Periodical Part

Report on the risks in the banking system of the Republic of Macedonia in ... / National Bank of the Republic of Macedonia ; 2019

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 2019

April 2020

Contents

I. Summary

This report was written in conditions unknown to most of us, under the influence of the health crisis caused by the COVID-19 pandemic. Extensive measures are being taken globally and nationally, which are primarily aimed at protecting human health, but have significant economic effects, as well. It is already certain that we are dealing with the most serious global shock with strong negative consequences for the economic growth, for the companies' performance and the households, which would have transfer effects on the operation of the domestic banks. At this moment it is difficult to say what the effects will be, but it is certain that there will be consequences for the scope of activities of banks, and above all for the level of lending activity, the quality of the loan portfolio, and of course, their profitability.

How much and how ready the banks are to cope with this shock is best shown by the numbers and conclusions presented in this Report.

In 2019, as in previous years, the banking system preserved its stability. The National Bank, through the constant improvement of the standards in accordance with the European regulations, but also the banks with their prudent behavior, enabled to maintain liquidity and solvency high and stable. These are the two basic pillars of the stability of the banking system, the scope and quality of which will certainly contribute to easier dealing with the consequences of the coronavirus. At the end of 2019, the capital adequacy ratio of the banking system equaled 16.3%, which is an annual decrease of 0.2 percentage points, mainly due to the faster growth of banks' activities, primarily credit activity, compared to the growth of own funds. Almost half of the own funds of the banking system belong to the capital supplements determined in accordance with the supervisory assessment and to the the capital buffers, which are especially important in crisis conditions, when they can be used to deal with various challenges.The stress testing of the resilience of the banking system and individual banks to simulated shocks shows improved resilience in 2019, compared to 2018.

In 2019, the liquidity position of banks further improved, mainly due to the growth of liquid assets, which is the highest in the last nine years. Consequently, the indicators through which liquidity is monitored and assessed also improved. As much as one third of the assets of the banking system are liquid assets, which cover close to 60% of household deposits.The results of the simulations for combined liquidity shocks confirm the satisfactory volume of liquid assets that allows banks to smoothly carry out their business. This indicates an appropriate liquidity risk management by banks and a satisfactory resilience to the assumed extreme liquidity outflows.

In these times of crisis, it is the structural excess liquidity and good capitalization of domestic banks that contribute to their solid capacity and readiness to meet the needs of their customers. Hence, in March 2020, the banks started a massive restructuring of loans to households and the corporate sector, by providing a grace period and changing the terms of financing. This created conditions for temporary ease the credit burden of the borrowers in the coming months in order to overcome this crisis episode more easily. The regulatory flexibility provided by the National Bank regarding the treatment of these restructurings, while maintaining prudence by limiting the possibility for additional risks to the banks' balance sheets, had contributed greatly to this.

Credit risk is still the most common risk in the overall risk profile of banks, but the exposure to this risk shows a decrease in 2019. This is reflected in the decrease in non-performing loans in both non-financial sectors. This decline is largely due to the non-performing loans write-offs by banks in accordance with the amendments in the credit risk management regulations[1]. Consequently, the ratio of non-performing loans to the non-financial sector dropped to the historical low of 4.8%. This means that 95.2% of bank loans are repaid regularly or with a delay of up to 90 days.

Still, most of the non-performing loans come from the loans to corporate sector, of which 7.6% are non-performing loans. The ratio between non-performing and total household loans is at a historically lowest level of only 2.0%. Despite the improvement of the indicators of the credit risk exposure, there are still certain movements in the loan portfolios of the banks that deserve more careful monitoring. The faster growth of household longer-term debt, indirect credit risk due to the high (although declining) share of loans with currency component and loans with variable and adjustable interest rates are some of the factors that may point to an additional source of credit risk. However, the significant coverage of non-performing loans with impairment along with the satisfactory volume and quality of own funds restricts the potential adverse effects on the banks' solvency from full default.

The exposure of the banking system to currency risk is low, due to the acceptable and mainly low ratio of banks' open currency positions with own funds. At the same time, the euro is the most common currency in the currency structure of banks' balance sheets, which in conditions of de facto fixed nominal exchange rate of the denar against the euro, limits the probability for materialization not only of the direct but also of the indirect exposure of banks to the currency risk. **Banks' exposure to interest rate risk in the banking book remains low.**

The domestic banking system in 2019 continued with profitable operations, but with slightly lower profits and consequently lower indicators of return on equity and assets, compared to 2018[2]. At the end of 2019, these rates of return equaled 11.7% and 1.3%, respectively. The narrowing of the banks' net interest margin, for the fourth year in a row, contributed as well to this reduction, whereby in 2019 it was reduced to a historically low level of 3.4%. In the coming period, banks will have to compensate for the reduced importance of net interest income for their profits, for which, in the expected slowdown in demand for various financial services, as a consequence of the crisis with the COVID-19 virus, it is particularly important to improve their operational efficiency. Of course, the consequences of the coronavirus will significantly determine the financial result of the banks due to the possible increase in the cost of impairment, based on the expectations for increasing the default rate on loans.

In general, the banking system is sound, stable and on solid ground, with the capacity to deal with a variety of shocks, including the adverse effects of the current health crisis. The good condition and the strong liquidity and capital positions of the domestic banks indicate sufficient potential for absorption of possible losses, but also for providing further advanced credit support to

[1] From July 2019, the obligation for mandatory write-off of non-performing exposures that are fully provisioned for more than one year was introduced. For comparison, from 1.1.2016 to 30.6.2019, the period of mandatory write-off of non-performing exposures that are fully provisioned was two years.

[2] The decrease in profits primarily stems from the exhaustion of the effects of the substantial improvement in profitability in 2018 due to one-off events.

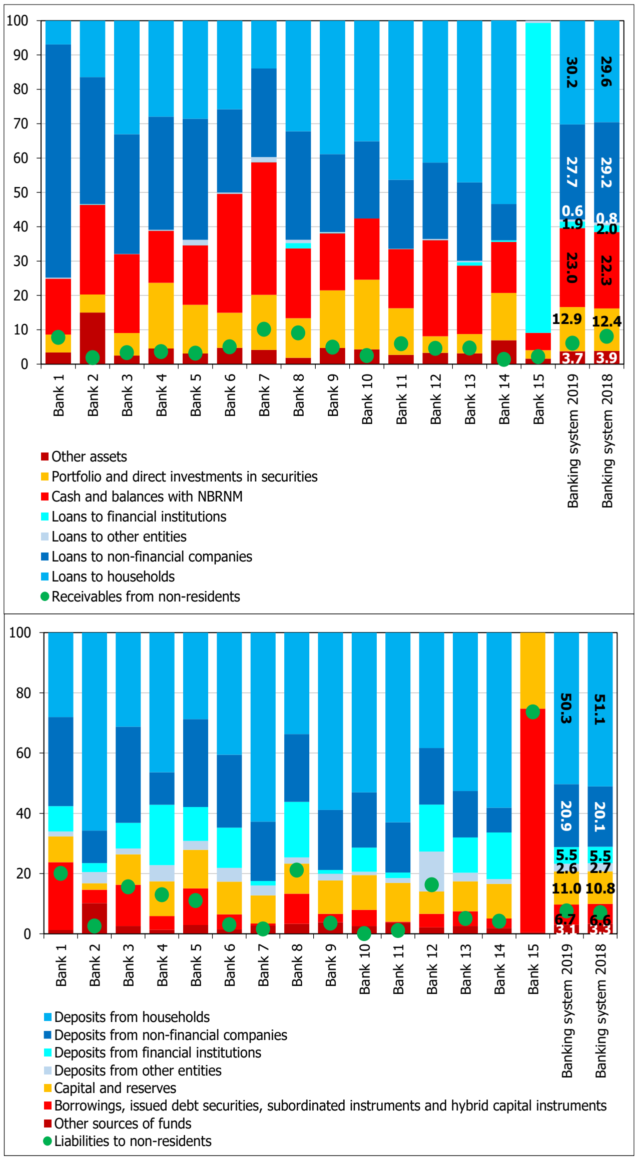
households and companies. The National Bank is closely following all developments and, as before, is ready to take all necessary measures within its competence, to more easily overcome the consequences of the crisis and to maintain the stability of the banking system.

I. 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 31.12.2019
in %



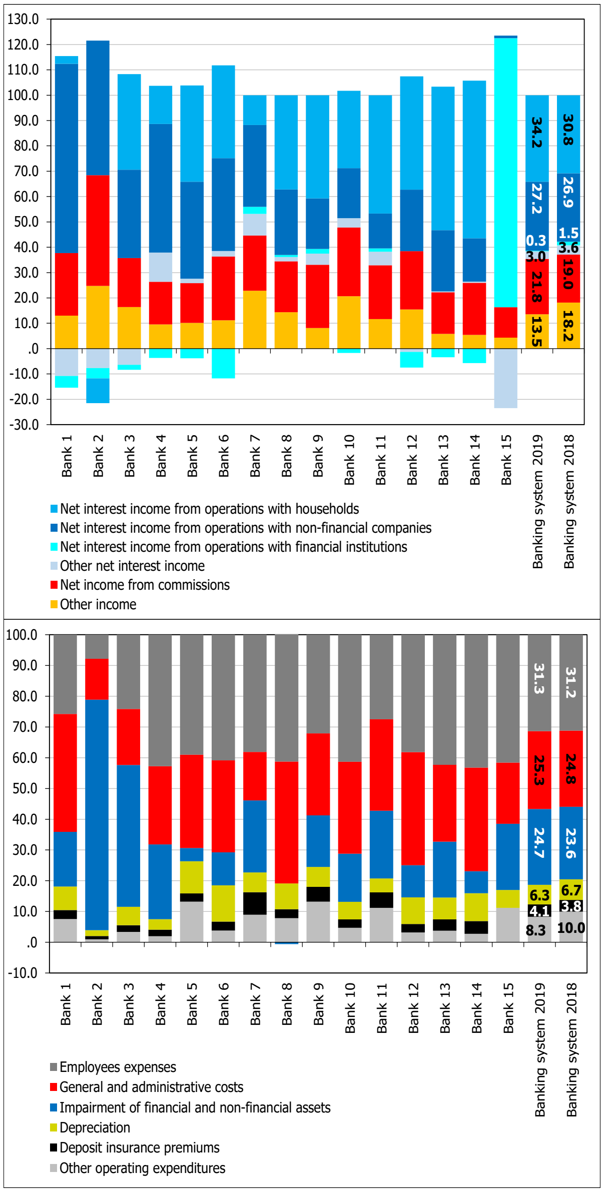
Source: National Bank, based on data submitted by banks.
The order of banks is random.

The main business model of the Macedonian banks, collecting deposits and extending loans, registered no significant changes in 2019. Household deposits, as the most important source of funding for banks, prevail in the total liabilities of the banking system, with a share of 50.3% (which is by 0.8 percentage points less compared with 31.12.2018). Analyzed by individual bank, household deposits have the highest share in the total sources of funds with eleven banks. In three banks, the shares of deposits from households and from non-financial corporations are similar, 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 (58.5%) is the highest, which is by 1.1 percentage point less compared to 31.12.2018. As last year, this year as well, there is an increase in the share of household loans (30.2%), compared to loans to non-financial corporations (27.7%), in total assets[3]. Analyzed by individual bank, five banks are more oriented towards lending to non-financial corporations, and six banks lend more to the households. In three banks, the share of the lending to the two sectors is almost the same, and in one bank, loans to domestic banks prevail.

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

Chart 2
Structure of total income (top) and total expenditures (bottom) of banks and the banking system, in 2019
in %



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

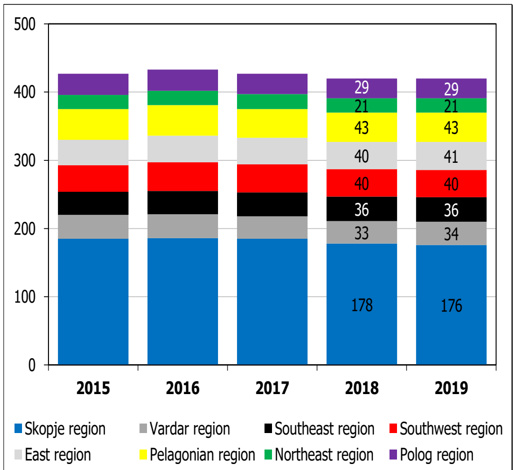
The structure of total banks' income corresponds to the application of the traditional business model. Thus, net interest income, with a share of 64.6% is the most important in the structure of total income, registering an increase of 1.7 percentage point compared to 2018. At the same time, the share of net fee income in total income increased by 2.8 percentage points, and the share of other income decreased by 4.6 percentage points. Similar to the movements in the structure of assets, this year the share of net interest income from the operations with households (34.2%) exceeded the share of net interest income from the operations with enterprises (27.2%) in total income.

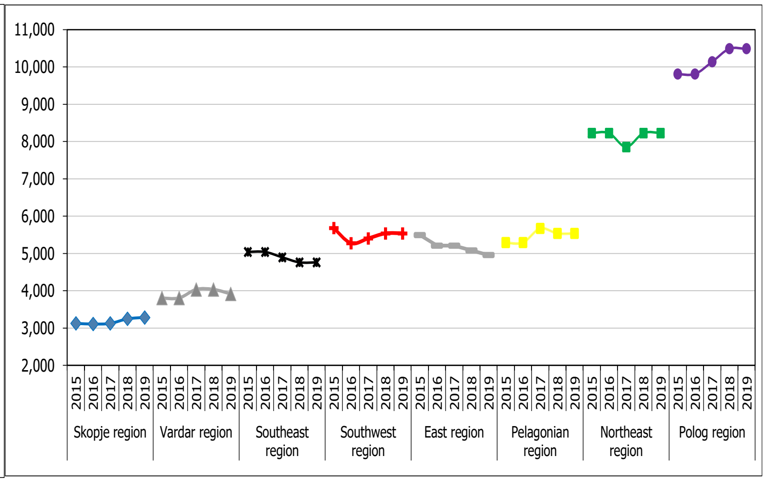
At the level of the banking system, the same as last year, the most significant expenditures are: employees costs (31.3%), followed by general and administrative costs (25.3%) and impairment of financial and non-financial assets (24.7%), with a minimal percentage increase.

1.2 Number of banks and access to banking services

As of 31.12.2019, seventeen depository institutions operate in the Republic of North Macedonia, i.e. fifteen banks and two savings houses[4]. The number of banks and savings houses is unchanged compared to the previous year.

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



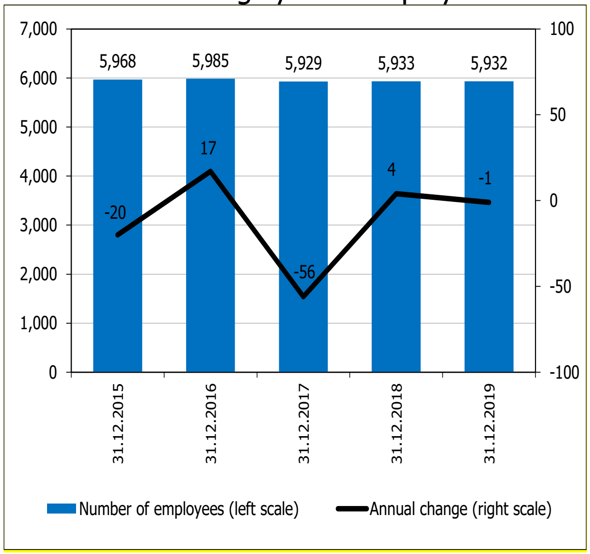


Source: The National Bank, based on data submitted by banks, State Statistical Office of the Republic of North Macedonia according to official data of the 2002 census.

The banking network is spread across almost all cities in the Republic of North Macedonia and consists of 420 business units[5]. The total number of business units is unchanged compared to the previous year (two new business units were opened and the same number were closed). Around 42% of the total number of business units are concentrated in the Skopje area, where the **access to banking services,** as measured by the number of inhabitants per business unit, is still the highest, despite the reduction of the number of business units (by two) in 2019. As for the rest of the country, the Vardar Region

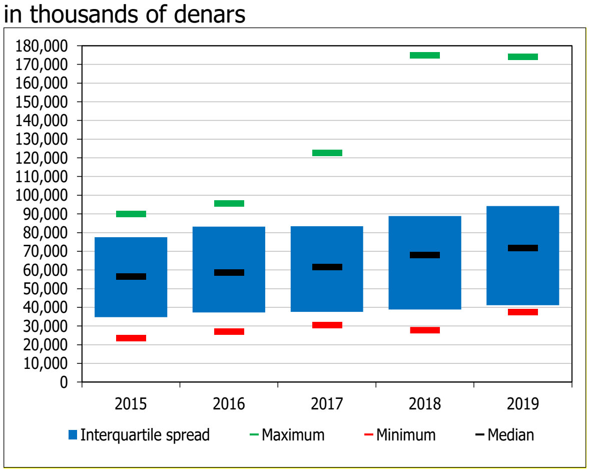
[4] The share of savings houses in total assets of depository financial institutions (banks and savings banks) is 0.4%, in total loans to non-financial entities 0.5% and 0.4% of total household deposits. Given the insignificant share of savings houses in the total banking system, they are subject to analysis only in the Reports on the Financial Stability of the Republic of North Macedonia.
[5] The number of business units includes the banks' main offices, but excludes banks' windows.

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.

and the east part of the country reported a slight improvement of the access to banking services.

1.3 Employment in the banking system

In 2019, the number of persons employed in the banking system is 5,932 and is almost unchanged (decreased by one person) compared to the end of 2018. Qualification structure of employees in the banking sector further improved. The share of employees with at least university education continues to increase, reaching 82.1% of the total number of employees in the banking system, which is an annual growth of 1.1 percentage point.

Banking system productivity continues to improve. Asset growth in 2019 accelerated, rising to the level of 9.2%, with almost unchanged number of employees. Analyzed by bank, the differences in the productivity of individual banks remain significant. The increase in productivity is especially noticeable in two banks in the sector, whose assets show solid annual growth (of 22.4% and 14.6%, respectively), while reducing the number of employees (-8.7% and -4, 5%, respectively).

1.4 Ownership structure and concentration of the banking system

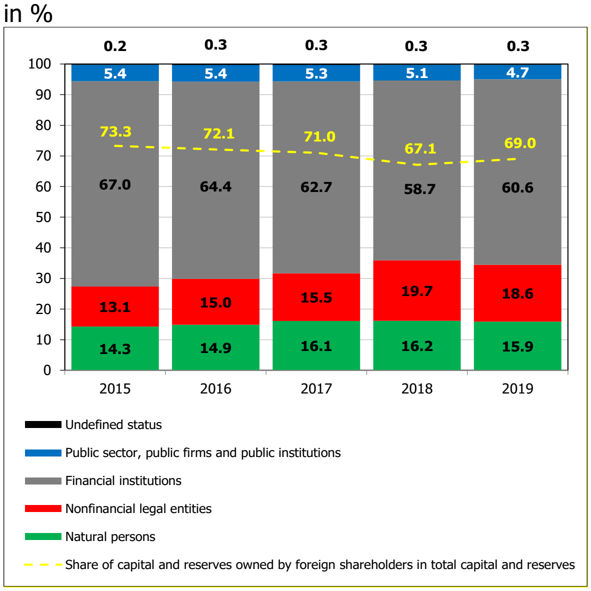
As of 31.12.2019, the number of banks owned by foreign shareholders (eleven), and the number of foreign banks subsidiaries[6] (six), remained unchanged.

Table 1
Structure of the number of banks and major balance sheet positions, by banks' majority ownership (as of 31.12.2019)
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	**11**	**43,864**	**72.8%**	**395,075**	**71.8%**	**272,858**	**80.3%**	**284,806**	**70.2%**	**17,828**	**76.7%**	**4,735**	**70.8%**
- subsidiaries of foreign banks	*6*	*38,003*	*63.0%*	*323,039*	*58.7%*	*220,580*	*64.9%*	*236,622*	*58.3%*	*15,030*	*64.7%*	*5,431*	*81.2%*
- Austria	2	6,753	11.2%	66,950	12.2%	47,692	14.0%	41,902	10.3%	2,695	11.6%	498	7.4%
- Bulgaria	1	1,214	2.0%	10,568	1.9%	6,847	2.0%	7,181	1.8%	376	1.6%	10	0.1%
- Greece	1	12,887	21.4%	99,714	18.1%	68,741	20.2%	80,996	20.0%	5,383	23.2%	2,371	35.5%
- Slovenia	1	9,793	16.2%	88,394	16.1%	59,178	17.4%	71,611	17.7%	4,426	19.0%	1,850	27.7%
- Turkey	1	7,355	12.2%	57,412	10.4%	38,121	11.2%	34,932	8.6%	2,151	9.3%	702	10.5%
- other banks in dominant foreign ownership	*5*	*5,861*	*9.7%*	*72,036*	*13.1%*	*52,278*	*15.4%*	*48,184*	*11.9%*	*2,798*	*12.0%*	*-696*	*-10.4%*
- Bulgaria	2	2,564	4.3%	25,395	4.6%	18,062	5.3%	17,766	4.4%	1,155	5.0%	236	3.5%
- Germany	1	2,589	4.3%	30,263	5.5%	23,186	6.8%	17,948	4.4%	897	3.9%	145	2.2%
- Switzerland	2	709	1.2%	16,378	3.0%	11,029	3.2%	12,471	3.1%	747	3.2%	-1,077	-16.1%
Banks in dominant ownership of domestic shareholders	**4**	**16,430**	**27.2%**	**154,895**	**28.2%**	**66,841**	**19.7%**	**120,780**	**29.8%**	**5,406**	**23.3%**	**1,950**	**29.2%**
- private ownership	*3*	*13,829*	*22.9%*	*144,582*	*26.3%*	*66,771*	*19.7%*	*120,780*	*29.8%*	*5,305*	*22.8%*	*1,932*	*28.9%*
- state ownership	*1*	*2,601*	*4.3%*	*10,313*	*1.9%*	*69*	*0.0%*	*0*	*0.0%*	*101*	*0.4%*	*18*	*0.3%*
Total:	**15**	**60,295**	**100.0%**	**549,969**	**100.0%**	**339,699**	**100.0%**	**405,587**	**100.0%**	**23,234**	**100.0%**	**6,685**	**100.0%**

Source: National Bank, based on data submitted by banks.
*Total revenues and financial result refer to 2019.

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

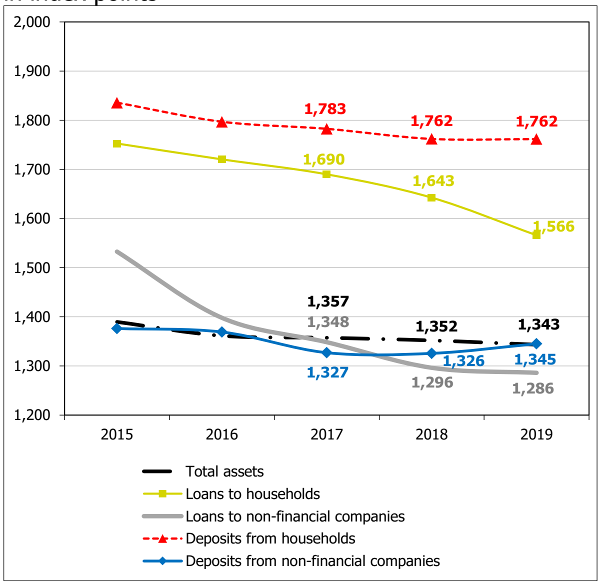


Source: National Bank, based on data submitted by banks.

In 2019, the banks in dominantly foreign ownership continue to prevail in most categories of activities, which is particularly pronounced in loans to non-financial entities (80.3%), total income (76.7%) and financial result (70, 8%). Compared to the previous year, a slightly larger decrease (of 5.7 percentage points) was registered in the share of banks in mostly foreign ownership in the total financial result of the banking system. In 2019, the share of the foreign shareholders in the total capital and reserves increased by 1.9 percentage points, non-financial legal entities decreased the share by 1.1 percentage points, while the share of financial institutions in

[6] In November 2019, the dominant ownership of one bank changed but it remained an EU bank subsidiary, but with a new dominant owner.

Chart 7
Herfindahl index*
in index points



Source: National Bank, based on data submitted by banks.
*Herfindahl index is calculated according to the formula

$$HI = \sum_{j=1}^{n} (S_j)^2$$

, where S is the share of each bank in the total amount of the analyzed category (e.g., total assets, total deposits, etc.), where *n* denotes the total number of banks in the system. When the index ranges from 1,000 to 1,800 points, the concentration ratio is considered to be acceptable.

the ownership structure of the banking system increased by 1.9 percentage points. According to the country of origin, the shareholders from Greece (19.7%), Slovenia (14.5%), Turkey (12.1%) and Austria (10.7%) have the highest share in the total capital and reserves.

According to the Herfindahl index, the concentration in the banking system in 2019 continued to decrease, which is most pronounced in household lending. The only increase is observed in the deposits of non-financial corporations, while in the deposits of households there is no change. All values of this index are within the interval for its acceptable values.

In terms of size, several banks are key for the total banking sector and the domestic economy, and the growth of medium-sized banks increasingly delutes the importance of the three largest banks in the system.

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

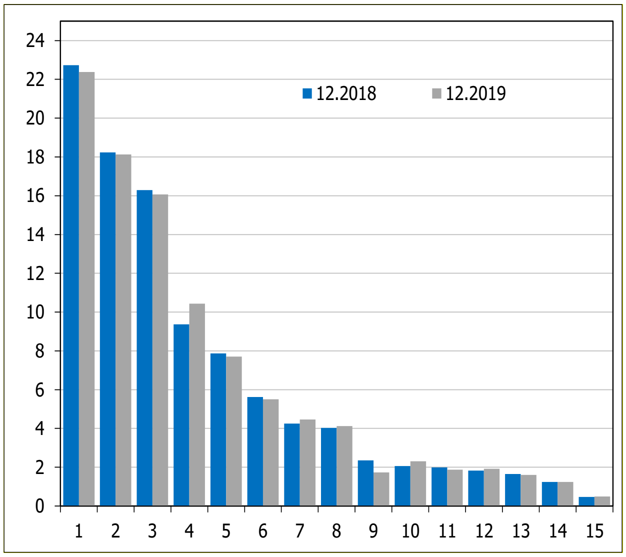
Position	31.12.2018		31.12.2019	
	CR3	CR5	CR3	CR5
Total assets	57.3	74.5	56.6	74.7
Loans to households	60.3	77.7	58.9	77.1
Loans to non-financial companies	49.9	72.3	48.6	73.5
Deposits from households	69.6	80.0	69.4	80.2
Deposits from non-financial companies	50.7	75.5	51.0	77.2
Financial result*	79.6	94.4	90.2	104.5
Total revenues*	62.6	78.2	60.9	77.6

Source: National Bank, based on data submitted by banks.
*Total revenues and financial result refer to 2019.

The CR5 and CR3[7] indicators also show annual decline in almost all segments of banking operations. A significant increase in these indicators is observed in the financial result, where, in conditions of decrease in the total profit, the indicators for the shares of the three and five largest banks in the financial result increased.

[7] The indicator CR5, i.e. CR3 shows the share of a certain analyzed category (for example, assets) of the five, i.e. the three banks with the highest value of that category in the total amount of the analyzed category (for example, in total assets) in the banking system.

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

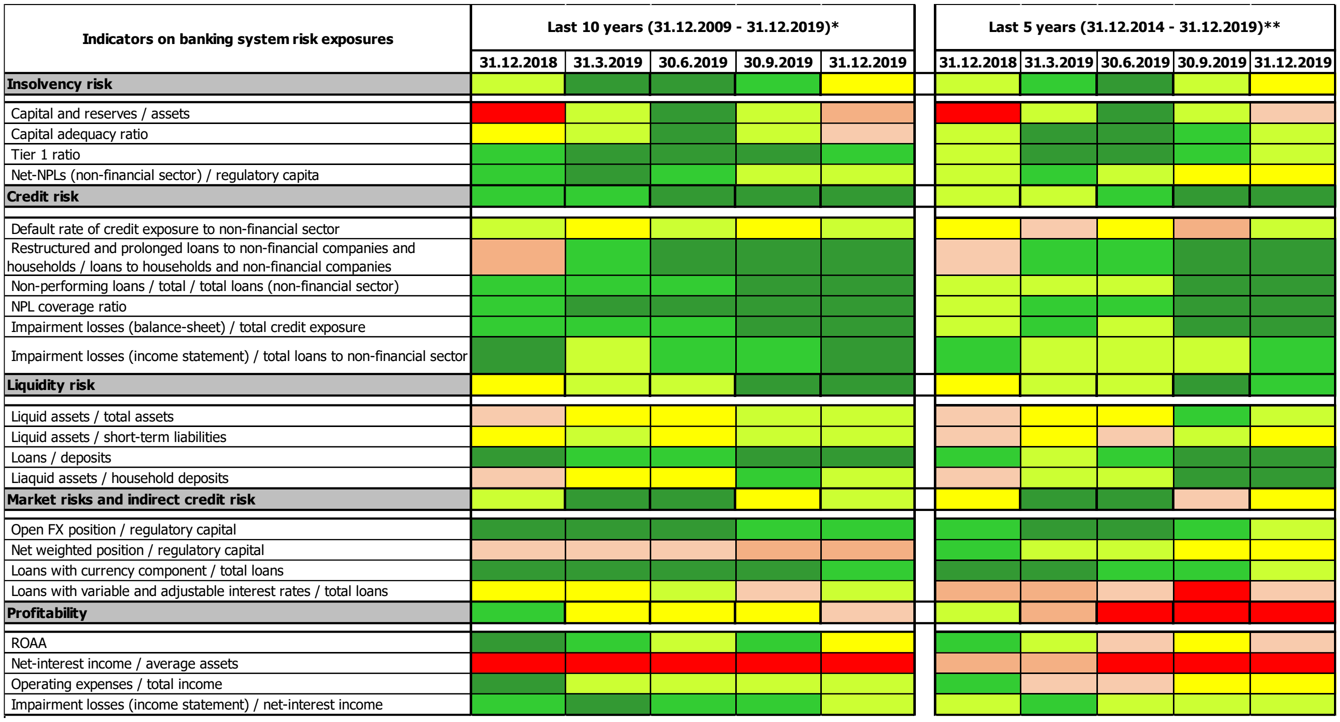


Source: National Bank, based on data submitted by banks.

Differences between banks in terms of their shares in the total assets of the banking system remain high**.** The spread between the bank with the largest (22.4%) and the bank with the lowest share in the assets (0.5%) of the system is almost at the same high level of the last year (by 0.4 percentage points lower), and seven banks constitute less than 2.5%. The share of the five smallest banks in the system decreased by a minimum of 0.2 percentage points, reaching 7%.

II. Bank risks

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



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 31.12.2009 to 31.12.2019)

**The affiliation to the percentile range is determined on the basis of quarterly data set for the indicators in the last 5 years (from 31.12.2014 to 31.12.2019)

At the cut-off date of this Report, credit and liquidity risk indicators are in the "green zone" of the heat map. In contrast, insolvency risk indicators are in the "yellow" zone (due to historically lower levels of equity and reserves in total assets, capital adequacy ratio and the share of non-provisioned portion of non-performing loans in own funds), while those for profitability are in the "red zone" (due to the historically lower levels of the indicator of the share of net interest income in average assets and the rate of return on average assets and the higher ratio between operating costs and total regular income). In the continuation of the Report, the movements of the indicators for the exposure of the individual risks are explained in details.

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 (31.12.2009 - 31.12.2019) and the last five years (31.12.2014 - 31.12.2019). 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 individual componens.

1. Credit risk

In 2019, the non-performing loans registered a decrease, which is largely due to changes in credit risk management regulations (shortening the period for mandatory write-off of fully provisioned non-performing exposures, from two to one year). The reduction of the non-performing loans is to a lesser extent due to collections, most often by taking over the debt from another entity and by taking and selling the pledge or executing the pledged property by way of foreclosure. In 2019, non-performing loans decreased by 2.8%, which reduced the rate of non-performing loans in the non-financial sector to a historic low of 4.8%. Analyzed by sectors, most of the reduction of non-performing loans accounts to the corporate sector, within which there was some credit risk due to defoult of individual corporate clients from several different industries. In addition, the annual growth of non-performing loans in certain industries, including some of the household loan products, may to some extent be related to the adjustment of banks' portfolios to the changes in the definition of non-performing loans. The share of non-performing loans in total loans to the non-financial corporations decreased by 0.4 percentage points to 7.6% at the end of 2019. In the household segment, the decrease in non-performing loans is mostly due to mandatory write-offs (the decrease in non-performing loans is most pronounced in non-performing consumer loans and credit cards and current account overdrafts). This contributed to reducing the ratio between non-performing and total household loans to the historical lowest level of 2.0%.

Despite the decrease in the level of provision, due to the write-off of fully provisioned non-performing loans, the coverage of non-performing loans with impairment for them is maintained at a relatively high level (67.7%), which together with the satisfactory volume and quality of own funds , limits the potential negative effects on the solvency of banks from their possible total non-collection.

As of July 1, 2019, a new regulation on the credit risk management methodology has been applied, which had a certain impact on the dynamics of the indicators of the banks' credit risk exposure in 2019. It enabled harmonization of the domestic regulations in this domain with the requirements of the international standard for financial reporting, the so-called IFRS 9. In addition, with the new regulation, the definition of non-functional exposure has been fully harmonized with that in the European regulations. The new regulation shortens the time period in which non-performing credit exposures should be reclassified from risk category "G" to "D", fully provisioned with impairment (for those classified in "D"), as well as the period for mandatory write-off from the banks' balance sheets. These regulatory requirements would enable faster "cleansing" of non-performing credit exposures from banks' balance sheets and greater focus on newer non-performing loans. Finally, changes were made in the requirements related to the treatment of restructured credit exposures, which should encourage banks to change the contractual terms more timely in order to comply with the current financial difficulties of customers[89].

Regulatory changes in credit risk management methodology to mitigate the effects of the COVID-19 epidemic

The beginning of 2020 was marked by the global coronavirus pandemic, which will inevitably have strong negative effects on the performance of the domestic economy and consequently on the creditworthiness of domestic banks' customers. In the first half of March 2020, the National Bank amended the existing regulations in the field of credit risk management, by temporarily easing the credit burden of borrowers in the coming months, in order to easily overcome this crisis episode. In particular, these amendments contribute to ease the requirements for whether and when banks' credit exposures to customers (non-financial legal entities or natural persons) become treated as restructured or non-performing exposures. Namely, for the credit exposures that were regular as of 29.2.2020, the banks were enabled to change the contractual conditions, in the period from March to September 2020, without such credit exposures to receive treatment of restructured credit exposures. This gave space to the banks, in agreement with the borrowers, to be able to offer more favorable contractual terms on the existing loans ("grace period" in the repayment of the loan, extension of the maturity, lower interest rate or approval of a new credit exposure for closure of the existing one), i.e. to ease the burden of repaying the debt to the clients, without receiving a restructuring treatment. The fact that these loans will not be considered restructured, leaves room for easier access of these customers to credit support after the end of this period. In this way, the approval of this exception not only enables the reduction of the current burden of the clients in dealing with the negative pressures from the pandemic, it also enables these clients in the future not to have limited access to loans, due to the changes in the contract conditions during the pandemic.

Furthermore, the credit exposure that was restructured before 29.2.2020 and was restructured in the period March - September 2020 will not receive treatment as non-performing credit exposure.

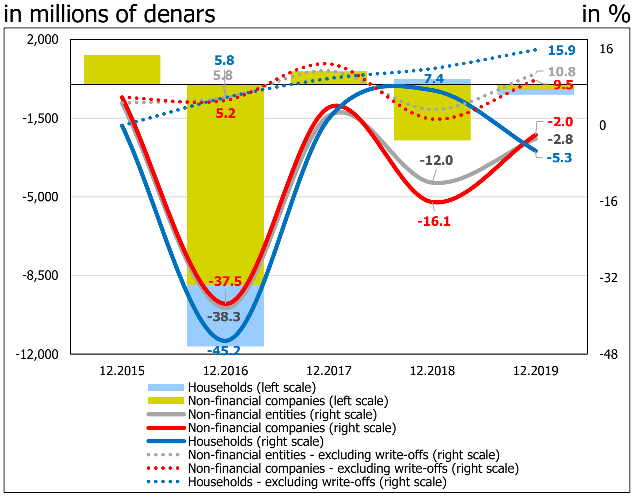
There has also been some facilitation regarding the recognition of non-performing status (the threshold for acquiring non-performing status has been moved from 90 days to 150 days). Thereby, this "facilitated" treatment can be applied only to the credit exposures that on 29.2.2020 were regular. Finally, in this crisis period, banks are not obliged to apply the criteria for assessing the so-called inability to collect from the client and on that basis to assess and treat credit exposures as non-performing.

The changes in the regulation should be temporary and should be applied until 30 September 2020. The possible prolongation of this measure mostly depends on the duration of the coronavirus epidemic in our country, the intensity and duration of the negative effects on the economy from this epidemic, as and the situation in the banking system. These regulatory changes prompted the banks to change the contractual terms of the loans according to the needs of the clients, in order to temporarily relieve the burden of repaying their loans, without creating an obligation for the banks to determine additional impairment. At the same time, these regulatory changes enable to avoid the difficult access of these clients to banks' financial support, due to negative events in the credit history (file), related to extremely low probability crisis episode, of unusual nature and expected duration, but with strong adverse effects. After the expiration of the period of eased requirements for the treatment of credit exposures as non-performing (September 2020), the banks are required by the end of 2020 to apply the usual rules for determining credit exposures as non-performing (before the introduction of these changes in the regulation) and make the necessary adjustments to the value of these exposures. Banks, their clients and, in general, all economic entities and institutions in our country will face numerous challenges in the coming period, the appropriate overcoming of which will depend on the duration and intensity of the negative effects of the global health and consequently, economic crisis. The intensity, form and duration of the negative effects for the banks can hardly be estimated at this moment, but possible massive prolongations of the borrowers 'liabilities may have liquidity consequences for the banks' operations and at least less available means for maintaining or growing the credit activity. In addition, despite the postponement of the obligation to recognize the impairment in the balance sheets of banks, due to reduced creditworthiness of customers, this will inevitably happen in the near future (according to changes in regulations, no later than 31.12.2020), which, in turn, will have negative effects on profitability, and through it on the solvency of banks.

[8] More details about the new Decision on the methodology for credit risk management can be found in the Report on the risks in the banking system of the Republic of Macedonia in 2019, pp 11-13.

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

in millions of denars in %



Source: National Bank, based on data submitted by banks.
*Note: Dotted lines represent the growth of non-performing loans exluding the effect of all mandatory write-offs made in the period 1.1.2016 - 31.12.2019. The data for December 2019, also contains mandatory written off loans in that month.

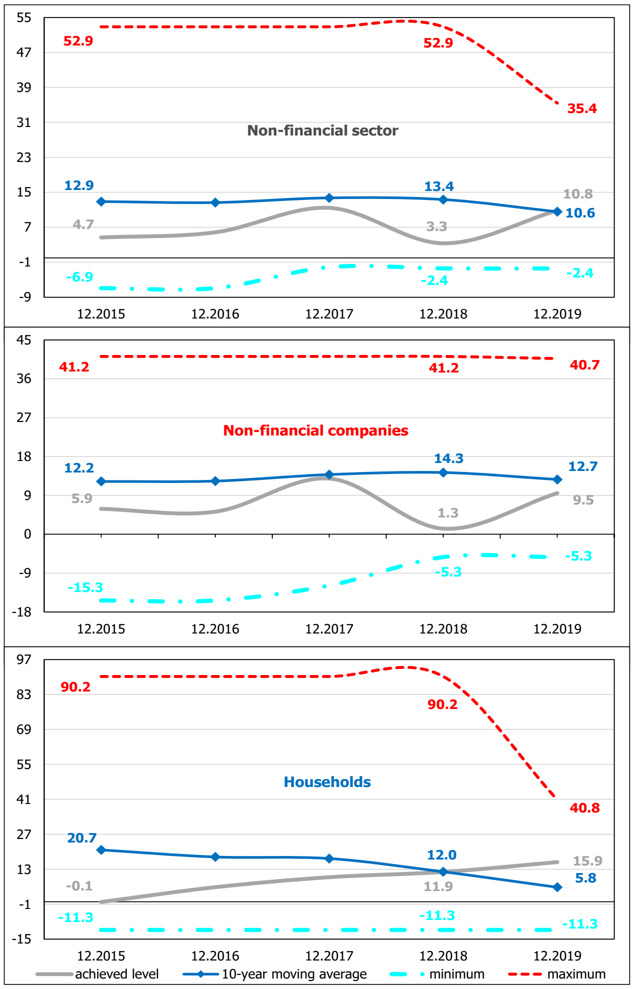
1.1 Materialization of credit risk in banks' balance sheets

In 2019, total non-performing loans to the non-financial sector decreased by 2.8% (or by Denar 464 million), which is a four-time lower decrease compared to the previous year, when the significant downward shift of these loans was caused by an irregular event[9]. The reduction of non-performing loans in 2019 mostly stems from the changes in the mandatory write-off regulations[10]. By isolating the effect of net write-offs[11], non-performing loans to the non-financial sector increased by 10.8%, which is mostly due to the growth of non-performing loans to the corporate sector, but the contribution of households is also significant.

The decrease in the volume of non-performing loans mainly results from their decrease in enterprises (by Denar 259 million, or 2.0%). According to the individual activities, the largest decrease was registered at the non-performing loans of the clients from the "industry" (of Denar 660 million, or 14.0%)[12] and trade activity (of Denar 542 million, or 14.4%), followed by non-performing construction loans (Denar 124 million, or

[9] The conducted sale of a significant amount of non-performing claims from a non-financial company (in the first quarter of 2018).
[10] With the start of the application of the new credit risk management regulations, the period after which the credit exposures that are fully covered by impairment / special reserve shall be transferred to off-balance sheet records, from two to one year, has been reduced. In addition, the time period in which credit exposures should be reclassified from risk category "D" to "E" (credit exposures covered by prescribed quality collateral that are not collected by activating that collateral for a period of up to 600 days is shortened), from the maturity date of the credit exposure, as opposed to the previous decision according to which this non-payment period could be counted after the date of inclusion of the collateral value in the calculation of the present value of the expected cash flows). The period in which the exposures classified in "E" should be fully provisioned shortened (credit exposures covered by prescribed better quality insurance that have not been collected for more than three years from the maturity date of the credit exposure, unlike the previous decision in which this period was longer than four years after the date of inclusion of the value of the collateral in the calculation of the present value of the expected cash flows, i.e. in determining the impairment).
[11] Net write-offs refer to the implemented write-offs of fully provisioned non-performing loans reduced by the amount of previously written-off loans collected on this basis. The data on the mandatory write-offs are available starting from January 2016 (after the measure for mandatory write-off of the fully provisioned non-performing loans has been applied). The data on the previously written off non-performing loans have been available starting from December 2019.
[12] The decrease is most pronounced in "food industry" (by Denar 303 million, or 27.9%), "other manufacturing industry" (by Denar 280 million, or 24.3%) and "textile industry" (by Denar 107 million, or 23.0%). With the exception of the growth of non-performing loans in the "chemical industry", no significant changes were observed in other industries.

Chart 10
Annual growth rate of non-performing loans: attained, 10-year moving average, maximum and minimum level, by individual sectors (without the effect of net write-offs *)
in %



Source: National Bank, based on data submitted by banks.
*Note: The effect of all mandatory write-offs made in the period 1.1.2016 - 31.12.2019 is excluded. The data for December 2019, also contains mandatory written off loans in that month.

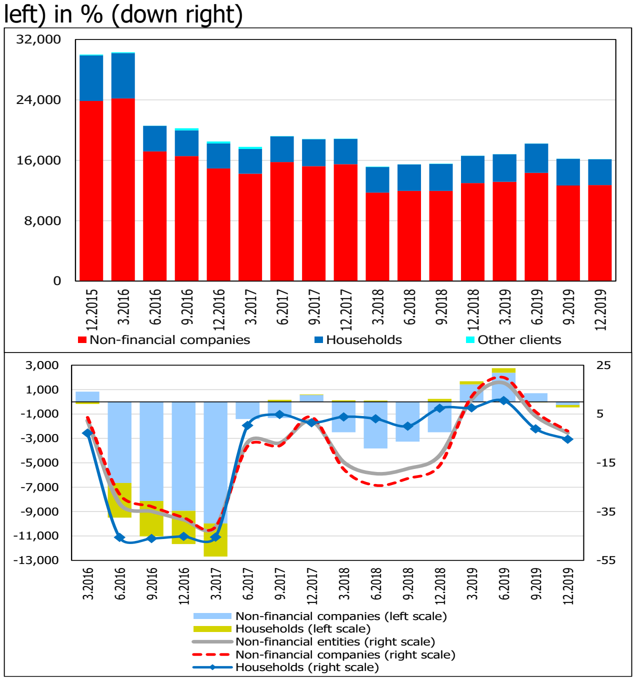
5.4%). In the above mentioned activities, the reduction of non-performing loans mainly results from the mandatory write-offs, but in some cases it is also due to collections (usually by taking over the debt from another entity and by taking and selling the pledge). Despite the general decrease in non-performing loans to enterprises, new non-performing loans are still registered in some industries and clients. Thus, in the trade activity, "chemical industry" and "professional, scientific and technical activities"[13] it is mainly due to default toward several clients, but to certain small amounts, while in "food industry", "real estate activities"[14], and "transport and storage"[15] several slightly larger customers transitioned to a non-performing status. The growth of non-performing loans of the legal entities may be related to changes in the definition of non-performing exposures[16], but the National Bank does not have data on this amount. Without the effect of mandatory net write-offs, the growth of non-performing loans to non-financial corporations would accelerate compared to the previous year (1.3%) and would amount to 9.5%.

Non-performing loans of households decreased by 5.3%, or Denar 192 million (compared to the growth of 7.4%, or Denar 247 million in 2018). This decrease is partly attributed to the mandatory write-offs which are the main reasons for the downward shift in non-performing consumer loans (by Denar 63 million, or 2.9%, compared to the increase of Denar 329 million, or 17.8% in 2018). Non-performing credit cards and overdrafts on current accounts also registered a more pronounced fall (by Denar 181 million, or 25.8%). Non-performing housing loans for the first time in the last six years began to register double-

[13] This caused an increase in non-performing loans in the "chemical industry" and "professional, scientific and technical activities" of Denar 237 million, or 88.1% and Denar 174 million, or 95.4%, respectively.
[14] In this activity, the increase of non-performing loans (by Denar 412 million, i.e. at three times higher level compared to the previous year) is largely due to the reclassification of a larger client from the trade activity.
[15] In "transport and storage", non-performing loans increased by Denar 390 million, or 63.5%.
[16] All exposures to a certain legal entity become non-functional, if the balance sheet credit exposure to that entity that has not been collected for more than 90 days exceeds 20% of its total balance sheet exposure. In addition, from July 1, 2019, banks are obliged to assess the so-called inability to collect from the client (and on this basis, certain credit exposures probably received non-performing status at the end of the year).

Chart 11 Dynamics (top) and annual change (bottom) of non-performing loans by individual sectors, after the introduction of the regulatory measure for mandatory write-off

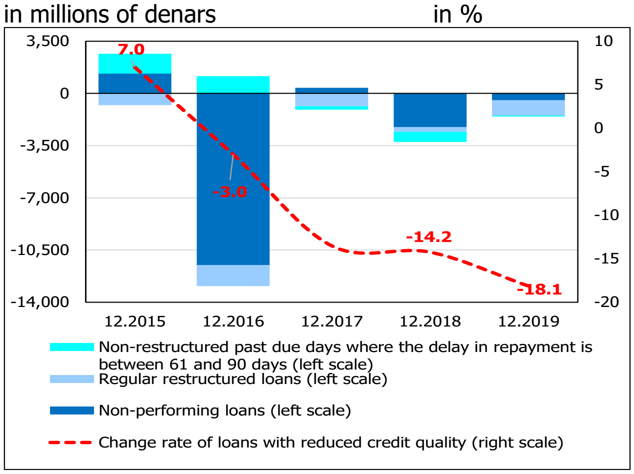
in millions of denars (up) and in millions of denars (down left) in % (down right)



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

Chart 12 Non-performing loans and regular loans to non-financial entities with reduced credit quality, annual change

in millions of denars in %



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

digit annual growth, which at the end of 2019 reached 13.4%. The growth of non-performing loans in this loan product results from a dozen clients in one bank (if we exclude the effect of the realized growth in this bank, non-performing housing loans on an annual basis would actually register a slight decline). Excluding the effect of mandatory net write-offs, then non-performing loans to households increased by 15.9%, which exceeds the growth registered in 2018 (11.9%).

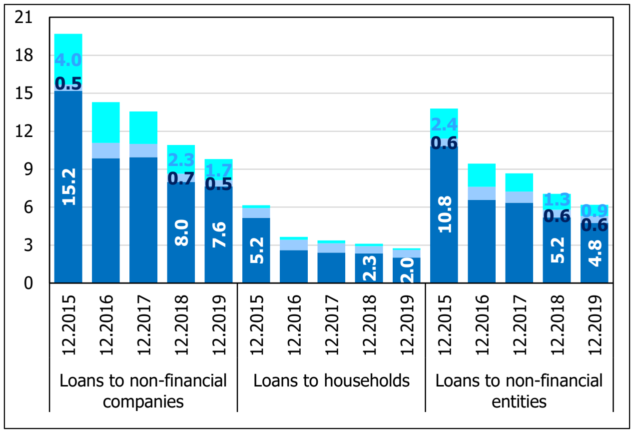
The annual growth rate of non-performing loans to households and the total non-financial sector in 2019 exceeds the ten-year moving average. As a contrast, the realized annual growth of the enterprises is constantly below the ten-year moving average in the analyzed period (2015 - 2019)[17].

Regular loans with reduced credit quality[18], i.e. loans that in the short term can be a source of new non-performing loans, registered more significant decrease of 18.1% in 2019 (decrease by 14.2% in the previous year). Also, their share in the total portfolio is very small and no significant materialization of the credit risk due to them has been noticed. Namely, these loans cover 1.5% of the total loans of the non-financial sector (compared to the share of 1.9% at the end of the previous year), and only 1.5%

[17] In determining the ten-year average and the annual growth rates, the effect of all net mandatory write-offs is excluded.

[18] 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). Regular restructured loans would likely obtain non-performing status if banks did not change the credit terms of clients facing financial difficulties

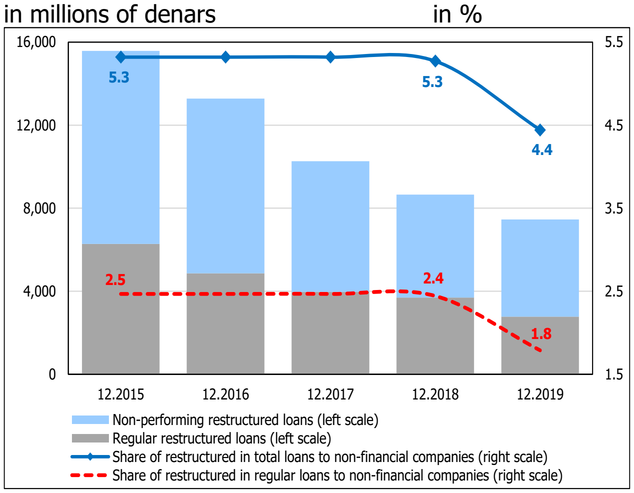
Chart 13
Share of non-performing and regular loans with reduced credit quality in the total loans of non-financial entities in %



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

of the loans with a delay of 61 to 90 days received non-performing status in January 2020[19], which is an indicator of solid collection of these overdue loans.

Chart 14
Restructured loans of non-financial companies
in millions of denars in %



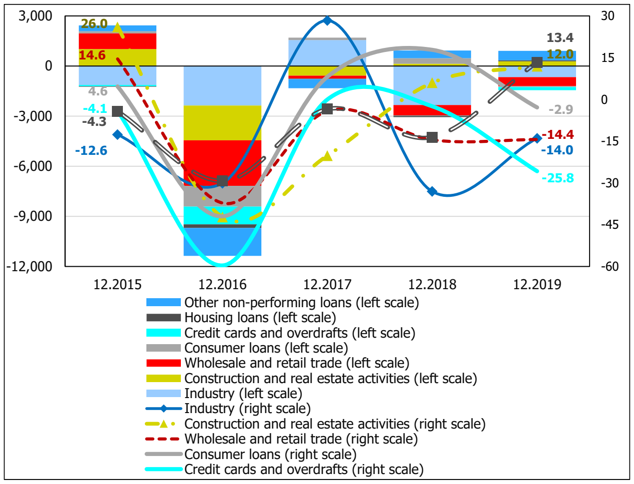
Source: National Bank's Credit Registry, based on data submitted by banks.

The share of restructured loans in total loans is also small (2.3% at the end of 2019, compared to 2.7% on 31.12.2018). The total restructured loan portfolio of banks decreased by Denar 1,309 million, or 14.3%, which is mostly due to the reduction of regular restructured loans due to their transition to non-performing status, and to a lesser extent, a result of regulatory changes (introduced possibility for exclusion from this category, pf the existing restructured credit exposures that meet the prescribed criteria[20]). Non-performing restructured loans also registered a downward trend as a result of mandatory write-offs, and to a lesser extent due to collection by taking over the debt by another non-financial company. Almost the entire restructured loan portfolio (about 95%) consists of legal entities, with these credit exposures accounting for only 4.4% of total corporate loans. The rate of non-performing loans in the portfolio consisting of

[19] For households, this percentage is significantly higher and is 4.5%, while for non-financial corporations it equals 1.1%
[20] From July 1, 2019, the banks can exclude the existing restructured credit exposure in this category, if two years have passed from the date of its last restructuring and if all credit exposures of the client is classified in risk category "A".

Chart 15
Annual growth rate of non-performing loans, by activity (non-financial corporations) and by credit product (households)

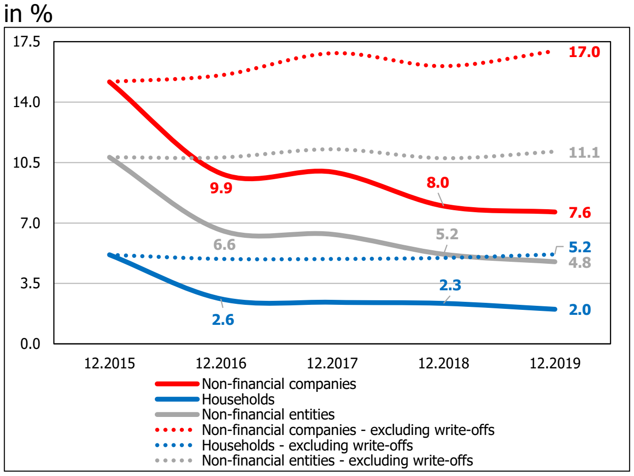
in millions of denars in %



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

Chart 16
Rate of non-performing loans of non-financial entities, by sector

in %



Source: National Bank, based on data submitted by banks. The dotted lines show the NPL indicator by subtracting the effect from all mandatory net write-offs made in the period 1.1.2016 - 31.12.2019.

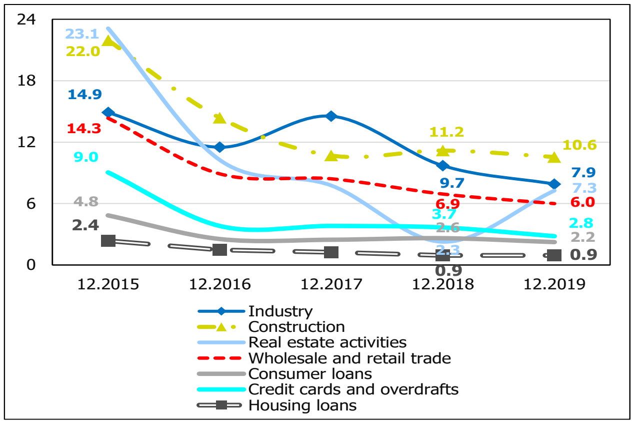
restructured loans to non-financial companies is quite high and is 62.8% on 31.12.2019 (57.3% on 31.12.2018).

The quality of the banks' loan portfolio, measured through the share of non-performing loans in the total loans of the non-financial sector improved by 0.4 percentage points in 2019. On 31 December 2019, this rate reached a historically lowest level of 4.8%. Namely, since the introduction of mandatory write-offs (in 2016), the rate of non-performing loans has been constantly below the level of its 10-year moving average. Excluding the effect of mandatory write-offs on fully provisioned non-performing loans (starting from 1.1.2016), the share of "bad" loans in the total loan portfolio is 11.1% and is higher by 0.4 percentage points compared to the previous year. Thus determined (without the effect of write-offs), the registered level of this indicator slightly deviates from the 10-year moving average (10.9%).

There was an identical improvement of the ratio between non-performing and total loans (by 0.4 percentage points) in the **non financial companies' portfolio, where 7.6% of total loans were non-performing**[21] on 31.12.2019. The decrease of this rate is mostly due to the mandatory write-offs and twice as weak credit support to this sector[22]. Analyzed by individual activities, the ratio between non-performing to total loans[23] decreased in three most important activities to domestic economy[24], which accounted for 75% of non-performing (as well as total) credit portfolio of the corporate sector. The decrease of this indicator was mostly pronounced in the industry, where

[21] A lower level of this indicator was only recorded at the end of 2008, when it amounted 7.5%.
[22] In 2019, total loans to non-financial companies increased by 3.948, or by 2.4% versus twice as higher growth of 7.239, or by 4.7% in the previous year.
[23] Analyzed by detailed economic activities and industry branches, the non-financial loans rate records a pronounced upper movement only in "chemical industry", "transport and storage", "real estate activities", "professional, scientific and technical activities", and "administrative and ancillary activities". These activities account for only 20% and 18% of non-performing and total corporate loans, respectively.
[24] The three most important economic activities refer to total industry, trade activities and construction.

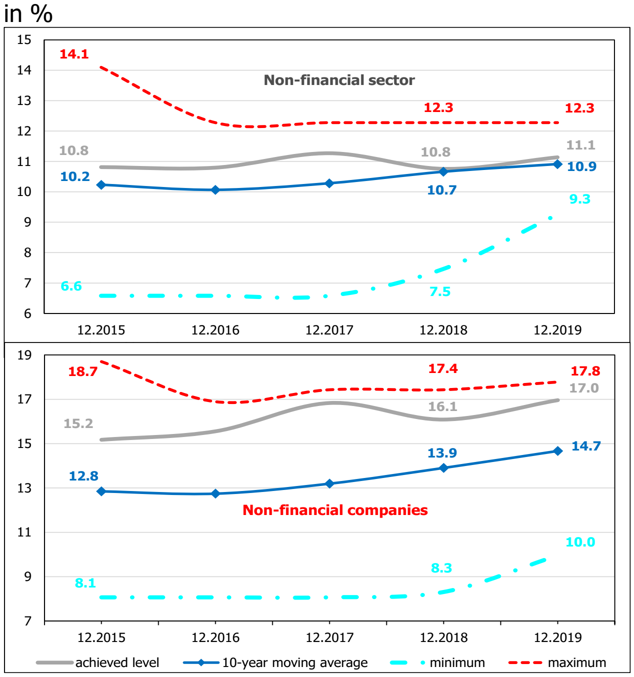
Chart 17
Rate of non-performing loans, by activity and credit product
in %



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

the non-performing loans rate decreased to 7.9% (from 9.7% on 31.12.2018) while the lowest level of 6.0% was recorded in trade activity (amid decline of 0.9 percentage points compared to the end of 2018). If we exclude the mandatory write-offs[25] effect, the non-performing loans rate is 17.0% and is higher by 0.9 percentage points compared to the previous year[26]. Without the effect of total mandatory write-offs, the non-performing loans rate to corporate loans is above this rate's 10 year moving average (14.7%) and records an increase as well as certain approximation towards the maximum value (17.8%) in 2019.

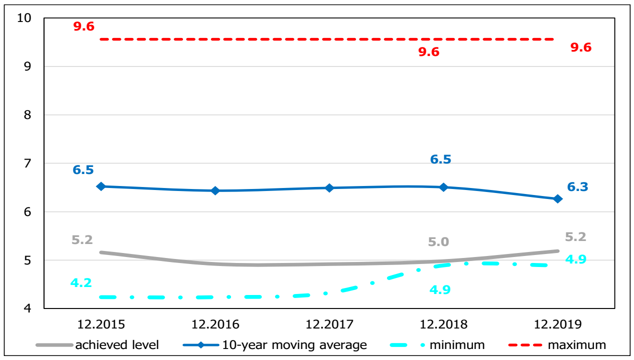
Chart 18
Non-performing loans rate, 10 year moving average and maximum and minimum level (without net write-offs effect)*, by individual sectors
in %



In the loan portfolio of households, the share of non-performing loans in total loans decreased by 0.3 percentage point, to the new record low of 2.0%. Despite the mandatory write-offs, the downward shift of non-functional loans rate is due to solid credit support of this sector. Without the write-offs effect, this rate registered a growth of 0.2 percentage points to 5.2% compared to the previous year. The rate of non-functional loans to households (excluding the effect of mandatory write-offs) is under its 10 year moving average and close to its minimum value[27].

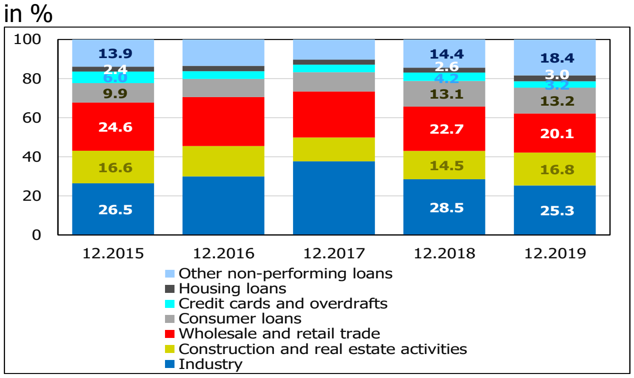
Loans to non-financial companies account for the largest share (78.8%) of non-performing loan portfolio of banks, whose share additionally increased in 2019 (by 0.6 percentage points). Nearly half (or 45.4%) of non-performing loan portfolio of banks falls to two activities- "industry"

[25] For the last month of 2019, the amount of collected, mandatory written-off non-performing loans were taken into account, only for that month.
[26] The share of non-performing in total loans to non-financial companies is almost constantly maintained at the same level of over 16% in the last six years, without the effect of mandatory write-offs.
[27] Lowest level of non-performing in total loans to households without the net write-offs effect in the amount of 4.9% was recorded at the end of 2016 and 2017 and several monthly dates during these years. This indicator was on a level lower than 4.2% at the end of 2017, before introducing the mandatory write-off measure.



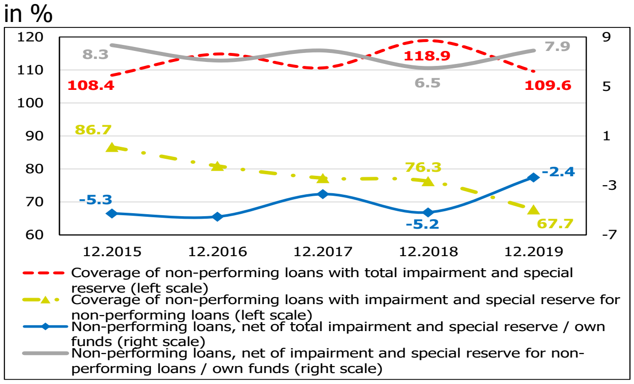
Source: National Bank, based on data submitted by banks.
* The effect of all mandatory write-offs is excluded in the period 01.01.2016-31.12.2019. The data on December 2019 includes non-collected mandatory written-off loans for that month.

Chart 19 Structure of non-performing loans to the banking system, by individual activities (non-financial companies) and credit products (households)
in %



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

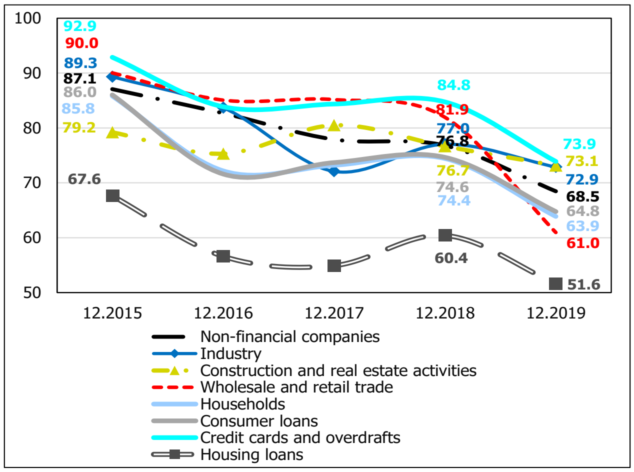
Chart 20 Coverage of non-performing loans with impairment (up) and by activity and credit product (down)
in %



and "wholesale and retail trade", whose share in total non-performing loans decreases due to the growth of share in construction and "transport and storage" sector[28]. From the households' portfolio, consumer loans have the highest share in the total non-performing loan portfolio of banks (13.2%), with an increase in the share of housing loans (to 3.0%).

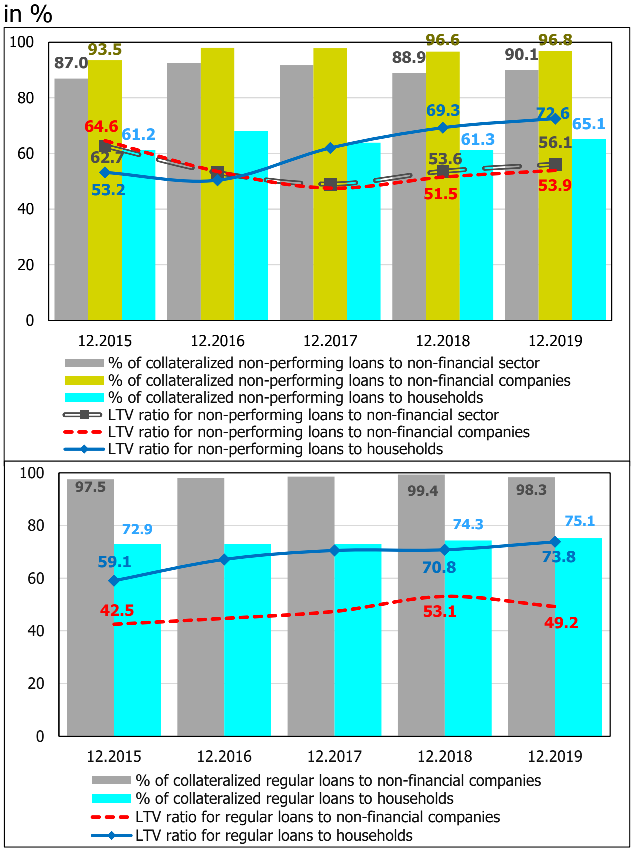
The negative effects of the possible complete default on non-performing loans, i.e. the volume of unexpected losses on this basis, have a relatively limited impact on the solvency position of the banking system. Namely, a large portion of non-performing loans are covered with impairment (67.7%) despite the decrease compared to the previous year (when it was 76.3%). The main reason for the downward trend of provi-

[28] In the structure of total non-functional loans, the share of clients in the construction sector increased to 16.8% (14.5% on 31.12.2018), and in "transport and storage" to 6.2% (3.7% on 21.12.2018.



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

Chart 21
Non-performing loans (up) and performing loans (middle and down) for which collateral and LTV ratio have been established, by sector
in %

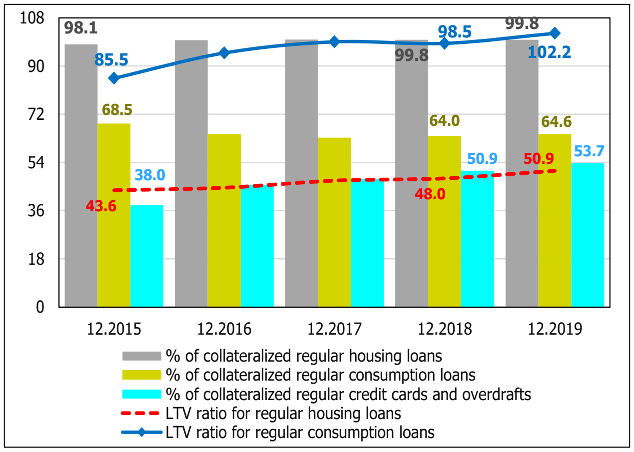


sioned non-performing loans are the mandatory write-offs of non-performing loans with full impairment (100%).
Consequently, the non-provisioned amount of non-performing loans increased (to 7.9% of banking system's own funds versus 6.5% at the end of the year). Assuming its full uncollectability, the solvency of the system would not be jeopardized. The coverage of non-performing loans with provisions is higher in the credit portfolio of non-financial companies (68.5%), and by individual activities the coverage is the highest in construction sector (73.1%) and "industry" (72.9%). In contrast, non-performing housing loans are least provisioned (51.6%), which is supported with their collateral.

Despite the high coverage of non-performing loans with provisions, the banks maintain high percentage of credit collateral, which is particularly pronounced in corporations (there is a collateral[29] for 96.8% of non-performing loans and 98.3% of regular corporate loans). With a relatively favorable ratio between the credit amount and the assessed collateral value (which amounts 49.2% for the regular, and 53.9% for non-performing loans), banks collateralize the higher credit risk from corporate lending.

The percentage of loan collateral in households is lower (75.1% or regular and 65.1% for non-performing loans), mainly because the credit cards and current account overdrafts as well as consumer loans. Namely, there is no collateral[30] for about half, i.e. one third of the credit cards and current account overdrafts and consumer loans, while almost 40% and 23.8% of these loans are adequately collateralized with a guarantor and bill (draft). However, the experience shows that the guarantor

[29] Mostly as equipment, machinery, production facilities, business and warehouse space and similar.
[30] Banks do not report amount of the collateral, in cases when the collateral is in the form of a guarantor and/or bill of exchange or co-borrower, which contributes to the higher value of the LTV ratio for households. This is especially relevant to the credits intended for consumption (including credit cards and overdrafts), where a guarantor and/or bill of exchange is a relatively frequent type of collateral.



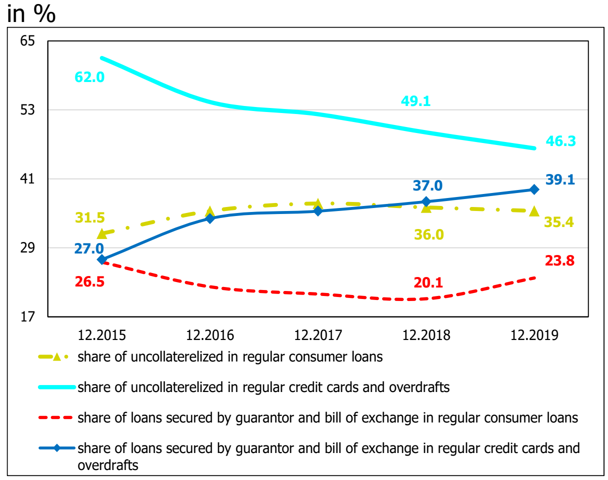
Source: National Bank's Credit Registry, based on data submitted by banks.

and the bill are a good source of collecting receivables, and in a great deal of credit agreements there is an executive clause[31] which enables the banks a relatively quick collections of loans by selling collateral.

Chart 22

Consumer loans and credit cards and current account overdrafts, no collateral and collateral only with guarantor and bill (draft)

in %

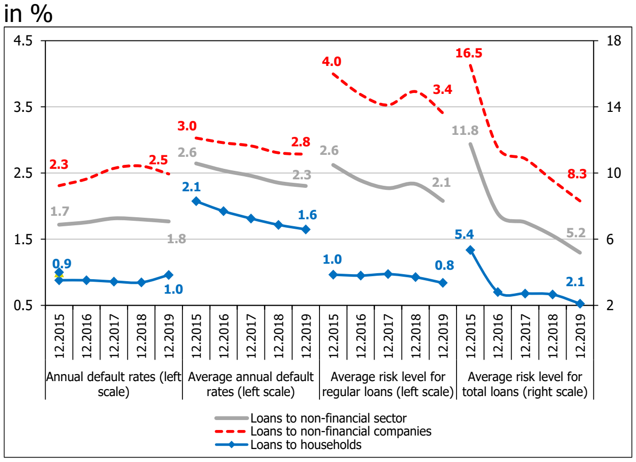


Source: National Bank's Credit Registry, based on data submitted by banks.

Chart 22

Annual rates of default and average risk level of performing and total loans, by sector

in %

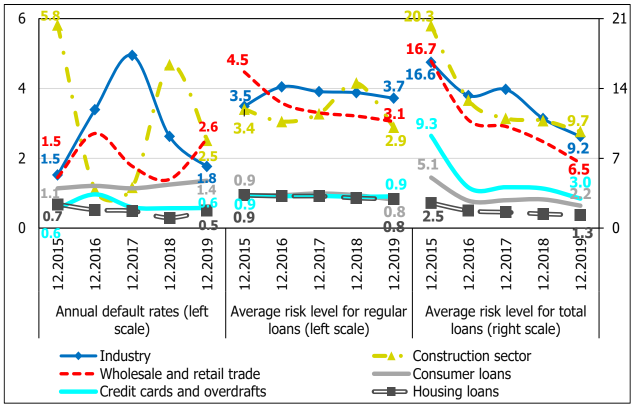


Source: National Bank's Credit Registry, based on data submitted by banks.

The annual rate of regular credit exposure uncollectability of non-financial companies and overall non-financial sector records an improvement (decrease), while this rate remains unchanged with households. The lower percentage of provision of household regular loan portfolio is described with the lower inherent risk due to its significant dispersion by individual clients. However, at the end of 2019, the average provision of regular loans to households was lower than the established uncollectability rate, which indicates that banks underestimate the risk of this portfolio. Therefore, a careful monitoring of this segment's quality from the banks' credit portfolio is needed, particularly in

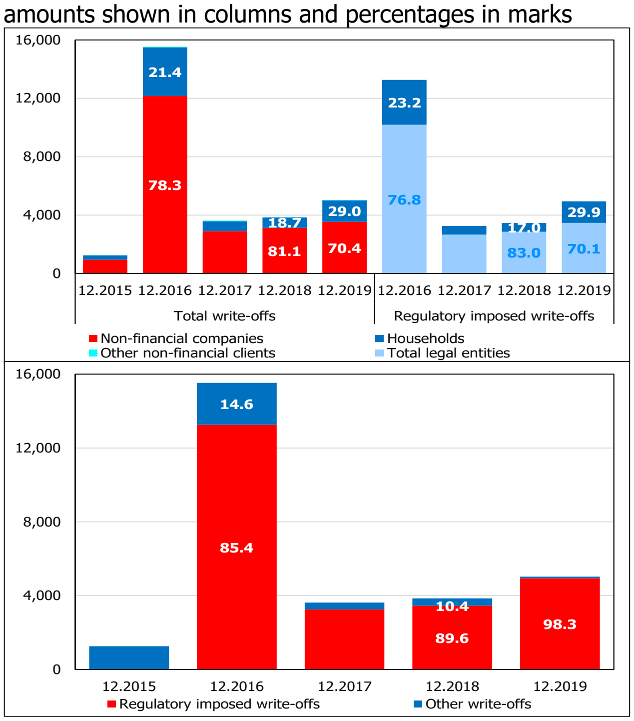
[31] Pursuant to the Law on Enforcement and Law on Notary. The National Bank does not have any data on the amount of loans with such clause included in the agreements.

Chart 23
Annual rates of default and average risk level , by sector and credit product
in %



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

Chart 24
Structure of written off non-performing receivables by the type of write-off and by section (up), and type of write-off (down)
amounts shown in columns and percentages in marks



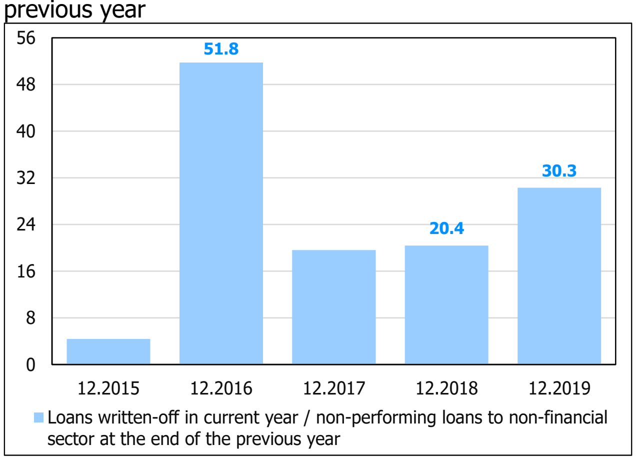
Source: National Bank, based on data submitted by banks.

the part of consumers loans[32] approved on longer terms[33] and/or at a higher amount.

In 2019, banks wrote off Denar 5,031 million, i.e. 30.2% of total non-performing loans at the end of the previous year. This amount of write-offs is higher by 40% compared to the previous year, which is a result of the introduced obligation to write off receivables that are fully provisioned for more than one year, as of 01.07.2019 (previously from 01.01. 2016, the obligation for mandatory write-off referred to those non-performing loans which were fully provisioned in the last two years at least). From a sectorial point of view, about 70% of the last years' written-off receivables refer to non-financial companies. The mandatory write-off of non-performing loans will also continue in the next period, given the fact that on 31.12.2019, 21.2% of the non-performing loans are fully covered with impairment and they will be written-off in the next one year at the most, unless collected in meanwhile.

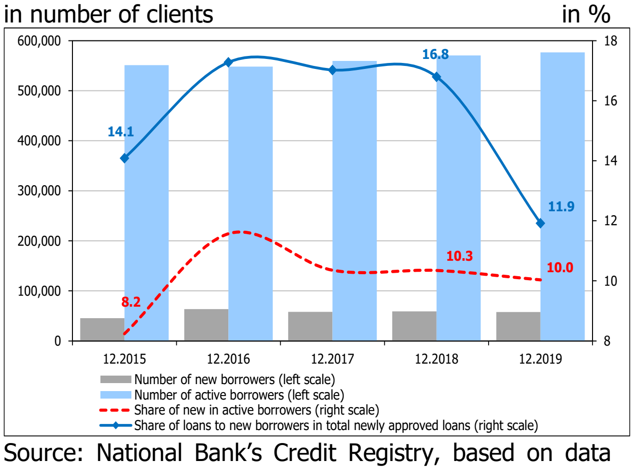
[32] By individual products, only consumer loans have less provisions (by 0.5 percentage points) than the realized annual uncollectability rate of regular loans (but if we take the provision of total loans into consideration, as well as regular and non-performing, the impairment coverage is significantly above the realized uncollectability rates)
[33] The long terms of consumer loans repayment may be considered as a risk factor, since they are usually related to greater uncertainty (due to the longer time horizon) compared to the ability of households to regularly meet due liabilities.

Chart 25
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.

Chart 26
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.

1.2 Potential sources of future credit risk materialization

Despite the good quality and poor realization of the credit risk from banks' exposure to households, certain structural features and adverse trends in this loan portfolio may be potential sources of new non-performing loans.

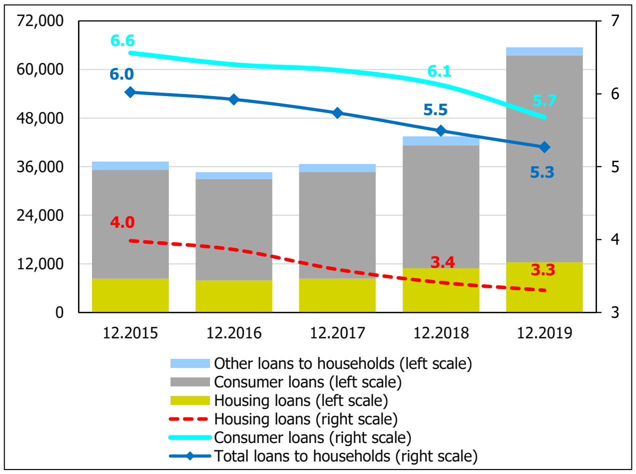
This refers to the slightly faster growth of household indebtedness, mostly on longer terms[34] in which the clients' creditworthiness is more uncertain. However, since 2016, the National Bank introduced higher capital requirement for consumer loans approved for maturities equal to or higher than 8 years (risk weight of 150% instead of 75% or 100%), which enables growth of relatively significant, additional capital amount for risk coverage from this loans (additional mitigation in the amount of 3.6% of total own funds). On the other hand, the quality indicators for these loans are still at a satisfactory level. Still, the housing loans are also granted with relatively long terms (92.8% of the housing loans are approved with repayment terms equal to or longer than 10 years, and almost 60% of the housing loans are granted with repayment terms equal to or longer than 20 years), but these loans have an exceptionally good quality and low rate of non-performing loans.

Most of the new loans are being granted to current borrowers- households. In the household segment, only 11.9% of the newly approved loans[35] (16.8% in 2018) are being approved to new borrowers[36] (in their structure, the highest share falls to consumer loans, 58.4%, and nearly one third of the loans approved to new clients falls to housing loans).

[34] As of the end of 2019, long-term household loans accounted for 92.0% of total household loans.
[35] The share of loans granted to new borrowers in 2019 is on a higher level in the housing loans portfolio and is 20.4%, while the share of loans to new borrowers in consumer loans amounts 8.9%.
[36] The borrowers that are indebted to the banks at the end of the analyzed period and were not borrowers a year before, are considered as new.

Chart 27
Newly approved loans and amount of interest rate of newly approved loans for selected credit products

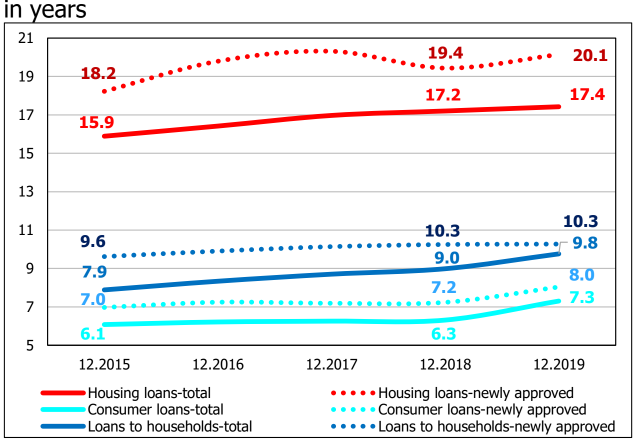
in millions of denars in %



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

Chart 28
Average weighted maturity of total to newly approved loans for selected credit products to households

in years

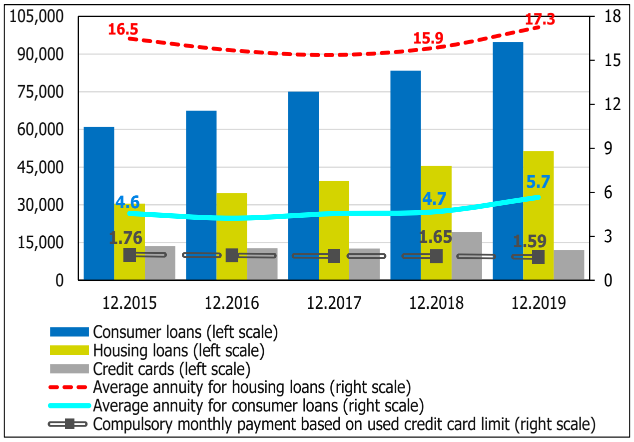


Source: National Bank's Credit Registry, based on data submitted by banks.

Namely, in terms of continuously loosening of the credit standards, including lower interest rates[37], refinancing household loans (primarily, housing and consumer loans) have become quite frequent. This indicates over-indebtedness of existing borrowers, which amid refinancing, often, borrow even a higher loan. In order to avoid clients' over-indebtedness, it is important for the banks to have set enough prudent levels of the ratio between the clients' monthly debt repayment and their monthly income (which are currently set at a level of 55-60%).

[37] In 2019 the interest rate of newly approved housing, consumer and total loans to households amounted to 3.3%, 5.7% and 5.3%, respectively, compared to higher levels at the end of 2018 (of 3.4%, 6.1% and 5.5%, respectively).

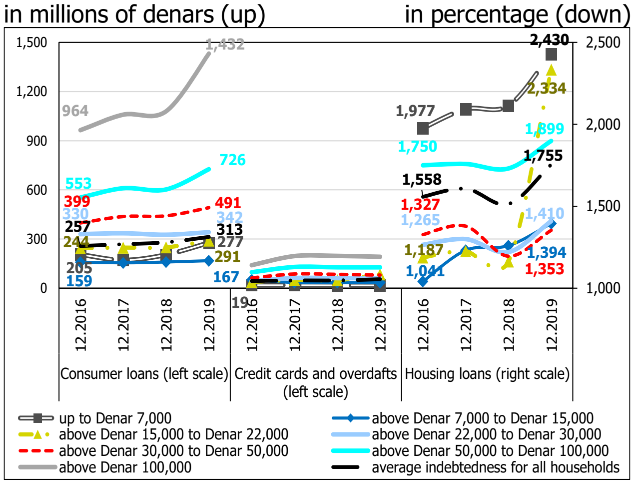
Chart 29
Consumer, housing loans and credit cards, balance and average annuity



Source: National Bank's Credit Registry, based on data submitted by banks.
Note: the mandatory monthly repayment based on the used credit card limit is set on 5%, for the needs of this analysis, although not excluding the fact for certain banks to have set different limits for certain types of credit cards.

The monthly debt burden of borrowers-households increased. Namely, despite the increase of the average weighted maturity of total and newly granted loans[38], the monthly liability by borrower increased, due to increase in debt per borrower[39]. Thus, the average annuity in consumer loans increased by 21.0% or by almost Denar 1000, while in housing loans this growth was 8.8% or almost Denar 1.400 in the past year. This growth exceeds the growth of total banks' consumer credit portfolio (which is 13.7%), which is not the case with the housing loans portfolio (which increased annually by 13.0%).

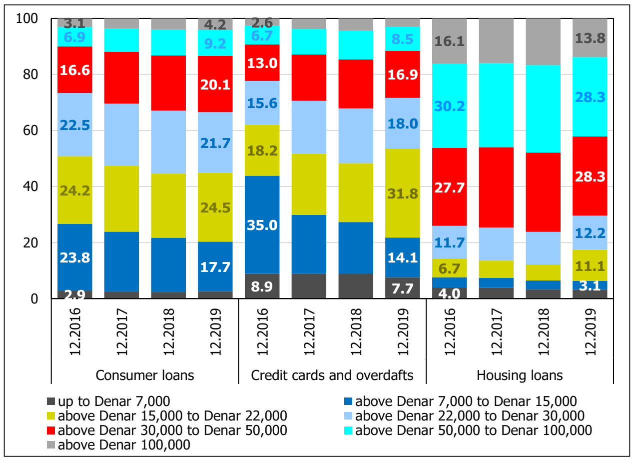
Chart 30
Average indebtedness per household (up) and structure of credit exposure (down) based on consumer, housing loans and credit cards and overdrafts of current accounts, according to the amount of monthly income.



In terms of the structure of credit exposure to households, according to their monthly income, in 2019 the share of indebtedness of persons with lower monthly income increased.

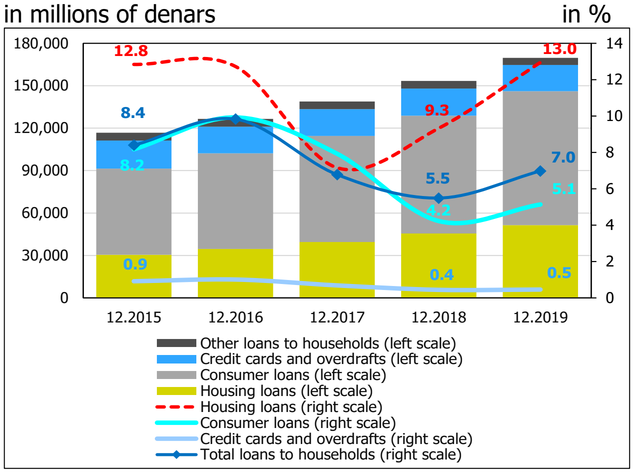
Namely, 46.7% of total credit exposure to households is concentrated in households with net-salary equal to or lower than the average net-salary in 2019. This percentage is still high for credit cards and overdrafts in current accounts (61.5%) and consumer loans (54.6%), while for the housing loans it is on a signifi-

[38] The average weighted residual maturity of the consumer loans by the end 0f 2019 were increased by 1 year, reaching 7.3 years (6.3 years on 31.12.2018), while in housing loans increased minimally to 17.4 years (versus 17.2 years on 31.12.2018). The newly approved consumer loans during 2019 were approved with a maturity of 8 years (7.2 years in 2018), while the average weighted maturity of the new housing loans is 20.1 years (19.4 years in 2018). In the loan portfolio of households, the average weighted maturity is 9.8 years (9.0 years in 2018) for total loans and 10.3 years (same as in 2018) only for newly approved loans
[39] In 2019, the amount of newly approved loans to households increased by Denar 21.999 million, or by 20.6%. Namely, this growth is Denar 20.773 million or 68.4% and Denar 1.443 million or 13.2% in consumer and housing loans, respectively.



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

Chart 31
Loans approved with exceptions and their share in the portfolio of selected credit products to households



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

cantly lower level (21.7%). However, according to the amount of monthly income, the category borrowers with a net-salary equal to or below the average, have the lowest average indebtedness per person.

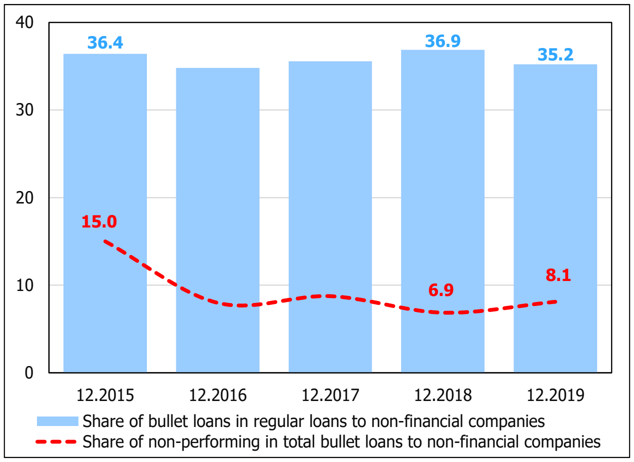
Loans approved with exceptions[40] from credit standards[41] could pose risk to the quality of household loan portfolio. However, currently, the share of loans approved with exceptions is on a relatively low level (5.1% of consumer loans, 13.0% of housing loans and 7.0% of total household loans).

An important structural feature of loans to non-financial companies which may have an impact on the risk realizations related to this banks' loan portfolio, is the level of concentration, from various aspects. About 80% of total loans to non-financial companies have been extended to 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. In Fact, it is in the loan portfolio

[40] According to the Decision on the methodology for credit risk management (Official Gazette of the Republic of Macedonia No. 149/18), 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, pursuant to the same Decision, 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.

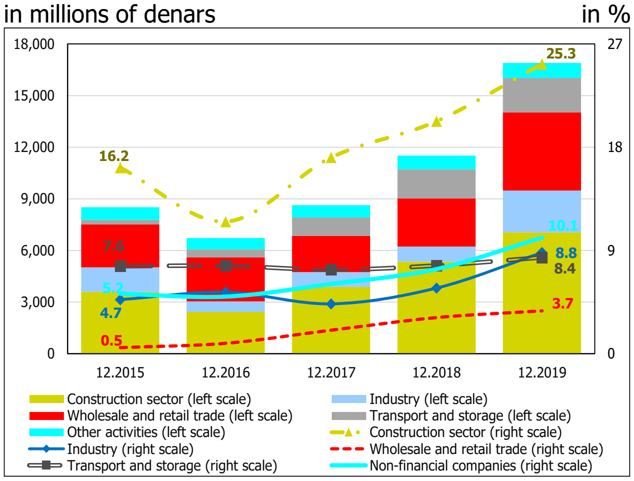
[41] The exceptions in approval of loans could be categorized as so called "commercial exceptions" which include the amount and type of interest rate, the loan's repayment period, client's age at application and the deadline of the loan repayment, document needed etc. with which the banks compete with 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.

Chart 32
Bullet loans to non-financial corporations
in %



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

Chart 33
Loans to non-financial companies for project funding and their share to total loans for selected economic activities
in millions of denars in %



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

consisted of clients from banks of these activities[42] that the indicator on the share of non-performing loans to total loans shows the highest levels, and at the same time the banks have set aside the highest amount of impairment, and thus provided the highest coverage with provisions[43]. However, when we draw a conclusion on the level of corporate loans concentration, from the aspect of activities towards which these loans are aimed, we should take into account the total volume and structural characteristic of our economy, which condition the concentration of the loan portfolio to a large extent.

Another characteristic of loans to non-financial companies which should be carefully monitored, is the level of **bullet loans.** The share of this loans is relatively high, though slightly lower in 2019 (slightly over 35% of regular loans to non-financial companies in 2019 and 36.9% in 2018). The level of credit risk realization from bullet loans deteriorated compared to the previous year (from 6.9% to 8.1% on 31.12.2019), which is higher compared to total loans to non-financial companies[44] due to the deteriorated creditworthiness of the clients in construction sector.

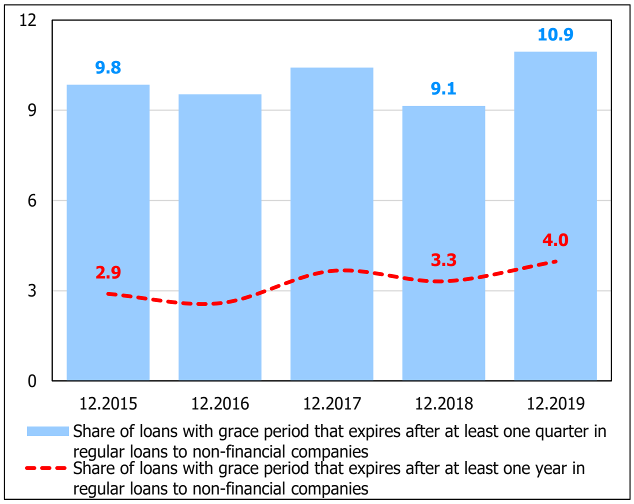
Loans to non-financial companies approved for project funding record an increase in 2019 (from 7.4% to 10.1%) whereas around two thirds of this loans were being granted to clients in construction sector and trade. Namely, one fourth of total loans in construction sector were loans granted to clients for the needs of project funding. Generally, the structure and dynamics of repayment of these loans is determined according to the projected

[42] Despite the improvement of this indicator on total industrial activity by 1.8 percentage points to the level of 7.9% and for the "processing Industry" by 1.6 percentage points to the level of 6.3%, the share of non-performing loans to total loans I the highest in certain industrial branches, such as "Electricity supply, gas, steam and air-conditioning", (17.8%), "other processing industry" (10.6%), as well as agricultural activity (11.7%), "construction" (10.6%) and "transport and storage" (9.6%).

[43] The coverage of non-performing loans with impairment is higher in the construction sector (by almost 5 percentage points) and "industry" (by 4.4 percentage points), but lower in trade activity (by 7.5 percentage points) in terms of the coverage of total "non-financial companies" sector.

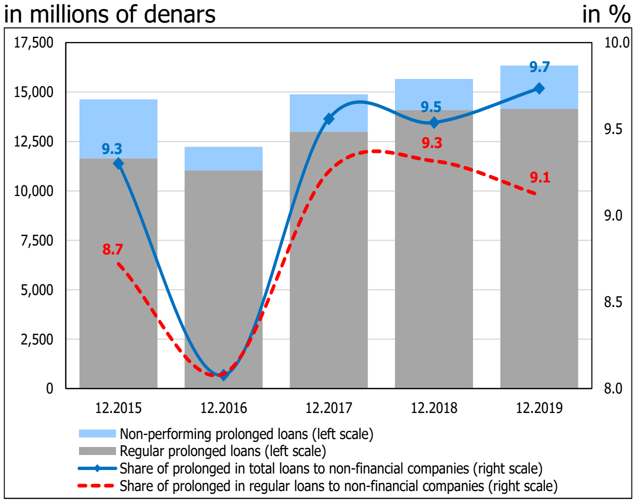
[44] The rate of non-performing loans for loans with one-off repayment of principal is on a higher level only in construction sector amounting 11.1% versus 9.7% for total loans to clients in this field. In "industry" (7.0%) and trade (5.6%) the NPL ratio is on a lower level compared to total loan portfolio composed of clients in this fields (7.9% and 6.0%, respectively).

Chart 34
Loans to non-financial companies with unexpired grace period
in %



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

Chart 35
Prolonged loans of non-financial corporations
in millions of denars in %



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

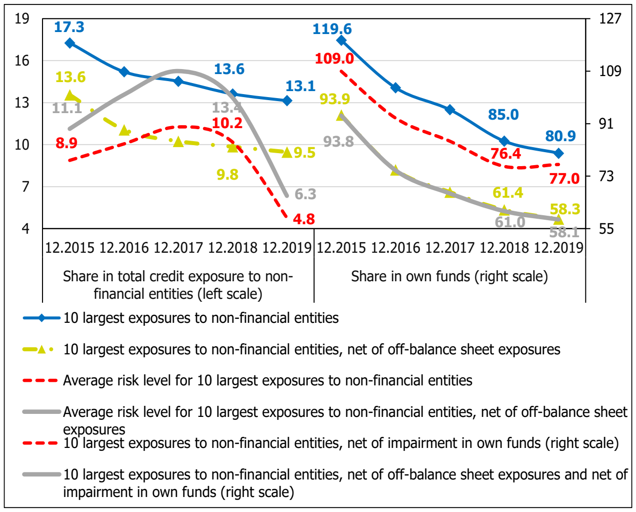
cash flows (inflows and outflows) from the project funded by the loan. Hence, the realizations of these loans are conditioned, mostly by the (non) realization of projections related to cash flows from the financed projects, for the determination of which an appropriate expertise and often specific knowledge is needed given the uniqueness and specificity of each project. In other words, every non-realization of projected cash flows of the project, with the predicted scope or dynamics, will most likely lead to inability for a regular repayment of the approved loan.

In 2019, the share of loans to non-financial companies with **approved grace period[45],** which expires after at least one quarter, in total regular corporate loans is relatively high and increased (from 9.1% to 10.9%), mostly due to their increase in construction sector and "industry". Grace period approval for loans could be considered as potential risk factor only if it is determined, since in the moment of loan approval, the creditworthiness of the client is uncertain. Also, approval of relatively long grace periods (for example one year) [46]could be a potential risk factor, since in that period the bank does not have an immediate insight whether the client would orderly settle the loan liabilities or not. However, the grace periods are often part of the promotional offers of new credit products, with which the banks tend to attract new clients, rather than hide or cover the clients' existing financial problems.

Loans with prolonged maturity[47] account for less than 10% of total regular loans to non-financial companies. According to the regulation, these are loans where the extended maturity is not made due to the clients' deteriorating financial condition. However, the fact that the non-performing loan ratio in this segment of the portfolio is higher, indicates that

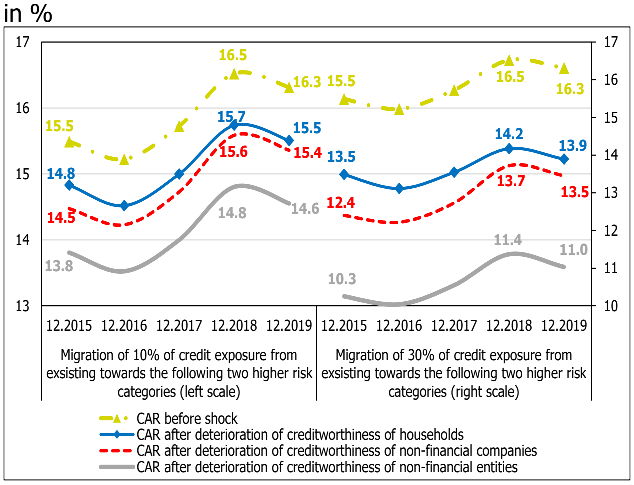
[45] The share of these loans is significantly higher in construction sector amounting 20.3% at the end of 2019.
[46] According to the regulation, the use of loan with a grace period longer than 18 months is one of the criteria on which the banks base their assessment whether there is an inability to collect from the client.
[47] The quality of these loans, measured through the share of non-performing to total prolonged loans (13.4%), is significantly weaker compared to total loans to non-financial companies and deteriorates in comparison to the previous year (10.0%).

Chart 36
Concentration of credit exposure to non-financial corporations
in %



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

Chart 37
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.

in certain cases, the extension might have been made exactly due to clients' financial difficulties or, the complicated financial situation hasn't been perceived.

Banks' exposure towards ten largest exposures to clients from non-financial sector (each bank) participates with 13.1% in total credit exposure of the banking system (13.6% on 31.12.2018). These loans account for 80.9% of banking systems' own funds (from 41.9% to 319.2% by individual bank[48]). Therefore, on average, the banks have provisioned these exposures with 4.8% or twice as less compared to the previous year, which is due to mandatory write-offs. If the ten largest exposures decrease for off-balance sheet exposure, than these exposures account for nearly 60% of own funds, for which the banks provided higher coverage with provisions of 6.3%[49].

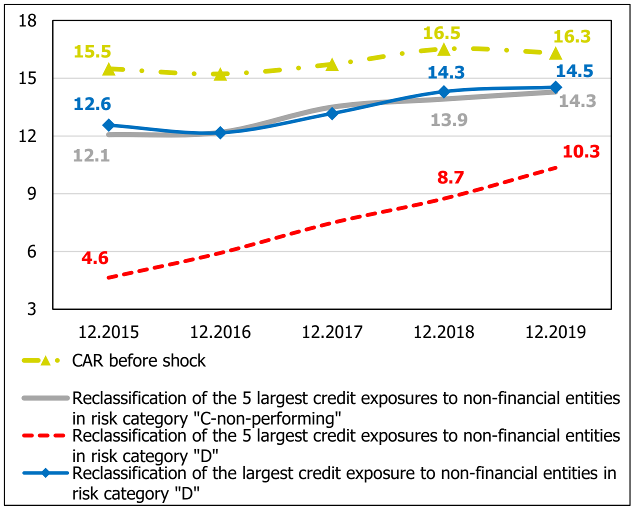
As a potential source of indirect credit risk in both segments from non-financial sector, the high (but declining) share of loans with currency component and the loans with variable and adjustable interest rate are pronounced. The analysis of this aspect is provided in the sections discussing currency 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 the stress-testing confirms the resilience of the banking system to the simulated shocks, but are somewhat weaker in comparison with the previous year. This is mainly due to lower capital adequacy of the banking system before simula-

[48] The Development Bank of the Republic of North Macedonia" AD Skopje is not included in determining the lowest and the highest shares of 10 largest exposures in own funds by individual bank, due to small credit exposure of this bank to non-financial sector.
[49] As with the total 10 largest exposures without off-balanced sheet exposure, the provision coverage is twice lower compared to 2018 with these exposures as well.

Chart 38
Effects on the capital adequacy ratio from reclassification of the largest credit exposures to non-financial entities (including the connected parties) in a higher risk category
in %



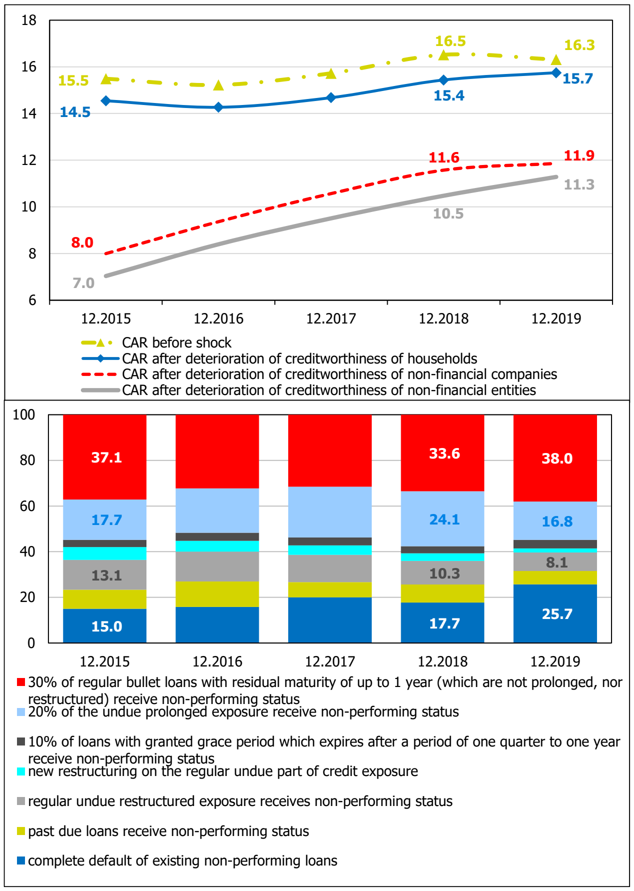
Source: National Bank's Credit Registry, based on data submitted by banks.

tions. The capital adequacy ratio of the banking system does not go below 8% in individual hypothetical shocks, although, analyzed by bank, there is need of recapitalization. Assuming a migration of 30% of the credit exposure to non-financial corporations, from the existing to the next two higher risk categories, the capital adequacy ratio of the banking system is reduced to 11.0% (by 5.3 percentage points compared to the initial level of capital adequacy ratio, which is almost the 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 to these activities with the highest total credit exposure has the greatest effect on the capital adequacy ratio. According to individual household credit products, the exposure based on consumer loans, as the most common credit product, has the largest negative impact on the capital adequacy ratio. The results of the stress test simulations on the loan portfolio concentration to non-financial sector, shows that the banks are less sensitive to the risk realization in this loan portfolio. Namely, the improvement of the results arises from the more pronounced decrease of the concentration level in the loan portfolio to non-financial sector[50], regarding the reduction of capital adequacy before the implementation of simulations.

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[51]. Even in third extreme simulation, the

[50] Perceived through the lower share of five largest credit exposures to non-financial sector in own funds and total credit exposure to non-financial sector of 51.2% and 8.3%, respectively at the end of 2019 (compared to shares of 54.6% and 8.7%, respectively by the end of 2018). Additionally, the five largest credit exposures to non-financial sector increased by 1.8%, compares to significant increase of own funds by 8.5%.
[51] 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-

Chart 39
Capital adequacy ratio before and after hypothetically combined shocks of various credit exposure segment (up) and contribution of individual shocks to the reduction of the capital adequacy ratio (down)
in %



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

adequacy of the banking system does not decrease below the minimum. Upon this simulation, the capital adequacy ratio reduces by 5.0 percentage points, to 11.3%, which is a better result compared to the end of the previous quarter (10.5%, which is a decrease relative to the initial capital adequacy ratio of 6.0 percentage points). The modest improvement of the results after this extreme simulation, despite the lower capital adequacy before the implementation of simulations, is mostly related to regulatory write-offs realized in the last quarter of the year, as well as the lower regular undue restructured exposure to non-financial sector as well as the undue prolonged exposure to households compared to last year. The highest negative effect on the capital adequacy ratio is that of the assumed deterioration in the quality of bullet loans, which contributes to almost 40% of the total reduction of capital adequacy amid combined shock. In addition, the negative effect of the assumed total uncollectability of non-performing loans to non-financial sector is high (25.7% of the total capital adequacy decline amid combined shock), as well as hypothetical worsening of the quality of prolonged loans (accounting for 16.8% of the total decrease of capital adequacy banking system) despite the reduced contribution compared to the previous year.

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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.

2. Liquidity risk

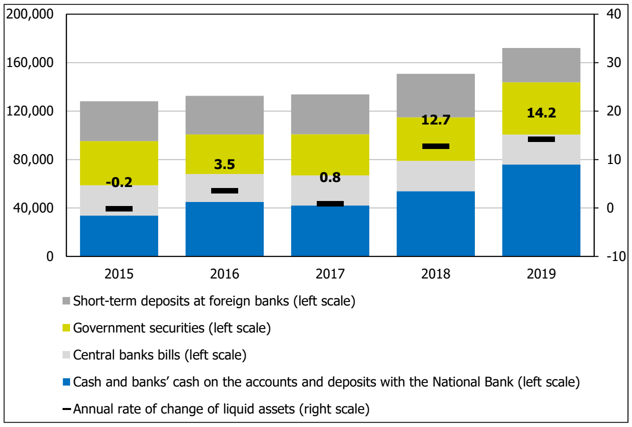
In 2019, the Macedonian banks owned a solid volume of liquidity assets, which enabled them an appropriate liquidity risk management without the occurrence of liquidity pressures. Amid solid deposit base growth (sight deposits, mostly), total liquidity assets increased in 2019, significantly faster compared to the previous year, achieving the highest relative and absolute growth in the last nine years. In their structure, the growth bearers were primarily the increased placements of banks in available overnight deposits at the National Bank, with a significant contribution of banks' increased investments in government securities (placements in domestic government Eurobonds[52]). Such developments influenced most liquidity indicators which increased, as well as the composition of assets and liabilities, according to their contractual residual maturity, where the gaps in most maturity segments still deepens. The satisfactory level of liquid assets that facilitate banks' smooth operations is also confirmed by the simulations of combined liquidity shocks, whose results indicate an appropriate liquidity risk management by banks and a satisfactory resilience to the assumed extreme liquidity outflows.

However, in the first quarter of 2020 we can most certainly expect that the COVID-19 pandemic will create significant negative effects on the performance of the domestic economy, which will have appropriate transfer effects on the liquidity of companies and households as the most important clients of domestic banks. In these moments of crisis, the solid liquidity of domestic banks is an important factor for their capacity and readiness to meet their clients' needs, by offering more favorable terms in loan restructuring, including a possibility of postponing their collection for a specified period.

The National Bank will closely monitor the operations of banks, including their liquidity, especially given that it can be influenced by possible changes on the side of assets, caused by the expected extensive restructurings of loan portfolios and mainly increased inability of the clients to timely settle their liabilities to banks. In addition, downward corrections of value are possible with a small part of liquidity instruments, depending on the accounting classification, given the turbulent movements of international financial markets due to the health crisis. Possible changes on the liability side of banks will be also carefully monitored, including their deposit base, whose volatility might increase due to growing uncertainty caused by this crisis.

[52] The Decision on the transition to the second phase of the association between the Republic of Macedonia and the European Community and its member states (Official Gazette of the Republic of Macedonia No. 17/19) of 25.1.2019, allows domestic banks to freely purchase and trade in domestic government Eurobonds.

Chart 40
Liquid assets, structure and growth
in millions of denars and in %



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

2.1. Dynamics and composition of liquid assets

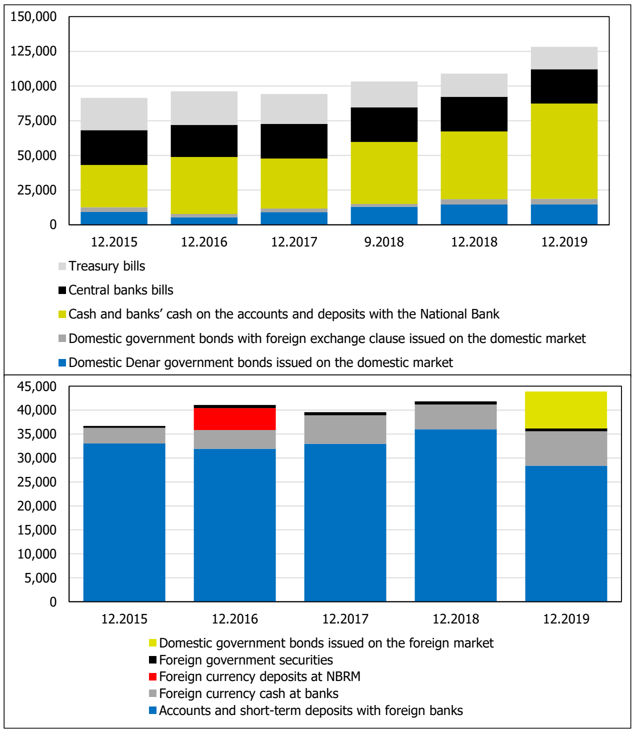
At the end of 2019, the liquid assets[53] of the banking system amounted to Denar 172,145 million and registered an annual increase (of Denar 21,345 million or 14.2%), for the fourth consecutive year. The increased cash and banks' assets with the National Bank had the largest share in the annual growth of liquidity assets structure. Although significantly lower, the increased placements of banks in long-term government securities, primarily investments in Macedonian Eurobonds (amid simultaneous decline in placements of banks in government bonds) also contributed to the growth of liquidity assets, while other components of banks' liquidity assets recorded a decrease (short-term foreign currency assets in foreign banks) or remained the same (investments in CB bills).

Cash and bank assets with the National Bank (including CB bills) registered an annual growth of Denar 21,655 million or 27.4%, thus continuing to dominate the structure of banks' liquid assets, with a share of 58.4% at the end of 2019. During 2019, the National Bank continued to offer CB bills in an unchanged amount (Denar 25.000 million) and fixed interest rate (which during the year was cut by 0.25 percentage points[54]). By limiting

[53] 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.

[54] Based on the assessment of the current economic and financial conditions, as well as existing risks, in conditions of absence of foreign exchange market pressures from the external sector and solid expectations of the domestic subjects, amid further growth of total deposits and low and stable inflation rate, the National Bank cut the core interest rate by 0.25 percentage points, i.e. from 2.50% to 2.25% in March 2019. In the first quarter of 2020, the National Bank cut the core interest rate twice: in January, when according to the assessment of the existing economic and financial conditions, as well as current risks, it was assessed that there is a space for further loosening of the monetary policy with a decision to cut the core interest rate by 0.25 percentage point, to 2.00%; and in March, when in conditions of high foreign reserves and low inflation movements, amid present global risks, including the spread of the virus infection COVID-19 (coronavirus), it was decided to loosen the monetary policy, in exceptional conditions, by another additional cut of the core interest rate by 0.25 percentage points, on a historic lowest level of 1.75% (effective from 15.4.2020).

Chart 41
Structure of Denar (up) and foreign exchange (down) liquid asset
in millions of denars

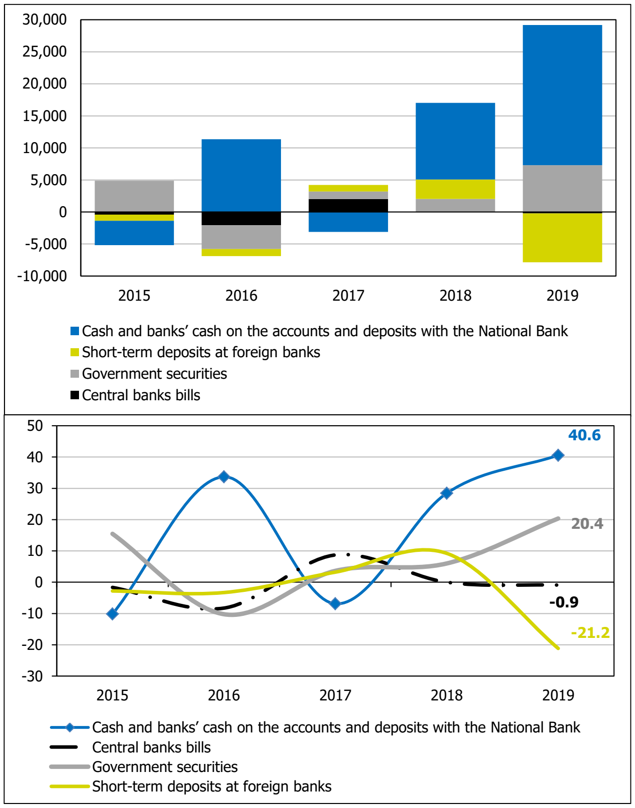


Source: National Bank, based on data submitted by banks.

the placements in the main instrument, and bearing in mind the growth of denar liquidity, the National Bank continuously encourages the banking system to intensify the financing of the private sector. However, despite the fact that banks' investments in CB bills were unchanged during entire 2019 (except in the last quarter of the year when they were significantly decreased), the banks placed a significant part of the excess liquid assets of available deposits with the National Bank, as a favorable instrument for management of liquidity changes. Therefore, the largest growth was recorded with banks' placements in available deposits with the National Bank overnight[55], which are twice as large compared to the previous year and which resulted in nearly three quarters of the total growth of banks' liquid assets in 2019. The funds placed in the seven-day available deposits with the National Bank were minimal.

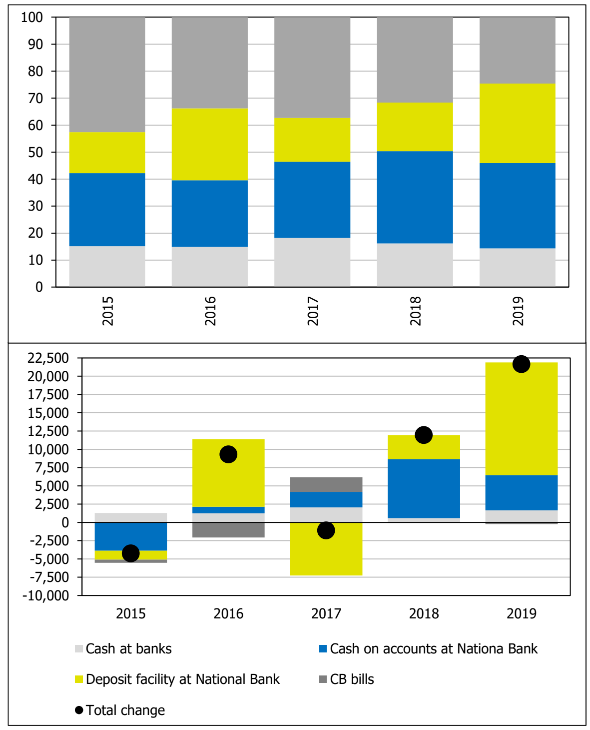
[55] According to the Decision on deposit facility (Official Gazette of the Republic of Macedonia No. 49/12, 18/13, 50/13, 166/13 and 35/15), the banks could place deposits with the National Bank every working day with a maturity of one business day (overnight) and once a week with a maturity of seven days. These deposits are placed without the possibility of partial or full early withdrawal. In 2019, 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 42
Annual growth of liquid assets by component, absolute (up) and relative (down)
in millions of denars and in %



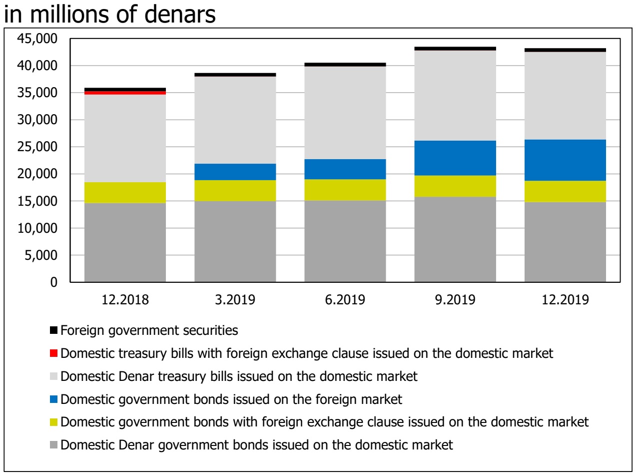
Source: National Bank, based on data submitted by banks.

Chart 43
Assets and claims of banks from the National Bank, by instrument, structure (up) and annual growth (down)
in % and in millions of denars



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

Chart 45
Banks' investments in domestic government securities
in millions of denars

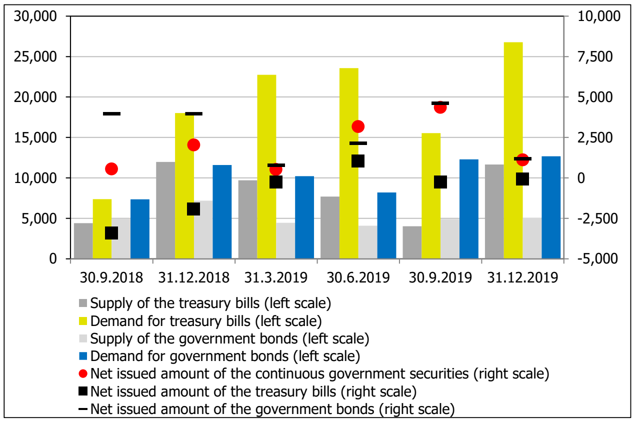


Source: National Bank, based on data submitted by banks.

Investments in government securities are a significant option for banks in the operational management of their liquidity position, which during 2019 grew significantly. The growth of bank investments in government securities in 2019 reached Denar 7,308 million, or 20.4% and was almost entirely conditioned by the investments in Macedonian Eurobonds, which in the banks' balance sheets amounted to Denar 7,643 million as of 31.12.2019[56]. Actually, in 2019, banks invested part of the short-term placements held in foreign banks in Macedonian Eurobonds for making higher returns. On the other hand, the annual growth of banks' investments in Denar government bonds, and government bonds with

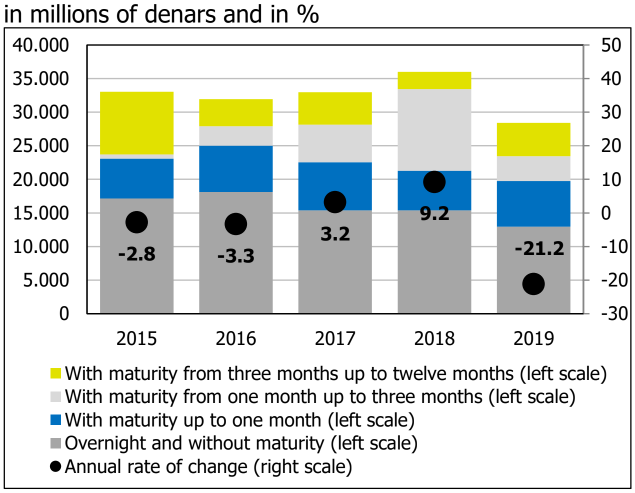
[56] As of 31.12.2019, their share in total placements in government securities was 17.7%.

Chart 46
Net issued amount and supply and demand of government securities on the domestic market of continuous securities
in millions of denars



Source: Ministry of Finance and National Bank.

Chart 47
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.

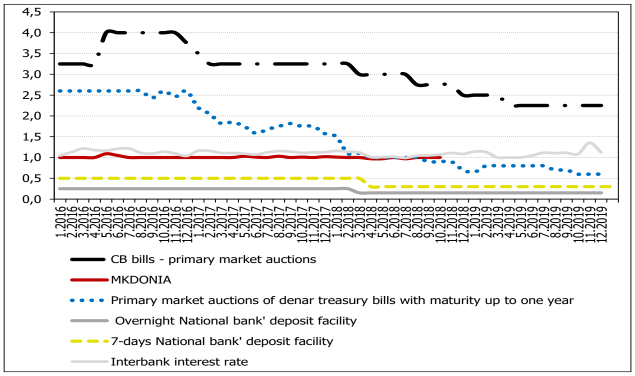
FX clause (issued on the domestic market) was lower (by 1.1% and 1.0%, respectively), while placements in foreign government securities (bonds) remained almost the same with a modest share of merely 1.5% of the total government securities portfolio of banks. Banks' investment in treasury bills decreased on an annual basis (by Denar 561 million, or 3.4%). In 2019, the share of banks in the primary market of government securities continued decreasing (from 36.1% on 31.12.2018, to 32.6% at the end of 2019), where the total net issued amount[57] of government securities increased by Denar 9,145.3 million.

Short-term assets placed in foreign banks still dominate the foreign currency component of banks' liquid assets[58] (64.7%)[59] despite the fact that these assets decreased significantly on an annual basis. At the end of 2019, the short-term assets invested in foreign banks, compared to the previous year are lower by Denar 7,618 million, or 21.2%, and with a share of 16.5% (23.9% on 31.12.2018) remain a significant component of liquid assets for liquidity and currency risk management needs. The largest portion of short-term assets in foreign banks are placed overnight i.e. are in the corresponding accounts of the domestic banks abroad, notwithstanding the annual fall.

One of the key incentives for banks to invest their liquid assets in financial instruments is the yield on individual instruments, which primarily depends on the movements of the key interest rates. During 2019, interest rates on the domestic interbank deposit market re-

[57] Net issued amount of government securities is calculated as the difference between the realized amount at the auctions of government securities for a certain time period and the amount of government securities that falls due in the same time period.
[58] 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.
[59] As a comparison, at the end of 2018, the share of these assets to total foreign currency liquidity assets was 86.1%.

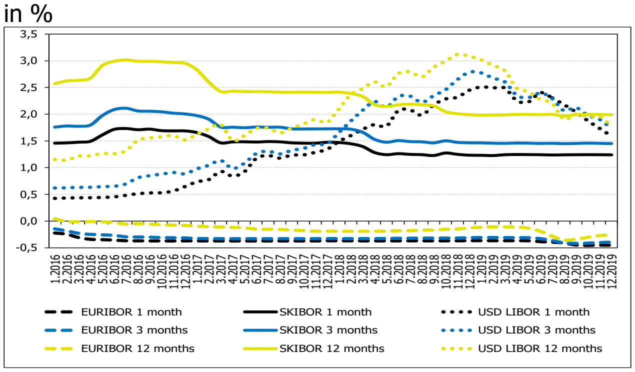
Chart 48
Domestic interest rates
in %



Source: National Bank.

Note: From the beginning of November 2018 to October 2019, 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.

Chart 49
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.

mained almost unchanged. The interbank interest rate on the deposit market was still stable, with no significant changes observed in the indicative interest rates for interbank deposit trading (SKIBOR[60]). The interbank interest rate on all transactions (MBKS[61]) averaged 1.1% for the year and remained low and stable.

Monetary policy in developed countries was stimulating. In 2019, the ECB eased the monetary policy, by cutting the interest rate on overnight deposits that banks can place in the Eurosystem from -0.4% to -0.5% at the meeting in September[62]. Thus, the negative EURIBOR in the last few months of the year deepened, and USD LIBOR decreased. Long after the normalization of the interest rate, the Fed for the first time in July 2019 made a decision to reduce the target interest rate (by 25 basis points), thus maintaining the stimulating monetary policy in the second half of the year, when it reduced the interest rate by 25 basis points twice (September 2019: 1.75% to 2%, and October 2019: 1.50% to 1.75%[63]). In March 2020, the global health crisis urged many central banks around the world to aggressively ease monetary policy, followed by massive, or even unrestricted, redemption programs for various types of financial instruments.

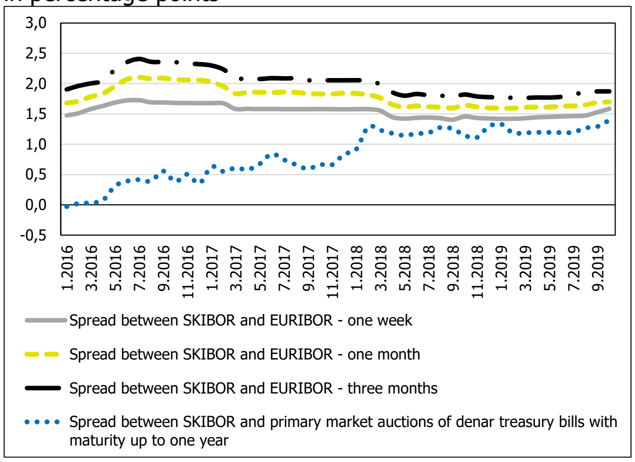
[60] SKIBOR (Skopje Interbank Offered Rate) is a reference interest rate on the denar money market and is an interbank interest rate at which one reference bank is ready to sell denar liquidity to another reference bank. Pursuant to the new Rules on Selection and Obligations of the Reference Banks Setting the Interest Rates for the Calculation of SKIBOR and the Calculation Process of SKIBOR, adopted on 22 August 2018 by the Macedonian Banking Association and effective from 1 October 2018, reference banks are required to quote one week, one month, three months, six months and twelve months interest rates.

[61] MBKS is the interbank interest rate for trading on the interbank deposit market.

[62] Other ECB main interest rates (interest rate on main refinancing operations and overnight loans) remained the same (0% and 0.25%, respectively). At the time of writing this report, the only change that the ECB has made is that it cut the interest rate in long-term refinancing operations program, from June 2020 to June 2021, where the interest rate will be 25 basis points lower than the level of the reference interest rate for refinancing operations, i.e. the deposit rate, but in no case higher than -0.75%. This reduction is part of the measures aimed to support economy and mitigate any adverse effects of the new infection (coronavirus), which the ECB adopted at its meeting on 12 March 2020.

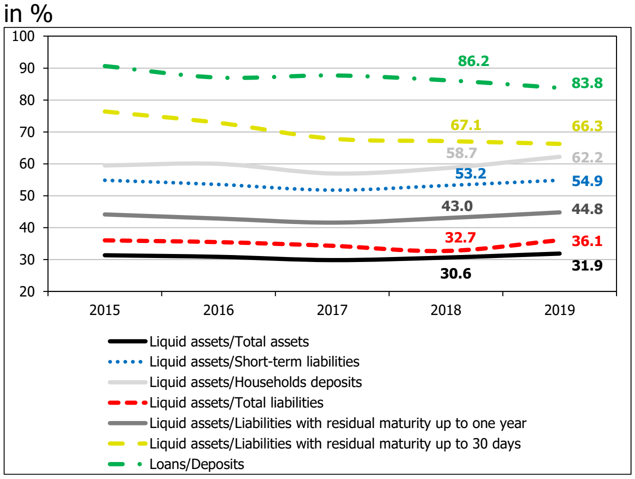
[63] Reduction of the target interest rate, by additional 0.50 basis points (to an interval of 1.00% to 1.25%) and by additional 1.00 basis points. (to an interval of 0.00% to 0.25%) was made at the two emergency meetings held in March 2020, as a result of the rapid global spread of COVID-19.

Chart 50
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.

Chart 51
Indicators of liquidity of the banking system
in %



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

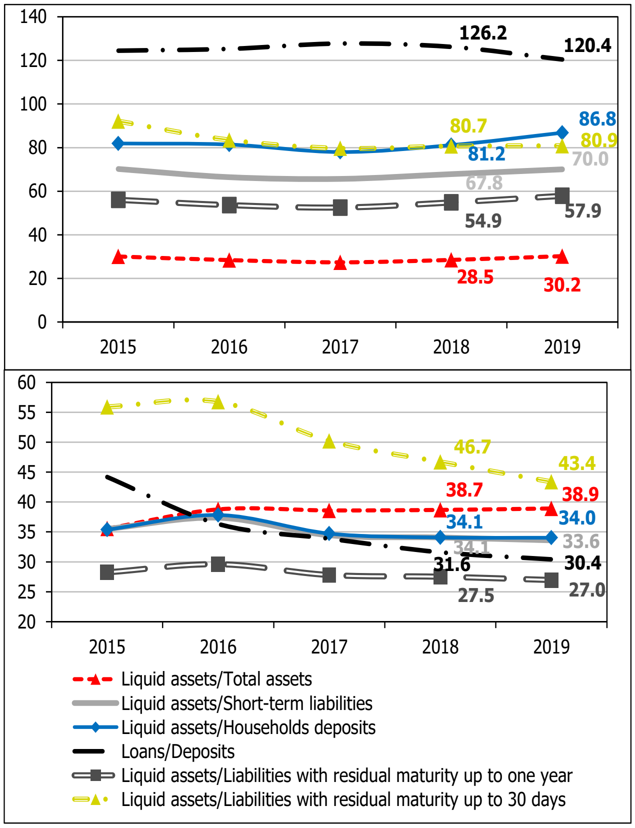
2.2. Liquidity ratios

In 2019, amid accelerated growth of liquid assets of the Macedonian banking system, the liquidity indicators[64] improved, which, although moderate, exceeded the level corresponding to the ten-year average. The relatively stable share of liquid assets in total assets (which remained nearly one third) and the satisfactory coverage of short-term liabilities and household deposits with liquid assets (which remained around 50% and 60%, respectively)[65] are indicators of proper liquidity management and maintenance of stable and solid liquidity position that ensures smooth operations. Loan to deposit ratio of the overall banking system is still below 100%, indicating acceptable liquidity risk and stable liquidity management.

Analyzing the **currency features of liquid assets and liabilities**, the improvement is **present mainly in denar liquidity indicators**[66], considering that the denar liquid assets were the main driver of the annual growth of liquid assets in 2019. On the other hand, most of the foreign exchange liquidity ratios slightly worsened. At the same time, denar liquidity indicators remain higher compared to the foreign currency liquidity indicators, due to the higher structural share of denar liquid assets in total liquid assets of banks. The reduction of foreign exchange liquidity indicators is "mitigated" by the possibility given to banks to provide the required foreign currency liquid assets at any time through the National Bank interventions on the foreign exchange market.

[64] The calculation of liquidity ratios of the banking system does not include resident interbank assets and liabilities.
[65] Analyzed by bank, as of 31.12.2019, liquid to total assets ratio ranges between 18.6% and 47.7%, with a median of 27.2% (December 2018: between 20.3% and 49.6%). The coverage of short-term liabilities with liquid assets ranges between 41.2% and 90.4%, with a median of 54.3% (December 2018: between 40.2% and 82.5%), the coverage of liabilities with residual contractual maturity up to 30 days between 48.3% and 114.2% with a median of 64.9% (December 2018: between 47.4% and 135.9%). The Development Bank of North Macedonia AD Skopje is excluded from this analysis.
[66] Claims and liabilities with FX clause are considered denar claims and liabilities, since their cash flow is in denars.

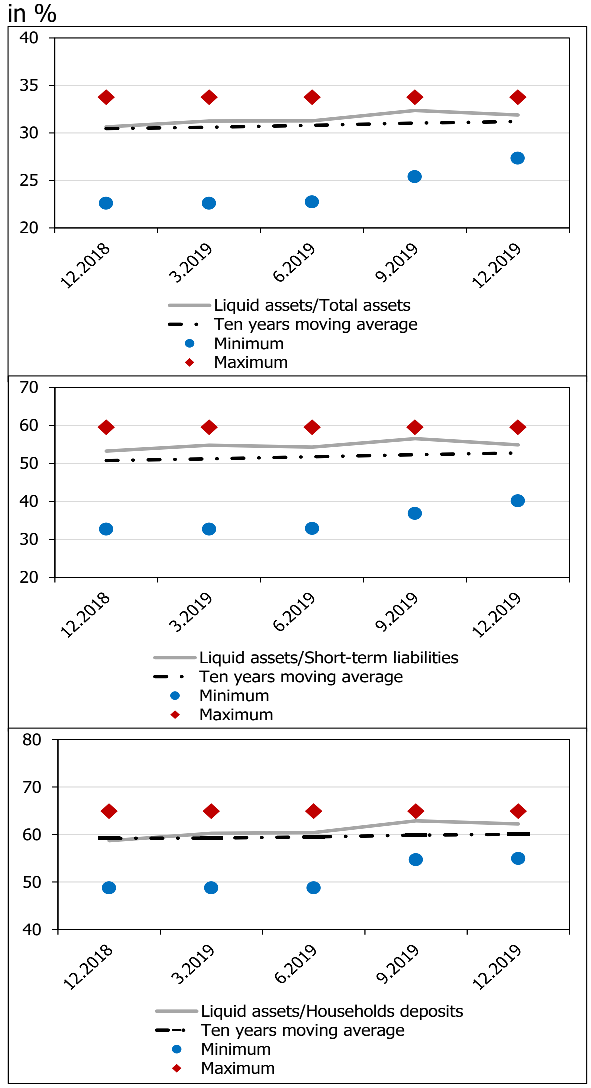
Chart 52
Banking system liquidity ratios according to currency structure, Denars (top) and FX (bottom)
in %



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

Regulatory liquidity ratios of the banking system, presented as ratios between assets and liabilities that mature in the next 30 and 180 days, are above the minimum requirement of 1 at the end of 2019, thereby confirming the sufficient amount of liquidity available to the Macedonian banking system, which allows banks to carry out their liabilities.

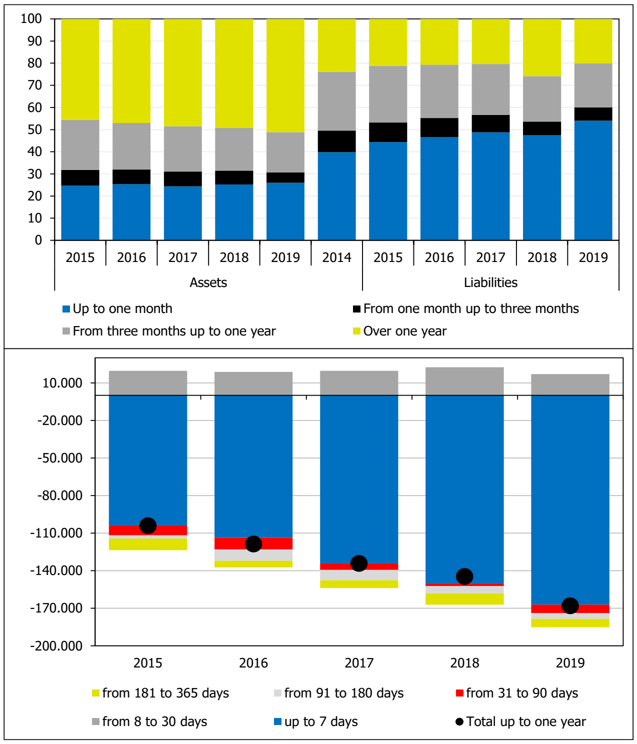
Chart 44
Liquid assets/total assets (up), liquid assets/short-term liabilities (middle) and liquid assets/household deposits (down)
in %



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

Chart 53 Composition of assets and liabilities of banks by contractual residual maturity (up) and the gap between assets and liabilities, with contractual residual maturity of up to one year (down)

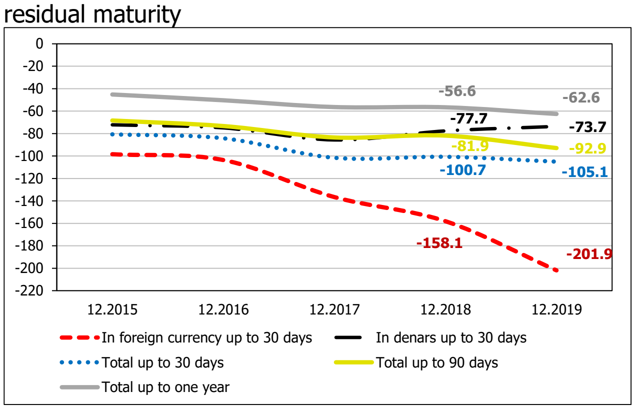
in % and in millions of denars



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

Chart 54 Relative importance of the difference between assets and liabilities, by contractual residual maturity

percentage of assets with the same contractual residual maturity



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

2.3. Maturity structure of assets and liabilities

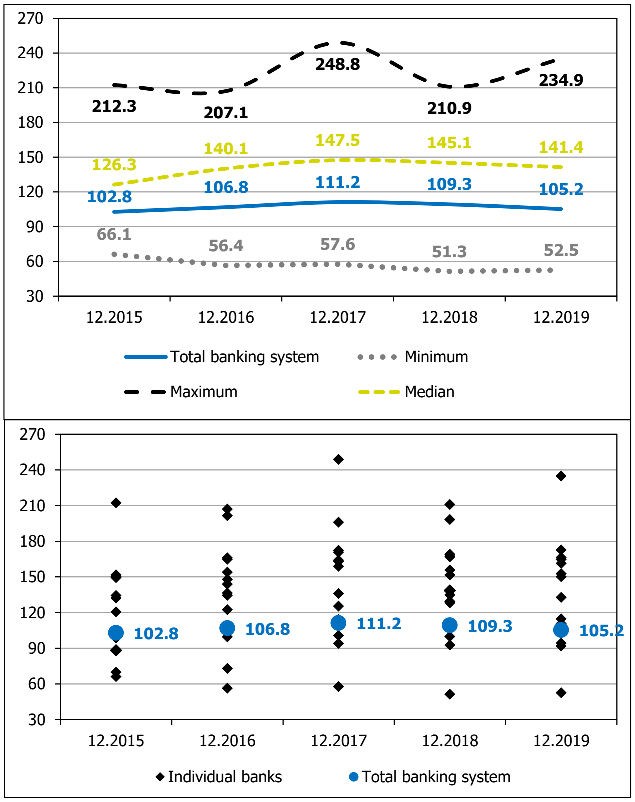
In 2019, changes to the assets and liabilities structure by their remaining maturity increased the shares of assets and liabilities with shorter contractual maturity (up to one month). This corresponds to the increase of cash and cash on accounts and deposits with the National Bank (on the assets side), i.e. stronger propensity of depositors to hold shorter-term deposits (on the liabilities side)[67].

Maturity mismatch between banks' assets and liabilities is significant, and in 2019 further enhanced. However, the largest mismatch between assets and liabilities by their contractual residual maturity is still registered in the maturity bucket up to seven days, which usually results from the inclusion of banks' liabilities on demand and without determined maturity (including transaction accounts) in this maturity bucket. Usually, a positive gap in the contractual residual maturity of assets and liabilities is observed only in the maturity bucket from 8 days to one month, mainly because the banks' investments in CB bills are classified in this maturity bucket.

Hence, the ratio between the cumulative negative difference of assets and liabilities by contractual residual maturity and total assets with the same residual maturity deepened in 2019, compared to the end of 2018. This movement was particularly noticeable in foreign currency assets and liabilities, arising from the accepted business model of domestic banks, which *inter alia,* is based on the currency and maturity transformation of foreign currency deposits of domestic nonfinancial entities.

[67] In 2019, bank deposit potential mostly increased given the rise in demand deposits.

Chart 55
Reduction of liquid assets after the simulation for combined liquidity shocks (after all shocks), total banking system (up) and by bank (down)
in %



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

2.4. Stress-simulations for liquidity shocks

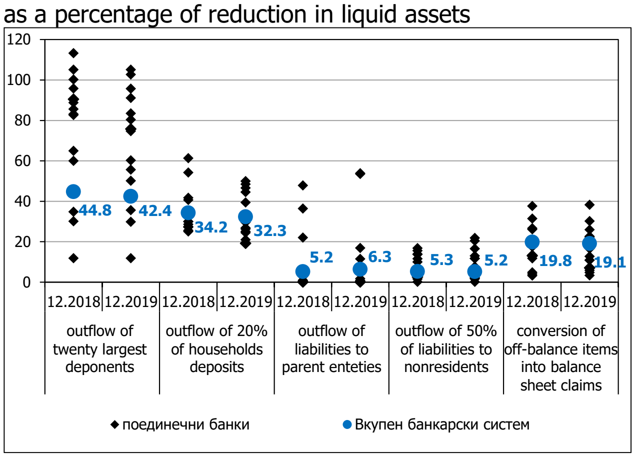
The results of the liquidity shock simulations as of 31 December 2019 indicate a stable liquidity position of the Macedonian banking system. The resistance of the Macedonian banking system to liquidity shocks is noticeable in the results of all individual simulations of liquidity shocks, and full utilization (105.2% on 31.12.2019) of liquid assets would occur only in extreme simulation of liquidity shock, which includes combined outflows[68] 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 to other financial instruments[69] owned by banks, for which it is estimated that banks will quickly and easily collect or turn into cash. In that case, the banking system would have sufficient liquid assets with certain amount of available liquid assets.

At individual simulations of liquid shocks, the high level of liquidity of the Macedonian banks also provides settlement of all assumed extreme liquidity outflows. The sharpest decline in liquid assets occurs amid outflow of the deposits 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

[68] 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 because, 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.

[69] Financial instruments that comprise liquid assets, also include 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 56
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.

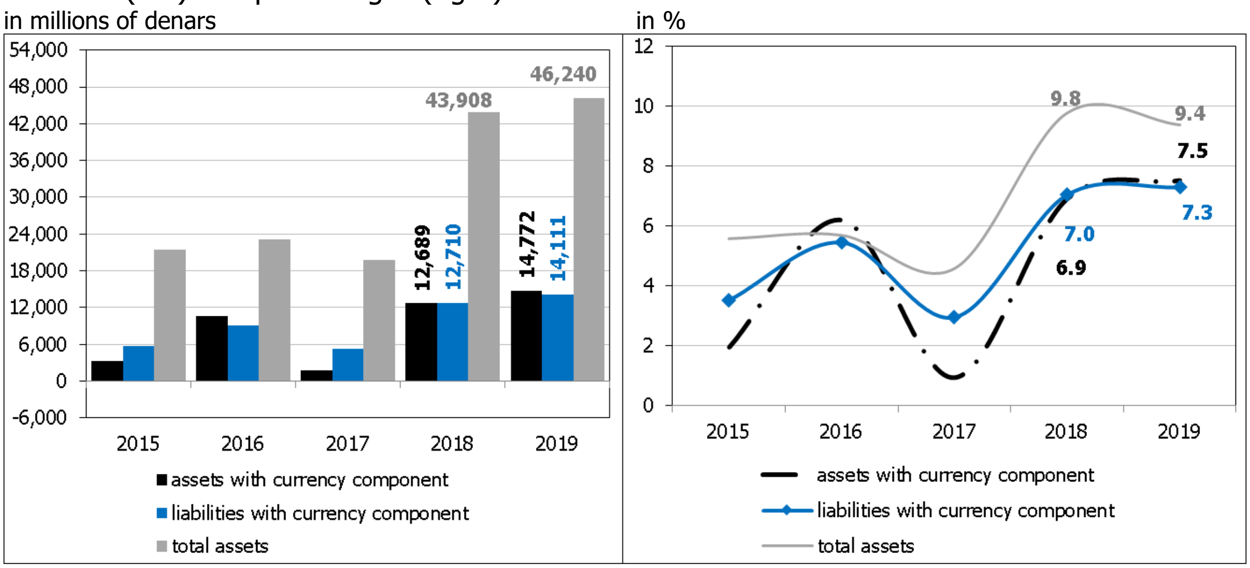
of 20% of household deposits shows a significantly greater similarity in the results for individual banks, thereby confirming the importance of deposits to the financing of the banks' activities. Hence, the sustainability of the liquidity position of banks, as well as the potential growth of their activities, 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 the case of assumed conversion of certain off-balance sheet liabilities of the banks into on-balance sheet claims[70], the banks would spend about 20% of their liquid assets, which although less compared to the simulations of outflow of deposits[71], can be considered significant. The small share of liabilities to nonresidents, as well as to parent entities in the structure of total banks' funding sources causes moderate impact of the associated shocks on the overall result of this simulation.

[70] There is an assumption for outflow from 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.
[71] At simulation of outflow of deposits of the 20 largest depositors, the liquid assets of the banking system are reduced by 42.4%, while in case of assumed outflow of 20% of the household deposits, liquid assets are reduced by 32.3%.

3. Currency risk

In 2019, the direct and indirect bank exposure to currency risk increased. The increased direct exposure to currency risk is seen through the increased gap between assets and liabilities with currency component in the banks' own funds, as well as through the increased open currency position to own funds ratio. Also, higher loans with currency component to total loan portfolio of the banking system indicate increased bank exposure to indirect credit risk. The euro is the most common currency in the currency structure of banks' balance sheets, which in conditions of de facto fixed nominal exchange rate of the denar against the euro, contributes to maintaining a low probability of direct and indirect bank exposure to currency risk. As of 30.12.2019, all banks were in line with the prescribed limit of 30% for the aggregate currency position to own funds ratio.

Chart 57
Annual growth of total assets, currency component assets and currency component liabilities, in amounts (left) and percentages (right) *



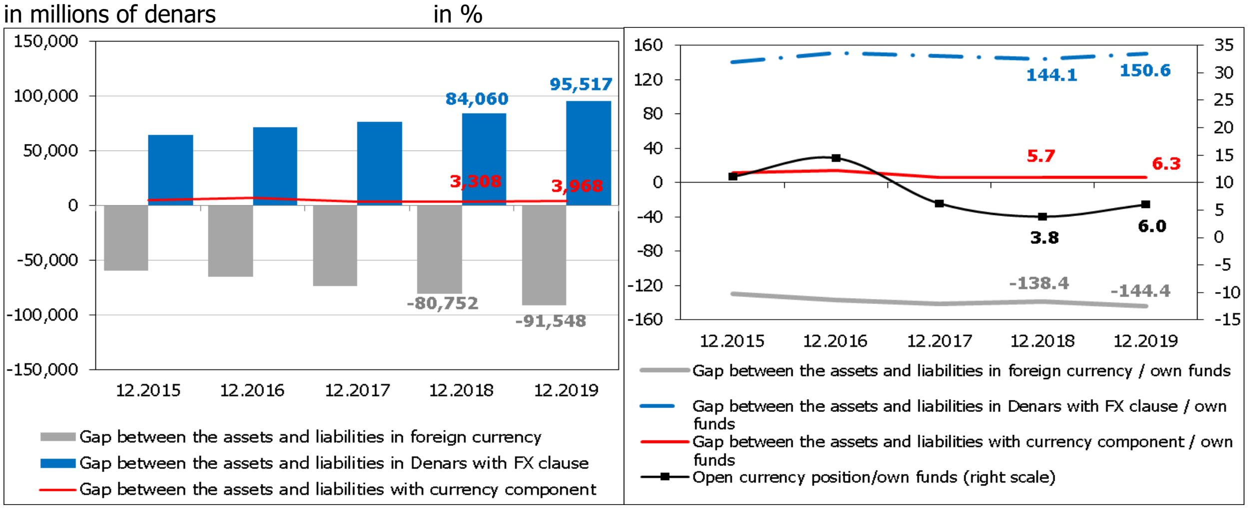
Source: National Bank, based on data submitted by banks.
* Currency clause assets are reduced for the impairment of receivables classified in C, D and E risk categories under the Decision on managing a currency risk. DBNM AD Skopje is not included in the analysis.

In 2019, the positive gap between assets and liabilities with currency component increased by Denar 661 million (or 20%), compared to the decrease of Denar 21 million (or -0.6%) in 2018. The annual growth of the gap between assets and liabilities with currency component results from the faster annual growth of Denar 14,772 million, or 7.5%, of assets with currency component[72], compared to the increase of Denar 14,111 million, or 7.3%, on liabilities with currency component[73]. As at 31.12.2019, the share of the gap between assets and liabilities with currency component in banks' own funds reached 6.3%, compared to 5.7%, at the end of 2018. On the other hand, open currency position[74] to own funds ratio is 6%, which is below the ten-year average of 10.7% for this indicator. Banks cover the negative gap in foreign currency (mostly arising from foreign currency deposits) with the positive gap in positions with currency clause (mainly Denar loans with foreign currency clause). Depending on the sector, banks maintain a long foreign exchange position when dealing with non-financial companies, and a short foreign exchange position with households.

Chart 58

Structure of the gap between assets and liabilities with currency component (left) and share of the assets and liabilities with currency component in own funds (right)

in millions of denars in %

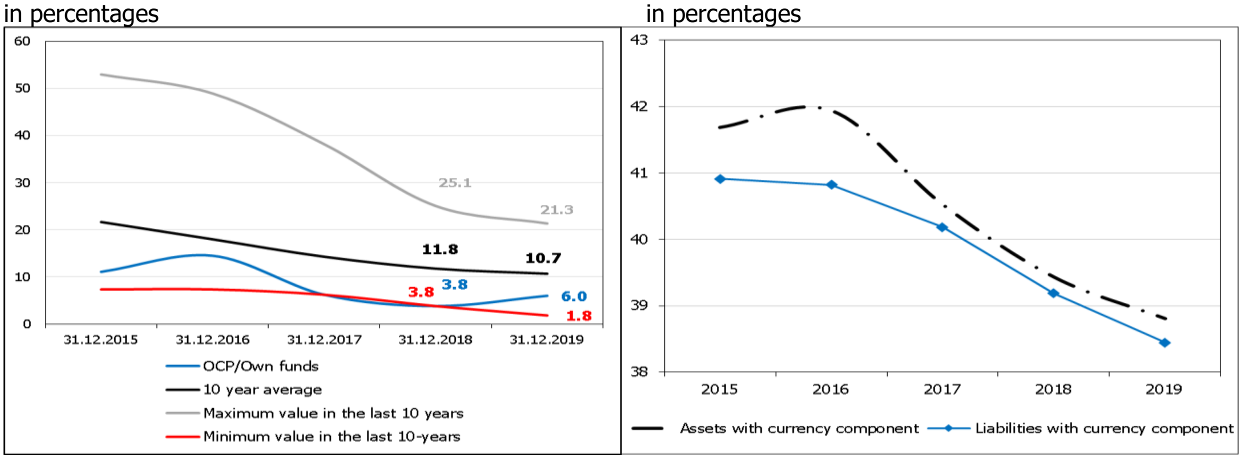


Source: National Bank, based on data submitted by banks.

Chart 59

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

in percentages in percentages



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.

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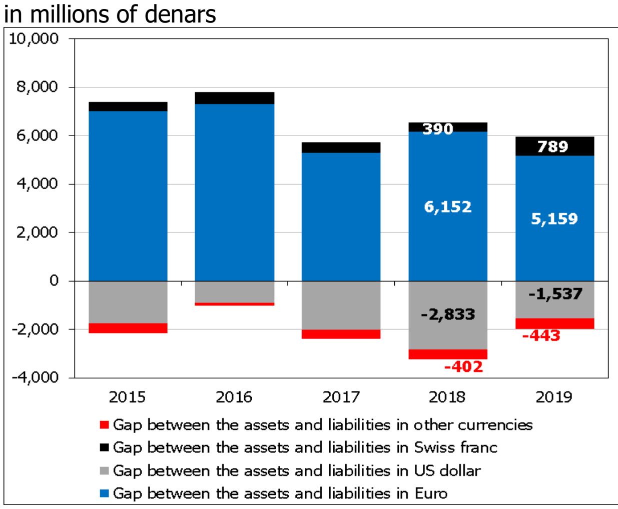
[72] The annual growth of assets with currency component is mostly a result of the growth of Denar loans with FX clause (Denar 10,509 million) and the banks' placements in domestic Eurobonds (issued on foreign markets), in the amount of Denar 7,643 million (net book value). In contrast, foreign currency deposits dropped by Denar 5,721 million annually. For more details, see Bank Activities below.

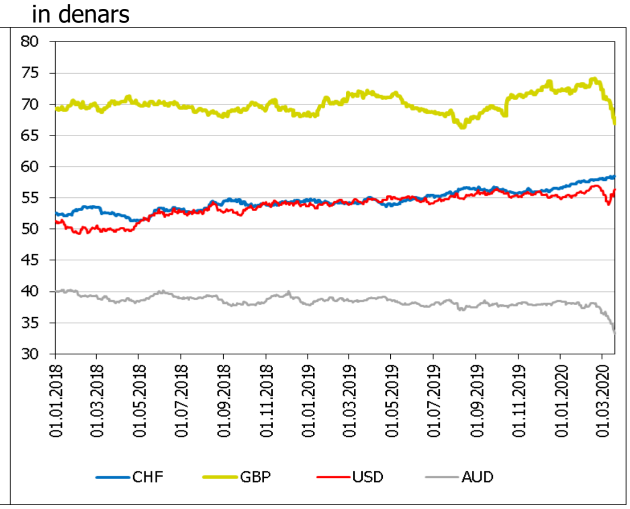
[73] The annual increase in liabilities with currency component stems mostly from the growth of foreign currency deposits of nonfinancial entities (of Denar 8,203 million), time deposits in foreign currency of non-resident financial institutions (Denar 2,812 million), as well as foreign currency loan liabilities to non-resident financial institutions (Denar 2,231 million). For more details, see Banking Activities below.

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

Assets and liabilities with currency component* to total assets/ liabilities ratio went down. Amid slightly slower growth of liabilities with currency component (compared to assets with currency component and total liabilities), its share in total liabilities decreased by 0.7 percentage points annually. On the other hand, the share of assets with currency component in total assets decreased by 0.6 percentage points.

Chart 60
Dynamics and structure of the gap between assets and liabilities with currency component, by currency (left) and exchange rate of the denar against selected currencies (right)





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

Analyzed by currency, the narrowing negative gap in US dollars contributed the most to the growth of the total gap between assets and liabilities with a currency component. This gap narrowed by Denar 1,296 million or 45.8%, as a result of the annual growth of assets in US dollars (Denar 774 million, or 5.8%) amid simultaneous decline in US dollar liabilities (Denar 522 million, or by 3.2%)[75]. The positive gap in euros also narrowed in 2019, by Denar 993 million or 16.1%, which, unlike the gap in US dollars, contributed to reducing the overall gap between assets and liabilities with a currency component[76]. The euro still dominates the currency structure of assets and liabilities with a currency component. The strategy of maintaining stable nominal denar exchange rate against the euro keeps the likelihood of currency risk materialization, low. The movement in values of other currencies does not have a significant impact on the domestic banking system, due to their low representation in the banks' balance sheets. The coronavirus pandemic in the first quarter of 2020 caused turbulence in the international financial markets, including the foreign exchange markets. Uncertainty about the duration and intensity of the health crisis and the transmitted adverse effects on economies and financial systems has increased volatility of exchange rates since the end of February 2020.

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

Currency	31.12.2018		31.12.2019	
	Assets	Liabilities	Assets	Liabilities
Euro	88.4	86.8	89.1	88.3
US dollar	6.8	8.4	6.7	7.6
Swiss franc	2.2	2.0	1.8	1.5
Australian Dollar	0.8	1.0	0.8	1.0
British pound	0.7	0.7	0.6	0.6
Other	1.1	1.0	1.0	1.0
Total	**100.0**	**100.0**	**100.0**	**100.0**

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

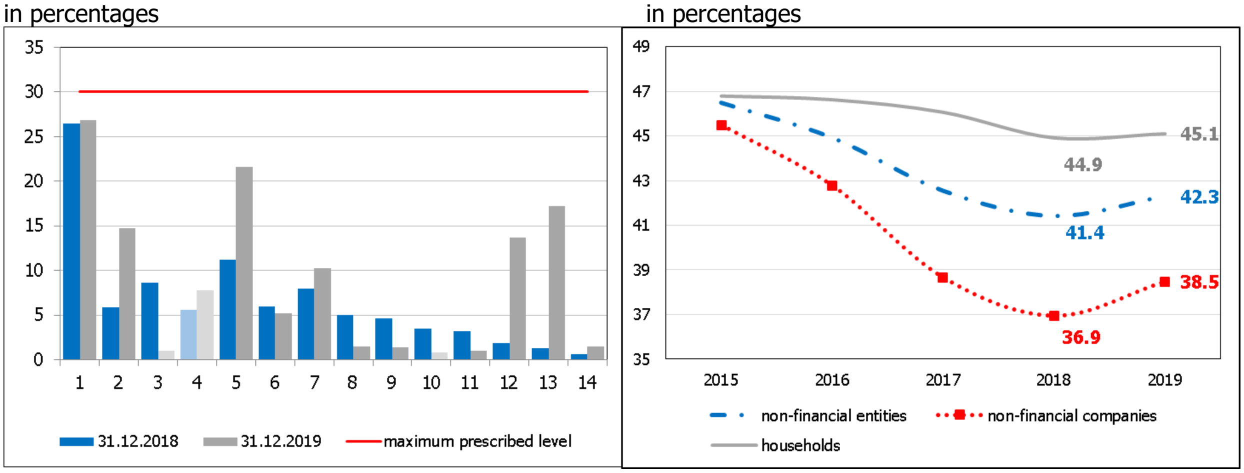
As of 30.12.2019, all banks were in line with the prescribed limit of 30% for the aggregate currency position to own funds ratio. Eleven banks had a long aggregate currency position, as opposed to three banks that reported a short currency position. The highest aggregate currency position was long (26.9%) relative to the bank's own funds, while the lowest was short and its ratio to the bank's own funds was 0.8%.

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%	4	3	7	7	9	4	5	4	12	2	6
from 5% to 10%		1									2
from 10% to 20%	4										4
from 20% to 30%	2										2
over 30%											

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

Chart 61
Aggregate currency position to own funds ratio, by bank (left) and loans with FX component to total loans ratio (right)
in percentages in percentages



Source: National Bank, based on data submitted by banks.
* Lighter shaded bars refer to the banks that reported a short foreign exchange position, but shown in an absolute value.

[75] The growth of assets in US dollars mostly stems from the increase in placements in loans (Denar 507 million) and deposits (Denar 302 million). The annual decline in US dollar liabilities reflects the reduction of current accounts and other short-term liabilities (Denar 358 million) and time deposits in this currency (Denar 230 million).
[76] The narrowing of the euro gap results from the higher annual growth of euro liabilities (Denar 15,472 million), compared to the increase in euro assets (Denar 14,479 million). The growth of current accounts and other short-term liabilities, time deposits of non-residents and natural persons and loan liabilities mostly contributed to the increase in euro liabilities. On the other hand, placements in domestic Eurobonds and increased loans in Denars with Euroclause contributed the most to the growth of euro assets.

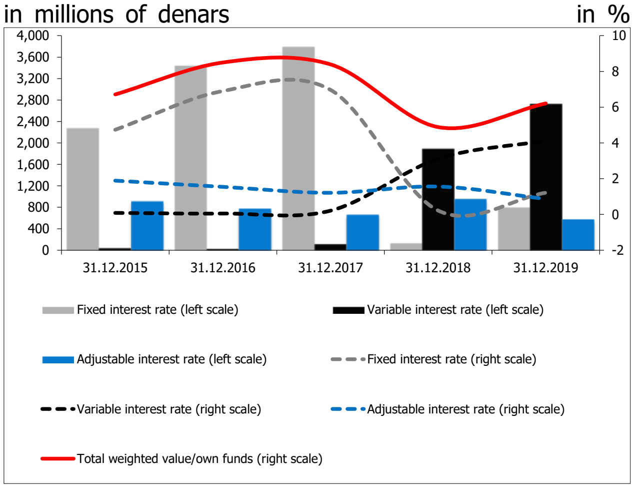
Maintaining a stable nominal exchange rate of the denar against the euro is crucial for preserving low probability of materialization of indirect currency risk. In 2019, the growth of loans in denars with FX clause (which had a significant contribution to the growth of assets with currency component) increased the share of loans with currency component in total loans, which increases the banks' exposure to this risk. However, in conditions of fixed nominal exchange rate of the denar against the euro, the probability of materializing this risk is also low, given that more than 99% of loans with currency component are denominated in euro or in denars with Euroclause.

4. Interest rate risk in the banking book

At the end of 2019, 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. The increase arises from the widening of the (non-weighted) gap between assets and liabilities with variable and fixed interest rate and from the changes in the maturity structure of the gap of positions with fixed interest rate, from shorter to longer maturity buckets. On an aggregate basis, the banking system is exposed to the risk of lowering interest rates, given the overall positive gap between interest-bearing assets and liabilities. Given the high positive gap between lending and deposit interest rate positions up to 1 month, any downward changes in interest rates would materialize interest rate risk relatively soon. The significant presence of loans with adjustable and variable interest rates continues to highlight the indirect exposure to the risk of increasing interest rates.

Chart 62 The total weighted value 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 %

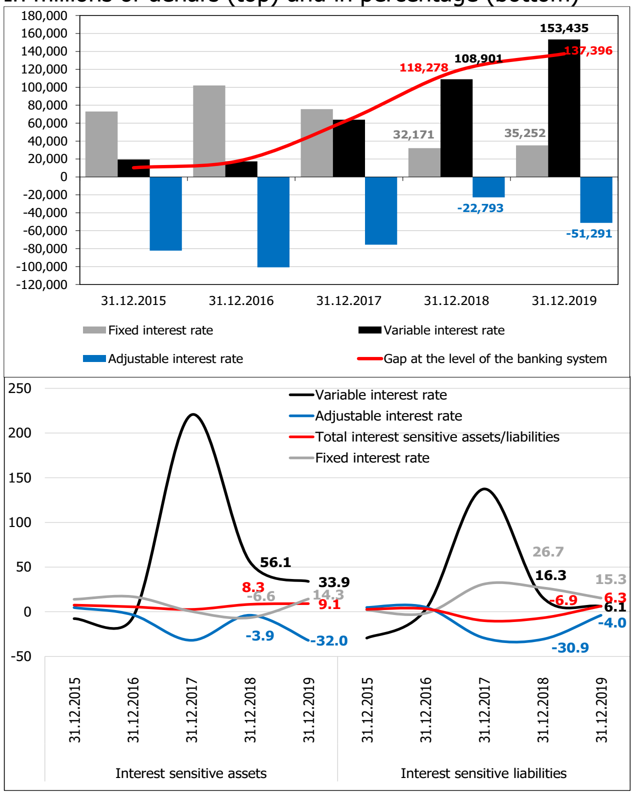


Source: National Bank, based on data submitted by banks.
*The total weighted value of the banking book denotes the potential loss of the economic value of this portfolio, amid assumed unfavorable interest shock of ±2 percentage points.

Total weighted value of the banking book registered a high annual growth of 37.9% or Denar 1,124 million and rose to the 6.2% of banking system's own funds (4.9% at the end of 2018). Analyzing by bank, this ratio ranges from 0.4% to 11.6%, which is far below 20%[77]. By type of interest rate, there is an annual rise in weighted values of the portfolios with fixed interest rate (by Denar 668 million or by 509.8%) and with variable interest rate (by Denar 831 million or by 44%). In contrast, the weighted value of the portfolio with adjustable interest rate decreased by Denar 376 million annually, or by 39.7%. The annual growth of weighted value of portfolios with fixed and variable interest rate results from the widening gaps between the lending and deposit positions with these types of interest rate. Also, the weighted value of the portfolio with fixed interest rate increases due to changes in the structure of the gap between lending and deposit positions with this type of interest rate, analyzed by maturity (more precisely, redistribution in the gap structure, from shorter to longer maturity buckets). Finally, given the widening of the negative gap between lending and deposit positions with adjustable interest rate, the decrease in the weighted value of the

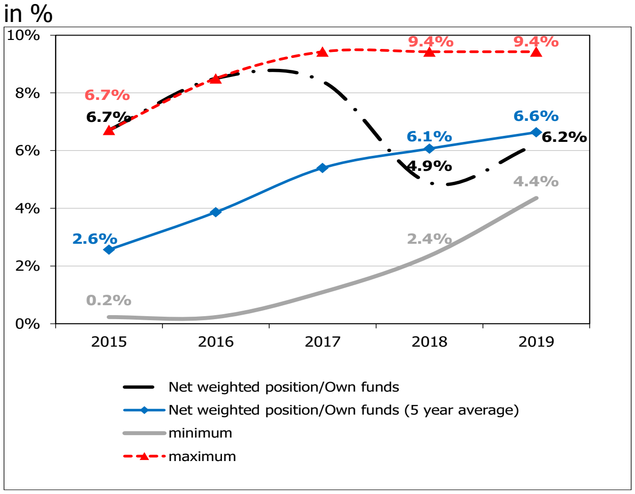
[77] According to the regulation, when total weighted value of the banking book to own funds ratio exceeds 20%, the bank is required to propose measures to reduce this ratio, and the National Bank may also require allocation of appropriate amount of capital for covering the interest rate risk in the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

Chart 63
Interest sensitive assets and liabilities, by type of interest rate: Gaps (up) and annual growth (down)
In millions of denars (top) and in percentage (bottom)



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

Chart 64
Net weighted position / own funds*
in %



Source: National Bank, based on data submitted by banks.
*Data on interest rate risk in the banking book are available as of 2010

banking book with this type of interest rate is also a result of changes in the structure of the adjustable interest rate gap (more precisely, redistribution in the negative gap structure, from positions where the time to the next interest rate revaluation is longer, to positions where the time to the next interest rate revaluation is shorter).

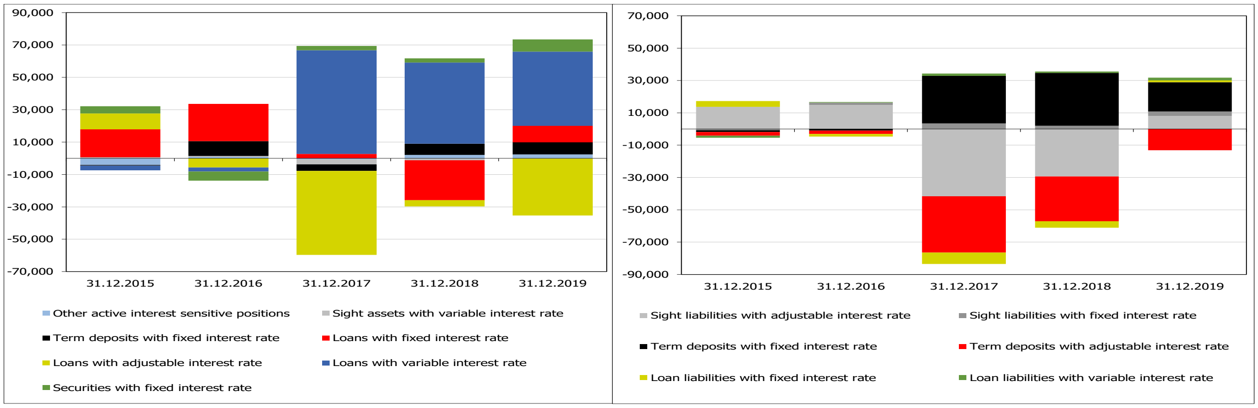
Although the net weighted position to own funds ratio is coming close to the average of this indicator, it is still below the average for the last five years.

In 2019, the total gap, i.e. net non-weighted position between interest-sensitive assets and liabilities registered an annual growth of 16.2% or by Denar 19,119 million. This is mostly due to the widening of the positive gap in the positions with variable interest rates, by Denar 44,534 million, or by 40.9%. The annual growth of placements in loans with floating interest rate (of Denar 45,865 million) contributed the most to widening the gap between the positions with floating interest rates. The positive gap between assets and liabilities with fixed interest rate widened by Denar 3,082 million or by 9.6%, as a result of the higher annual growth of assets with this type of interest rate (mostly loan placements, deposits with the National Bank and domestic Eurobonds issued on foreign markets) compared to the growth of fixed interest rate liabilities (primarily sight liabilities and liabilities on term deposits and loans). The trend of replacing the adjustable interest rate with variable and/or fixed interest rate continued in 2019 and was more pronounced on the side of loan placements, compared to deposit-based liabilities, which widened the negative gap between the positions with adjustable interest rate (by Denar 28,498 million, or by 125%).

Chart 65 Annual growth of interest sensitive assets (left) and liabilities (right), by type of instrument and type of interest rate

in millions of denars

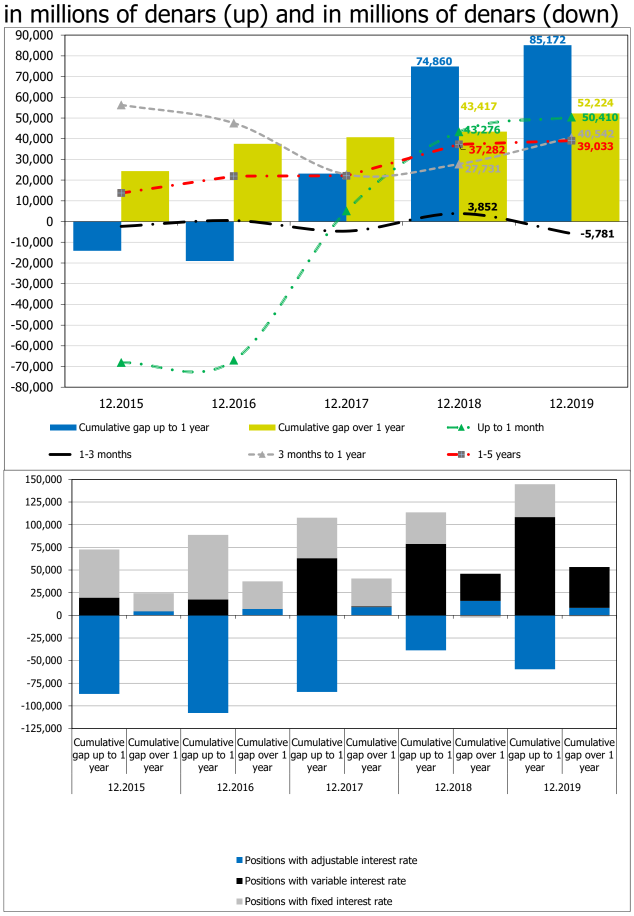
in millions of denars



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

Chart 66 Asset-liability gap, by period until next interest rate revaluation (up) and gap structure by interest rate type (down)

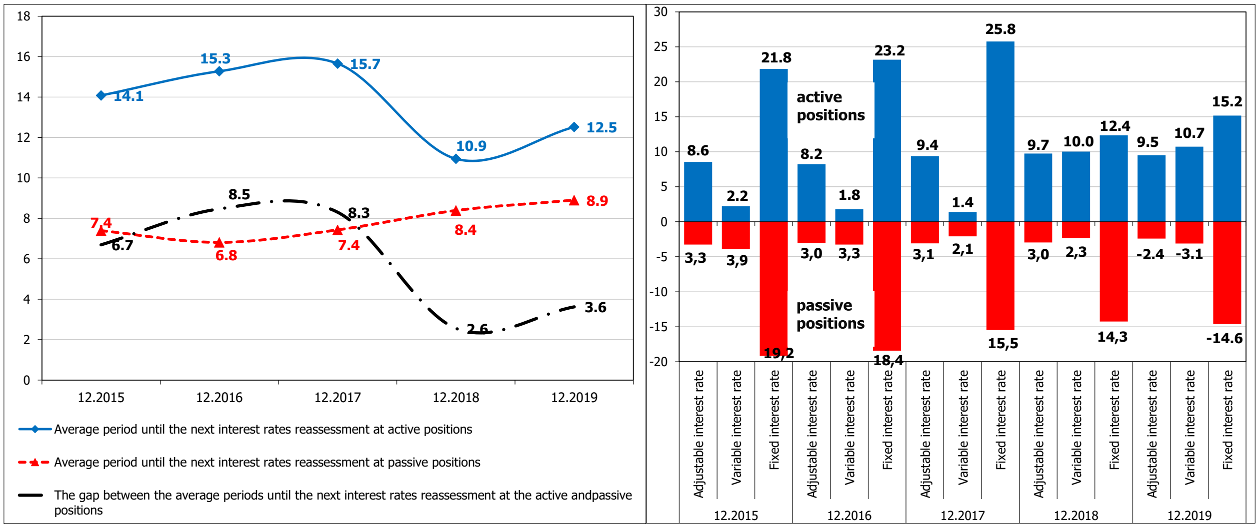
in millions of denars (up) and in millions of denars (down)



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

Analyzed by period to the next interest rate revaluation, in 2019, the gap up to 1 year contributed more to the widening of the total gap between interest sensitive assets and liabilities, which widened by Denar 10,312 million (or 13.8%). There is also a solid growth of the gap between positions, where the period to the next interest rate revaluation is over 1 year (Denar 8,807 million, or by 20.3%). The largest contribution to the annual growth of the gap between interest-sensitive assets and liabilities up to 1 year was made by the gap with variable interest rate, mostly in up to 1 month bucket and in 6 to 12 months bucket (primarily due to the growth of placements in loans with variable interest rate). Positions with variable interest rate contributed the most to the widening of the gap over 1 year, primarily due to the growth of loans with combined interest rates (fixed interest rate in the initial loan maturity period, and variable after the end of the initial period). Such movements were followed by extension of the average period to the next revaluation of interest rate, primarily on the side of lending positions. On an aggregate basis, the banking system remains exposed to the risk of lowering interest rates, given the overall positive gap between interest-sensitive assets and liabilities. Given the still high positive gap between lending and deposit interest-sensitive positions up to 1 month, any downward change in interest rates would cause significant materialization of the interest rate risk in the banking system relatively soon.

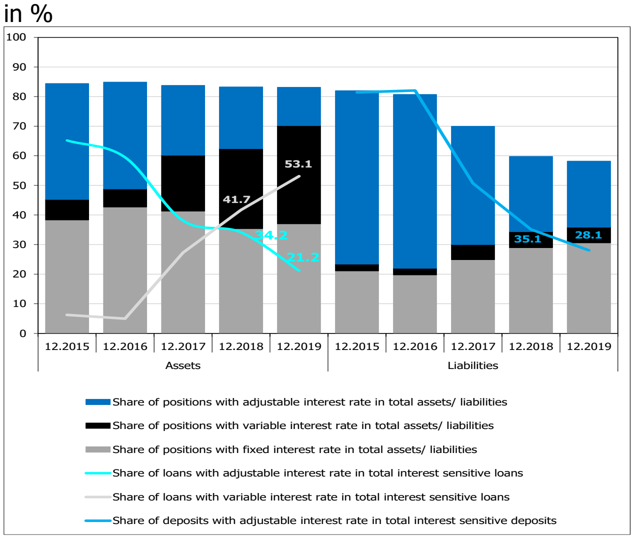
Chart 67 Average period until the next interest rates revaluation*, total (left) and by interest rate type (right)
in number of months



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

* The average period to the next interest rates revaluation is the amount of lending/deposit position of each maturity bucket to total interest sensitive assets/liabilities, multiplied by the maturity of each maturity bucket, in months. For fixed interest rate positions, the average period to the next revaluation refers to the average remaining maturity.

Chart 68 Assets and liabilities structure, by type of interest rate
in %



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

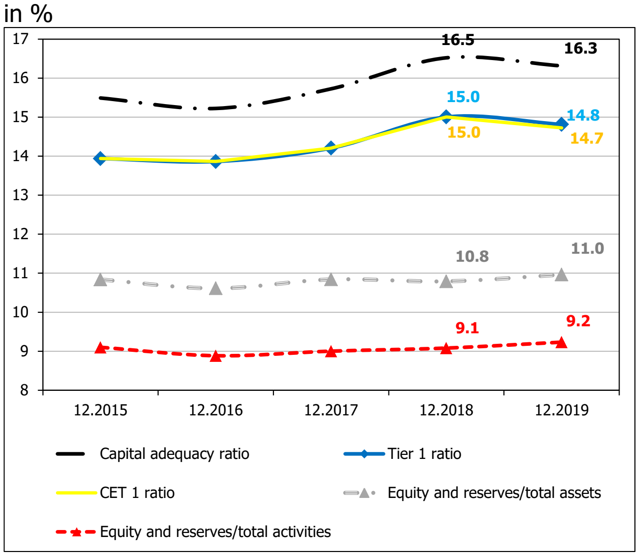
Indirect exposure to the risk of increasing interest rates, arising from loans with adjustable and variable interest rates is significant, yet decreasing in 2019. As of 31.12.2019, the cumulative share of these loans in total loans is 74.3% (75.9% as at 31.12.2018), where 53.1% of total loans have a variable interest rate, while 21.2% are with adjustable interest rate. The downward trend in the share of positions with adjustable interest rate continued in 2019, both in interest-sensitive assets and in interest-sensitive liabilities.

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

5. Insolvency risk

The solvency and capitalization of the Macedonian banking system are stable and satisfactory, despite the insignificant deterioration of some solvency indicators in 2019. The capital adequacy ratio decreased slightly by 0.2 percentage points, to 16.3% as a result of the faster enhancement of banks' activities (mainly credit risk weighted assets) compared to the growth of own funds. Most of the growth of own funds was used to meet the capital requirements and capital buffers (that increased due to the enhancement of activities), which also used part of the available capital (capital above the regulatory and supervisory requirement). Available capital to own funds decreased from 8.6% in 2018 to 6.6%. However, as much as 44.3% of the banking system's own funds are capital additions identified in the supervisory assessment and capital buffers, which are especially important in times of crisis, when they can be used to deal with challenges of any nature and intensity. The stress testing of the resilience of the banking system and the Macedonian banks to simulated shocks shows improved resilience of banks in 2019 compared to 2018.

Chart 69
Indicators of solvency and capitalization of the Macedonian banking system
in %

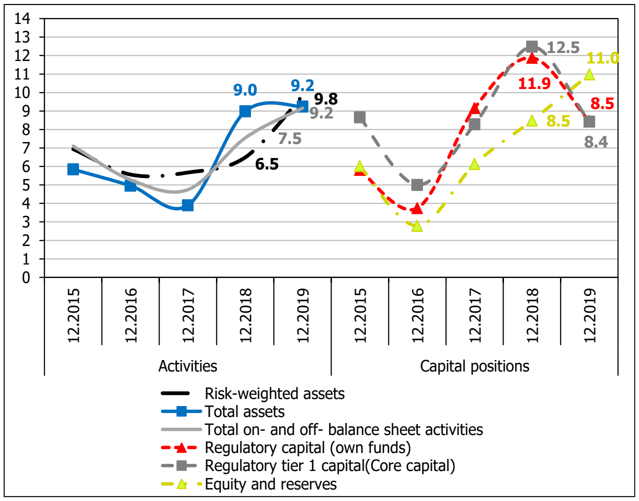


Source: National Bank, based on data submitted by banks.

5.1. Solvency and capitalization ratios of the banking system

In 2019, the banking system maintained its solid capitalization and stable solvency position. On an annual basis, the capital adequacy ratio decreased by 0.2 percentage points to 16.3%, which is slightly below the ten-year average (16.5%). As of 31.12.2019, Tier I capital and Common Equity Tier I capital registered an annual decrease of 0.2 and 0.3 percentage points, respectively, to 14.8% and 14.7%, respectively. Despite such movements, capital and reserves to total assets ratio, i.e. to total banking system activities increased by 0.2 and 0.1 percentage points, respectively, and on 31.12.2019 reached 11.0% and 9.2%, respectively. Such solvency and capitalization indicators of the banking system are conditioned by the dynamics of change of the components of these indicators. In 2019, assets and total activities (on-balance sheet and off-balance sheet) of the banking system increased by 9.2%, while risk weighted assets increased by 9.8%. In contrast, capital and reserves, own funds and Tier I capital increased by 11.0%, 8.4% and 8.5%, respectively.

Chart 70
Annual growth of solvency ratio components
in %

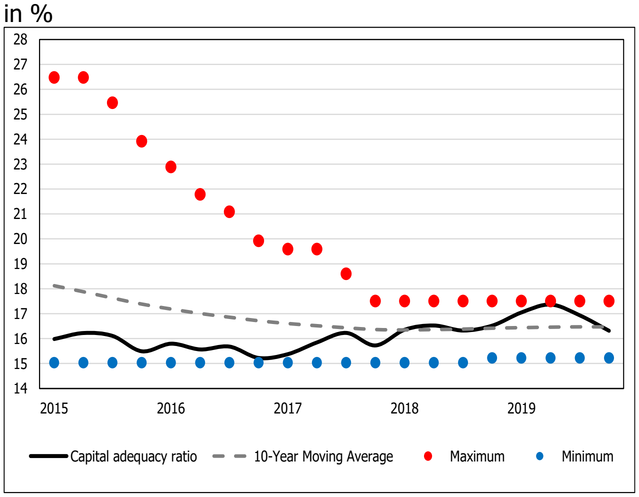


Source: National Bank, based on data submitted by banks.

To ensure an adequate level of capital and prevent excessive borrowing, Macedonian banks banks are obliged to calculate the leverage ratio (as a ratio between the core capital and the total on- and off-balance sheet exposure) semi-annually. The leverage ratio for 2019 is 10.8% and is by 0.9 percentage points higher than the leverage ratio for 2018.

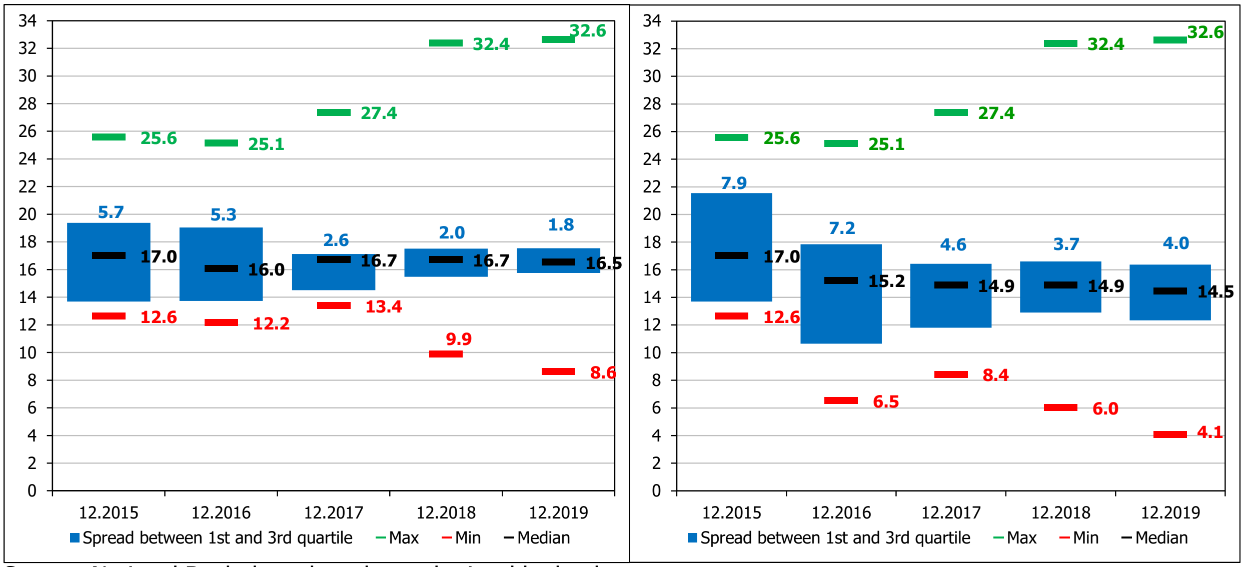
Analyzed by bank, capital adequacy and Tier I capital ratios of most banks decreased annually from -0.3 to -2.2 percentage points, i.e. from -0.3 to -1.9 percentage points, respectively. Only two banks have issued instruments of Additional Tier I capital, so the Tier I capital and Common Equity Tier I capital ratios of the banking system are similar (as of 31.12.2019, these ratios are 14.8% and 14.7%, respectively, compared to the end of 2018, when both of them equaled 15%).

Chart 71
Capital adequacy ratio
in %



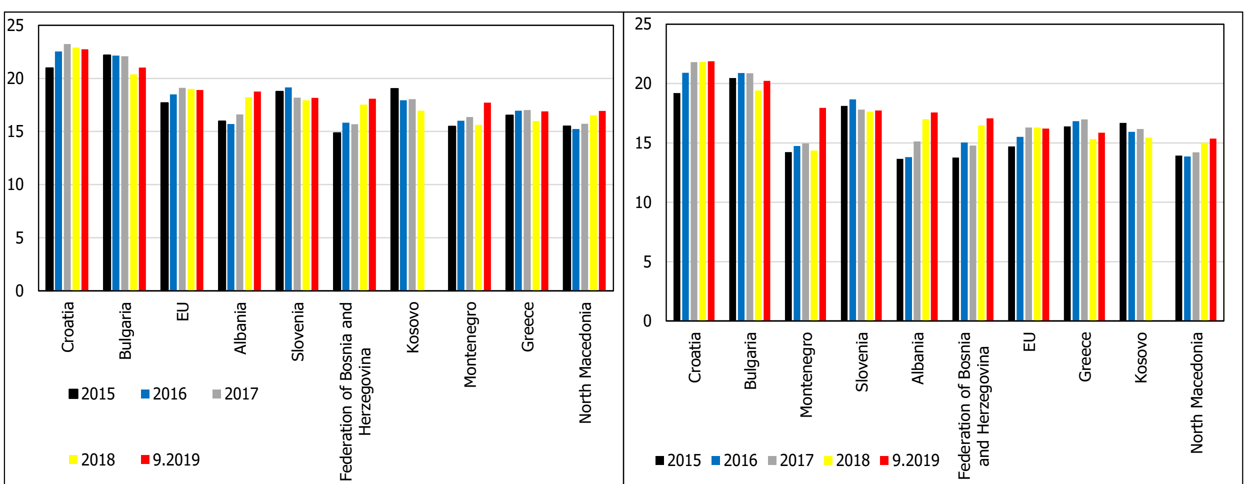
Source: National Bank, based on data submitted by banks.

Chart 72
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.

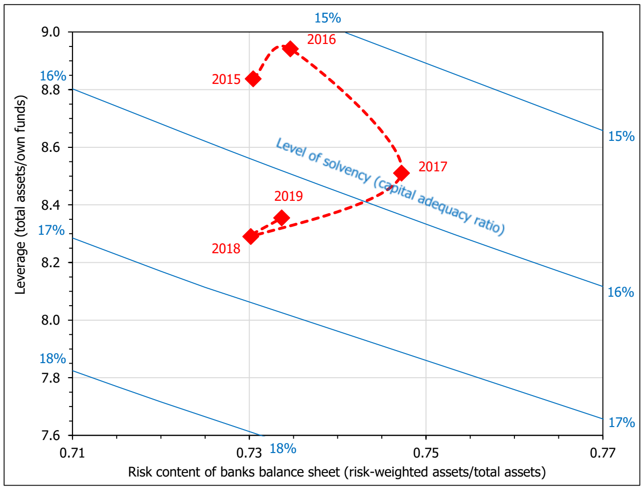
Chart 73
Capital adequacy ratio (left) and Tier I capital (right) of the banking system of selected countries
in %



Source: IMF, EBA and websites of institutions
* Data for the domestic banking system are also as of 30.9.2019 for better comparability with the banking systems of other countries.

Compared to the banking systems of the countries of our environment and the EU, the Macedonian banking system has lower solvency indicators. In this group of analyzed

Chart 74
Leverage, risk and solvency of the banking system
in denars and in %

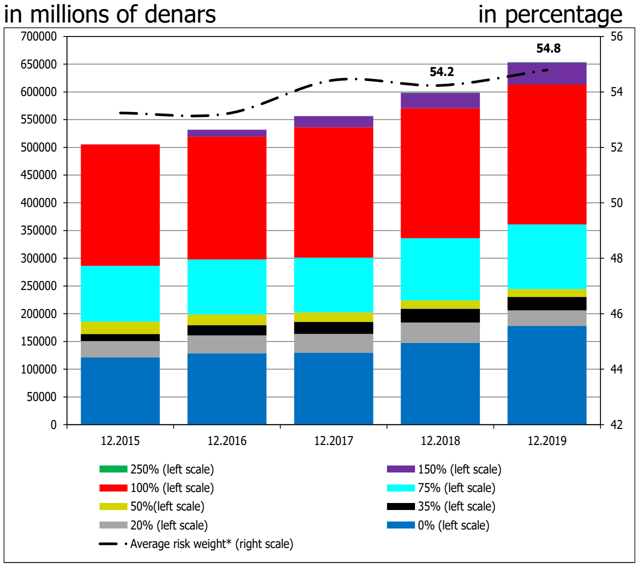


Source: National Bank, based on data submitted by banks.

countries, the capital adequacy rate rages between 16.9% and 22.7%.

The breakdown of the capital adequacy rate to its constituent components indicates a simultaneous increase in the ratio between assets and own funds (leverage level indicator, indebtedness), as well as the share of risk weighted assets in total assets (risk level indicator of the activities of the banking system), which had an overall contribution to the reduction of the capital adequacy rate in 2019.

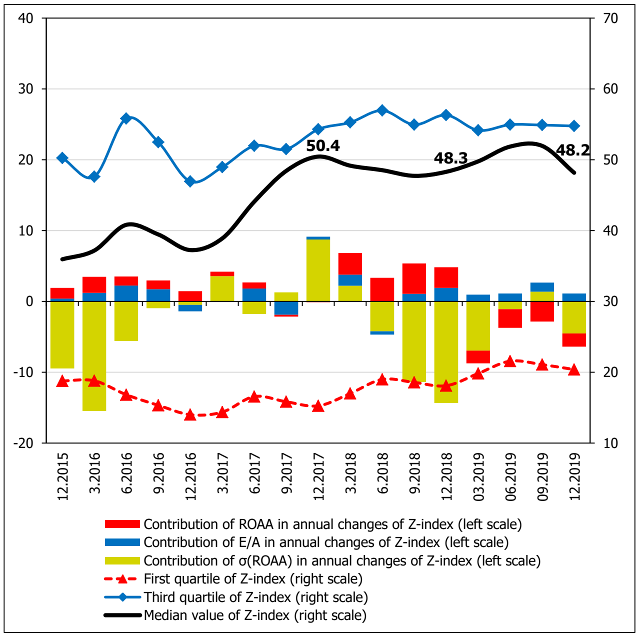
Chart 75
Annual growth in the total on-balance sheet and off-balance sheet exposure, by risk weight
in millions of denars in percentage



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

The risk level of total on-balance and off-balance bank activities, measured as a ratio between credit risk-weighted assets and total on-balance sheet and off-balance sheet exposure increased by 0.7 percentage points and totaled 54.8% as of 31.12.2019. The reason for this growth, to a large extent should be sought in the annual growth of positions with risk weight of 75% and 150% (within the portfolio of small loans), in the total amount of Denar 16,452 million (or by 11.8%) and of positions with risk weight of 100% (primarily, receivables from other companies, but also from the portfolio of small loans and receivables from public institutions) which increased annually by Denar 18,061 million (or by 7.7%). The activity with risk weight of 0% also registered a relatively high growth of Denar 30,467 million or 20.7%, as a result of the solid annual increase in individual components of banks' liquid assets (deposits with the National Bank, placements in government bonds, denar cash and assets in denar accounts with the National Bank). Contrary to this, activities

Chart 76
Z index
in levels



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

with risk weight of 20% registered an annual decrease of Denar 8,644 million (or 23.5%), which is mostly due to the reduced placement with the foreign banks.

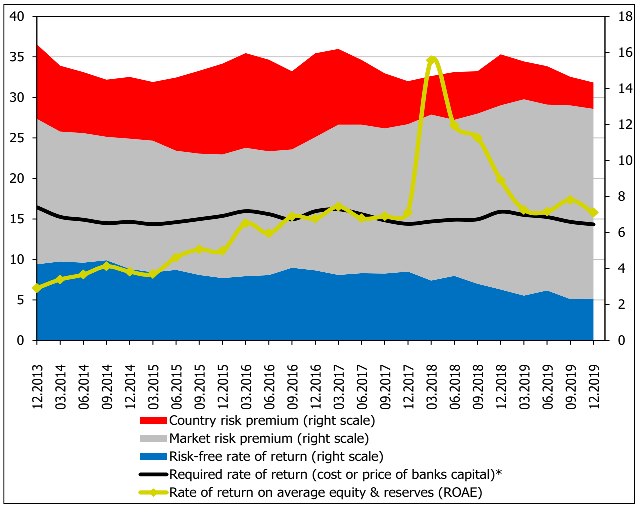
Banking system stability measured by the so-called Z-index[78] is relatively high. On average, it requires a negative shock of at least 48.2 standard deviations from the rate of average return on assets to fully exhaust the capital potential of the banking system. During 2019, there was a minimal decrease in the Z Index value due to the lower rate of return on average assets, as well as the increased volatility of banks' profits during the year, measured through the standard deviation from the rate of return of average assets.

The cost of capital i.e. requested rate of return of investors in banks' shares, calculated with the change of the so-called KAPM[79]model, on a sample eight banks whose shares are listed on the official market, registered an annual decline. The reduction of this rate is as a result of the reduced risk premium of a country and lower risk-free rate of return. The cost of capital, calculated using this model decreased by 1.6 percentage point and reached 14.3% at the end of 2019. That is lower by 1.5 percentage points compared to the rate of return on equity of the banks included in this analysis. The lower required rate

[78] 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 ratio (*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. At the level of the banking system, the index is determined as an average 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.

[79] *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 premiums is calculated as the average premium for market risk for each bank, weighted by the size of their assets. The beta coefficient is a measure for the deviation of the variability of the returns of a specific share (or the risk of owning that share), compared to the variability of the returns of reference share portfolio (in this case the shares that make up the index MBI10).

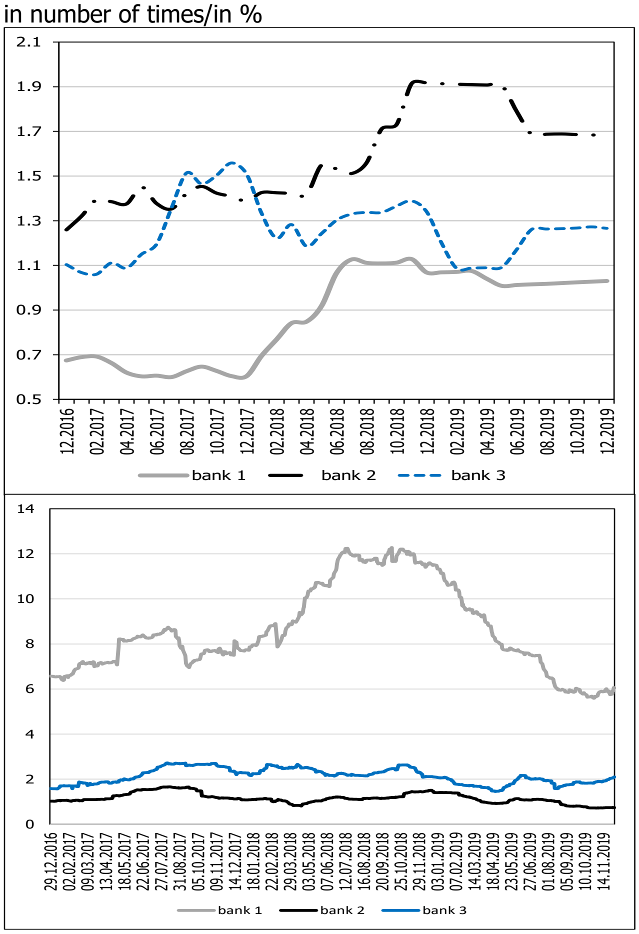
Chart 77
Level and structure of the cost (price) of the capital* of the banks whose shares are listed on the official market of the Macedonian Stock Exchange
in %



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

of return on banks' shares arises from the reduced risk premium of a country, which decreased by 1.4 percentage points (due to the narrowing of the gap between the yields of issued Macedonian Eurobonds and yields of comparable German bonds), and to a lesser extent due to the reduction of risk-free yield, by 0.5 percentage points (the reduction of the yields on government bonds which are listed on the Macedonian Stock Exchange). Four Macedonian bonds, whose yields registered annual downward correction are currently traded in the international capital markets (yields of one of the Eurobonds, at the end of 2019 entered in the negative zone), which is an indicator for their increased demand as a result of the improved macroeconomic stability. With the outbreak of the crisis related to the coronavirus pandemic and consequent increased turbulences in the international financial markets, these trends changed in the first quarter of 2020, when bond yields (not only Macedonian) mainly increased.

Chart 78
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.

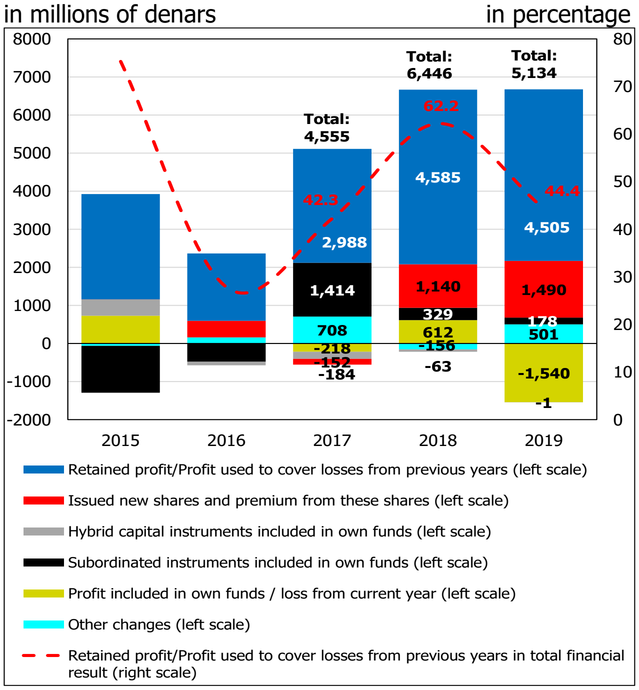
The indicators for trading the shares of three largest banks on the Macedonian Stock Exchange registered a certain decrease compared to 2018, and the ratio between share prices and price-to-book ratio) remained relatively high. Since the beginning of March 2020, stock prices on the Macedonian Stock Exchange, including banks, registered a downward correction, influenced by the spread of the coronavirus in our country and in the world and the uncertainty regarding the duration and intensity of the spillover negative effects of the health crisis on economies.

5.2 Quality of own funds of the banking system

The quality of banks' own funds is quite favorable, which contributes to a greater resilience of the Macedonian banking system to potential stressful scenarios. In 2019, the own funds of the banking system registered an annual growth of Denar 5,134 or 8.5%, resulting from retained earnings in own funds, the issue of ordinary shares, issued new subordinated instruments and bonds that met the requirements to be involved in banks' own funds.

On 31 December 2019, the share of Common Equity Tier 1 Capital i.e. the highest quality capital buffer of the own funds of the banking system in own funds decreased by 0.5 percentage points to the level of 90.3%. Such a movement is a consequence of the slower growth of Common Equity Tier 1 Capital (with a significant amount of current loss in one bank which is a deductible item of own funds) compared to the other buffers of own funds (Additional Tier 1 Capital). Namely, Common Equity Tier 1 Capital increased by Denar 4,347 million or by 7.9%, mostly due to reinvestment of earnings and issuance of ordinary shares in one bank. Additional Tier 1 Capital increased by Denar 301 million (or by 501.1% given the low starting base of this buffer of own funds), resulting from the issuance of

Chart 79
Structure of annual changes in own funds

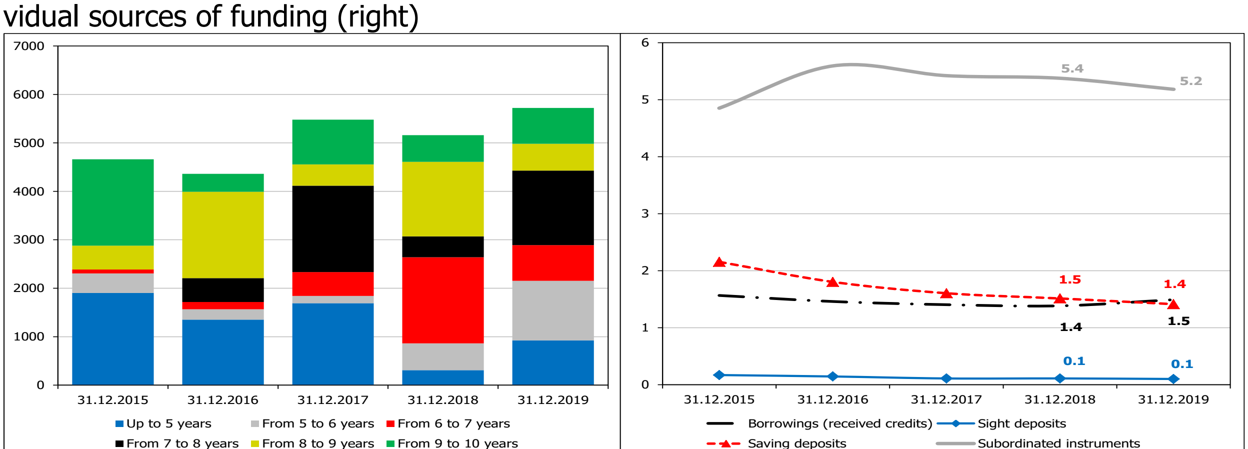


Source: National Bank, based on data submitted by banks.

perpetual convertible bonds by one bank. Finally, the Additional Tier 1 Capital of the banking system increased by Deanr 485 million or by 8.7%, as a result of the issuance of subordinated instruments in the form of bonds (by two banks) and loans to banks.

The structure of the subordinated instruments in terms of their maturity improved as a result of the newly issued subordinated instruments in 2019. Thus, 83.9% of the total amount of liabilities on subordinated instruments has a residual maturity longer than five years as of 31.12.2019, which gives legal power to banks to fully include these instruments in the calculation of own funds. On the other hand, the cost of subordinated instruments, measured as an interest expense rate (reduced on an annual basis) that banks make for these instruments decreased by 0.2 percentage points (5.2%).

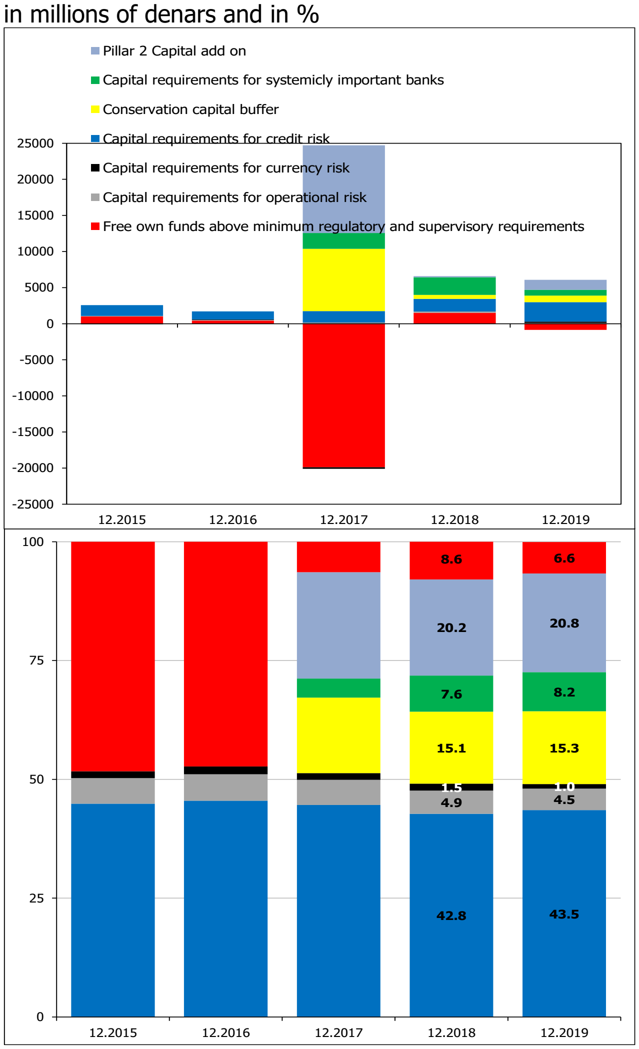
Chart 80
Amount and structure of total banks' liabilities based on subordinated instruments, by residual maturity (left) and interest expenses*, for individual sources of funding (right)



Source: National Bank, based on data submitted by banks.
*Total banks' liabilities based on subordinated instruments are given by net carrying amount from the balance sheet.
**The interest expenses rate is calculated as a ratio between the amount of interest expenses realized in the last four quarters (the cumulative flow of interest expenses realized in the last four quarters) and the average amount of sources of funds, calculated as an average of the their stock in the last five quarters.

With the help of the increased volume of banks' activities during 2019, most of the annual growth of own funds was used to meet the capital requirements to cover credit risk, capital additions

Chart 81
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.

determined in accordance with the supervisory assessment (pillar 2) and capital requirements for meeting the capital conversion buffer[80] and capital buffer for systemically important banks[81] whose amounts increased as risk-weighted assets grew.

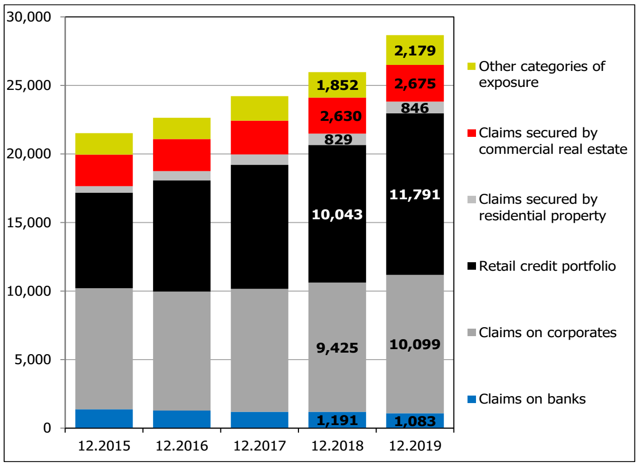
Consequently, at the end of 2019, the share of the "free" capital above the determined regulatory and supervisory minimum decreased from 8.6% at the end of 2018 to 6.6% of total own funds. However, as of 31 December 2019, 44.3% of the own funds of the banking system (42.9% on 31 December 2018) belong to capital supplements determined in accordance with the supervisory assessment and evaluation and capital buffers, which are particularly important in times of crisis when banks may use them to deal with challenges of different nature and intensity.

Total capital requirements for covering risks register an increased (by Denar 2,891 million or 9.8%), which almost entirely arises from the growth of required capital for covering credit risk (by Denar 2,703 million or 10,4%). The growth of capital requirements to cover credit risk arise from the increase in receivables, which are part of the portfolio for small loans and receivables of other trade companies, which is related to the lending activity of the banks with the households and corporations.

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.

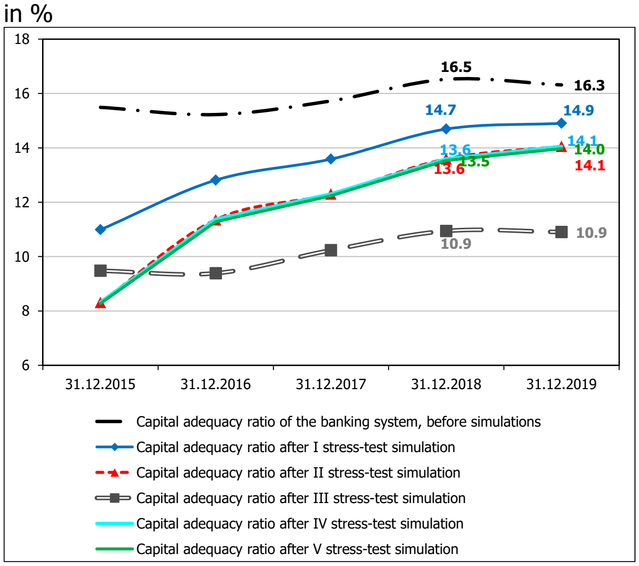
[80]The regulation provides an opportunity to activate the countercyclical capital buffer and the capital buffer for systemically important banks, with the data as of 31 December 2019 it is not assessed that the conditions for the introduction of these capital buffers are not met.
[81]The calculation for the identification of systemically important banks for the period April 2019 - March 2020 was conducted based on the data as of 31 December 2018. According to this calculation, eight banks have been identified as systemically important banks. For more information please visit
http://www.nbrm.mk/ns-newsarticle-zastiten-sloj-na-kapitalot-za-sistemski-znacajni-banki.nspx

Chart 82
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.

Chart 83
Results of stress-test simulations
in %



Source: National Bank, based on data submitted by banks[82].

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

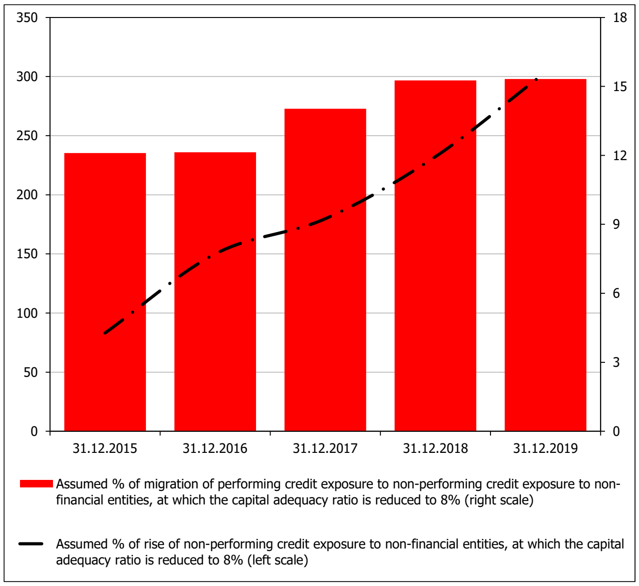
The results from the conducted stress-testing of the banking system resilience and individual banks to simulated shocks improved compared to 31 December 2018, although solvency indicators (prior to shocks) at the end of 2019 are moderately lower.

Namely, in all simulations where growth of non-performing exposure is assumed, in addition to the lower capital adequacy, the results of the stress-testing are better, due to the annual reduction of non-performing loan exposure and consequently lower starting base of this exposure prior to 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.

The results of the reverse stress test show that it takes growth of 303.7% of non-performing loan exposure, i.e. migration of 15.3% from regular to non-performing loan exposure for the capital adequacy of the banking system to drop to 8%. Such an assumption seems extreme, given the fact that non-performing loan exposure to non-financial entities register an annual growth of 9%, with the isolation of the effect from the mandatory write-off of fully provisioned non-performing loan exposures (or decline of 6% without excluding the effect from the write-offs). On the other hand, in 2019, only 1,8% of regular loan exposure to the non-financial sector obtained non-performing status. The development with

[82] 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;

Chart 84
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.

the coronavirus are not only a crisis in terms of health systems and human health, but can also cause the biggest global crisis ever and increase risks for banks' operations.

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;

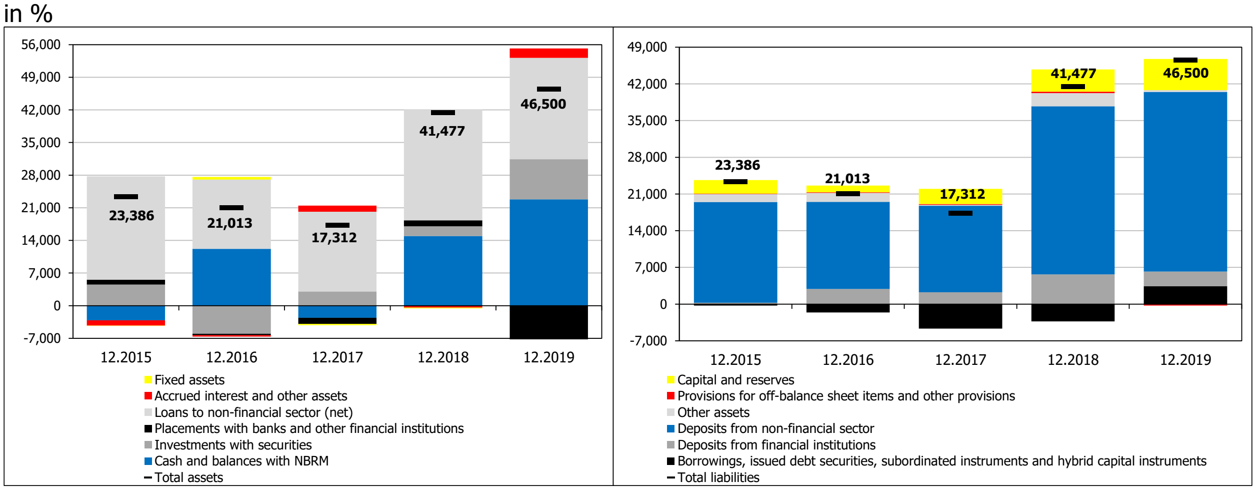
III. Major balance sheet changes and profitability of the banking system

1. Bank activities

In 2019, total assets of the banking system grew faster than in the previous year. The growth of banks' assets largely stemmed from the solid increase in the deposit base and reflects the growth of loans to non-financial corporations and the liquid assets. In addition to that, liabilities based on loans of banks and deposits of financial institutions also registered a growth. In 2019, banks increased their capital and reserves by issuing new shares and reinvesting profits from the previous year. The growth of lending is mostly due to the household denar loans and loans with foreign currency, while the corporate credit support continues to grow, but with a much lower contribution in the total credit growth. The growth of deposit potential of the banks mostly resulted from the increase of denar deposits, and to a lesser extent from foreign currency deposits, from both sectors and mostly by sight deposits.

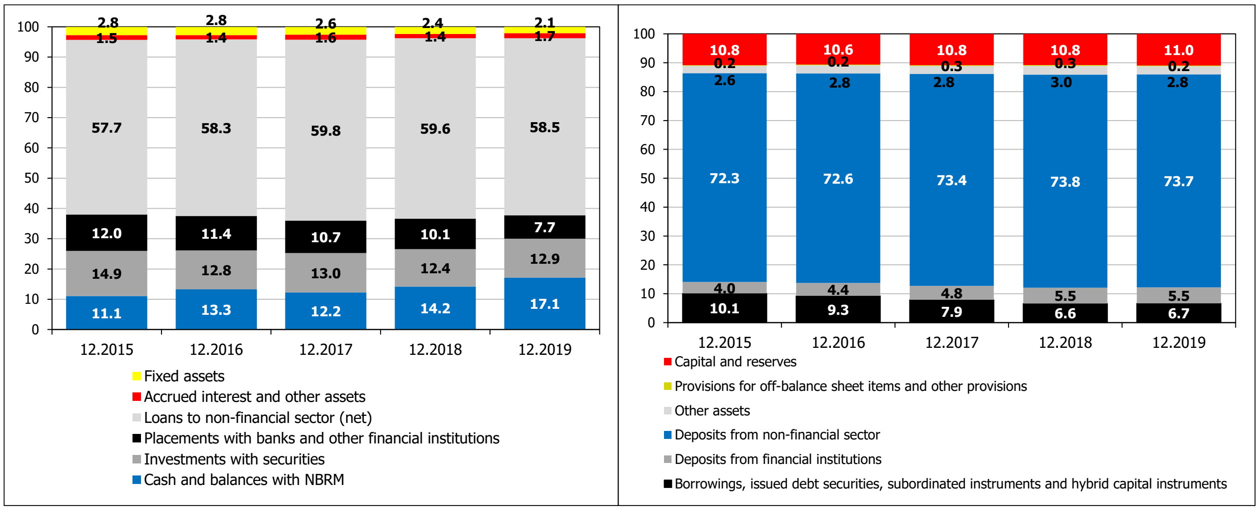
The rapid spread of the new viral infection Covid-19 at the end of February 2020 has deepened the risks to the global and domestic economy. As a result to this, amid low inflation and high level of foreign reserves, the National Bank reduced the policy rate by 0.25 percentage points to 1.75%. This is the second reduction of the interest rate in 2020 and should contribute to reducing costs of financing through bank loans, in order to maintain the credit cycle and mitigate the effects of the negative shock on the domestic economy, which will certainly have negative spillover effects on banks activities. As of March 2020, relatively stable movements of the deposits of non-financial entities can be observed. However, the economic effects as a whole are uncertain and depend on the duration and instensity of this shock which is of a non-economic nature.

Chart 85
Annual growth of components of assets (left) and liabilities (right) of the banking system
in %



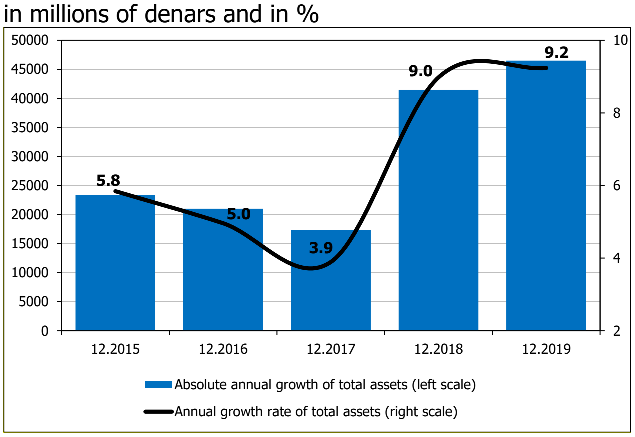
Source: National Bank, based on data submitted by banks.

Chart 86 Structure of the assets (left) and liabilities (right) of the banking system
in millions of denars and in %



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

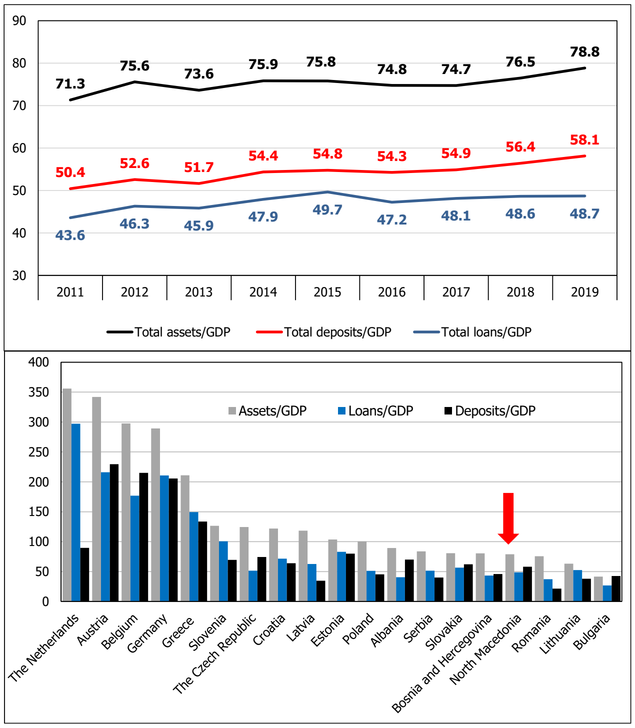
Chart 87
Assets of the banking system
in millions of denars and in %



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

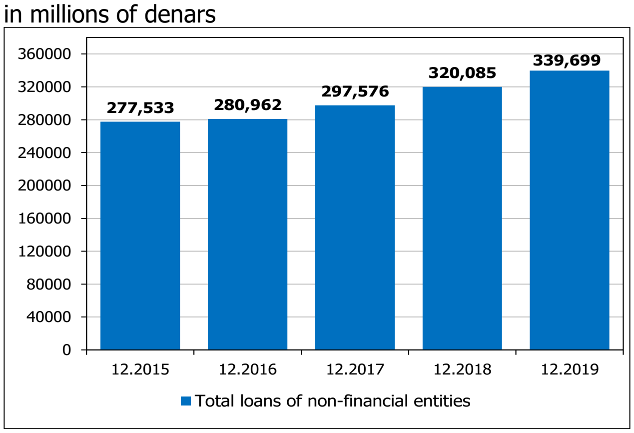
As of 31.12.2019, total assets of the banking system was Denar 549,969 million worth, which is an annual increase of Denar 46,500 million, or 9.2% (9% in 2018). On the assets side, the lending activity with non-financial entities and banks' liquid assets register a growth (primarily overnight deposits with the National Bank and placements in domestic government bonds). On the liabilities side, deposits of non-financial entities registered the highest annual growth, and a certain contribution was made by the increase of deposits of financial institutions and liabilities based on loans to non-residents, conditioned by the significant growth of liabilities to parent entities.

Chart 88
Financial intermediation in the Republic of North Macedonia (up), EU countries and the region
in %



Source: NBRM, based on data submitted by banks, websites of IMF, ECB and central banks.

Chart 89
Amount of loans to non-financial entities
in millions of denars



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

In 2019, the indicators point to larger role of the banking system as financial intermediary. Compared to most EU countries under observation, financial intermediation in the Republic of North Macedonia is lower yet similar to the analyzed countries in the region.

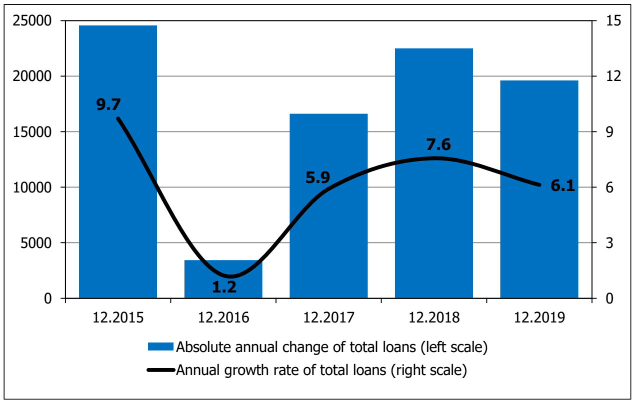
1.2 Loans to non-financial entities

In 2019, lending to non-financial entities increased, but at a slower pace. The deceleration is mostly as a result of the new credit risk management regulation which requires banks to "clean up" the non-performing loans from their balance sheets[83]. Loans to non-financial entities[84] increased by Denar 19,613 million, or by 6.1% (7.6% in 2018). Analyzed by bank, four banks (two large and two medium-sized) contributed with 62.4% to the total annual growth of loans to non-financial entities. The mandatory write-off of non-performing loans which were fully provisioned for more than two years had the largest impact on the decelerated annual growth (two years as of 30 June 2019)[85]. If we exclude the effect from the mandatory write-offs in the period June - December 2020, the growth rate of total deposits would amount to 7.5%, which is at a similar level as at the end of 2018.

The annual growth of the lending activity mostly (83%) resulted from the solid growth of household lending, while the contribution of loans to non-financial companies amounted to 20.1%. Loans to non-financial companies increased by Denar 3,948 million annually, while the annual

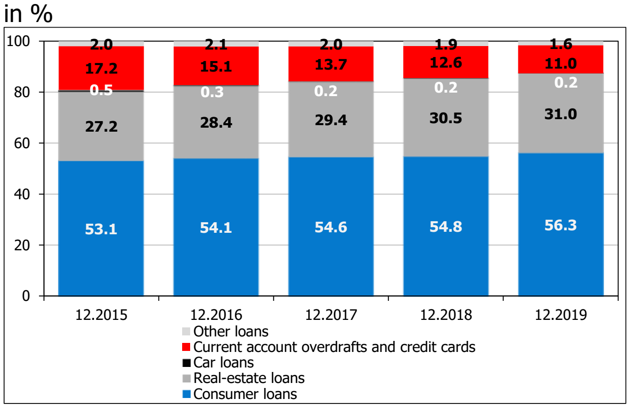
[83]More details on the credit risk section of this report.
[84] Loans to non-financial entities include loans to resident and non-resident non-financial entities, including loans to private and public non-financial companies, central government, local government, non-profit institutions serving households (loans to other clients), sole proprietors and natural persons (loans to households).
[85]More details on the credit risk section of this report.

Chart 90 Growth of loans to non-financial entities
in millions of denars and in %



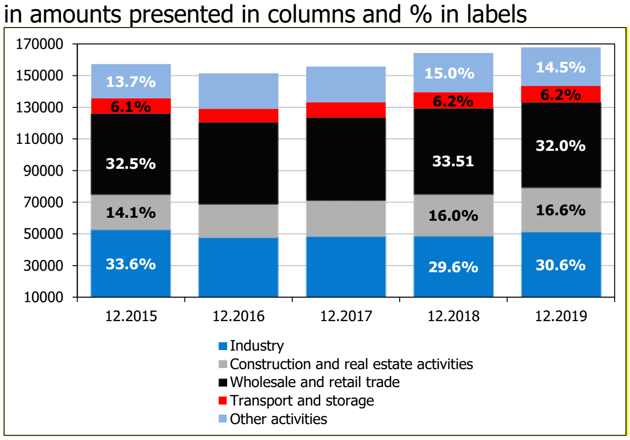
Source: National Bank, based on data submitted by banks.

Chart 91 Structure of loans to natural persons, by product
in %



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

Chart 92
Structure of loans to non-financial corporations, by activity
in amounts presented in columns and % in labels



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

growth rate of these loans amounts to 2.4% (4.7% as of 31 December 2018). The reduction of the annual growth rate of corporate loans mostly resulted from the effect of mandatory write-offs of non-performing loans[86]. Household loans[87] in 2019 increased by Denar 16,281 million or 10.6% (11.4% excluding the effect of mandatory write-offs in the period July-December 2020), which is higher than the growth in 2018 (10.4%). The significant growth of household lending is also seen in the approximation of the growth rate to the maximum value of its ten-year moving average. The solid credit support to households continues to correspond with the net easing of the overall credit terms, which was mostly pronounced in the third quarter of 2019, and also continued during the fourth quarter, but far more moderately, as in terms of housing loans (where the net percentage of banks which indicating easing of the credit terms amounted to 8.4%, compared to 58.5% in the third quarter of the year, as well as the in terms of consumer loans (where the net percentage of banks indicating easing of the credit terms amount to 0.2%, as opposed to 36.2% in the third quarter of 2019). According to banks' perceptions for specific credit terms, the estimated net easing largely stems from the interest rate, which is significantly pronounced in both housing (more in the last two quarters of the year), and consumer loans (more in the first two quarters of the year). Competition from other banks remains the most pronounced factor that influences the net easing of the credit standards of household loans.

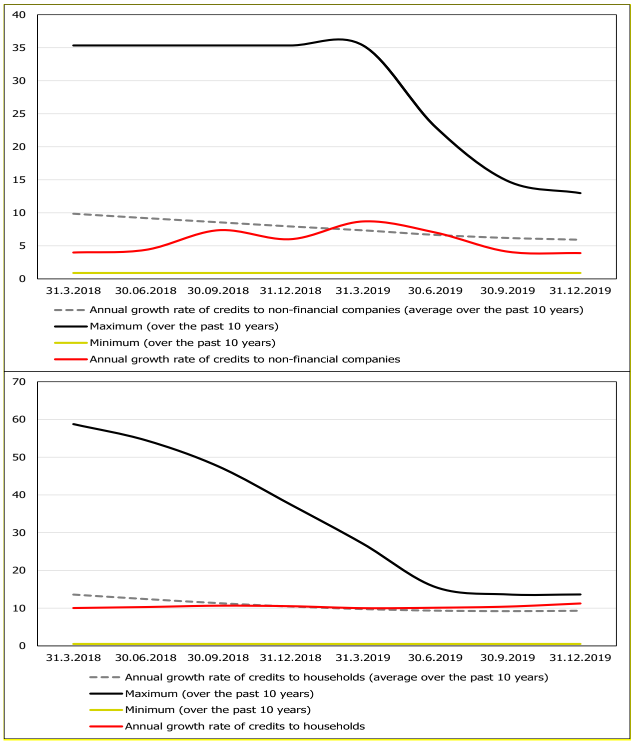
On the demand side of household loans, banks reported reduced demand for consumer loans, in three of four quarters of 2019 (banks reported an increased demand for consumer loans in the second quarter of the year only). In doing so, banks estimated "household savings" and "loans from other

[86]If we exclude the effect of the mandatory write-offs of non-performing loans for the period July-December 2020, the annual growth of loans of non-financial companies would amount to 4.3%.
[87] Consumer loans, overdrafts and credit cards are the most widely used credit products by households.

Chart 93

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

in %



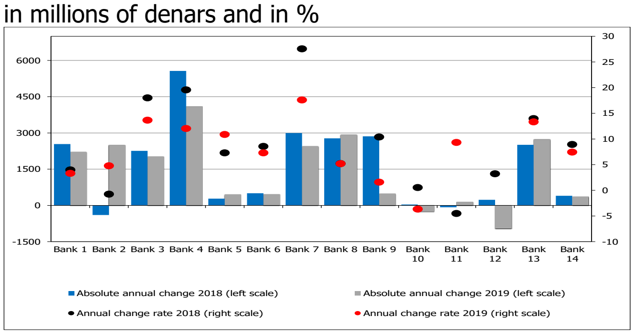
Source: National Bank, based on data submitted by banks.

*Note: Data for the period from 2016 to 31.12.2019 does not include the effect of the regulatory change to compulsory write-offs.

Chart 94

Annual growth of the total lending to non-financial entities, by bank

in millions of denars and in %



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

banks" as factors that contribute to the reduction of the demand for consumer loans. In the housing loans segment, in two of four quarters of 2019, banks reported increased demand (in the second and fourth quarter of 2019). Thus, only "loans from other banks" are estimated by banks as the factor which reduced the demand of housing loans. All other factors ("housing market prospects", "consumer confidence", "non-housing costs", "household savings" and "other sources of financing") are estimated as factors which increased the demand for housing loans[88].

With the consistent relatively high growth of household loans, their structural share in total loans increased, which on 31 December 2019 (49.9%) exceeded the share of loans of non-financial companies in total loans (49.1%). In six of the fourteen banks, the share of household loans in the banks' loan portfolio is higher than the share of corporate loans. Thus, three banks from the group of large banks account for 58.9% of total household loans at the level of the banking system. By credit product, 67.3% of the loans to natural persons are intended for financing the non-identified consumption by natural persons (consumer loans, overdrafts and credit cards).

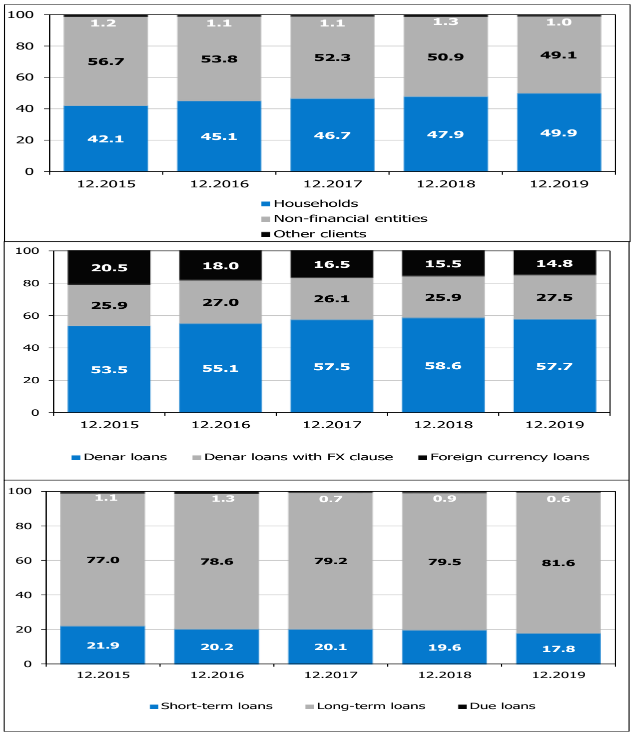
In 2019, denar loans with currency clause[89] had the largest (53.6%) contribution in the growth of total loans of non-financial companies, while the contribution of denar loans[90] is slightly smaller and amounts to 43.2%. Foreign

[88] Source: National Bank's Bank Lending Survey.

[89] Denar loans with currency clause increased by Denar 10,509 million or 12.7% on an annual basis, and within them household loans increased by Denar 7,306 million (or 12.4%), while loans to non-financial companies registered a slightly lower increase of Denar 3,396 million (15.3%).

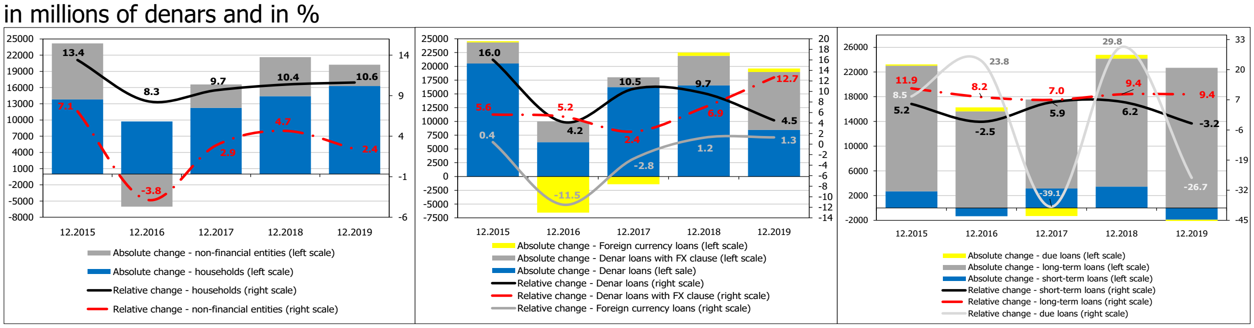
[90] Denar loans increased annually by Denar 8.469 million, or 4.5%. The growth of denar household loans was determined by household loans (growth of Denar 8,657 million or 10.3%), compared to the lower loans to non-financial corporations (Denar 73 million or 0.1%).

Chart 95
Structure of total loans, by sector (left) and currency (middle), and structure of regular loans, by maturity (right)*
in %



Source: National Bank, based on data submitted by banks.
* Note: The structure of total loans by maturity does not include non-preforming loans.

Chart 96
Annual growth of loans by sector, currency and maturity
in millions of denars and in %



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

currency loans[91] registered a modest annual growth on an annual basis. In the currency structure of total loans there is a growth of the share of denar loans with currency clause, while denar loans continue to have the leading structural share (57.7%).

In terms of maturity, the maturity of the loan portfolio continued to increase through further growth of long-term lending, which at the end of 2019 reached a share of 81.6% in the structure of total regular loans. Most (72.1%) of the growth of long-term loans was due to household loans[92]. Conversely, the decrease in short-term loans was entirely due to loans to non-financial corporations[93].

[91] Foreign currency loans grew by Denar 635 million (or 1.3%) annually, almost entirely due to the loans to non-financial corporations (Denar 625 million or 1.6%).
[92] Long-term household loans increased by Denar 16,342 million or by 11.7% on an annual basis, and within them Denar loans registered a growth of Denar 8,750 million, while the growth of denar loans with currency clause amounted to Denar 7,312 million.
[93] Short-term loans reduced annually by Denar 1,895 million or 3.2%, almost entirely due to the loans to non-financial corporations (decrease of Denar 1,826 million or 3.7%). Within the short-term loans of non-financial companies, denar loans decreased by Denar 2,539 million, while foreign currency loans registered a growth of Denar 702 million.

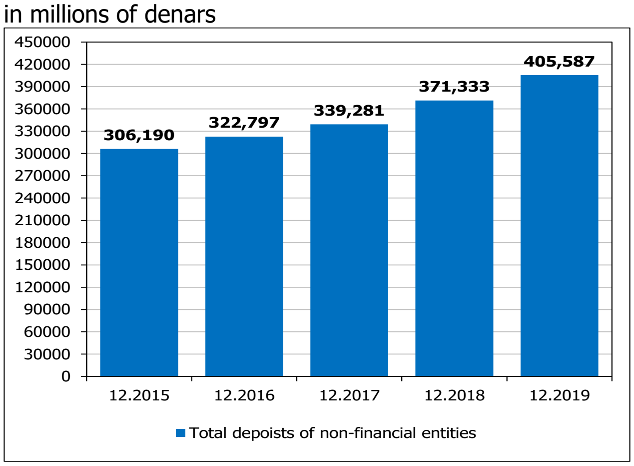
1.2 Deposits of non-financial entities

In 2019, deposits of non-financial entities registered a significant growth and are still the main source of financing bank activities (73.7% of total sources of assets). The annual growth of the total deposit base of the banks (Denar 34,253 million) registered a certain deceleration and amounted to 9.2% (growth of 9.4% in 2018). Analyzed by bank, 84% of the growth of the deposit base resulted from deposits growth in four banks from the group of large banks. Thereby, only one of fourteen[94] banks registered a decrease in total deposits compared to 2018.

Households, which are traditionally the most important depositor in the Macedonian banking system (share of 68.2% in total deposits) significantly increased their assets in banks in 2019, by Denar 19,635 million, or 7.6% (9.5% in 20018). **Deposits of non-financial companies** registered a more moderate annual increase of Denar 13,905 million compared to the growth of household deposits, but their growth rate (13.8%) was a solid acceleration compared to 2018 (when it amounted to 9.2%).

Chart 97 Stock of deposits of non-financial entities

in millions of denars



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

Analyzing the currency structure, denar deposits made the greatest contribution (77.4%) to the annual growth of total deposit, increasing by Denar 26,529 million or 12.4%. Household deposits contribution to the growth of denar deposits was higher (50.7%) compared to the contribution of the deposits of non-financial corporations (48%). In both sectors, the growth of denar deposits resulted from sight deposits[95]. **Foreign currency deposits** registered an annual increase (of Denar 8,203 million or 5.2%), which mostly resulted from household sight deposits[96]. Such movements contributed to the growth of the share of denar deposits in the total deposit base, which at the end of 2019 amounted to 59.2% and is by 1.7 percentage points higher compared to 31 December 2018.

In terms of maturity, **sight deposits[97] almost entirely (98.8%) conditioned the growth of the total deposit base** and registered the highest annual

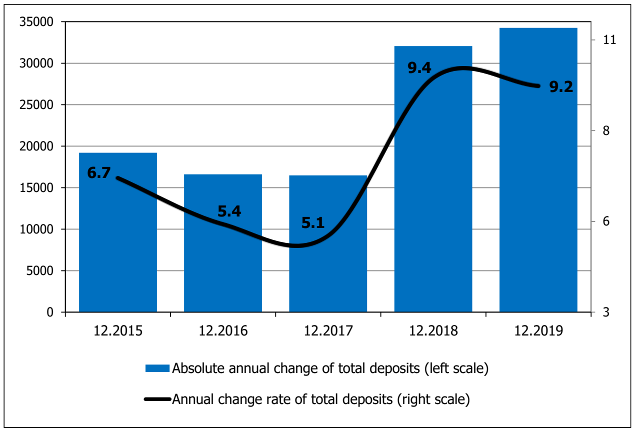
[94] The Development Bank of North Macedonia AD Skopje is excluded from this analysis.

[95] The annual increase of denar sight deposits of non-financial companies amounts to Denar 13,113 million or 24.1%, while the annual increase of denar sight deposits of households amounts to Denar 11,784 million or 20.9%.

[96] The annual increase of foreign currency sight deposits of households amounts to Denar 5,484 million or 12.4%. The remaining part of the growth of deposits is due to sight deposits to non-financial companies, which registered a growth of Denar 2,291 million or 10.5%.

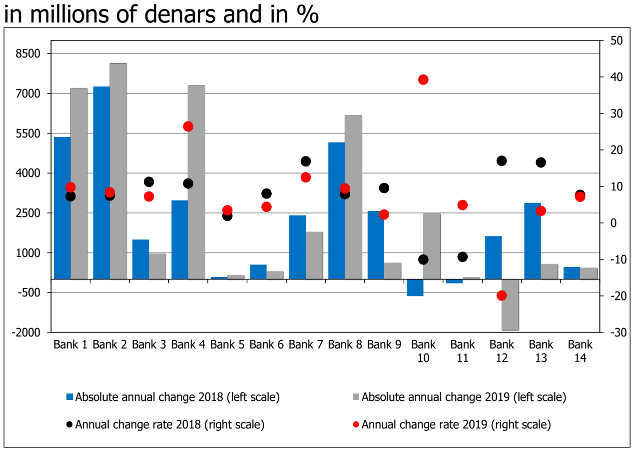
[97] In the annual growth of sight deposits, the contribution of denar deposits of non-financial companies amounts to 38.7%, while the contribution of household denar deposits amounts to 34.8%. The contribution of foreign currency deposits of non-financial companies in the annual growth of sight deposits amounts to 6.8%, while the contribution of foreign currency household deposits is higher and amounts to 16.2%.

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



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

Chart 99
Quarterly growth of total deposits of non-financial entities, by bank
in millions of denars and in %



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

growth (Denar 33,849 million or 18.2%), which was due to the growth of deposits in both sectors. On an annual basis, long term deposits[98] increased by Denar 5,441 million or 5.4%, while short-term deposits registered a decrease of Denar 5,037 million or 5.9%, mainly under the influence of the lower level of short-term deposits of households and non-financial companies[99].

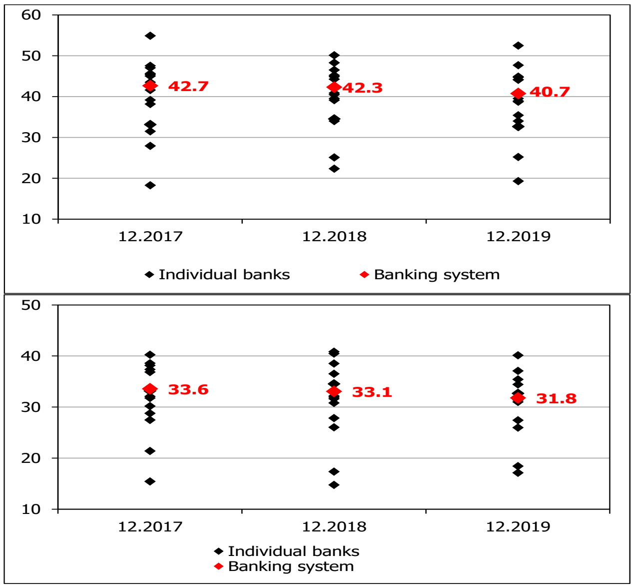
The analysis of the maturity structure of household deposits in 2019 shows an increase of the structural share of sight deposits in the maturity structure of household deposits (from 39.1% on 31 December 2018 to 42.6% on 31 December 2019). The share of short-term deposits continues to show a steady downward trend (from 27.2% on 31 December 2018 to 24.6% on 31 December 2019), while the share of long-term deposits decreased, on an annual basis, from 33.7% to 32.8%.

1.3. Other activities

At the end of 2019, banks' investments[100] in securities (according to net book value) registered an increase of Denar 8,605 million (or 13.8%), which contributed to the increase of their share in total banks' assets to 12.9% on 31 December 2019. Such movements are mostly conditioned by the growth of banks' investments in domestic government Eurobonds (by Denar 7,858 million or 42.5%). In contrast, banks reduced their investments in treasury bills (by Denar 561 million or 3.4%), while investment in CB bills remained almost unchanged compared to 2018, amid reduced key interest rate of the National

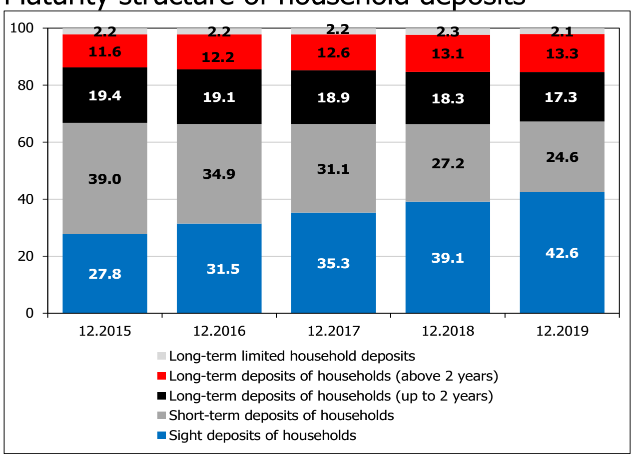
[98]The annual growth of long-term deposits is mostly as a result of the increase of household deposits by Denar 4,089 million (where the contribution of denar deposits is 46%, while the contribution of foreign currency deposits amounts to 54%) and to a lesser extend due to the increase of denar deposits of non-financial companies by Denar 1,489 million.
[99]Short-term deposits of non-financial companies decreased by Denar 2,983 million (or 21.6%), with denar deposits having the largest contribution (62.5%). The reduction of household short-term deposits amounts to Denar 1,722 million (or 2,5%), which was mostly (86.8%) conditioned by foreign currency deposits.
[100] Including investment in associated companies.

Chart 100
Share of total foreign currency deposits (up) and foreign currency household deposits (down) in total deposits of the banks/banking system
in %



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

Chart 101
Maturity structure of household deposits

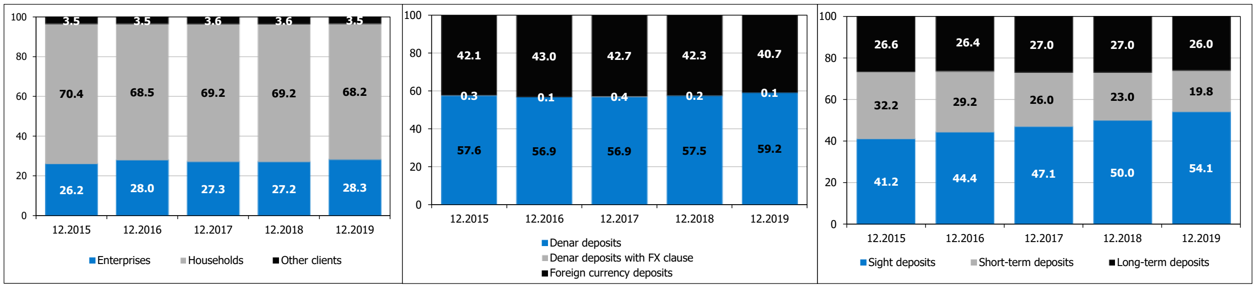


Source: National Bank, based on data submitted by banks.

Bank[101] and unchanged supply of CB bills (Denar 25,000 million). Such movements contributed to the annual increase of the share of investments in government bonds in the total securities portfolio in banks, from 29.7% on 31 December 2018 to 37.2% on 31 December 2019, on the account of the reduced share of placements in treasury bills (from 26.9% on 31 December 2018 to 22.8% on 31 December 2019).

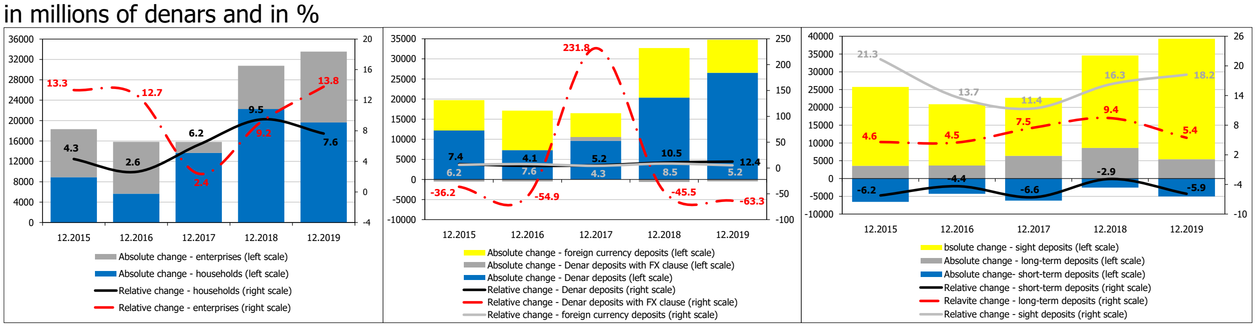
[101]In March 2019, based on the assessment of current economic and financial conditions, as well as existing risks, and in conditions of absence of foreign exchange market pressures from the external sector and stable expectations of the domestic entities, with further growth of total deposits and low and stable inflation rate, the National Bank reduced the key interest rate by 0.25 percentage points i.e. from 2.50% to 2.25%. In the first quarter of 2020, the National Bank reduced the key interest rates on two occasions: in January, when based on the assessment of current economic and financial conditions, as well as present risks, it was assessed that there was room for further easing of the monetary policy and was decided to reduce the key interest rate by 0.25 percentage points, to 2.00%; and in March, when in condition of high foreign reserves and low inflation movements, and in the presence of global risks, including the risks from the spread of the viral infection Covid-19 (coronavirus), in extraordinary circumstances, a decision was made to ease the monetary policy with another additional reduction of the key interest rate by 0.25 percentage points to the historically lowest level of 1.75% (effective from 15 April 2020). The need for this last extraordinary reduction arose from the rapid spread of the viral infection of Covid-19 globally, which deepened the risk in the domestic economy as well.

Chart 102
Structure of total deposits, by sector (left), currency (middle) and maturity (right)
in %



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

Chart 103
Annual change of deposits by sector, currency and maturity
in millions of denars and in %

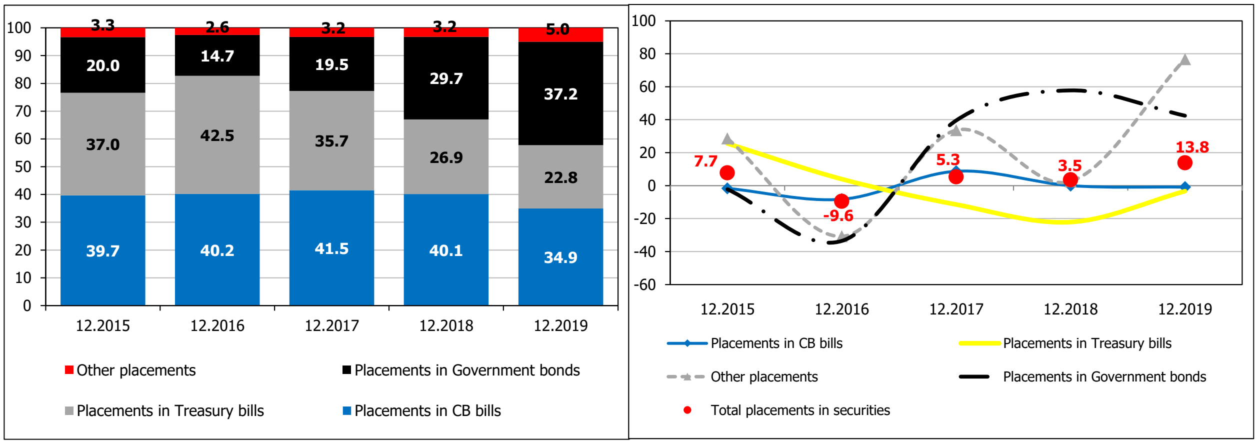


Source: National Bank, based on data submitted by banks.

In 2019, placements with banks and other financial institutions decreased by Denar 8,207 million, or 16,2%. A decrease was registered in all categories of placements (except in loans of domestic banks)[102], with the reductions of current account balances in foreign banks and the reduction of short-term maturity assets of domestic banks abroad[103] having the largest contribution. Total **liabilities based on** loans increased by Denar 2,845 million or 10.3%, on an annual basis, which is almost entirely (97.9%) due to the growth of foreign currency liabilities based on loans up to one month and the growth of long-term liabilities based on foreign currency loans to non-resident financial institutions.

[102]The funds on the accounts and deposits with domestic banks in 2019 decreased by Denar 1,004 million, which is mostly due to the reduction of term deposits of domestic banks in foreign currency for up to 1 month in two large banks and the growth of foreign currency term deposits from 1 to up 3 month is one medium-sized bank. Domestic banks' loans registered growth by Denar 235 million, or 1.6%.
[103]The annual decline of liquid assets on the accounts and deposits with foreign banks amounts to Denar 7,618 million (of 21.2%) and was largely due to the decrease in their balances of regular foreign accounts in foreign currency (mostly in three large banks and one medium-sized bank) and more significant reduction in term deposits abroad in foreign currency from one up to three months in one large bank.

Chart 104
Structure (left) and annual growth (right) of the securities portfolio
in %



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

Deposits of banks and other financial institutions continue to be a small source of banks' financing, with a share of 5.5% in total liabilities in 2019. The annual growth of the deposits of banks and other financial institutions (of Denar 2,798 million or 10.1%) is mostly due to the increase of foreign currency deposits of non-resident financial institutions up to one month and growth of placements in foreign currency deposits of non-resident financial institutions from three months up to one year.

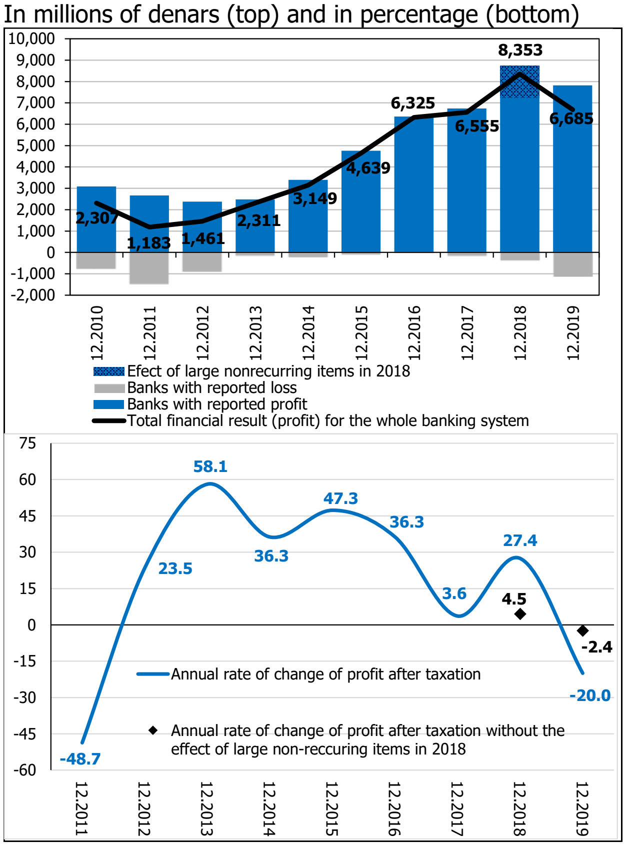
2. Profitability

The domestic banking system continued with profitable operations in 2019, but with slightly lower profits compared to 2018. The decline in profits primarily arises from the exhaustion of the effects of large non-recurring items from 2018, which led to one-time and unusual high profit growth last year. The decrease in the net interest income as the main income component of the banks also contributed to the decrease in the profit, which in turn caused the narrowing of the net interest margin of the banks. The decline in net interest income was mainly due to the faster decline in average interest rates on bank loans and the effects of lower interest rates on monetary instruments. Net commission income recorded solid annual growth, which allowed compensation of lower interest income. In 2019, various expenditure categories recorded modest growth, but their contribution to the reduction of profit was more moderate compared to the decline in revenues. Banks' costs for impairment, expressed as a ratio of different income categories or average assets in 2019, reached historically low levels (excluding the one-time effects of the 2018 impairment release). Amid such movements in revenues and expenditures, the indicators of the return on capital and reserves i.e. assets decreased, but are higher than their ten-year average.

The latest developments on a global and domestic level related to the global pandemic of COVID-19, will certainly cause a decline in economic activity, which will inevitably have a negative impact on the performance of banks. Although it is still difficult to predict the duration and intensity of this global pandemic, it is quite clear that it will significantly size the consequences on the financial performance of banks. On the other hand, the initial reactions of the monetary authorities from more developed countries, as well as the National Bank, indicate that the period of prevailing low and even negative interest rates on low-risk investment alternatives will continue, which may result in further pressure to reduce of net interest income and narrowing of banks' net interest margin. Another limiting factor on the dynamics of different categories of non-interest income is the expected slowdown in demand for various financial services. It is also very realistic to expect a gradual increase in banks' costs based on impairment for financial and non-financial assets, due to the greater likelihood of increasing the non-performing rate on loans in conditions of significant economic slowdown. All these developments can be expected to have an impact on almost all major income and expenditure categories of banks and consequently on the further maintenance of the current level of profit of banks.

2.1. Profitability and efficiency indicators of the banking system

Chart 105 Dynamics of the presented total profit of banks (top) and its annual change (bottom)
In millions of denars (top) and in percentage (bottom)



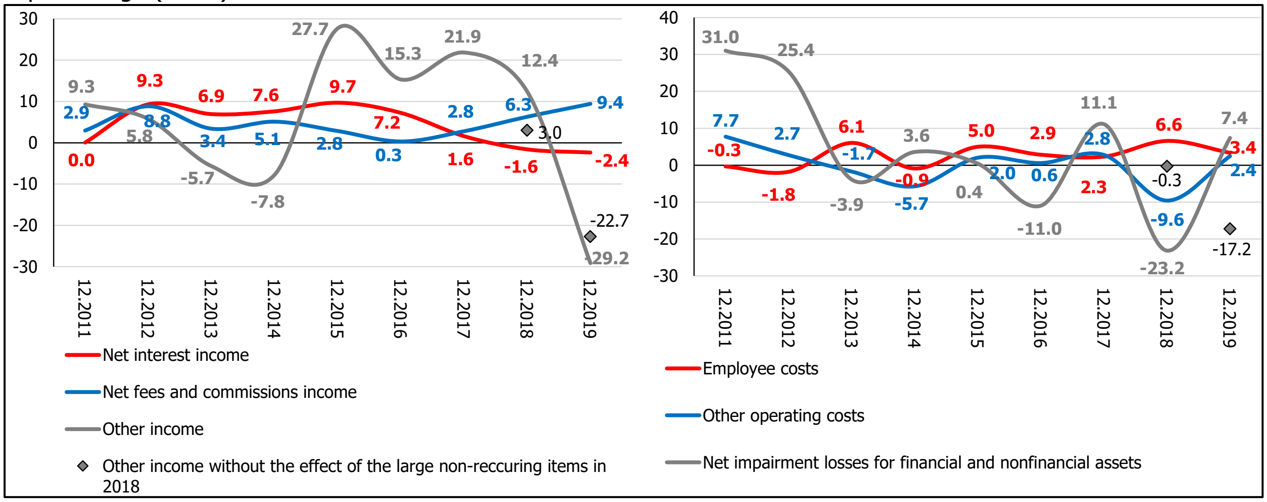
Source: NBRNM, based on data submitted by banks.

The total after-tax profit of banks in 2019 amounts to Denar 6,685 million and compared to the previous year it is lower by Denar 1.668 million, i.e. by 20.0%. This reduction of the achieved financial result of banks is due to the exhaustion of the effects of the large non-recurring items which were present in 2018 in the form of reduction of impairment costs and increase in the amount of other operating income. These non-recurring items result from the collection of a relatively high amount of non-performing exposure by a domestic legal entity and realization of a capital gain with one bank from the sale of a stake in its associate. If we exclude the effect of these one-time events, banks' profits in 2019 would be smaller by only 2.4% compared to that from 2018.

The reduction of profit in 2019 was also due to the fall in total banks' income (by 5%). However, also if we exclude the effect of the large non-recurring items in 2018, total banks' income falls by 3.5%. This results from the fall in other banks' income of 29.2%[104], i.e. 22.7% without the one-time income from 2019[105]. This was also due to the reduced net interest income that banks earn from the traditional financial intermediation (by 2.4%). Given that the COVID-19 pandemic will cause a serious economic slowdown, there are prospects that this organic fall in banks' income will continue at least during 2020, and even in the next years. This applies to the net interest income, due to the continuation of the period of low interest rates at global level and the initial shock of the credit demand, but also to the income from commissions and to the other income, due to the negative effects on the real economic activity and the subsequent fall in the total demand for financial services.

[104] Besides the realized capital gain from the sale of a capital stake, the smaller other income in 2019, is due to the fact that in 2018 banks had increased income from the sale of foreclosed property due to uncollected claims.
[105] One-time income in 2018 refers to the capital gain from the sale of a capital stake in an associate.

Chart 106 Annual growth rate of the main income (left) and expenditure items (right) of banks
in percentage (down)



Source: NBRNM, based on data submitted by banks.

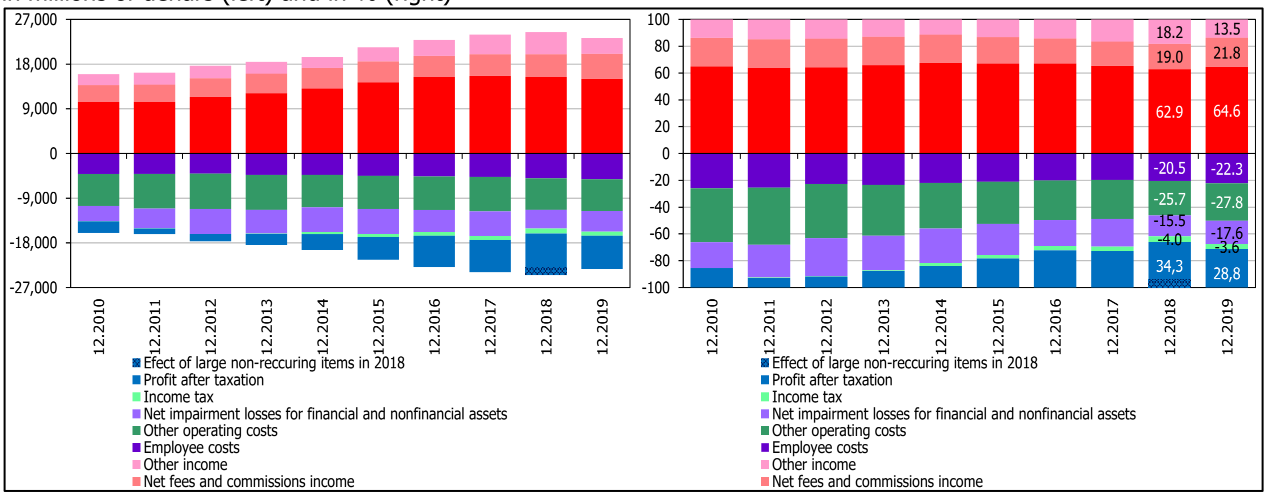
In 2019, among banks' income, **an increase was registered in net commission income**. This shows that, in conditions of low interest rates and with significantly exhausted room for further reduction of the cost for their deposit financing, domestic banks are increasingly oriented towards finding alternatives with which they could offset the reduced contribution of the net interest income to the formation of the rates of return. This can be performed in different ways, by increasing the scope of the activities that generate commission income, by introducing new services or more sophisticated business activities by banks, etc. The structure of the net commission income of the domestic banks shows that most of this income results from the performance of payment services, i.e. payment operations in the country, international payment operations and card operations, which jointly form over two thirds of total net commission income in 2019[106].

The different categories of banks' costs also increased in 2019, but this had a smaller impact on the annual decline in profit compared to the decline in revenues. Namely, **total banks' expenditures grew by 4.0% on an annual basis, in which all categories of expenditures had an appropriate share**[107]. If we exclude the effect of the release of impairment in 2018 due to the large non-recurring item[108], total banks' expenditures in 2019 would register even a decrease of 3.2%. The fastest annual growth of 7.4% was registered in the banks' cost on the basis of impairment of their financial and non-financial assets[109]. Moreover, the COVID-19 pandemic and its consequences for the real economic activity will inevitably be reflected on the impairment costs. The two key factors on which the effect of the COVID-19 pandemic on the impairment costs will

[106] From the net commission income of the banks arising from the performance of other business activities, the largest contribution to the total annual growth of net commission income was registered in the net income from all other activities, including activities in the execution process, with a share of slightly below 27%. All other business activities of the banks contributed with about 13% to the total annual growth of net commission income in 2019.
[107] In the growth of total banks' costs in 2019, the largest share of 46.5% was that of the growth of impairment costs, the growth of staff costs had a share of 28.1%, and the growth of other operating costs, including general and administrative costs, as individually the most important item, accounted for 25.4% of the annual growth of total costs.
[108] In 2018, the banks presented smaller costs for impairment of financial assets due to the release of previously allocated impairment in a total amount of Denar 1.1 billion as a result of a one-time unrepeatable event, i.e. the improvement of the credit risk with one major corporate client.
[109] If we exclude the effect of the release of impairment in 2018 due to the improvement of the credit risk with one major corporate client from the comparison base for 2018, then the banks' impairment cost in 2019 would decrease by 17.2% in 2019.

depend, will be its duration, including the time that would be necessary for reviving the economic activity and whether the same structural features will remain in the economy, i.e. the consequences on the business behavior of economic agents, their financial position and the capacity to generate revenues.

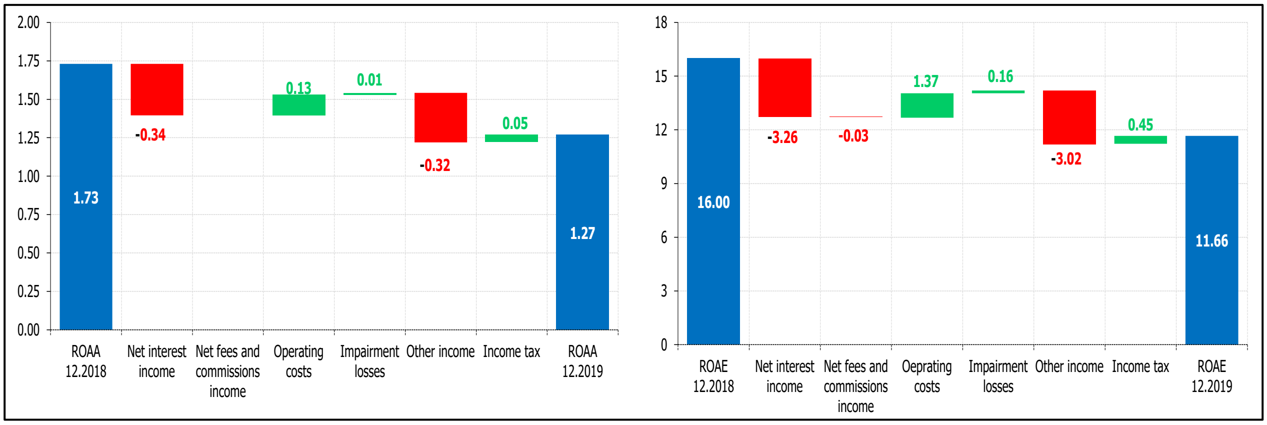
Chart 107 Distribution of the main income and expenditure items of banks, in absolute amount (left) and in relative size (right)
in millions of denars (left) and in % (right)



Source: NBRNM, based on data submitted by banks.

The annual changes in the income and expenditure items caused certain changes in their structure in 2019. Regarding the income, the exhaustion of the effects of the large non-recurring items from 2018 decreased the share of other income, at the expense of the increase in the share of net commission income, but also of net interest income. Namely, net interest income, despite the fall registered in 2019, remains the main component of total banks' income, with a share of 64.6%. The changes in the structure of expenditures in 2019 were slightly smaller, mainly through an increase in the share of staff costs and impairment costs, and a decrease in the share of other operating expenses. Analyzed by groups of banks, the group of medium banks realized a loss in 2019 (mainly due to the high impairment costs with one bank of this group), and the groups of large and small banks had a smaller profit by 11.5% and 17.0%, respectively. These movements of profits by the individual groups of banks led to an increase in the concentration of the profit in the domestic banking system. Thus, the three largest banks according to the assets provided 90.2% of the total profit of the banking system in 2019 (79.6% in 2018).

Chart 108 Contribution of the individual items to the annual change of the rate of return on average assets of banks (left) and the rate of return on average equity and reserves of banks (right)
in %



Source: NBRNM, 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. 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.

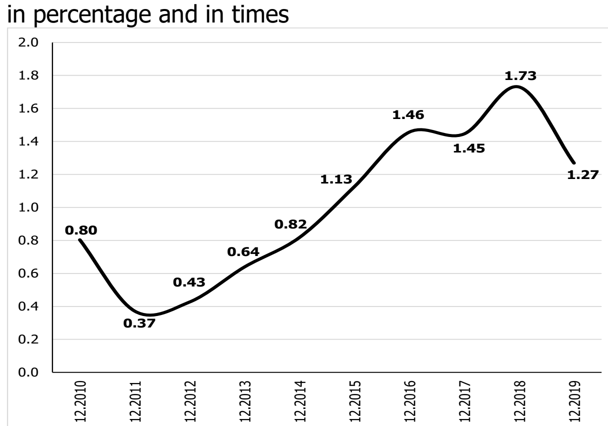
The decrease in the profit of the banking system also caused a decrease in the rates of return on average assets (ROAA) and on average equity[110] (ROAE). **Thus, at the end of 2019, these rates of return were 1.27% and 11.66%, respectively, which is a decrease of 0.46 and 4.34 percentage points compared to the end of 2018.** Generators of this decrease were the narrowing of the net interest margin of banks, demonstrated through the reduced contribution of the net interest income to the formation of the rates of return, for the second consecutive year, as well as the fall in the contribution of other income due to the effect of the large non-recurring item from 2018. However, despite the reduction in 2019, the rates of return are still at a relatively high level compared to the performances in the past ten years, i.e. they are by 0.26 and 2.37 percentage points above their ten-year averages, which were 1.01 % and 9.29%, respectively.

[110] Average assets and average capital and reserves are calculated as the average of their balance as of 31 December of the current year and as of 31 December of the previous year.

The analysis of the individual components[111] that form the rate of return on average equity and reserves in 2019, shows that the **most important individual generator of its annual fall was the reduction of the profit margin.** The profit margin of the domestic banking system dropped by 5.4 percentage points on an annual basis and amounted to 28.77 at the end of 2019. However, the profit margin is still at a higher level compared to the average in the past ten years (2010-2019) of 19.84%. The smaller share in the fall in the rate of return on average equity and reserves was that of the fall in the turnover of the average risk-weighted assets in 2019, from 6.86 to 6.02. At the same time, the turnover of the risk-weighted assets shows a lower performance in 2019 compared to the average in the past ten years (for 2010-2019) which was 6.90 times. The other two components that condition the rate of return on average equity and reserves, i.e. the indicator for the level of the assumed risk and the level of leverage, in 2019 registered small changes, had a symbolic impact on the change in the rates of return and are relatively close to their average values in the past ten years (2010-2019)[112].

Chart 109 Dynamics of the rate of return on average assets (ROAA)

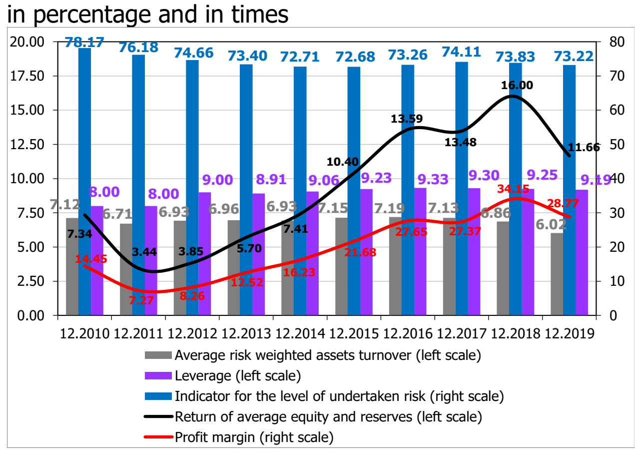
in percentage and in times



Source: NBRNM, based on data submitted by banks.

Chart 110 Dynamics of the rate of return on average equity and reserves (ROAE) and its components

in percentage and in times



Source: NBRNM, based on data submitted by banks.

Note: The level of assumed risk is the ratio between the average risk-weighted assets and the average assets at a level of the banking system. Profit margin equals profit (loss) after tax-to-total bank income ratio.

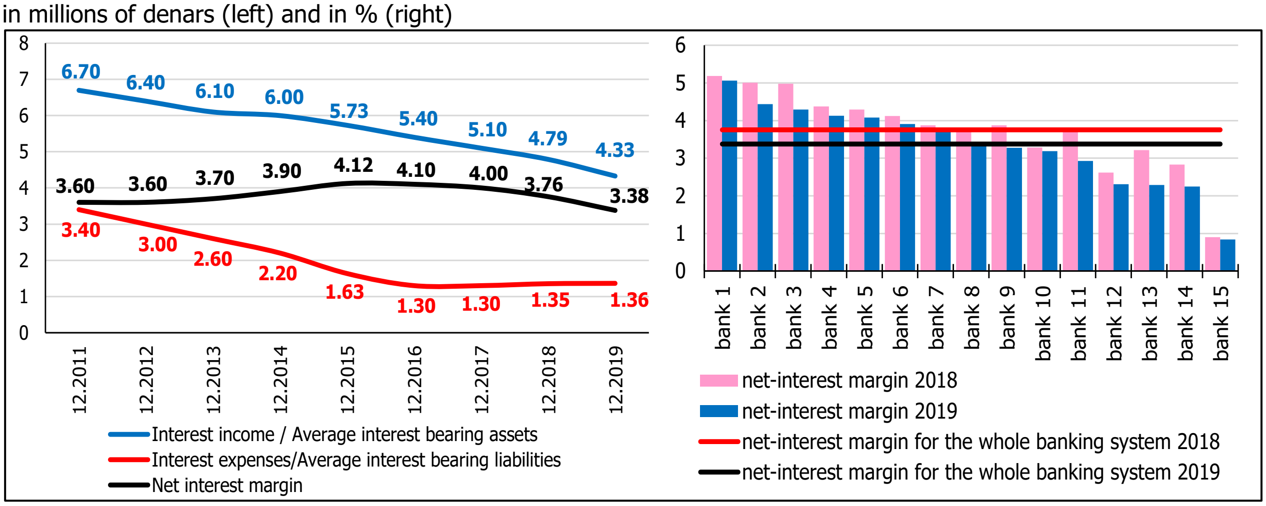
The net interest margin at a level of the banking system has been decreasing for the fourth consecutive year. Moreover, unlike the past three years, in 2019, there was a slightly more pronounced reduction of the net interest margin of 0.38 percentage points, thereby reaching the historically lowest level of 3.38%. The reduction of the net interest margin in 2019 results

[111] The rate of return on average equity and reserves can be shown this way: : $POAE = \frac{P}{CR} * \frac{S}{S} * \frac{A}{A} * \frac{RWA}{RWA} = \frac{P}{S} * \frac{S}{RWA} * \frac{A}{CR} * \frac{RWA}{A} = PM * RWAturnover * L * RBAratio$, where P = profit after taxation, CR = average capital and reserves, S = total regular income, A = average assets, RWA = risk-weighted assets, PM = profit margin, RWAturnover = risk-weighted assets turnover, L = leverage, RBAratio = ratio of risk assumed.

[112] The average of the level of assumed risk in the past ten years (2010-2019) was 74.22%, while the average of the level of leverage in the same period was 8.93 times.

from both the reduction of the net interest income (of 2.4%) and the acceleration in the annual growth of the average interest-bearing assets (from 4.8% in 2018 to 8.6% in 2019). Moreover, the reduction of the net interest income was almost entirely caused by the annual fall in interest income of 1.8%, in circumstances when interest expenses recorded a slight growth of 0.2%. This shows that in conditions of relatively low interest rates, which register a trend of decline, the room for a further fall in the banks' interest expenses has already been significantly exhausted, but on the other hand the competition between them to serve in the credit market is gradually intensifying. Hence, the trend of reduction of the ratio between the interest income and the average interest-bearing assets accelerated in 2019, amid insignificant changes in the ratio between the interest expenses and the average interest-bearing liabilities.

Chart 111 Dynamics of the net interest margin and its components for the entire banking system (left) and net interest margin by individual bank (right)
in millions of denars (left) and in % (right)



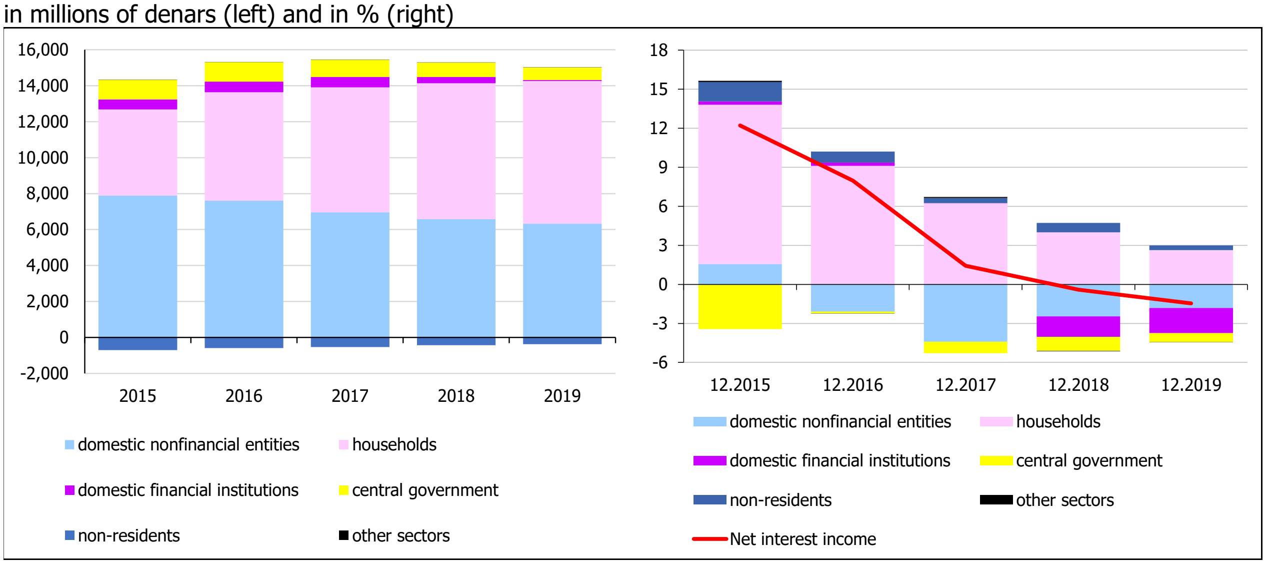
Source: NBRNM, based on data submitted by banks.

The financial intermediation with the households, in 2019 made the largest positive contribution to the formation of the net interest income and consequently of the net interest margin of banks. This positive contribution results from the growth of the interest income generated from the household sector (by Denar 325 million, i.e. by 3.3%), due to the growth of household loans, but also from the reduction of interest expenses (by Denar 66 million, i.e. by 3.0%). On the other hand, the deposit-credit intermediation with the domestic non-financial companies, for the fourth consecutive year, makes a negative contribution to the formation of the net interest income. This is primarily due to the reduction of the interest income from non-financial companies (by Denar 272 million, i.e. by 3.8% in 2019), while the interest expenses from this sector registered a minimal annual change (decline of Denar 3 million). Such movements can be explained by both the trend of reduction of the interest rates and the slower pace of the credit activity to the domestic non-financial companies compared to lending to households[113]. Also, a factor that contributes to the negative contribution of the non-financial companies to the annual change of the net interest income of the banking system is also the significantly smaller presence of the deposits of the

[113] During 2019, the average annual growth rate of household loans was 9.9%, ranging from 9.4% to 10.6%, while the average annual growth rate of loans to non-financial companies was 5.3%, ranging from 2.2% to 8.7%. In 2018, the average annual growth rate of household loans was 10.3%, while the average annual growth rate of loans to non-financial companies was 4.0%.

domestic non-financial companies in the structure of the sources of funding for banks compared to household deposits[114].

Chart 112 Distribution of the net interest income of the banking system by sectors (left) and contribution of the sectors to the annual change of the net interest income (right)
in millions of denars (left) and in % (right)

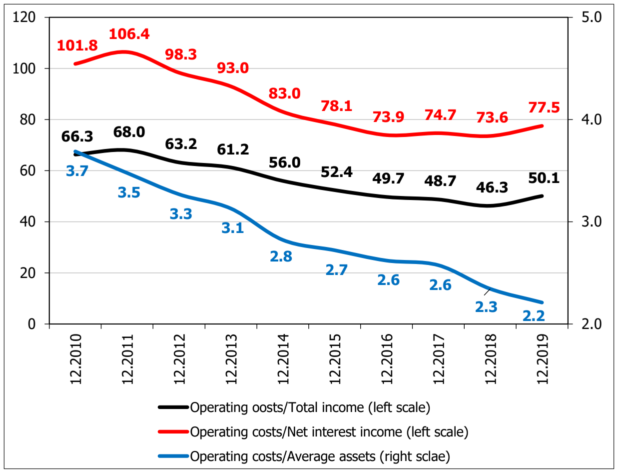


Source: NBRNM, based on data submitted by banks.
Note: In the chart, the net interest income is presented without including the effect of the losses of the interest income due to non-performing claims and the effect of the collected previously written-off interest claims. Other sectors include local government, social insurance funds, nonprofit institutions serving households.

Other sectors have a more modest role in the formation of the net interest income of banks. The net interest income from the central government, which is mostly comprised of the interest income from government securities, made a negative contribution to the annual change of the net interest income, mainly due to the trend of reduction of the interest rates on government securities[115]. It should be noted that the non-resident sector, which usually has a negative impact in the formation of the net interest income[116], still makes a positive contribution to the annual change of the net interest income, primarily due to the slightly faster growth of the interest income from non-residents in 2019[117]. The domestic financial institutions in 2019 made a significant negative contribution to the annual change of the net interest income of banks, primarily due to the fall in interest income from the National Bank of almost 20%, due to the reduction of the interest rates on monetary instruments in 2019[118].

[114] During 2019, the share of household deposits in total bank deposits averaged 69.0%, ranging from 68.2% to 69.7%. In 2018, the average share of household deposits in total deposits was 69.4%.
[115] Interest income from the central government in 2019 decreased by Denar 18.2 million, i.e. by 7.8%
[116] This results from the fact that the domestic banks in the past few years usually have higher interest expenses to non-residents (due to the use of subordinated instruments, loans from foreign financial institutions or non-resident deposits), compared to the interest income from non-residents (which mainly results from the placements in foreign banks).
[117] Interest income from non-residents in 2019 increased by Denar 71 million, or 27.2%, interest expenses for non-residents increased by Denar 17 million, or 2.4%.
[118] In March 2019, the National Bank reduced the interest rate on CB bills from 2.5% to 2.25%, the interest rate on seven-day deposits from 0.5% to 0.3% and the interest rate on overnight deposits from 0.25% to 0.15%.

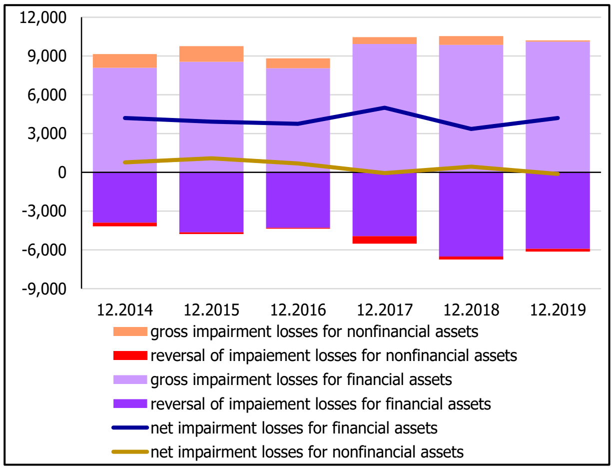
Chart 113
Operational efficiency indicators
in %



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

The reduction of the banks' income categories in conditions of a slight growth in cost categories in 2019 caused**an interruption of the trend of improvement of the operational efficiency of the domestic banks** which was typical for the past ten years. Namely, the relative size of operating costs relative to total banks' income in 2019 increased by 3.8 percentage points. However, this ratio is significantly lower than the average in the past ten years of 56.2%, which reflects the general improvement of the operational efficiency of the domestic banks in the past period. The same conclusion also applies to the ratio of the operating costs with the net interest income as the most important income component of the domestic banks. In 2019, this indicator also deteriorated by 3.9 percentage points, but is smaller by 8.5 percentage points than the average in the past ten years which amounts to 86%. On the other hand, the indicator for the ratio of the operating costs with the average assets, in 2019 registered a modest reduction of 0.1 percentage point, due to the slightly faster growth of the assets (in 2019 of 9.2%) compared to the growth of the operating costs (of 2.9%). At the same time, this indicator in 2019 is significantly lower than its average in the past ten years of 2.9%.

Chart 114
Dynamics of the amount of the banks' costs on the basis of impairment of financial and non-financial assets
in millions of denars

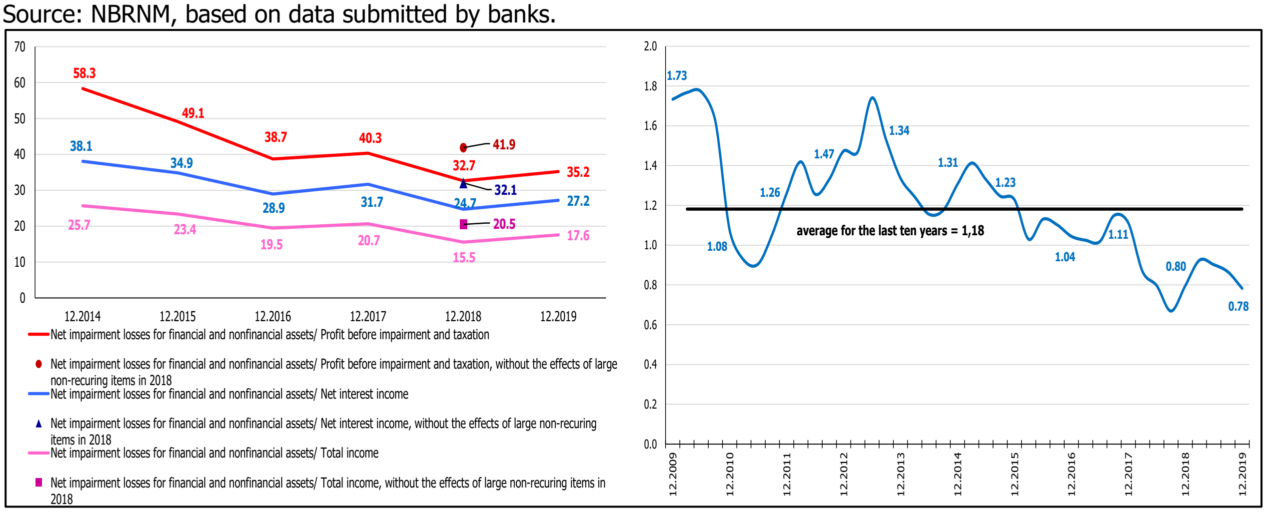


Source: National Bank, based on data submitted by banks.

The increase in the banks' impairment costs in 2019 was entirely caused by the growth of impairment of financial assets of Denar 844 million, i.e. by 25.1%. The main cause for this increase in impairment costs (with a share of around 70% of the increase) was the exhaustion of the effects of the release of impairment in 2018, as a result of the unrepeatable event related to the collection of non-performing claims.

Unlike this, the banks' cost on the basis of impairment of non-financial assets in 2019 registered a net positive amount (of Denar 123 million), resulting from the release of impairment due to the sales of previously foreclosed property from uncollected claims by banks during the year and consequently, the reduction of impairment of non-financial assets.

Chart 115 Indicators for the ratio of impairment costs and different categories from the income statement (left) and indicator for impairment costs in relation to average assets (right)
in millions of denars (left) and in % (right)
Source: NBRNM, based on data submitted by banks.



Note: The indicator for impairment costs relative to average assets is calculated on the basis of trailing twelve months.

The indicators that show the relative size of impairment cost relative to total income, net interest income and banks' profits before impairment and taxation, in 2019, registered a certain increase. This resulted from the exhaustion of the effects on the impairment of the one-time events in 2018, but also from the fall in the income categories. If we exclude the effect of the one-time events in 2018, these indicators would actually register an annual reduction in 2019. The ratio of impairment cost and banks' average assets in the past few years registers a trend of reduction, and amounts to 0.78% at the end of 2019. This value of the indicator is at a level of two thirds of its ten-year average (of 1.18%), which is also the lowest level at the end of the calendar year during the past ten years[119]. Given that banks' impairment cost as a rule has a pro-cyclical character and has a tendency to return to the average values, but also considering that a slowdown in the global and domestic economic activity lies ahead due to the consequences of the COVID-19 pandemic, this component of banks' costs has preconditions for growth in the forthcoming period.

2.2. Movements in interest rates and interest rate spread

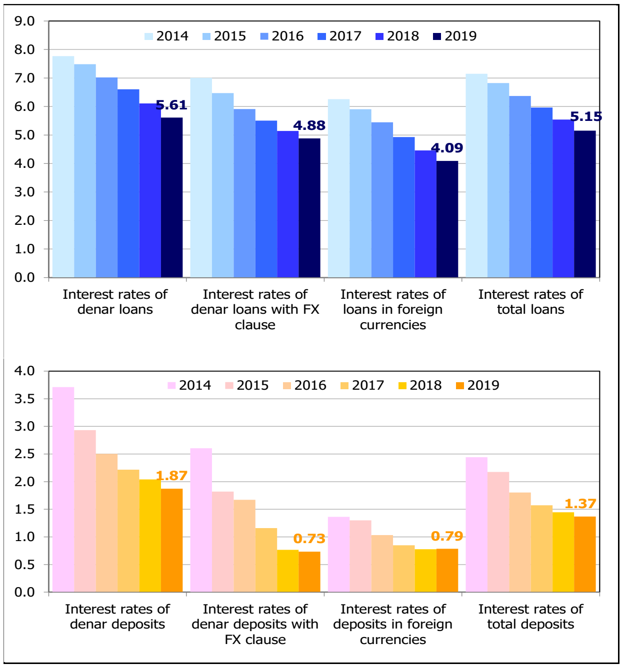
Under the influence of the reduced interest rates on the instruments of the domestic monetary policy, the low interest rates in the international money markets, especially in the euro area, as well as due to the competition on the domestic credit market, in 2019, the banks' interest rates kept on decreasing[120]. Moreover, the reduction was slightly more pronounced in the interest rates on loans, compared to the reduction in the interest rates on deposits. Namely, at the end of 2019, the weighted average total interest rate on loans amounted to 5.15% and decreased by 0.39 percentage points compared to the end of 2018, while the weighted average total interest rate on deposits decreased by only 0.08 percentage points and amounted to 1.37%. Analyzed by currency characteristics, the decline in 2019 was slightly more pronounced in the average interest rates on denar loans (by 0.50 percentage points) and denar deposits (by 0.17 percentage points)[121].

[119] The amount of additional impairment cost that would equal this indicator with its ten-year average is Denar 2,077 million, i.e. about 30% of the after-tax profit at a level of the banking system.

[120] The analysis refers to the weighted interest rates of the banks in accordance with the interest rates statistics of the National Bank. Weighted interest rate is the ratio between the sum of the products between ACR and individual amounts of each loan/deposit agreement, and the sum of the individual amounts of each loan/deposit agreement. For more information on the interest rates statistics and on the adequate methodological explanations visit https://www.nbrm.mk/statistika_na_kamatni_stapki.nspx.

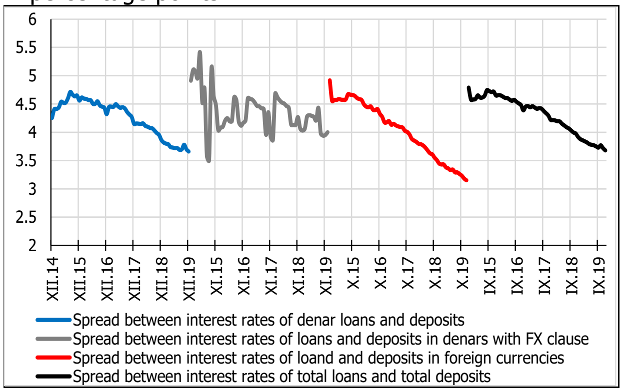
[121] The reductions in the average weighted interest rates on denar loans with currency clause and on foreign currency loans in 2019 amounted to 0.26 and 0.37 percentage points, respectively. The average weighted interest rates on denar deposits with currency clause decreased by 0.03 percentage points, while the average weighted interest rates on foreign currency deposits in 2019 increased by 0.01 percentage point.

Chart 116 Interest rates on loans (top) and on deposits (bottom) of banks, according to their currency characteristics
in %



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

Chart 117 Interest rate spreads according to the currency characteristics of loans and deposits
in percentage points



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

In conditions of a stronger reduction of the interest rates on loans compared to the interest rates on deposits, at the end of 2019 the interest rate spread reduced to 3.78 percentage points, whereby it is smaller by 0.32 percentage points compared to the end of the previous year. In terms of currency characteristics, the spread between foreign currency interest rates is lower by 0.51 percentage point compared to the spread between denar interest rates.

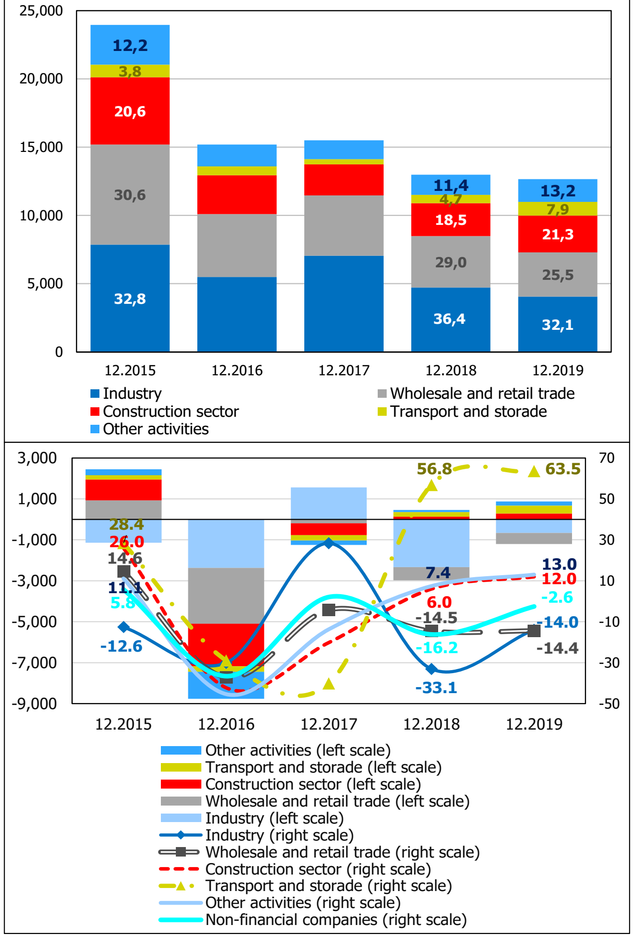
Appendix 1: Concentration of non-performing loans of corporations

The concentration of loans according to some of their characteristics has a direct impact on the volume and speed of the materialization of credit risk. This Annex analyzes the concentration of the non-performing loan portfolio of non-financial companies, according to their affiliation to certain economic activities, according to the number and amount of non-performing loans, as well as the concentration of non-performing corporate loans by individual banks. The analysis covers the period from 31 December 2015 to 31 December 2019.

Lending to the corporate sector provides considerable financial support for the activities of the corporate sector and is an important generator for the growth of the domestic economy. Generally, this segment of the loan portfolio is characterized by a lower level of granularity (higher level of concentration) and this is its inherent feature, which is appropriately present within the non-performing segment of corporate lending. Thus, in the structure of non-performing loans to non-financial companies, there is a high share of the 50 largest non-performing loans, as well as of loans in the amount of over Euro 1 million. On the other hand, analyzed by the affiliation of the clients to the individual activities, there is highest cumulative share of the non-performing loans approved to the clients from the trade activity, the industry and the construction sector. Namely, the business performances, the operational successfulness, the level and the sustainability of the debt of the corporate sector, as well as the ability for regular repayment of the liabilities of the clients from these three activities largely determine the quality of the total corporate credit portfolio of banks. The domestic regulation on credit risk management registers a constant qualitative improvement in accordance with the best and prudential international standards in this domain, in order to prevent the creation of non-performing loans, but also to stimulate faster and more efficient management of the already incurred non-performing claims by banks. In general, although the concentration of non-performing loans to non-financial companies is decreasing, it is still relatively high.

Almost 80% of non-performing loans of non-financial corporations are loans approved to customers in industry, wholesale and retail trade, construction and activities related to real estate. In the past period, the share of the loans approved to the clients from these three activities in the non-performing credit portfolio decreased by almost 10 percentage points compared to the end of 2017 when this share had the highest value (88.6%). The downward trend of the share of these three activities in the non-performing credit portfolio of banks is due to the reduced share of the non-performing loans of the "industry" and trade activity at the level of

Chart 118
Structure (top) and annual change (bottom) of non-performing loans by individual activities of non-financial companies
amounts presented in columns and % in labels (up)
down: in millions of denars (left) in % (right)



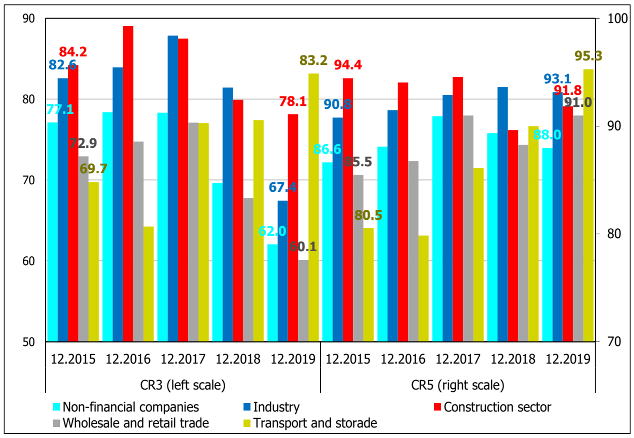
Source: National Bank's Credit Registry, based on data submitted by banks.

32.1% and 25.5%, respectively (versus 45.5% and 28.4%, respectively, at the end of 2017). This shift is mainly due to the conducted mandatory write-offs of non-performing loans of the clients from these activities, but also the sale of the non-performing claims made by one company from the "industry" and reclassification of two major clients from the trade to other activities. In contrast, the share of the loans of the construction sector increased to 21.3% (after the lowest share of 14.7% as of 31 December 2017), while in "transport and storage" it reached 7.9% (after the lowest share of 2.5% as of 31 December 2017) as a result of the shift to a non-performing status of several major clients, in the analyzed period. But this growth may also be related to the changes in the definition of non-performing exposure. The higher concentration of non-performing loans to non-financial companies to the clients from several activities is a consequence of the greater orientation of the credit activity to these activities, which, in turn, is largely conditioned by the total volume and structural features of the domestic economy. Hence, the business performances of the companies from these activities are especially important for the level of the quality of the banks' loan portfolio.

The concentration of non-performing loans to non-financial companies registers a decrease, which is more pronounced according to the CR3 indicator[122] (by 15.1 percentage point, from 77.1% to 62.0%), and more moderate according to the CR5[123] indicator[124] (from 86.6% to 88.0%), in the period 31 December 2015 - 31 December 2019. The concentration of non-performing loans in the three banks with the largest share in the non-performing part of the corporate credit portfolio decreases in the analyzed period, especially

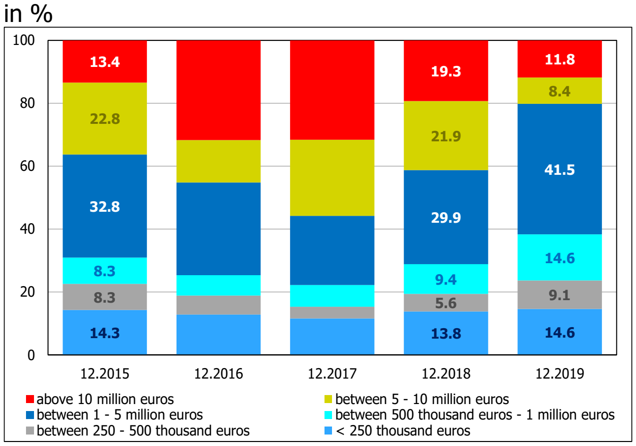
[122] The twice smaller share of the bank with the largest share in non-performing loans to non-financial companies (from 48.7% to 24.2%) in the analyzed period, should also be noted.
[123] The CR3 indicator, i.e. CR5 also shows the share of loans to non-financial companies by individual economic activities of the three, i.e. five banks with the highest value of loans in the total amount of loans for a certain segment, i.e. for the total corporate credit portfolio.
[124] As of 31 December 2019, the value of the CR5 indicator exceeds 90% in the individual analyzed activities.

Chart 119
Indicators of concentration of non-performing loans to non-financial companies by individual activities in the three and five largest banks according to the value of the CR indicator
in %



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

Chart 120
Structure of non-performing loans to non-financial companies according to the amount of loans to an individual client
in %



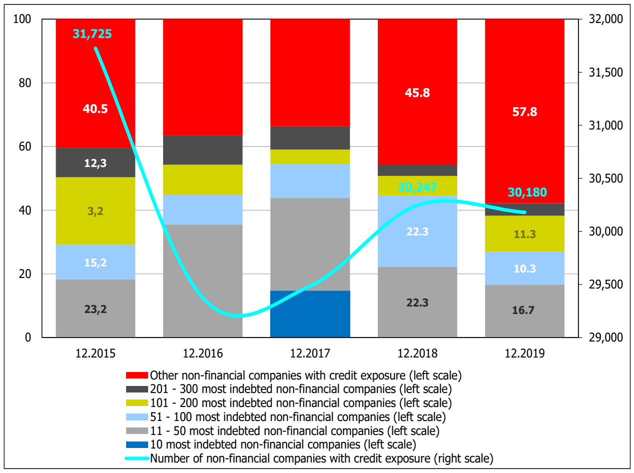
Source: National Bank's Credit Registry, based on data submitted by banks.

in the "industry" and trade activity[125]. The reduced concentration of the non-performing loans with the three largest banks is in part a consequence of the increased share of the fourth and fifth bank, but also the larger share of other banks in the portfolio of non-performing corporate loans. The lower concentration of the non-performing loans with the three banks is also attributed to the conducted mandatory write-offs, given the fact that on average about 85% of the conducted write-offs of the claims on non-financial companies (in the period 2016 - 2019) are concentrated in these banks. According to the current level of the indicators for the concentration of non-performing loans to non-financial companies (as of 31 December 2019), the concentration is the highest in "transport and storage"[126], and the lowest in the trade activity[127].

The analysis of the granularity[128] of the non-performing credit portfolio composed of individual non-financial companies indicates reduced concentration of non-performing loans to individual clients ("single name concentration"). Thus, at the end of 2019, 61.7% of the amount of non-performing loans to enterprises account for the clients[129] with loans larger than Euro 1 million, which is less by about 8 percentage points compared to the end of 2015. Loans approved in higher amounts are often used to finance capital investments, whereby the structure and dynamics of repayment of these loans are largely conditioned by the successfulness in the realization of the projected sale of the final goods which arose as a result of the capital invest-

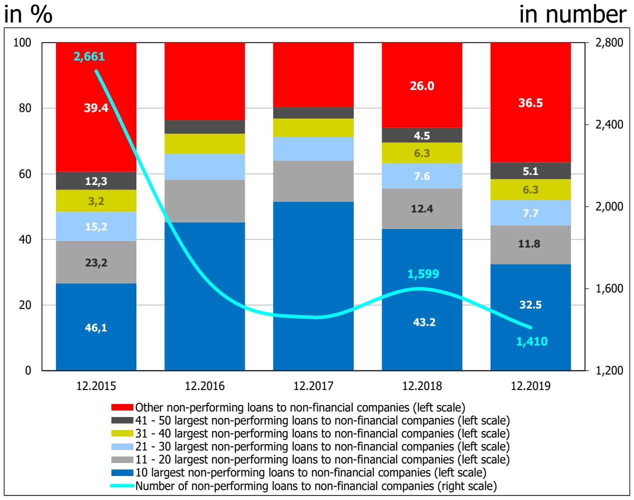
[125] The CR3 indicator reduces from 82.6% to 67.4% in "industry" and from 72.9% to 60.1% in "wholesale and retail trade".
[126] With values of the CR3 and CR5 indicators of 83.2% and 95.3%, respectively. Namely, the value of the indicators for the concentration of non-performing loans registers a more significant increase only in this activity, by 13.4 and 14.7 percentage points in the CR3 and CR5 indicators, respectively, in the analyzed period.
[127] With values of the CR3 and CR5 indicators of 60.1% and 91.0%, respectively.
[128] Granularity is defined as the level to which the portfolio is divided, whereby the higher the granularity, the lower the concentration, i.e. the better the portfolio is diversified. Hence, the granularity of the credit risk exposure shows to what extent it is divided into loans to individual clients and shows the level of concentration through distribution of lending to individual clients.
[129] In the charts for the structure of non-performing loans according to the amount of loans to an individual client, credit agreements to the same client are aggregated and analyzed as a single amount.

Chart 121
Non-performing loans of the most indebted non-financial companies
in % in number



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

Chart 122
Concentration of non-performing loans to individual clients, approved to non-financial companies
in % in number



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

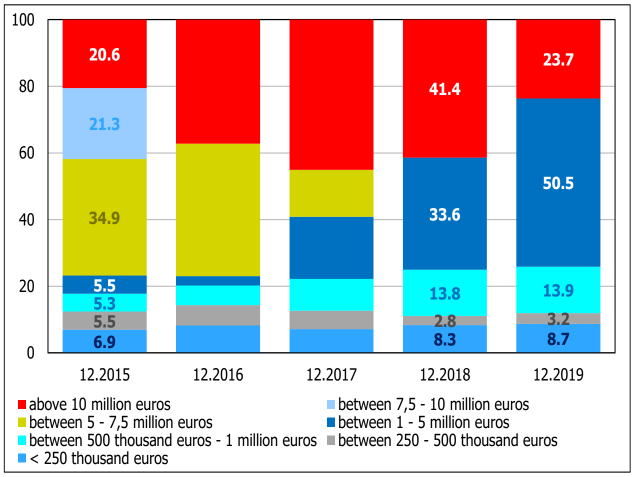
ments. The non-realization of the planned volume and dynamics of the inflows leads to inability for regular repayment of approved loans and their shift to a non-performing status, due to which such loans are a major risk factor for the level of concentration of non-performing corporate loans. The non-performing credit portfolio of companies composed of clients whose non-performing loans are in the amount of over Euro 1 million consists of a total of 46 loans. The structure of non-performing corporate loans larger than Euro 1 million is predominated by loans to the clients from industry (14 loans) with a share of 41.4% at the end of 2019. Despite the downward shift, there is also a relatively high share of the 50 largest non-performing loans to enterprises (out of a total of 1,410 non-performing loans to individual enterprises[130]), which amounts to 63.5% of the total non-performing loans to enterprises. Moreover, the share of the 10 largest non-performing loans is 32.5%[131]. Namely, for the 10, i.e. 50 largest non-performing loans, the banks have also allocated the highest amount of impairment, and thus the highest coverage with provisions[132] relative to the coverage for the overall sector of "non-financial companies". In this way, the negative effects of a possible complete default on non-performing claims are limited.

Analyzed by individual activities, relatively low granularity (high concentration to individual clients) is registered in the non-performing credit portfolio composed of clients who deal with construction, where 74.1% of the amount of non-performing loans account for loans larger than Euro 1 million (these are 10 construction companies with a share of 25.6% in the total non-performing corporate loans which analyzed by an individual amount exceed Euro 1 million),

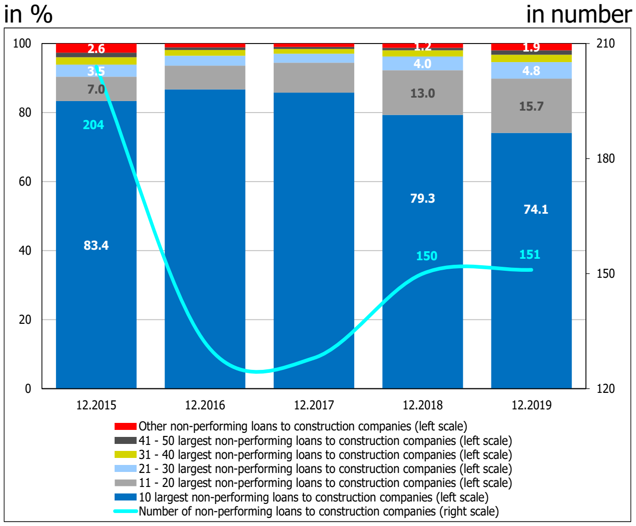
[130] The number of non-performing loans to non-financial companies is smaller by two times compared to the end of 2015 when their number was 2,661.
[131] The share of the 10 and 50 largest non-performing loans in the total non-performing loans to enterprises was the highest at the end of 2017 and amounted to 51.5% and 80.3%, respectively.
[132] The coverage of the 10 and 50 largest non-performing loans with impairment is 83.7% and 78.2%, respectively, whereby it is higher by 15.2 and 9.8 percentage points, respectively relative to the coverage of the total non-performing loans to enterprises (68.5%).

Chart 123
Structure of non-performing loans to construction companies according to the amount of loans to an individual client (top) and concentration of non-performing loans to individual clients from the construction sector (bottom)

in %



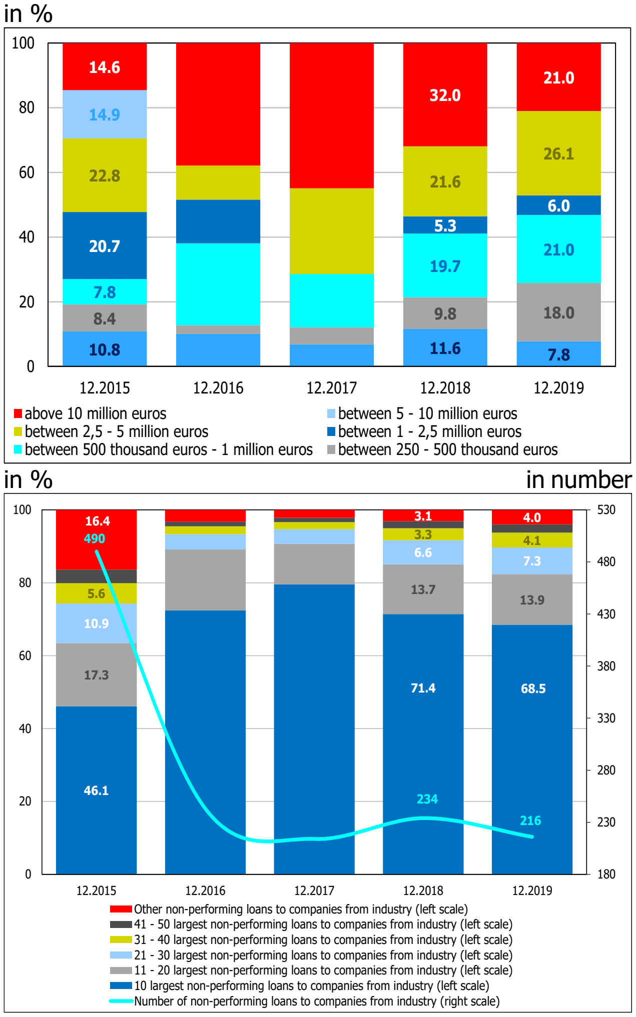
in % in number



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

and only the ten largest non-performing loans (out of a total of 151 non-performing loan to construction companies) comprise almost 75% of the total amount of non-performing loans to construction companies (83.4% as of 31 December 2015). Thus, in this segment of the total credit portfolio of banks, the migration of a relatively small number of clients, from regular to a non-performing status, caused a relatively high deterioration of credit quality indicators (e.g. the share of non-performing to total loans). The concentration of the non-performing loans of the construction sector is also evident through the high share of bullet loans (40.5%), restructured (41.2%) and prolonged loans (20.0%) in the non-performing credit portfolio of this sector at the end of 2019.

Chart 124
Structure of non-performing loans to companies from the industry according to the amount of loans to an individual client (top) and concentration of non-performing loans to individual clients from the industry (bottom)

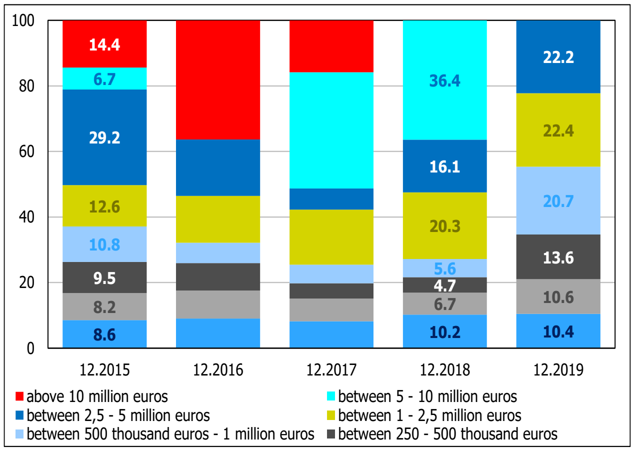


Source: National Bank's Credit Registry, based on data submitted by banks.

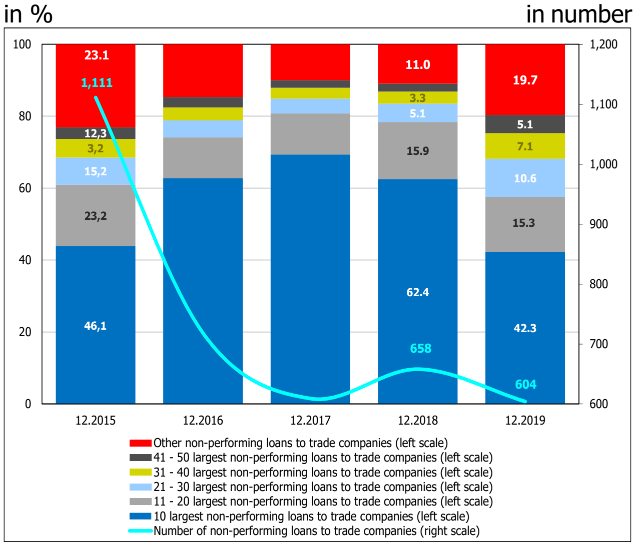
There is also moderate concentration to individual clients in the portfolio of non-performing loans to the companies from the "industry", where the loans larger than Euro 1 million comprise 53.1% of non-performing loans (a decrease of almost 20 percentage points, compared to the end of 2015). The ten and thirty largest non-performing loans (out of a total of 216 non-performing loans) account for 68.5% and almost 90%, respectively, of the total non-performing loans approved to the clients from this activity (46.1% and 74.3%, respectively at the end of 2015). The increased share of the clients ranked from 11 to 30 according to the amount of non-performing loans indicates an upward trend of the concentration in terms of the number of clients. Generally, it can be considered that the concentration in the non-performing portfolio of the "industry" is at some moderate/acceptable level according to the amount and number of non-performing loans. **Slightly higher granularity is registered in the non-performing credit portfolio composed of loans approved to the clients from the trade activity,** where the loans larger than Euro 1 million account for 44.7% of the total non-performing loans (62.9% as of 31 December 2015), and the 50 largest non-performing loans (out of a total of 604 non-performing loans to the clients from the trade activity) represent 80.3% of the total non-performing loans to trade companies (76.9% as of 31 December 2015). In terms of amount, non-performing loans up to Euro 500 thousand account for about one third of the total non-performing loans of the trade activity (26.3% at the end of 2015). Despite the downward trend of the concentration, i.e. the higher granularity of the non-performing credit portfolio of the trade activity, the concentration of non-performing loans is still at a moderate level according to the number of clients. Namely, almost 60% of the non-performing credit portfolio composed of clients from the trade activity is concentrated in the 20 largest non-performing loans. According to

Chart 125
Structure of non-performing loans to trade companies according to the amount of loans to an individual client (top) and concentration of non-performing loans to individual clients from the trade activity (bottom)

in %



in % in number



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

the amount of non-performing loans, the concentration of non-performing trade loans is relatively low whereby by about 22% of these loans are distributed in the intervals from Euro 500 thousand to Euro 1 million, over Euro 1 million to Euro 2.5 million and over Euro 2.5 million to Euro 5 million.

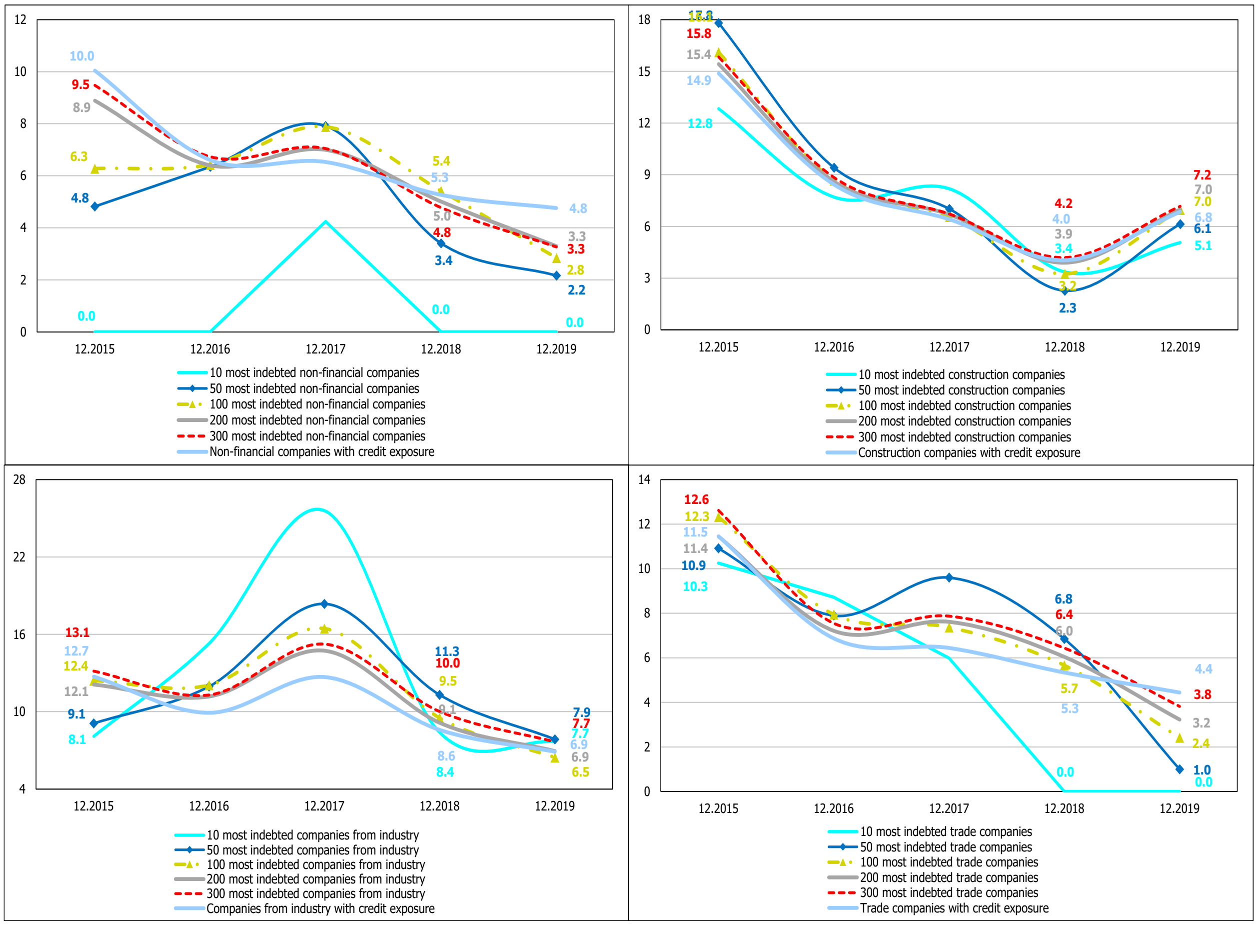
The share of non-performing loans in the total credit exposure in the portfolio of non-financial companies to which banks have the largest credit exposure (see Chart 9) is maintained at a relatively low level. Higher share is registered in the companies from the "industry" and the construction sector, in which the non-performing loans of the largest clients account for about 7%, on average, of their total credit exposure with banks.

The analysis of the level of concentration of non-performing loans by individual activities indicates an increase in the concentration according to the number of non-performing loans (given the fact that the total number of non-performing loans to individual clients is halved), but simultaneously higher granularity according to the amount of non-performing loans (in the analyzed period 31 December 2015 - 31 December 2019). Hence, it can be concluded that the non-performing credit portfolio to the individual activities at the end of 2019 is concentrated on a smaller number of loans, which are also approved in smaller amounts.

Chart 126

Concentration of non-performing loans to individual clients, approved to non-financial companies (top left), to construction companies (top right), to companies from industry (bottom left) and to trade companies (bottom right)

in %



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

ANNEXES