing it to an interval from 0% to 0.25%, with the Bank of England in the same period, after a longer period of unchanged monetary policy (from August 2018), having the interest rate reduced in two occasions, totally from 0.75% to 0.1%. In the euro area, the interest rate remained the same, at the level of 0%, and the interest rate of the Bank of Japan remained unchanged (at -0.1%).

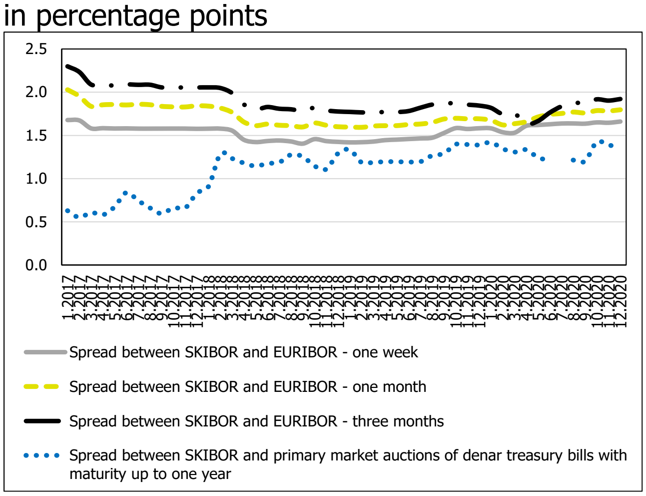
[41] SKIBOR (Skopje Interbank Offered Rate) is a reference interest rate on the denar money market and is an interbank interest rate at which one reference bank is ready to sell denar liquidity to another reference bank. In accordance with the Rules for selection and liabilities of the reference banks that set quotations on the interest rates for calculation of SKIBOR and for the process of calculation of SKIBOR, adopted on 22.8.2018 by the Macedonian Banking Association, the implementation of which began from 1 October 2018, the reference banks are obliged to quote interest rates for: one week, one month, three months, six months and twelve months.
[42] MBKS is the interbank interest rate for trading on the interbank deposit market.

Chart 44 Movement of the basic interbank interest rates SKIBOR, EURIBOR and LIBOR for the US dollar
in %



Source: The National Bank and the website of the European Money Markets Institute for EURIBOR and the website of the Federal Reserve Bank of St. Louis (so-called FRED) for LIBOR for US dollars.

Chart 45 Spread of SKIBOR to EURIBOR, for selected maturities
in percentage points



Source: The National Bank and the website of the European Money Markets Institute for EURIBOR and the website of the Federal Reserve Bank of St. Louis (so-called FRED) for LIBOR for US dollars.

In the euro area[43], the interest rate on deposit facility remained the same from the last change in September 2019 (when it was reduced from -0.4% to -0.5%), and the interest rate on marginal lending facility was unchanged (0.25%)[44]. With this monetary policy setup, the negative interest rates on the interbank markets in the euro area (EURIBOR) deepened at the end of the first half of the year, and a downward shift was observed in the level of international interbank rates in US dollars (LIBOR).

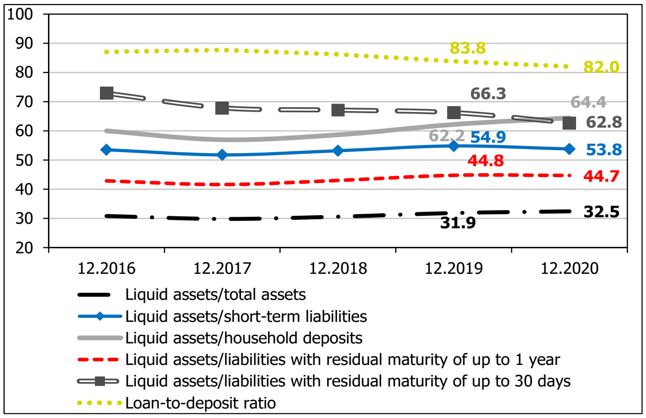
2.2 Liquidity indicators

In 2020, in conditiond of decelerated growth in the liquid assets of the Macedonian banking system, the liquidity indicators[45] showed divergent movements, but remained stable, exceeding the levels, corresponding to the ten-year average. Namely, the relatively stable share of the liquid assets in the total bank assets (which stayed at the level of one third) and coverage of the household short-term liabilities and deposits with liquid assets, which remained stable (of over 50% and 60%[46], respectively) is an indicator for adequate liquidity risk management. The loans-to-deposits ratios at the level of the banking system is stable and is below 100%, which additionally points to acceptable frames of liquidity risk to which banks are exposed and their stable liquidity management.

From the aspect of the currency features of the liquid assets and liabilities, during 2020, there is an improvement mainly in the foreign exchange liquidity indicators, given that the liquid assets in foreign currency

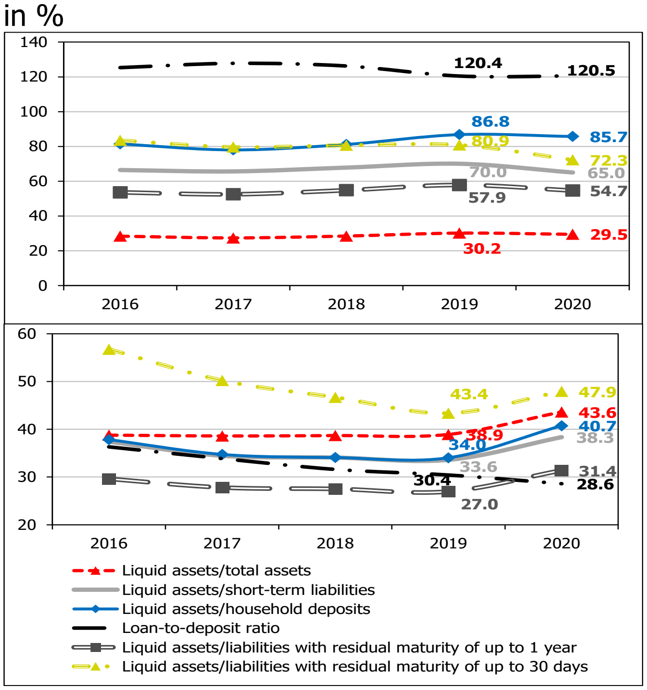
[43] At a meeting in mid-December 2020, the ECB announced that key interest rates would remain at or below current levels until inflation prospects approached 2%.
[44] At the time of writing, the ECB has not made any changes to interest rates.
[45] The calculation of liquidity ratios of the banking system does not include resident interbank assets and liabilities.
[46] Analyzed by bank, as of 31 December2020, the share of liquid in total assets ranges between 21.5% and 50.9%, with a median of 26.6% (31 December 2019: between 18.6% and 47.7%). The coverage of short-term liabilities with liquid assets ranges between 41.6% and 67.9%, with a median of 51.9% (31 December 2019): between 41.2% and 90.4%), the coverage of household deposits with liquid assets between 35.8% and 91.5% with a median of 60.2% (December 2018: between 40% and 104.4%). The Development Bank of North Macedonia AD Skopje is excluded from this analysis.

Chart 46 Indicators of liquidity of the banking system
in %



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

Chart 47
Banking system liquidity indicators according to currency structure, Denars (top) and FX (bottom)
in %



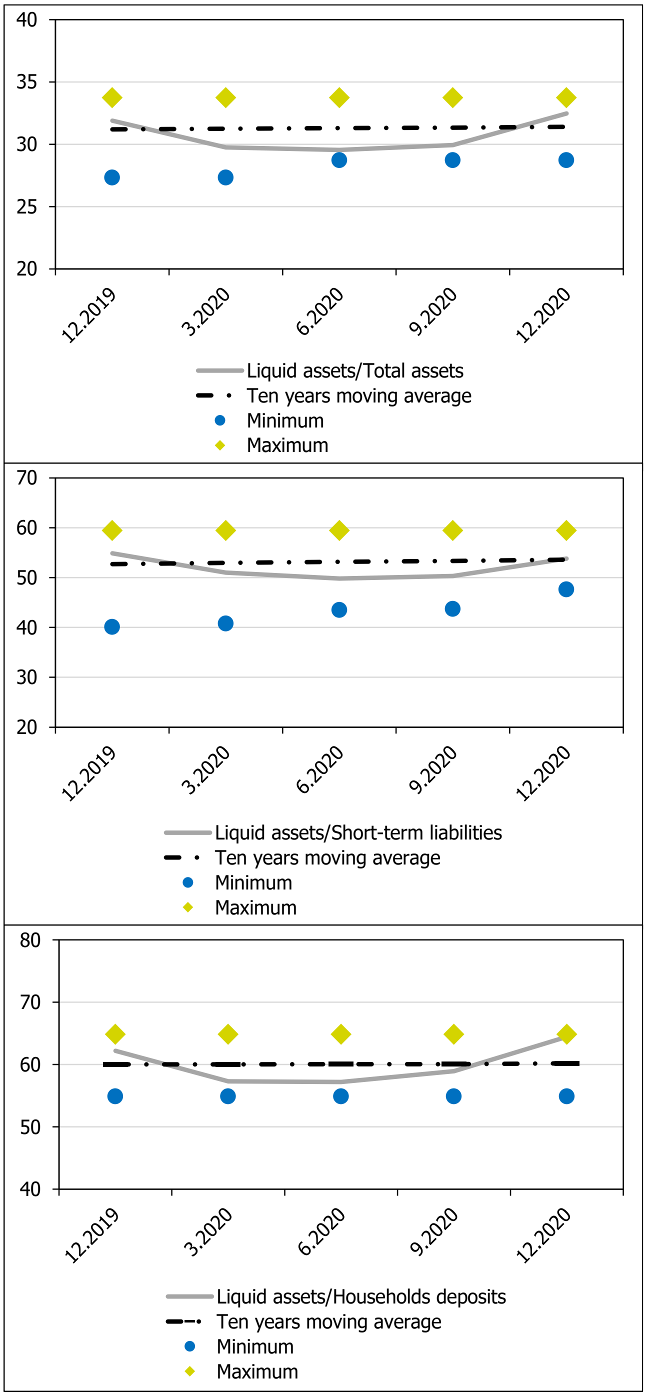
Source: National Bank, based on data submitted by banks.

were the main carrier of the annual growth of liquid assets. The increase almost entirely stems from the annual increase in the Macedonian eurobonds[47]. On the other hand, most of the denar liquidity ratios slightly worsened. However, the largest portion of the denar liquidity indicators remains at higher level compared to the indicators for foreign currency liquidity, which arizes from the higher structural share of liquid assets in denars in the total liquid assets of the banks. The lower level of the foreign exchange liquidity indicators is mitigated by the possibility available to the banks at any time to provide the necessary foreign currency liquid assets, through the interventions of the National Bank on the foreign exchange market. On the other hand, in August 2020, the European Central Bank (ECB) announced that at the request of the National Bank, it approved a repo line worth Euro 400 million, intended to provide foreign currency liquidity, if needed.[48]. Such an instrument is especially important, because it provides quick access to liquidity in euros, and in conditions of high uncertainty and possible major disruptions in international markets due to the shock of COVID-19. The repo line, after one extension, will be available until March 2022. So far, the National Bank has not withdrawn funds from this repo line.

Regulatory liquidity ratios of the banking system, presented as ratios between assets and liabilities that mature in the next 30 days and 180 days, are above the minimum requirement of 1, thereby confirming the sufficient amount of liquidity available to the Macedonian banking system, which allows banks to carry out their liabilities. As of 31 December, these rates equal 1.8 and 1.4 respectively (the same as at the end of 2019).

[47]In May 2020, the Ministry of Finance issued the seventh Eurobond in the amount of Euro 700 million and at an interest rate of 3.675%. 16 In March 2021, the Ministry of Finance issued the eight Eurobond in the amount of Euro 700 million, with a maturity of 7 years and issued at historical lowest interest rate of 1.625%.
[48] For more details please visit http://nbrm.mk/ns-newsarticle-soopstenie-18082020.nspx and https://nbrm.mk/ns-newsarticle-soopstenie-04022021.nspx .

Chart 48
Liquidity assets/total assets (top), liquid assets/short-term liabilities (middle) and liquid assets/household deposits (bottom)
in %



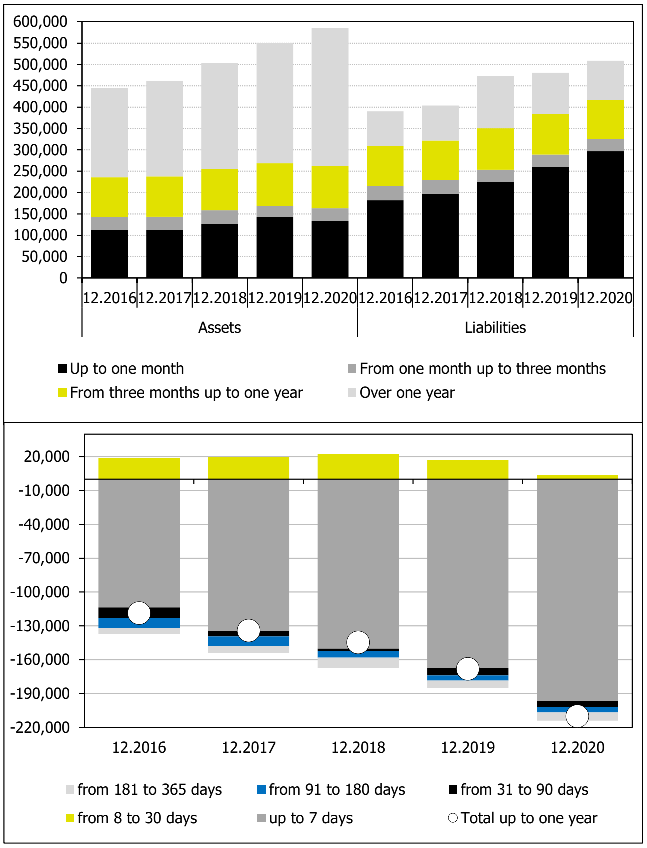
Source: National Bank, based on data submitted by banks.

2.3 Maturity structure of assets and liabilities

In 2020, the changes in the assets and liabilities structure according to their residual maturity, contributed to further deepening of the gap between assets and liabilities with a contractual residual maturity of up to one year. The largest contribution to the widening of the total gap (up to one year) was the gap between assets and liabilities with a contractual remaining maturity of up to one month, which, in turn, results from reduced funds and claims on the National Bank and growth of liabilities. As usually, only in the maturity segment of 8 days to one month there is a positive gap (although smaller on annual basis), mainly due to the fact that banks' investments in CB bills belong to this maturity segment. However, the largest mismatch between assets and liabilities according to their contractual residual maturity is still registered in the maturity bucket up to seven days (which additionally widened at the end of the year), which usually results from the inclusion in this maturity bucket of banks' liabilities on demand and without determined maturity (including transaction accounts).

According to the banks' expectations, the aggregate gap between assets and liabilities in all maturity segments is positive, which indicates the conclusion that banks expect to maintain deposit stability as the main source of financing their activities (more details in the annexes of this Report). Namely, at the end of the fourth quarter of 2020, the banks expect high and greater stability of deposits, i.e. that 84.2% of time deposits with residual maturity of up to three months (82.1% on 31 December 2019) will remain in banks, where the percentage of expected stability for total deposits and demand deposits is almost identical (84.8% and 84.9, respectively). The further maintenance of the high propensity to save in

Chart 49
Composition of assets and liabilities of banks according to their contractual residual maturity (top) and the gap between assets and liabilities, with contractual residual maturity of up to one year (bottom)
in % and in millions of denars



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

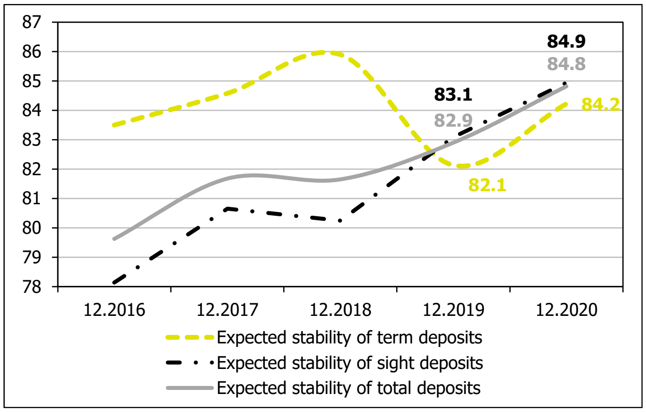
banks is especially significant and largely depends on the expectations for stabilization of the situation in the domestic economy in conditions of prolonged duration of the corona virus pandemic.

2.3. Stress-simulations for liquidity shocks

As of 31 December 2020, the results of the conducted stress simulations for liquidity shocks show that the banking system is characterized by a stable liquidity position, i.e. it has sufficient liquid assets to adequately respond to individual simulated cash outflows. The resiliance of the Macedonian banking system to liquidity shocks is proven by the results of all individual liquidation shock simulations, with full utilization (102.6% on 31 December 2020) of the liquid assets would occur only in case of a significantly extreme simulation of liquidity shock, which includes combined outflows[49] 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[50] owned by banks, for which it is estimated that banks will quickly and easily collect or turn into cash. In such a case, in combination with the assumed shocks, the liquid assets of the banking system would not be fully used (more precisely, 95.4% of the liquid assets available, according to the expanded definition, would be needed to cover the liquid outflows).

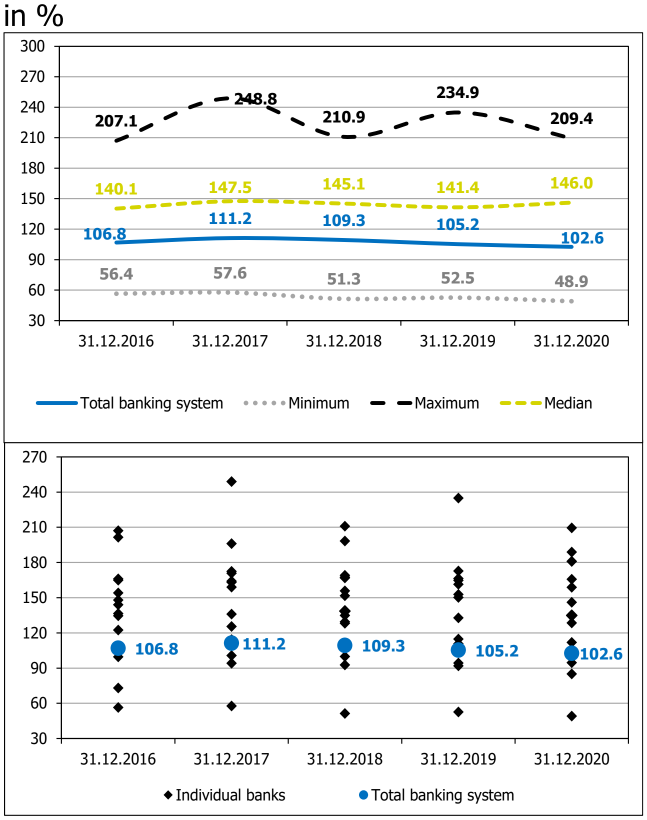
[49] The simulation assumes outflow of: deposits of the twenty largest depositors, 20% of household deposits, liabilities to parent entities (liabilities on subordinated instruments and hybrid capital instruments are excluded from the simulation as, according to the regulations for calculating capital 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.
[50] 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.

Chart 50
Expected stability of deposits with residual maturity of up to three months, by banks
in %



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

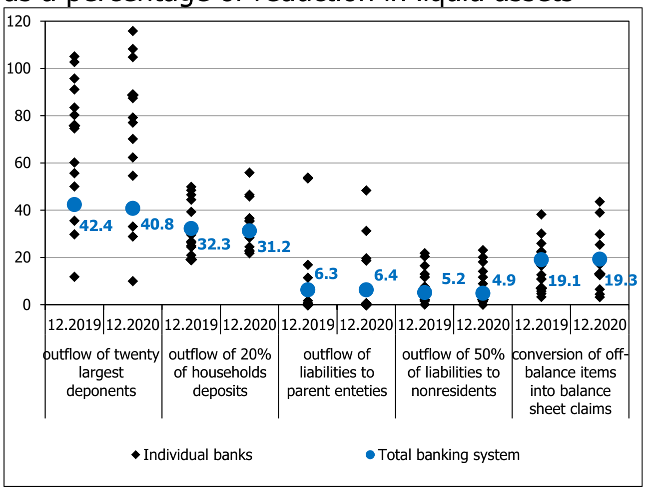
Chart 51
Reduction of liquid assets after the simulation for combined liquidity shocks (after all shocks), total banking system (top) and by bank (bottom)
in %



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

At individual simulations of liqud 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 fall in liquid assets occurs amid deposit outflows of the twenty largest depositors, but the importance of this simulation to individual banks is different, given the differences in the degree of concentration of deposits. On the contrary, simulated materialization of reputation risk and loss of confidence of the population in the banks represented by an outflow of 20% of household deposits shows a significantly greater similarity in the results for individual banks, thereby confirming the importance of deposits to the financing of the banks' activities. Hence, the sustainability of the liquidity position of banks, as well as the potential growth of their activities, are directly dependent on developments and the banks' participation in the deposit market and the maintenance of the confidence of domestic depositors in Macedonian banks. In case of an assumed conversion of certain off-balance sheet liabilities of the

Chart 52
Contribution of shocks to the decline in liquid assets in the simulation of a combined liquidity shock, by bank
as a percentage of reduction in liquid assets



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

banks into on-balance sheet claims[51], the banks would spend about 20% of their liquid assets, which although is less compared to the simulations of outflow of deposits[52], 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.

[51] 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.

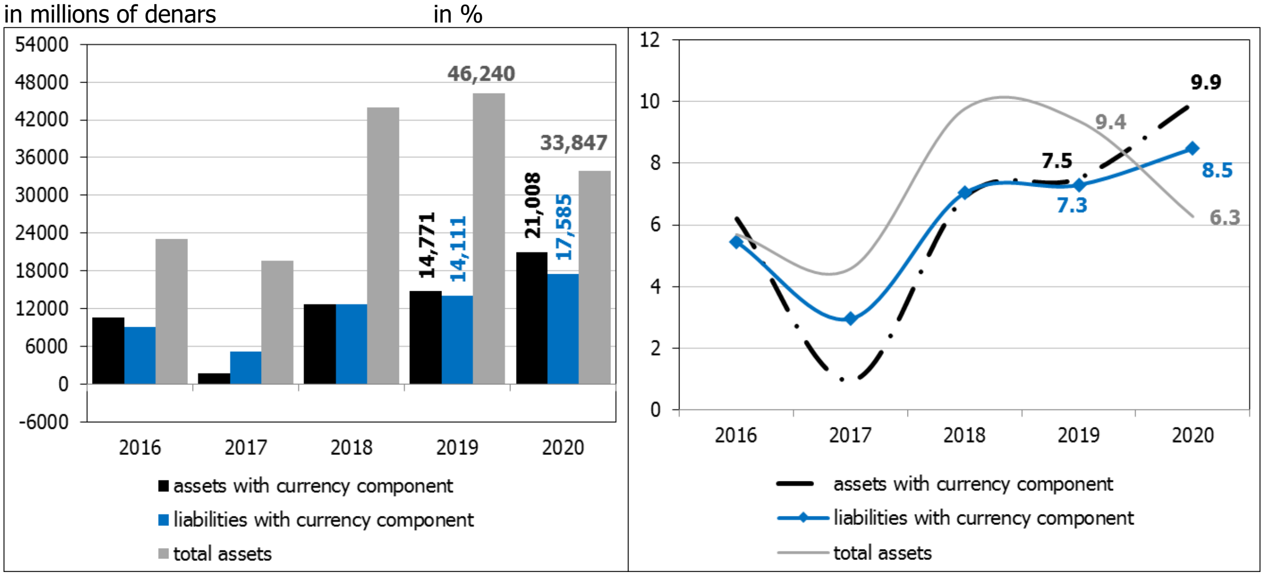
[52] During a simulation of outflow of the deposits of the 20 largest depositors, the liquid assets of the banking system are reduced by 40.8%, while in case of assumed outflow of 20% of the household deposits, liquid assets are reduced by 31.2%.

3. Currency risk

In 2020, the banking system's direct exposure to currency risk increased, mirrored in the increase in the open currency position and own funds ratio, as well as through the growth of the share of the gap between assets and liabilities with currency component in own funds. However, the level of this exposure is still moderate and within the prescribed limits. After a long period of steady decrease, the level of euroization measured through the share of assets and liabilities with currency component in total assets, i.e. liabilities, increased, mostly due to higher placements in Eurobonds.

The indirect exposure to credit risk arising from the presence of loans with currency component in the banks' credit portfolios fails to register significant changes and remains relatively high. However, given the predominant share of the euro in the bank activities with currency component, the probability of banks' direct and indirect exposure to currency risk is minimal, having in mind the implementation of the strategy of maintaining a stable nominal exchange rate of the denar against the euro. As of 31 December 2020, all banks were in line with the prescribed limit of 30% for the aggregate currency position to own funds ratio.

Chart 53
Annual change in total assets, currency component assets and currency component liabilities, in amounts (left) and percentages (right) *



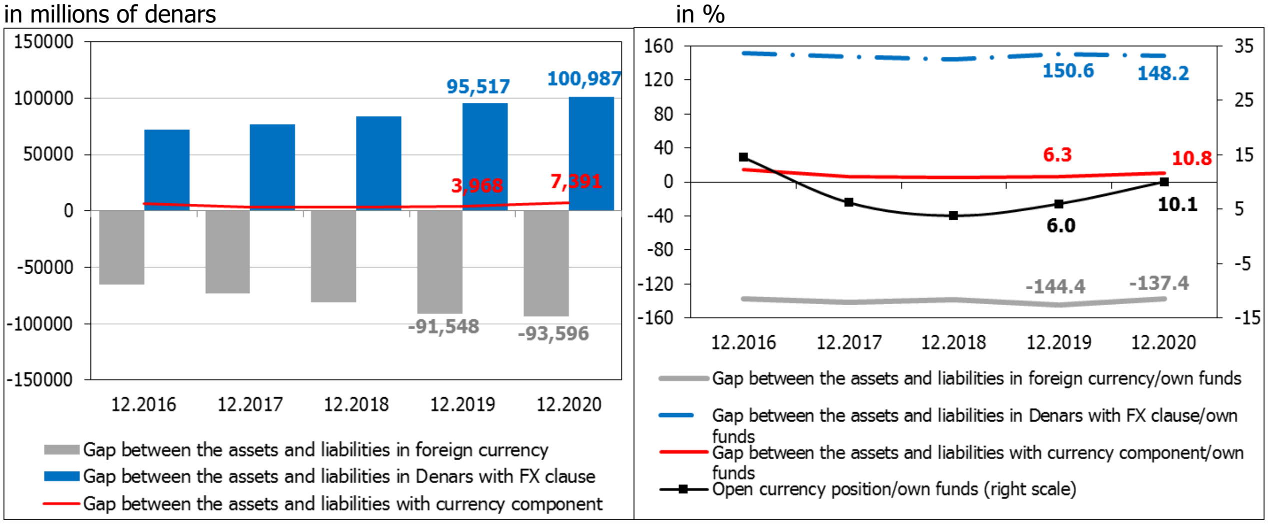
Source: National Bank, the Open Currency Position Report based on data submitted by banks.
* The assets are on a net basis, reduced by the impairment of clames that are classified in risk categories "C", "D" and "D", in accordance with the regulation on currency risk management. DBNM is not included in the analysis, because in accordance with the legislation, the regulations for the open currency position do not apply to DBNM.

On 31 December 2020, the gap between assets and liabilities with currency component was positive and equaled Denar 7,391 million, which is an annual increase by high 86.3%, or Denar 3,423 million. This gap widening arises from the higher assets growth (of 9.9% or Denar 21,007 million[53]) relative to the increase in liabilities with currency component (of

8.5% or Denar 17,585 million)[54]. The high increase in the gap between assets and liabilities with currency component (86.3%) given smaller increase in the own funds (7.4%), conditioned higher ratio of this gap with own funds. Thus, at the end of the year, the ratio of the gap between assets and liabilities with currency component and banks' own funds equaled 10.8%, which is an annual growth of 4.6 percentage points, while the open currency position was 10.1% of its own assets of the banking system and is higher by 4.1 percentage points compared to 31 December 2019[55].

Chart 54

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)



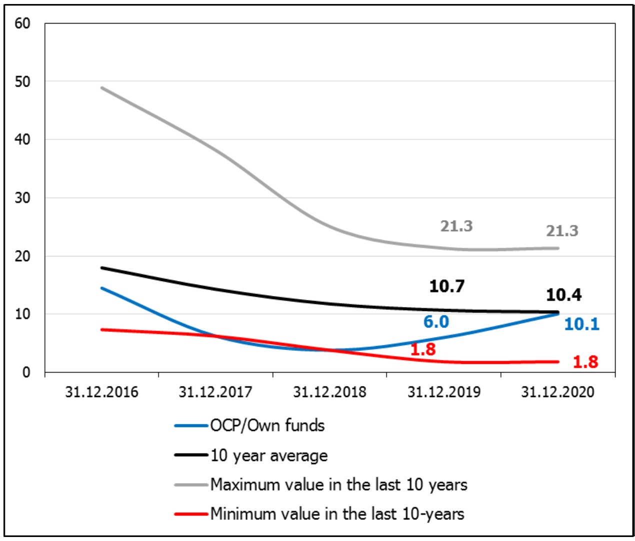
Source: National Bank, based on data submitted by banks.

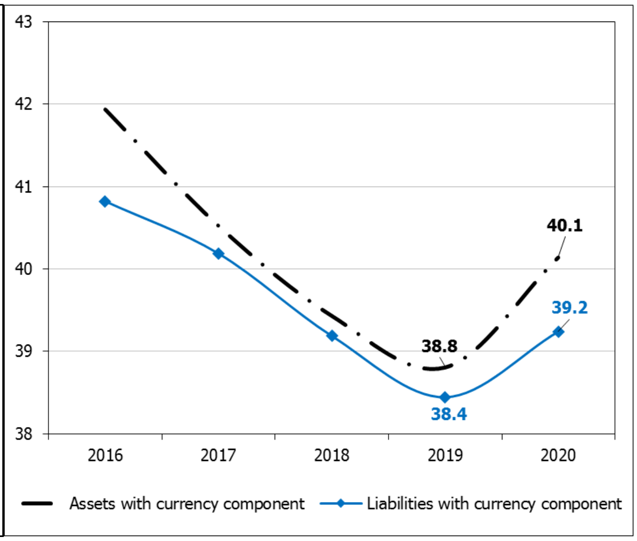
[53] Assets with currency component increased mostly as a result of increased investments in domestic Eurobonds by Denar 11,313 million and loans with currency component (as an item from the OCP Report), which increased by Denar 5,822 million (of which Denar 4,508 million were Denar loans with foreign exchange clause, while Denar 1,314 million are foreign currency loans). However, the growth of government bonds in denars with foreign exchange clause (of Denar 1,181 million) and the growth of accrued interest rates based on loans and placements in denars with currency clause by Denar 747 million had a certain impact on the growth of assets with currency component (of which Denar 503 million are interest from natural persons).

[54] The growth of liabilities with currency component was mostly conditioned by the growth on the current accounts in foreign currency by Denar 15,133 million, with some impact being made also by the growth of liabilities based on foreign currency loans by Denar 2,410 million.

[55] The gap between assets and liabilities with currency component is the difference between balance sheet assets and liabilities with currency component, while the open currency position besides the gap between balance sheet assets and liabilities with currency component, includes the gap between off-balance sheet assets and liabilities with currency component.

Chart 55
Ten year average, of the OCP/own funds indicator (left) and share of the assets and liabilities with currency component * in the total banks' assets (right)
in %





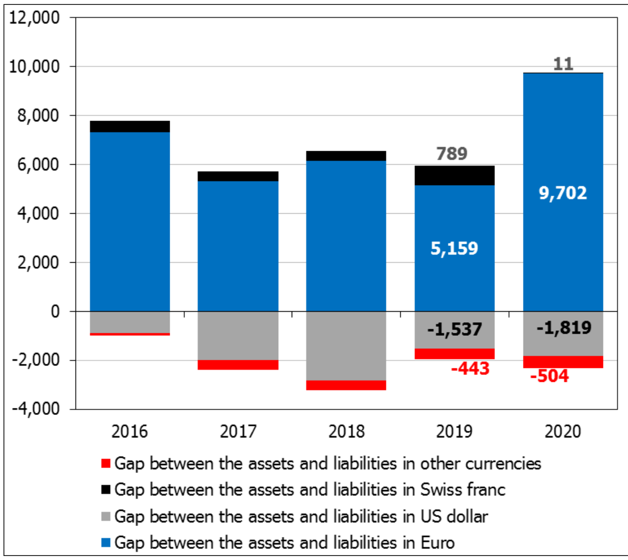
Source: National Bank, based on data submitted by banks.
*Within the assets, claims are shown on a net basis i.e. adjusted for the impairment. The analysis does not include DBNM AD Skopje.

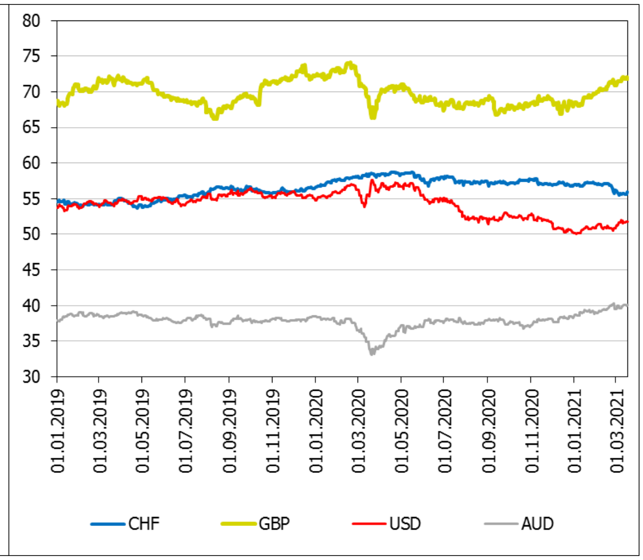
Intensified growth, primarily assets, as well as liabilities with currency component,[56] given decelerated growth of the total assets,[57] conditioned an increase in the share of assets, i.e. liabilities with currency component in the total assets, i.e. banks' liabilities, by 1.3% and 0.8% percentage points, respectively.

---

[56] In 2020, assets with currency component increased by 9.9%, i.e. by Denar 21,008 million (7.5% or Denar 14,771 million, respectively, in 2019), while liabilities with currency component increased by 8.5% or by Denar 17,585 million (7.3% or Denar 14,111 million, respectively, in 2019).
[57]DBNM AD Skopje is excluded from the calculation of the banking system's total assets, whereby on 31 December 2020, the total assets increased by 6.3%, or by Denar 33,847 million (9.4%, or by Denar 46,240 million, respectively in 2019).

Chart 56
Dynamics and structure of the gap between assets and liabilities with currency component, by currency (left) and exchange rate of the denar against US Dollar, Swiss franc and the British pound and Australian dollar (right)





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

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

Currency	31.12.2019		31.12.2020	
	Assets	Liabilities	Assets	Liabilities
Euro	89.1	88.3	90.8	89.5
US dollar	6.7	7.6	5.8	6.8
Swiss franc	1.8	1.5	1.3	1.4
Australian Dollar	0.8	1.0	0.7	0.9
British pound	0.6	0.6	0.5	0.6
Other	1.0	1.0	0.9	0.9
Total	**100.0**	**100.0**	**100.0**	**100.0**

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

Analyzed by currencies, the widening of the positive difference between assets and liabilities with currency component is due to the widening of the gap between the positions in euros and euro clause (growth by Denar 4,544 million). This results from the higher growth of assets in euros and denars with euro clause (by Denar 22,653 million), in relation to the growth of liabilities in euros and denars with euro clause (by Denar 18,109 million)[58]. The changes in the gap in positions in other currencies do not affect significantly the movements in the total gap between assets and liabilities with currency component.[59]

[58]Similar to total assets and liabilities with currency component, the annual growth of assets with eurocomponent arises mostly from the growth of placements in eurobonds, denar bonds with euro clause and loans with euro component, while the annual growth of liabilities with euro component is mostly due to the increase on current accounts in euro and liabilities based on euro loans.
[59] The gap between assets and liabilities in and presented in Swiss francs narrowed by Denar 778 million, as a result of the decrease in assets in this currency. Regarding other analyzed currencies, the negative gap between assets and liabilities widened (which for the

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

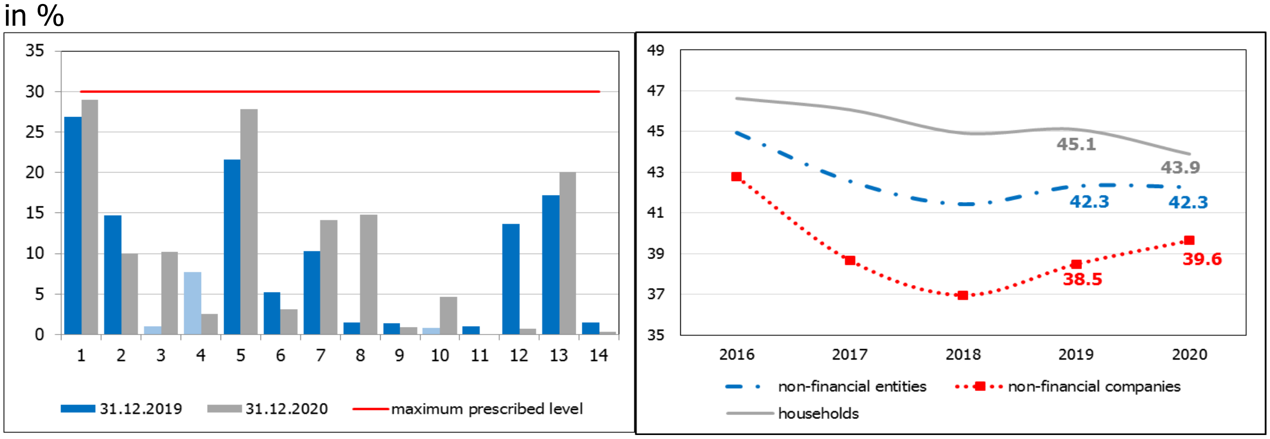
Items	Number of banks										
	Open currency position by currency / own funds										Aggregate currency position / own funds
	Euro		US Dollar		Swiss franc		Australian Dollar		Other		
	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	
under 5%	5	1	11	2	9	3	8	1	10	3	6
from 5% to 10%	2										
from 10% to 20%	3										4
from 20% to 30%	2										3
over 30%											

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

Maintaining a stable nominal exchange rate of the denar against the euro is a key factor in maintaining a low probability of materialization of indirect currency risk, given that more than 99% of loans with currency component are nominated in euros, or in denars with euro clause. On 31 December 2020 the share of loans with currency component in the total loans with non-financial companies increased by 1.2 percentage points, while this share with households reduced by 1.2 percentage points. The share of loans with currency component in the total loans of the non-financial entities remained unchnaged.

As of 30 December 2020, all banks were in line with the prescribed limit of 30% for the aggregate currency position to own funds ratio. All banks register lonf foreign currency position, with the highest aggregate foreign currency position being equal to 29.0% relative to banks' own funds, while the lowest one equaling 0.4% of the banks own funds.

Chart 57
Aggregate currency position to own funds ratio, by bank (left) and loans with FX component to total loans ratio (right)
in %



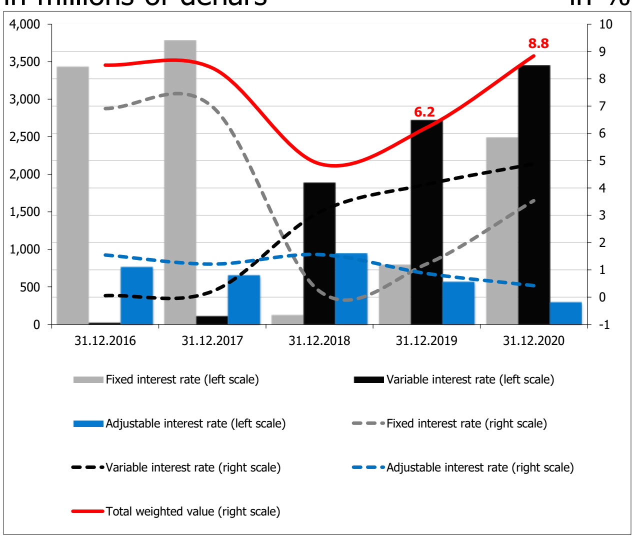
Source: National Bank, based on data submitted by banks.
* The columns with lighter shades refer to the banks that have a short foreign exchange position, but shown in absolute value.
* On 31 December 2020, 13 banks are shown (one bank less) considering the revocation of the operating license of Eurostandard Bank AD Skopje, in August 2020.

positions in and presented in US dollars expanded by Denar 282 million, while regarding other currencies it increased cumulatively by Denar 61 million).

4. Interest rate risk in the banking book

At the end of 2020, the weighted value of the banking book, as a measure of the exposure to interest rate risk, increased, both in absolute terms and in terms of own funds of the banking system. On an aggregate basis, the banking system remains exposed to the risk of reducing interest rates, given the positive total gap between the interest-sensitive assets and liabilities. The significant presence of loans with adjustable and variable interest rates continues to emphasize the indirect exposure to interest rate risk.

Chart 58
The 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 %



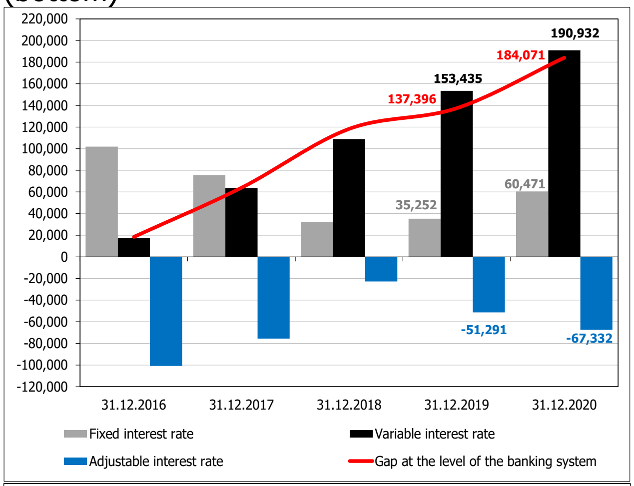
Source: National Bank, based on data submitted by banks.
*The total weighted value of the banking book denotes the potential loss of the economic value of this portfolio, amid assumed unfavorable interest shock of ±2 percentage points.

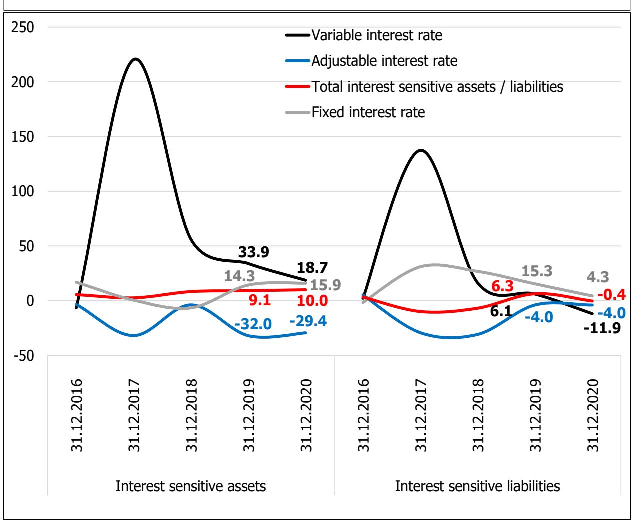
Total weighted value of the banking book registered a high annual growth of 52.5% or Denar 2,147 million, reaching the level of 8.8% of banking system's own funds (6.2% at the end of 2019). Analyzing by bank, this ratio ranges from 0.5% to 16%, which is below the prescribed 20%[60]. By the interest rate type, the weighted values of the portfolios increase with fixed interest rate (by Denar 1,693 million, or by 211.8%) and with variable interest rate (by Denar 726 million or 26.7%). In contrast, the weighted value of the portfolio with adjustable interest rate decreased by Denar 272 million annually, or by 47.6%.

In 2020, the realized level of the ratio between net weighted position and own funds exceeded the calculated average of this indicator for the last 5 years and got closer to the maximum level recorded in the last 5 years[61]. **In 2020, the total gap, i.e. the net non-weighted position between interest-sensitive assets and liabilities, registered an annual growth of 34%, or by Denar 46,675 million. This is mostly due to the widening of the positive gap in the positions with variable interest rates, by Denar 37,497 million or by 24.4%.** The largest contribution to the gap

[60] 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.
[61] Data on the exposure of banks and the banking system to interest rate risk in the banking book have been available since 2010, which enable the establishment of five-year averages starting from 2016.

Chart 59
Interest-sensitive assets and liabilities by type of interest rate, gap (top) and annual growth (bottom)
In millions of denars (top) and in percentage (bottom)



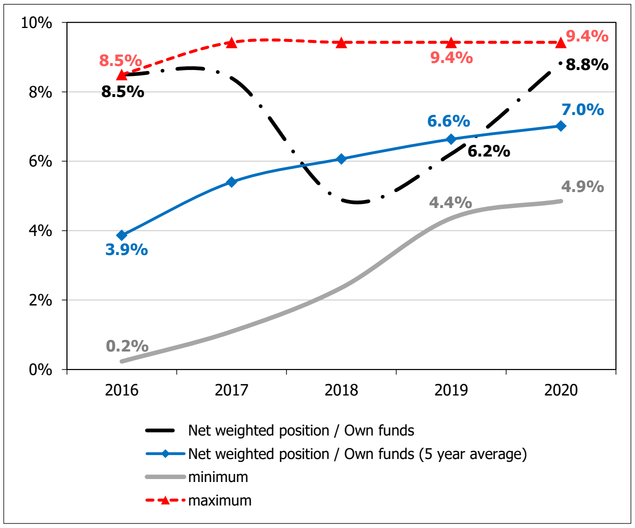


Source: National Bank, based on data submitted by banks.

widening of the positions with variable interest rates was made by the loan placements growth with this type of interest rates (Denar 30,497 million). The positive gap between assets and liabilities with fixed interest rate increased by Denar 25,219 million, or by 71.5% on annual basis, as a result of the higher annual growth of assets with this type of interest rate, mostly due to the growth of time deposits[62] (of Denar 10,518 million) and debt securities (of Denar 12,643 million). The negative gap between assets and liabilities with adjustable interest rate increased annually (by Denar 16,042 million, or by 31.3%), mostly due to the decrease in loan placements with this type of interest rate (by Denar 20,765 million). In conditions of annual fall in the total liabilities based on time deposits, the trend of replacement of the adjustable[63] with fixed interest rate with time deposits continued, although slowly. On the other hand, in 2020 the placements of loans with adjustable interest rate registered a decrease, which was smaller compared to the total growth of placements with adjustable and fixed interest rate.

[62] They are primarily deposit facilities with the National Bank.
[63] The share of the adjustable interest rate with the interest sensitive liabilities reducec from 22.3% at the end of 2019 to 20.1% at the end of 2020.

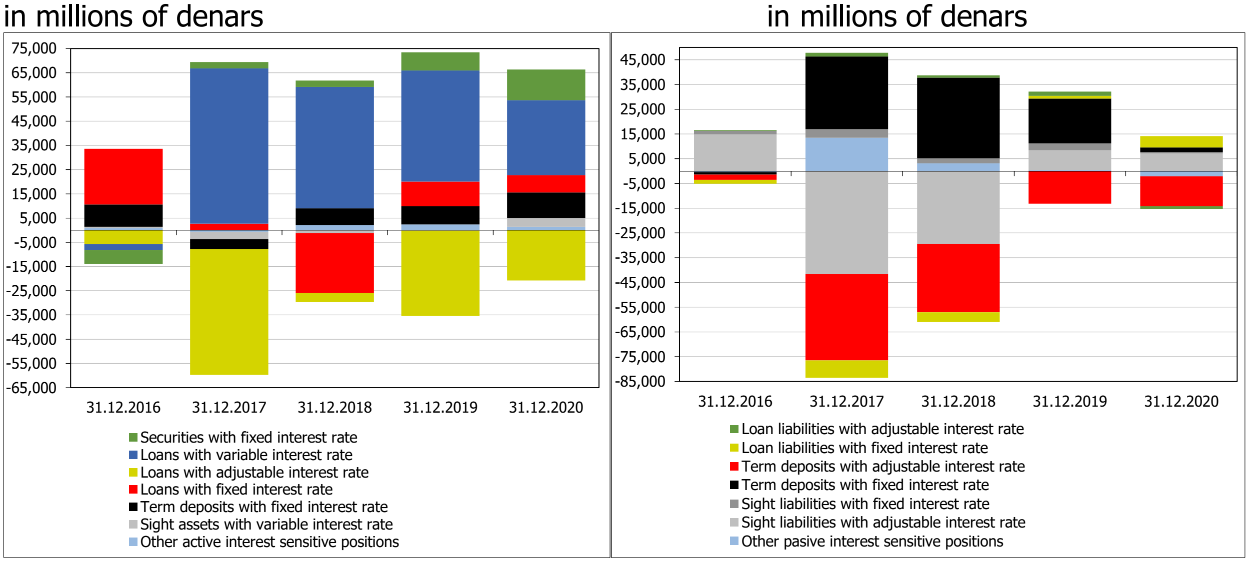
Chart 60
Net weighted position / Own funds*
in %



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

Chart 61
Annual growth of interest sensitive assets (left) and liabilities (right), by type of instrument and type of interest rate
in millions of denars

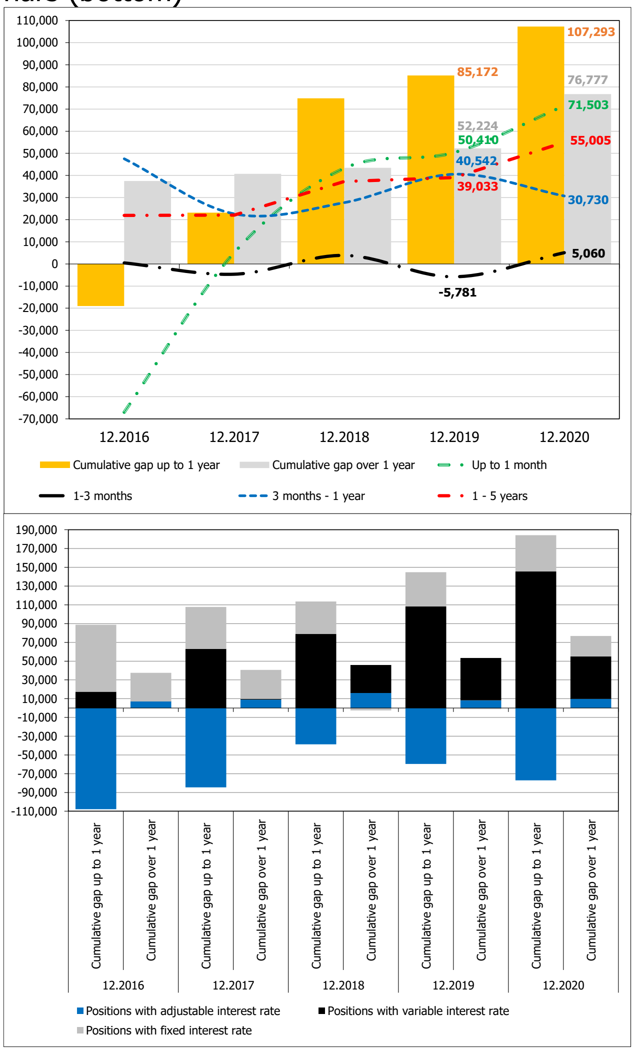
in millions of denars



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

Analyzed by the time period until the next revaluation of interest rates, in 2020, the largest contribution to the widening of the total gap between interest sensitive assets and liabilities accounted to the gaps up to 3 months (growth of Denar 31,934 million) and from 2 to 3 years (growth of Denar

Chart 62
Asset-liability gap, by period until next interest rate revaluation (top) and gap structure by interest rate type (bottom)
in millions of denars (top) and in millions of denars (bottom)

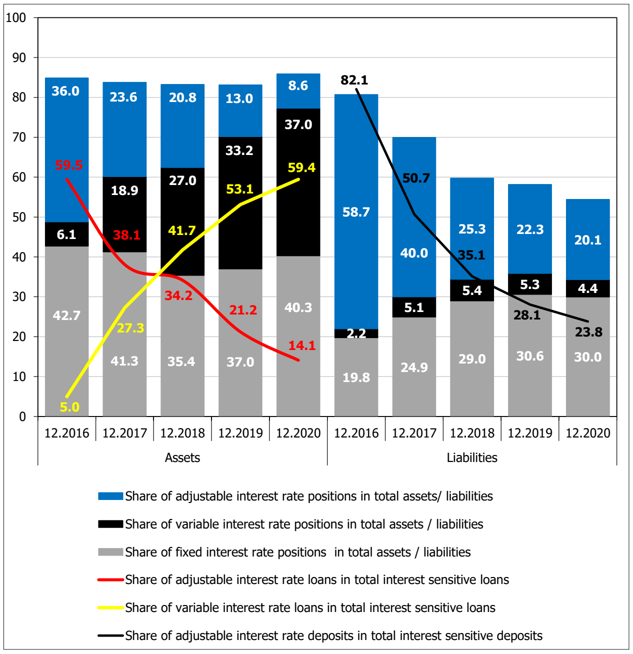


Source: National Bank, based on data submitted by banks.

20,321 million). Thereby, the gap between the positions where the time period until the next interest rate revaluation is up to 3 months has widened, mostly due to the growth of placements in securities and time deposits with fixed interest rates, as well as placements in loans with variable interest rate. Similarly, the increased placements in fixed interest rate securities and variable rate loans had the greatest contribution to gap widening in the 2 to 3 years block. On the other hand, the gap between the positions where the time period until the next interest rate revaluation is between 6 to 12 months registered an annual decline of Denar 11,165 million, which is mostly due to the reduced placements in loans with adjustable interest rate. On an aggregate basis, the banking system is exposed to the risk of reducing interest rates, given the positive total gap between the interest-sensitive assets and liabilities.

Indirect exposure to interest rate risk, resulting from the presence of variable and adjustable interest rate loans, remains significant and registered certain rise in 2020. As of 31 December 2020, the cumulative share of these loans in the total loans is 73.5% (74.3% as of 31 December 2019), whereby 59.4% of the total loans have a variable interest rate, while 14.1% are with adjustable interest rate

Chart 63
Structure of assets and liabilities, by type of interest rate
in %



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

The downward trend of the share of the positions with adjustable interest rate continued also in 2020. Thus, the annual growth rate of lending to corporate sector increased from 13% at the end of September 2019, to 8.6% at the end of September 2020.

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

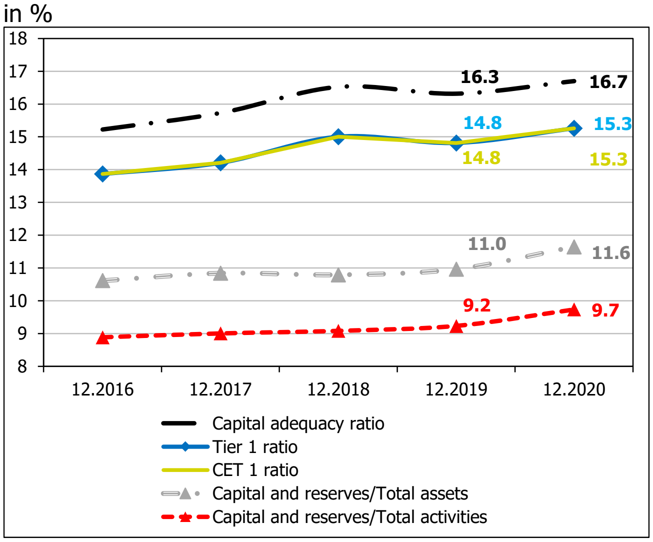
5. Insolvency risk

Despite all challenges from the health crisis, the banking system ended 2020 with higher solvency and capitalization ratios, compared to the previous year. The higher growth of the banks' own funds relative to the risk exposure led to an improved solvency position, and thus improved capacity to deal with unexpected losses. The capital adequacy ratio registered an annual increase of 0.4 percentage points, to the level of 16.7%. The growth of own funds is mostly due to the retained earnings, the issue of ordinary shares and the issued new subordinated bonds and instruments that met the conditions to be included in the calculation of own funds, while the growth of the risk weighted assets was mostly concentrated in the credit risk weighted assets. Half of the growth of own funds was used to meet the capital buffers and to meet the capital requirements for credit risk coverage, but half of this growth was used to increase the "free" capital above the minimum regulatory and supervisory requirements. Thus, in conditions of more moderate changes in the activities of the banking system, the "free" capital above the determined regulatory and supervisory minimum increased its share in the own funds to the level of 9.1% (6.6% at the end of 2019). In addition, as much as 43% of the own funds of the banking system account for the capital supplements determined according to the supervisory assessment and for the capital buffers, which in turn are especially important in conditions of crisis episodes, when they can be used to deal with challenges of different nature and intensity. The conducted stress testing of the banking system resilience to the simulated shocks continues to show satisfactory resilience.

5.1. Solvency and capitalization ratios of the banking system

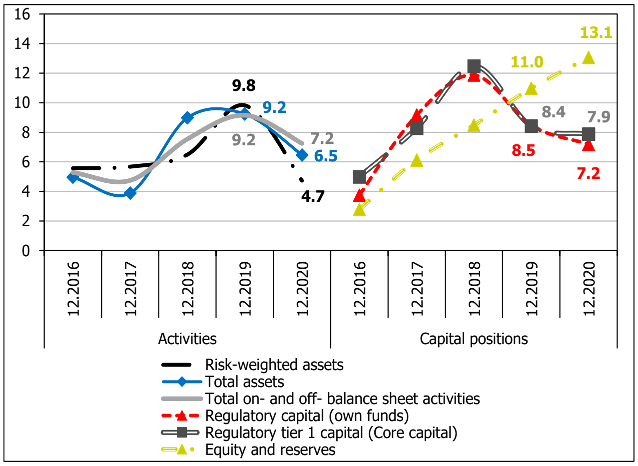
In 2020, the banking system maintained its high capitalization and stable solvency position. On an annual basis, the capital adequacy ratio increased by 0.4 percentage points, to the level of 16.7%, which is above the calculated ten-year average of this ratio (16.5%). An annual increase of 0.5 percentage points was also registered in the Tier I capital ratio and the Common Equity Tier I capital ratio, which as of 31.12.2020 equal 15.3% and are significantly higher than the prescribed minimum of 6% and 4.5%, respectively (only one bank has issued Additional Tier 1 capital instruments). At the same time, the share of capital and reserves in the total assets, i.e. in the total activities of the banking system also increased by 0.6 and 0.5 percentage points, respectively and as of 31.12.2020

Chart 64
Indicators of solvency and capitalization of the Macedonian banking system
in %



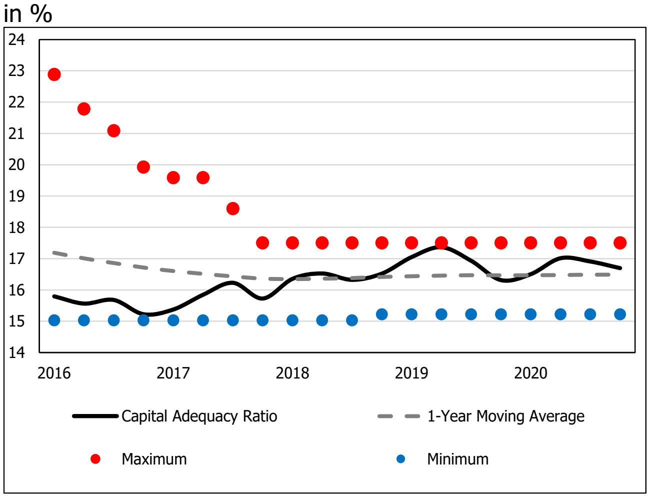
Source: National Bank, based on data submitted by banks.

Chart 65
Annual growth of solvency ratio components
in %



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

Chart 66
Capital adequacy ratio
in %



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

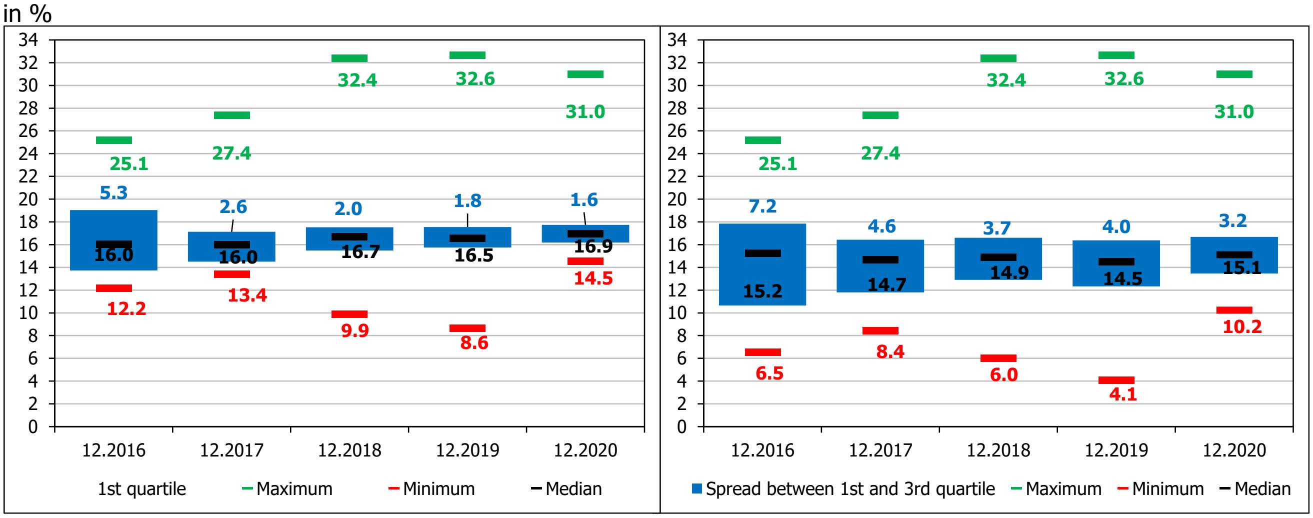
amounted to 11.6% and 9.7%, respectively. This improvement of all solvency and capitalization ratios of the banking system results from the more pronounced increase in capital positions compared to the increase in the activities of the banking system. Thus, the own funds, the Tier I capital and the capital and reserves registered an annual growth of 7.2%, 7.9% and 13.1%, respectively, while the increase in the risk weighted assets, the on-balance sheet assets and the total (balance sheet and off-balance sheet) activities of banks was more moderate and amounted to 4.7%, 6.5% and 7.2%, respectively.

In order to ensure an appropriate level of capital and prevent excessive indebtedness, banks are obliged to determine and monitor the leverage ratio on a semi-annual basis (as the ratio between the Tier I capital and the total on-balance sheet and off-balance sheet exposure). The average leverage ratio calculated for 2020 amounts to 10.6%[64] and is lower relative to the average leverage ratio for 2019, by 0.2 percentage points.

Analyzed by individual bank, the capital adequacy ratios in half of the banks registered an annual increase (in an interval from 0.3 to 2.1 percentage point), while in the other half of the banks they registered an annual decrease (in an interval from -0.3 to -2.1 percentage point).

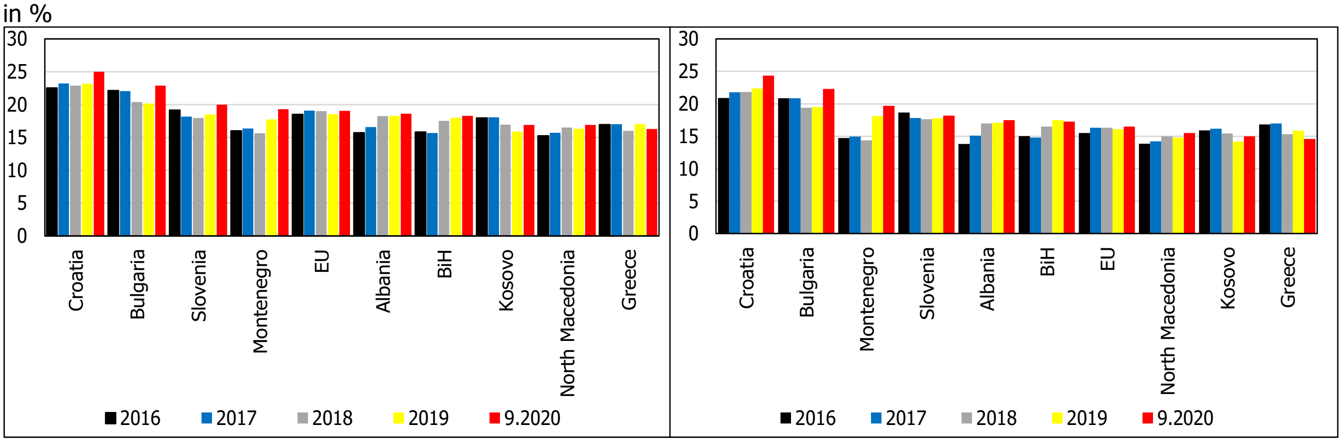
[64] The average leverage ratio calculated for the first half-year of 2020 amounts to 10.5%, and for the second half of the year it amounts to 10.8%.

Chart 67
Measures for capital adequacy ratio distribution (left) and Tier 1 capital rate (right) in the banking system
in %



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

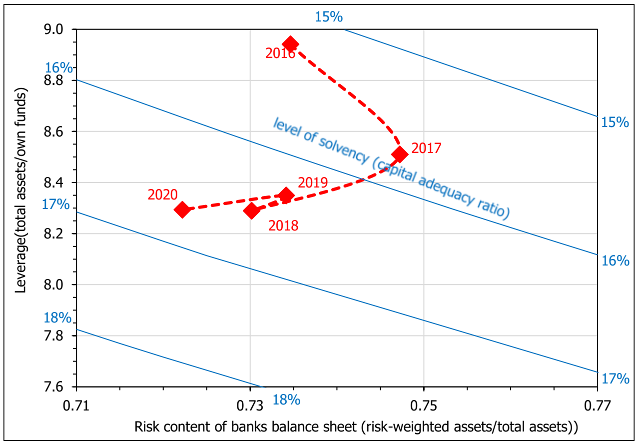
Chart 68
Capital adequacy ratio (left) and Tier 1 capital ratio (right) for the banking systems of selected countries
in %



Source: IMF, EBA and websites of institutions
* Data for the banking system of North Macedonia are as of 30.9.2020, for the purpose of better comparability with the banking systems of the other countries, for which the latest available data is as of September 2020.

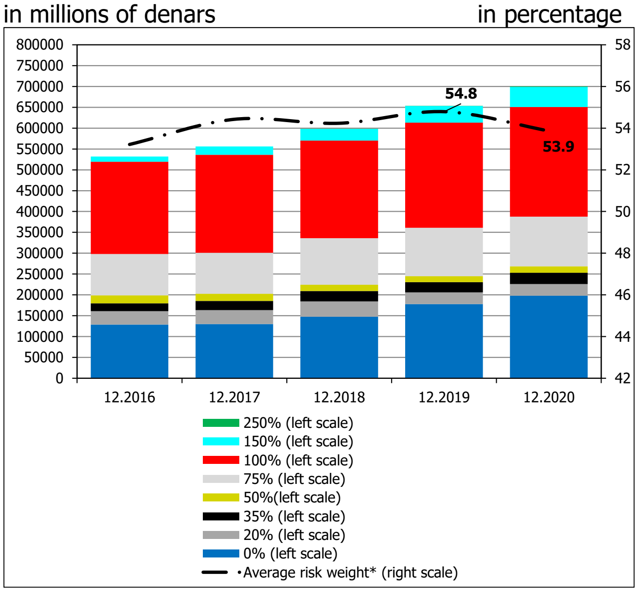
Compared to the banking systems of the countries from our neighborhood and to the EU, the Macedonian banking system predominantly has lower solvency ratios. In this

Chart 69
Leverage, risk and solvency of the banking system
in times and in %



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

Chart 70
Amount of total on-balance sheet and off-balance sheet exposure, by risk weights
in millions of denars | in percentage



Source: National Bank, based on 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.

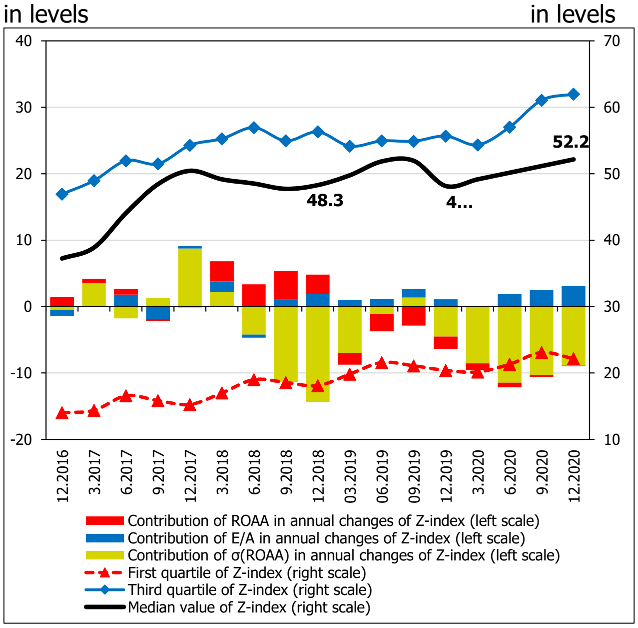
group of analyzed countries, the capital adequacy ratio ranges between 16.3% and 25%.

The breakdown of the capital adequacy ratio of its components indicates a simultaneous reduction of the ratio between assets and own funds (indicator for the level of leverage), as well as of the share of the risk weighted assets in the total assets (indicator for the level of risk of the activities of the banking system), which contributed to increasing the capital adequacy ratio in 2020.

In conditions of an extremely unpredictable environment and slowing credit activity of the banking system, the risk weighted assets significantly slowed down the annual growth. The total risk weighted assets increased by 4.7% (9.8% in 2019) or by Denar 19,088 million, which almost entirely resulted from the growth of the credit risk weighted assets of Denar 18,824 million, or by 5.3%. The largest growth in the total on-balance sheet and off-balance sheet exposure of the banking system was registered in the banks' activities that are included with risk weight of 0% (by Denar 20,108 million), as a result of the annual growth of the liquid assets of the banking system (the banks' placements in domestic securities[65]). At the same time, a slightly lower annual growth is also registered in the positions with risk weight of 100% and 150% (by Denar 10,673 million and by Denar 8,858 million, respectively), as a result of the increase in the claims on other trade companies and the retail credit portfolio (mostly due to the increase in the banks' credit activity with the households, amid a slightly more moderate growth of the banks' credit activity with the corporate sector), in circumstances when more than half of the consumer loans were under moratorium in most of 2020 and the clients did not pay their loan installments. **Such movements**

[65] More details in the section concerning the liquidity risk of this Report.

Chart 71
Z-index



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

in the credit risk weighted assets contributed to lowering the average level of bank risks (as measured by the credit risk-weighted assets to total on-balance and off-balance sheet exposure ratio) by 0.9 percentage points, up to 53.9%.

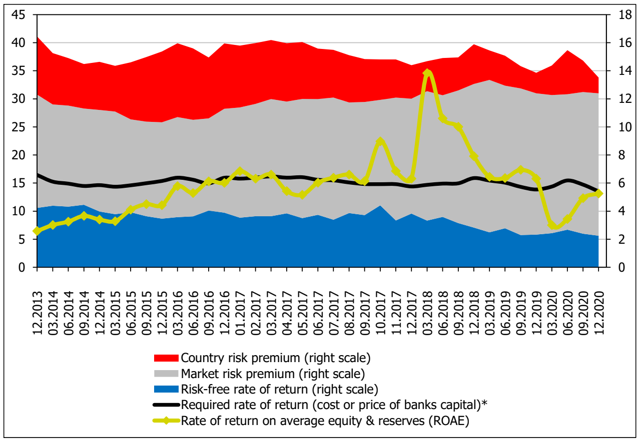
Banking system stability measured by the so-called Z-index[66] is relatively high. On average, it requires a negative shock of at least 52.2 standard deviations from the rate of average return on assets to fully exhaust the capital potential of the banking system. During 2020, there was a certain increase in the average value of the Z-index, due to the higher rate of return on average assets, as well as due to the reduced volatility of the banks' profits during the year, measured by the standard deviation of the rate of return on average assets.

The cost of capital, i.e. the required rate of return to investors in the shares of banks, calculated by applying the so-called CAPM[67], on a sample of eight banks whose shares are listed on the official market, registered an annual decrease. Namely, the cost of capital, calculated with this model, decreased to 13.5%, at the end of 2020, which in turn was higher by 0.4 percentage points compared with the rate of return on equity registered by the banks covered by the analysis. The lower required rate of return on the

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

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

Chart 72
Level and structure of the cost (price) of the capital of the banks whose shares are listed on the official market of the Macedonian Stock Exchange
in %



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

banks' shares results from the reduced country risk premium, which decreased by 0.4 percentage points (which is a result of the narrowing of the difference between the yields on the issued Macedonian Eurobonds and the yields on comparable German bonds). On the other hand, the risk-free rate of return and the market risk premium remained at the same level as in December 2019, i.e. at 2.3% and 10.1%, respectively. The international capital markets in 2020 witnessed trading in five Macedonian bonds whose yields registered an annual downward correction, and the yields of one of the Eurobonds, at the end of 2020, even entered the negative zone, which is an indicator for their increased demand despite the current crisis related to the pandemic and the consequently increased volatility of the developments in the international financial markets.

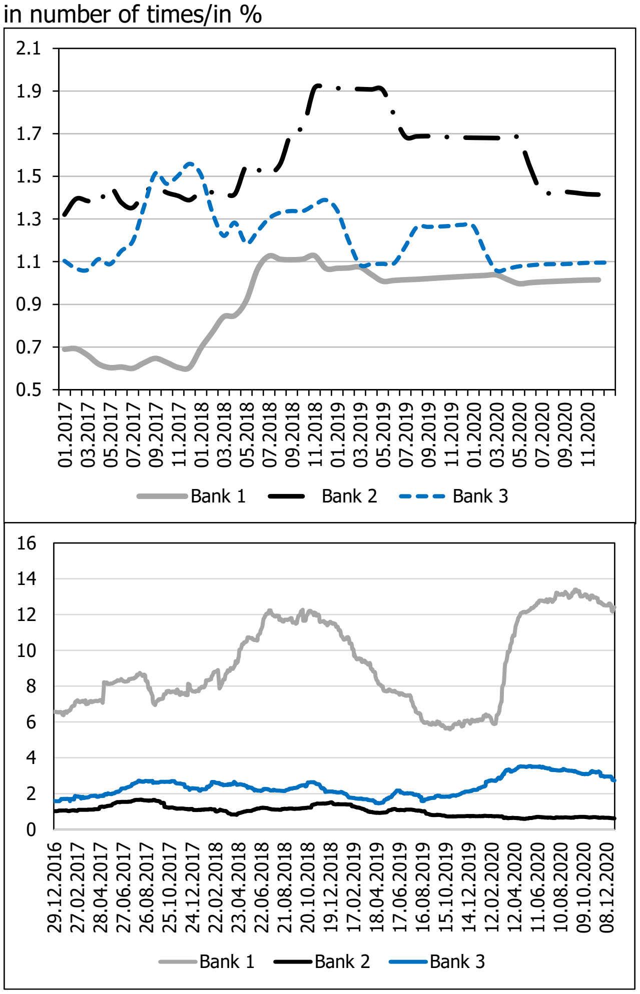
In 2020, the price-to-book ratio for the three largest banks in the system remained relatively high. However, the values of this ratio are lower compared to 2019, which is largely explained by the strong downward correction of the prices of shares, mostly pronounced in March 2020, under the influence of the events and the information related to the spread of the viral infection COVID-19[68].

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

[68] Due to the uncertainty about the duration and the intensity of the transmission negative effects of the health crisis on the economies, in March 2020, the Macedonian Stock Exchange changed the daily price limitations, and also introduced a new mechanism for automatic stabilization of price movements. More information can be found on the website of the Macedonian Stock Exchange (links: https://www.mse.mk/mk/news/16/3/2020/new-price-limitations-on-the-macedonian-stock-exchange and https://www.mse.mk/mk/content/21/1/2008/trading-rules).

Chart 73
Price-to-book ratio for the shares of the three largest banks in the system (up) and percentage of turnover ratio for the previous one-year period, for the three largest banks in the system (down)
in number of times/in %



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

positions, which provide it with satisfactory resilience to potential stressful scenarios. At the end of 2020, the highest-quality buffer of the own funds of the banking system (the Common Equity Tier I capital) accounts for 91% of the total own funds, the Additional Tier I capital accounts for only 0.4% of the own funds of the banking system, while the Tier II capital makes up 8.6%.

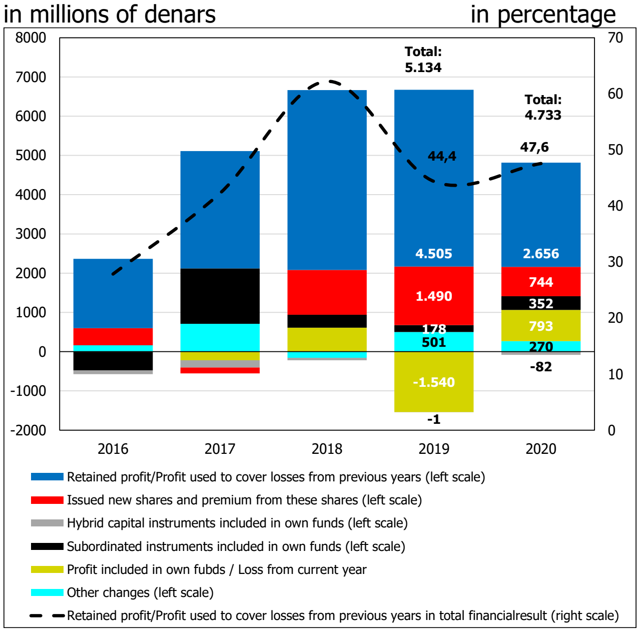
In 2020, the own funds of the banking system registered an annual increase of Denar 4,733 million, or 7.2%, which is a slight slowdown compared to the previous year. The largest contribution to the growth of own funds in 2020 was made by the reinvestment of the banks' profits achieved in the previous year, as well as the issue of new ordinary shares (by two large banks[69]) and the issued new subordinated instruments[70]. For more details about the level of own funds by group of banks please see annexes to this report.

In conditions of a more moderate growth of the activities of the banking system, almost half of the the annual growth of the own funds was accumulated as "free" capital above the required level for covering the individual risks and for maintaining the necessary capital buffers and capital supplements. Thus, the own funds above the required level for covering all these requirements registered a more substantial annual increase (by Denar 2,045 million, or by

[69] For more information about the issues visit:
https://www.sec.gov.mk/media/files/2020/%D0%9C%D0%B5%D1%81%D0%B5%D1%87%D0%B5%D0%BD%20%D0%B8%D0%B7%D0%B2%D0%B5%D1%88%D1%82%D0%B0%D1%98%20%D0%B0%D0%BF%D1%80%D0%B8%D0%BB%202020%20%D1%80%D0%B5%D0%B2%D0%B8%D0%B4%D0%B8%D1%80%D0%B0%D0%BD.pdf and
https://www.sec.gov.mk/media/files/2020/%D0%9C%D0%B5%D1%81%D0%B5%D1%87%D0%B5%D0%BD%20%D0%B8%D0%B7%D0%B2%D0%B5%D1%88%D1%82%D0%B0%D1%98%20%D0%9C%D0%B0%D1%98%202020%20%D0%9C%D0%9A%D0%94.pdf

[70] In 2020, subordinated instruments in a total amount of Denar 492 million were issued by one medium-sized bank (in March, September and December 2020, in a total amount of Denar 400 million) and by one small bank (in the form of a corporate bond, in a total amount of Denar 92 million).

Chart 74
Structure of annual changes in own funds
in millions of denars in percentage



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

46.8%) and as of 31.12.2020 they increased the share in the total own funds to 9.1% (6.6% as of 31.12.2019). At the same time, the total regulatory capital requirements for covering the individual risks increased by Denar 1,527 million, or 4.7%, which is almost entirely a result of the increased capital requirements for credit risk, by Denar 1,506 million, or by 5.3% (mainly due to the increase in the banks' credit activity with the households, amid slightly more moderate growth of the banks' credit activity with the corporate sector)[71]. The amount of the capital supplement determined by the supervisory grade and evaluation (pillar 2) registered an annual increase of Denar 394 million, or by 2.9%, while the capital conservation buffer[72] and the capital buffer for systemically important banks[73], of Denar 477 million (or by 4.7%) and of Denar 289 million (or by 5.3%), respectively. However, the more substantial increase in the own funds than the annual increase in the capital requirement for covering risks conditioned a slight decrease (from 44.3% as of 31.12.2019, to 43% as of 31.12.2020) in the part (amid growth of the absolute amount) of the own funds that accounts for the capital supplements determined according to the supervisory grade and evaluation and for the capital buffers, that are especially important in conditions of crisis episodes, when banks

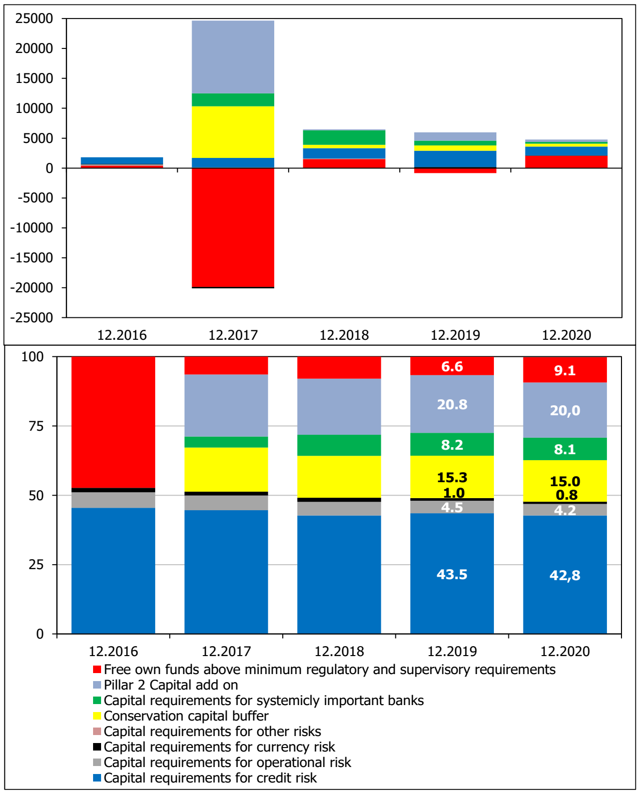
---

[71] In 2020, the capital requirements for currency risk annually increase by Denar 51 million, or by 7.8%, and for the first time in 2020, two large banks also allocate capital requirements for covering other risks (counterparty risk) in a total amount of Denar 0.9 million.

[72] From the four capital buffers specified by the Banking Law, in 2020, all banks were required to meet the capital conservation buffer, while the seven banks identified as systemically important banks are also required to meet an appropriate rate of capital buffer for systemically important banks.

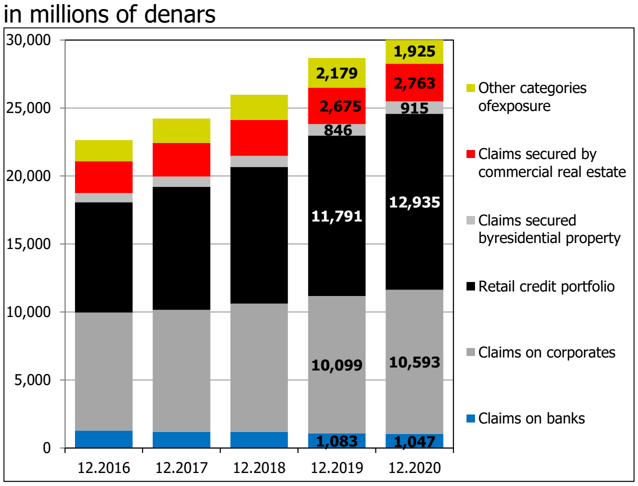
[73] Pursuant to the Decision on the methodology for identifying systemically important banks (Official Gazette of the Republic of Macedonia No. 26/17), not later than 30 April of each year, the National Bank identifies the systemically important banks and determines the rates of capital buffer that these banks should maintain. Systemically important banks are required to comply with the prescribed capital buffer rates for systemically important banks by 31 March next year. The calculation for identifying systemically important banks for the period April 2020 - March 2021 is conducted on the basis of the data, as of 31 December 2019. According to this calculation, seven banks have been identified as systemically important banks (which should meet the determined rate of capital buffer for systemically important bank, not later than 31.3.2021). For more information visit: https://www.nbrm.mk/content/%D0%9B%D0%B8%D1%81%D1%82%D0%B0%20%D1%81%D0%B8%D1%81%D1%82%D0%B5%D0%BC%D1%81%D0%BA%D0%B8%20%D0%B7%D0%BD%D0%B0%D1%87%D0%B0%D1%98%D0%BD%D0%B8%20%D0%B1%D0%B0%D0%BD%D0%BA%D0%B8%2031%2012%202019.pdf

Chart 75
Structure of annual 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 %



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

Chart 76 Stock and structure of capital requirements for credit risk, by category of exposure
in millions of denars



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

can use them to deal with challenges of different nature and intensity.

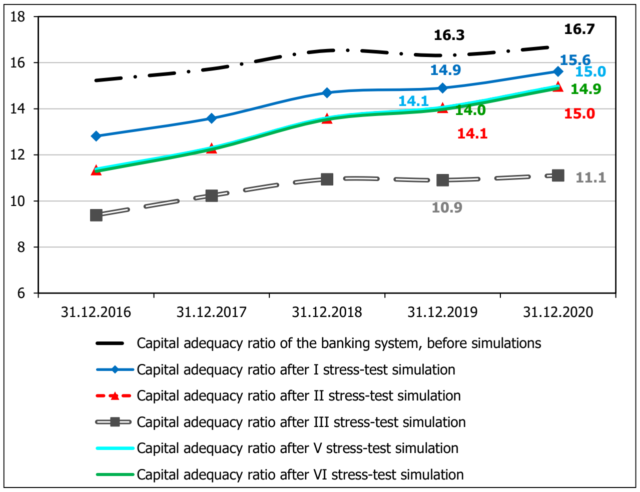
For more details on the capital requirements for covering risks and on the capital adequacy ratio, by group of banks, see annexes to this Report.

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

The banking system shows a satisfactory level of 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 conducted regular stress-testing of the resilience of the banking system and of the individual banks to simulated shocks are better compared with 31.12.2019, due to the higher starting level of the capital adequacy ratio, before shocks. In addition, in all simulations where growth of the non-performing credit exposure is assumed, the results of the stress-test are better due to the more substantial annual reduction of the non-performing credit exposure and the consequently lower starting basis of this exposure before the conduct of the simulations. 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.

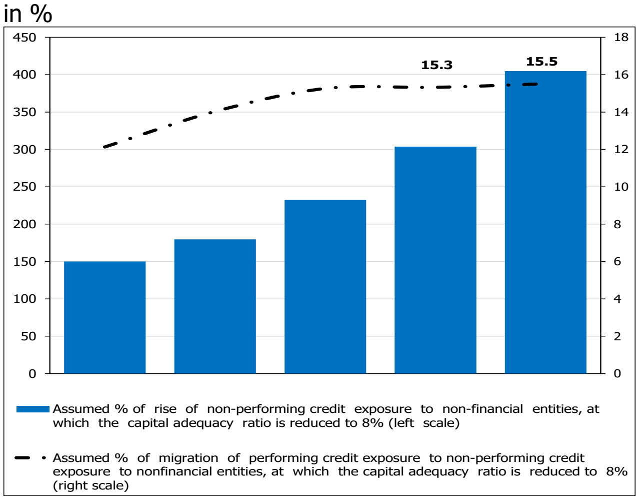
Hypothetical shocks on the part of the credit risk had the greatest impact on the solvency of the banking system. The results of the reverse stress test show that it takes growth of 404.9% of non-performing loan exposure, i.e. migration of 15.5% from regular to non-performing loan exposure for the capital adequacy of the banking system to

Chart 77
Results of stress-test simulations
in %



Source: National Bank, based on data submitted by banks[74].

Chart 78
Necessary deterioration of the quality of credit exposure to cause a decline in the capital adequacy of the banking system to 8%
in %



National Bank, based on data submitted by banks.

drop to 8%. However, these are rather extreme and less likely simulations, especially in the short term, given that in 2020, the non-performing credit exposure to non-financial entities registered an annual decrease of 26.5%. On the other hand, in 2020, only 0.7% of the regular credit exposure to the non-financial sector received a non-performing status. However, the banking system must remain faced with the possibility for increased risks and possible materializations of the more extreme scenarios. Although, for the time being, the banking sector showed appropriate readiness to respond to the risks and to overcome the negative effects of the health crisis, the challenges are still present. The high uncertainty is still present, as well as the risks mainly related to the development of the pandemic and the prospects for dealing with it.

---

[74] 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;

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

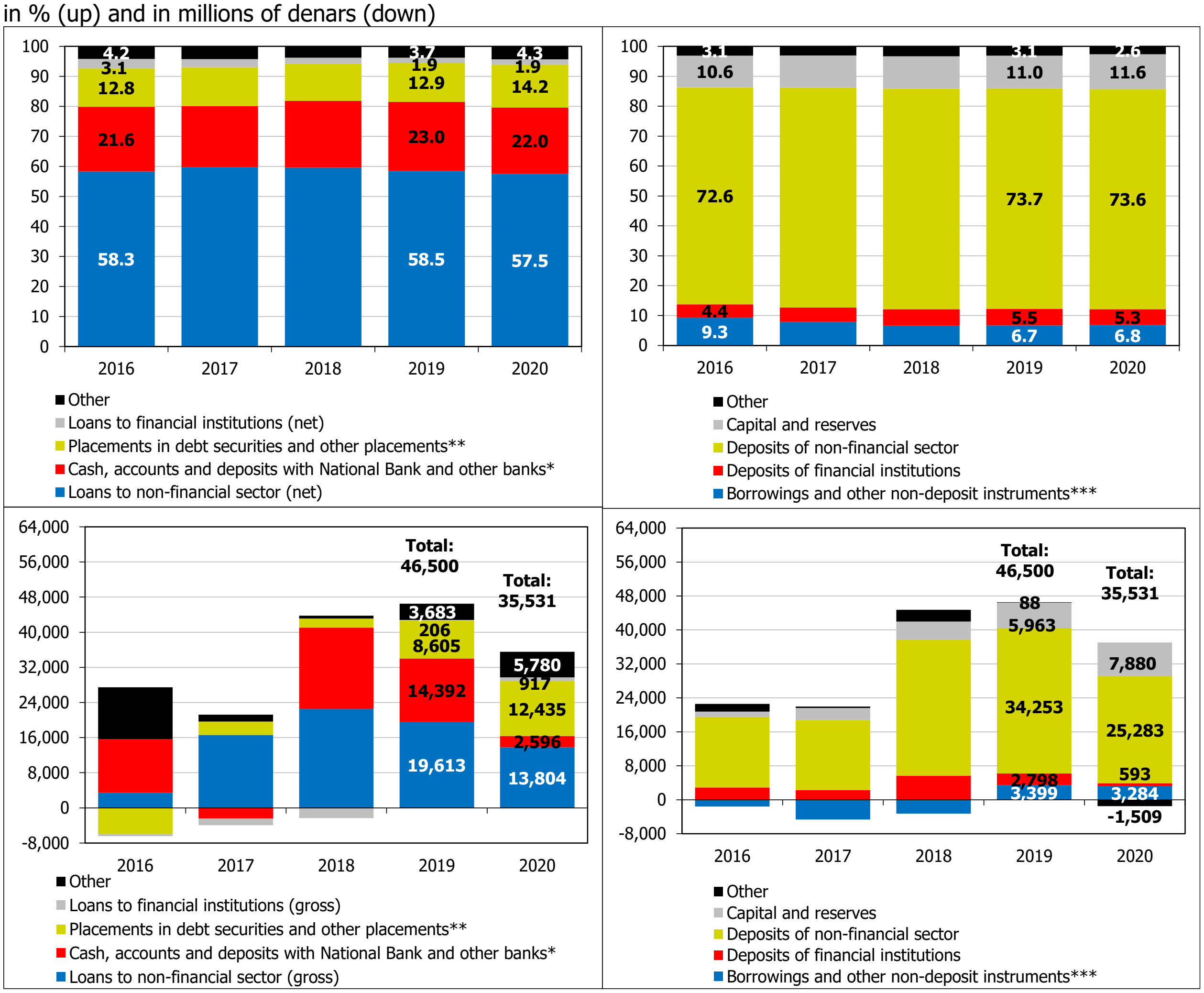
1. Bank activities

In 2020, the banking sector faced numerous challenges and showed appropriate readiness to respond to the risks. In conditions of a strong health and economic crisis, the banking system not only maintained its stability, but also registered an increase in its activities and contributed to mitigating the consequences of the corona crisis. With the support of the measures adopted by the National Bank, by providing additional liquidity and regulatory flexibility, the banks allowed a temporary delay in the loan repayment, which in the second quarter of 2020 covered about 45% of the performing credit portfolio. In September 2020, amid prolonged duration of the pandemic of the virus, a new offer for amending the contractual terms of the loans followed, thus covering about 7% of the total performing loans. This eased the financial burden of a large number of borrowers in the banking sector, so they could easily deal with the negative effects of the health and economic crisis. At the end of 2020, 7.5% of the total performing loans are still under certain form of easing in payments, which for most of 70% of these loans ends in March 2021.

The assets of the banking system grew also in 2020, but at a slower pace, under the influence of the health and economic crisis[75]. Therefore, in parallel with the delay in the loan repayments, the banks also provided a solid credit growth. Most of the annual growth of loans was aimed at households, predominantly in denars, although the lending activity with the companies also increased. Besides the lending activity with the non-financial sector, in 2020, a more significant growth was also registered in the banks' placements in government securities. The increase in the assets of the banking system was supported by the further growth, although slower, of deposits of non-financial entities. Observed by sector, deposits of households and non-financial companies made an almost equal contribution to the annual growth of total deposits. The currency preference of depositors changed in 2020, whereby foreign currency deposits for the first time since 2016 made the largest contribution to the increase in total deposits. Observing maturity, demand deposits entirely conditioned the growth of total deposits amid annual fall in long-term deposits. The higher level of capital and reserves, due to the reinvestment of profits from 2019 and the new share issues in two banks, also significantly contributed to the annual growth of the sources of funds.

The uncertainty and the risks for the global and domestic economic flows remain high, which affects the recovery dynamics of the economic activity in the period ahead, and accordingly, the future operations and the scope of activities of the financial intermediaries.

Chart 79
Structure of the assets (up left) and liabilities (up right) and structure of the annual changes of the assets (down left) and liabilities (down right) of the banking system
in % (up) and in millions of denars (down)

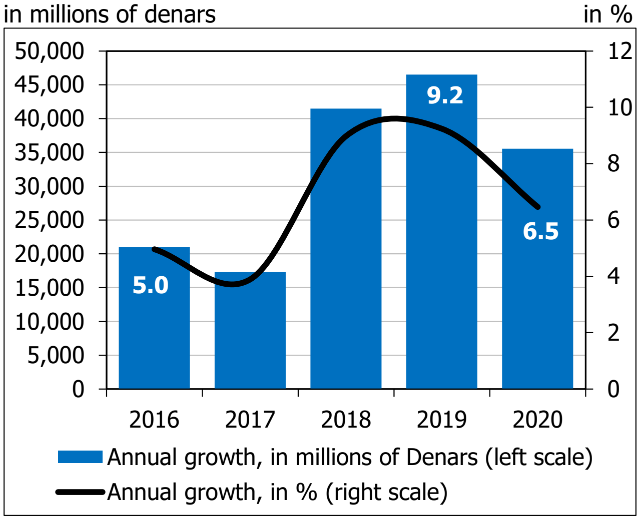


Source: National Bank, based on data submitted by banks.
Note: * Cash, accounts and deposits with the National Bank and other banks also include the assets in the guarantee fund of KIBS, as well as the reserve requirement in foreign currency; **Other placements include placements in equities and investment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

In 2020, the balance sheet of the banking system continues to grow, but at a slower pace compared with the previous year. On an annual basis, the assets of the banking system increased by Denar 35,531

[75] The reduction of the number of banks due to the revocation of the license for founding and operation of Eurostandard Bank AD Skopje, in August 2020, had some impact on the annual dynamics of the activities of the banking system, which is relatively small, given the low market shares of this bank (from 1% to 2%) in the individual categories of the balance sheet of the banking system.

Chart 80
Assets of the banking system

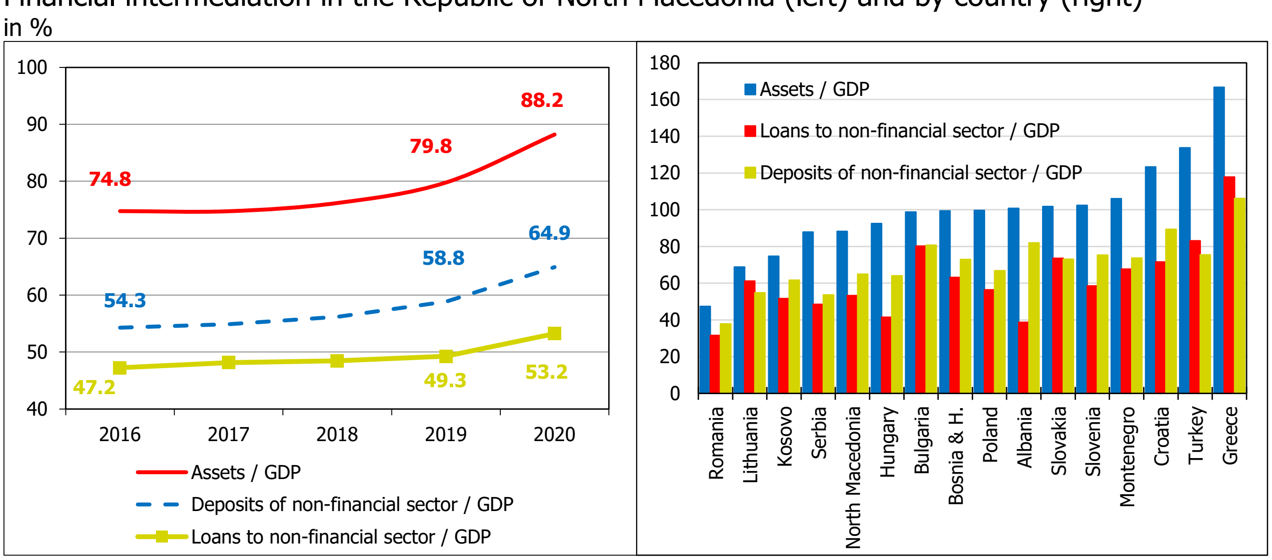


Source: National Bank, based on data submitted by banks.

million, or by 6.5% (in 2019, the assets increased by Denar 46,500 million or by 9.2%). In the assets, the highest growth was recorded in loans to non-financial entities and placements in government securities, while on the liabilities side, the increase in deposits of non-financial entities and in capital and reserves contributed the most to the growth of liabilities.

Financial intermediation indicators increased in 2020, which is mostly due to the decline in GDP, amid simultaneous growth, but slower, of the activities of the banking system. However, the comparative analysis with other countries of Central and Southeast Europe indicates a still modest level of financial intermediation in our country.

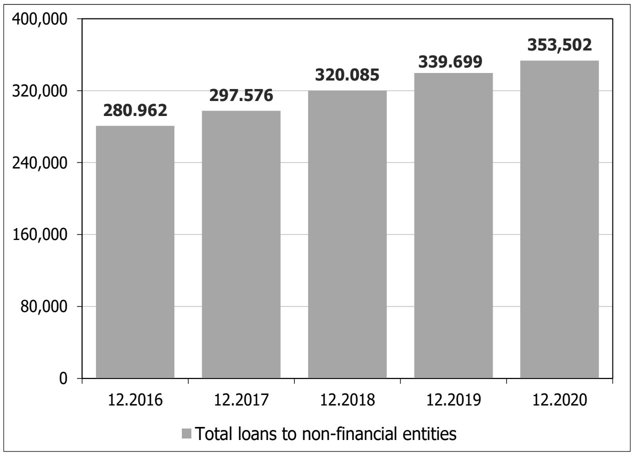
Chart 81
Financial intermediation in the Republic of North Macedonia (left) and by country (right)



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

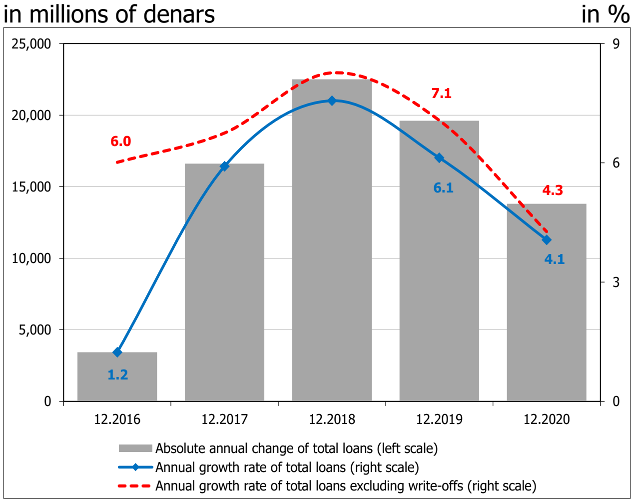
The comparatively lower levels of financial intermediation usually indicate potentially smaller support of the banking system for the economic growth and development of the country. In contrast, due to the application of a simple, traditional business model by banks, their low interconnectedness and interdependence, as well as due to the smaller integration into international flows, the banking system is more resistant to external shocks, and its modest size additionally limits the potential spillovers of the negative effects (shocks) from the banking sector to the economy.

Chart 82
Amount of loans to non-financial entities
in millions of denars



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

Chart 83
Growth of loans to non-financial entities
in millions of denars in %



Source: National Bank, based on data submitted by banks.
Note: The red line shows the growth of total loans by excluding the effect of all mandatory write-offs made in the period 1.1.2016 - 31.12.2020. Starting from December 2019, the data also contains the collected compulsorily written-off loans.

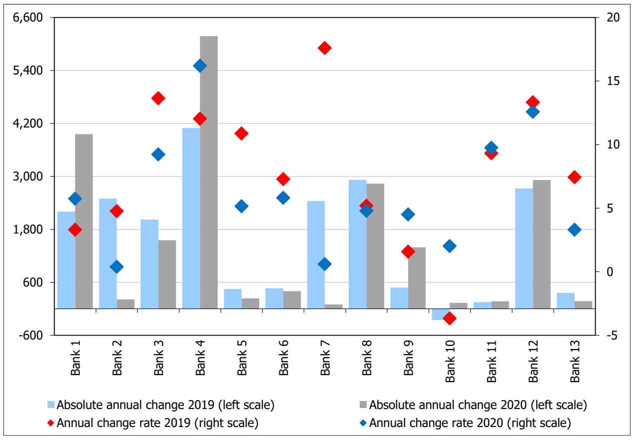
1.1 Loans to non-financial entities[76]

In 2020, the lending to the non-financial sector grew, but at a slower pace. The slowdown partly results from the exit of Eurostandard Bank from the banking system. The slower credit growth to a small extent also results from the mandatory write-offs of fully provisioned non-performing loans[77]. In 2020, loans to non-financial entities increased by Denar 13,804 million, or 4.1%. Analyzed by bank, four banks (three large and one medium-sized) contributed with about 78% to the total annual growth of loans to non-financial entities.

The growth of credit activity in 2020 was supported by the package of measures undertaken by the National Bank due to the health crisis. Namely, the monetary measures taken by the National Bank in the first half of the year (still active at the beginning of 2021) contributed to the creation of liquidity in the banking system, which is used to provide support to the domestic economy, mainly through the maintenance of credit flows and the credit cycle by banks. Besides the monetary measures, the regulatory changes adopted by the National Bank from the end of March 2020, allowed banks during April and May 2020 to make major changes to the contractual terms of regular loans mainly by approving a grace period, usually in duration of up to six months. This allowed clients (who were creditworthy before the commencement of the crisis) to overcome the negative effects of the crisis more easily. Amid prolonged duration of the pandemic in September 2020, banks made new easing of the credit conditions, which this time was limited to those categories of clients that are most affected by the crisis, since they

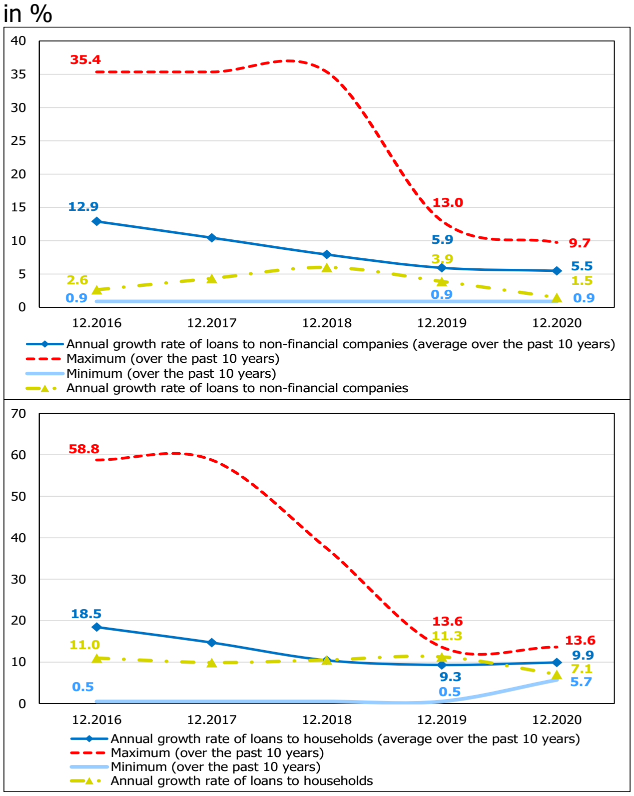
[76] Loans to non-financial entities include loans to resident and non-resident non-financial entities, including loans to private and public non-financial companies, central government, local government, non-profit institutions serving households (loans to other clients), sole proprietors and natural persons (loans to households).
[77] Excluding the effect of mandatory net write-offs, the total loans to non-financial entities grew by 4.3%, compared with the growth of 7.1% at the end of 2019.

Chart 84
Annual growth of the total lending to non-financial entities, by bank
in millions of denars in %



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

Chart 85
Ten-year moving average of annual growth rates of loans to non-financial companies (up) and household loans (down)
in %



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

have lost their jobs, have a significant reduction in their income, have faced increased medical treatment costs, etc. The second change in the contractual terms was smaller compared to the first one and aims to allow the most affected categories of banks' clients, easing of their credit burden and consequently easier dealing with the negative pressures from the health crisis.

The approved grace period of loans (by 39.5% of the banks' credit portfolio as of 31.12.2020) contributes to the slower growth of total loans in 2020, since the loan repayment was "frozen", in part of 2020. According to the data submitted by banks, the grace period of most of the loans is already expired. Loans that are still under so-called moratorium (with an unexpired grace period) as of 31.12.2020 account for 7.5% of total loans[78] and almost entirely refer to loans with a second period of deferred payment (from September 2020). The expiration period of the approved grace period for the loans that are in a grace period as of 31.12.2020 is usually by the end of March 2021, for the loan portfolio of the households, i.e. by the end of September 2021, for the loans to non-financial companies.

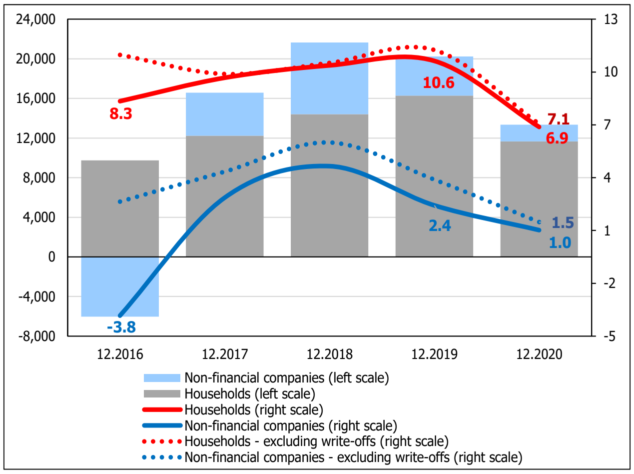
The volume of new loans decreased in 2020. On a monthly basis, the volume of new loans in 2020 is mainly smaller compared to 2019, but from the second half of the year, especially in the last quarter of 2020 there is a certain revival of the banks' credit activity, especially in the household segment. However, the amount of new loans in 2020 decreased by 12.1%, compared to 2019, with an almost identical reduction of new loans to households (by 12.6%) and businesses (by 11.9%).

The annual growth of the credit activity mostly resulted from lending to

[78] Observing individual sectors, the loans that are still in a grace period as of 31.12.2020 account for 9.9% and 5.3% of the total corporate and household loans, respectively.

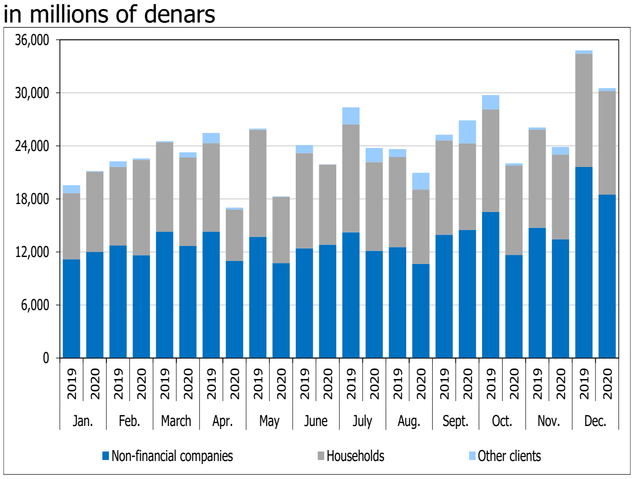
*Note: Excluding the effect of all mandatory write-offs made in the period 1.1.2016 - 31.12.2020. Starting from December 2019, the data also contains collected compulsorily written-off loans.

Chart 86 Growth of loans to non-financial companies and households
in millions of denars in %



Source: National Bank, based on data submitted by banks.
Note: The lines with dots show the growth of loans by excluding the effect of all mandatory write-offs made in the period 1.1.2016 - 31.12.2020. Starting from December 2019, the data also contains the collected compulsorily written-off loans.

Chart 87
New loans by individual sectors
in millions of denars



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

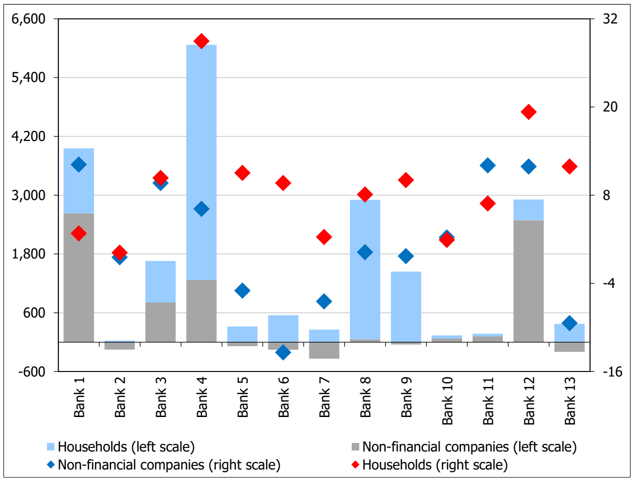
households, while the contribution of loans to non-financial companies was smaller.

Loans to non-financial companies increased by Denar 1,698 million, or by 1.0%[79], compared with the growth of 2.4% at the end of 2019. The lower growth of the lending to the corporate sector (excluding the effect of net write-offs) is also perceived by the approching of the growth rate towards the minimum value of the annual growth of corporate loans registered in the last 10 years (the difference between the two growth rates is only 0.6 percentage points). However, this deceleration in the annual growth rate is mostly due to the abovementioned reduction of the number of banks by one bank. It should be borne in mind that the approved moratorium on about 40% of the banks' credit portfolio, due to the absence of repayments for this part of the credit portfolio, also influenced the credit growth rate.

The reasons for the slowdown of the credit growth to non-financial companies should also be sought on the credit market, which registered tightened credit supply (in the second half of the year) and reduced demand for loans (during 2020). In the second half of 2020, banks performed net tightening of the conditions[80] for approving corporate loans[81] (versus the first half of the year when banks performed net easing of the credit conditions for these loans). At the same time, in the second half of 2020, banks point to a more pronounced net reduction of the total demand for corporate loans, amid a more moderate net reduction in the first half of the year. For the first quarter of 2021, banks expect net easing

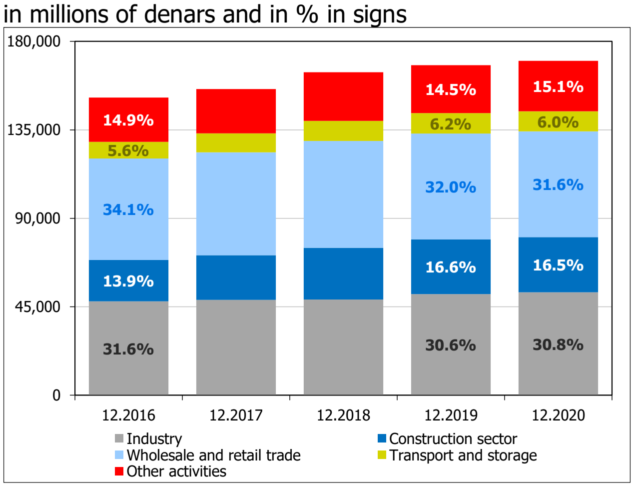
[79] If we exclude the effect of the mandatory net write-offs, the annual growth of loans to non-financial companies is 1.5% (3.9% as of 31.12.2019).
[80] Analyzing the individual conditions for the lending to the corporate sector, banks point to net tightening in the non-interest revenues and in the collateral requirements, throughout 2020. Regarding the other credit conditions (interest rate, size and maturity of loans) banks pointed to net easing in the second half of 2020.
[81] Source: National Bank's Bank Lending Survey in the first, second, third and fourth quarter of 2020.

Chart 88
Annual growth of loans to non-financial companies and households, by bank
in millions of denars in %



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

Chart 89
Structure of loans to non-financial companies, by activity
in millions of denars and in % in signs



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

of the credit conditions for approving corporate loans, amid further net reduction of the credit demand by companies.

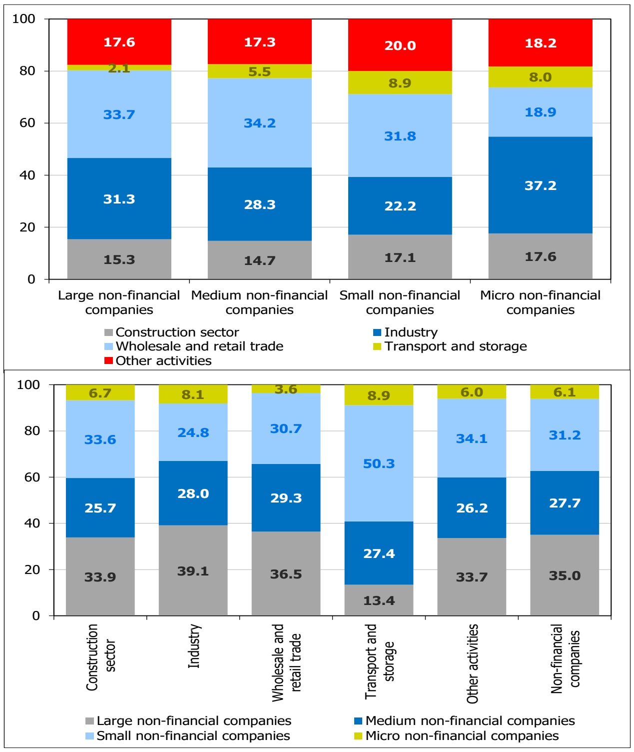
According to the economic activity of the clients, the structure of loans to non-financial companies is predominated by loans approved to clients from wholesale and retail trade and industry. Analyzing the size of non-financial companies[82], at the end of 2020, most of the approved corporate loans refer to large enterprises (35.0%), with a relatively similar share of small enterprises (31.2%). They are followed by loans to medium-sized enterprises (27.7%) and loans to micro enterprises (6.1%).

Weaker credit support is also registered in the loan portfolio of the households, where the annual growth rate in 2020 is 6.9%[83], amid growth of these loans of Denar 11,656 million (the growth in 2019 amounted to 10.6% or Denar 16,281 million). Moreover, the annual growth of household loans (excluding the effect of net write-offs) fell below the 10-year moving average of the annual growth rates of these loans and also came closer to the minimum value of its 10-year moving average (the difference between the two growth rates is 1.4 percentage points).

The slowdown of the credit growth in households is mostly a consequence of the reduced demand for loans, amid simultaneously eased credit conditions. In 2020, most of the banks point to net easing of the credit conditions[84] in household loans[85]. Analyzed by individual types of loans, banks pointed to continuous net easing of the

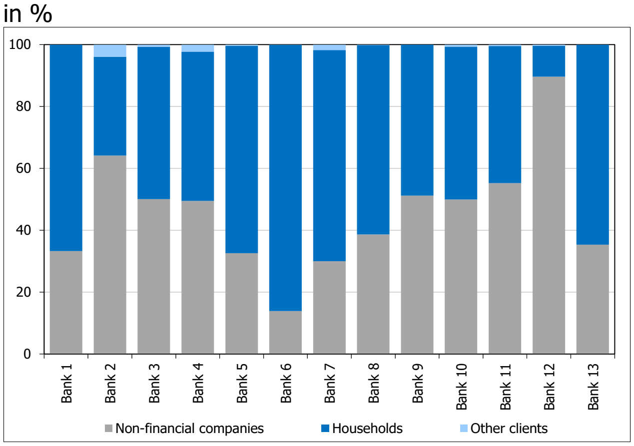
[82] The criteria for classification of entities by size (into large, medium, small and micro) are defined in Article 470 of the Law on Trade Companies.
[83] Excluding the effect of mandatory net write-offs, household loans increased by 7.1% (compared with the growth of 11.3% in 2019).
[84] With the exception of the third quarter of 2020 when most of the banks pointed to unchanged credit conditions.
[85] In terms of individual credit conditions, there is more pronounced net easing in the interest rate on household loans and commissions on housing loans, which is still weaker in the second half of the year. The other credit conditions in consumer and housing loans (collateral liabilities, loan maturity and collateral coverage) mainly registered small net easing.

Chart 90 Structure of loans to non-financial companies (up) and by individual activities (down), according to the size of companies
in %



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

Chart 91
Sectoral structure of loans to non-financial entities, by bank
in %



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

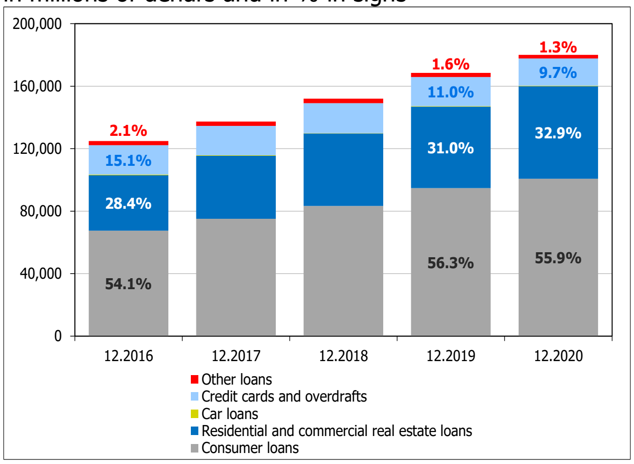
credit conditions in housing loans, while consumer and other loans registered small net tightening in the third quarter of 2020. On the demand side, banks point to net reduction of the demand for household loans which was more pronounced in the second quarter, but it was also less pronounced in the second half of 2020. Namely, households' interest in other and housing loans is mainly smaller, versus consumer loans for which banks pointed to smaller net reduction of the demand[86]. In the first quarter of 2021, banks expect net easing of the credit conditions, amid further net reduction of the demand for loans by households.

The significantly lower growth of corporate loans, amid growth, but slower, in lending to households contributed to increasing the structural share of households in total loans, which amounted to 51.2% as of 31.12.2020, compared to the share of 47.6% of loans to non-financial companies. By credit product, 65.6% of the loans to natural persons are intended for financing the unspecified consumption by natural persons (consumer loans, overdrafts and credit cards).

In 2020, there is an increasing, but still relatively low, interest of domestic creditors to finance investments in projects with a positive impact on the environment and people's health, projects that contribute to reducing the negative effects of climate changes and projects related to renewable energy sources (so-called "green financing"). Namely, "green" loans[87] approved by banks, account for 2.5% of the total loans to non-financial entities, with greater share of 4.4% in non-financial companies and only 0.8% in households, at the end of 2020. Despite the slightly increased share of these loans in the corporate credit portfolio (from 3.7% as of 31.12.2019),

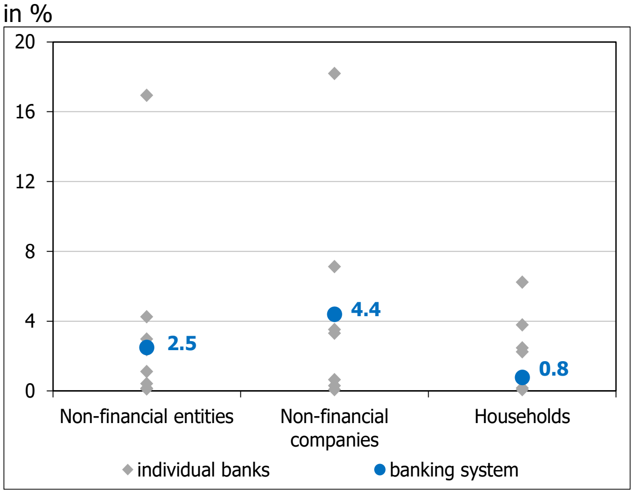
[86] In consumer loans, banks pointed to a small net increase in demand in the third quarter of 2020.
[87] In the absence of a standardized definition in the domestic economy, for the purposes of this report, "green" loans denote loans that are intended to improve the energy efficiency of the households 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.

Chart 92
Structure of loans to natural persons, by product
in millions of denars and in % in signs



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

Chart 93
Share of "green" loans in the total loans to non-financial entities and by individual sectors, by individual bank
in %



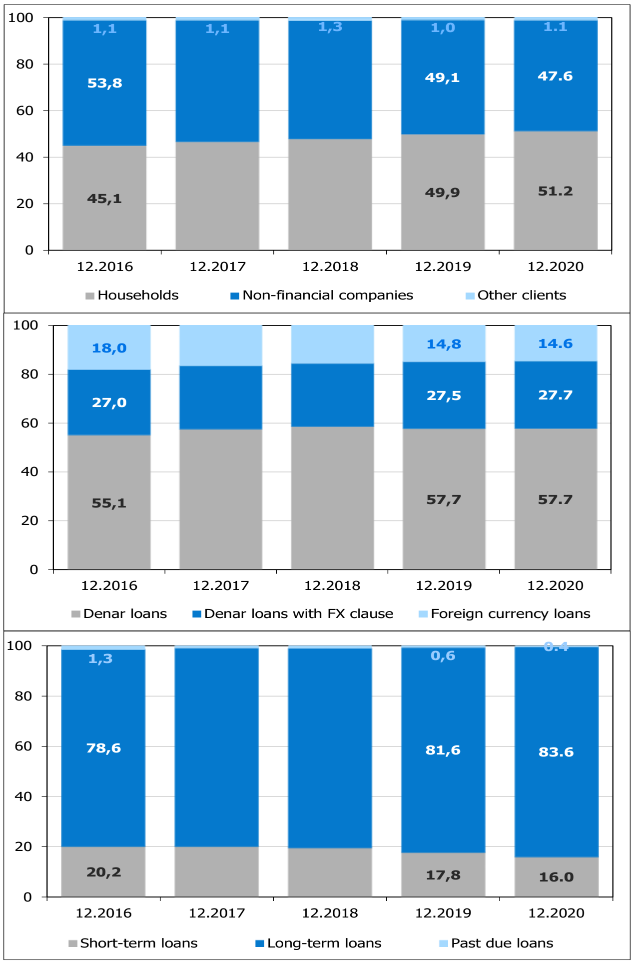
Source: National Bank, based on data submitted by banks.

however, analyzed aggregately, the share of the financing of projects of this type is still small, although in individual banks a solid portion of the loan portfolio accounts for "green" loans[88].

In 2020, denar loans[89] made the largest contribution (58.9%) to the growth of the total loans to non-financial entities, while the contribution of denar loans with foreign exchange clause[90] and foreign currency loans[91] is significantly smaller (31.8% and 9.3%, respectively). The currency structure of total loans remained almost the same compared to the previous year. The largest structural share is still that of denar loans with an identical percentage share as in 2019 (57.7%).

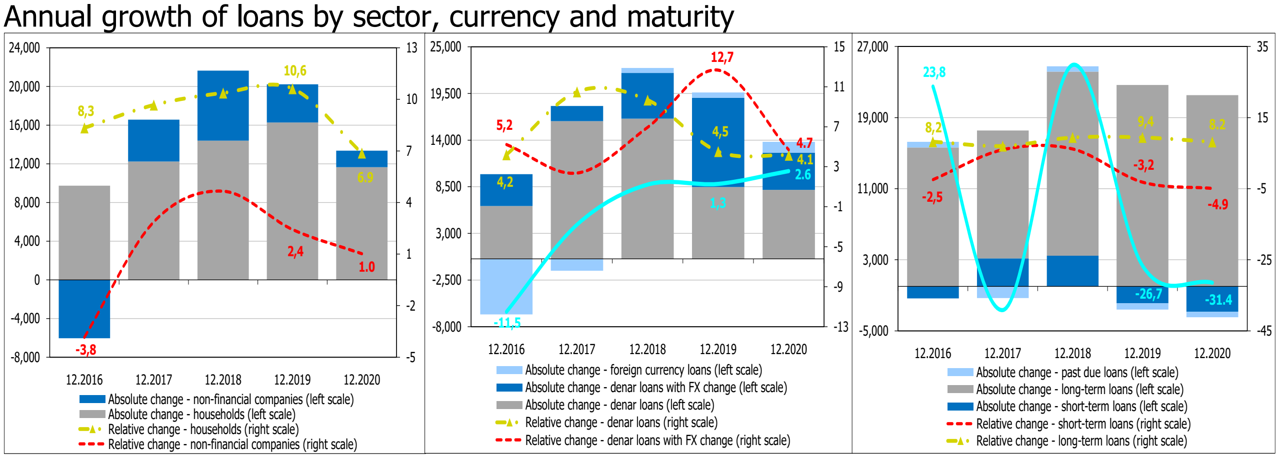
[88] From the thirteen analyzed banks, five banks have not approved "green" loans as of 31.12.2020. In the banks that have approved such loans, the share of "green" loans in total loans ranges from 0.1% to 16.9%. Observed by sector, the share of "green" loans in total loans by individual banks is between 0.1% and 18.2% in corporate loans, i.e. between 0.1% and 6.2% in household loans.
[89] Denar loans increased annually by Denar 8,133 million, or 4.1%, resulting from household loans (growth of Denar 8,590 million, or 9.2%), versus the decrease in denar loans to non-financial companies (by Denar 911 million, or 0.9%).
[90] Denar loans with foreign exchange clause increased annually by Denar 4,384 million (or 4.7%), largely as a result of household loans (Denar 2,665 million, or 4.0%), and to a lesser extent of the increase in corporate loans (Denar 1,965 million, or 7.7%).
[91] Foreign currency loans grew annually by Denar 1,287 million, or 2.6%. Within their frames, corporate loans increased by Denar 644 million (or 1.7%), while the growth of household loans amounted to Denar 402 million (or 4.0%).

Chart 94 Structure of total loans, by sector (up) and currency (middle), and structure of regular loans, by maturity (down)*
in %



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

Chart 95
Annual growth of loans by sector, currency and maturity



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

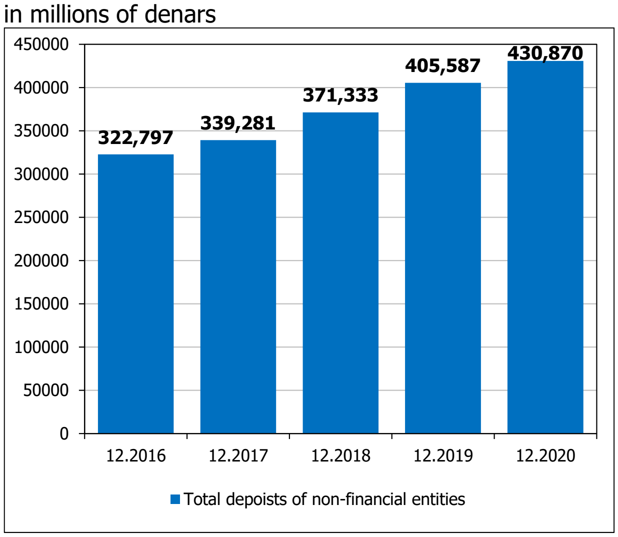
The increase in the maturity of the credit portfolio continued also in 2020, through further growth of long-term lending (by 8.2%, or by Denar 21,535 million), which as of 31.12.2020 reached a share of 83.6% in the structure of total regular[92] loans. Most (about 60%) of the growth of long-term loans is due to household loans, and less to loans to non-financial companies. Short-term loans decreased.

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

1.2 Deposits of non-financial corporations

In 2020, deposits of non-financial entities continue to grow (by Denar 25,283 million, or by 6.2%), but at a slower pace compared to the previous year (when the growth was 9.2%), as expected, given the deepening of the risks for the domestic economy, caused by the current health crisis. A certain contribution to the slower growth of deposits of non-financial entities was also made by the reduction of the number of banks by one bank, due to the revocation of the license for founding and operation of Eurostandard Bank. Analyzed by individual bank, four banks from the group of large banks mostly condition the annual growth of deposits.

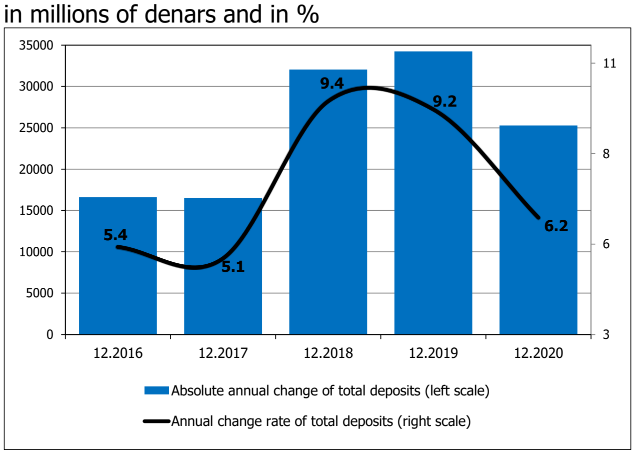
Chart 96 Stock of deposits of non-financial entities
in millions of denars



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

Slowdown in the deposits growth is registered in the two non-financial sectors, which is mainly associated with the health crisis. Households, which are traditionally the most important depositor in the Macedonian banking system (share of 67.1% in total deposits) increased their assets deposited in banks in 2020, by Denar 12,321 million, or 4.5% (7.6% in 2019). Slowdown in the growth of household deposits, only to a small extent, results from the closure of Eurostandard Bank AD Skopje.

Chart 97 Growth of deposits of non-financial entities
in millions of denars and in %

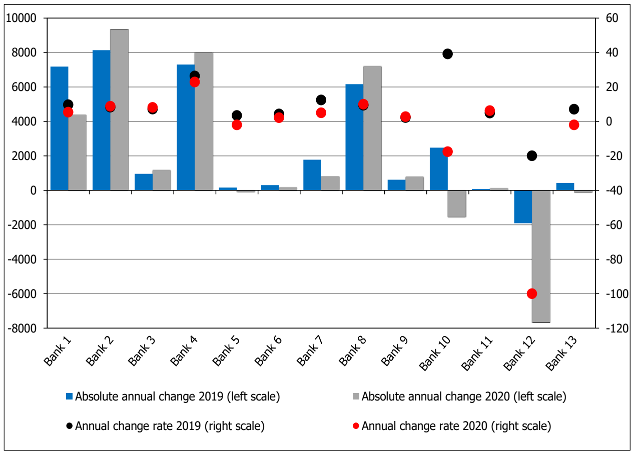


Source: National Bank, based on data submitted by banks.

Deposits of non-financial companies registered an annual growth of Denar 12,532 million, or by 10.9%, which is a certain slowdown compared to the growth registered in 2019 (Denar 13,905 million or 13.8%).

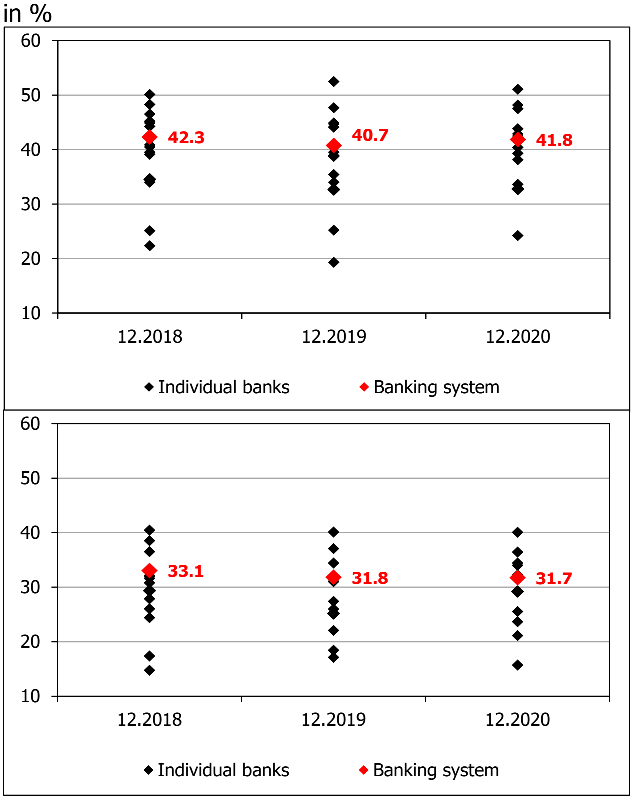
Analyzing the currency structure, the largest contribution to the annual

Chart 98 Growth of deposits of non-financial entities, by bank
in millions of denars and in %



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

Chart 99 Share of total foreign currency deposits (up) and foreign currency household deposits (below) in total deposits
in %



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

growth of the deposit base was made by foreign currency deposits (59.3%), which increased by Denar 15,002 million, or 9.1%. Thus, foreign currency deposits for the first time since 2016 made the largest contribution to the increase in total deposits. The annual growth of foreign currency deposits was mostly due to demand deposits of the two non-financial sectors. **Denar deposits** registered a more modest annual increase (of Denar 10,118 million, or by 4.2%). Within their framework, deposits of non-financial companies made a slightly larger contribution (49%) compared to the contribution of household deposits (44.8%). Moreover, in both the household sector and the non-financial companies, the growth of denar deposits resulted from demand deposits. Following these developments, the share of denar deposits in the total deposit base decreased, which at the end of 2020 was 58.1% (59.2% as of 31.12.2019), while the share of foreign currency deposits increased to the level of 41.8% (40.7% as of 31.12.2019).

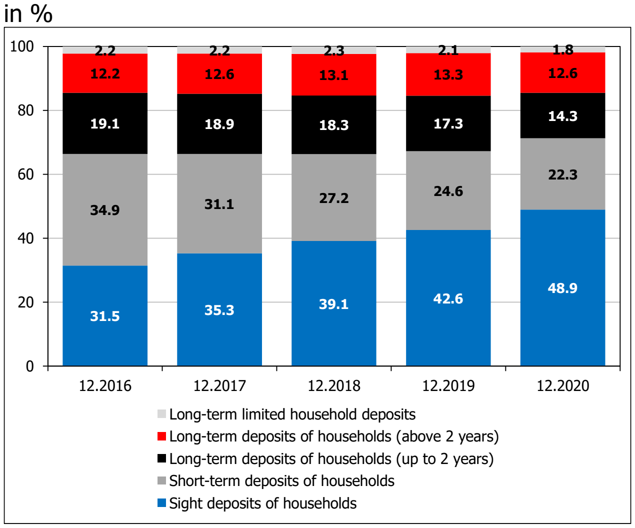
Observing maturity, during 2020, there is a visible propensity of depositors to hold their deposits in banks in very short terms. Thus, demand deposits entirely conditioned the annual growth of the deposit potential and registered an absolute annual increase of Denar 38,605 million, or 17.6%, as a result of the growth of deposits in the two sectors. In contrast, both short-term and long-term deposits[93] registered an almost equal annual decrease (by Denar 6,851 million and Denar 6,471 million, or by 8.5% and 6.1%, respectively).

[93] The annual fall in long-term deposits is almost entirely a result of the fall in household deposits of Denar 7,577 million (where the contribution of denar deposits is 87.1%, while the contribution of foreign currency deposits is far smaller, i.e. 12.9%) and less of the reduction of denar deposits of non-financial companies of Denar 579 million.

The analysis of the maturity structure of household deposits in 2020 shows an increase in the structural share of demand deposits in the maturity structure of household deposits (from 42.6% as of 31.12.2019, to 48.9% as of 31.12.2020). In contrast, the share of short-term deposits continues to register a downward trend (from 24.6% as of 31.12.2019, to 22.3% as of 31.12.2020), while the share of long-term deposits decreased, on an annual basis, by 4 percentage points, to the level of 28.7%[94].

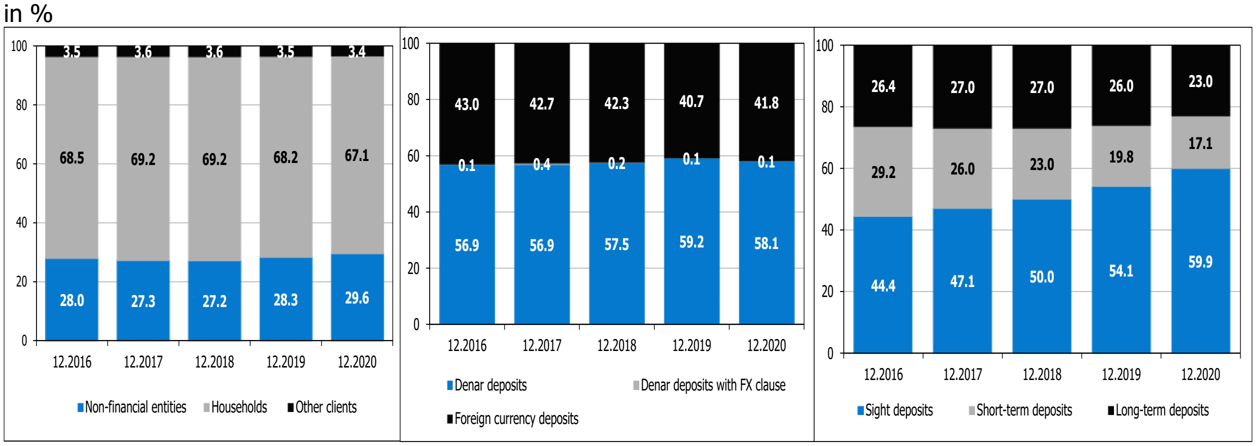
Although the higher contribution of demand deposits to the growth of total deposits is a regular trend in recent years, however the unusual fall in long-term deposits, on the one hand, and the largest contribution of foreign currency deposits to the growth of total deposits, on the other hand, indicate present currency and maturity transformation of deposits in 2020, which is probably a consequence of the uncertainty about the prolonged COVID-19 pandemic. However, the level of euroization is relatively stable, and long-term savings register signs of recovery in the last quarter of 2020.

Chart 100 Maturity structure of household deposits
in %



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

Chart 101 Structure of total deposits, by sector (left), currency (middle) and maturity (right)
in %

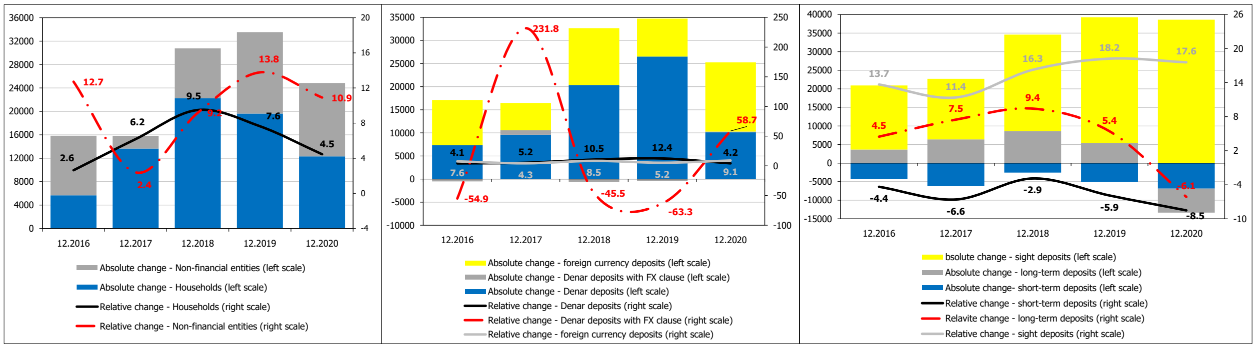


Source: National Bank, based on data submitted by banks.

[94] For comparison, as of 31.12.2019, the share of long-term deposits in the maturity structure of household deposits was 32.8%.

Chart 102 Annual change of deposits by sector, currency and maturity

in %

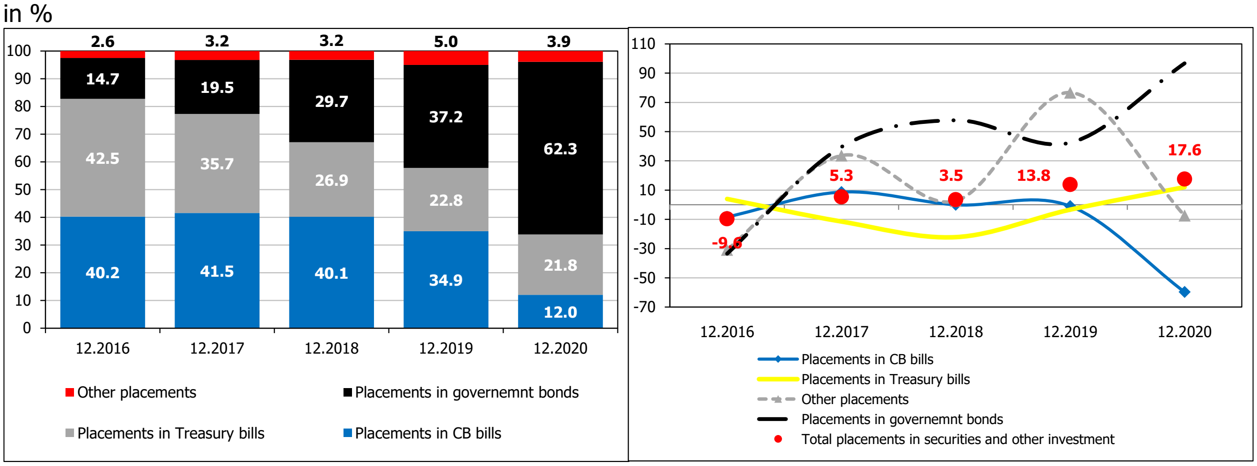


Source: National Bank, based on data submitted by banks.

1.3. Other activities

At the end of 2020, banks' placements in debt securities and other investments[95] (net book value) increased by Denar 12,435 million (or 17.6%), which contributed to increasing their share in total assets of banks up to 14.2% as of 31.12.2020 (12.9% as of 31.12.2019). Such movements were almost entirely conditioned by the annual growth of banks 'investments in government bonds (of Denar 25,510 million[96]), and to a slightly lesser extent by the annual growth of banks' investments in treasury bills (of Denar 1,939 million, or by 12%). On the other side, banks' investments in CB bills have significantly decreased compared to 2019 (by Denar 14,755 million or 59.6%), which corresponds to the significant two-time reduction of the offered amount of CB bills in 2020[97]. In addition, in May 2020, as a result of the increasing risks arising from the current health crisis and, consequently, the economic crisis, the National Bank made additional changes that provided greater access to liquidity for banks. These changes include extension of the scope of securities from domestic banks acceptable for the National Bank as instruments to inject denar liquidity in the banking system (namely, domestic government bonds with maturities of 15 and 30 years and Eurobonds issued by the government on the international financial markets, owned by domestic commercial banks). Such developments contributed to the annual increase of the share of investments in government bonds in the total placements in debt securities and other banks' investments from 37.2% as of 31.12.2019 to 62.3% as of 31.12.2020, at the expense of the decrease in the share of placements in CB bills (from 34.9% as of 31.12.2019 to 12% as of 31.12.2020).

Chart 103
Structure (left) and annual growth (right) of placements in debt securities and other investment*
in %



Source: National Bank, based on data submitted by banks.
*Other investment includes placements in equities and investment in subsidiaries, associates and joint ventures.

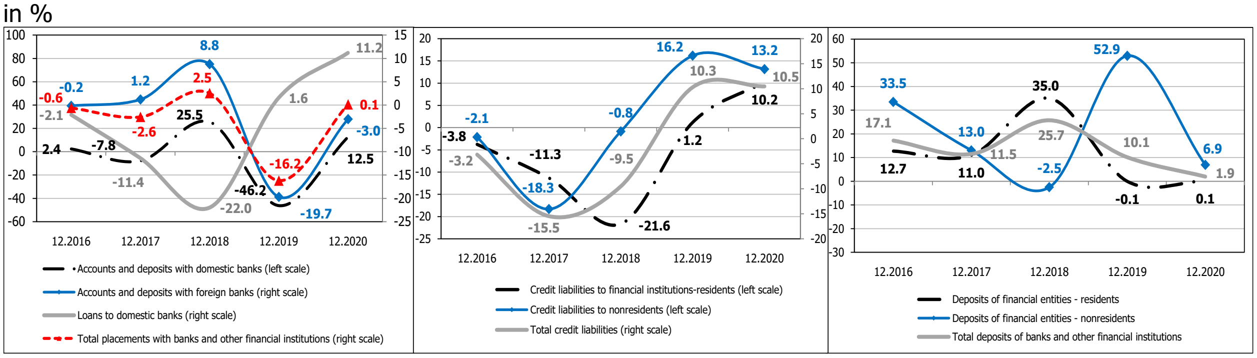
In 2020, placements with banks and other financial institutions slightly increased by Denar 54 million or 0.1%. This increase was mostly due to the growth of loans to domestic banks (by Denar 1,063 million or 11.2%[98]), and to a lesser extent to the growth of placements of accounts and deposits with domestic banks[99], amid reduced placements of accounts and deposits with foreign banks[100].

[95] Other investment includes placements in equities and investment in subsidiaries, associates and joint ventures.

Total **loan liabilities** increased by Denar 3,193 million, or by 10.5% annually, which is mostly due to the growth of loan liabilities to non-resident parent entities of banks (by Denar 2,633 million), and less to the increased loan liabilities to domestic banks[101] (by Denar 1,017 million).

Chart 104 Annual growth rate of claims on financial institutions (left), loan liabilities (middle) and deposits of financial institutions (right)

in %



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

Deposits from banks and other financial institutions remain a small source of banks' financing, accounting for 5.3% of total liabilities in 2020. The annual growth of deposits of banks and other financial institutions (of Denar 593 million, or 1.9%) is mostly due to the increase in deposits of non-resident financial companies (foreign currency transaction accounts and short-term foreign currency deposits) and long-term deposits of pension funds (up to five years in denars).

The scope of banking system activities with non-residents is constantly small, with bank-to-bank differences. The banking system's liabilities[102] to non-residents exceed their receivables. Domestic banks' liabilities to non-residents registered an annual growth of Denar 3,220 million, or 7.7%, and their share in the total banking system liabilities increased to 7.7%[103] (7.6% as at 31.12.2019). Such increase in part stems from the growth of long-term foreign currency loan liabilities (at the DBNM, for the EIB loan), as well as from the growth of transaction accounts and short-term foreign currency deposits of non-resident financial companies

[96] Banks' investments in government bonds in 2020 almost doubled compared to the previous year. In December 2020, the banks invested the funds collected from the loan granted to the government in January 2020 (of Denar 8.1 billion) in government securities (mainly government bonds).

[97] The amount of CB bills that banks could subscribe with the central bank in April and May was reduced by Denar 8,000 million and Denar 7,000 million, respectively (to Denar 10,000 million). In 2020, the National Bank reduced the policy rate by 0.5 percentage points in January, March and May, to 1.5%.

[98] The growth of long-term loans of domestic banks stems from the loans of DBNM AD Skopje placed in domestic banks, based on an approved credit line from the EIB, with the ultimate goal of financing domestic non-financial companies.

[99] The funds on the accounts and deposits with domestic banks increased by Denar 146 million or by 12.5%, which is mostly due to the growth of balances of foreign currency time deposits of domestic banks up to one month (by Denar 404 million) at two large and one medium-sized banks.

[100] The annual decline of funds on accounts with foreign banks is Denar 924 million (or 3%). Within them, there was a significant increase in the funds on regular accounts abroad in foreign currency (by Denar 5,348 million) with a significant decrease in in foreign currency time deposits abroad from three months to one year (by Denar 4,427 million), to one month (by Denar 1,562 million) and overnight (by Denar 1,214 million).

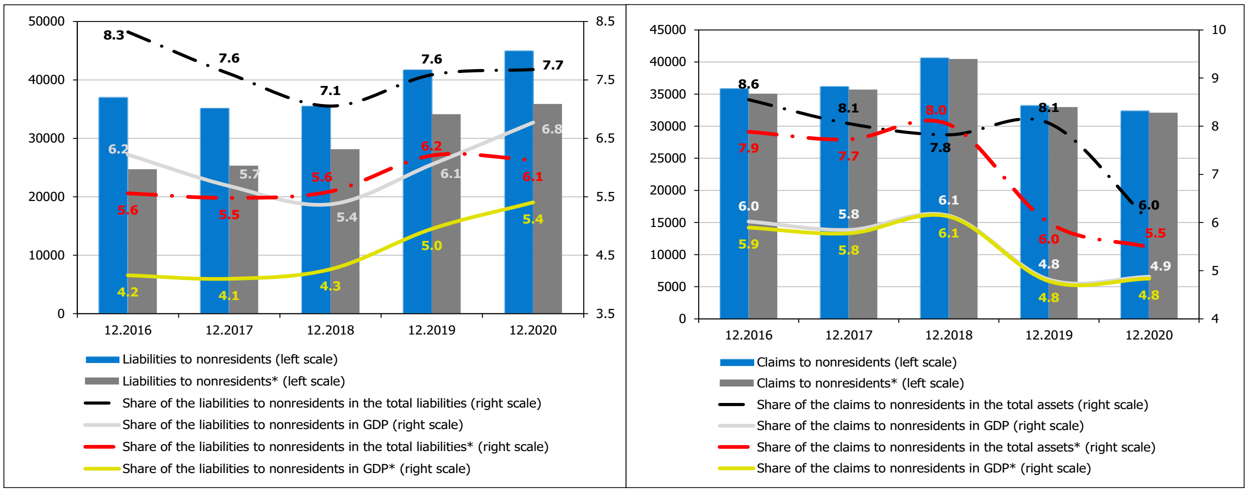
[101] The annual increase in loan liabilities to domestic banks is due to the growth of loan liabilities in foreign currency over five years to DBNM (by Denar 1,788 million).

[102] As of 31.12.2020, eight of fourteen banks owe more than they claim from non-residents.

[103] If DBNM AD Skopje is excluded from the analysis, the share of liabilities to non-residents in total liabilities will be 6.1%.

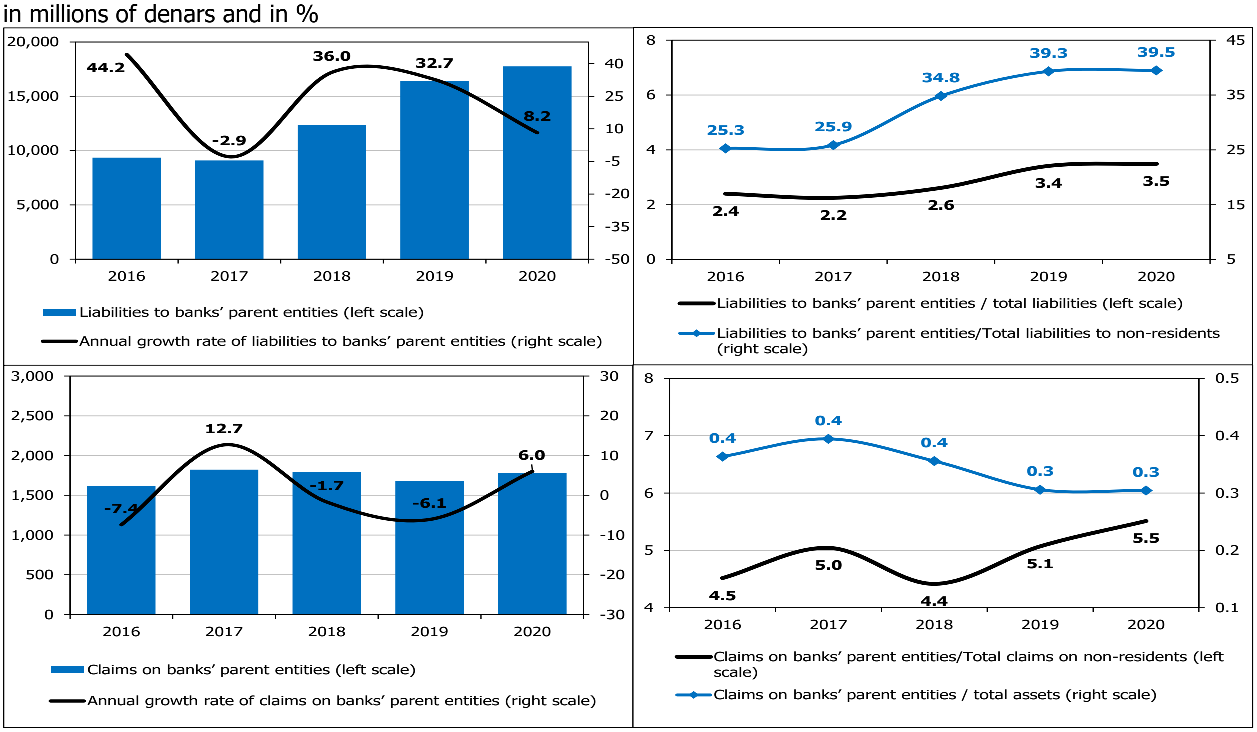
- banks’ parent entities. Contrary to liabilities, banks' claims on non-residents decreased by Denar 833 million (or 2.5%) on annual basis, entirely reflecting the decrease in foreign currency deposits in foreign bank.

Chart 105
Liabilities to (left) and claims on (right) non-residents
in millions of denars and in %



Source: National Bank, based on data submitted by banks.
Source for GDP: State Statistical Office.
*Without DBNM AD Skopje

Chart 106
Liabilities to (up) and claims on (down) banks’ parent entities
in millions of denars and in %



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

Borrowing from parent entities is not a significant source of financing the domestic banks' activities, although bank-to-bank differences can be observed. In 2020, banks' liabilities to their parent entities increased by Denar 1,346 million (or 8.2%), which is mostly due to the increase in short-term deposits of financial entities, as well as the increase in long-term loan liabilities. Thus, the share of banks' liabilities to parent entities (including subordinated liabilities and hybrid capital instruments) in total liabilities of the domestic banking system, and in liabilities to non-residents increased to 3.5% and 39.5%, respectively. Claims on parent entities account for only 0.3% of the total assets of the banking system, while their share in total claims on non-residents is 5.5%. Compared to 31.12.2019, claims on parent entities increased by Denar 101 million or 6%.

2. Profitability

In 2020, the banking system reported higher operating profit, compared to the same period last year. The high growth of the capital gain from the sale of foreclosed assets, as well as the slightly higher income from the collected written off claims made the largest contribution to the profit growth. The modest growth in net interest income and the minor decline in operating expenses had little effect on profit growth. In contrast, there was an increase in the costs of impairment of financial and non-financial assets, as well as a decrease in commission and fee income, which limited the possibility for the banking system to generate larger profit. The higher financial result in 2020 is also influenced by the reduced number of banks, given the exit of Eurostandard Bank AD Skopje from the banking system, which operated at a loss.

The rate of return on average assets remained at the 2019 level, while the rate of return on average equity slightly decreased. At the same time, the profit margin indicator improved. Given the reduction of operating costs, albeit minor, mostly due to lower staff costs, the operational efficiency ratio of the banking system improved.

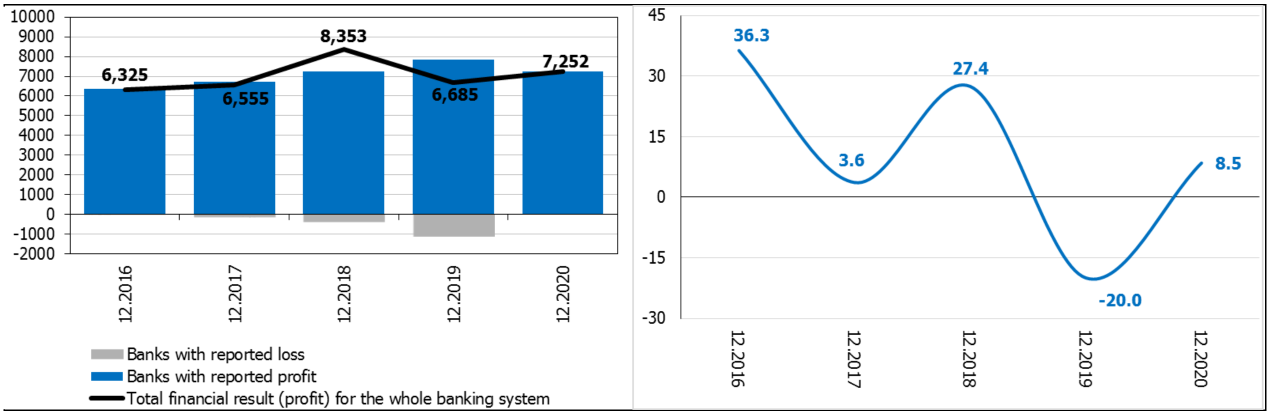
Expenditures for impairment of financial and non-financial assets recorded double-digit percentage growth. The high growth of these costs is largely due to the increased vigilance of banks given the expected higher credit losses due to the corona crisis. Uncertainty about the duration and intensity of coronavirus developments will undoubtedly affect the banks' profitability in the coming period.

In the first half of 2020, the National Bank cut the interest rate on CB bills three times to 1.5%, which remained until the end of the year. The downward trend in banks' lending and deposit interest rates continued throughout the year. The larger decrease in lending, compared to deposit interest rates, conditioned the moderate narrowing of the interest rate spread between them in 2020.

2.1 Profitability and efficiency indicators of the banking system

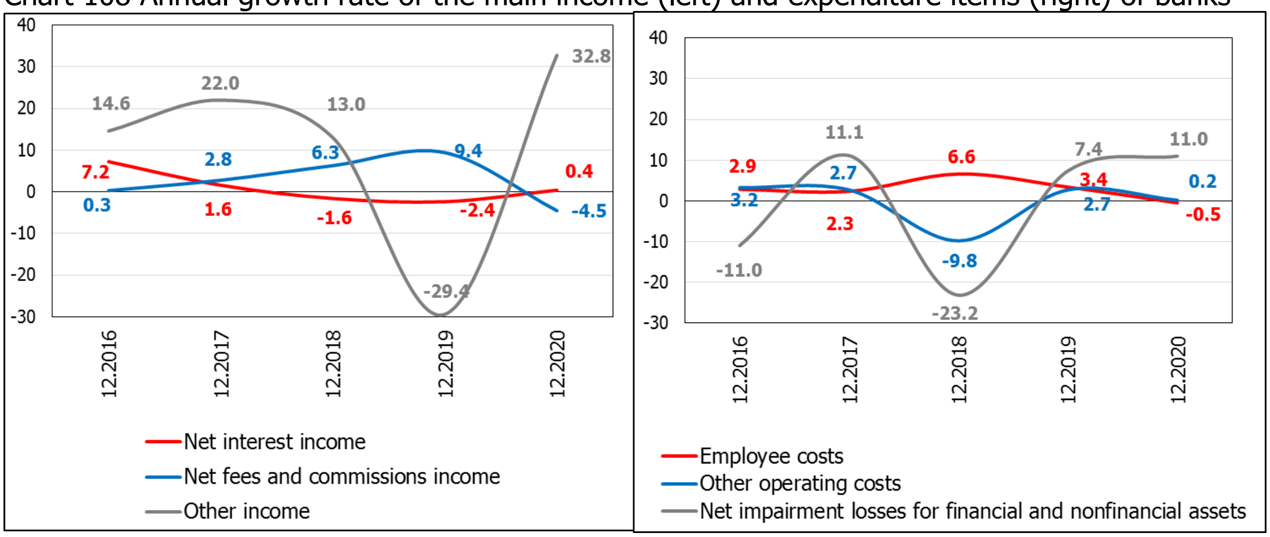
In 2020, the banking system generated operating gain of Denar 7,252 million, which is by 8.5% or Denar 567 million higher, compared to the previous year. The largest contribution to the profit growth was made by the capital gain from the sale of foreclosed assets (higher by Denar 916 million, or by almost 1.5 times), and less to the income growth from collected written off claims (which increased by Denar 158 million or by 18.3%). The higher financial result in 2020 is also influenced by the reduced number of banks, given the exit of Eurostandard Bank AD Skopje from the banking system, which operated at a loss. On the other hand, the absence of faster profit growth reflects the increase in impairment costs (which are higher for financial assets and lower for non-financial assets) and the decrease in net fee and commission income. **Analyzed by bank, all banks achieved positive financial operating result.**

Chart 107 Dynamics of the presented total profit of banks (left) and its annual change (right)
in millions of denars



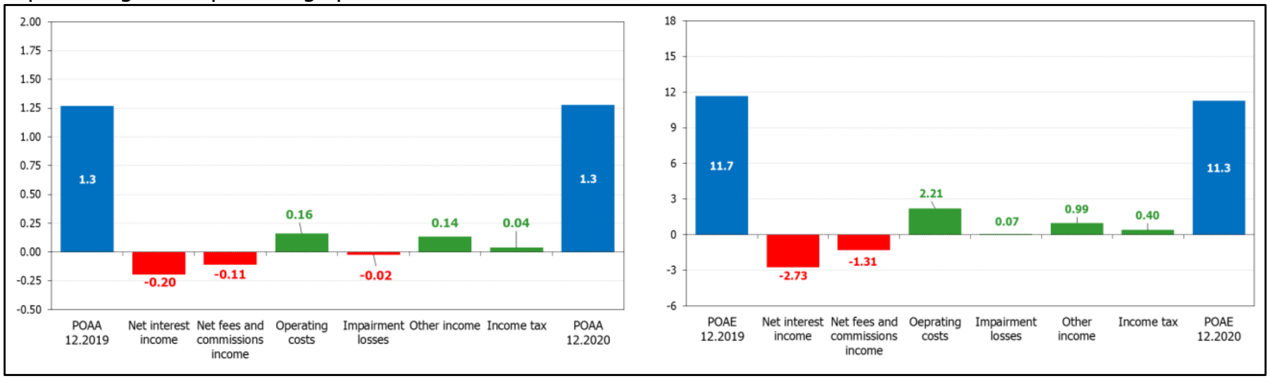
Source: National Bank, based on data submitted by banks.

Chart 108 Annual growth rate of the main income (left) and expenditure items (right) of banks



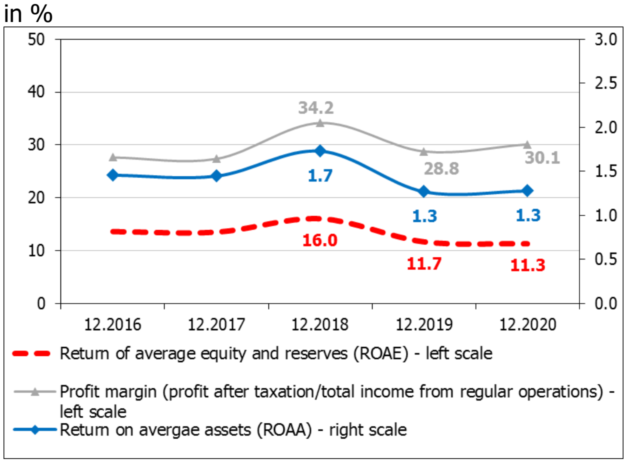
Source: National Bank, based on data submitted by banks.

Chart 109 Decomposition of the rates of return on average assets (left) and average equity (right)
in percentages and percentage points



Source: National Bank, based on data submitted by banks.
Note: The chart shows the changes in individual components of profitability expressed as a share in average assets i.e. average equity and reserves. The green and red bars indicate a positive and negative contribution to the growth of ROAA/ROAE, respectively, in percentage points. ROAA and ROAE are expressed in percentages.

Chart 110
Rates of return on average assets and on average equity and reserves and profit margin
in %

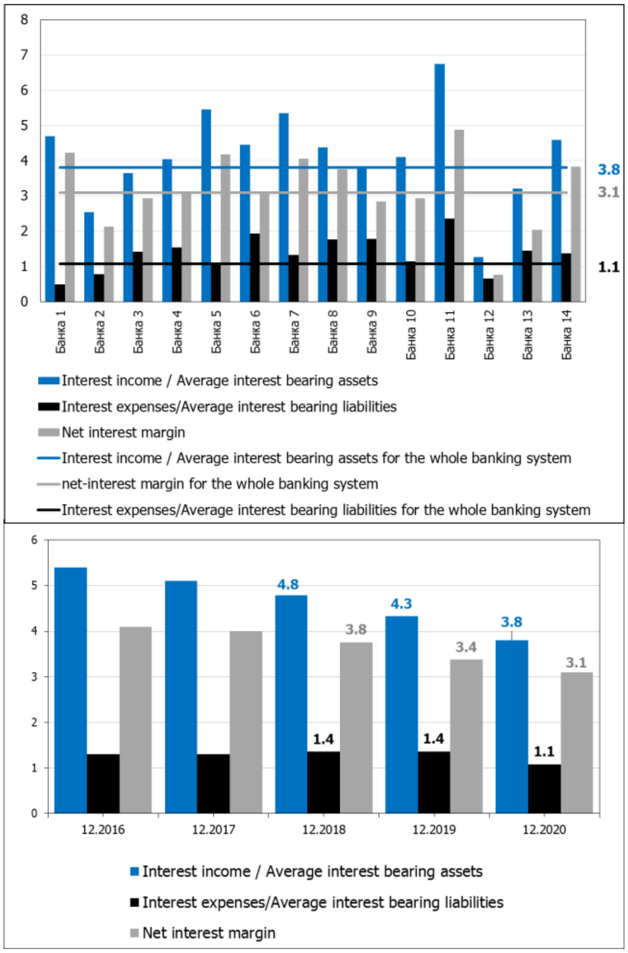


Source: National Bank, based on data submitted by banks.

Profit growth in 2020 was not sufficient to improve the rates of return on average assets and average equity. On the other hand, the profit margin recorded an annual growth. In 2020, the rate of return on average assets remained at the same level as in 2019 (1.3%), while the rate of return on average equity, amid a slightly faster improvement of the capitalization indicators of the banking system decreased by 0.4 percentage points, to 11.3%. The profit margin registered an annual improvement of 1.3 percentage points, which amid modest growth of net interest income and decline in net commission income results from the high growth of other income from regular operations (mainly capital gains from sales of assets). In addition, the slower growth of profits, compared to the growth of total operating income is caused by the relatively high growth of impairment cost in 2020.

Amid constant interest rate cut, the net interest margin of the banking system also follows a downward trend. Thus, in 2020, the net interest margin decreased by 0.3 percentage points and hit a record low of 3.1%. Moreover, this rate is below its ten-year average of 3.7% (4.1% max.). The decrease in the net interest margin results from the faster growth of the average interest-bearing assets (by 9.5%

Chart 111
Net interest margin by bank, as of 31.12.2020 (up)* and of the banking system (down)
in %



Source: National Bank, based on data submitted by banks.
* Indicators of the banking system are shown in lines.
** As of 31.12.2020, 14 banks are presented (one less) given the revocation of the operating license of Eurostandard Banka AD, Skopje in August 2020

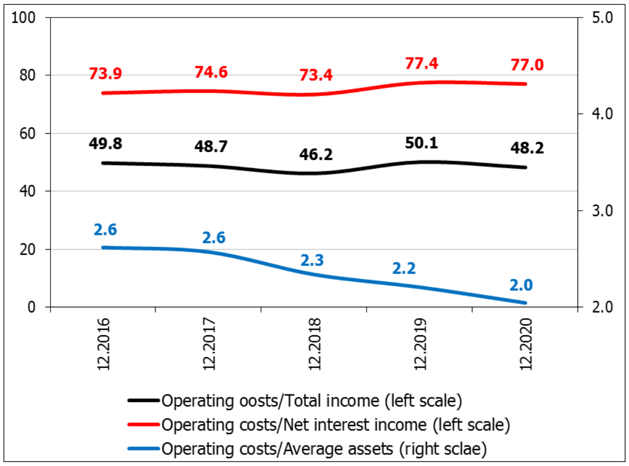
or Denar 42,342 million), compared to the modest growth of the net interest income (merely 0.4% or Denar 59 million). Amid declining interest rates, the increase in net interest income is a result of the faster annual decline in interest expenses (of Denar 781 million, or 18.4%), compared to the decrease in interest income (of Denar 721 million or 3.7%).

In 2020, as usual, financial intermediation with households made the largest positive contribution to the net interest income. Net interest income from households increased annually by Denar 831 million, or by 10.5%, given the growth in interest income[104] and decline in operating interest expenses with this sector[105]. Given the higher growth of placements in government securities, net interest income from the government sector increased by Denar 156 million, or by 21.5%. On the other hand, net interest income from non-financial companies registered an annual decline of Denar 427 million, or 6.8%, due to the faster decline in interest income, compared to the decrease in operating interest expenses with this sector[106]. In the loan/deposit activity with the other sectors (financial institutions, non-profit institutions serving households and non-residents), the banking system reported net expenses i.e. interest expenses exceeds interest income.

The indicators of the banking system operating efficiency improved. The improvement of these indicators primarily reflects the annual decline, minor though, in operating costs (of 0.1%, i.e. of Denar 15 million), which, in turn, mostly results from the slightly lower staff expenses (by 25 million denars, or by 0.5%). At the same time, net interest income, total operating income and

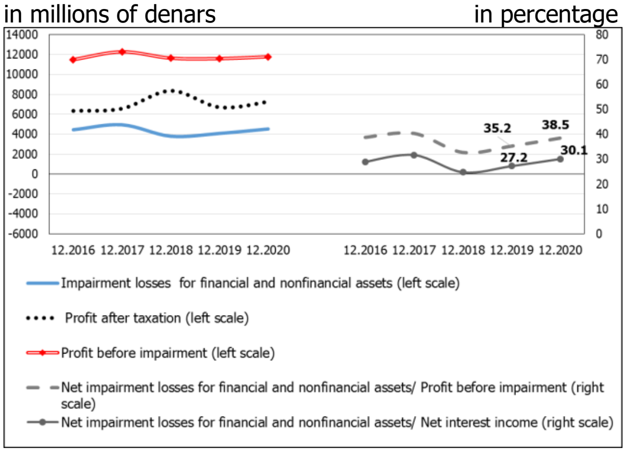
[104] In 2020, household interest income increased by Denar 279 million or 2.8% relative to the previous year.
[105] In 2020, household interest expenses decreased by Denar 552 million or 26.1% compared to 2019.
[106] In 2020, interest income from non-financial corporations reduced by Denar 548 million or 8% compared to the previous year, and the interest expenses decreased by Denar 121 million or 24.7%.

Chart 112
Operational efficiency indicators
in %



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

Chart 113
Impairment costs to gain and to net interest income ratio
in millions of denars in percentage



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

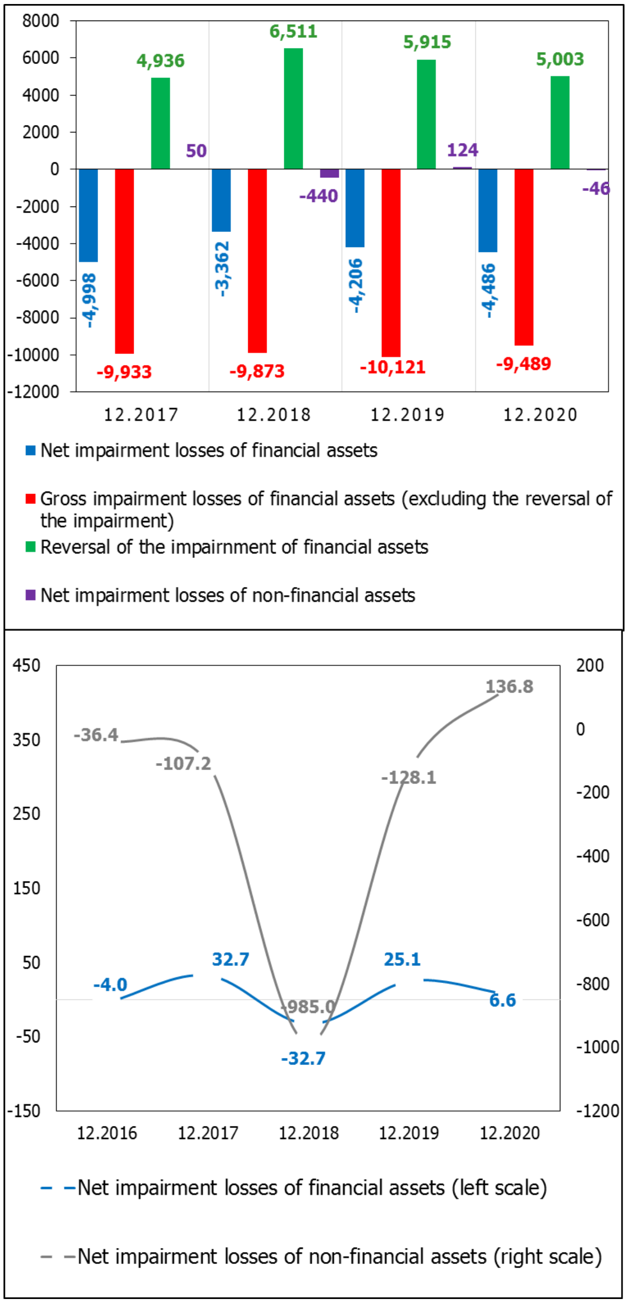
average assets increased by 0.4%, 3.7% and 7.8%, respectively, which led to some improvement (decline) in the share of operating costs in each of these three categories. Analyzing the structure of operating income, the largest increase of 32.8% or Denar 1,026 million was registered in other income as a result of the aforementioned growth of capital gains from the sale of assets and income from collected written off claims. In 2020, net fee and commission income decreased by Denar 231 million or 4.5% given the reduced bank fees for electronic banking services in times of pandemic.

In 2020, impairment cost for financial and non-financial assets increased by Denar 449 million or 11.0%. The increase in these costs is largely due to the increase in impairment costs for financial assets (of Denar 280 million), mostly due to the net growth of costs for special reserve for off-balance sheet exposure of Denar 346 million[107].
The costs for impairment of balance sheet financial assets, on a net basis, registered an annual decline (by Denar 66 million), which is mostly due to the decrease in the number of banks in 2020. Excluding the effect of this event, the costs for impairment of balance sheet assets increased by 32.7%, or by Denar 1,090 million, which is largely (93.3%) due to the increase in the costs of impairment of the value of loans and other placements. The high growth of these costs is due to the increased vigilance of banks given the expected credit losses due to the corona crisis.

The net cost of impairment of non-financial assets increased by Denar 169 million[108], compared to 2019, which results from the

[107] The increase in the costs for special reserve of the off-balance sheet exposure largely arises from the lower annual release of the special reserve of this type of exposure (by Denar 280 million), compared to 2019, and less from the larger allocated special reserve (by Denar 66 million more), compared to last year. In 2019, the allocated special reserve for off-balance sheet exposure was lower than the release of this reserve, thus on a net basis, the special reserve for off-balance sheet exposure was positive and enjoyed an income status. In contrast, in 2020, the allocated special reserve for off-balance sheet exposure is higher than the release, so on a net basis these reserves are negative and have an expense status in the income statement.
[108] Note that on a net basis, the impairment of non-financial assets was positive in 2019. On the other hand, in 2020, this impairment is negative and has an expense status in the income statement.

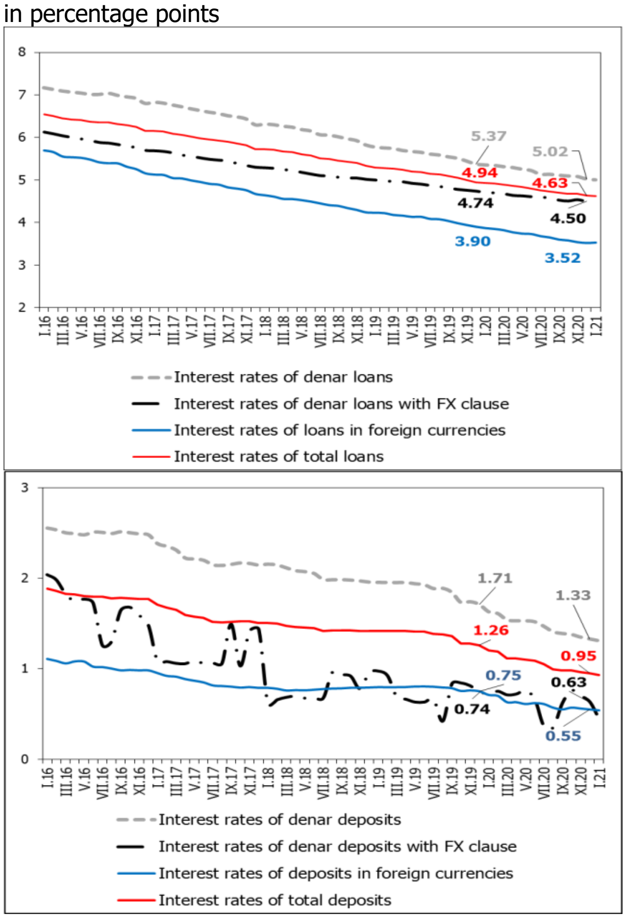
Chart 114
Amount of impairment costs of financial and non-financial assets (up) and annual rates of change in impairment costs of financial and non-financial assets (down)
in millions of denars and in %



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

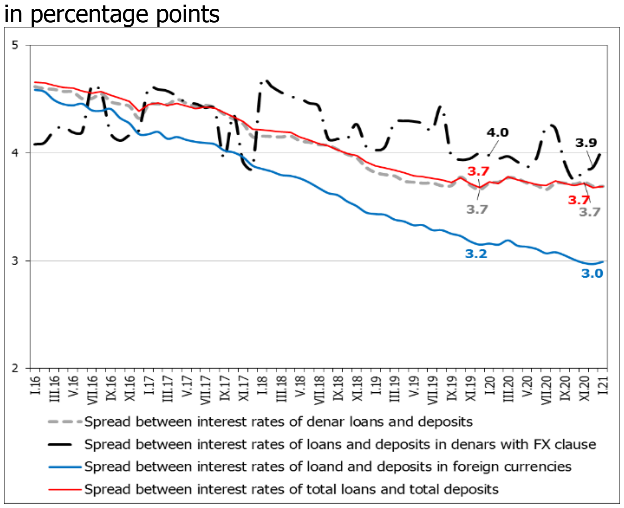
Denar 127 million lower release of impairment of assets, amid simultaneous growth of the cost of impairment of non-financial assets of Denar 42 million.

Chart 115
Lending (up) and deposit interest rates (down)
in percentage points



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

Chart 116
Interest spread
in percentage points



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

2.2 Movements in interest rates and interest rate spread

In the first half of 2020, the National Bank reduced the interest rate on CB bills three times to 1.5%, which remained until the end of the year. The downward trend in banks' lending and deposit interest rates continued throughout 2020. Thus, the weighted average lending interest rate of banks in 2020 was 4.8%, which is less by 0.4 percentage points compared to 2019. In 2020, the weighted average deposit interest rate was also cut by 0.3 percentage points, to 1.1%. Analyzed by currency, average Denar interest rates decreased almost identically on both loans (by 0.42 percentage points) and deposits (by 0.40 percentage points). Analyzing the currency of other interest rates, the average interest rates on loans registered a stronger decrease compared to the fall in the average interest rates on deposits.

In line with the larger decrease in lending compared to deposit interest rates, the interest spread narrowed moderately in 2020. The spread between the weighted average interest rates on total loans and deposits in 2020 was 3.7 percentage points, which is an annual decrease of 0.1 percentage points.

ANNEXES