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Report on the risks in the banking system of the Republic of Macedonia in ... ; 2016

Provided in Cooperation with:

National Bank of the Republic of Macedonia, Skopje

Reference: Report on the risks in the banking system of the Republic of Macedonia in ... ; 2016 (2017).

This Version is available at:

<http://hdl.handle.net/11159/1133>

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National Bank of the Republic of Macedonia

Supervision, Banking Regulation and Financial Stability Sector

Financial Stability and Banking Regulations Department



***REPORT ON THE RISKS IN THE BANKING SYSTEM
OF THE REPUBLIC OF MACEDONIA IN 2016***

April 2017

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Summary

In 2016, and especially in the first half of the year, the activities of the domestic banking system were strongly influenced by the unstable political situation in the country, accompanied by speculation on the devaluation of the Denar exchange rate and the stability of the domestic banks and the deposits invested in them. Speculative pressures in an uncertain political environment led to staggering of the public confidence in the banking system (especially pronounced in households) and deposit withdrawal by non-financial entities in April and May 2016. Deposit withdrawal was also accompanied by higher propensity of households to hold of foreign currency and foreign currency deposits, which caused higher demand for foreign currency on the currency exchange market and on the foreign exchange market. Unfavorable movements in the foreign exchange and deposit market imposed a need for interventions of the National Bank to calm the situation on the foreign exchange market, as well as tightening of monetary policy, by increasing the interest rate on CB bills and the reserve requirement rate for banks' liabilities in denars with foreign exchange clause. Also, the auctions of foreign currency deposits with the National Bank were reactivated, on more favorable contractual terms (interest rate), so that it became more beneficial for the banks to keep the foreign currency liquid assets in the country (in response to the increased demand for foreign currency from banks' customers), which was expected to have positive spillover effects on the deposit interest rates of banks. The measures taken by the National Bank and the good liquidity management by banks, which carried out all the requirements for payment of deposits smoothly, yielded the expected positive spillover effects in the second half of the year. Thus, there was a gradual stabilization of the expectations of the economic agents and calming the unfavorable developments in the foreign exchange and deposit market. This in turn created conditions, the banking system to end the year with growth of total assets of 5%, which is by not full percentage point less compared to the increase in assets realized in 2015 (5.8%).

Deposits from non-financial entities, after the decline in the first half of 2016, in the second half began to move upwards and annually recorded solid growth (of 5.4%), although somewhat slower compared to 2015 (6.7%). Deposits from non-financial companies made twice higher contribution to the annual growth of deposits compared to households. However, household deposits kept the role of individually largest source of financing of the activities of the banking system (with a share of 49.7% in the total liabilities). The continuous process of denarization of banks' deposits, typical of the past few years, was stopped in 2016, as a result of the somewhat more pronounced propensity of households to invest foreign currency deposits this year, amid simultaneously significantly slower growth of the placements in denar deposits with this sector. The largest contribution to the annual growth of deposits was made by demand deposits (including transaction accounts with banks), amid a simultaneous decline in total time deposits, for which, again, households made the largest contribution. These developments indicate the staggered confidence of households in domestic banks, for whose full return it will probably take calming the political processes in the country. Also, although the currency and maturity transformation of deposits contributed to lower interest expenses in the banks' balance sheets, it complicates the liquidity risk management and imposes a need for greater vigilance, i.e. keeping larger amounts of liquid assets, which in turn are less yielding.

In the second quarter of 2016, the deposit withdrawal from the banking system was a real stress test for the volume adequacy of banks' liquid assets, which declined by more than 10% in just one quarter. However, the higher amount of previously accumulated liquid assets and



the National Bank instruments to create liquidity successfully offset this crisis in the domestic banking system and even ensured positive credit growth rates, as the main source of income for the banking system. By the end of 2016, the gradual recovery of the deposit activity, combined with the given opportunity for placement of the banks' foreign currency deposits with the National Bank at higher interest rates, compared with the rates obtained from foreign banks, led to a greater propensity of banks to invest in liquid financial instruments. Thus, in 2016, the liquid assets of the banking system increased by 3.5%, compared to the slight decline in 2015, which contributed to the maintenance of liquidity indicators at levels similar to those at the end of 2015, and the indicators of external liquidity of the banking system even registered certain improvement.

Volatility in the domestic environment and the turbulence on the deposit market had gradual spillover effects on banks' credit activity. Bank loans ended the year with growth of just 1.2%, which is significantly weaker performance compared with the previous year (9.7%). However, loan movements were largely conditioned by the amendment to the existing regulation by the National Bank that required from banks by 30 June 2016 to "cleanse" the credit portfolios from all claims that have been fully booked for more than two years. The effects of these amendments to the regulation were the strongest in the second quarter of the year, when significant amounts of fully booked non-performing loans were "written off", and by the end of the year, there was a gradual depletion of the effects of regulatory change. If we isolate the effects of these regulatory changes, the annual growth rate of banks' credit activity at the end of 2016 is slightly higher (6%), but is again significantly lower compared with that realized in the previous year (9.7%). Banks' attention remained focused on lending to households for the purchase and renovation of the residential property or for financing consumption of this sector. In contrast, credit support to the corporate sector declined in 2016, and if we exclude the effects of the measure for obligatory "write-off" of non-performing loans to this sector, then the loans to non-financial companies recorded positive, but quite modest and almost three times lower annual growth rate compared to the previous year.

The obligatory cleansing of the loan portfolios from the old and fully provisioned non-performing loans improved the quality indicators of banks' loan portfolio, but it should also encourage greater focus on the management of the newer and less reserved non-performing loans, which could create losses in the future. Thus, the share of the non-performing in the total loans dropped to the level of 6.6% as of 31 December 2016, which is significantly lower compared to the end of the previous year (10.8%). If we exclude the effects of this measure, the overall quality of the loan portfolio from non-financial entities remains unchanged. However, analyzed by sectors, there is a deterioration of the quality of the corporate loan portfolio amid reduced banks' credit activity to these customers, while the quality of loans to households improved. The threat for the banks' own funds from the possible materialization of the credit risk from non-performing loans is not high due to their high coverage with allocated impairment (80.9%), but also because of the satisfactory volume and quality of banks' own funds.

The regular loan portfolio of the banking system also registered an improvement of the quality, whereby the average risk level of regular loans (2.8%) decreased. The qualitative dimension of the claim restructuring process has exceptional importance to the future dynamics of the quality of credit portfolios, i.e. the extent to which the banks will show success in the reassessment of the creditworthiness of their customers and in the appropriate adjustment of the contractual terms of loans, especially in the current conditions of unstable domestic political environment.

In 2016, banks showed by one third higher amount of operating profit compared to last year, which allowed them to continue the trend of increasing their profit margin, as well as the rates of return on equity (13.6%) and assets (1.5%). The improvement of banks' profitability mostly stems from the more substantial reduction of interest expenses, amid only modest growth of interest income, which is particularly evident in the financial intermediation with the households sector. The reduction of impairment, especially for non-financial (foreclosed) assets, is the second most important driver of the high profitability of the banking system. The constant improvement of the operational efficiency of banks, should also be noted.

The solvency and capitalization ratios of the banking system registered a certain decrease, which mostly stems from the faster growth of risk-weighted assets. Apart from the growth of banks' credit activity, the increase in the risk-weighted assets arises also from the introduced regulatory measures, with application from 1 January 2016, in order to stop the excessive growth of the exposure based on credit products intended for funding households (credit cards, overdrafts, as well as consumer loans with maturity equal to or longer than eight years). However, the capital adequacy ratio at the end of 2016 is high, it equals 15.2% (15.5%, as of 31 December 2015) and allows enough room to absorb the possible unexpected losses for banks. In order to cover the banks' exposure to the risks of the operation, a favorable fact is the dominant share of the core (the most high-quality) capital (90.9%) in the structure of banks' own funds, as well as that half of the own funds are "free", above the legally prescribed minimum required to cover the risks. The new amendments to the Banking Law, adopted in October 2016, which started to apply from March 2017, mean significant modernization of the regulatory framework, by introducing the new rules of the Basel Committee and the European regulations on the so-called capital buffers, whose fulfillment will further support the solvency of banks.

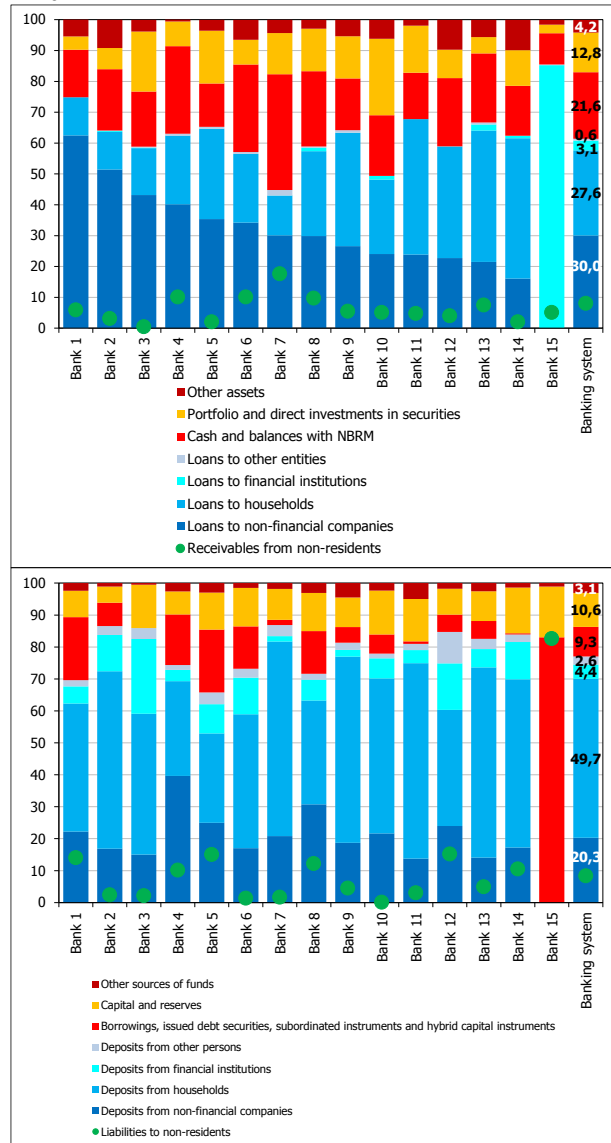
In late 2016 and early 2017, amid increased excess liquidity and calming the situation on the deposit and foreign exchange market, the National Bank started to normalize the monetary policy as a result of the gradual stabilization of the expectations of economic agents and further retention of the estimates for the stability of the fundamentals of the domestic economy. Namely, the National Bank increased the supply of CB bills and reduced their interest rate three times, thereby returning the policy rate to the level from the beginning of 2016 (3.25%). Also, from October 2016, the National Bank has ceased to hold auctions for foreign currency deposits, which were reactivated in May 2016, in the peak of the turbulent developments on the foreign exchange and deposit market. However, domestic risks associated with the uncertainty in the daily political environment are still present and represent a significant risk factor for the future performances of the banking sector.



I. Structure of the banking system

1. Main features of the business models of banks

Chart 1
Structure of the assets (top) and liabilities (bottom) of banks, as of 31 December 2016
in %



Source: NBRM, based on data submitted by banks.
The order of banks is coincidental.

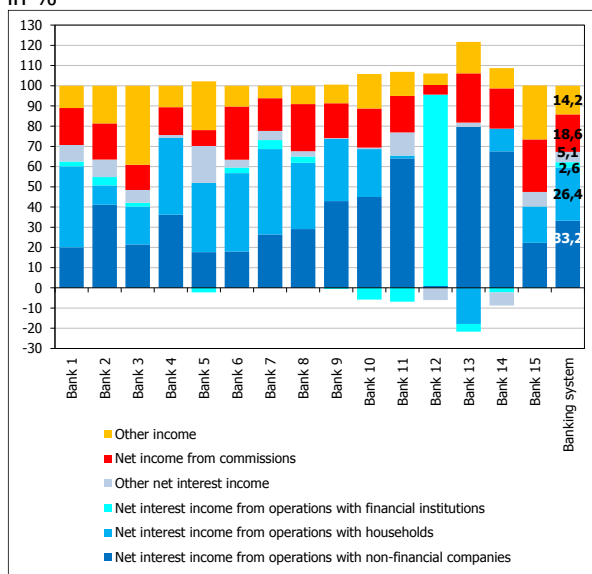
Banks in the Republic of Macedonia apply a traditional business model in their work – collecting deposits from the domestic private sector and their placement in loans to domestic enterprises and households. During 2016, the growth of household deposits continued, as the most significant source of funding for the banking activities, but at a slower pace, whereby their share in the total liabilities of the banking system decreased by 1.1 percentage point and reached 49.7%. In contrast, the percentage share in the total liabilities of deposits from non-financial companies increased by 1.4 percentage points, accounting for around 20% of total sources of funds. Analyzed by individual bank, with eleven banks deposits from households have the highest share in the total sources of funds, with one bank deposits from non-financial companies have the most significant share in liabilities, with two banks deposits from households and from non-financial companies have almost equal share. MBDP AD Skopje, given its specific nature, is financed with credit lines from international financial institutions, which are marketed to end users through other banks in the country. The share of other sources of funding¹ registered no significant annual growth, and as of 31 December 2016 it was around 14%. Loans to non-financial companies² still have the highest share in the assets of the banking system (of 30%), although in recent years, there is a trend of more enhanced household lending, whose share in assets, in 2016, increased by 3.6 percentage points. Analyzed by bank, six banks are more oriented toward lending to non-financial companies, five banks mostly lend households, three banks equally fund the two sectors, and one bank marketed loans with domestic banks. In 2016, there was a significant increase of 3.4 percentage points in the cumulative share of cash, accounts and deposits with the NBRM and with other banks, as one of

¹ Deposits from financial institutions, loan liabilities, subordinated and hybrid capital instruments.

² Loans to non-financial companies and households are analyzed on a net basis (taking into account impairment and accumulated amortization of loans), but the conclusion would not change if the analysis of the loans is made on a gross basis.



Chart 2
Structure of total banks' income in 2016
in %



Source: NBRM, based on data submitted by banks. The order of banks is coincidental.

the most liquid assets of the banking system. The investments in securities (primarily CB bills and government³ securities) accounted for around 13% of assets, which is a decline of around 1 percentage point compared to the end of 2015. The largest share, or 84.8% of banks' placements in securities are classified as instruments available for sale, and only 0.8% as instruments available for trade.

Deposits and loans with currency component amounted to 43% and 45% of total deposits and loans to non-financial entities, respectively, which is an annual increase of 1 percentage point in deposits⁴ and annual reduction of 2 percentage points in loans. Activities with non-residents in the banking system of the Republic of Macedonia registered a slight increase during 2016, slightly faster on the liabilities side than on the assets side, with shares of 8.3% and 8.1%, respectively.

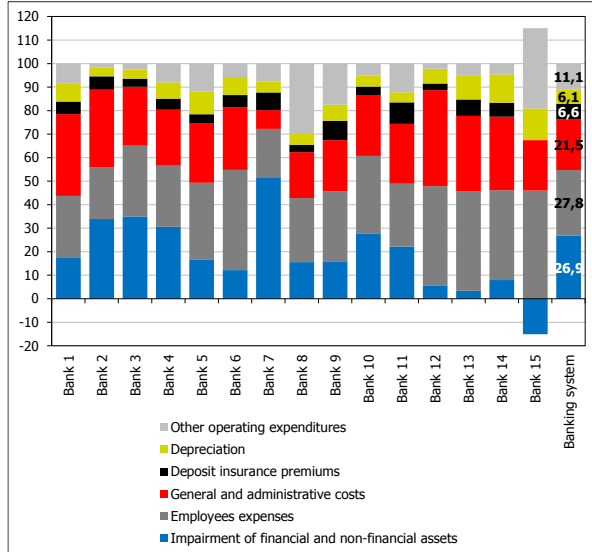
The traditional business model in the bank operations is reflected through the structure of total banks' income. Around two thirds of the total income of the banking system continually account for the net interest income, rather successfully dimensioned by banks according to the set profit targets (even in an environment of low interest rates), through active implementation of the contractual possibility of adjusting interest rates in credit, but much more in deposit products.

The present trend of banks' reorientation to work with households is confirmed also by sectoral structure analysis of the net interest income, and within these, primarily of interest income. The individual share of the net interest income from operation with non-financial companies decreased by 3.6 percentage points compared with 2015, for account of the increased share of the net interest income from operation with

³ Includes domestic and foreign government securities.

⁴ The unstable domestic environment and subsequently worsened expectations of economic agents triggered deposit withdrawal from the banking system in April and partly in May 2016, which were simultaneously followed by currency transformation of Denar deposits. These developments contributed to stopping the downward trend of the euroisation, present several years.

Chart 3
Structure of total banks' expenditures in 2016
in %



Source: NBRM, based on data submitted by banks.
The order of banks is coincidental.

households, by 4 percentage points. Changes in interest income are in the same direction, where in 2016 the share of interest income from households in total interest income grows by 2.5 percentage points, while the share of interest income from non-financial companies reduces by 2.1 percentage point.

Staff costs and impairment of financial and non-financial assets, at the level of the banking system, have the highest individual shares in the cost structure. As of 31 December 2016, staff costs have the highest individual share in the total expenditures of the banking system, which increased by 1.1 percentage point during 2016. In contrast, the share of impairment in total expenditures continued to decline and in 2016 it decreased almost by 3 percentage points. Analyzing by banks, there are significant differences in the cost structure. Particularly evident is the difference in the share of impairment in the total expenditures of individual banks, which probably indicates the specific (individual, separate for each bank) nature of the current banks' exposure to credit risk and the level of risk, as well as the activities of individual banks for recovery of the "bad" claims.

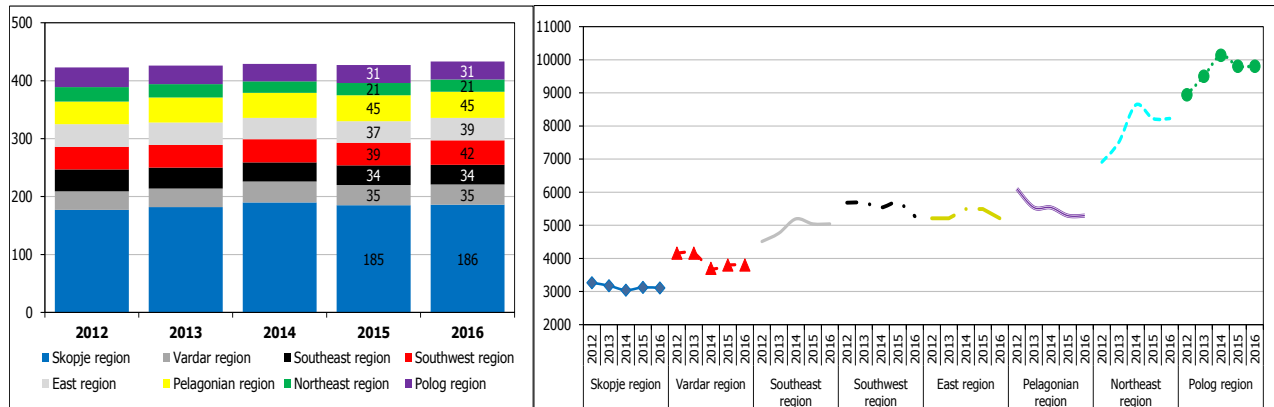


2. Number of banks and access to banking services

As of 31 December 2016, eighteen depository institutions operate in the Republic of Macedonia, i.e. fifteen banks and three savings houses⁵. Compared to previous year, the structure of the banking system remains unchanged. Given the insignificant share of savings houses in the total banking system, they are not analyzed in this Report⁶.

Chart 4

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



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

*The calculation does not include banks' windows.

The banking network is comprised of 433 business units⁷ spread across almost all cities on the territory of the Republic of Macedonia. The number of business units increased by six, and most of the new business units are in the South-West Region. The banking network is still the most numerous in the Skopje area, where the **access to banking services**, as measured by the number of inhabitants per business unit, is the best. By region, the access to banking services is maintained unchanged, except in the southwest and east regions, where it registers a slight improvement.

⁵ The share of savings houses is only 0.6% of total assets of depository financial institutions (banks and savings banks), 0.7% of total loans to non-financial entities and 0.4% of total household deposits.

⁶ The risk profile and the scope of activities of savings houses is analyzed in the reports on the financial stability of the Republic of Macedonia.

⁷ The number of business units includes the headquarters of banks, but excludes banks' windows.

Table 1
Comparative indicators on number of residents per credit institution and per business unit of banks

Country	Number of inhabitants by bank	Country	Number of inhabitants by business unit of banks
Luxembourg	3.856	Spain	1.494
Austria	11.605	Cyprus	1.504
Cyprus	13.235	France	1.770
Malta	14.805	Portugal	1.853
Lithuania	33.196	Bulgaria	1.951
Montenegro	44.436	Italy	1.995
Germany	47.735	Austria	2.095
Denmark	50.988	Germany	2.385
Poland	60.712	Luxembourg	2.524
Sweden	61.304	Poland	2.656
Portugal	69.165	Belgium	3.200
Hungary	74.663	Hungary	3.403
Latvia	76.388	Slovenia	3.502
Estonia	82.179	Croatia	3.596
Slovenia	89.690	Malta	3.939
Italy	101.495	Romania	4.017
Belgium	117.055	Serbia	4.144
France	117.678	Словачка	4.199
Croatia	128.040	Greece	4.270
Macedonia	137.945	Macedonia	4.846
The Netherlands	170.714	The Czech Republic	5.081
Spain	177.968	Denmark	5.085
Albania	180.769	Lithuania	5.235
The Czech Republic	184.882	Sweden	5.482
Slovakia	200.791	Albania	5.785
Bosnia and Hercegovina	224.142	Latvia	7.196
Serbia	237.146	The Netherlands	9.581
Greece	241.289	Estonia	12.289
Bulgaria	257.221	Montenegro	n.a.
Romania	551.962	Bosnia and Hercegovina	n.a.

Banks in the Republic of Macedonia still have underdeveloped banking network compared to the majority countries covered in the analysis. The number of residents served by a bank, i.e. by a business unit, places Macedonia in the second half of the list of analyzed countries, which is almost unchanged compared to the previous year.

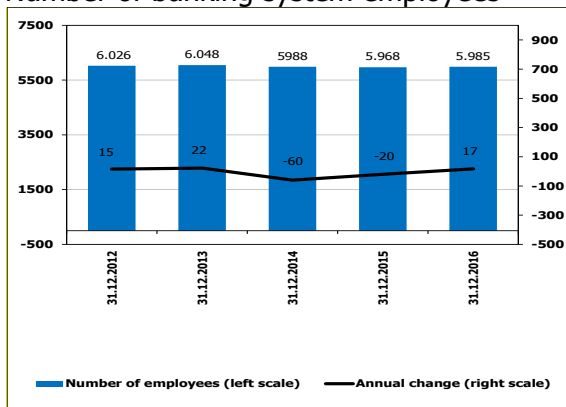
Source: The NBRM, EU Structural Financial Indicators 2015, BSCEE Review 2015, www.dbresearch.com, the website of the European Union, the website of the World Bank, the Bank of Albania (Supervision Annual Report 2015), the National Bank of Serbia (Banking Sector in Serbia, Report on the Third Quarter of 2016).

Note: Data on Macedonia are as of 31 December 2016, on Serbia as of 30 September 2016, while data for other countries they are as of 31 December 2015.



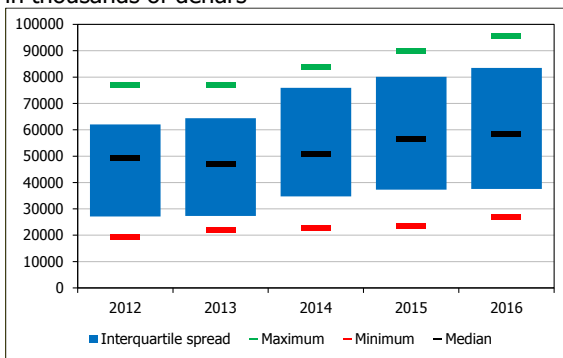
3. Employment in the banking system

Chart 5
Number of banking system employees



Source: NBRM, based on data submitted by banks.

Chart 6
Assets per employee*
in thousands of denars



Source: NBRM, based on data submitted by banks.

*The MBDP is not included in the analysis due to the type of its operations.

The downward trend of the number of employees in the banking system of the previous two years was interrupted in 2016. The number of bank employees amounted to 5,985 and during 2016 it increased by 17⁸ or by 0.3%. Qualification structure of employees in the banking sector continues improving, mirrored through the annual increase in the share of the number of employees with at least university education in the total number of employees, of 2 percentage points (as of 31 December 2016, this share was 76.7%).

Banking system productivity, as measured by the amount of assets per employee, continues improving. In 2016, assets grew, though at a slower pace, at a rate that is several times higher than the rate of change in the number of employees. Analyzed by individual bank, productivity has improved in thirteen banks, which is mostly a result of the faster growth of assets compared to the growth of the number of employees (exception is one bank, in which the increased amount of assets per employee arises from the faster decline in the number of employees compared to the decrease in the amount of assets). Despite the increase in productivity of the banking system, the differences in the productivity of individual banks have increased. Thus, the range between the bank with the highest and the bank with the lowest productivity, as well as the range between the first and third quartile of the assets per employee ratio registers a further expansion in 2016.

⁸ More pronounced growth of employees was registered in two large (by 30 and 20 employees, respectively) and one middle-size bank (by 21 employee), while the largest decrease was registered in one small bank (by 64 employees). The remaining net increase in the number of employees stems from eight banks.



4. Ownership structure and concentration of the banking system

In 2016, the number of foreign owned banks remained unchanged (eleven), but the number of foreign bank subsidiaries (currently six) reduced by one⁹ compared to the end of 2015.

Table 2

Structure of the number of banks and major balance sheet positions, by banks' majority ownership (as of 31 December 2016) in millions of denars and in %

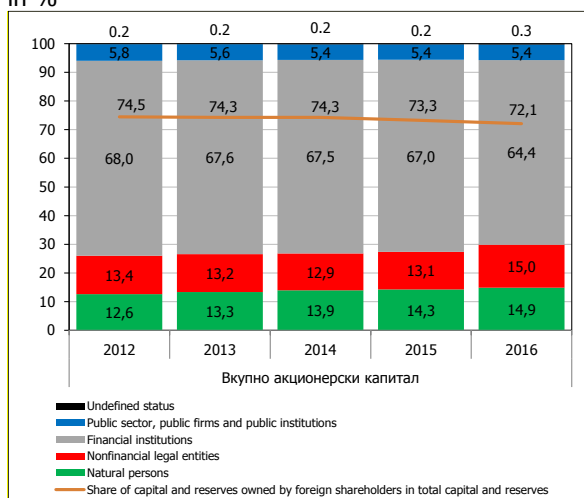
Type of ownership	Number of banks	Capital and reserves		Assets		Loans to non-financial sector		Deposits from non-financial sector		Total revenues*		Financial result*	
		Amount	In %	Amount	In %	Amount	In %	Amount	In %	Amount	In %	Amount	In %
Banks in dominant ownership of foreign shareholders	11	32.756	69,4%	310.956	69,9%	217.700	77,5%	225.023	69,7%	16.829	73,6%	5.329	84,3%
- subsidiaries of foreign banks	6	28.289	59,9%	257.002	57,8%	179.563	63,9%	187.235	58,0%	13.994	61,2%	4.940	78,1%
- Austria	1	2.256	4,8%	18.904	4,3%	12.032	4,3%	12.301	3,8%	1.199	5,2%	213	3,4%
- Bulgaria	1	1.205	2,6%	8.414	1,9%	5.240	1,9%	6.077	1,9%	367	1,6%	1	0,0%
- Greece	1	11.436	24,2%	86.153	19,4%	61.742	22,0%	66.265	20,5%	5.144	22,5%	2.240	35,4%
- Slovenia	1	6.668	14,1%	71.834	16,2%	51.056	18,2%	56.916	17,6%	4.037	17,6%	1.579	25,0%
- Turkey	1	4.140	8,8%	35.815	8,1%	23.976	8,5%	20.283	6,3%	1.675	7,3%	471	7,5%
- France	1	2.585	5,5%	35.882	8,1%	25.518	9,1%	25.394	7,9%	1.571	6,9%	435	6,9%
- other banks in dominant foreign ownership	5	4.467	9,5%	53.954	12,1%	38.137	13,6%	37.788	11,7%	2.835	12,4%	389	6,1%
- Bulgaria	2	1.759	3,7%	17.428	3,9%	11.515	4,1%	12.944	4,0%	899	3,9%	140	2,2%
- Germany	1	1.773	3,8%	21.403	4,8%	16.468	5,9%	13.759	4,3%	1.093	4,8%	272	4,3%
- Switzerland	2	936	2,0%	15.123	3,4%	10.154	3,6%	11.085	3,4%	844	3,7%	-23	-0,4%
Banks in dominant ownership of domestic shareholders	4	14.434	30,6%	133.725	30,1%	63.262	22,5%	97.774	30,3%	6.049	26,4%	996	15,7%
- private ownership	3	12.072	25,6%	118.863	26,7%	63.224	22,5%	97.774	30,3%	5.871	25,7%	893	14,1%
- state ownership	1	2.362	5,0%	14.862	3,3%	38	0,0%	0	0,0%	178	0,8%	103	1,6%
Total:	15	47.191	100,0%	444.680	100,0%	280.962	100,0%	322.797	100,0%	22.878	100,0%	6.325	100,0%

Source: NBRM, based on data submitted by banks.

*Total income and financial result refer to 2016.

Chart 7

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



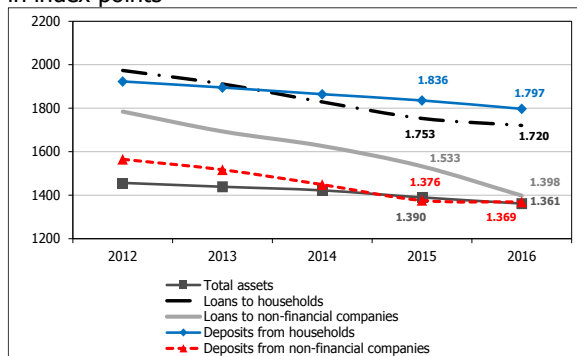
Source: NBRM, based on data submitted by banks.

Banks in predominant ownership of foreign shareholders prevail in the banking system of the Republic of Macedonia, which is thus influenced by economic and non-economic risk factors associated with parent entities of banks and their countries of origin. With the exception of the change in the owner in one bank, in 2016, there were no significant changes in the ownership structure of banks. Banks in dominant ownership of foreign shareholders prevail in all major banks' balance sheet positions. Their dominance is particularly pronounced in the credit activity and the financial result. Among foreign shareholders, observing the country of their origin, the share of shareholders from Greece and Slovenia in the total capital (including reserves) of the banking system is the highest, which was 22.4% and

⁹ It concerns the sale of Alpha Bank AD Skopje (conducted on 9 May 2016, through a block trade on the Macedonian Stock Exchange), whereby Silk Road Capital AG, Switzerland became full owner of Alpha Bank AD Skopje (later renamed into Silk Road Bank AD Skopje).



Chart 8
Herfindahl index*
in index points



Source: NBRM, based on data submitted by banks.

*The Herfindahl index is calculated according to the

formula $HI = \sum_{j=1}^n (S_j)^2$, where S is the share of each

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

Table 3

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

in %	Position	2015		2016	
		CR3	CR5	CR3	CR5
	Total assets	59,4	74,3	58,2	74,3
	Loans to households	64,2	79,8	62,9	79,2
	Loans to non-financial companies	59,7	76,7	55,5	74,9
	Deposits from households	71,3	80,2	70,5	79,9
	Deposits from non-financial companies	54,2	77,3	53,9	76,9
	Financial result*	70,6	87,2	72,7	87,0
	Total revenues*	61,4	74,7	61,3	75,5

Source: NBRM, based on data submitted by banks.

*Total income and financial result are calculated for 2016.

13.8%, respectively. In 2016, the share of shareholders from Greece¹⁰ in the total capital (including reserves) of the banking system decreases (by 2.9 percentage points), while the share of shareholders originating from Switzerland¹¹ registered an increase. By type of shareholders, financial institutions registered the highest share in the capital (including reserves), although in 2016, their share decreased by 2.6 percentage points, at the expense of the increase in the share of non-financial legal entities (mostly due to the aforementioned change in the owner of one bank).

Several banks in the banking system stand out according to the size, and whose achievements have a leading role for the entire banking sector and the domestic economy. The concentration in the banking system is reducing slowly, but constantly. For the first time so far at the end of 2016 all values of the Herfindahl index are within the interval of its acceptable values. As of 31 December 2016, the CR5 and CR3 indicators¹² show insignificant annual decline in all segments of banking operations, except the share of the three largest banks in lending to the corporate sector, which fell by 4.2 percentage points. There is no change in the share of the five largest banks in the system in the total assets (74.3%), but there is a decrease in the share of the three largest banks of 1.2 percentage points. The difference between the bank with the largest (22.6%) and the bank with the lowest share in the assets (0.7%) of the system is still high, and nine banks (with a total share in the assets of 20%) constitute less than 5%.

¹⁰ Due to the sale of Alpha Bank AD Skopje, which was in full Greek ownership, to Silk Road Capital AG, Switzerland.

¹¹ Due to the sale of Alpha Bank AD Skopje, which was in full Greek ownership, to Silk Road Capital AG, Switzerland.

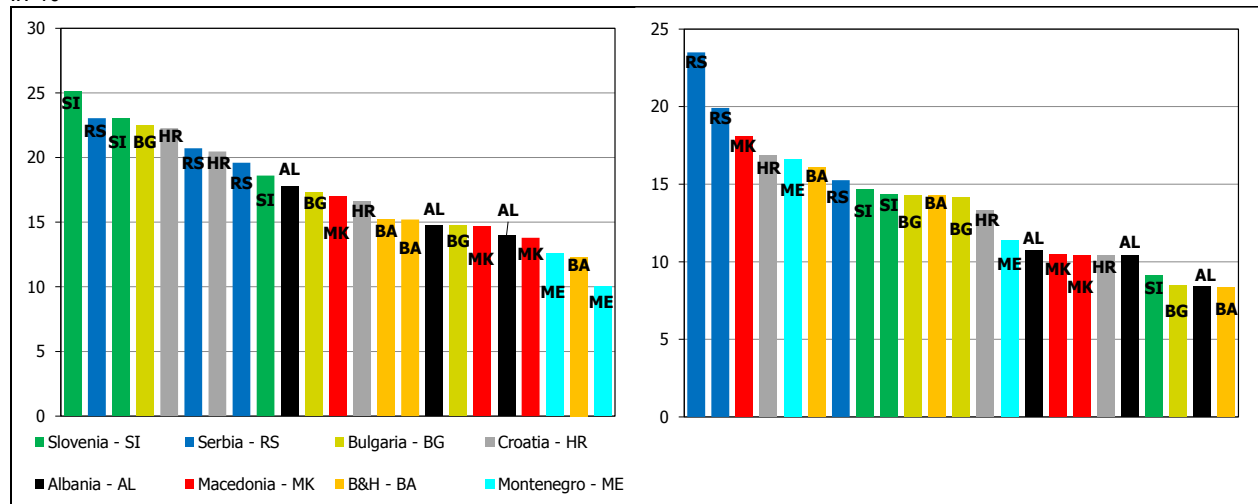
¹² CR5 indicator, i.e. CR3 shows the share of a certain analyzed category (e.g. assets) of the five, i.e. the three banks with the highest value of that category in the total amount of that analyzed category (e.g. in the total assets) in the banking system.

Comparative analysis between the three largest banks of the countries in the region, according to selected indicators of their operations and the risk exposure

The purpose of this analysis is to compare the three largest banks in the countries in the region (Macedonia, Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Montenegro, Serbia and Slovenia), according to certain indicators of their operations and the risk exposure. This purpose uses the database of Orbis Bank Focus¹³, and presented data are as of 31 December 2015. In the analyzed countries, the concentration of the banking system, according to the assets of the three largest banks, is relatively high (ranges from 42% to 60%) and hence, the situation and the movements at the aggregate level (at the level of the banking system of each analyzed country) are largely conditioned by (or reflect) the situation and the movements in the three largest banks. At the same time, when using microdata (at the level of individual banks) the specificities of individual institutions in the banking systems are best taken into account, thus allowing extraction of more accurate conclusions without unnecessary loss of information (which actually exists when using aggregate or average data at the level of the system), in connection with the situation in the individual banking systems.

Chart 9

Capital adequacy ratio (left) and capitalization rate* (right) of the three largest banks of the countries in the region in %



Source: Orbis Bank Focus

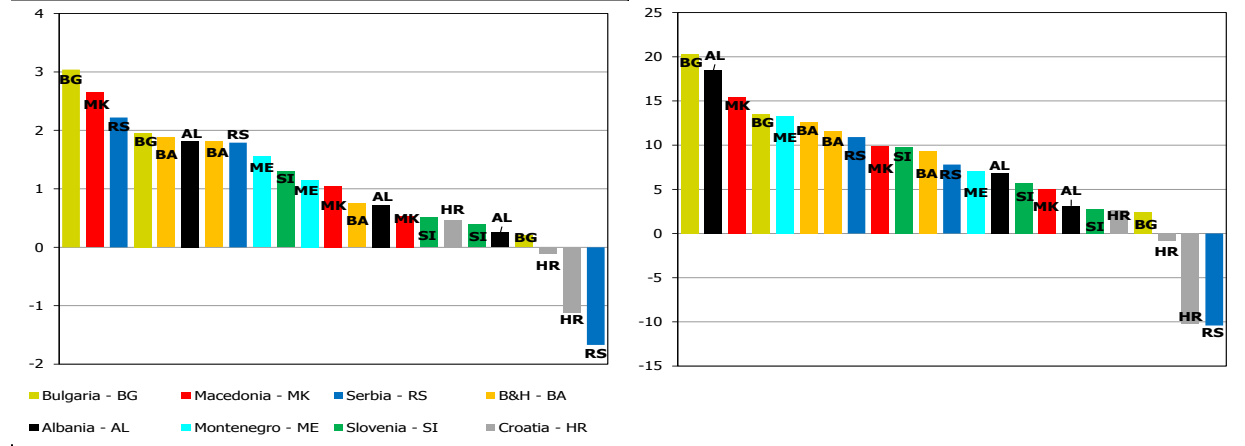
*The capitalization rate is the ratio of capital and reserves to total assets.

¹³ This database lacks data on some indicators of certain banks.



Chart 10

Rate of return on average assets (left) and rate of return on average equity and reserves (right) of the three largest banks of the countries in the region in %

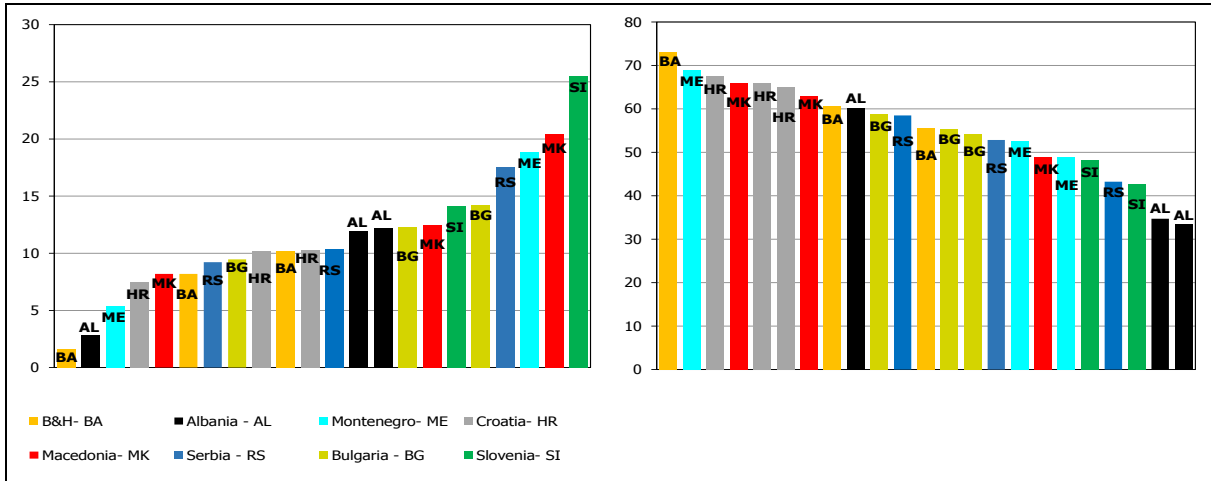


Source: Orbis Bank Focus

In comparison, i.e. the ranking of the regional banks, according to the analyzed indicators, each of the three Macedonian banks is at a different position (in the top, the middle and / or the bottom of the list). Hence, a general conclusion cannot be drawn that according to individual indicator, the three Macedonian banks (as a group) are comparatively the best, i.e. comparatively the weakest, compared with the regional banks. However, it may be noted that, according to some indicators, one of the Macedonian banks occurs among the three best or the three weakest banks, on the list of analyzed banks in the region. Thus, one Macedonian bank is present among the three best banks, according to the profitability indicators (the rates of return on average assets and equity and reserves), the capitalization rate and the liquid assets to deposits and short-term funding sources ratio. In contrast, one Macedonian bank occurs among the three banks in the region with the highest indicator of the average risk level of loans (ratio between impairment for loans and the gross amount of loans). According to the capital adequacy ratio, the three Macedonian banks are mostly ranked in the second half of the list of analyzed banks, while according to the loan-to-deposit ratio, two of the banks are in the second half of the list of analyzed banks, and one is ranked fourth.

Chart 11

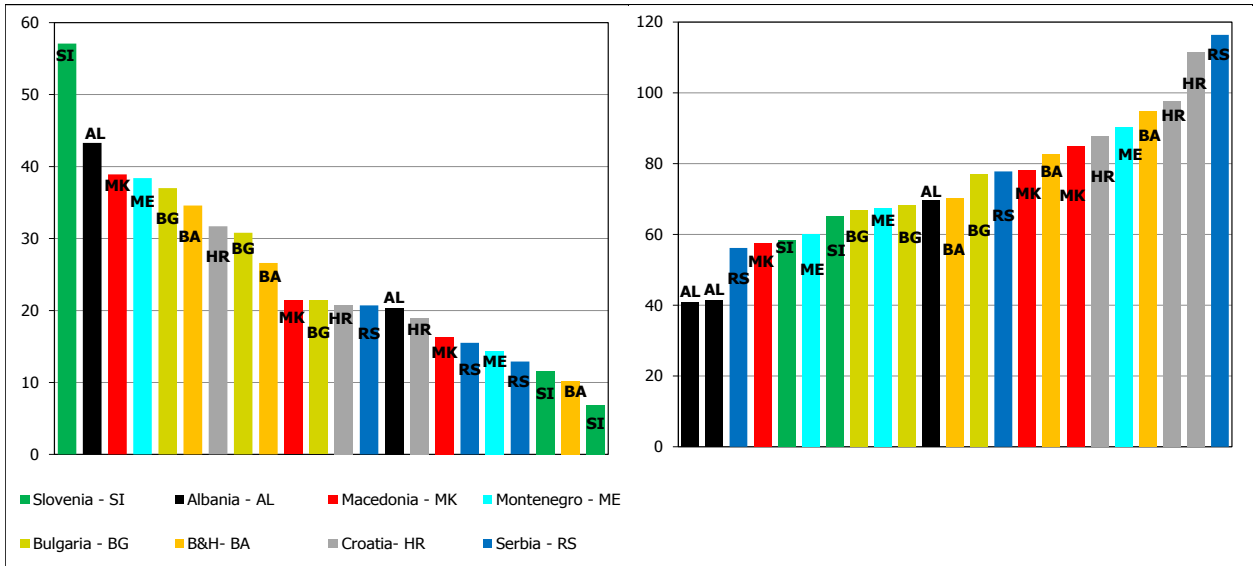
Average risk level of loans (left)* and net loans to total assets ratio (right) of the three largest banks of the countries in the region in %



* Gross loans refer to non-financial entities.
Source: Orbis Bank Focus

Chart 12

Liquid assets to deposits and short-term funding sources ratio (left)* and net loans to total deposits ratio (right)** of the three largest banks of the countries in the region in%



*The liquid assets encompass cash and assets with the central bank (without the reserve requirement), financial instruments held for trading and financial instruments that are measured at fair value through income statement, interbank claims (net basis) and claims based on repo operations and borrowed securities. Deposits include deposits from financial and non-financial entities, while the short-term sources of funding refer to the short-term borrowings and issued short-term securities.

**Net loans and deposits refer to non-financial entities.

Source: Orbis Bank Focus



II. Bank Risks

1. Credit risk

In 2016, non-performing loans recorded a significant decline, mainly due to the amendments to the regulation of the National Bank¹⁴, requiring from banks to transfer all claims that have been fully provisioned for more than two years to off-balance sheets. This compulsory cleansing of credit portfolios of banks is the main driver for the improvement of the credit risk indicators. The effect of regulatory measure was most pronounced in the second quarter of the year when more striking changes were reached in the volume of non-performing loans and in the indicators of their quality, while the rest of the year was followed by a gradual depletion of the effect of the compulsory implementation of write-offs. Non-performing loans to total loans ratio at the end of 2016 dropped to 6.6%¹⁵. The high coverage of non-performing loans with allocated impairment, amid satisfactory volume and quality of the banks' own funds, limits the effects of a possible full uncollectibility of these loans on the own funds of the banking system. The regular loan portfolio of the banking system also registers an improvement of the quality. In the regular loan portfolio of banks, there are specific risk factors whose adverse impact can cause the losses from the possible materialization of the credit risk to exceed banks' expectations (allocated provisions). This primarily concerns the concentration ratio of banks' credit portfolios, the high costs or the impossibility to sale the established collateral for loans (at a favorable price), or the presence of loans where it is harder to identify on time the financial problems of the customer (loans with an approved grace period or loans with a single repayment of principal). The qualitative dimension of the claim restructuring process, i.e. the extent to which the banks will be successful in reassessing the creditworthiness of their customers and the appropriate adjustment of the contractual terms of loans, is an important aspect for the future dynamics of the quality of banks' credit portfolios, of course together with the quality of new loans.

In 2016, the **total credit exposure** of the banking system grew by 2.2% and reached Denar 469,675 million, which is extremely slower growth compared down the years. However, it must be borne in mind that the level of the total credit exposure in 2016 was influenced by the effect of the compulsory implementation of write-offs, in accordance with regulatory changes. Thus, excluding the effect of the total write-offs¹⁶, the credit exposure increased by 5.5%.

¹⁴ Decision on amending the Decision on credit risk management (Official Gazette of the Republic of Macedonia No. 223/15) that requires from banks by 30 June 2016 to transfer all claims that have been fully booked for more than two years to the off-balance sheet record. This requirement continues for non-performing claims that will meet the above-mentioned criteria. Despite the write-off, the banks reserve the right to collect these claims.

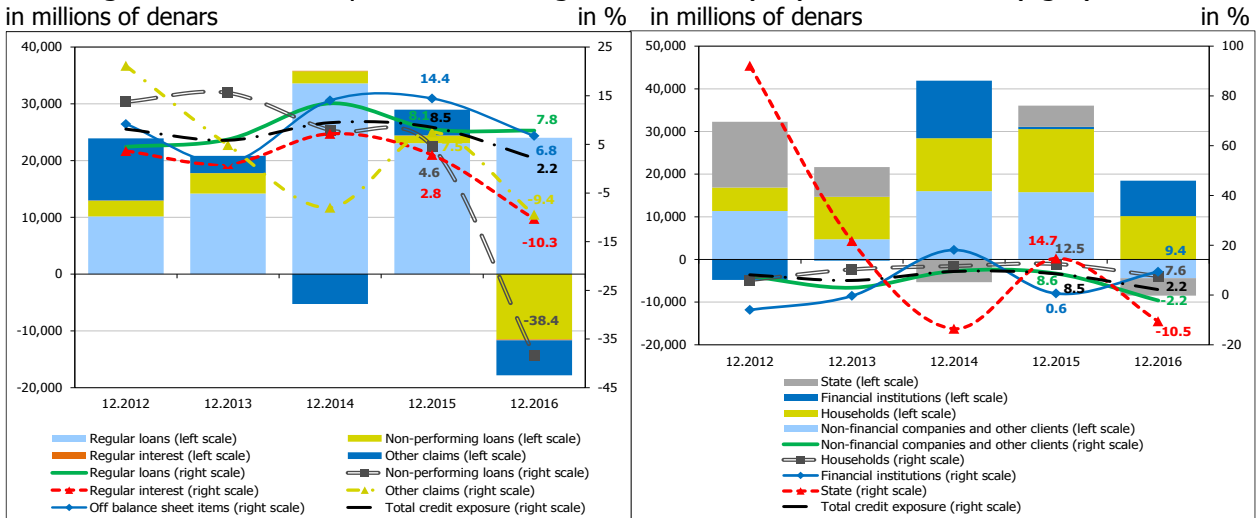
¹⁵ If we exclude the effects of this measure, the quality of the loan portfolio from non-financial entities, measured by the share of the non-performing in the total loans, has not changed. However, by sectors, there is a deterioration of the quality of the corporate loan portfolio amid reduced banks' credit activity to these customers, while the quality of loans to households improved.

¹⁶ Write-offs made in accordance with regulatory changes and the regular write-offs.



Chart 13

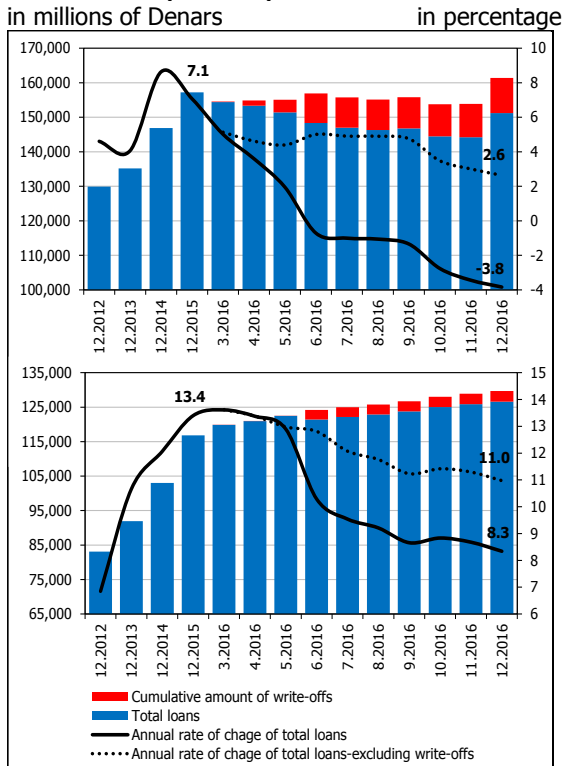
Annual growth of credit exposure according to the items (left) and the sector (right)



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

Chart 14

Dynamics of total loans and write-offs of non-financial companies (top) and households (bottom)



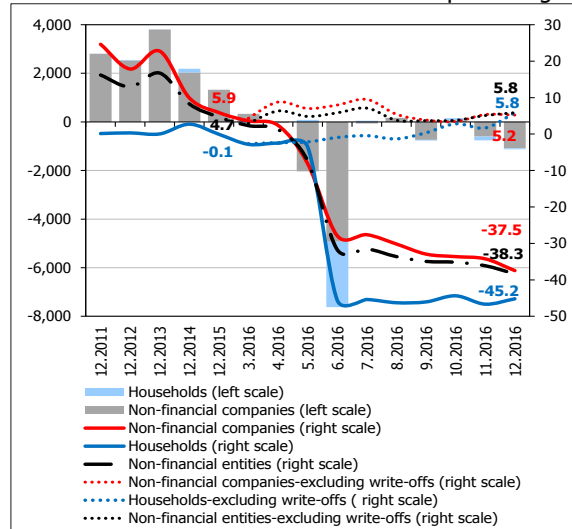
Source: NBRM, based on the data submitted by banks.

In 2016, banks were aimed at "cleansing" assets by writing off the old and fully provisioned non-performing loans and, to a lesser extent, through the sale of the foreclosed property due to uncollected claims. Downward movement was registered also with the regular restructured loans (of Denar 1,336 million, or 21.1%), while non-restructured loans overdue from 61 to 90 days are the only category of loans with signs of impairment which increased in 2016 (by Denar 983 million, i.e. they are more than sixfold higher compared to the end of 2015 as a result of the growth of these loans with non-financial companies¹⁷). Amid favorable movement (decrease) in most categories of loans with signs of impairment, the movements in the banks' balance sheets indicate somewhat higher collection of past due claims to 61 day (annual reduction of Denar 426 million, or 16.6%).

¹⁷ The absolute and relative growth of non-restructured loans overdue from 61 to 90 days applies only to the past due part of the principal of these loans.

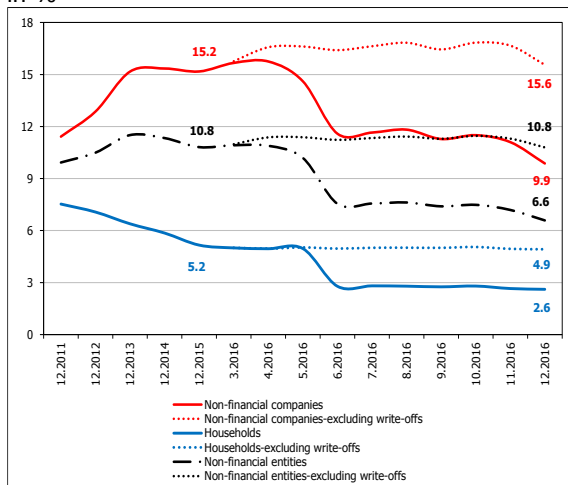
Chart 15
Annual growth rate of non-performing loans to non-financial entities and individual sectors

in millions of Denars in percentage



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

Chart 16
Share of non-performing loans to total loans of non-financial entities, and by sector in %



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

With the exclusion of the effect of regulatory changes for compulsory write-off, the annual change in loans to the corporate sector stood at 2.6%, compared to the reduction with the effect of the write-off of 3.8% (by comparison, as of 31 December 2015, the annual growth rate of loans to non-financial companies was 7.1%). The impact of regulatory changes is less pronounced in lending to households, where the annual growth amounted to 11.0% by excluding the effect of the write-off, compared to 8.3% if we take into account actual compulsory write-offs of loans (by comparison, as of 31 December 2015, the annual growth rate of loans to households stood at 13.4%).

1.1 Materialization of credit risk in banks' balance sheets

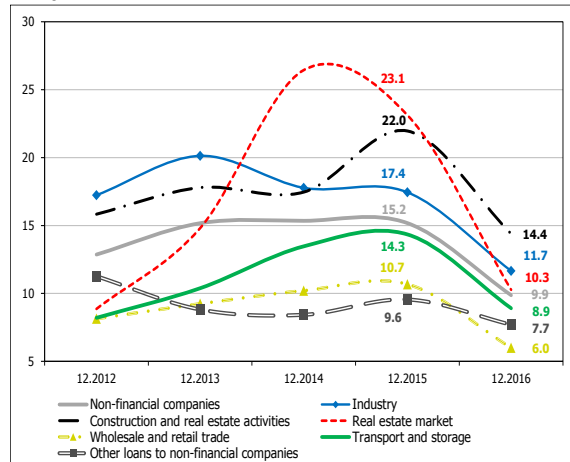
Non-performing loans, as a basic measure of the quality of the loan portfolio of the banking system, declined significantly (by 38.3%) during 2016. This movement entirely results from the compulsory "cleansing" of credit portfolios of all claims for which the banks fully covered the credit risk at least two years before. As a result of this amendment to the regulation on the credit risk, in 2016, Denar 13,262 million of non-performing principal were written off, which were mostly (84,1%) incurred in the second quarter¹⁸ of the year, with a gradual depletion of the effect by the end of the year. The largest portion, or 76.8% of the write-offs of non-performing loans refer to non-financial companies.

Write-offs made according to regulatory changes have a striking impact upon the annual dynamics of non-performing loans (double-digit reduction rates), which without them would have a positive trend in the total loan portfolio, but also in the two sectors separately. By isolating the effect of write-offs, non-performing loans to non-financial entities would register an annual increase of 5.8%, which would be an acceleration in last year's growth of 1.1

¹⁸ Almost 60% of the write-offs in 2016 were made in June 2016, when the level of non-performing loans registered a drastic monthly decrease of 27%.



Chart 17
Share of non-performing loans to total loans of non-financial companies, by activity in %



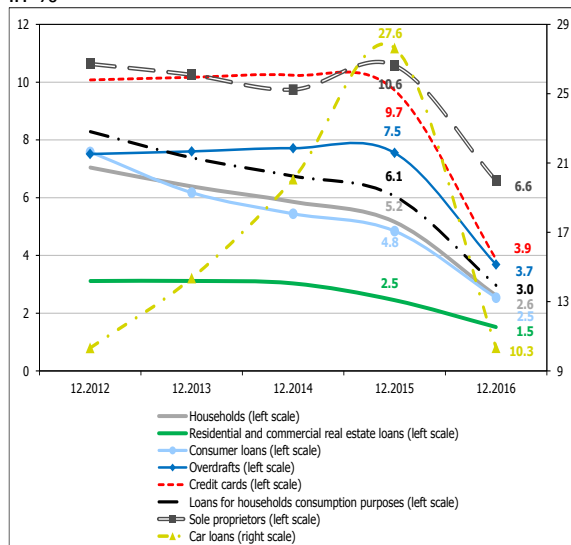
Source: NBRM, based on the data submitted by banks.
*Loans on "real estate market" denote loans to non-financial companies that deal with construction and activities related to real estate, as well as loans to natural persons, based on loans for the purchase and renovation of residential and commercial properties.

percentage point. Without the effect of the write-offs, the annual growth of non-performing loans to non-financial companies would be moderate and would amount to 5.2% and compared to the growth realized at the end of 2015 (5.9%) signals certain improvement of the quality in this segment of the credit portfolio. Regarding the non-performing loans to households, the annual growth would be 5.8%, which means certain deterioration of the quality of loans to this sector, compared to the downward shift of "bad" loans at the end of the previous year (-0.1%), amid a relatively small amount of compulsory write-offs.

Changes in the level of total and non-performing loans as a consequence of the write-offs led to a significant improvement of the rate of non-performing loans¹⁹ to non-financial entities, which was reduced to 6.6% at the end of 2016. Without the effect of the write-offs, this rate is 10.8% and is at an identical level as at the end of the previous year.

¹⁹ The rate of non-performing loans is the share of non-performing loans in total loans.

Chart 18
Share of non-performing loans to total loans to households, by individual credit product in %



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

Within the non-financial companies sector, the rate of non-performing loans moves downward from the commencement of the obligation for compulsory write-offs, and at the end of 2016 it was reduced to a one-digit level of 9.9%. This level was last time registered at the end of 2009, when the rate of "bad" loans generally registers a steady upward trend (until the introduction of the compulsory write-off). If we exclude the effect of the write-offs, this rate would be 15.6%, which is a higher level compared to the end of the previous year (15.2%). By activities²⁰, the credit risk is the highest among banks' claims from construction and real estate services, and industry. However, the credit risk reduces in these two activities, including in the wholesale and retail trade. In the construction sector, this movement can be related to the favorable performance of the sector. Namely, the construction sector is among the leading sectors of economic growth and the improved performance of this activity reflects the increased activity in the construction of residential buildings, and the government capital investments also registered solid growth. At the same time, the assessment of the economic situation of construction companies is favorable, and for the following period favorable movements are expected in the orders (contracts) for construction works and the selling prices of apartments²¹. The reduced risk of claims on the trade activity is also indicated by the favorable assessments of the current business and financial status of the companies, as well as the expectations for increased orders and growth of the selling prices in the following period, amid growth of the value of the turnover in retail trade and trade in motor vehicles²².

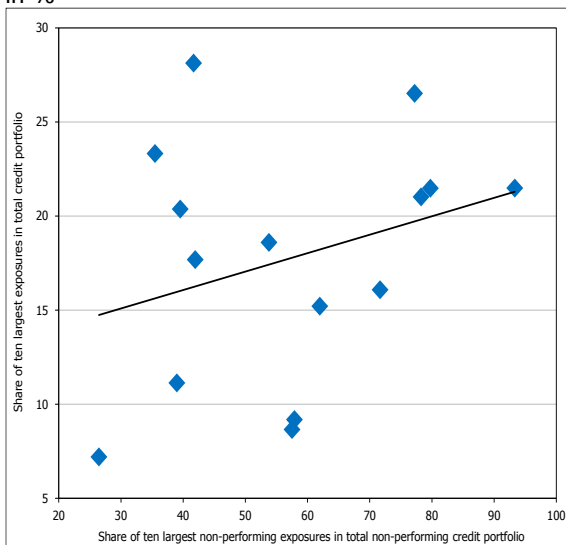
²⁰ Credit exposure to clients from wholesale and retail trade has the highest share in the total credit exposure to non-financial companies (34.5%). At the same time, non-performing loans to clients from this activity have the largest share, of 30.6%, and in the total non-performing loans to non-financial companies.

²¹ Source: Business Tendency Survey in construction for the fourth quarter of 2016, SSO.

²² Source: Business Tendency Survey in retail trade for the fourth quarter of 2016, SSO.



Chart 19
Comparison between the concentration of the total and the non-performing loan portfolio of non-financial entities, by bank in %



Source: NBRM, based on the data submitted by banks. Note: The black line denotes the trend. MBDP AD Skopje was excluded from the analysis due to its specific activities (it has a small number of non-financial clients).

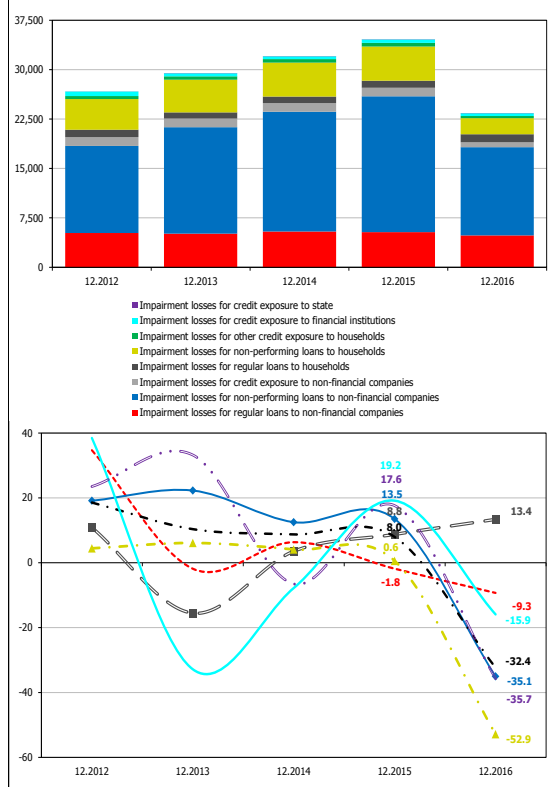
Lending to households brings lower risks to banks. The rate of non-performing loans of this sector is 2.6%, or 4.9%, without the effect of the write-offs. The lower level of this rate compared to the end of 2015 (5.2%), except to regulatory changes, is also related to the solid credit support to households, which arises from factors, on both the supply side and on the demand side of these loans. Analyzed by credit product, the largest decrease in the rate of non-performing loans²³ was recorded in "credit cards", which is probably a consequence of the compulsory write-offs (the loans based on credit cards are reduced on annual basis by Denar 824 million or by 6.1%) of this type of claims on households, despite the slower lending on this basis after the introduction of the higher capital requirements for the exposure based on transaction accounts and credit cards²⁴.

The concentration of the non-performing loan portfolio is extremely high, given that the ten largest non-performing exposures account for 62.0% of the total non-performing exposures of the banking system. This means that banks' non-performing claims mostly derive from several larger customers. Analyzing by bank, the share of the ten largest non-performing exposures in the non-performing part of the portfolio ranges from 26.5% to 93.3%. **The largest non-performing exposures of the banks are provisioned solidly (83.1%), reducing unexpected losses from these exposures and the possible negative effect on the own funds.**

²³ Regarding the car loans, this rate dropped by 17.3 percentage points, but traditionally, the rate of non-performing loans is the highest in this credit product. In recent years, there has been a trend of disappearance of this credit product in the banks' balance sheets.

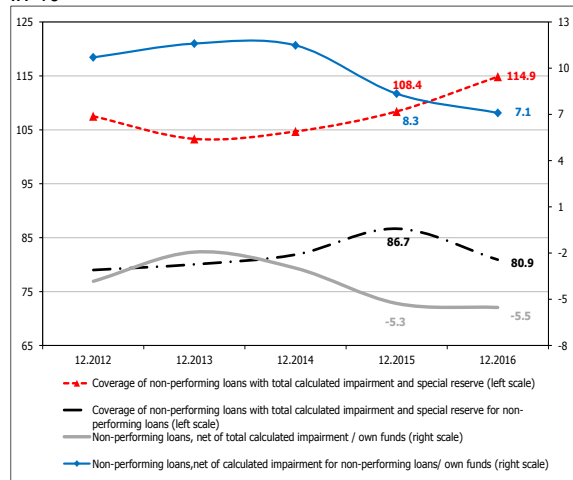
²⁴ The amendments to the Decision on the methodology for determining the capital adequacy (Official Gazette of the Republic of Macedonia No. 47/12, 50/13, 71/14, 223/15 and 218/16) increased the capital requirement for newly approved consumer loans (approved after 1 January 2016) with maturity equal to or longer than eight years (in order to slow down the high growth of this kind of loans). In order to prevent the redirection of the borrowing to overdrafts on transaction accounts and credit cards, the NBRM introduced higher capital requirements for the growth based on these products, realized in relation to 31 December 2015.

Chart 20
Structure (top) and annual growth rates (bottom) of impairment, by sector in millions of denars (top) in percentage (bottom)



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

Chart 21
Coverage of non-performing loans and share of net non-performing loans in banks' own funds in %



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

1.2 Banks' capacity to deal with any loss from non-performing loans

In 2016, impairment of the total banks' loan portfolio decreased by Denar 11,198 million, or by 32.4%. The significant decrease in impairment results from the above-mentioned transfer of fully provisioned non-performing loans to the off-balance sheet records.

The coverage of non-performing loans with allocated impairment is high, which indicates a satisfactory capacity of the banking system to absorb expected credit losses, and at the same time "mitigates" the level of the taken credit risk. At the end of 2016, the coverage of the non-performing loans with impairment for the non-performing loans decreased, but it is still high. The decrease in the indicator is due to the compulsory write-offs.

The solid coverage of non-performing loans with allocated impairment limits the negative effects of their possible complete default on banks' capital. Namely, non-provisioned part of non-performing loans covers only 7.1% of the total own funds of the banking system, which would cover unexpected losses in a hypothetical extreme event for a full default of these loans. In such an extreme assumption, the capital adequacy ratio of the banking system would reduce by only 1.1 percentage point (by 0.2 percentage points less than the assumed reduction in the previous year).



1.3 Other potential sources of materialization of credit risk

In 2016, the annual default rate of the credit exposure with regular status²⁵ equals 1.8% and is lower compared to the average risk level of the regular credits to the non-financial entities²⁶ (2.8%), determined by the banks. This shows that the banks are more careful and allocated somewhat greater impairment than the historical rate of default on exposures with regular status.

Looking at individual activities (in non-financial companies) and credit products (in households), the annual default rates generally register an unchanged trend, with the exception of the significant improvement in construction and activities related to real estate. The favorable shift of the annual default rate in the exposures from this activity is partly due to the high starting base (the significant deterioration of the loan portfolio quality during 2015). Also, in the same period, new credit exposures were granted to construction companies whose quality, in the next one-year period (31 December 2015 – 31 December 2016), is maintained at a solid level.

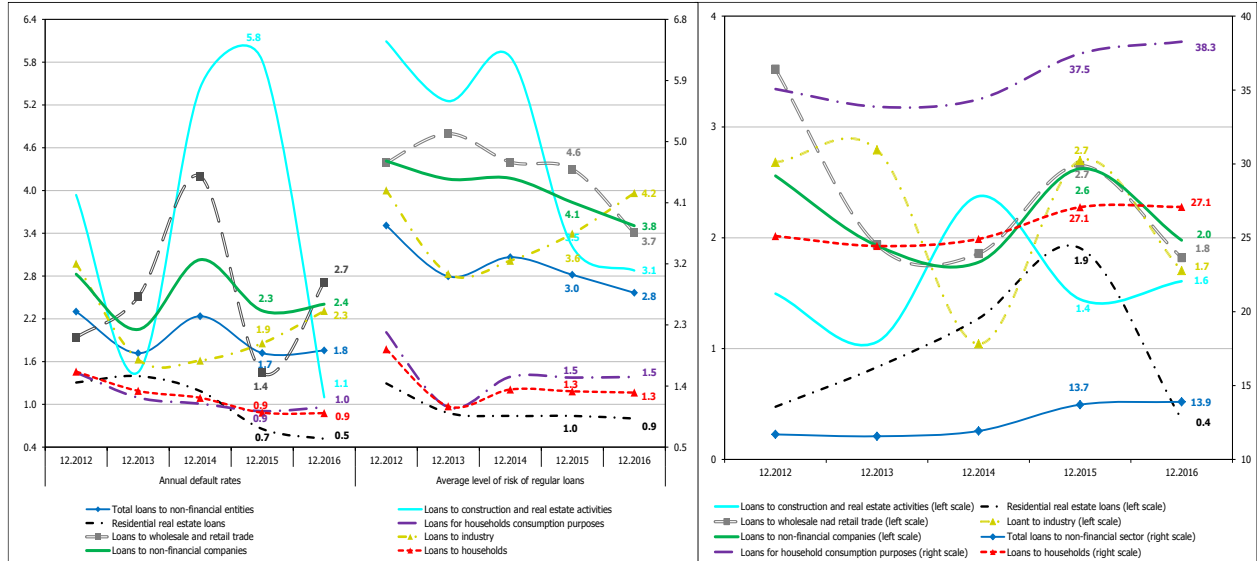
Such movements give certain indications of stopping the trend of deterioration of the exposure quality from the most riskily classified activity within the non-financial companies sector, which remains to be monitored and confirmed in the following period.

²⁵ The annual default rate of credit exposure is calculated as a percentage of credit exposure with regular status, which for a period of one year migrates into exposure with a non-performing status.

²⁶ Calculated as a ratio between the impairment of regular loans and the gross amount of regular loans.

Chart 22

Annual default rates* of credit exposure with regular status and average risk level of regular loans (left), and share of unsecured regular loans in total regular loans (right), by activity and credit product in %



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

*Note: The annual default rate of credit exposure is calculated as a percentage of credit exposure with regular status, which for a period of one year migrates into exposure with a non-performing status.

Despite the adequate coverage of regular loans with allocated impairment (taking into account the historical annual default rates), the high share of loans for which a certain collateral was established, should also be noted (86.1% of total regular loans to non-financial entities), which "mitigates" the level of credit risk taken by banks and may serve as a potential (secondary) source of recovery. Banks' more conservative policies regarding the coverage of loans with collateral enable them greater certainty in lending, but on the other hand, it can be a limiting factor for expanding the banks' lending activity and to impede the customer access to the necessary sources of financing. Also, the established collateral is usually a source of additional costs for both banks and customers (collateral establishment costs, collateral value regular assessment costs, takeover and sale costs of the property established as collateral, inability to sell the property at a favorable price, etc.). High degree of coverage with collateral is primarily



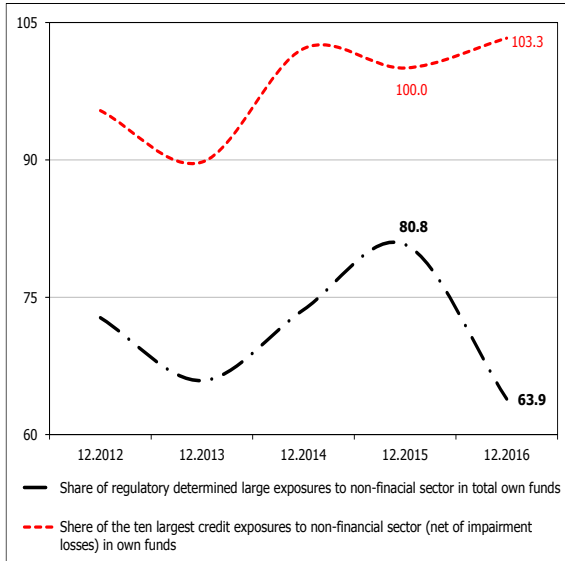
characteristic of regular claims on non-financial companies (in which the coverage with collateral is 98%²⁷). Regarding households, regular housing loans are almost entirely collateralized (99.6%), but the coverage of regular loans for financing consumption²⁸ is less than two thirds, which stems from the more liberal requirements for collateral due to the nature of this type of loans. Also, in 70.8% of the secured regular loans for financing consumption, the established collateral applies only to endorser and bill of exchange.

Despite the higher percentage of determined impairment for the regular loans, compared to the historical annual default rates of the regular credit exposure, as well as the high share of loans with established collateral, the losses from the possible materialization of the credit risk may exceed banks' expectations (allocated provisions), especially amid adverse business conditions.

²⁷ The degree of coverage is identical to non-performing claims.

²⁸ Credit exposure for financing consumption of natural persons includes the exposure on the basis of consumer loans, overdrafts on current accounts, credit cards, car loans and other loans, except residential and business premises loans.

Chart 23
Indicators of the level of concentration of credit exposure to non-financial entities in %



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

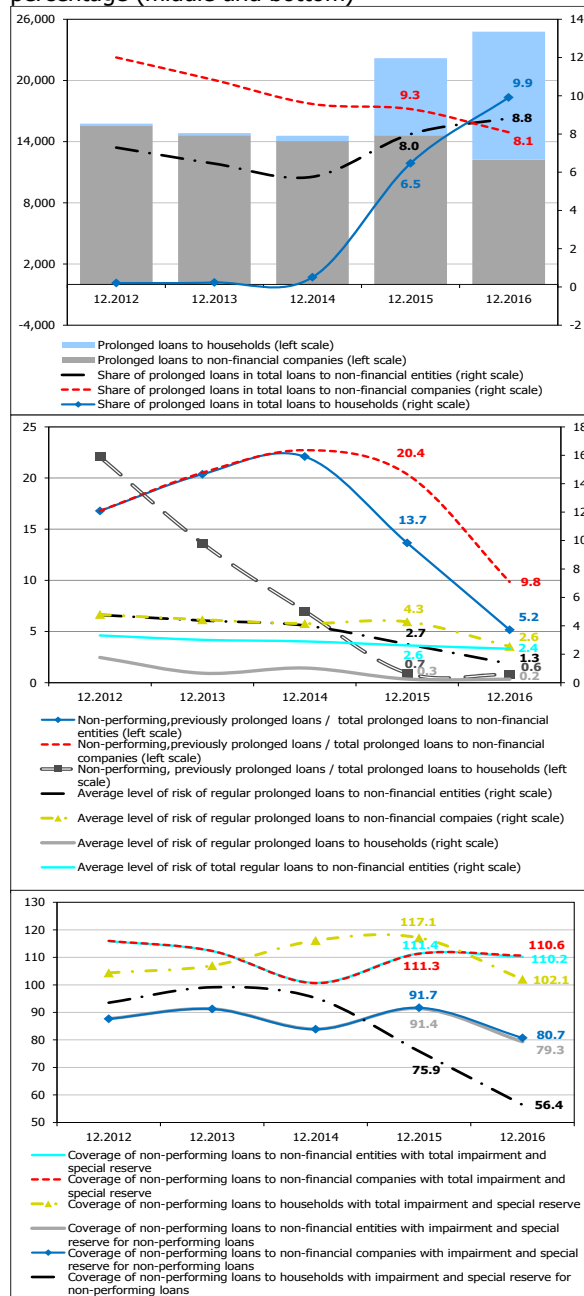
Losses due to credit risk materialization may be above banks' expectations due to the **relatively high concentration of credit portfolios of individual banks**, by both individual customers and by some other features of customers (for example, the affiliation to certain activities). This **points to a more pronounced connection between the quality of the total loan portfolio and the performance of individual activities, especially present amid unstable business conditions**. At the end of 2016, the ten largest banks' exposures to non-financial entities occupy a significant part of banks' own funds (103.3%), ranging from 5.3% to 191.7%, by bank. The average level of risk of these exposures of banks is usually low and corresponds with risk categories "A" and "B", but in the structure of the largest exposures of some banks, higher risk exposures were observed. High level of concentration of credit exposure is also indicated by the indicator for the share of large exposures²⁹ in the banks' own funds (63.9%), despite its downward trend compared to the previous year (80.8% as of 31 December 2015). The concentration is especially high with some banks (analyzed by bank, the share of large exposures to non-financial entities ranges from 0% to 194.4%). Given the high share of large exposures in own funds, maintaining of their risk level is especially important, because in the event of materialization of any risk of these exposures and the impossibility to be collected, the effect on banks' own funds would be substantial.

²⁹ Large exposure to a person or persons related thereto is an exposure equal to or higher than 10% of bank's own funds.



Chart 24

Dynamics of prolonged loans and structural indicators (top) and indicators of their quality (middle and bottom) in millions of denars and in percentage (top), in percentage (middle and bottom)

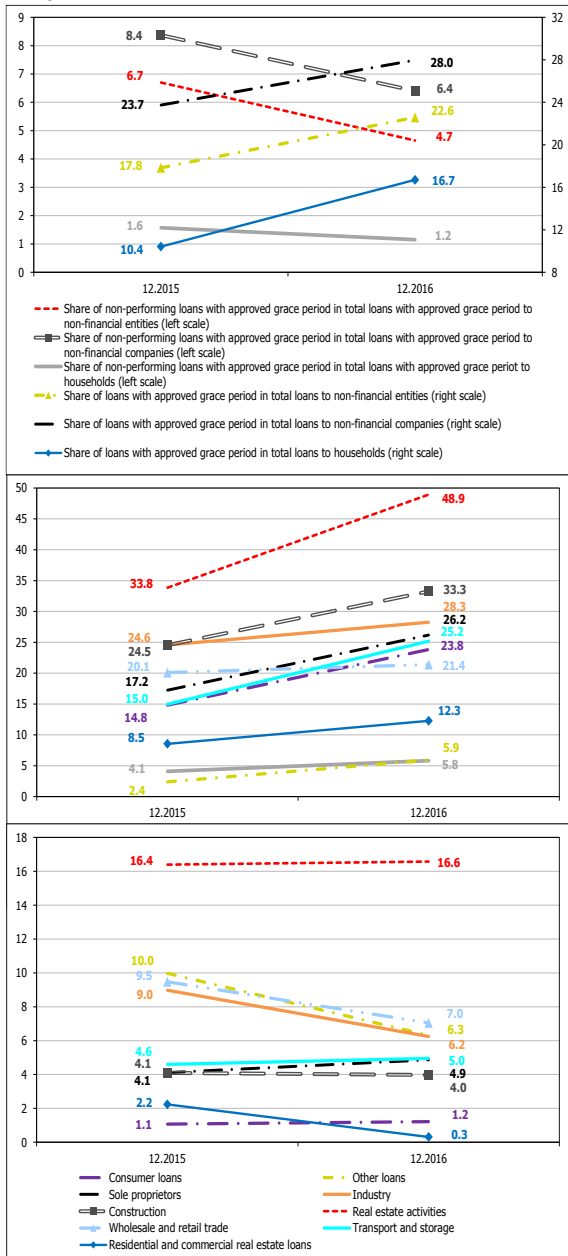


Source: NBRM's Credit Registry, based on data submitted by banks.

Prolonged loans (according to the regulations, the extension of the maturity of the loans is not a result of a deteriorated financial status of customers) represent 8.8% of total loans to non-financial entities. This share is at a similar level in both segments of the non-financial sector (8.1% in non-financial companies and 9.9% in households). The growth of the share of the prolonged loans in the household portfolio is particularly evident, however, the extremely high quality of these prolonged loans, should also be noted³⁰. The rate of the non-performing loans to non-financial companies that were previously prolonged (9.8%) is almost at an identical level as in the total loan portfolio in this segment and decreased significantly compared to the end of 2015 (when it was 20.4%). These movements in 2016 probably suggest that a large part of the prolonged loans to non-financial companies that had a non-performing status were covered by the regulatory obligation for compulsory write-off of fully provisioned non-performing claims. Hence, this category of loans needs to be monitored carefully, because in the period before 2016, with a large part of the prolonged loans, exactly the deteriorated financial status of customers was probably the reason for extension of the maturity (according to the regulation, the extension of the maturity of the loan due to a deteriorated financial status of the customer has a restructuring treatment).

³⁰ As measured by the share of non-performing loans that were previously prolonged loans in total prolonged loans to households (0.6% as of 31 December 2016), the average level of risk of regular prolonged loans to households (0.2% as of 31 December 2016) and the solid coverage of non-performing loans to households that were previously prolonged, with their total and their own impairment (102.1% and 56.4%, respectively).

Chart 25
 Loans quality indicators with approved grace period (top), share of loans with approved grace period in total loans (middle) and share of non-performing loans with approved grace period in total loans with approved grace period (bottom), by activity and credit product in %



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



Loans with an approved grace period³¹ are significantly present in banks' credit portfolios and account for around 22% of the total loans to non-financial entities (i.e. 28.0% and 16.7% of the total loans to non-financial companies and households, respectively), with a pronounced upward trend in the last year. More than one third (36.5%) of the loans of construction and activities related to real estate are with a grace period, and this share is higher in industry (28.3%) and transport and storage (25.2%). At the same time, analyzing credit products to households, about a quarter of the consumer loans are with approved grace period, while for residential and commercial real estate loans this share is 12.3%, with a pronounced upward trend. The increased share of loans with an approved grace period supports the financial intermediation process and points to increased flexibility of the banks and readiness to meet the specific needs of their customers (for example, to finance a specific project). However, one should not neglect the fact that until the approved grace period expires (period in which only interest is paid) banks have smaller opportunity for timely insight into the current creditworthiness of the customer. It is positive that around 40% of loans with an approved grace period (43.5% and 28.5% of loans to non-financial companies and households, respectively) have a relatively short grace period, not longer than one year, and the quality level, as measured by the share of non-performing in total loans with a grace period,³² is 4.7%. In the non-financial companies segment this share is higher and equals 6.4%³³, while that of the households, is significantly lower and accounts for only 1.2%³⁴. However, the rate of non-performing loans generally registers a downward

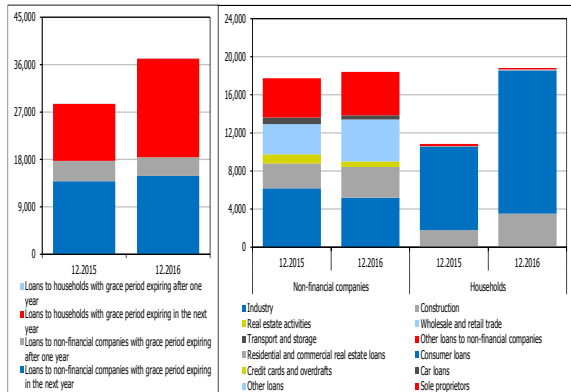
³¹ The grace period is calculated as the difference between the date of first maturity of the principal and the date of approval for credit agreements where this difference is greater than 90 days.

³² Those are mainly loans for which the grace period is approved in restructuring.

³³ In terms of individual activities, the credit risk of non-financial companies is higher in construction and activities related to real estate (7.5%), while industry is second-ranked activity in which the rate of non-performing loans (6.2%) is at a similar level as in the non-financial companies sector.

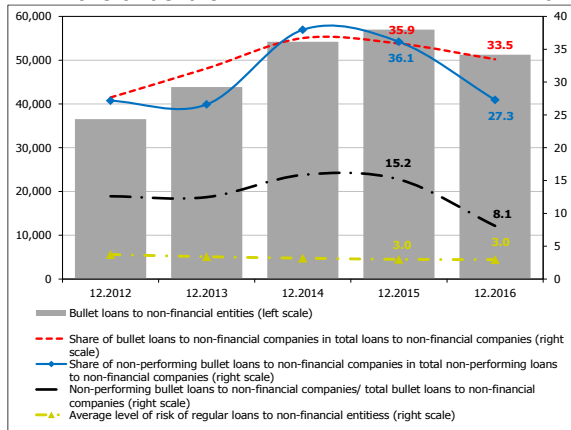
³⁴ Analyzing credit products to households, the rate of non-performing loans is higher only with other loans (6.3%) and loans to retailers (4.9%), but their share in total loans to households with grace period is negligible (2.9%), while with consumer loans which account for 76.1% of the loan portfolio of households with an approved grace period, the rate of non-performing loans is at an identical level (1.2%).

Chart 26
Structure of loans with a grace period that is still not expired on corresponding date by sectors and date of expiry (left) and structure of loans with a grace period that is still not expired, by individual activities of non-financial companies and credit products to households (right) in millions of denars



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

Chart 27
Dynamics of bullet loans and indicators of their structure and quality (in chart – SPL) in millions of denars in %



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

trend in non-financial entities and in individual sectors.

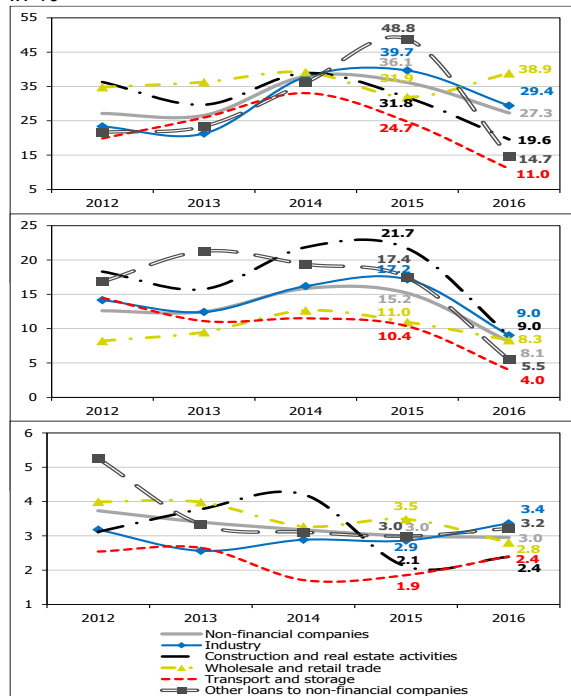
Bullet loans represent a special category of loans, in which the banks have no insight into the current customers' regularity in settling liabilities based on principal until the expiration of the final maturity date of loans. Bullet loans are significantly present in the banks' portfolios of non-financial companies, where at the end of 2016, about one third of the loans have a clause for single repayment of principal, but this share registers a downward trend in the last two years. Non-performing loans with single repayment of principal account for significant 27.3% of total non-performing loans to non-financial companies, and their share is the highest in wholesale and retail trade with 38.9% and industry with 29.4%. Contrary to the higher inherent risk of bullet loans (as banks have no insight into the current customers' regularity in settling liabilities based on principal), the impairment, determined by banks, for regular loans to non-financial companies with single repayment of principal is lower (3.0%) compared to the total loan portfolio composed of non-financial companies (3.8%)³⁵, signaling that the losses from materialization of the credit risk of these loans can be higher than banks' expectations.

³⁵ Analyzed by individual activities of non-financial companies, the difference between the average level of risk of total regular loans and regular bullet loans is as follows: industry 4.2% and 3.4%; construction and activities related to real estate 3.1% and 2.4%, respectively.



Chart 28

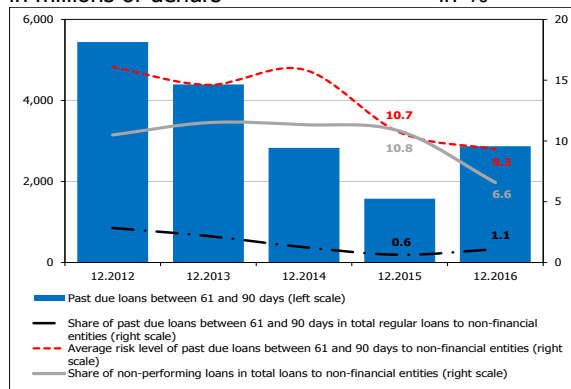
Share of non-performing bullet loans in total non-performing loans (top), non-performing bullet loans in total bullet loans (middle) and average level of risk of performing bullet loans (bottom), by activity in %



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

Chart 29

Dynamics and average risk level for loans with due part for payment of principal between 61 and 90 days in millions of denars in %

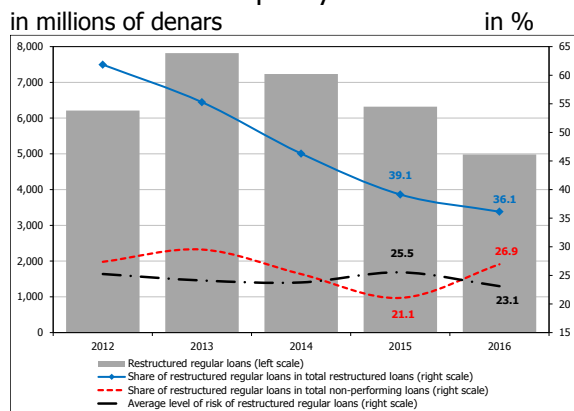


Source: NBRM's Credit Registry, based on data submitted by banks.

The delayed repayment of individual claims for more than 90 days is one of the basic criteria for acquiring a non-performing status. Hence, the possible increase in **due loans with delayed repayment of principal between 61 and 90 days represents an important signal** for increase in the level of non-performing loans in the following period, i.e. the potential future materialization of credit risk in banks' portfolios. In 2016, these loans registered a significant increase of Denar 1,294 million, or 82.1%³⁶, which stems from the deterioration of the quality of some customers of the non-financial companies sector at the end of the year. Assuming that the due debt of none of the due loans between 61 and 90 days will be collected in the next month, as of 31 December 2016, 1.1% of total regular loans would become non-performing, and therewith only on this basis, non-performing loans would rise by Denar 2,869 million, or 15.5%. However, at the beginning of the next year (January 2017), the realized monthly growth with non-performing loans is significantly lower than this extreme assumption, accounting for only 0.2% or Denar 42 million, indicating a **solid collection of the loans with past due part of 61 to 90 days and only an incidentally increased delay longer than 61 day (up to 90 days).**

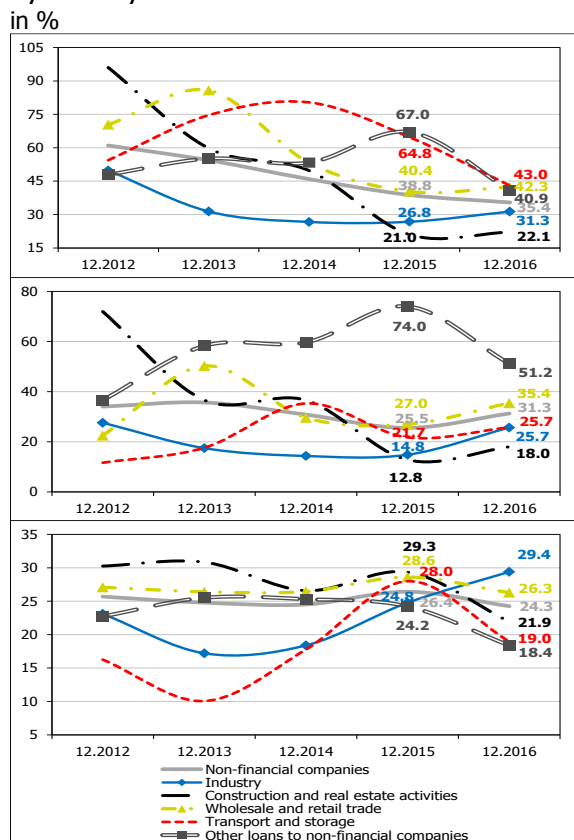
³⁶ The increase in due loans with delayed repayment of principal from 61 to 90 days includes the due, but also the undue part of the principal of these loans.

Chart 30
Dynamics of restructured regular loans and indicators of their quality



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

Chart 31
Share of restructured regular in total restructured loans (top) and in total non-performing loans (middle), and average risk level of restructured regular loans (bottom), by activity



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

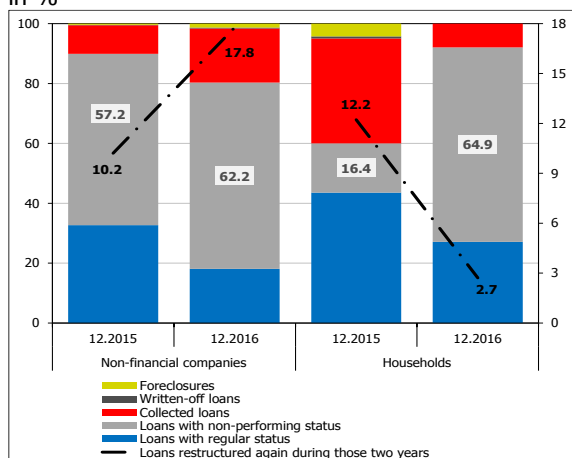
The trend and the quality of the restructured loans are an important indicator of the credit risk, as they are associated with financial difficulties of banks' customers that probably would have received non-performing status if the banks had failed to restructure them. Restructured regular loans account for around one third of the total restructured loans and register a steady downward trend over the years. Non-financial companies prevail in the structure of these loans. Assuming that the restructuring of regular loans was unsuccessful, these loans would have received non-performing status, and the rate of non-performing loans at the end of 2016 would be higher by 1.8 percentage points. In non-financial companies, this rate would be higher by 3.1 percentage point, which highlights the higher risk of lending to the corporate sector.

The banks' success in restructuring of loans is assessed more elaborately by monitoring the performance of loans two years after the restructuring, assuming that two years are sufficient to see the effects of this activity of the banks. Loans that are considered "successfully" restructured are those that are collected or have regular status two years after restructuring. Thus, at the end of 2016, restructuring was successful in just over a third of the restructuring conducted during 2014.

In recent years, there was an improvement of the banks' capacity for timely and appropriate adjustment of the credit conditions in accordance with the current financial difficulties of customers. The faster decrease in restructured regular loans (of Denar 1,336 million, or 21.1%) arises from the solid collection during 2016 of loans that were restructured earlier, which indicates an improvement of the banks' practices for timely identification of financial difficulties of customers and consequently, timely and proper restructuring of the claims according to the needs and abilities of their customers. Despite the effectiveness of conducted restructuring, the collection of a significant portion of the

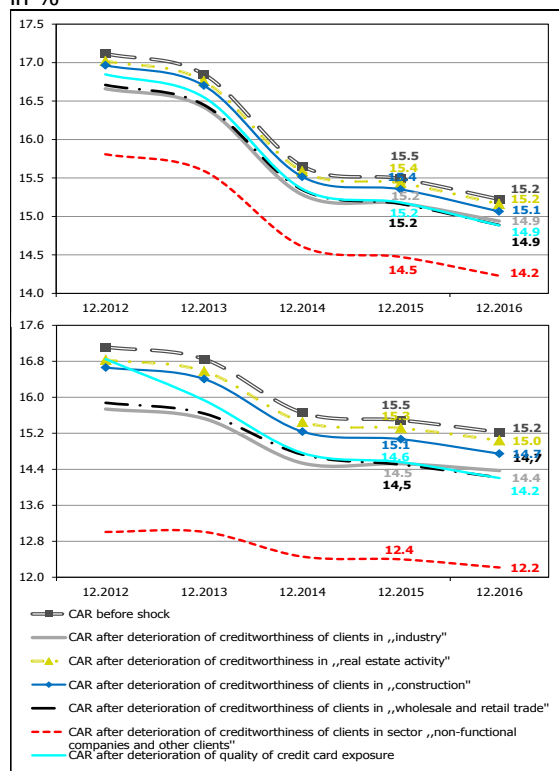


Chart 32
Structure of loans restructured two years ago, on corresponding date in %



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

Chart 33
Capital adequacy ratio, by activity and credit product, after the first (top) and the second (bottom) simulation for both sectors in %



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

restructured loans indicates an improvement of the situation of customers with financial difficulties. Under such positive signals, it is considered that the restructuring conducted in the past two years (2015 and 2016) is characterized by far higher quality, which would be confirmed by such a similar analysis conducted in the following period.

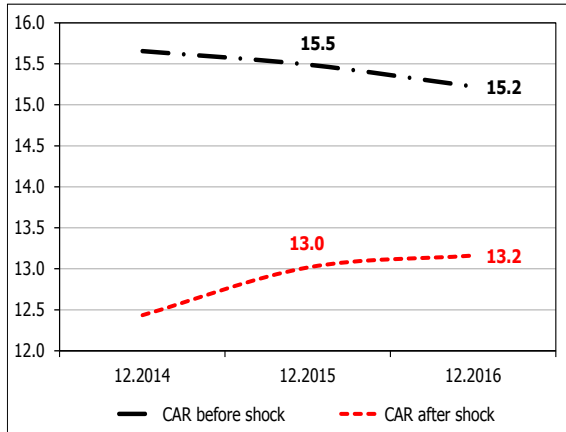
1.4 Stress test simulation of the banking system's sensitivity to higher credit risk

Stress tests conducted on a regular, quarterly basis tend to examine the sensitivity of the banking system in case of deterioration of the quality of certain segments of the loan portfolio. They consist of simulation of hypothetical migration of 10% (first simulation) and 30% (second simulation) of credit exposure to non-financial companies (by activity) and households (by credit product), separately, and to the two sectors jointly, to the following two higher risk categories. The results of the simulations confirm the resilience of the banking system to the simulated shocks, but are somewhat weaker in comparison with the previous year. This is due to the lower capital adequacy of the banking system before the simulations, but also to the increased sensitivity of some banks to the assumed shocks. Yet, the capital adequacy of the banking system does not go below 8% in any of the simulations, although individual banks reveal hypothetical need for recapitalization, but only in the event of simulated shocks of the second extreme simulation³⁷. The largest decrease in the capital adequacy ratio during the implementation of the two simulations was recorded in case of deterioration of the creditworthiness of clients from industry and wholesale and retail trade activities, as well as in the exposure based on consumer loans.

Three combined hypothetical simulations of deterioration of the loan portfolio quality of

³⁷ The capital adequacy goes below 8% in two banks in the event of simulated shocks of the second simulation.

Chart 34
Capital adequacy ratio before and after the three combined shocks
 in %



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

non-financial entities are conducted as an additional test of the banking system's sensitivity to the materialization of the credit risk. More precisely, it is assumed that all non-performing loans to non-financial entities are completely uncollectible, the overall regular restructured exposure receives non-performing status, and banks are conducting new restructuring of the regular part of the loan portfolio which according to the volume corresponds to the amount of restructured exposures which received a non-performing status³⁸. In this combined very extreme simulation, the capital adequacy ratio of the banking system is reduced to 13.2% and is only by 2.1 percentage point lower than the current level (less than the assumed reduction at the end of the previous year, which was 2.5 percentage points).

³⁸ A more detailed explanation for the manner of conducting the three combined hypothetical simulations is given in the Report on the risks in the banking system of the Republic of Macedonia in the third quarter of 2016.

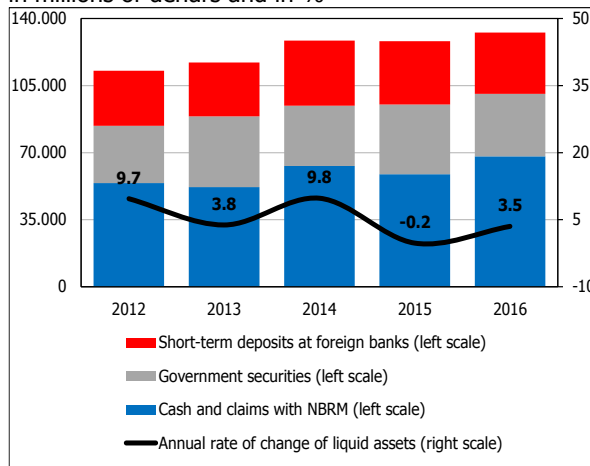


2. Liquidity risk

In 2016, the liquidity of the banking system, as one of the key factors for its stability and resilience to shocks, was maintained at a satisfactory level. Despite the episodes for realization of the liquidity risk due to evident deposits outflow in the first half of 2016 (primarily, in April and May, when deposits of non-financial entities decreased by 2.2% and 0.7% monthly, respectively) banks ensured continuous operation. Namely, banks' prudence and good liquidity management, as well as the monetary measures of the National Bank contributed to fast a stabilization of the deposits, and by the end of the year liquidity indicators approached the level of the end of 2015. Simulations for combined liquidity shocks confirm that banks in the Republic of Macedonia maintain a satisfactory level of liquidity assets which enables proper management with the liquidity risk and satisfactory resilience to the suspected extreme liquidity outflows.

2.1 Dynamics and composition of liquid assets

Chart 35
Liquid assets, structure and growth
in millions of denars and in %



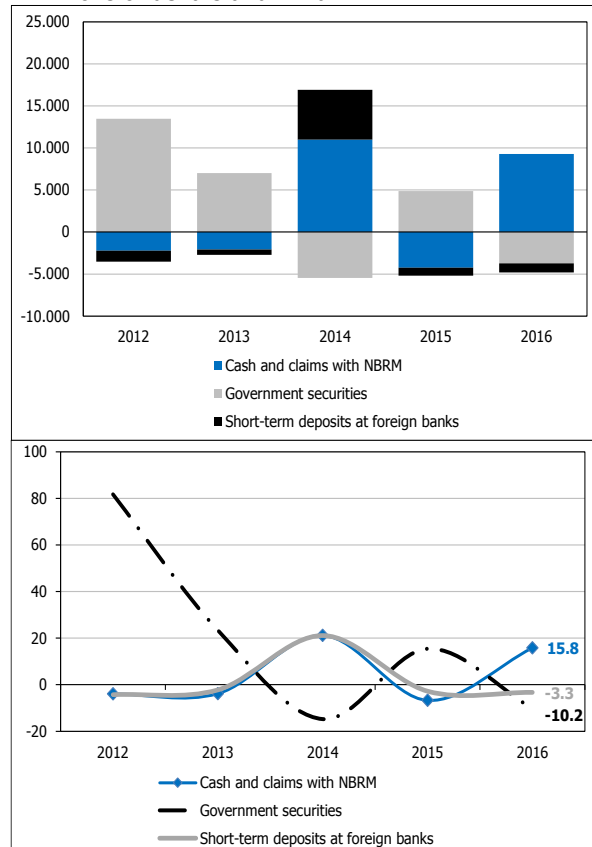
Source: NBRM, based on the data submitted by banks.

At the end of 2016, liquid assets³⁹ of the banking system amounted to Denar 132,663 million. Despite the volatility during the year, as a result to the prolonged instability in the domestic political environment and consecutive negative events in the depository market⁴⁰, the liquid assets of the banking system increased by Denar 4,483 million (or by 3.5%), on an annual basis. The annual increase of liquid assets is entirely due to the increased amount of cash and banks' placements with the National Bank. Other components of banks' liquid assets (banks' placements in government securities and short-term foreign currency assets in foreign banks) decreased on an annual basis. Hence, in the structure of banks' liquid assets there was an annual decrease of the share of government securities (from 28.4% to 24.2%) and short-term deposits with foreign banks (from 25.8% to 24.2%), in order to

³⁹ 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, foreign currency deposits and 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) book value of placements in securities issued by central governments i.e. government securities issued by the Republic of Macedonia and foreign countries. For the purposes of analyzing the liquidity, assets and liabilities in denars with foreign exchange clause are considered denar assets and liabilities.

⁴⁰ In the first half of the year, there were certain pressures on the banks' deposit base, due to the worsened expectations of economic agents, caused by the action of the non-economic factors - the destabilizing political situation in the country and publicly expressed "doubts" by individuals about the stability of banks and deposits with them. This was particularly felt in April and May 2016, when the banking system faced with deposit withdrawal by natural persons, as well as increased demand for foreign currency. Thus, the decline in deposits was mostly pronounced in Denar household deposits, whose monthly decrease rate in April and May amounted to 3.0% and 3.6%, respectively.

Chart 36
Absolute (top) and relative (bottom) annual change of liquid assets by components in millions of denars and in %



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

increase the structural share of assets and placements in the National Bank instruments (from 45.8% to 51.6%).

The annual growth generator of **assets and claims of banks from the National Bank** in 2016 (by Denar 9,290 million, or by 15.8%), was mostly the growth of placements of banks in foreign deposits with the National Bank and deposit facility with the National Banks with a maturity of seven days, whereas banks' investments in deposit facility with the National Bank overnight⁴¹, were significantly lower. Namely, reactivating the auctions for foreign currency deposit with the National Bank, as a monetary instrument, and **changing the conditions for placements of foreign currency deposits of domestic banks with the National Bank**⁴², which allowed banks to make placements in foreign currency deposits with the National Bank with positive interest rate (unlike the negative interest rates which dominate in placements in euros in the international financial markets), significantly increased the amount of placed foreign currency deposits with the National Bank⁴³. Hence, the changes in the structure of total liquid assets according to currency characteristics, were directed in increasing the share of banks' foreign currency liquid assets, which reached 31.0% (from 28.6% in the previous year). Contrary to these movements, banks investments in CB bills in 2016 registered an annual decrease of 8.3%. CB bills auctions during 2016, were conducted through a volume tender and limited amount offered, and throughout the year the National

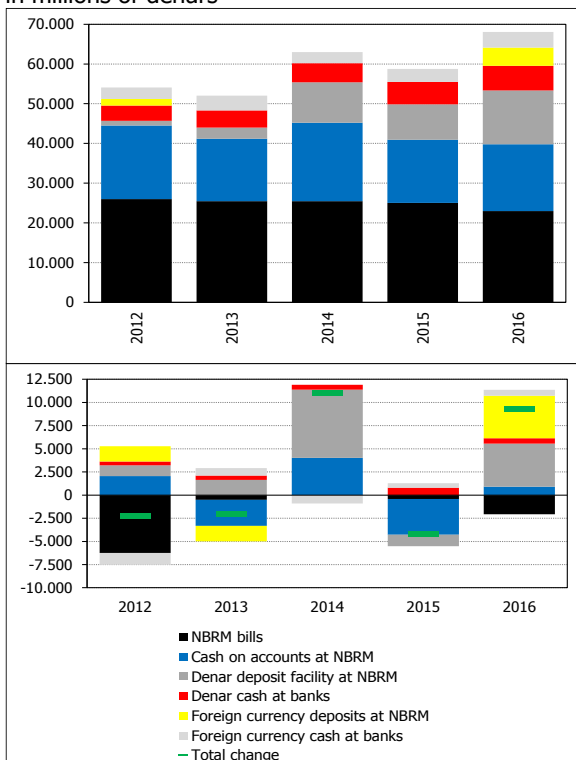
⁴¹ According to the Decision on the deposit facility ("Official Gazette of the Republic of Macedonia" No. 49/12, 18/13, 50/13 and 35/15), the banks could place deposits with the National Bank every working day with a maturity of one business day and once a week with a maturity of seven days. These deposits are placed without the possibility of partial or full early withdrawal. During the whole 2016, the interest rates on these deposits equaled 0.25% on overnight deposits and 0.5% on seven-day deposits.

⁴² On 5 May 2016, The National Bank Council adopted a new Decision on the foreign currency deposit with the National Bank of the Republic of Macedonia (Official Gazette of the Republic of Macedonia No. 87/16), where the key change compared to the provisions of the previously valid Decision on foreign currency deposit with the National Bank of the Republic of Macedonia (Official Gazette of the Republic of Macedonia No. 42/2011), is in the method for determining the deposit interest rate in euros which banks will place with the National Bank. Namely, with the previously valid Decision these interest rates were equal to the interest rates placed in the central banks in the euro area, in the international financial institutions and yields of treasury bills of the member states of the euro area, and with the new Decision, the interest rates are determined by the Governor.

⁴³ NBRM ceased to hold auctions of foreign currency deposits starting from 28.10.2016. The Decision on the foreign currency deposit with the National Bank remains in force, which enables reactivation of this instrument according to the market circumstances.

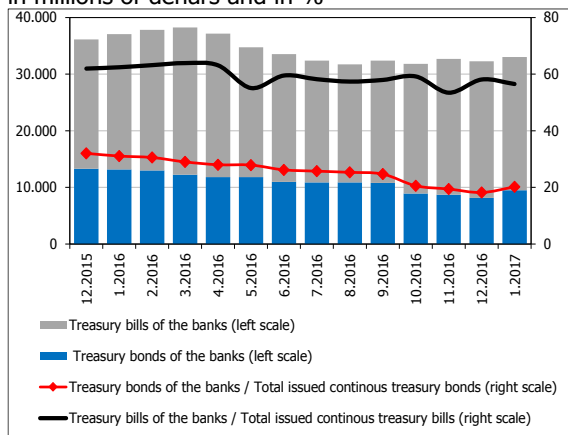


Chart 37
Assets and claims of banks from the National Bank, by individual instruments, amount (top) and annual change (bottom) in millions of denars



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

Chart 38
Banks' investments in domestic government securities in millions of denars and in %



Source: Ministry of Finance and NBRM, based on data submitted by banks.

Note: Structure of investments in government securities is presented according to their nominal value.

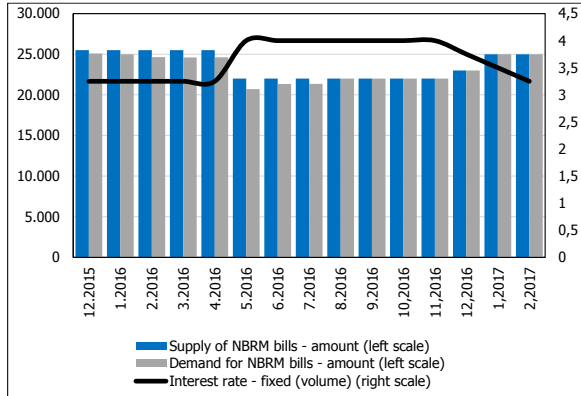
Bank made few changes in the interest rate level and the offered amount of CB bills⁴⁴.

Banks' investments in domestic government bills registered an annual decrease (of Denar 7 billion or by 18.4%, according to the net book value). Namely, in the first quarter of 2016, in conditions of withdrawal of significant amounts of deposits from the banking systems followed by the reduction of liquid assets, banks used the placements on government securities (as one of the most liquid instruments) for amortization of the liquidity shock. On the other hand, in the fourth quarter of 2016, banks' liquid assets gradually returned to the levels prior the crisis episode, but the supply of government securities, during this period of the year decreased, given the previous borrowing of the government in the international markets (through issuing Eurobond). Thus, banks' placements in continuous government securities⁴⁵ registered an annual decrease of 10.6% (December 2016 - December 2015, according to their nominal value), which was entirely defined by the reduction of banks' placements in government bonds (the maturity structure of bonds owned by banks, almost two-thirds are bonds with a lower maturity, two to three years). However, banks

⁴⁴ As a reaction to the banks' deposits outflow and the need of amortizing the negative expectations of the economic agents and to the intensified pressures in the foreign exchange market, in May 2016, the National Bank increased the CB bills interest rate by 0.75 p.p. (from 3.25% to 4.0%). However, influenced by the stabilization of the economic agents' expectations and significantly higher liquidity structure of the banking sector, in December 2016, January and February 2017, the National Bank conducted three consecutive reductions by 0.25 p.p. to the interest rate, which was reduced to 3.25 (which was the amount prior the events associated with oscillations of the deposit and foreign exchange market). The changes in the CB bills interest rate level were followed by multiple changes in the level of the offered amount of CB bills, and such: in May 2016 with the reduction from Denar 25.500 million to Denar 22.000 million (where the National Bank sterilized a smaller amount of the assets from the system), in December 2016 with the increase from Denar 22.000 million to Denar 23.000 million, in January 2017, also, with the increase from Denar 23.000 million to Denar 25.000 million, and in March 2017 with the increase to Denar 30.000 million i.e. by Denar 5.000 million over the level of past due CB bills (Denar 25.000 million).

⁴⁵ Treasury bills and government bonds are considered as continuous government securities issued in the domestic financial market, and structural securities i.e. Bonds for denationalization are not included.

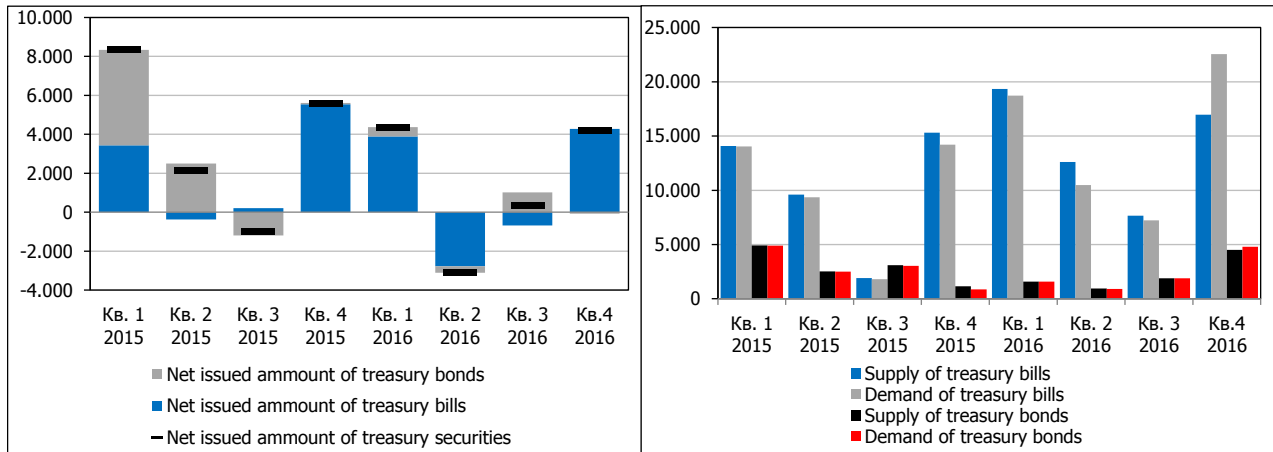
Chart 39
Supply and demand and interest rate at auctions of CB bills of the National Bank in millions of denars and in %



Source: the National Bank

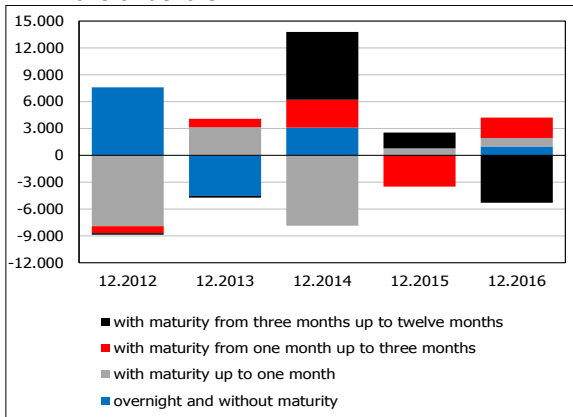
still have the role of the most important investor in the government securities primary market with a share of almost 40.0% in the total value of issued government securities.

Chart 40
Net issued amount (left) and supply and demand (right) of domestic government securities in millions of denars



Source: Ministry of finance and NBRM.

Chart 41
Annual change of short-term deposits in foreign banks in millions of denars

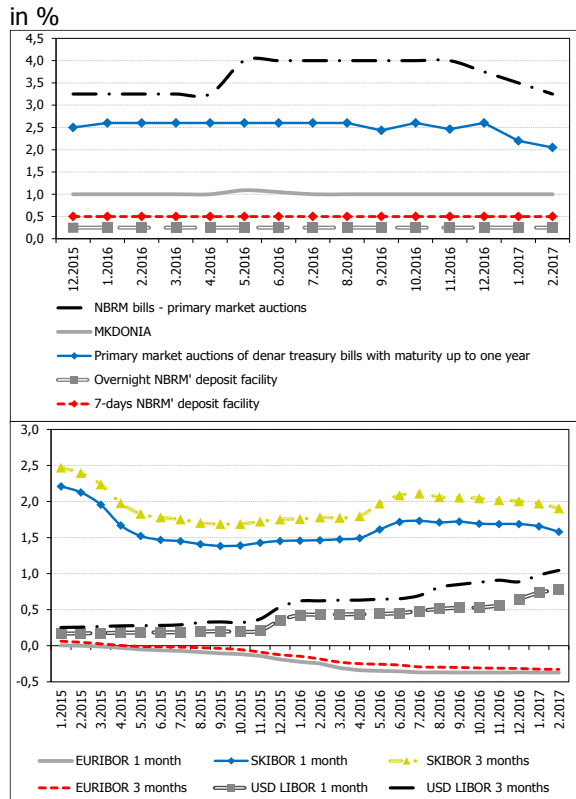


Source: NBRM, based on the data submitted by banks.

The most important currency component of banks' liquid assets⁴⁶ are assets placed in foreign banks with contractual maturity lower than one year. In 2016, these assets continued to decrease at a slightly faster pace, compared to the previous year, but still remained at a certain stable level, which enables their use both for operational

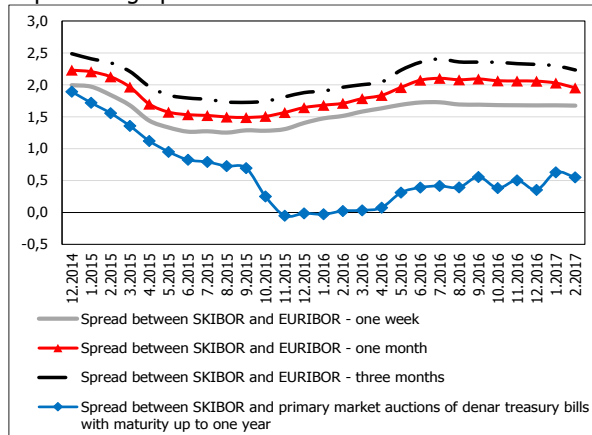
⁴⁶ Foreign currency liquid assets comprise the short-term deposits with foreign banks, including assets in corresponding accounts, investments in foreign government securities, foreign currency liquid assets and placements of foreign currency deposits with the National Bank.

Chart 42
Key domestic interest rates (top) and key interbank interest rates SKIBOR, EURIBOR, and LIBOR for US-dollar (bottom) in %



Source: National Bank and website of European Money Markets Institute for Euribor and website of Federal Reserves Bank in St. Luis (so-called FRED) for LIBOR for US dollars.

Chart 43
SKIBOR spread in relation to EURIBOR, for certain maturities in percentage points



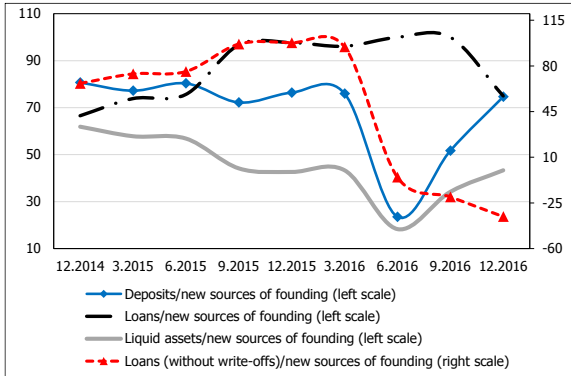
Source: NBRM calculation based on publicly available data for interbank interest rates.

purposes and the needs for management primarily with the liquidity and currency risk. The reduction of these assets is mainly associated with enabled foreign currency investments with the National Bank. The largest portion of short-term assets invested in foreign banks are placed overnight i.e. are in the corresponding accounts of the domestic banks abroad, which often bring low and even negative yields. Contrary to the developments of the previous year, in 2016, assets with a maturity from three to twelve months register the largest decrease.

After the reduction of the key interest rate on CB bills in December 2016 (from 4.0% to 3.75%), banks moderately reduced the indicative interest rates for interbank trading in deposits (SKIBOR), while the interbank interest rate on performed transactions overnight (MKDONIA) remained stable at the level of 1.0%. Also, certain changes were registered in key interest rates of international interbank markets. After FEDs Decision to increase the key interest rate in December 2015 and the expectations for another increase (that took place in December 2016 and March 2017), the interbank interest rate LIBOR for US dollars registered a certain growth. Contrary to this, EURIBOR, not only in the shorter maturities but also in the longest maturity of twelve months, remained in the zone of negative values, which even additionally deepened⁴⁷. The interest rate spread between market indicative interest rates in RM and in the Euro area widened in the first half of 2016, while in the second half of the year a certain narrowing was registered.

⁴⁷ European Central Bank showed signs of undertaking additional measures to further loosen the monetary policy, which during March 2016 were translated into decisions (reduction of the interest rate on key operations for re-financing from 0.5% to 0.0%, on deposit interest rate from -0.30% to -0.40% and on overnight credits from 0.30% to 0.25%).

Chart 44
Share of new sources of founding, annually in %



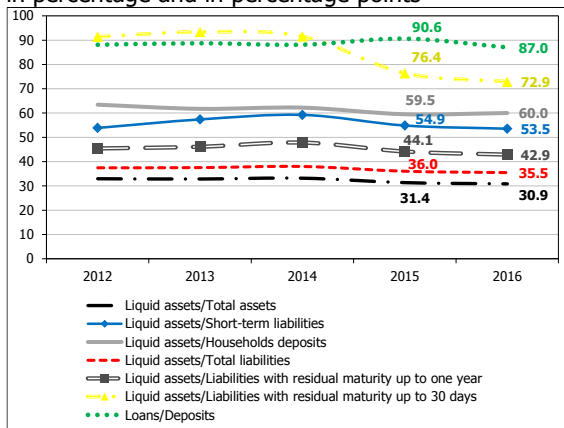
Source: NBRM, based on the data submitted by banks.

The volume of the new sources⁴⁸ of founding by banks showed a high level of sensitivity from the domestic political events and the speculative events that caused turmoil on the deposit market. However, the deposits of domestic non-financial entities continue to have a dominating role in the founding sources for domestic banks' activities, which is one of the main characteristics of the Macedonian banks⁴⁹.

In 2016, banks' willingness to undertake risks was maintained on a relatively high level. Namely, more than 70% of the new sources of funding for banks in 2016 were used for lending.

2.2 Liquidity indicators

Chart 45
Movement of the liquidity indicators of the banking system in percentage and in percentage points



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

Note: By banks, at the end of 2016, the share of liquid assets in total assets ranged from 16.4% to 43.7% (2015: from 15.5% to 39.6%), with a median of 27.3%. The coverage of short-term liabilities with liquid assets ranged from 32.6% to 77.6% (2015: from 31.7% to 75.2%) with a median of 50.1%, while the coverage of liabilities with residual maturity up to 30 days ranged from 37.2% to 146.4% (2015: from 36.9% to 163.1% with a median of 70.5%). Loans/deposits indicator ranges from 61.9% to 119.7% (2015: from 72.5% to 128.7%), with a median of 93.2%

In 2016, the liquidity of the banking system, followed through liquidity indicators⁵⁰ remained satisfactory and stable, despite the fact that the indicators registered a minor decline on an annual basis. The decrease was present in the first half of the year, in conditions of negative oscillations of the deposits, and solid growth of banks' credit activity. The reduction trend was not of equal intensity in individual indicators. Traditionally high amount of liquid assets (as a percentage of total assets) maintained by banks, enabled continuous servicing of the demand for deposits payment in the second quarter of the year. But, this in turn, led to reduction of the liquid assets

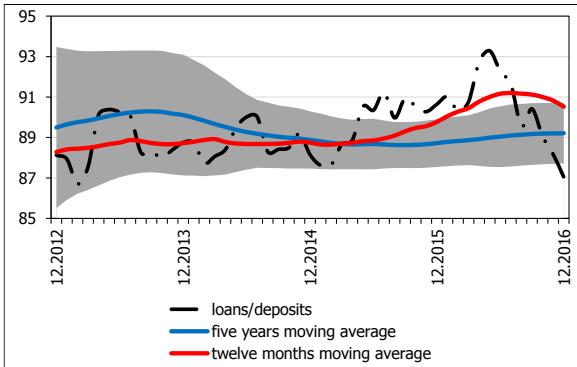
⁴⁸ The new sources of funding for banks and their use are obtained in an indirect calculation, i.e. by changing the balances of individual accounts of the banks' balance sheet. The effect on the banks' cash flows, which is due to the income and expenditures that do not represent cash outflow or inflow (e.g. loan write-offs, revaluation of securities available for sale or held for trading, depreciation of fixed assets, net foreign exchange differences, etc.) is an integral part of the change in the corresponding balance sheet items, the respective inflow or outflow refers to, while the effect of the impairment of loans and other assets is included in the total sources of funding. In the calculation the effect of domestic interbank claims and liabilities is excluded.

⁴⁹ In 2016, the share of deposits of non-financial entities in the structure of the new sources of funding for banks is almost 80%.

⁵⁰ The calculation of liquidity indicators of the banking system does not take into account resident interbank assets and liabilities.

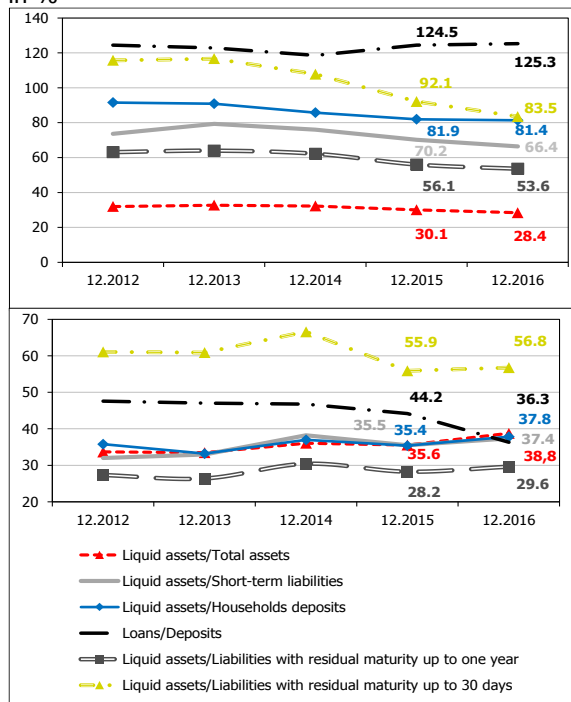


Chart 46
Loans/deposits
in %



Source: NBRM, based on the data submitted by banks.
Note: The shaded part in the chart denotes the range of one standard deviation above and below the five-year moving average of the indicator.

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



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

in the second quarter of the year⁵¹, which also caused decrease of coverage indicators of individual liability categories with liquid assets. However, by the end of 2016 banks' liquid assets increased, and the liquidity indicators almost returned to the levels of the end of 2015.

In 2016, the ratio between loans and deposits of the non-financial entities registered a significant improvement (decrease by 3.6 percentage points compared to 2015). Namely, this indicator is more than one standard deviation above its twelve-month moving average, as well as under its five-year moving average. The reason behind the fall lies in the regulatory write-off of fully provisioned non-performing loans. If the effect of the write-offs is excluded, this indicator would amount to 91.2% and would be higher compared to the previous year, but still lower than 100%. Only in four banks (constituting 19% of the assets of the banking system⁵²) this indicator is above 100%, which points to funding part of the loans through non-deposit sources of assets, which, normally, are considered a funding source with a higher variability.

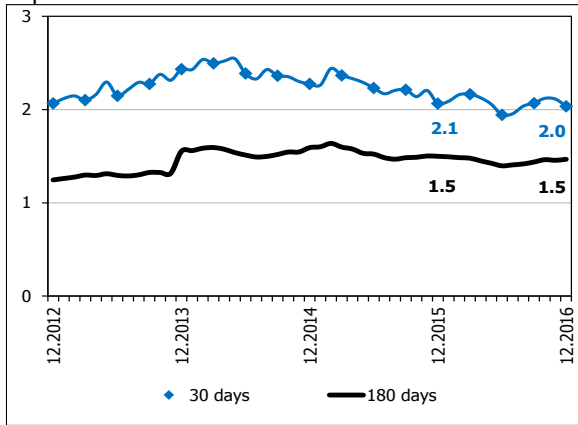
In terms of **currency characteristics of the liquidity assets and liabilities**⁵³, liquidity indicators during 2016 showed difference in dynamics. Thus, foreign currency liquidity indicators have improved, which became especially prominent in the second half of the

⁵¹ Unlike in 2015, when in conditions of annual growth of the deposits of the domestic non-financial entities, historically low interest rates of government securities and relatively low yields of the international financial markets, the main driver of the reduction of the liquid assets was the banks' lending activity, and partially the factors of non-economic nature (domestic political turmoil, and the debt crisis in Greece), in the first half of 2016, the decrease of the liquid assets was caused by the deposit outflow influenced by the psychological reactions of the domestic population to the domestic-political environment.

⁵² Six banks, with a share of 23.8% in the total assets on 31.12.2015.

⁵³ Banks accept and return denar liabilities (deposits) and liabilities (deposits) in denars with foreign exchange clause in denars, creating cash flow (inflow or outflow) in denars. Foreign currency liabilities, according to the Law on Foreign Exchange Operations, banks accept and return foreign currency in the respective foreign currency and therefore, have an expected cash flow (inflow or outflow) in foreign currency.

Chart 48
Liquidity ratios of the banking system
in points



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

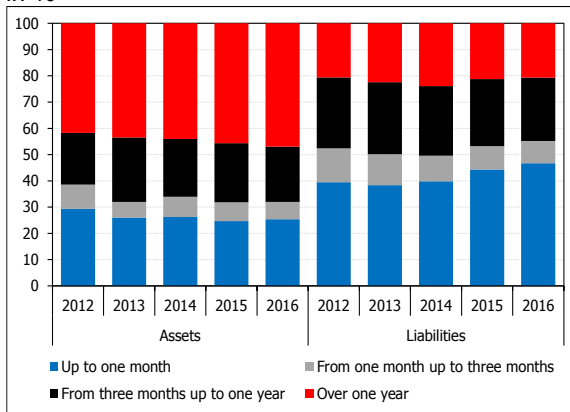
year. The growth of the foreign currency component of banks' liquid assets was a driver of this development, influenced by the possibility to make placement in foreign currency deposits with the National Bank, and the improved developments in the foreign exchange market. Contrary to that, indicators for denar liquidity mainly registered downward movement, but still continued to be very high compared to the indicators for foreign currency liquidity, which is due to the higher structural share of denar liquid assets in the total liquid assets of the banks.

Regulatory liquidity ratios of the banking system⁵⁴ presented as ratio between assets and liabilities that fall due in the following 30 and 180 days, remained almost at the same level as in the previous year and are higher than the prescribed minimum of 1.

2.3 Maturity structure of assets and liabilities

In 2016, shifts in the structure of assets and liabilities, according to their residual maturity, were mainly in the direction of increasing the share of assets with a residual maturity up to one month and over one year and the liabilities with a residual maturity up to one month. On the assets side, the increase of the share of assets with a residual maturity up to one month, is explained through the growth of liquid assets, primarily through the growth of banks' funds with the National Bank, whereas in banks' liabilities, the annual increase, is mostly associated with the significant growth in sight deposits in the second half of the year. Also, due to the decline of short-term loans of non-financial entities, mostly pronounced in the first half of the year, the share of assets with a residual maturity over one year increased on an annual basis.

Chart 49
Structure of banks' assets and liabilities by their contractual residual maturity
in %



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

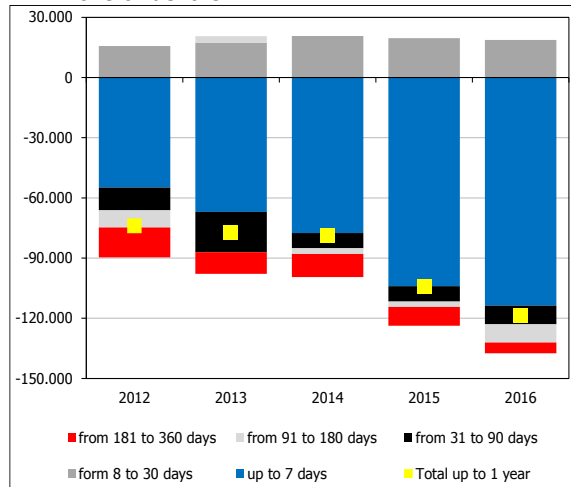
The maturity mismatch between banks' assets and liabilities is high and in 2016 additionally increased. The maturity

⁵⁴ up to 180 days is determined by the Decision on the liquidity risk "Macedonia" no. 126/11, 19/12 and 151/13).



Chart 50

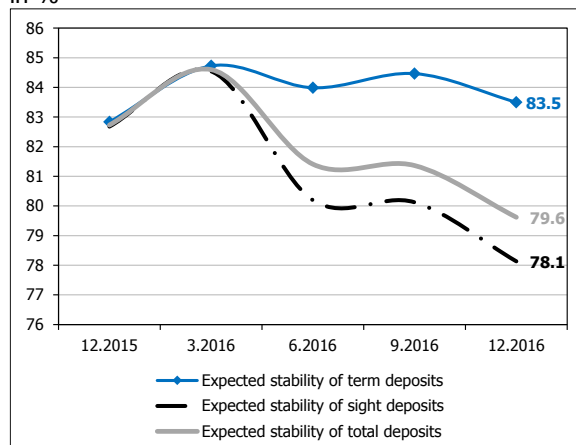
Structure of the gap between assets and liabilities, with a contractual maturity of one year in millions of denars



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

Chart 51

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



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

bucket up to seven days still has the largest mismatch between assets and liabilities according to their contractual residual maturity, which usually results from the inclusion in this maturity bucket of banks' liabilities on demand and without determined maturity.

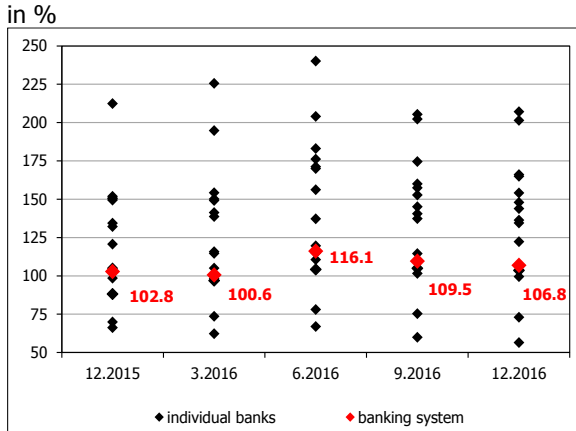
In 2016 also, banks expect high deposit stability, as their main funding source. Therefore, at the end of 2016, the banks expect 83.5% of the term deposits with residual maturity up to 3 months (82.8% as of 30 December 2015) to remain in the banks also in the following three months. Certain deterioration is registered in banks' expectations for the stability of sight deposits compared to the previous year. In sight deposits, including the funds on transaction accounts, the percentage of the expected stability amounted to 78.1% (year 2015: 82.7%). Banks **continue to expect positive maturity gap between assets and liabilities** (annex no. 33).

2.4 Stress-simulations for liquidity shocks

The sufficient liquidity of the Macedonian banking system is confirmed through the obtained results from the stimulations for liquidity shocks. The volume of the liquid assets enables resilience of the banking system, even during stimulation of significantly extreme liquidity shocks, which covers combined outflows of more types of funding sources⁵⁵ outside the banks. Amid such stimulation the liquid assets of the banking system are entirely used (over 100%). Thus, shortage of liquidity would have been reported by eleven banks, with a joint share in total assets of the banking system of 59.5% at the end of 2016. If for the purposes of this simulation, the scope of liquid assets will be extended including

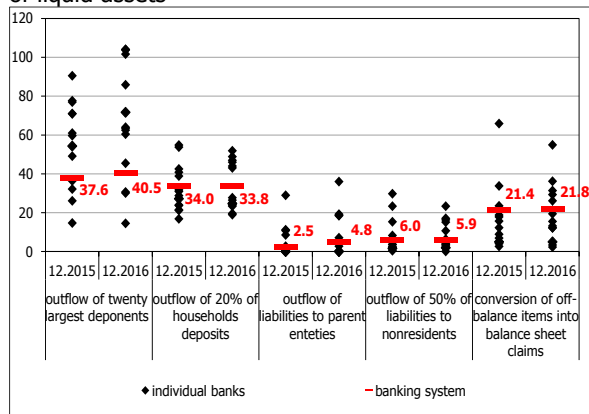
⁵⁵ The simulation assumes outflow of: deposits of the twenty largest depositors, 20% of household deposits, liabilities to parent entities (with the exception of liabilities on subordinated instruments and hybrid capital instruments that are excluded from the simulation as according to the regulations for calculating capital adequacy their early 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 credits, irrevocable credit lines and unused limits based on credit cards and approved overdrafts on transaction accounts) in balance sheet claims. The simulations of liquidity shocks excludes MBDP AD Skopje, because of the legal restriction to serve in a deposit market.

Chart 52
Reduction of liquid assets in the simulation of combined liquidity shocks



Source: NBRM calculations, based on data submitted by banks

Chart 53
Contribution of individual combined shocks to the decline in the liquid assets in the simulation of a combined liquidity shock as percentage of decline of liquid assets



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

other financial instruments⁵⁶, that are assumed to have been recoverable relatively quickly and easily or convertible into cash within 30 days, then the banking system would have enough liquid assets, i.e. the decrease of liquid assets of the banking system would have amounted to 94.0% (which means that even after such extreme shocks, banks would have held certain amount of liquid assets, analyzed on a banking system level).

When applying individual assumed liquidity shocks, banks have sufficient liquid assets to repay simulated outflows.

Thus, simulations for deposits outflows of 20 largest depositors and outflow of 20% of household deposits are the most significant. By individual banks, in the first shock is evident that it has a different meaning for different banks, mainly due to the differences in the degree of concentration of deposits. In the outflow simulation of 20% of household deposits there is a significantly higher similarity in the results for individual banks, which confirms the importance of deposits for funding their activities i.e. maintaining banks' liquidity, as well as the potential activity growth, mostly depends on the developments and performance of the banks in the deposit market and maintaining the domestic depository confidence⁵⁷.

Among other shocks, somewhat more relative significance is registered in the stimulation for transferring off-balance items in the balance claims, and shocks that are associated with outflows of liabilities to non-residents and outflows of liabilities to parent entities without treatment of equity instruments, have a small contribution in forming the total combined outflows, which is a reflection of the modest volume of banks' funding through such type of liabilities.

⁵⁶ In this expansion of the scope of liquid assets, in addition to financial instruments that comprise liquid assets, the following financial instruments from the balance of the banks are added (if present): 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.

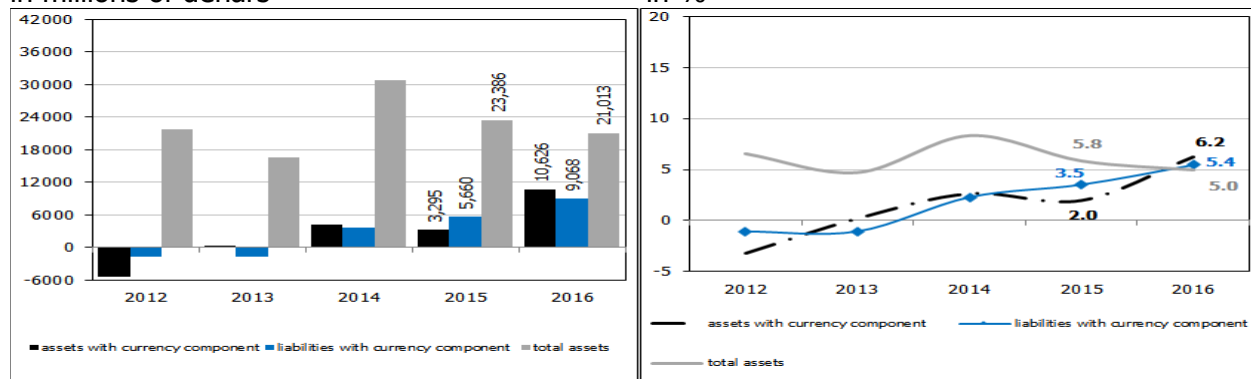
⁵⁷ Precisely the events associated with the reduction of deposits in banks in the second quarter of 2016, contributed so that the banks faced one liquidity shock which are premised during usual stress test simulations.

3. Currency risk

In 2016 the exposure of the banking system to the currency risk increased, measured through the ratio of the gap between assets and liabilities with currency component and total own funds, which increased to the level of 14.3%. However, banks' direct exposure to the currency risk is still on an acceptable level, and the ratio between the aggregate currency position and own funds in each bank individually is within the prescribed limit (30% of banks' own funds). The euro prevails within foreign currencies in the banks' balance sheets and hence, the applied strategy for maintaining a stable nominal exchange rate against the euro is of a significant importance in order to maintain a low probability of the materialization of the currency risk. The denarization of banks' balance sheets, which was continuously present in the past years, stopped in 2016, especially in deposits, which was a reflection of the tottering confidence in the stability of the domestic currency and domestic banks impacted by the internal-political developments.

Chart 54

Annual change of assets and liabilities with currency component in millions of denars

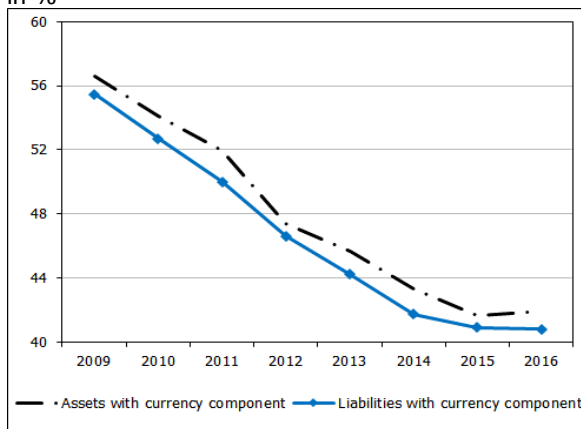


Source: NBRM, based on data submitted by banks.

Chart 55

Share of the assets and liabilities with currency component* in the total assets of banks

in %



Source: NBRM, based on data submitted by banks.

*Within the assets, loans are on a net basis (i.e. adjusted for the impairment). MBDP AD Skopje is not included.

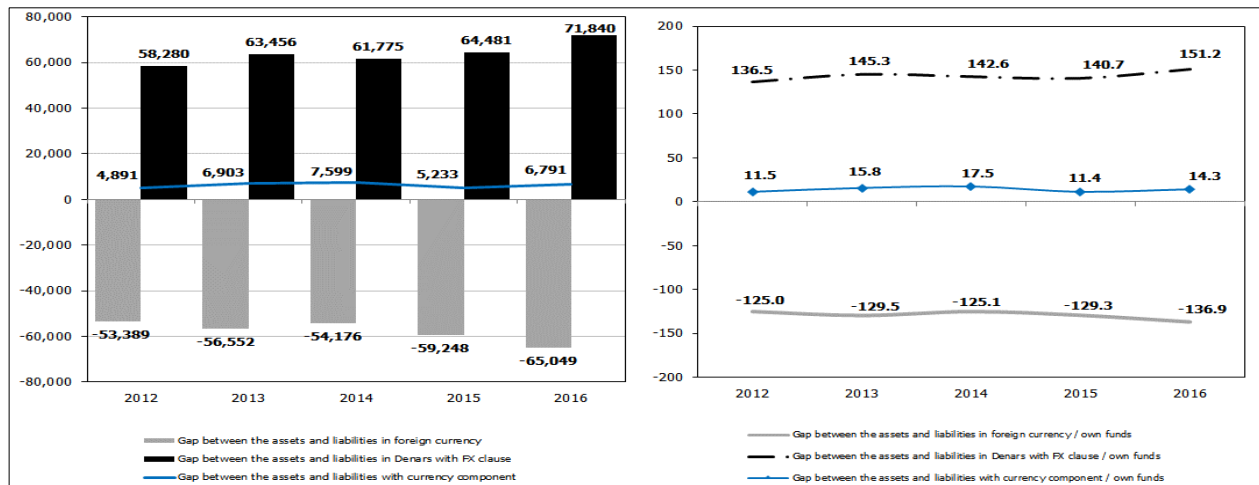
As of 31 December 2016, the gap between assets and liabilities with currency component increased by Denar 1,558 million and compared to 31 December 2015 it amounted to Denar 6,791 million. The higher growth in assets with currency component (of Denar 10,626 million) compared to the increase in liabilities with currency component (by Denar 9,068 million), contributed to the increase of the gap between

them⁵⁸. Subsequently, also the ratio between this gap and the funds of the banking system increased by 2.9 percentage points.

The higher growth rate of assets with a currency component, in conditions when total assets registered a decelerated growth, contributed to the growth of its share in the total assets of the banking system by 0.3 percentage points, which halted the downward trend of this ratio. Liabilities share with currency component remained almost on the same level.

Chart 56

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 %

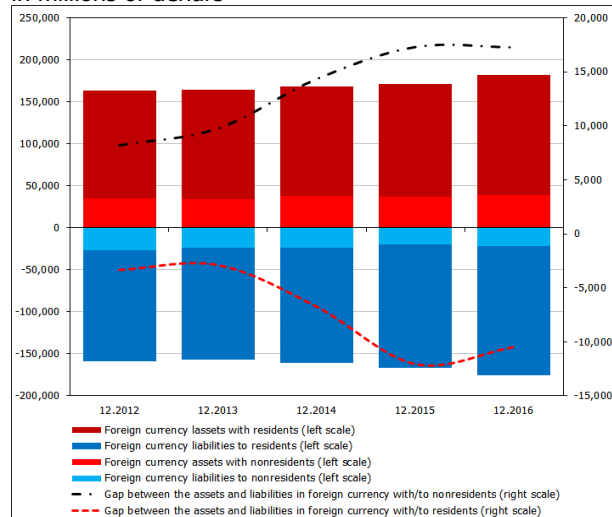


Source: NBRM, based on data submitted by banks.
*MBDP AD Skopje is not included.

⁵⁸ The increase of the assets with a currency component arises from the solid annual growth of Denar loans with a currency clause (approved to households), as well as from the increased placement of short-term currency deposits with the National Bank (given the re-activation of the currency deposits with the NBRM, as a monetary instrument). On the side of liabilities with a currency component, the growth of sight currency deposits (primarily current accounts) of households and non-financial companies mostly contributed for the annual increase of liabilities with a currency component.

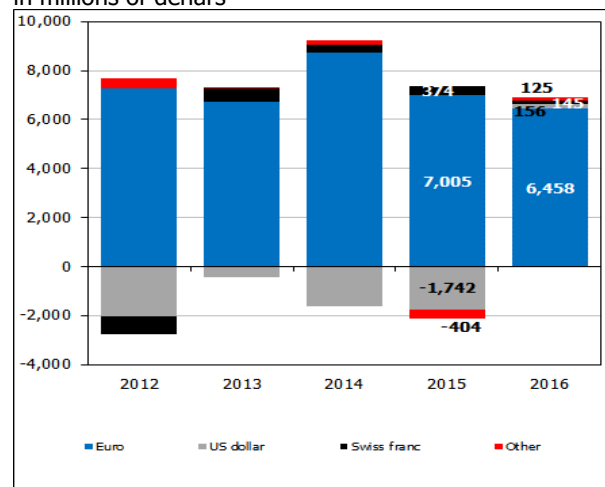


Chart 57
Claims* and liabilities with currency component to/from residents and non-resident and the gap between them in millions of denars



Source: NBRM, based on data submitted by banks.
 *Claims with a currency component from non-residents also include the currency assets of banks (which is considered as claim from the Central Bank - currency issuer).
 **This calculation excludes MBDP AD Skopje.

Chart 58
Dynamics and structure of the gap between assets and liabilities with currency component, by currency in millions of denars



Source: NBRM, based on data submitted by banks.

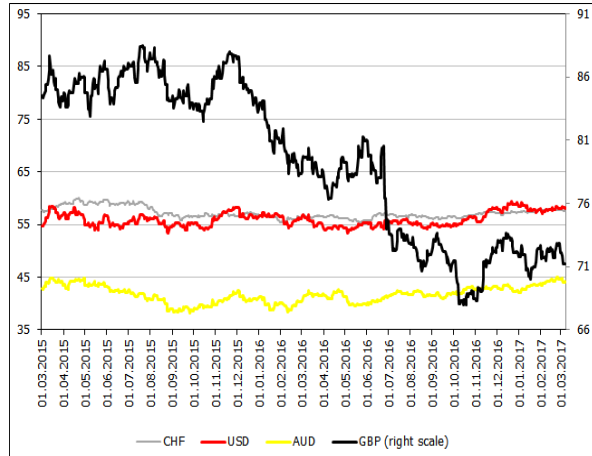
Analyzed by resident status, the positive gap with a currency component of banks' operations with non-residents is wider than the negative gap of operations with residents, which aggregately conditions a positive gap between total assets and liabilities with a currency component. The short position i.e. negative gap of operations with residents is a result of relatively high amounts of collected currency deposits which exceed the amount of loans with currency component granted to residents. The gap with a currency component from operations with non-residents is positive and is primarily due to currency placements of banks in foreign banks, whose amount is higher compared to the foreign currency liabilities to non-residents (mostly, to foreign parent entities in domestic banks).

Analyzed by currencies, on 31 December 2016, the increase of the gap between assets and liabilities with a currency component mostly arises from the gap in US dollars, which, for the first time this year, after a longer period, is positive. This change arises from the increased deposits of banks in US dollars.⁵⁹ On the other hand, the positive gap between assets and liabilities in euros decreased. The euro is the currency that prevails in banks' balance sheets in the Republic of Macedonia, and hence, maintaining stable exchange rate of the denar against the euro is extremely important for the probability for materialization of banks' exposure to currency risk. The growth of the gap in US dollars increases the currency risk, but still the positions of this currency are not substantial.

The more pronounced variability in the value of the British pound compared to

⁵⁹ Banks' deposits in US dollars increased by Denar 3,090 million.

Chart 59
Exchange rate of the denar against the US dollar, Swiss franc and the British pound and Australian dollar in denars



Source: NBRM

other global currencies marked the year 2016 in the international currency markets. For most of the year, the value of the British pound registered a decrease (especially in the period after the Referendum for the exit of Great Britain from the EU), which was partially stopped in October 2016, after the value of the British pound registered a certain increase. However, the more significant changes in the exchange rate of the British pound against other global currencies do not have important impact on the domestic banking system, due to the small participation of this currency in the structure of assets and liabilities with a currency component. Namely, the British pound has a share of only 0.6% in the total assets and liabilities with a currency component. Banks have almost not granted any British pound loans, and on the deposits side (in liabilities) are registered some small amounts in the current account and deposits nominated in this currency.

Table 4
Currency structure of assets and liabilities with currency component in %

Currency	31.12.2015		31.12.2016	
	Assets	Liabilities	Assets	Liabilities
Euro	88.9	87.5	88.4	87.6
US dollar	6.7	8.0	7.1	7.9
Swiss franc	1.8	1.7	2.0	1.8
Australian Dollar	0.9	1.3	1.0	1.2
Other	1.6	1.6	1.6	1.6
Total	100.0	100.0	100.0	100.0

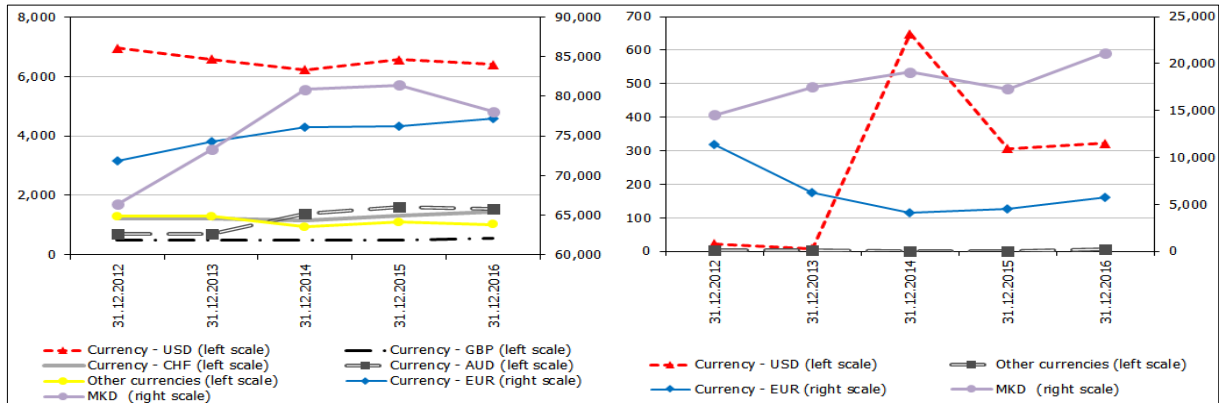
Source: NBRM, based on data submitted by banks.

By the end of 2016, the value of the US dollar started to increase, which was in accordance with the expectations for increasing the FED interest rate in December 2016. The US dollar, despite being the second most present in the banking sector, still its share in the total assets i.e. liabilities with a currency component is low.



Chart 60

Deposits in denars and with currency component of the natural persons (left) and non-financial corporations (right) in millions of denars

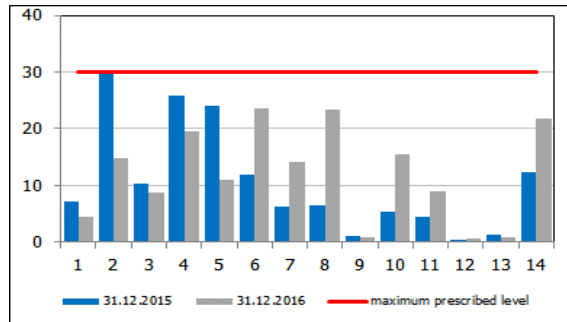


Source: NBRM, based on data submitted by banks.

The deposits do not include transaction accounts of the natural persons and non-financial corporations

Chart 61

Aggregate currency position to own funds ratio, by bank in %



Source: NBRM, based on data submitted by banks.

As of 30 December 2016, all banks have complied with the prescribed limit for the aggregate currency position, which should not exceed 30% of the banks' own funds. Banks, mostly maintain long position by individual currencies.

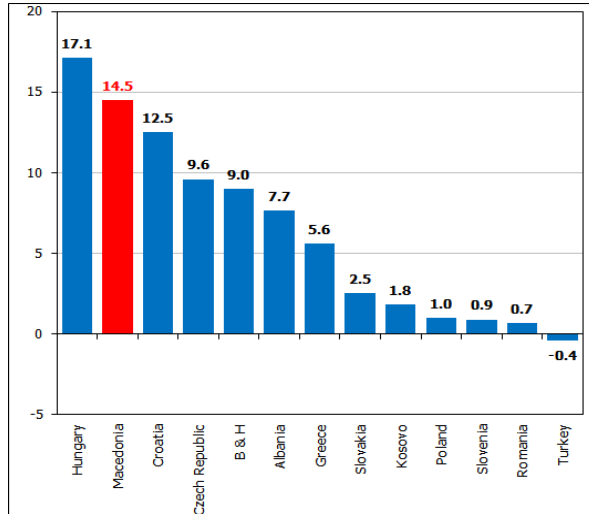
Table 5

Classification of banks according to the share of the open foreign currency position by currency and the aggregate foreign currency position in the own funds

Items	Number of banks										Aggregate currency position / own funds
	Open currency position by currency / own funds										
	Euro		US Dollar		Swiss franc		Australian Dollar		Other		
	Long	Short	Long	Short	Long	Short	Long	Short	Long	Short	
under 5%	4	1	12	2	7	6	8	1	13	1	4
from 5% to 10%	1										2
from 10% to 20%	5										5
from 20% to 30%	3										3
over 30%											

Source: NBRM, based on data submitted by banks.

Chart 62
Open currency position to own funds ratio, by country
in %



Source: For Macedonia, NBRM based on the data submitted by banks, while for other countries data are obtained from IMF web-site (financial stability indicators).

Note: Data for the Republic of Macedonia are as of 31.12.2016, while for the other analyzed countries as of 31.12.2015.

Among analyzed countries, after Hungary, Macedonia has the largest share in the open currency position in own funds, which however it is not high. Clearly, there is a very low level of this indicator in the Euro area countries (Greece, Slovakia and Slovenia), as well as in Kosovo where the euro is used as an official currency, but a very small share in the open currency position of own funds is registered in Poland, Romania and Turkey.

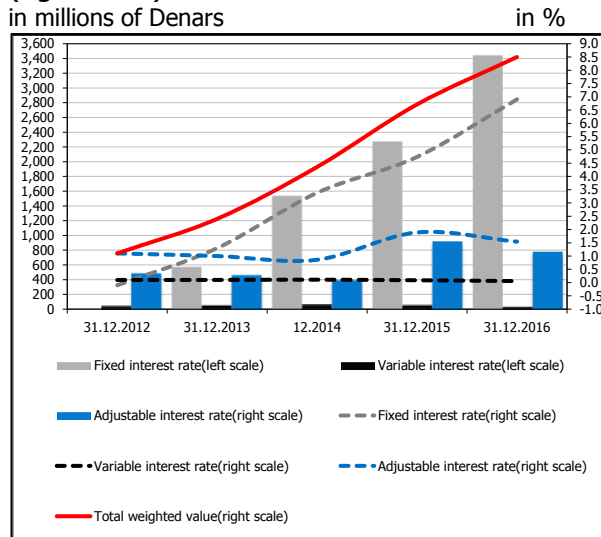


4. Interest rate risk in the banking book

Banking system exposure to the risk of interest rate change in the banking book in 2016 registered an increase, which is due to the growth of the average residual maturity in assets items, amid simultaneous decrease of the average period until the next assessment of interest rates in liabilities items. The gap between interest-sensitive assets and liabilities increased, which entirely arises from the increase of the gap in items with fixed interest rates. According to the items in the banking book, the banking system is exposed to the risk of future increase in interest rates. The application of adjustable interest rates, due to the applied clauses for unilateral adjustable interest rates in contracts for loans and deposits downplayed the exposure of banks to this risk. But, the intentions of gradually abandoning the application of adjustable interest rates and linking the interest rate change with market factors, will increase the risk of interest rate change in the banking book, but will decrease the legal and reputation risk, and banks will be obligated to improve their capacities for interest rate change risk management.

Chart 63

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



Total weighted value of the banking book registered an annual growth of Denar 1,009 million and rose to the level 8.5% of banking system's own funds (6.7% at the end of 2015). Such movements are entirely conditioned by the annual growth of the weighted value of the banking book with fixed interest rates. Analyzed by bank, the correlation between total weighed and banks' own funds ranges from 0.5% to 16.2%, which is still below the level of 20%⁶⁰.

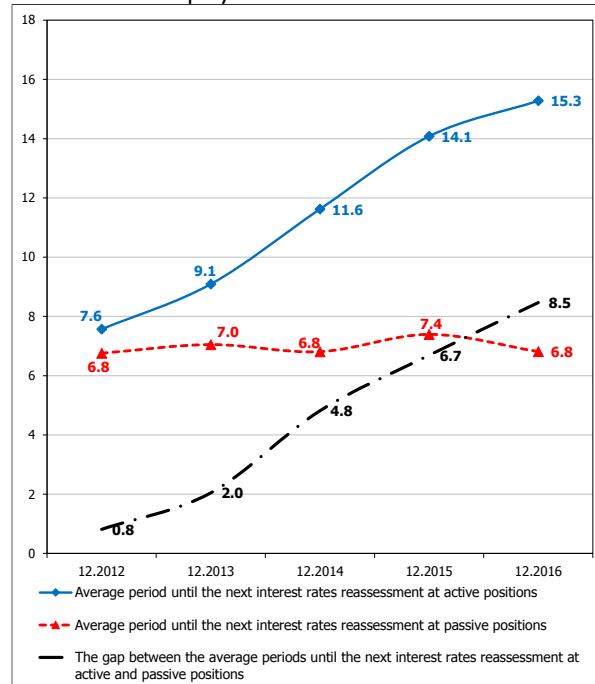
Source: NBRM, based on data submitted by banks.

*The total weighted value of the banking book denotes the potential loss of the economic value of this portfolio, given assumed unfavorable interest shock of ± 2 percentage points.

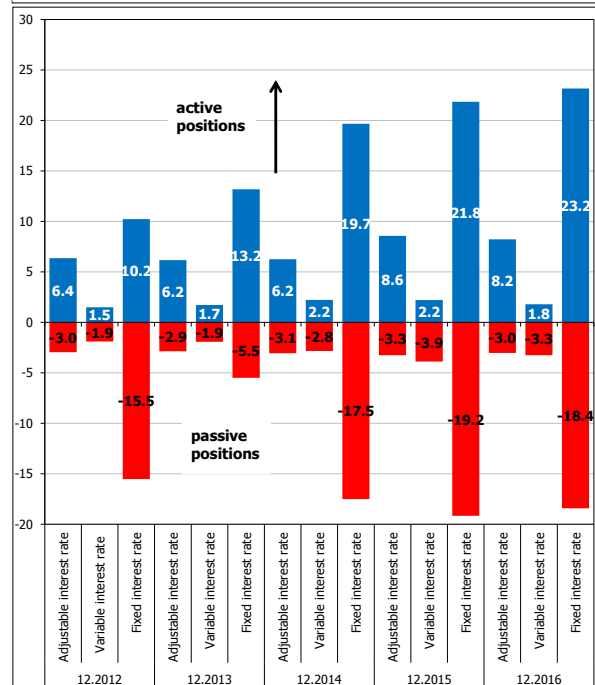
⁶⁰ According to the Decision on managing interest rate risk in the banking book (Official Gazette of the Republic of Macedonia No. 163/2008 and 144/2009), when the ratio between total weighted value to own funds ratio exceeds 20%, the bank is required to propose measures to reduce this ratio, and the National Bank may also require allocation of appropriate amount of capital for the interest rate risk in the banking book.

Chart 64

Average period until the next interest rates reassessment*, total (top) and by interest rate type (bottom) in number of employees



The increase in the exposure of the banking system to the interest rate risk in the banking book arises from the increase of the average period until the next change in the interest rate in the assets items, amid simultaneous decrease of the average period until next change in the interest rates in liabilities items. The average period until the next assessment in interest rates (i.e. average residual maturity date) in assets items, is increased by 1.2 months, which was mostly pronounced in loans with fixed interest rate. On the liabilities side, average period until the next change in the interest rate registered a decline of 0.6 months, which was mostly present in liabilities based on loans with fixed interest rate, and term deposits with adjustable interest rate. Reducing the average period until the next change in interest rate in term deposits is determined by the annual decline in these liabilities impacted by the speculative pressures in April and May when a significant outflow of deposits and decrease in deposits maturity was registered.



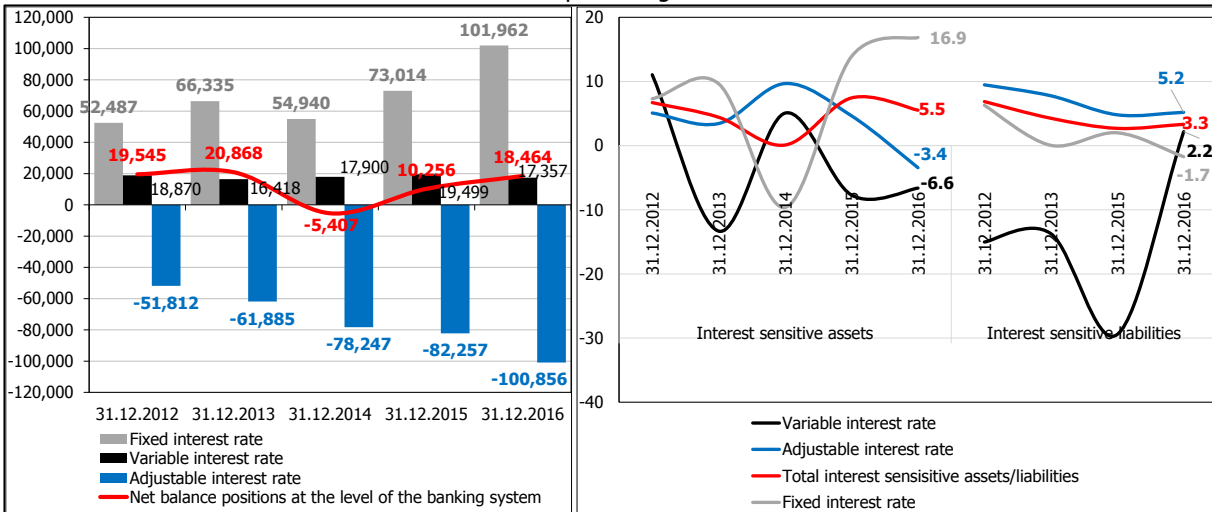
Source: NBRM, based on data submitted by banks.

*the average residual maturity is taken for the items with a fixed interest rate.



Chart 65

Gap between the interest-sensitive assets and liabilities (left) and annual change in the interest-sensitive assets and liabilities (right), by interest rate type in millions of Denars in percentage



Source: NBRM, based on data submitted by banks.

In 2016 the gap between interest-sensitive assets and liabilities increased by Denar 8,208 million, or by 80%, which is entirely due to the positive gap of items with fixed interest rates. Namely, the increased lending and placements in term deposits with fixed interest rates⁶¹, given simultaneously reduced liabilities based on loans and term deposits with fixed interest rates, increased the gap between the items with this type of interest rates by Denar 28,948 million (or by 39.6%).

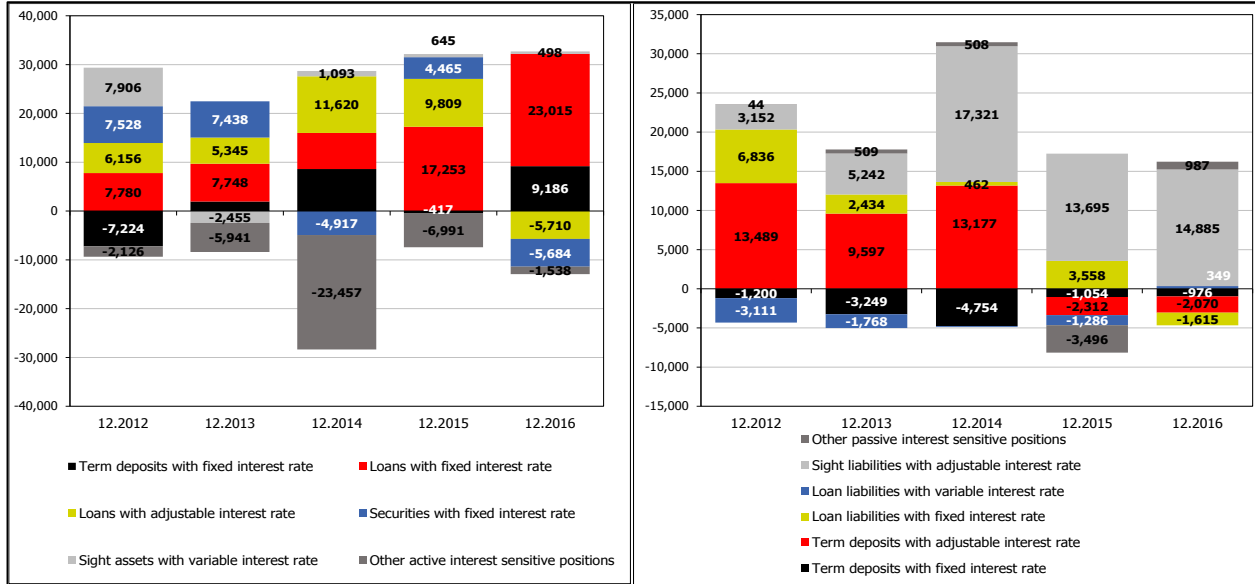
The increase of the negative gap between items with adjustable interest rate (by Denar 18,599 million, or by 22.6%) is due to the larger annual decline of claims based on loans with adjustable interest rate compared to the decline of liabilities based on term deposit with this type of interest rate⁶². More details about the structure of the interest-sensitive items of the banks are provided in Annex no. 36 and Annex no. 37.

⁶¹ Pursuant to the Decision on foreign exchange deposits with the National Bank, as of May 2016, banks are allowed to place foreign currency deposits in the central bank at higher interest rates compared to current interest rates prevailing in the international financial markets. NBRM ceased to hold auctions of foreign currency deposits starting from 28.10.2016.

⁶² The annual decline of liabilities based on term deposits is due to the withdrawal of more significant amounts of deposits from the banking sector in April and May 2016.

Chart 66

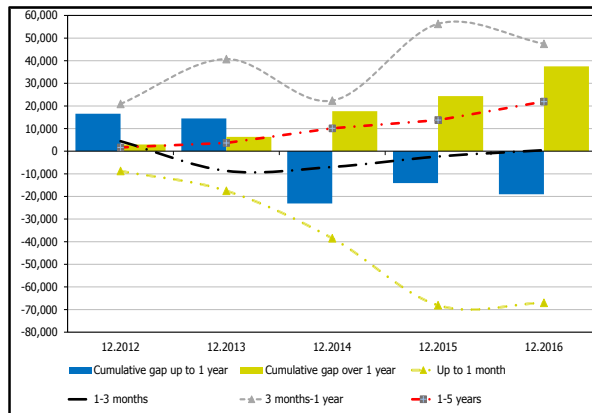
Structure of the annual changes of the interest-sensitive assets (left) and liabilities (right), by type of instrument and interest rate type in millions of denars



Source: NBRM, based on data submitted by banks.

Chart 67

Gap between on-balance sheet asset and liabilities items, by the period until next interest rates reassessment in millions of denars

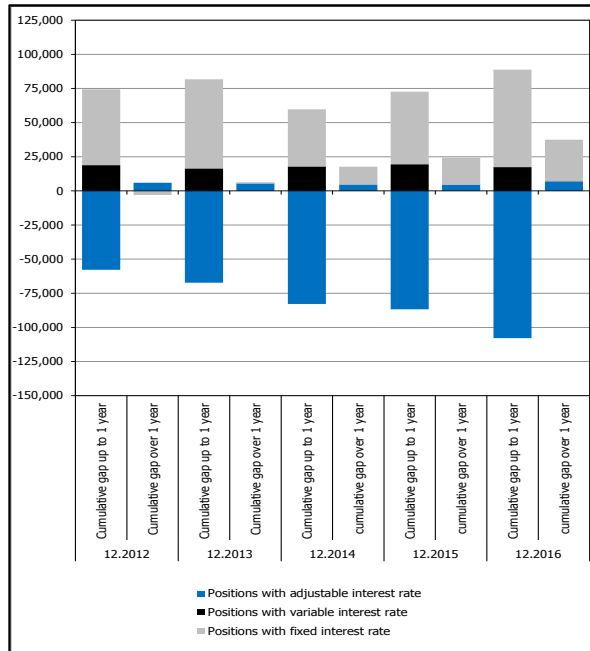


Source: NBRM, based on data submitted by banks.

Compared to the end of 2015, the cumulative gap of both the short maturity (negative gap)⁶³ and longer maturity (positive gap) increased. Considering the gap structure according to the interest rate type, these items expose the banking system to risks from future interest rates' increase. The short position up to one year between assets and liabilities interest-sensitive items, for which banks expect assessment of the interest rates level in the period longer than one year, is entirely due to the items with adjustable interest rate. In fact, adjustable interest rates are the dominating interest rate type on the source side of banks' funding. The long position between assets and liabilities interest-sensitive items whose interest rates' reassessments would be conducted in the period longer than one year, is due almost entirely to, by the claims of banks with a fixed interest rate. In fact, unlike the liabilities, in assets, items with fixed interest rates prevail, whose share also continued to increase

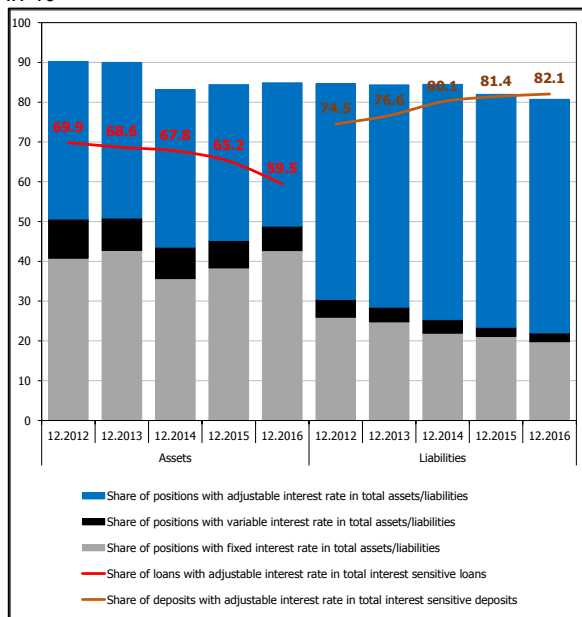
⁶³ The negative gap between interest-sensitive asset and liabilities, where the period until next interest rate reassessment (change) relatively short and does not exceed one year, increased by Denar 4.9 billion and as of 30.12.2016 it reduced to the level of Denar 19 billion (38.3% of the own funds of the banking system).

Chart 68
Gap structure of the asset and liabilities items, by interest rate type in millions of denars



Source: NBRM, based on data submitted by banks.

Chart 69
Structure of assets and liabilities, by type of interest rate in %



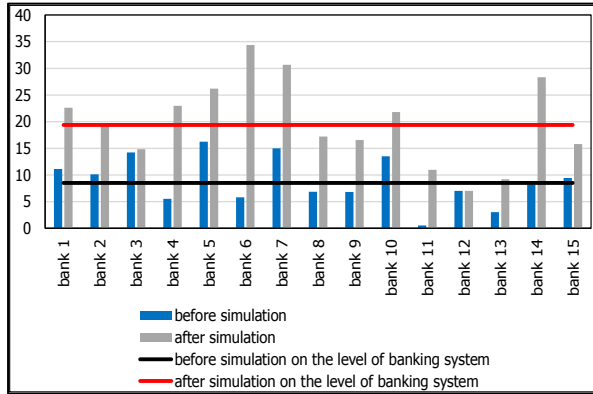
Source: NBRM, based on data submitted by banks.

in 2016. Thus, the increase of the gap between assets and liabilities items in the maturity block from one to five years arise from the reporting rules, according to which, loans whose interest rates are fixed only in the first few (between three and five) years after their approval (after this period, application of the adjustable interest rates is envisaged), in the first few years are reported as loans with a fixed interest rate in full amount. The application of the clauses for adjustable interest rates in loan contracts decrease the exposure of banks to the mentioned risk of interest rate growth, but exposes it to indirect credit risk. Also, the application of such clauses, not only in loans but in deposits also, exposes the domestic banks to a legal and reputation risk⁶⁴, given the fact that the adjustable interest rates change unilaterally, based on the decision of the relevant authority of the banks. **However, the risk from interest rate change in the banking book will increasingly gain importance, given the intention of gradual abandonment of the application of adjustable interest rates and application of interest rates which are predetermined or whose change will be done based on market variables.**

In order to get an insight how the fully possible abandonment of the practice for unilateral adjustment of the interest rate level by the banks, will reflect on the current level of exposure to the risks of the interest rate change, a special hypothetical simulation was prepared. This simulation stems from the assumption that all interest-sensitive items with adjustable interest rates in banks are items with fixed interest rates (i.e. are distributed according to their residual contractual maturity).

⁶⁴ In October 2016, the NBRM sent a written recommendation to banks to increase the transparency level in setting interest rates on loans and deposits. The NBRM expects from the banks to extend new loans and receive deposits at interest rates that will vary on the basis of parameters previously set clearly in the contracts.

Chart 70
 Total weighted value of banking book to own assets ratio, before and after the simulation, by individual bank
 in %



Source: NBRM, based on data submitted by banks.

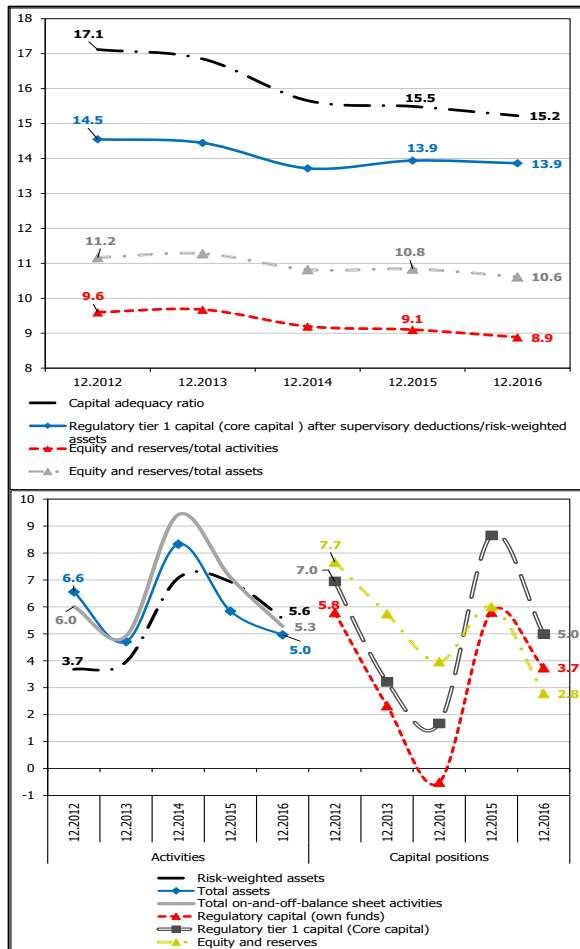
The simulation results suggest a significant increase of the total weighted value of the banking book to own assets ratio, in almost all the banks. Thus, this ratio, after the simulation, would range in an interval of 7.0% to 34.4%, with a median of 19.6%. Therefore, seven banks have exceeded the prescribed ratio of 20% and would face potential⁶⁵ allocation of additional capital amount for covering this risk. The total weighted value of the banking book to own assets ratio at a banking system level would amount to 19.4%, after the simulation, which is more than double, or by 10.9 percentage points more compared to the current level (prior the simulation). This confirms the expectations for a risk increase from the interest rates changes in the banking book, after abandoning adjustable interest rates.

⁶⁵ According to the regulation, in cases when total weighted value 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.

5. Insolvency risk

In 2016, banks' own fund increase decelerated, but they continue to be twice as high from the minimum regulatory required capital for covering individual risks. If the supervisor's observations (NBRM) and established capital supplement according to individual banks' risk profile are taken into account, then banks' own funds are for one-thirds higher than the supervisor's requirements. The volume and structure of own fund point to a solid banks' capacity for complying the capital buffers from Basel Capital Accord 3. Despite the new share emission, for the first time in the last three years, the increase of own funds, continues to be mostly conditioned by the retained earnings of the previous years. The solvency and capitalization ratios of the banking system registered a certain decrease, which mostly stems from the faster growth of risk-weighted assets (due to the growth in lending and regulatory changes). The results of the stress test point to satisfactory resilience of the banking system to hypothetical shocks.

Chart 71
Solvency indicators (top) and annual growth rates of their components (bottom)
in %



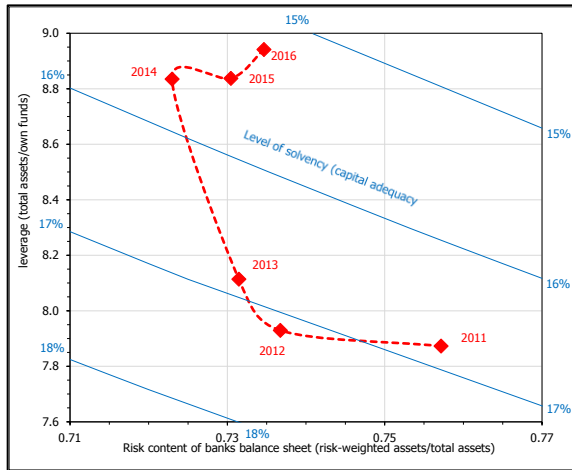
Source: NBRM, based on the data submitted by banks.

5.1. Solvency indicators and capitalization of the banking system and risk level of the activities

In 2016, solvency and capitalization indicators of the banking system registered certain downward changes. The capital adequacy ratio fell by 0.3 percentage points and equaled to 15.2%.

The decrease of the solvency indicators is exclusively due to the higher growth of risk weighed assets, while all capital items, even though decelerated, increase. Own funds increased by 3.7%, compared to the growth of 5.8% in 2015, and the core capital of the banking system increased with a rate of 5.0% (8.7% in 2015). Simultaneously, the capital and reserves registered a growth of 2.8%, which is by 3.2 percentage points lower compared to the growth registered in 2015. Banks' activity, also registered a decelerated growth, which is still higher compared to the annual growth registered in the capital items of the banking system.

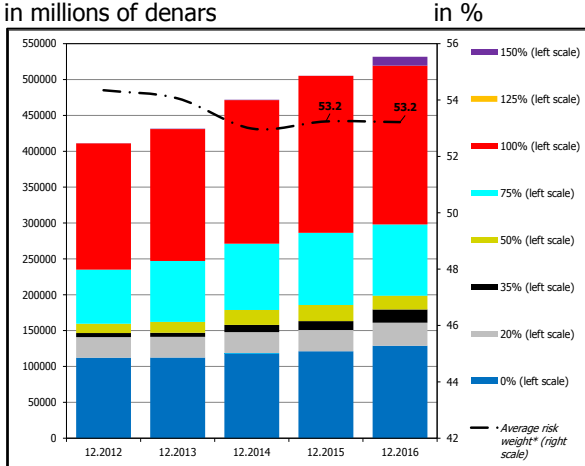
Chart 72
Leverage, risk and solvency of the banking system
in denars and in %



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

At the same time, the indebtedness level of the banking system has increased (measured as a ratio between assets and own funds).

Chart 73
Stock and structure of the total on-balance sheet and off-balance sheet exposure, by risk weight**
in millions of denars



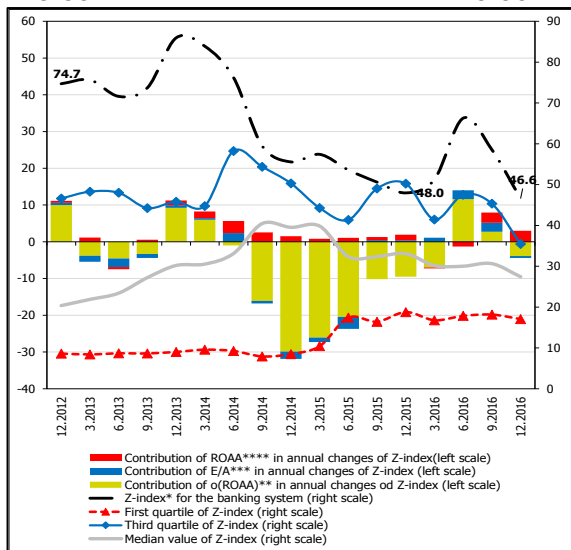
Source: NBRM, based on the data submitted by banks.
Note: * The average risk weight is calculated as a ratio between risk weighted assets and total banking system balance and off-balance sheet exposure.

In 2016, the level of risk of banking activities, measured as a ratio between risk weighted assets and on-balance sheet and off-balance sheet exposure, remained unchanged (53.2%). Within risk weighted assets, activities with risk weight of 150% have the highest growth of Denar 12.3 billion, which is mostly as a result to the regulatory changes by the end of 2015. Contrary to that, banks' activities, which are included in calculating the risk weighted assets, with risk weight of 50% and 75% decreased by Denar 3.2 billion and Denar 1.4 billion, respectively (or by 14.4% and 1.4% respectively)⁶⁶. At the same time, a solid growth of Denar 7.6 billion (or by 6.3%) is registered in activities with risk weight of 0%, which is a result of banks' investment in foreign deposit with the NBRM⁶⁷.

⁶⁶ Starting in 1 January 2016, banks are obliged to apply 150% risk weight to claims based on newly approved consumer loans with a maturity date equal to or longer than eight years. NBRM introduced additional capital requirements for the growth of overdrafts of transaction accounts and credit cards, as of 31 December 2015 (to which a risk weight of 75% is applied). Meanwhile, lower capital requirements for claims backed by commercial properties were introduced, if certain requirements were met (for these claims a risk weight of 75%, instead of the previous 100%) as a guarantee which generates payments in case of default of the debtor to a third party arising from a certain business relationship (for which a conservation factor of 50%, instead of the previous 100% is applied). Total net effects from these amendments to the regulation are the additional capital of around Denar 470 million, which reduces the capital adequacy rate for around 0.3 percentage points, which is the annual decrease of the capital adequacy of the banking system.

⁶⁷ By reactivating the foreign currency deposit with the NBRM banks were enabled to place foreign currency deposits in the central bank at positive interest rates. NBRM ceased to hold auctions of foreign currency deposits starting from 28 October 2016.

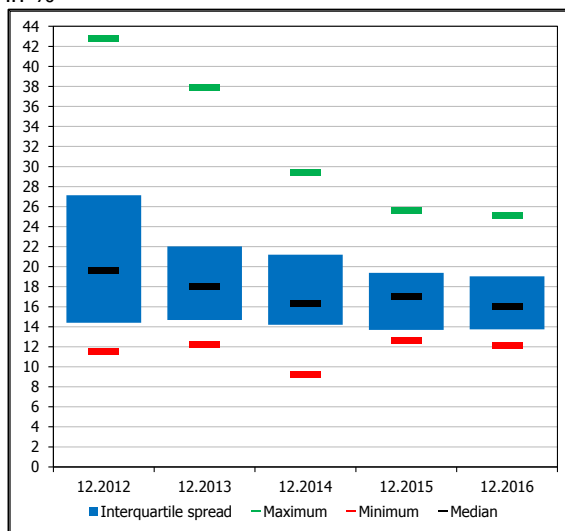
Chart 74
Z-index for the banking system
in levels



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

According to the Z-index movements⁶⁸, the stability of the banking system continues to be high. Same as in the previous year, despite the higher profitability of the banking system (measured through return rates of average assets), the Z-index decrease is mostly due to the higher variability of banking profits in 2016 (measured through standard deviation of the return rate of average assets). Despite the Z-index decrease, the overall stability of the banking system is relatively high and it requires a negative shock of at least 46.6 standard deviations from the rate of return on assets to fully exhaust the capital potential of the banking system.

Chart 75
Measures for distribution of capital adequacy ratio in the banking system
in %



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

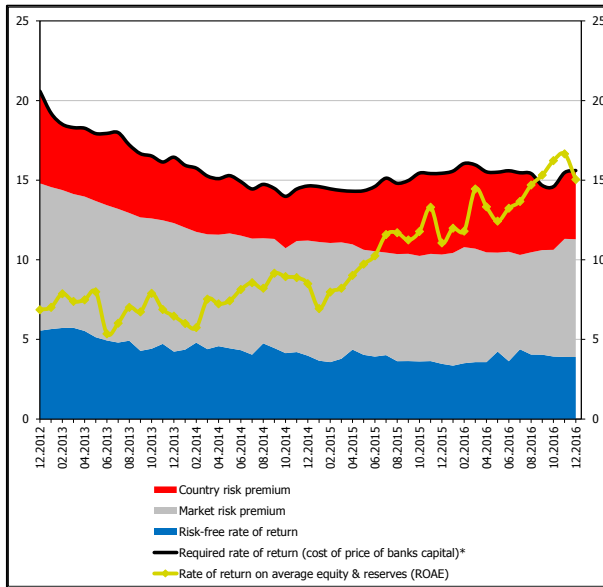
Analyzed by individual bank, the capital adequacy rate is maintained at a similar level, as in the end of the previous year. The difference between the bank with the highest and the bank with the lowest capital adequacy remained on the same level, as in 31 December 2015, and the range between the third and first quarter decreased by 0.4 percentage points. The lowest capital adequacy ratio of one bank increased and reached 12.2% as of the end of 2016 (12.6% as of 31 December 2015).

⁶⁸ The Z Index is calculated as follows: $Z = \frac{ROAA + E/A}{\sigma(ROAA)}$, where ROA is the rate of return on assets, E is equity and reserves, A is assets and $\sigma(ROA)$ is the standard deviation of the rate of return on assets, calculated for the last three years. The formula shows that this measure as such, combines several indicators: banks' performance and profitability indicator (ROA), bank risk indicator ($\sigma(ROA)$) and banks' soundness and solvency measure (E/A). Calculated as such, the Z Index measures the bank's "distance" from full depletion of its capital potential, expressed in number of standard deviations from the rate of return on assets and as such, it is a measure of the banks' capacity to absorb losses. Higher levels of this index indicate lower risk levels and higher overall stability of the banks. The Z Index is usually presented in a logarithmic form (natural logarithm of the previously given formula), but it is easier to interpret and more indicative when presented in levels.

Chart 76

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: NBRM, based on the data submitted by banks.

*Calculated with the application of 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).

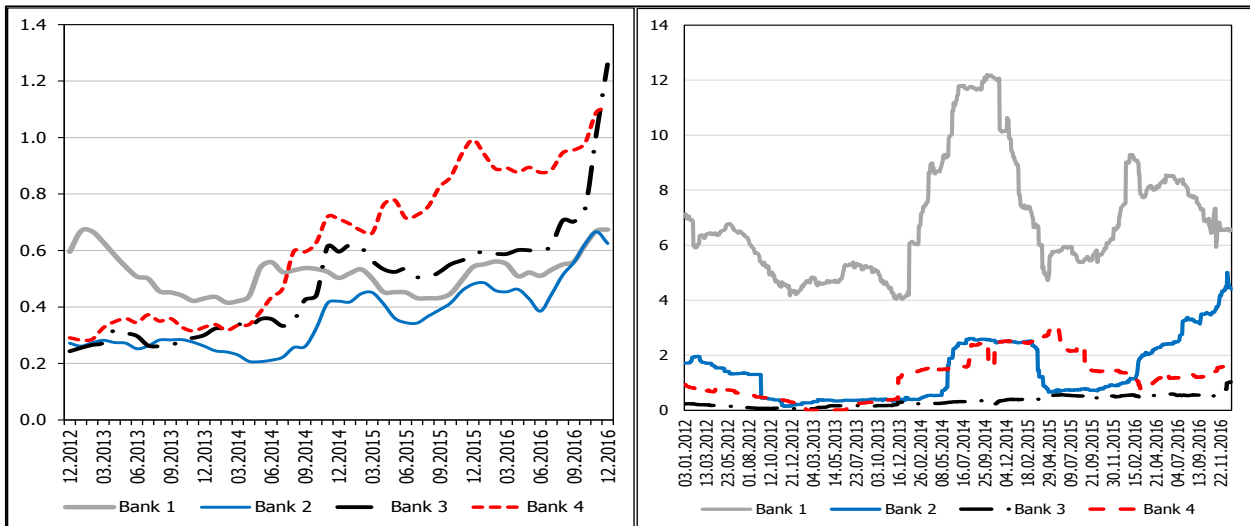
The calculation includes eight banks with shares being listed on the official market of the Macedonian Stock Exchange. Market risk premiums is calculated as the average premium for market risk for each bank separately, weighted by the size of their assets.

The cost of capital (required rate of return to investors in bank stocks), calculated by using the so-called CAPM-Capital-Asset Pricing Model, to a sample of eight banks, registers a certain annual growth, which is due to the increase of the market risk premium and increase of the risk-free yield rate. The cost of the capital, calculated using this model, increased by half percentage point and reached the level of 15.9% at the end of 2016. That is higher by 0.9 percentage points compared to the return rate realized by the banks included in this analysis. The higher required yield rate of banks shares is due to the increase of the market risk premium by 0.5 percentage points (as a result to the increase of the shares' beta coefficients of the banks), as well as due to the increase of the risk-free yield rate, by 0.4 percentage points (present, primarily, in the first half of 2016). Risk premium by country, after the slight increase in the first half of 2016, registered a decline in the remaining part of the year, and on an annual basis registers a decrease.



Chart 77

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



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

Trading with banks' stocks in the Macedonian stock registers a growth in 2016, which corresponds with the increased share prices, including with the ratio between the prices in auctions and their book value.

Advancing regulatory framework for banks

In October 2016, amendments to Banking Law were adopted, which refer to the introduction of capital buffers, strengthening capital requirements, introduction of the leverage ratio, strengthening banks' corporate governance and strengthening corrective measures that can be undertaken by the National Bank. In order to properly apply these amendments, the National Bank Council adopted few by-laws, allowing further compliance of the domestic regulation with the reforms of the international capital standard (so-called Basel 3) and with the European regulation package (CRR and CRD IV) for operation and prudential requirements for banks.

The most important amendment to the Law refers to the ability of banks to maintain the so-called capital buffers. The main goal of the capital buffers is to enable increased protection of the banks' solvency (capital adequacy level) over the legal requirements in terms of the capital adequacy level, especially in conditions of significant growth of the realized losses. There are four types of capital buffers, such as:

1) **capital conversation buffer** determined at the level of 2.5% of risk weighted assets, which banks shall constantly maintain;

2) **countercyclical capital buffer** which may amount up to 2.5% of risk weighted assets and even more depending on other systemic factors and indicators and aims to limit risks associated with the rapid credit growth. The countercyclical capital buffer can be different for the exposures in the Republic of Macedonia and for exposures in other countries. The National Bank is authorized to determine the need for introduction, increase, decrease or removal of countercyclical capital buffer, as well as to determine

the level of both countercyclical capital buffer rates, which is regulated in more details in the relevant by-law adopted by the National Bank Council;

3) **systemically important banks buffer** which may range from 1.0% to 3.5% of risk weighted assets. This buffer should be allocated by the banks that are identified as systemically important banks i.e. as banks whose operation is important for the overall banking system stability, on the basis of the criteria and indicators defined with the Decision on the methodology for identifying systemically important banks. Systemically important banks are required to draft a recovery plan, whose preparation and assessment by the National Bank, are prescribed in relevant by-laws adopted by the National Bank Council; and

4) **systemic risk buffer** which may range from 1.0% to 3.0% of risk weighted assets and is introduced by the Governor of the National Bank in order to limit the risk of disrupting the financial system or the domestic economy. This capital buffer can be different for different banks or groups of banks.

Capital buffers are only met with the most qualitative capital items i.e. with the Common Equity Tier 1 capital (CET1) which exceeds the minimum regulatory capital requirements (so-called excess CET1). The bank that does not have the sufficient amount of excess CET1 for covering the total amount of capital buffers faces with restrictions on its distributable profits. The method of determining the maximum distributable amount is prescribed in details in the Decision on the methodology for determining maximum distributable amount of earnings.

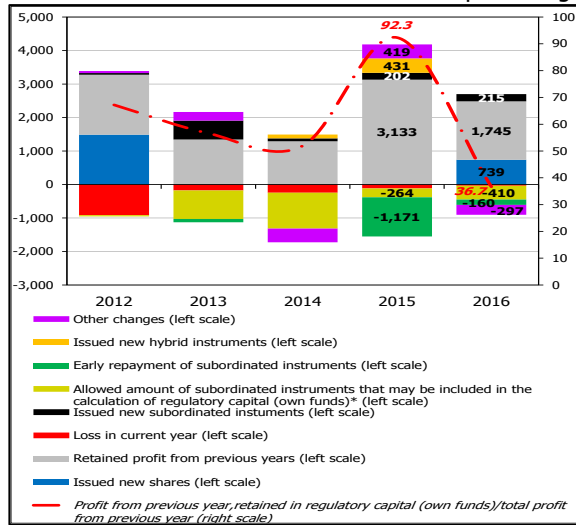
With the amendments to the Banking Law, despite the existing provision for the capital adequacy rate of at least 8% of risk weighted assets, two other legal requirements in terms of capital adequacy level were introduced, such as: 4.5% of risk weighted assets, for CET1 and 6% of risk weighed assets, for Tier 1 capital. These novelties were in details prescribed with the Council's Decision on amending the Decision on the methodology for determining capital adequacy, in December 2016, which despite achieving further compliance with the Basel 3 requirements in terms of the structure and composition of own funds, aims to significantly improve banks' own funds quality, through strengthening the requirements which certain items have to meet in order to become a part of banks' own funds. In this regard, the most important amendment is related to the structure of Tier 1 capital which is divided in Common Equity Tier 1 capital and Additional Tier 1 capital, while the structure of Tier 2 capital remained almost unchanged. The Common Equity Tier 1 capital includes capital items with the highest quality (equity capital and reserves) which are fully and readily available to cover risks and losses during the bank's operation and which shall classify as Common Equity Tier 1 items only after a consent is granted by the National Bank. On the other hand, Additional Tier 1 capital, includes instruments which, among other things, contain a clause for their conversion into Common Equity Tier 1 capital instruments or write-off on temporary or permanent basis (reduction of the value of their principal), in clearly defined cases.

Despite prescribing capital buffers and amendments in the structure of own funds, in February 2017 the Decision on the methodology for leverage risk management was adopted, which in details prescribes the method of calculating the leverage ratio as a ratio between Tier 1 capital and total on-balance sheet and off-balance sheet activities of the bank.

In order to further comply with the international standards, the strengthened requirements for banks' corporate governance are provided with the amendments of the Banking Law, which shall be additionally covered with a special by-law which should be adopted by the National Bank Council in the second half of 2017. Through implementation of the standards prescribed in the European directive, in the new Basel principles for banks' corporate governance from July 2015 and in the recommendations of the European banking authority, the requirements that shall be met by the members of the supervisory and management board of the bank are strengthened, including the method of their nomination, performance monitoring and their dismissal, as well as the role of independent members of the supervisory board.



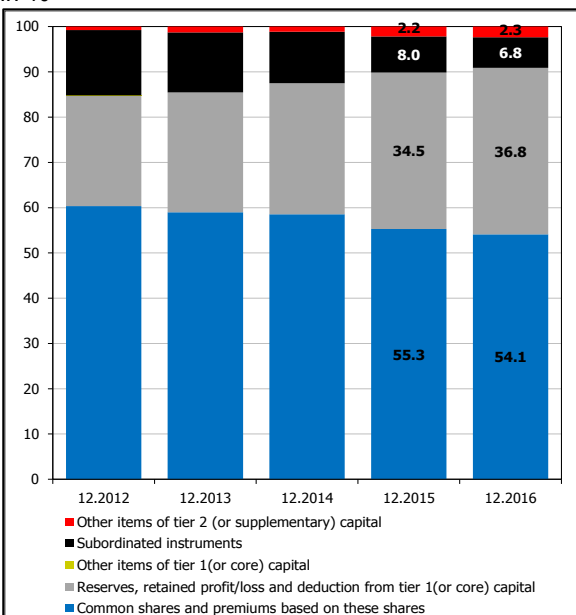
Chart 78
Structure of annual changes in own funds
in millions of Denars in percentage



Source: NBRM, based on the data submitted by banks.
Note: * Refers to the changes in the amount of outstanding subordinated instruments arising from the compliance/non-compliance with the regulation for inclusion of these instruments in the calculation of own funds.

In 2015, the high percentage of reinvested earnings in own funds relative to the previous year's profit is due to the redistribution of part of the profit previously classified as distributable to shareholders by one bank.

Chart 79
Structure of own funds, before deductions from core capital and supplementary capital
in %



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

5.2. Movements and quality of own funds of the banking system

In 2016, the own funds of the banking system registered an annual increase of Denar 1,794 million (or 3.7%), which is mostly due to the earnings retained in the previous year of Denar 1.7 billion. In 2016, the ratio between reinvested earnings in own funds and profit from the previous year is significantly lower than in the previous years. Namely, some banks retained the profits, but as distributable to shareholders (which, according to the regulation, does not increase the bank's own funds), while some of the banks made a significant dividend payment to their shareholders.

The next significant source of increase in own funds in 2016 was the issue of new shares by one bank in the third quarter of the year (in the amount of Denar 739 million), which was the first issue of shares in the last three years.

The share of core capital, before deducting Tier I capital and supplementary capital, in total own funds (also before deducting Tier I capital and supplementary capital) was high and further strengthened in 2016 to 90.9% (89.8 % as of 31 December 2015).

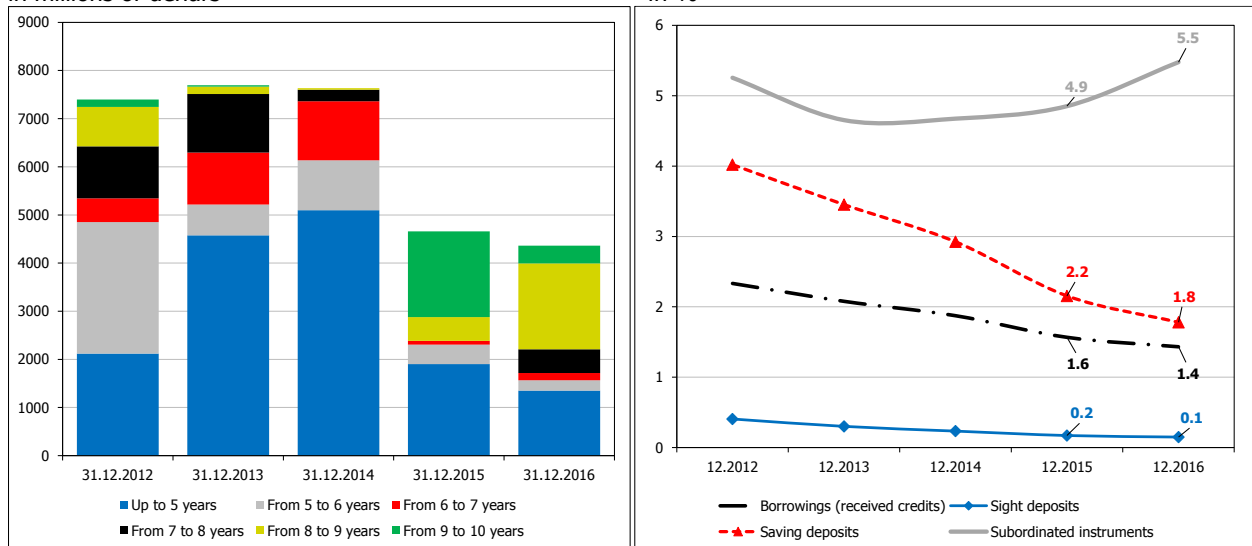
In addition to the decrease in total amount of banks' liabilities based on issued subordinated instruments (due to the early repayment of a subordinated instrument by one bank and the use of subordinated instruments by another bank to cover accumulated losses from previous years), in 2016, there was a significant improvement in the maturity profile of these instruments. Thus, 69% of the total amount of liabilities based on subordinated instruments has a residual maturity longer than five years (59.2% as of 31 December 2015), which gives legal power to banks to fully include

these instruments in the calculation of own funds. However, one should bear in mind that subordinated instruments are one of the most expensive sources of financing for banks, since they contain a subordination clause⁶⁹.

For more details about the level of own funds by group of banks see Annex 38.

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) in millions of denars



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

* Note: 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.

**Total banks' liabilities based on subordinated instruments are expressed according to the net carrying amount, from the balance sheet.

One of the significant challenges that banks will face in the coming period is the alignment with the capital requirements of Basel 3 (in terms of both the new structure of own funds and the requirement to maintain an adequate amount of capital buffers) included in the domestic regulation since March 2017⁷⁰.

⁶⁹ According to the subordination clause, in the case of bankruptcy or liquidation of the bank, subordinated liabilities will be paid before settling the liabilities towards the bank's shareholders and holders of hybrid instruments, but after settling the liabilities to other creditors.

⁷⁰ As of 31 March 2017, banks have been required to maintain a capital conservation buffer of 2.5% of the risk weighted assets. Also, banks identified as systemically important, according to the calculations based on the data as of 31 December 2016 (and duly

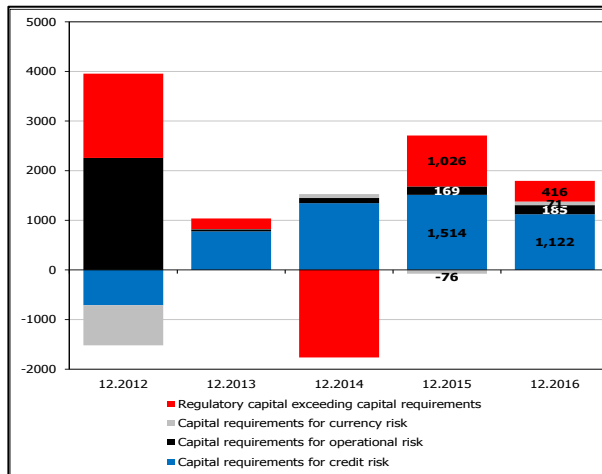
The relatively high amount and quality of banks' own funds indicates a solid capacity to comply with the new capital requirements.

5.3. Movements and structure of capital requirements and available capital of the banking system

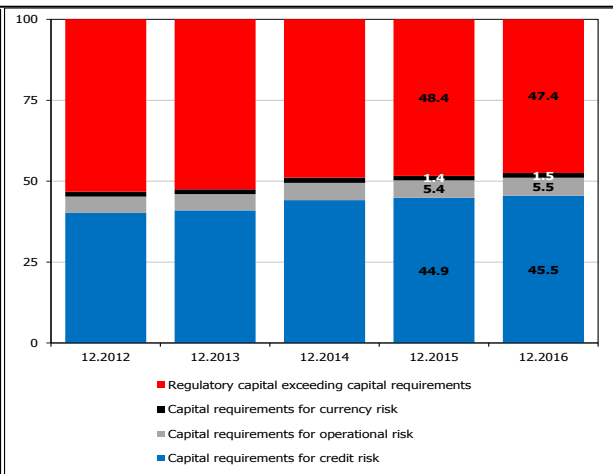
Chart 81

Structure of annual growth rates (left) and stock (right) of own funds, by the purpose for covering risks

in millions of denars



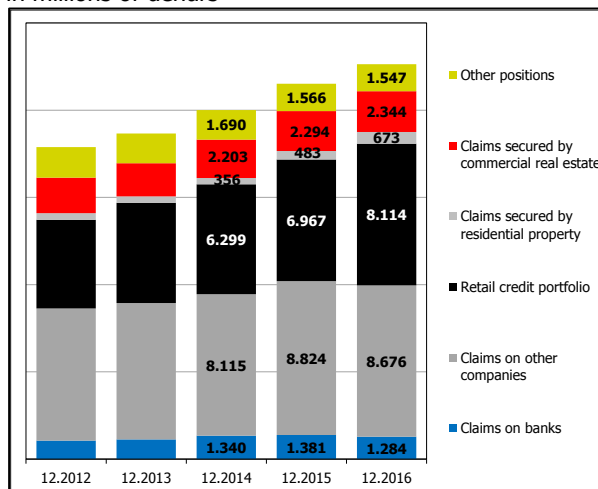
in %



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

Chart 82

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

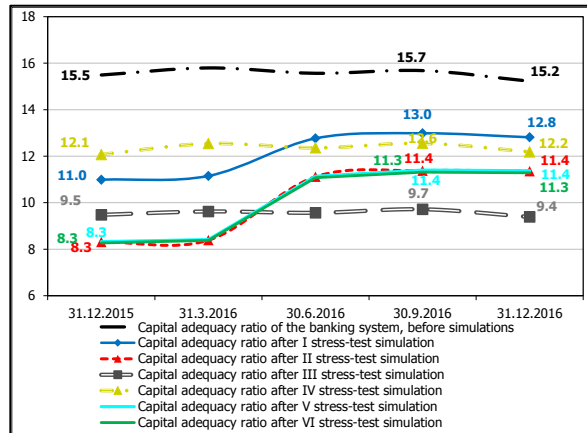


Source: NBRM, based on the data submitted by banks.

In 2016, capital requirement for covering risks increased by Denar 1,377 million (or 5.6%). Most of the increase in capital requirements for covering risks results from the higher capital requirement for credit risk, which mostly derives from the growth in retail loan portfolio. Similar to the previous year, portion of the new own funds was not engaged and remained available above the capital requirement for covering risks. The share of own funds above the capital requirement for covering risks in total own funds is still high (about 48%). If we take into account the supervisor's (NBRM) findings on the risk profile of each bank and the capital adequacy requirement, own funds above the minimum capital requirement for covering risks of the banks account for around a quarter of total own funds.

notified no later than 30 April 2017), will be required to hold capital buffer for systemically important banks until 31 March 2018, whereby half of the required capital buffer have to be allocated by 30 September 2017.

Chart 83
Comparison of results from simulations of credit and combined shocks
in %



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

*Stress testing includes the following simulations:

I simulation: Increase in non-performing loan exposure to non-financial entities by 50%;

II simulation: Increase in non-performing loan exposure to non-financial entities by 80%;

III simulation: Migration of 10% of the regular to a non-performing loan exposure to non-financial entities;

IV simulation: Reclassification in "C - non-performing" of the five largest credit exposures to non-financial entities (including connected entities);

V simulation: Increase in non-performing loan exposure to non-financial entities by 80% and increase in interest rates from 1 to 5 percentage points;

VI simulation: 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;

**Note: Credit exposure to non-financial entities includes the total credit exposure decreased by the exposure of banks to financial institutions and the government, i.e. to customers from the financial activities and insurance activities and public administration and defense and compulsory social security

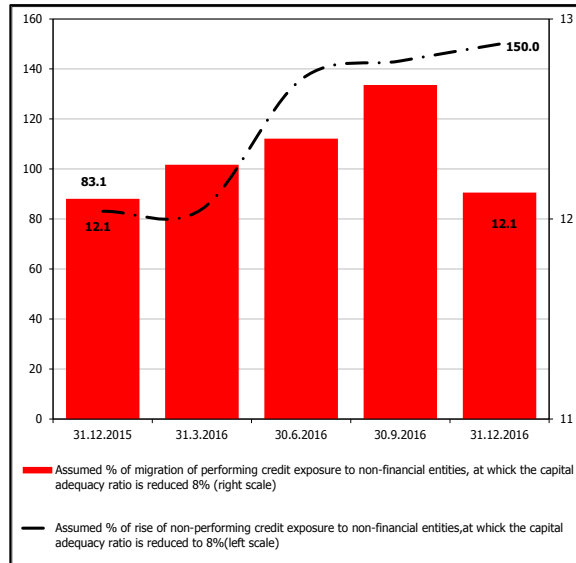
For more details on the capital requirements for covering risks and on the capital adequacy ratio, by group of banks, see Annex 39.

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

The stress testing of the resilience of the banking system and individual banks in the Republic of Macedonia to simulated shocks for 2016 generally indicates improved resilience of the banks compared to 2015. The improvement of the results of the stress test simulations, at lower initial capital adequacy ratio of the banking system relative to 2015, is mostly due to the reduced amount of non-performing loan exposure (which is often subject to "stress" in certain stress test simulations), which in turn stems from the regulatory measure for mandatory write-off of NPLs that have been fully provisioned for more than two years.



Chart 84
Necessary deterioration of credit exposure quality for the capital adequacy of the banking system to drop to 8% in %



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

Hypothetical shocks on the side of credit risk have the greatest impact on the stability of the banking system. Within the credit exposure to non-financial entities, simulations show a need of growth of 150% of non-performing loan exposure (by bank, the needed growth of non-performing loan exposure ranges from 55.3% to 2858.1%), i.e. migration of 12.1% of regular to non-performing loan exposure (by bank, the result ranges from 5.2% to 23.7%), for the capital adequacy of the banking system to drop below the capital requirement of 8%. These simulations would lead to a tripling of the share of non-performing to total loan exposure to non-financial entities (from the current 5.6% to 16.1%).

Internal Capital Adequacy Assessment Process

The Basel II International Capital Framework sets out the basic principles for risk and capital management by banks, deployed in the so-called "three pillars". The first pillar provides a complex overview of the definitions, processes and formulas for calculating the minimum regulatory capital requirements, and the third pillar points to the disclosures that banks have to make to ensure full transparency for investors and the public, which improves and strengthens market discipline.

The second pillar of Basel II describes processes that banks and regulators need to implement in order to meet capital adequacy requirements. Namely, banks should, *inter alia*, demonstrate through the Internal Capital Adequacy Assessment Process (ICAAP), that they have established methods and procedures necessary for securing the required capital resources for covering all materially significant risks. On the other hand, regulators/supervisors conduct a Supervisory Review and Evaluation Process (SREP), among other things, to assess the soundness of the process of determining the internal capital and, if necessary, to undertake appropriate activities.

The first phase of the process of determining the internal capital includes identification of all bank material risks, on the basis of internally defined criteria. This is how this process complements the methodology for determining the capital adequacy (which specifies rules for determining the minimum capital requirements for credit risk, market risks, currency and operational risk) and expands the scope of the risk types as well as their specific aspects that banks should take into account in the overall process of risk and capital management.

The identification of the risks of material significance to the banks is followed by measurement of each risk. In doing so, the bank should develop its own, more or less advanced, quantitative or qualitative risk measurement approaches that fit the nature and size of the bank, its risk profile and the features of the risk management process. In addition, when measuring risks, banks should also take into account the

results of stress testing, conducted on the basis of legally defined stress testing rules. Exemption from the obligation to develop own risk measurement approaches are the (aspects of) risks contained in the methodology for determining capital adequacy, for which the bank can use the regulatory approach prescribed by this methodology. The results of risk measurement are presented in the amount of internal capital requirement for covering each of the identified material risks, and the total internal capital is the sum of the internal capital requirement for covering each material risk. The results of the process of determining the internal capital, after conducting supervisory review and evaluation⁷¹, may show a need for allocating higher capital requirements than those stipulated in the regulation, because of the wider and more complex mix of risks that should be taken into account⁷².

The bank undertakes to provide and maintain the level of own funds determined under the process of determining the internal capital and confirmed through the process of supervisory evaluation. If the level of own funds does not correspond to the level of the determined internal capital, the bank should prepare a capital plan with a time horizon of at least three years, foreseeing activities to be undertaken to achieve and maintain the required level of own funds (recapitalization, reduction in the volume of activities, changes in the dividend policy, etc.).

The regulatory provisions that require from the banks in the Republic of Macedonia to implement the process of determining the internal capital are valid as of 1 January 2010⁷³. In accordance with the current regulations⁷⁴, this process is carried out once a year and at every significant change in the risk profile of the bank. Below is a review of some of the basic findings (outcomes) of the process of determining the internal capital for 2016⁷⁵.

Banks identify material risks based on the following quantitative and qualitative criteria: monitoring of the amount of bank's exposure to certain risks (including the probability of their materialization and the amount of losses if the risk materializes), share of some activities in the overall activities, monitoring the implementation of laws or internally defined limits for individual risks, conduct of analysis of occurrence of unforeseen events, the loss caused and the bank's responsiveness, analysis of the application of certain risk mitigation techniques and results of their application, expert opinion, conducting surveys etc.. In 2016, 13 banks identified material risks. However, one needs to bear in mind that there are certain differences between the banks in terms of the definition and coverage of individual risks (the thing that one bank distinguishes as a material risk, another one identifies as one of the aspects of other risk).

Banks measure the risks contained in the capital adequacy methodology by applying the regulatory approach⁷⁶, while for other material risks, they use mostly simple, internal approaches and methods for risk quantification. Two banks apply advanced, econometric models for measuring some of the identified material risks (more specifically, the credit risk, the interest rate risk in the banking book and the risks from the external environment) in the stress testing, whose results, under the regulations,

⁷¹ The supervisor may require from the bank to make changes in the process of determining the internal capital and/or maintain a higher level of own funds than the level determined through the process of determining the internal capital, if it considers that the process of determining the internal capital and the calculated total internal capital for covering risks does not correspond to the risk profile of the bank and its surrounding.

⁷² Theoretically, the process of determining the internal capital may also refer to the need to allocate lower capital requirements than the prescribed minimum, if the bank shows that it has achieved a high level of risk diversification. However, according to the current regulations, the National Bank will not recognize the effects of diversification and the correlation between the individual risks in determining the total internal capital for covering risks. Hence, the level of total internal capital is at least equal to the minimum regulatory capital requirements.

⁷³ Decision on risk management (Official Gazette of the Republic of Macedonia No. 31/2008).

⁷⁴ Decision on risk management (Official Gazette of the Republic of Macedonia No. 42/2011 and 165/2012).

⁷⁵ The analysis covers 14 of 15 banks (MBDP AD Skopje is not required by law to determine the internal capital).

⁷⁶ One bank applies internal approaches for measuring the risks contained in the capital adequacy methodology (more precisely for only one of the risks), but they point to a lower level of internal capital than that determined by applying the regulatory approaches to quantify these risks. Hence, the bank has an obligation to determine the internal capital for covering these risks at the level of the regulatory capital requirements.



should be considered in the process of determining the internal capital for the identified material risks (usually stress tests are used to supplement the already established method for measuring risk). Considering the fact that more than 90% of the determined amount of internal capital refers to risks whose measurement uses an approach included in the NBRM bylaws, the planned amounts of the risk weighted assets are crucial variables that influence the results of the process of determining the internal capital (internal capital for covering risks measured by applying the regulatory approach prescribed in the methodology for determining the capital adequacy is calculated as a certain percentage of the amount of risk weighted assets the bank plans for the end of the year⁷⁷).

Table 6

Internal capital set by the banks, additional capital requirements determined by the supervisor (NBRM) and capital buffers*, ** in amount, number and %

	Amount of internal capital (in 000 of Denars)	In % of total internal capital	Number of banks	In % of RWA that banks applied in the ICAAP
Internal capital for credit risk	26,956,717	77.2%	14	8.3%
Internal capital for currency risk	667,474	1.9%	13	0.2%
Internal capital for operational risks	2,952,470	8.5%	14	0.9%
Internal capital for risk of concentration	2,148,057	6.2%	8	0.7%
Internal capital for interest rate risk in banks activities portfolio	1,196,399	3.4%	10	0.4%
Internal capital for external environment risks	424,201	1.2%	2	0.1%
Internal capital for liquidity risk	126,625	0.4%	3	0.04%
Internal capital for reputation risk	43,387	0.1%	4	0.01%
Internal capital for strategic risk	354,715	1.0%	7	0.1%
Internal capital for legal risks	7,321	0.0%	2	0.002%
Internal capital for laundering money risk	6,398	0.0%	1	0.002%
Internal capital for regulatory risk	27,144	0.1%	2	0.01%
Internal capital for competition risk	1,626	0.0%	1	0.0005%
Total internal capital:	34,912,533	100.0%	14 out of 15 banks	10.7%
Pillar 2 capital requirements	4,475,305	12.8%	9	1.4%
Capital buffers in 2017, according to Basel 3 methodology (capital conservation buffer and half of capital buffer for systemically important banks)***	10,314,060	29.5%	14	3.2%

Source: NBRM, based on data submitted by banks.

*The analysis includes 14 banks, except MBDP AD Skopje.

**As of 31 December 2016, own funds amounted to Denar 47,523,947 thousand, and the capital adequacy ratio was 14.9%.

***As of 31 March 2017, banks are required to maintain a capital conservation buffer of 2.5% of the risk weighted assets. Banks identified as systemically important as of 31 December 2016 (for which they will be notified by 30 April 2017) are required to allocate

⁷⁷ It should be taken into consideration that when implementing the process of determining the internal capital for 2016, some banks do not use the planned amount of risk weighted assets, but data that was last available at the time of the implementation of the process.

the required capital buffer for systemically important banks, in full by 31 March 2018. However, banks are required to allocate half of this capital requirement until 30 September 2017. The amount of the capital buffers is calculated on the basis of the amount of risk weighted assets that the banks used in the process of determining the internal capital for 2016.

According to the results of the internal capital determining process implemented by each bank, the required capital adequacy ratio of the banking system in 2016 was 10.7%, which is almost 3 percentage points higher than the regulatory requirement (of 8%). Over 77% of the internal capital is required to cover credit risk.

The supervisory review of the process of determining the internal capital points to certain weaknesses and inconsistencies in the phases of this process, among some banks. Thus, according to the Supervisor's Review (NBRM), nine banks should hold slightly higher capital than the one calculated through the process of determining the internal capital, and on the aggregate basis, the required capital adequacy ratio of the banking system is 12.1%. Also, the capital requirement determined by the supervisor in one bank is at a level that is higher than the available own funds as of 31 December 2016. Banks with a current shortage of own funds are required to develop a capital plan for at least three years, indicating the activities to be undertaken in order to increase and maintain their own funds at a level higher than the required minimum. Also, a significant challenge for the banks in the coming period is the introduction of capital requirements stipulated in the Basel III international framework to domestic regulations, which will start to apply from 2017 (in 2017 banks will be required to maintain a capital conservation buffer, and systemically important banks will have to allocate a special capital buffer). Thus, analyzed by bank, taking into account the capital buffers that banks have to allocate during 2017⁷⁸, the required minimum capital adequacy ratio for 2017, by bank, ranges from 12.6% to 20%. Currently, as of 31 December 2016, five banks reported capital adequacy ratio below the required minimum, taking into account the capital buffers, and in the period ahead, they will have to take activities for achieving the required level of capital adequacy. Until then, under the Regulation (Decision on the methodology for determining the maximum distributable amount⁷⁹), these banks will have limitations on the amount of profit (for 2016) distributable to their shareholders and accordingly on the banks' dividend policy).

⁷⁸ As of 31 March 2017, banks have to maintain a capital conservation buffer of 2.5% of the risk weighted assets. Banks identified as systemically significant as of 31 December 2016 (for which they will be notified by 30 April 2017), have the obligation to allocate the required capital buffer for systemically important banks, in full by 31 March 2018. However, banks have to allocate half of this capital requirement by 30 September 2017.

⁷⁹ Official Gazette of the Republic of Macedonia No. 26/17.



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

1. Bank activities

In 2016, and particularly in the first half of the year, the activities of the domestic banking system were strongly influenced by the unstable political situation in the country, accompanied by speculation against the stability of the denar exchange rate, the domestic banks and the deposits. This situation staggered the public confidence (especially of households) and triggered deposit withdrawal by households in April and May 2016. In such circumstances, banks managed liquidity extremely well and executed all deposit payment demands smoothly. The National Bank intervened on the foreign exchange market (due to the increased demand for foreign currency), and tightened monetary policy, by increasing the interest rate on the CB bills and the reserve requirement rate for banks' liabilities in denars with FX clause. Also, the FX deposit auctions of the NBRM were reactivated at favorable contractual terms (interest rate), which made the keeping foreign currency liquid assets in the country compared to abroad more cost efficient for banks, which registered an annual growth on this basis. Signals for gradual stabilization of the situation and the perceptions of the economic agents were registered in the third quarter of 2016, through the positive movements on the foreign exchange market and the upward movement of the deposit base of banks, as well as of the household deposits, which is particularly significant. The deposit growth continued to accelerate in the fourth quarter of the year, when the banks' deposit potential recorded a solid annual growth, although somewhat slower compared to the end of 2015 and almost entirely conditioned upon the increase in sight deposits. Deposits growth mostly reflected the increase in deposits of non-financial companies, although with significant contribution of the households, while the stronger annual growth of foreign currency deposits in comparison with the increase in denar deposits ceased the deposit denarization process, present in the past years.

Changes in the level of loans in the banks' balance sheets were largely conditioned on the changes in the National Bank's regulation for the required transfer of claims that are fully provisioned for more than two years to the off-balance sheet of the banks. The strongest effects from these changes in the regulation were felt in the second quarter of the year, after which there was a gradual depletion of the effects. When controlled for the effects of the aforementioned regulatory changes, the annual growth in the lending activity of banks slows down; making the annual growth rate at the end of 2016 significantly lower compared to the previous year. Banks continue to focus on increasing the credit support of the household sector in domestic currency, which was the main driver of the annual growth in the lending activity of banks.

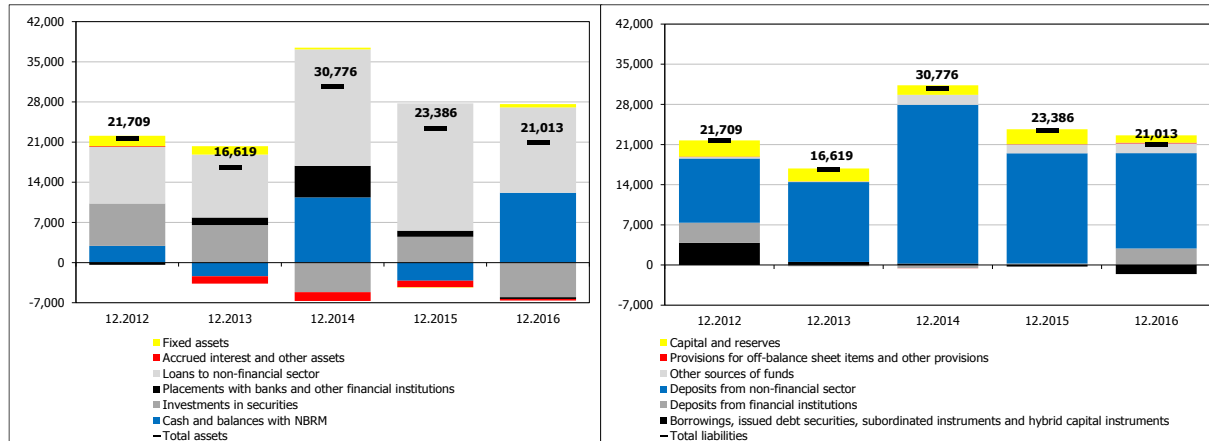
At the end of 2016 and early 2017, the National Bank cut the policy rate three times, bringing it back to the level from the beginning of the year (3.25%). Also, since October 2016, the National Bank has ceased to hold foreign currency deposit auctions. These National Bank's decisions to normalize the monetary policy were the result of the gradual stabilization of economic agents' expectations after the measures taken to cope with pressures arising from the uncertain political developments, and amid further retention of estimates for stability of the economic



fundamentals. Yet, the unstable political situation in the country poses significant risk for the banks in the future.

Chart 85

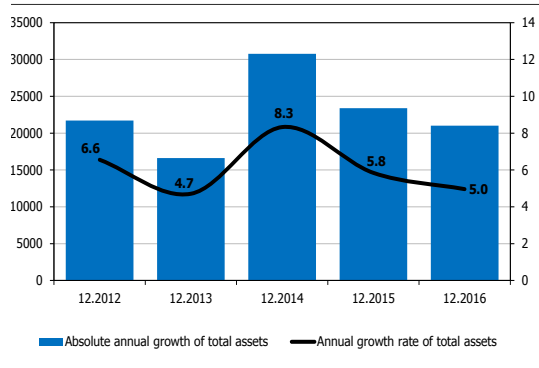
Absolute annual growth of the components of assets (left) and liabilities (right) of the banking system in millions of denars



Source: NBRM, based on the data submitted by banks.
Note: Loans are presented on a net basis less impairment

Chart 86

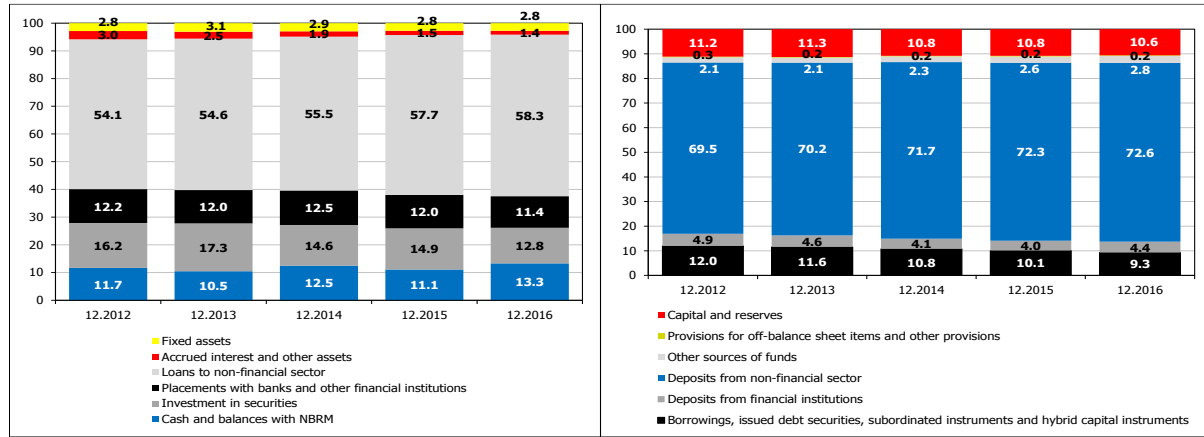
Annual change of assets of the banking system in millions of denars and in %



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

As of 31 December 2016, the total assets of the banking system were valued at Denar 444,680 million, which is an annual increase of Denar 21,013 million, or 5%. Growth mostly reflects the increase in lending activity to non-financial entities and placements in foreign currency deposits with the NBRM. The growth of the total banking system activities slowed down compared to 2015, mainly reflecting the slower annual growth of the deposit base, due to the withdrawals of deposits in the second quarter of 2016.

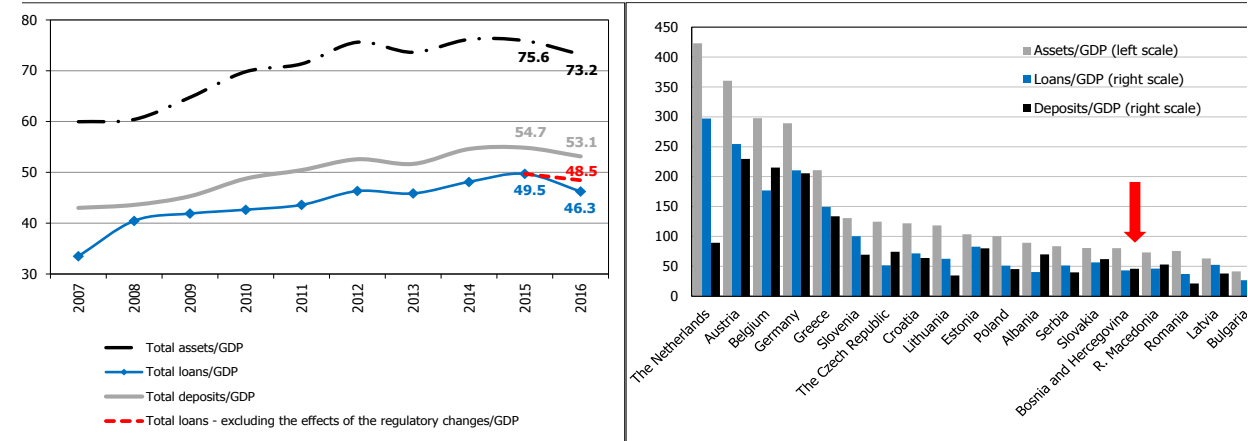
Chart 87
Structure of the assets (left) and liabilities (right) of the banking system
in %



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

Compared with most EU countries under observation, financial intermediation in the Republic of Macedonia is lower, but similar to that of the countries in the region. **In 2016, the role of the banking system as a financial intermediary was diminishing.**

Chart 88
Financial intermediation in the Republic of Macedonia, EU countries and the region
in %



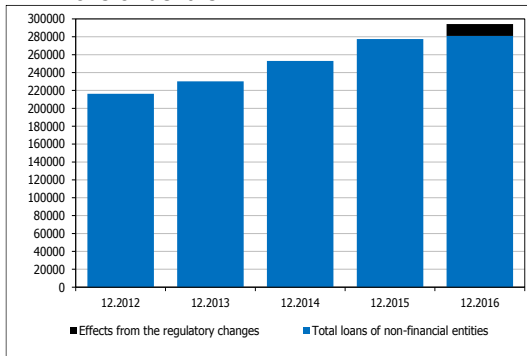
Source: NBRM, based on data submitted by banks, websites of IMF, ECB and central banks.

Note: Data refer to December 2015, with the exception of Macedonia (December 2016) and Serbia (June 2015).



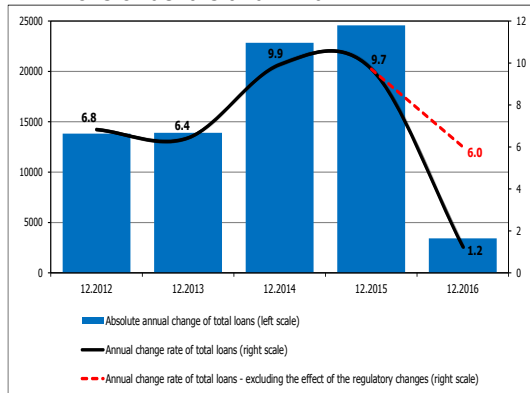
1.1 Loans to non-financial entities

Chart 89
Loans to non-financial entities
in millions of denars



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

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



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

In 2016, against the background of domestic political turmoil, followed by speculation against the banking system stability, lending to non-financial entities⁸⁰ increased, but at a slower pace. The growth of banks' lending to the non-financial sector in 2016 amounted to Denar 16,691 million or 6.0%, which is a slowdown of 3.7 percentage points compared to the growth in 2015. In December 2015, the National Bank made changes to the existing regulatory framework⁸¹, according to which, by 30 June 2016, the banks had to start transferring to the off-balance sheet accounts all claims that were fully provisioned for more than two years. Such regulatory changes influenced the balance sheet indicators for credit growth. In 2016, Denar 13,262 million was written off⁸². The strongest effect (or 84% of this amount) was felt in the second quarter of the year, and by the end of the year, the effects of this regulatory change were gradually exhausted. **Thus, taking into account the effects of the write-offs, the annual growth of lending to non-financial entities was Denar 3,429 million or 1.2%.**

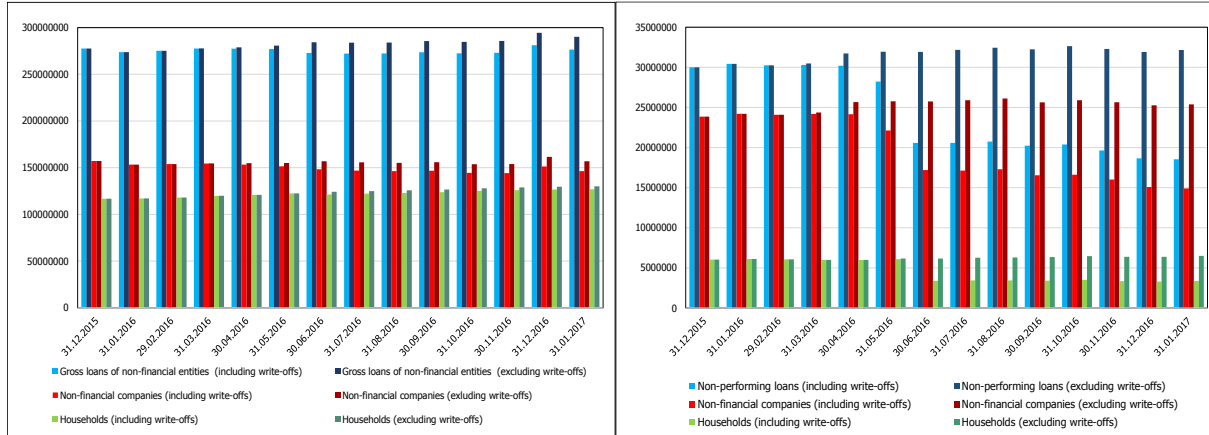
⁸⁰ Loans to non-financial entities include loans to resident and non-resident non-financial entities, including loans to private and public non-financial companies, central government, local government, non-profit institutions serving households (loans to other clients), sole proprietors and natural persons (loans to households).

⁸¹ Decision on amending the Decision on credit risk management (Official Gazette of the Republic of Macedonia No. 223/15).

⁸² Of this amount, Denar 10,185 million are write-offs of fully provisioned loans to non-financial companies, while the residue of Denar 3,077 million are written-off household loans.

Chart 91

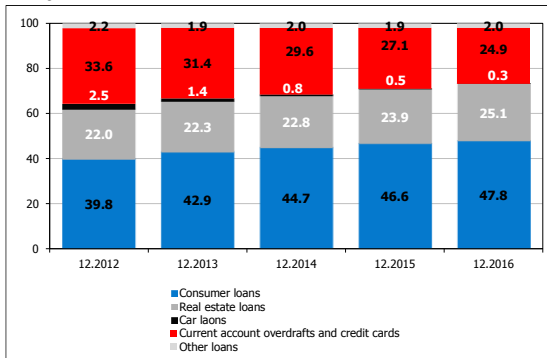
Comparison of gross loans to non-financial entities, non-financial companies and households (left) and non-performing loans to non-financial entities, non-financial companies and households (right), with and without the effects of the write-offs in millions of denars and in %



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

Chart 92

Structure of loans to households, by product in %

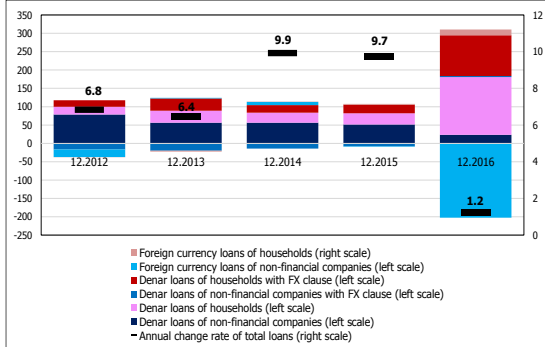


Source: NBRM, based on the data submitted by banks.

The credit growth almost entirely resulted from the increased credit support of the banks to the households, amid significant slowdown in lending to corporate clients. Namely, in 2016, household loans increased by 11% (a slowdown of 2.4 percentage points compared to the previous year), while loans to non-financial companies increased by 2.6% (7.1% in 2015). The effects of mandatory write-offs were largely felt in corporate loans, so if their effect is included, in 2016, loans to the corporate sector decrease by 3.8%.



Chart 93
Contribution of individual components to the annual growth of total loans of non-financial entities in %

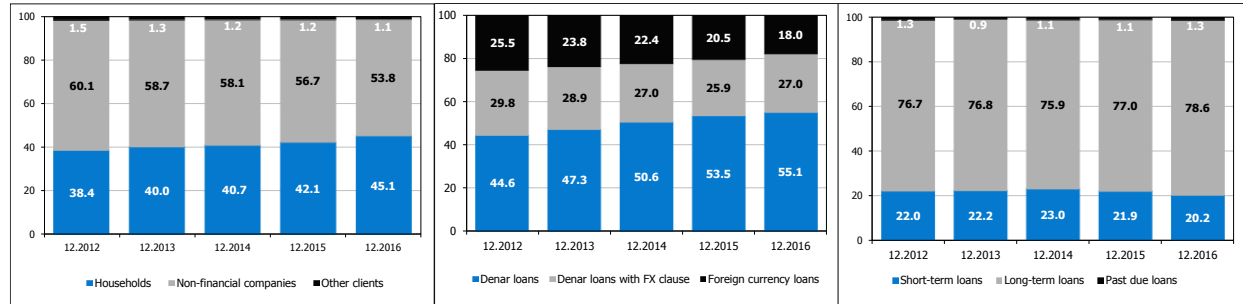


Source: NBRM, based on the data submitted by banks.

Denar loans kept the leading role in the currency structure of total loans. In 2016, denar loans increased at the expense of the almost equal decrease of the loans in foreign currency. The growth in denar loan was more pronounced in loans to households⁸³ than to non-financial companies, while the decline in foreign currency loans was almost entirely due to the decline in these loans to non-financial companies⁸⁴. Denar loans with FX clause registered an annual increase of Denar 3,759 million (or 5.2%), mostly due to household loans.

Chart 94

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



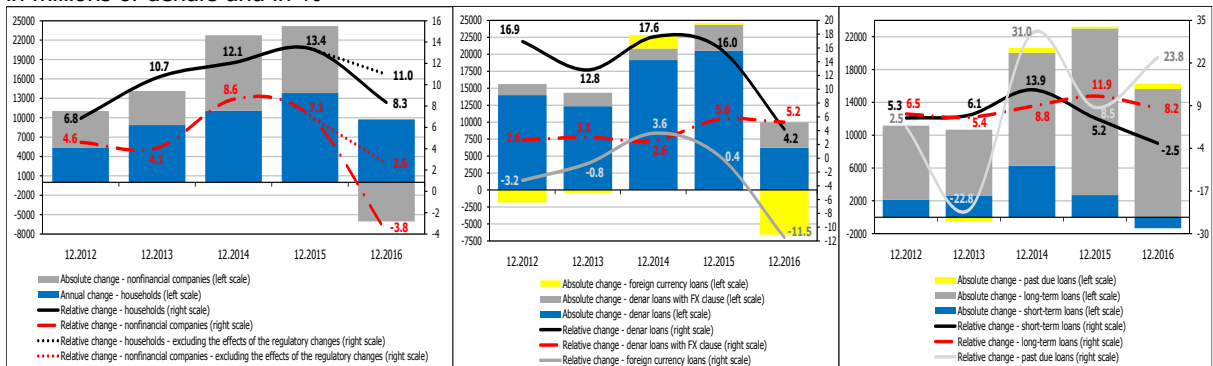
Source: NBRM, based on the data submitted by banks.

The analysis of changes in the loan structure in 2016, by currency and by maturity, partially failed because of lack of data on the structure of regulatory write-offs by currency and by maturity. The National Bank holds data only for the sectoral structure of write-offs (households and non-financial companies).

⁸³ Denar loans to households increased annually by Denar 5,394 million (or by 8.7%), while the annual growth of Denar loans to non-financial companies was Denar 805 million (or 0.9%).

⁸⁴ Foreign currency loans to non-financial companies decreased annually by Denar 6,943 million, or 14.0%.

Chart 95
Annual change of loans by sector, currency and maturity
in millions of denars and in %

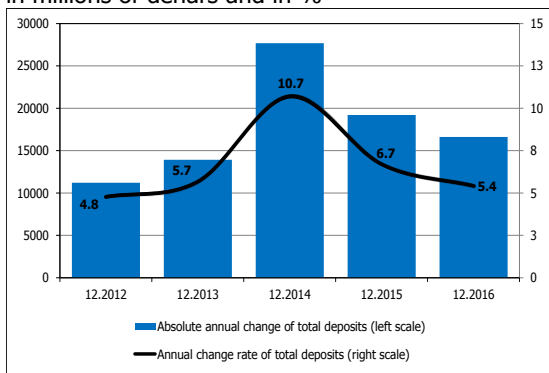


Source: NBRM, based on the data submitted by banks.

The analysis of changes in loans in 2016, by currency and by maturity, partially failed because of lack of data on the structure of regulatory write-offs by currency and by maturity. The National Bank holds data only for the sectoral structure of write-offs (households and non-financial companies).

With respect to maturity, long-term lending continues to be the main driver of the growth of lending activity, whose contribution in 2016 further increased. Almost 78% of the growth of long-term loans is due to the household sector⁸⁵.

Chart 96
Annual change of deposits of non-financial entities
in millions of denars and in %



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

1.2 Deposits of non-financial entities

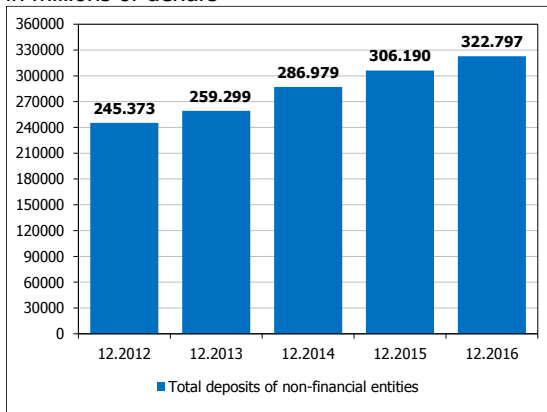
The intensified domestic political turmoil, followed by public suspicions about the stability of banks' deposits, with record low interest rates on deposits, led to withdrawals of deposits from banks, mainly in April and May 2016. This in turn **slowed down the annual growth of total deposits with banks in 2016.**

Banks performed all requests for payment of deposits without any delay, which made the public's distrust to shrink rapidly, and the third quarter registered certain stabilization. Namely, deposits started to grow again (although mostly in the form of demand deposits), and at the end

⁸⁵In 2016, long-term loans to households increased by Denar 12,147 million, which largely resulted from the growth of long-term Denar loans to households (Denar 7,089 million) and less from the growth in long-term Denar loans with FX clause to households (Denar 4,380 million).

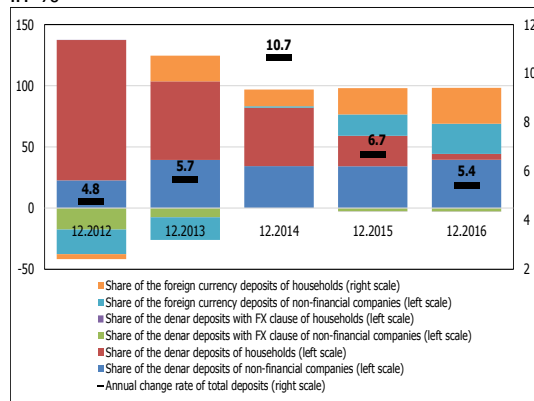


Chart 97
Stock of deposits of non-financial entities
in millions of denars



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

Chart 98
Contribution of individual components to
the annual growth of total deposits of
non-financial entities
in %



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

of the year, their amount approached their long-term trend.

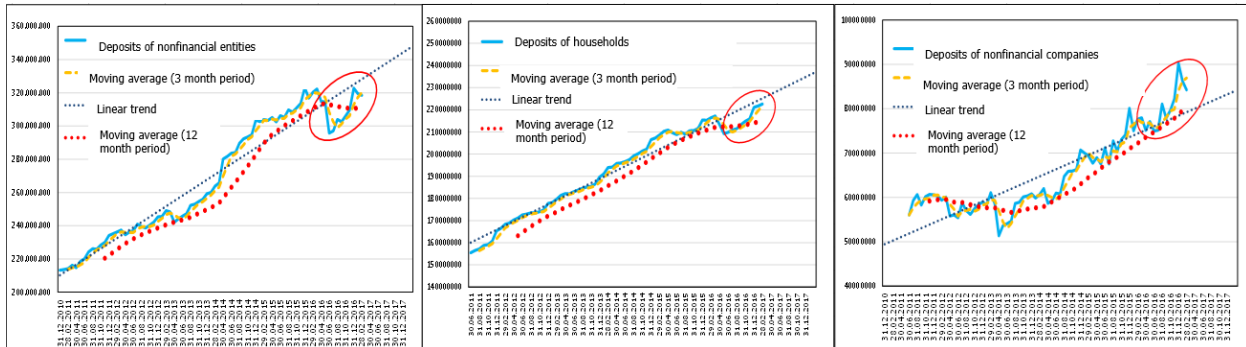
On annual basis, total deposit base of banks increased by Denar 16.607 million, or by 5.4%, which is a slowdown of 1.3 percentage points or Denar 2.604 million compared to the annual growth in 2015. Deposits remained the major source of financing of banking activities (72.6% in total assets, which is almost unchanged compared to the end of 2015). The annual dynamics of the banks' deposit base (61.3%) was determined by the **deposits of non-financial companies**, whose growth (of Denar 10,183 million or 12.7%⁸⁶) was twice higher than the annual growth of **household deposits** (Denar 5,667 million, or 2.6%⁸⁷). Nevertheless, household deposits remained the most important source of financing of the domestic banking system, with a share of 68.5% in total deposits (70.4% as of 31 December 2015).

⁸⁶ 13.3% in 2015.

⁸⁷ 4.3% in 2015.

Chart 99

Comparison between total deposits of non-financial entities, household deposits and deposits of non-financial companies with linear and movable averages in millions of denars

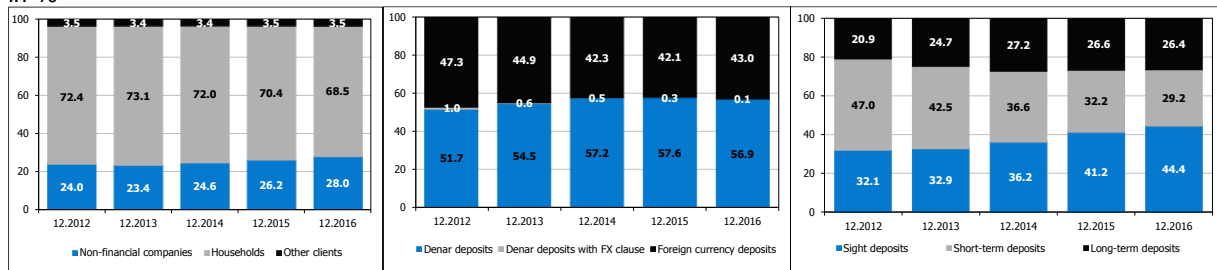


Source: NBRM, based on the data submitted by banks.

In addition to the withdrawal of deposits, the staggered public confidence in the banks in the second quarter of the year was also shown through distrust in the stability of the domestic currency and consequently, enhanced demand for foreign currency (cash or foreign currency deposits). This suspended the constant denarization of the banks' deposits present in the past years. The annual growth rate of denar deposits almost halved compared to the previous year and is also lower compared to the growth rate of foreign currency deposits, which accelerated in 2016. This caused the share of denar deposits in the total deposits to decrease

Chart 100

Total deposit structure by sector, currency and maturity in %



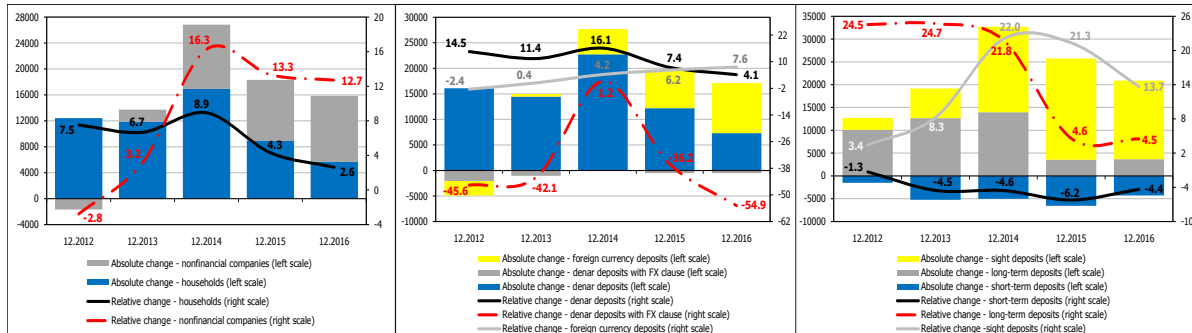
Source: NBRM, based on the data submitted by banks.



from 57.6% in 2015 to 56.9%⁸⁸ at the end of 2016. In 2016, the growth in the Denar deposits (which was 4.1%⁸⁹) was mostly conditioned upon the growth of corporate deposits⁹⁰. Denar household deposits increased by only 0.7%, which is a multiple slowdown, compared to the previous year, when the growth was 14%. Deposits in denars with FX clause usually have a low share in the total deposit base, and the demand for them is more pronounced in the corporate sector, which due to the foreign exchange regime cannot buy foreign currency if they are not intended for payment abroad. Thus, in order to prevent any strengthening of the growth of deposits with FX clause (primarily from non-financial companies), in May 2016, the National Bank increased the reserve requirement for denar liabilities with FX clause of banks, from 20% to 50%⁹¹.

Chart 101

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



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

The annual growth of foreign currency deposits (7.6%⁹²) accelerated, with slightly larger contribution of the household foreign currency deposits (49.6%) compared to that of the corporate sector (41.6%). The National Bank responded to the increased demand for foreign currency with interventions on the foreign exchange market and by increasing the policy rate from 3.25% to 4%, and in May 2016, it

⁸⁸ Thus, 61.3% of the total denar deposits are household deposits (63.4% as of 31 December 2015).

⁸⁹ 7.4% in 2015

⁹⁰ 11.2% in 2016 and 12.6% in 2015.

⁹¹ Decision on reserve requirement (Official Gazette of the Republic of Macedonia No. 87/16 and 218/16) is hereby repealed.

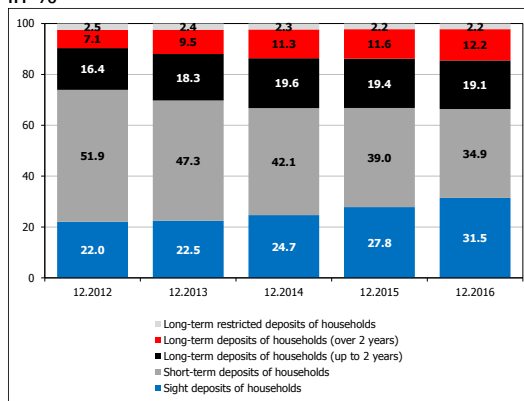
⁹² 6.2% in 2015.

reactivated the foreign exchange deposit auctions (as an attractive instrument for directing the available foreign currency liquidity of banks).

The suspension of denarization of the deposit base was followed by shortening of its maturity, which may also reflect the political insecurity in the country and public distrust. Short-term deposits continued to decline in 2016, with the most significant growth registered in demand deposits, whose annual growth rate (13.7%⁹³) was three times higher than the growth rate of long-term deposits. Slightly unusual, but the growth of demand deposits⁹⁴ mainly reflected the households contribution (55.6%) that exceeded the contribution of the corporate sector (39.2%). The annual growth of long-term deposits (4.5%⁹⁵), was largely (or 65%) conditioned upon household foreign currency deposits.

While the currency and maturity transformation of deposits tends to decrease interest expenses in the banks' balance sheets, it still complicates the liquidity risk management and creates need for greater vigilance, i.e. holding larger, yet less yielding, amounts of liquid assets.

Chart 102
Maturity structure of household deposits in %



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

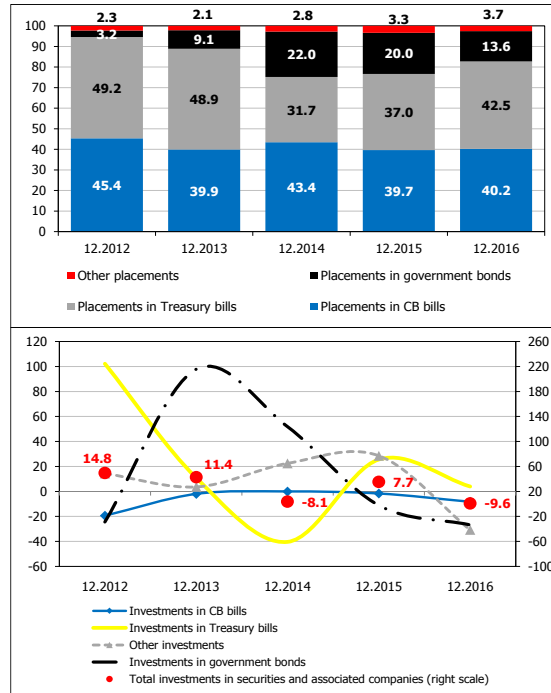
⁹³ 21.3% in 2015.

⁹⁴ The annual growth of household demand deposits was mostly (53.3%) determined by foreign currency deposits and less (46.7%) by denar deposits. The annual growth of demand deposits of non-financial companies was mostly (64.4%) determined by denar deposits and less (35.6%) by foreign currency deposits.

⁹⁵ 4.6% in 2015.



Chart 103
Structure (up) and annual growth rate (down) of securities portfolio and investments in associated companies in %

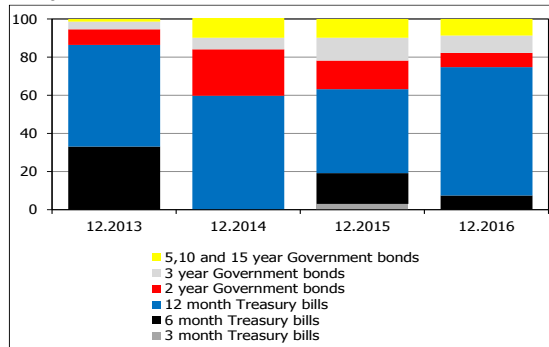


Source: NBRM, based on the data submitted by banks.

1.3 Other activities

At the end of 2016, **banks' investments in securities⁹⁶** were lower by Denar 6,033 million (or by 9.6%) compared to the end of 2015, and their share in total assets of banks reduced to 12.8% (from 14.9% at the end of 2015). This is due to the reduced banks' placements in domestic debt securities. The intensified decrease in banks' investments in domestic government bonds (mostly pronounced in three-year government bonds) of Denar 4,891 million (or 38.7%) contributed the most to the decrease in the total portfolio of securities. Banks' investments in CB bills also decreased by Denar 2,071 million (8.3%). On the other hand, investments in treasury bills increased annually (by Denar 920 million, or 3.9%). Amid limited investment alternatives, securities portfolio remains characterized by non-diversification and dominance of debt securities issued by the Republic of Macedonia and CB bills.

Chart 104
Maturity structure of banks' investments in government securities in %



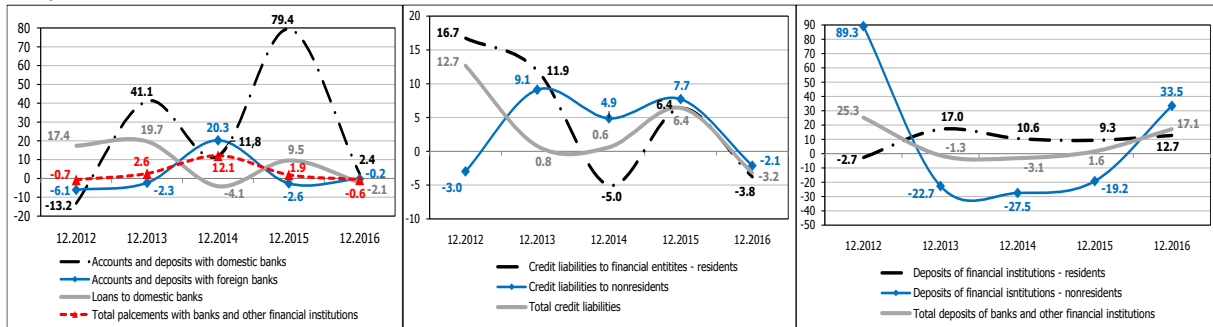
Source: NBRM, based on the data submitted by banks.

Placements with banks and other financial institutions in 2016 slightly decreased (by Denar 315 million or by 0.6%), mostly due to the reduced credits to domestic banks, mostly long-term with maturity of over two years, in foreign currency. An insignificant decrease was also observed in the current account balances in foreign currencies in foreign banks.

⁹⁶ Including investment in associated companies. Banks' investments in foreign securities account for 1.2% in the total banks' investments in securities.

Chart 105

Annual growth rate of placements with financial institutions (left), loan liabilities (middle) and deposits of financial companies (right) in %

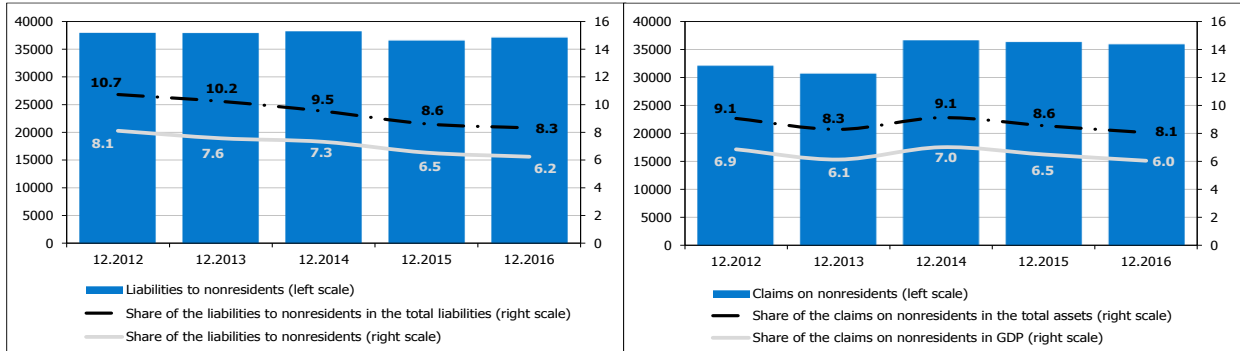


Source: NBRM, based on the data submitted by banks.

Analyzing liabilities, **loan liabilities** declined (by Denar 1,185 million, or 3.2%), largely due to the reduced liabilities based on long-term interbank lending in foreign currency (deleveraging of other domestic banks to MBDP AD Skopje). On the other hand, the deleveraging of MBDP AD Skopje to non-residents reduced the loan liabilities to non-residents (long-term loans in foreign currency to non-resident financial companies).

Chart 106

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



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

In 2016, deposits of banks and other financial institutions increased compared to the previous year, determined by denar transaction accounts of foreign banks (accumulation of denar funds on a non-resident account of a foreign bank due to dividend payment) and by short-term deposits of resident

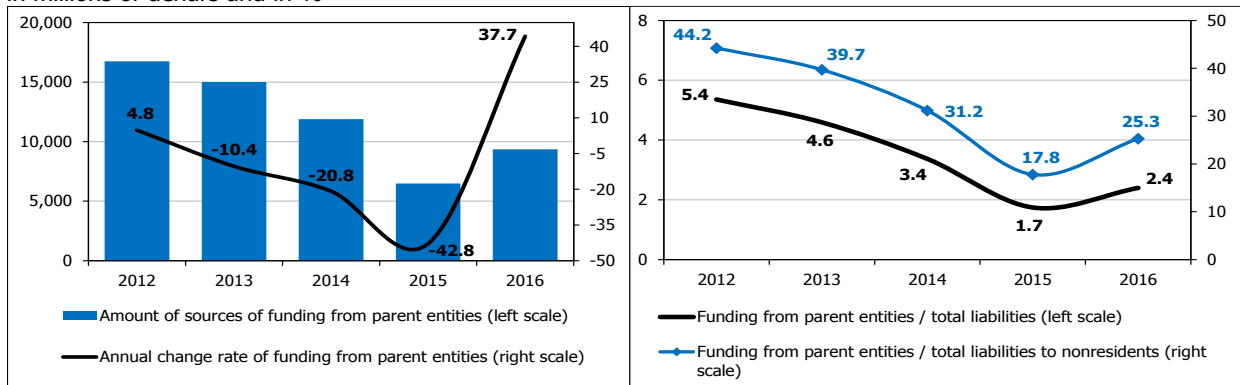


financial companies (denar deposits up to one year). There was also a certain increase in long-term deposits of pension funds.

As in previous years, in 2016, the banks in the Republic of Macedonia perform their business mostly on the domestic market. Claims on and liabilities to non-residents are low, and in 2016, there was further decrease in claims on non-residents (of Denar 411 million or 1.1%). In contrast, liabilities to non-residents went up by Denar 519 million (1.4%). Domestic banks' placements with non-residents mainly include liquid assets (correspondent accounts or short-term deposits) with foreign banks, while the bulk of banks' liabilities to non-residents are based on long-term loans (mainly of MBDP AD Skopje to international financial institutions). The banking system has continuously appeared as debtor rather than creditor to non-residents, although in 2016, the amount of liabilities to non-residents was very close to the amount of claims on non-residents. Accordingly, the share of claims on non-residents came closer to the share of liabilities to non-residents in the total assets/liabilities (8.1% and 8.3%, respectively)⁹⁷.

⁹⁷Analyzed by individual bank, the share of banks' claims on non-residents in total assets ranges from 0.5% to 17.6%, while the share of banks' liabilities to non-residents in total liabilities ranges from 0.1% to 15.2%. MBDP AD Skopje was excluded from this analysis.

Chart 107
Liabilities to parent entities of banks
in millions of denars and in %



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

The use of funds⁹⁸ from parent entities is not a major source of funding for the Macedonian banks. Thus, in 2016, the share of liabilities to parent entities (including subordinated liabilities and hybrid capital instruments) in total liabilities of the domestic banking system, and in liabilities to non-residents⁹⁹ were 2.4% and 25.3%, respectively. After years of continuous reduction of liabilities to parent entities, in 2016, these funding sources registered a solid growth of 37.7% (or Denar 2,869 million), mainly in three banks due to the increase in liabilities based on short-term deposits and long-term loans. However, the annual growth of liabilities to parent entities is a result of their significant increase in the last quarter of 2016. With the exception of this significant increase, in the past few years, the liabilities to parent entities have registered a continuous decrease followed by a shortening of their maturity.

⁹⁸ The sources of banks' financing from parent entities predominantly include short-term deposits and liabilities based on subordinated and hybrid capital instruments.

⁹⁹ Analyzing by bank, the share of banks' liabilities to parent entities in total liabilities to non-residents ranged from 1.4% to 35.1%.

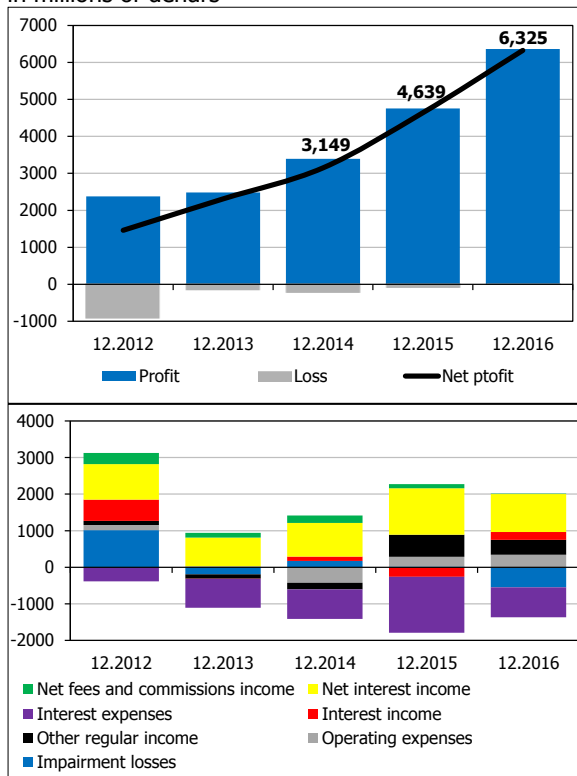
2. Profitability

Despite the domestic political instability and slower economic growth, in 2016, banks managed to significantly improve their profitability, income, and particularly cost-effectiveness, which in turn improved their productivity. The financial result was by one third higher compared to last year, which is mostly due to lower expenditures. Thus, this year, interest expenses also significantly decreased, amid modest growth in interest income, which is particularly evident in the financial intermediation with the household sector. Reduction of impairment, especially for non-financial (foreclosed) assets, is the second most important driver of the high profitability of the banking system. Lending and deposit interest rates declined at a slower pace, while the changes to the monetary policy aimed to ease the deposit market situation, contributed to the stabilization of the deposit interest rates in denar. Amid low interest rates, one of the major challenges for banks is the maintenance of high profitability and capacity building to further generate solid net interest income.

Chart 108

Net profit after taxation (top) and annual change in main income and expenses (bottom)

in millions of denars

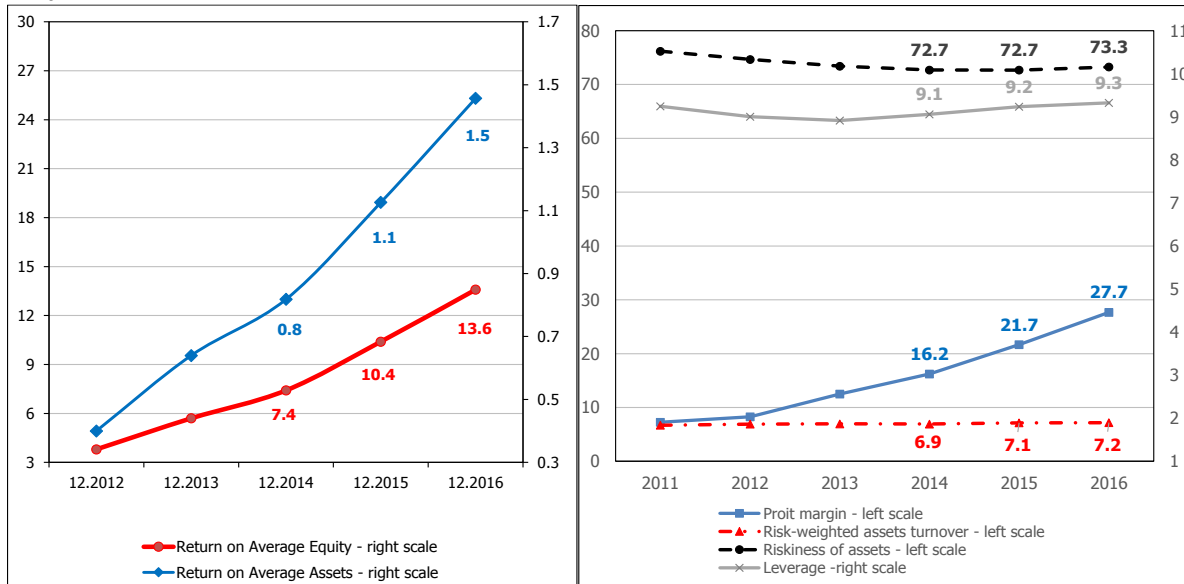


Source: NBRM, based on the data submitted by banks.

2.1 Profitability and efficiency indicators of the banking system

At the end of 2016, the financial result of the overall banking system reached Denar 6.3 billion, an increase of Denar 1.7 billion (or 36.3%), compared to last year. Analyzed by bank, only two banks ended the year at a loss. The three smallest banks showed a positive financial result for the first time in the last ten years. Amid a weaker financial market, maintaining a profitable banking system is particularly important, given that retained earnings play an important role in the self-sustainability of capital, and maintaining financial stability.

Chart 109
ROAA and ROAE (left) and their components (right)
in %



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

The higher profit for 2016 directly improved the profitability and efficiency indicators of the banking sector. Return on average assets and average equity ratio kept on growing over the past few years and amounted to 13.6% and 1.5%, respectively, in 2016, which is an increase of one-third compared to 2015¹⁰⁰. The growth of these rates in the past three years is mainly due to the significant positive trends in the profit margin¹⁰¹. Compared to 2015, there was a minimum increase in the banks' indebtedness and the risk level in the banking activities, but the significant increase in the profit margin had the greatest impact on the increase in ROAA and ROAE. Profitability and efficiency indicators of the banking system and by group of banks are presented in Annex 40, and point to improved income and cost efficiency of banks.

Although the net profit increased significantly in 2016, the net interest margin¹⁰² remained unchanged at 4.1%. In fact, the increase in net interest income (as one of the net interest margin components) is the main driver of the increase in the financial result (accounting for 61.6% of the increase in the net profit after tax), but it is offset by the same (percentage) growth of the average interest-bearing assets. Thus, net interest income registered solid growth of 7.2% (or Denar 1,037 million), while the average interest-bearing assets increased by Denar 25,299 million (or 7.2%)¹⁰³.

¹⁰⁰ Assets and equity are presented as average of assets or liabilities, i.e. equity as of 31 December 2015 and 31 December 2016.

¹⁰¹ The rate of return on average equity and reserves can be shown this way: $ROAE = \frac{P}{CR} * \frac{S}{S} * \frac{A}{A} * \frac{RWA}{RWA} = \frac{P}{CR} * \frac{S}{RWA} * \frac{A}{CR} * \frac{RWA}{A} = PM * RWAturnover * L * RBAratio$ 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 = riskiness of assets

Profit margin is operating profit (loss) to total regular income ratio.

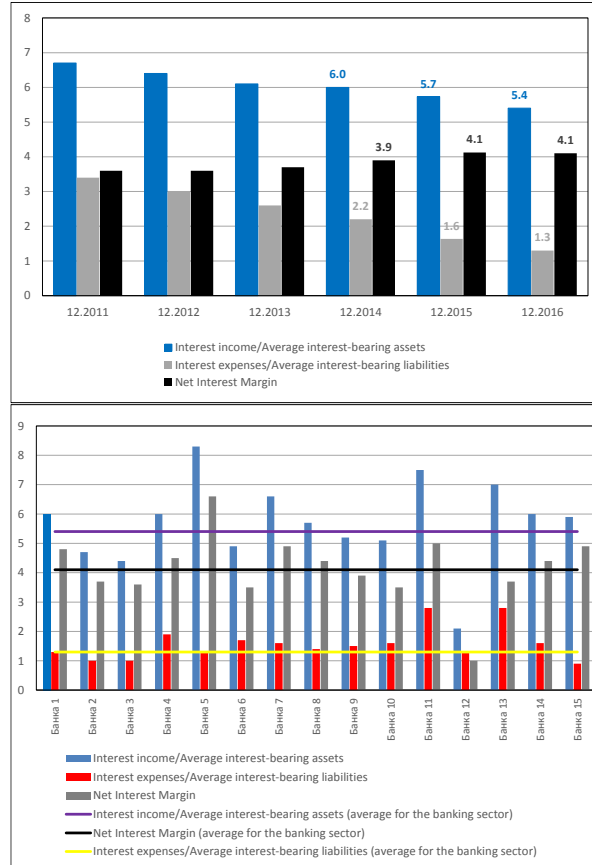
¹⁰² Calculated as a ratio between net interest income and average interest-bearing assets.

¹⁰³ The average interest-bearing assets in 2015 increased by 3.6% compared to 2014.



Chart 110

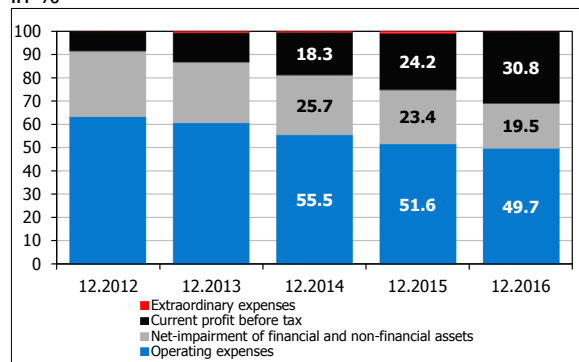
Net interest margin as of 31 December 2016 of the banking system (up) and by bank (down) in %



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

Chart 111

Usage of total income in %



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

Financial intermediation with households have made the greatest contribution to maintaining the net interest margin at the same level. In the year of historically lowest interest rates¹⁰⁴, amid slower growth in the deposit base¹⁰⁵ and significant changes in its currency and maturity structure, banks cut interest expenses by significant 14.7% (Denar 822 million). Reduction of interest expenses is observed in all sectors, most significantly in the interest expenses of households, which declined by 19.3% (or by Denar 648 million) and contributed with almost 79% in the total drop in interest expenses¹⁰⁶. At the same time, the banks raised interest income by a modest 1.1% (Denar 215 million), but again, the interest income from lending to households increased the most by Denar 592 million (or 7.3%), which is the result of the increased lending to this sector¹⁰⁷. Finally, half of the growth in interest-bearing assets stems from the increased credit activity with the household sector, and only a quarter of the increase is due to the credit activity with non-financial companies.

In 2016, the banking system kept on strengthening its operational efficiency, as reflected by the reduction in operating costs per unit generated total and net interest income, as well as per unit average assets, although operating costs

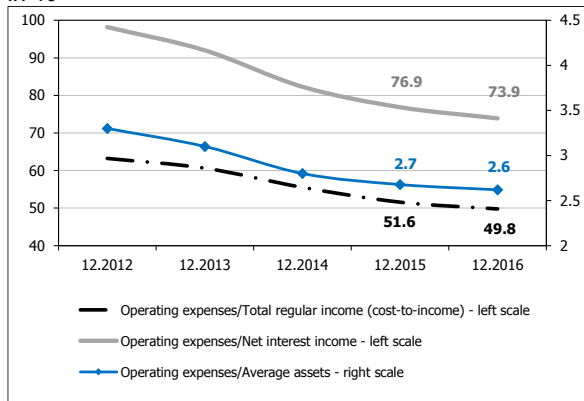
¹⁰⁴ The interest rate movement analysis is given below. For more details about the movement of interest rates visit the NBRM website.

¹⁰⁵ For more details on the movements of deposits, see II.1.2 Deposits of non-financial entities.

¹⁰⁶ Interest expenses from non-financial entities decreased by Denar 48 million (8.5%).

¹⁰⁷ Interest income from non-financial entities decreased by Denar 332 million (3.9%).

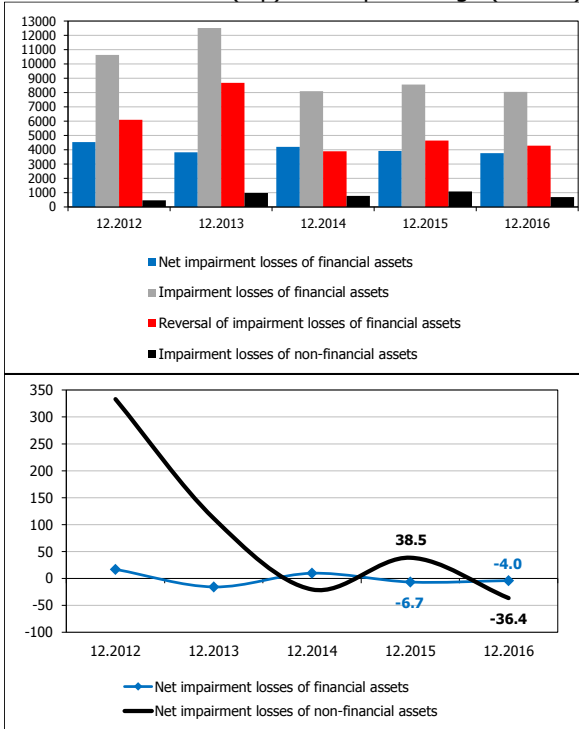
Chart 112
Bank operating efficiency indicators
in %



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

increased by Denar 340 million (or 3.1%). Almost half of the annual increase in operating costs is concentrated in one large bank and stems from the higher additional provisions for potential liabilities due to litigation. Also, employees' costs also record an annual increase of Denar 128 million (or 2.9%), and have the highest individual share in the operating costs of 40.5%. On the other hand, the increase in total revenues from the banks' regular operations was higher (by 6.8% or by Denar 1,460 million), with the largest contribution of 71.1% made by the net interest income. However, non-interest income¹⁰⁸, also increased by 6% or Denar 422 million (this growth does not result from the expansion of some non-traditional banking activities, but is mostly due to the higher amount of written off claims collected in 2016).

Chart 113
Amount (left) and annual growth rates (right) of impairment costs of financial and nonfinancial assets
In millions of Denars (top) and in percentage (bottom)



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

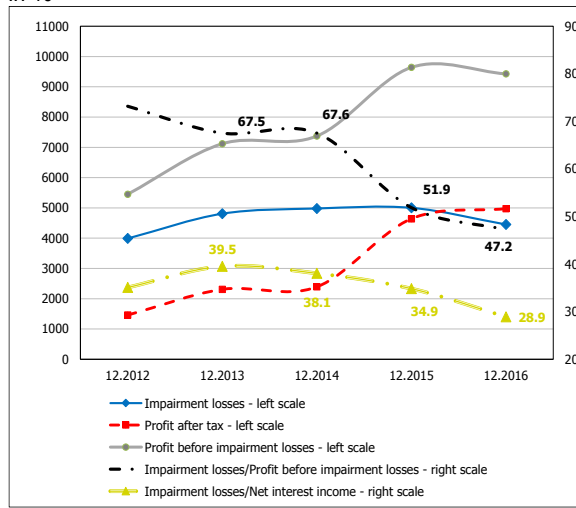
Given the continuous improvement of banks' operations, on both the income and the expenditure sides, the impairment cost that ranges between Denar 4 billion and Denar 5 billion decreasingly absorbs the income and the profits of the banking system. In 2016, impairment cost for financial and non-financial assets declined by 11% (or by Denar 549 million) compared to 2015. Consequently, one-third of the increase in the financial result in 2016 is due precisely to the reduction in the impairment as a result of the sale of a part of the foreclosed assets¹⁰⁹, as well as to the lower average level of risk in the banks' loan portfolio.

¹⁰⁸ Non-interest income includes net fees and commissions, net

¹⁰⁹ The average amount of gross foreclosures in 2016 decreased by 14.3% (Denar 896 million), compared to 2015. This decline is mainly concentrated in the group of large banks.



Chart 114
Impairment costs to gain and net interest income ratio
in %

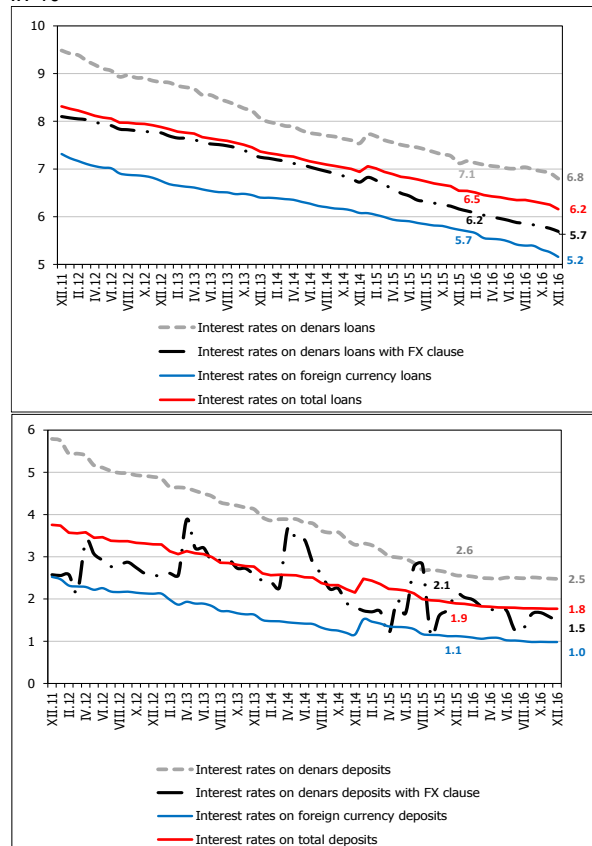


Source: NBRM, based on the data submitted by banks.

2.2 Movements in interest rates and interest rate spread

Lending and deposit interest rates of banks¹¹⁰ continued to decline in all currencies, and in 2016, thus hitting a record low in the last two decades. Thus, in 2016, the average lending and deposit interest rates were 6.4% and 1.8%, respectively, which is a decrease of 0.4 and 0.3 percentage points, respectively, compared to last year. The average interest rate registered the most rapid decline in denar loans with FX clause, by 0.5 percentage points, and in denar deposits, by 0.4 percentage points. Comparison between the interest rates in December 2016 and December 2015 indicates a decrease in the interest rates on total loans of 0.3 percentage points, and almost a stagnant trend in deposit interest rates that reduced by only 0.1 percentage point. The interest rate cut was less pronounced in 2016 compared to 2015.

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

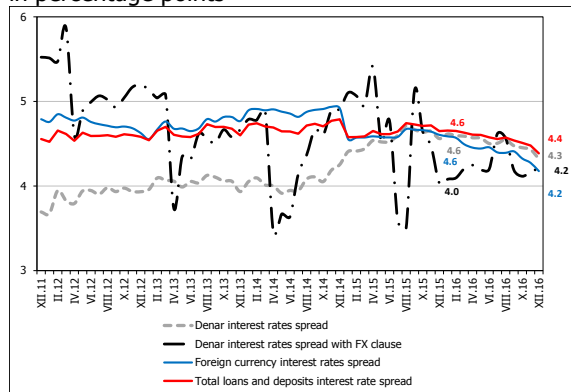


Source: NBRM, based on the data submitted by banks.

Unlike 2015, when the spread of interest rates in a certain period insignificantly increased, **in 2016, interest spreads, with the exception of the spread in denars with FX clause, registered a small, but continuous decline.** In December 2016, the interest rate spread between the lending and the deposit rates was 4.4 percentage points, and decreased by 0.2 percentage points compared to the same month of 2015. The average spread between the lending and the deposit interest rates in 2016 was 4.6 percentage points, which is a decrease of 0.1 percentage point compared to 2015.

¹¹⁰ As of January 2015, data on interest rates of banks and savings houses have been collected under the new interest rate methodology. Data under the new and previous methodology are not fully comparable, so that the changes in the relevant interest rates as such also include the effect of methodological changes which are described in more details on the website of the National Bank and within the Report on the risks of the banking system of the Republic of Macedonia in the third quarter of 2015, page 70. The new interest rate methodology mainly affected the level of deposit interest rates because interest rates on sight deposits and overnight deposits are no longer included in the calculation of interest on total deposits.

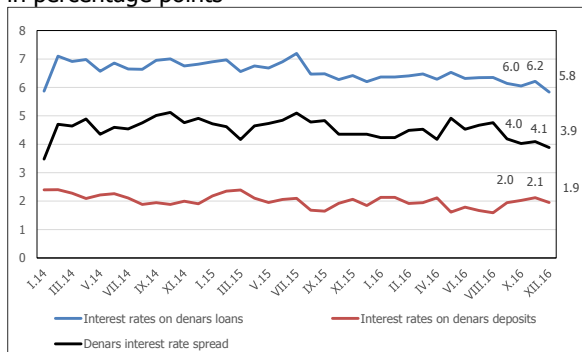
Chart 116
Interest spread, by currency
in percentage points



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

In May 2016, for the first time after 2013, the CB bill interest rate was changed, i.e. increased, from 3.25% to 4%. From December 2016 to February 2017, the interest rate on CB bills was cut three times, to 3.25%. The analysis of denar interest rates on newly approved loans and newly received deposits indicates somewhat greater response of these interest rates to the changes in the monetary policy compared to the response of the interest rates to the total loans and deposits. More specifically, the effect was most pronounced in the month when the change in the policy rate occurred, as well as in the first following month.

Chart 117
Lending and deposit denar interest rates and interest rate spread of new loans and new deposits
in percentage points



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



ANNEXES