Periodical Part

Report on the risks in the banking system of the Republic of Macedonia in ... ; 2015

National Bank of the Republic of Macedonia
Supervision, Banking Regulation and Financial Stability Sector
Financial Stability and Banking Regulation Department

REPORT ON THE RISKS IN THE BANKING SYSTEM OF THE REPUBLIC OF MACEDONIA IN 2015

April 2016

CONTENTS

I. Summary

In 2015, despite all challenges, the banking system maintained its stability and proved the resilience to shocks stemming from domestic and external environment. In conditions of slower recovery of the global economy, but solid economic growth in the country, the role of the banks as an intermediary between depositors and borrowers further strengthens, although with slower pace. Assets, loans and deposits rose by 5.8%, 9.7% and 6.7% respectively, on an annual basis (in 2014: 8.3%, 9.9% and 10.7%, respectively). The environment in which banks operated was strongly influenced by the factors of non-economic nature, primarily by the domestic political turmoil and debt crisis in Greece. All of this, together with the environment of low interest rates, **limits the possibilities for higher increase in the sources of funding of the banks.** Unlike the usual movements, in 2015 the reason for the deposit growth lies more in the increase in the corporate deposits than in the rise with households, which, as a traditionally main source of financing, decelerated. The public perception for growing risks contributed for deceleration in the several year trend of denarization of the natural persons' deposits and shortening of their maturity. For this reason, the National Bank made amendments to the regulation that refers to the reserve requirement, which were aimed at stimulating the households' savings in domestic currency also on longer run. Namely, at mid year, under evident influence of non-economic factors, the banking system faced with moderate and shorter-term deposit withdrawal and shortening of their maturity. At the end of June 2015, the National Bank adopted a Decision on introducing special protective measures, thus contributing to retain the confidence and financial stability. Banks and their management proved to be very mature and stable in liquidity management, which, coupled with increased monitoring by the National Bank, contributed to mitigate the observations made in public about the risks of these effects and also enabled rapid stabilization of these events, and normalizing movements in the deposit base. **The liquidity of the banking system is at satisfactory level.** Despite the slight decrease in liquid assets in 2015, they still account for over 30% of total assets of banks and cover nearly 60% of total liabilities, which is satisfactory level, and enable the banks to operate smoothly. The banks expect stability of the deposits in the following period.

The most present in the banking system of the Republic of Macedonia is the **foreign capital,** with 75% of the total equity originating from foreign shareholders. Thus, the banking system is influenced by economic and non-economic factors that arise from their parent entities and countries of origin. The financial deleveraging to parent entities of domestic banks (seven banks are subsidiaries of foreign banks, six of them from EU countries), continued in 2015, but it did not cause staggering of the liquidity position of the banks, because their activities do not depend on the sources of funds used from their parent entities. Even the simulation of total outflow of funds used from parent entities (or bank groups) has almost no effect on the banks' liquidity, having in mind the slight dependence of the domestic banks on their "parent".

The low yields of financial instruments on the domestic and international financial markets in 2015, contributed **to maintain the banks' propensity for lending.** The banks remained cautious in lending to corporate sector entities, with the upward movement of the banks' lending activity being more evident in the households segment, unlike the credit support to corporate clients, whose annual increase decelerated. In order to diminish the potential risks from a certain segment of consumer loans which registered an extremely high growth rates, the National Bank adopted a set of measures aimed at deceleration of the high increase in the long-term consumer

loans[1]. In addition, measures aimed to facilitate the access of the corporate sector to financial services were taken, extending also the validity of the non-standard measure of the monetary policy for supporting the lending to net exporters and domestic producers of electricity.

The **credit risk** is the most important inherent risk in the banks' balance sheets, but in 2015, it was not a reason for higher concern. The increase in the non-performing loans evidently decelerated (it equals 4.7%, compared to 8.3% in 2014), thus contributing to reducing the share in the non-performing loans in the total loans at the end of 2015 to the level of 10.8%, and after several quarters, it fell below 11%. The movements of the non-performing loans arises from the non-performing loans of the corporate sector, whose growth also slowed down in 2015 and equaled 5.9% (in 2014: 9.9%). The non-performing loans of the households reduced in 2015 by 0.1% (increase of 2.7% in 2014). The coverage of the non-performing loans with allocated impairment is high, thus improving the capacity of the banking system to absorb unexpected credit losses. The restructured loans should be monitored more cautiously, since they are possible source of increase in the non-performing loans, due to the growth of non-performing restructured loans and reduction of restructured regular loans. On the other hand, until mid 2016, the non-performing loans are expected to reduce due to the NBRM measure for write-off of the fully reserved claims for more than two years.

The banks exposure to other risks is minor. As a result of the euro domination in the banks' foreign exchange sub-balance and the applied strategy of stable nominal foreign exchange rate of the denar against the euro, **the currency risk** for the banks has minimized. In addition, all banks adhere to the limit for the aggregate foreign currency position (30% of the banks' own funds). The increase in the US dollar exchange rate, the Swiss frank and the British pound against the denar did not influence on the scope of the banks' currency risk, since these currencies have small share in their balance sheets. **The market risks** are minimal, due to the banks' poor involvement in trading with financial instruments. The risk of change in the interest rates in the banking book remains non-material for the banks, and although the ratio between the total weighted assets of the banking book and own funds is increasing, however, it is significantly lower than the prescribed ratio of 20% of own funds. Such a position mainly arises from the banks use of adjustable interest rates, which minimizes the interest rate risk in the banking book, but also increases the indirect credit risk. After the constant indications of the National Bank for possible risks from the implementation of these interest rates, in 2015 the use of fixed interest rates increased, for the account of the decrease in the positions with adjustable interest rates.

The interest of the foreign banks to invest in bank industry, especially in smaller banking systems, such as Macedonian, reduced to minimum after the last global crisis. Except that, part of the parent entities of our banks are under measures of the single supervisor in EU. For these reasons, the banks' profit is once again the most certain channel for maintaining, or boosting their capital. **The banks profitability improved** in 2015. The return on assets and equity equals 1.1% and 10.4%, respectively (in 2014: 0.8% and 7.4%, respectively). For several years, the improved profitability has been based on the decrease in the interest expenses, due to which in conditions of extremely low interest rates on deposits, the banks face challenges to further maintain the increasing profitability on this basis.

[1] This measure has been taken in December 2015, which means that the effects would become evident in the first quarter of 2016.

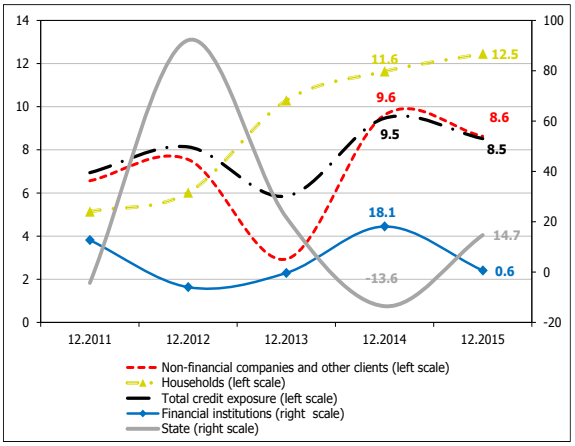
The solvency of the banking system is high. At the end of 2015, the adequacy ratio equals 15.5% registering slight decrease compared to 2014 due to the enhanced credit activity of the banks (given solid growth of the banks' own funds in 2015, of 5.8%). The capital adequacy is expected to increase until mid 2016, after finalizing the procedures for allocation of profit generated in 2015.

II. Bank risks

1. Credit risk

In 2015 the credit risk was not causing larger concern, although it is still the most significant risk in the bank operations. The slower growth in the non-performing loans amid solid increase in the bank credit activity contributed to lower share of the non-performing loans in the total loans at the end of 2015, which in several occasions, fell below 11% and reduced to 10.8%. The lower increase in these loans originates from both non-financial sectors, with the deceleration in the corporate sector being especially significant, which produces the most significant credit risks for the banks. At the end of 2015, the share of the non-performing in the total loans of the corporate sector equals 15.2% An important aspect of the credit risk from non-financial companies is also the significant concentration of exposures, followed by the share of large exposures to non-financial entities in the banks' own funds, which increased in 2015. The coverage of non-performing loans with allocated impairment is high, thus enlarging the capacity of the banking system to absorb unexpected credit losses. The restructured loans need larger attention because of their deteriorated structure in the recent years, given an increase in the non-performing loans and decrease in the regular restructured loans. The regulations for obligatory write-off of banks' fully reserved claims in the period of two years, are expected to contribute to decrease in the level of non-performing loans to mid 2016.

Chart No. 1
Annual growth of credit exposure to all sectors, by sector
in %



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

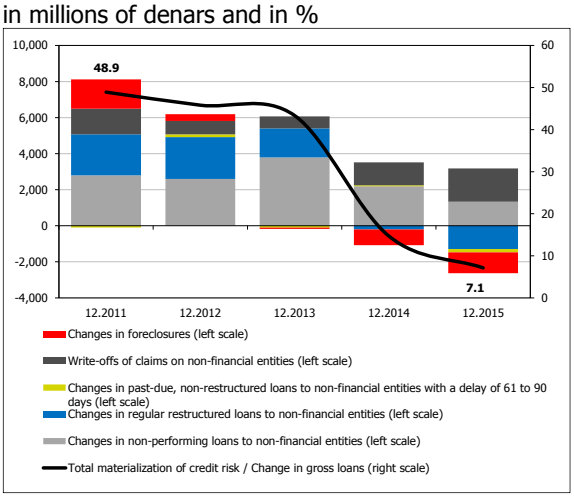
1.1 Total credit exposure of the banking system

In 2015, the total credit exposure[2] of the banking system grew by Denar 36,084 million or by 8.5% and reached Denar 459,658 million. The increase in 2015 is almost equally distributed between households and non-financial companies[3]. The credit risk analysis in this part refers to the credit risk arising from both non-financial sectors, non-financial companies and households, except if not stated otherwise.

[2] The total credit exposure encompasses: balance sheet (loans and deposits, financial leasing, payments made on the basis of given guarantees, letters of credit, warrants and other off-balance sheet positions, interest, fees and commissions, investments in securities and other financial instruments available for sale or held to maturity, etc.) and off-balance sheet claims (unused irrevocable credit lines, unused irrevocable credits based on overdrafts and on credit cards, letters of credit, guarantees and other contingent liabilities for the bank), which expose the bank to a credit risk.

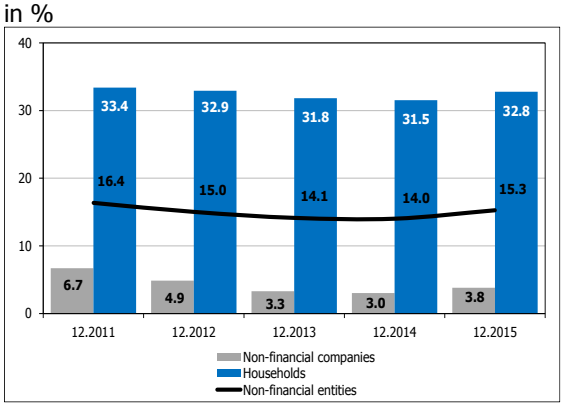
[3] "Non-financial companies" mean non-financial trade companies, as well as other clients (clients from this activities: "education", "health and social care", "arts, entertainment and recreation", "other services", "activities of households as employers" and "activities of extraterritorial organizations and bodies").

Chart No. 2
Materialization of credit risk in banks' credit portfolios
in millions of denars and in %



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

Chart No. 3
Share of the uncollateralized exposure in the total credit exposure to non-financial entities and to individual sectors
in %



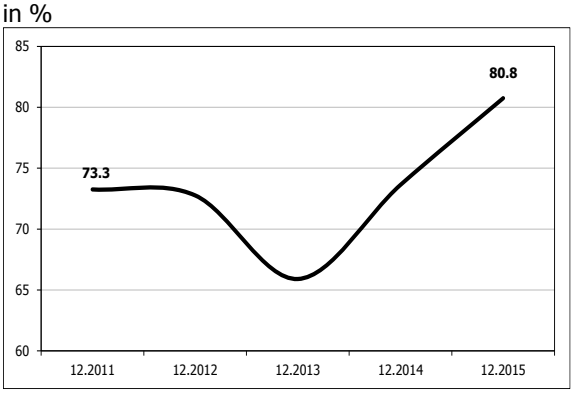
Source: NBRM's Credit Registry, based on data submitted by banks.

In 2015, the level of credit risk materialization reduced[4], which can be perceived through the smaller rise in loans with signs of impairment, compared to the total credit growth. Namely, the share of the change in the loans with signs of impairment equals only 7.1% in the change in the gross loans of the banking system. This share is significantly higher compared to the previous years, when the loans with signs of impairment had large contribution to the change in the gross loans (almost half in 2011).

Banks have conservative policies regarding the coverage of loans with any kind of collateral, which gives them greater certainty in lending. But on the other hand, this may impede customer access to necessary sources of financing, and for the bank to cause additional costs at collection (regular assessment, takeover and sale costs, inability to achieve an appropriate price, etc.). The high degree of coverage with collateral is primarily noticeable in claims on non-financial companies (96.2% of exposure to this sector is collateralized). For households, one third of the total credit exposure, or 20.9% is not collateralized, if exclude the exposure based on overdrafts on current accounts and credit cards.

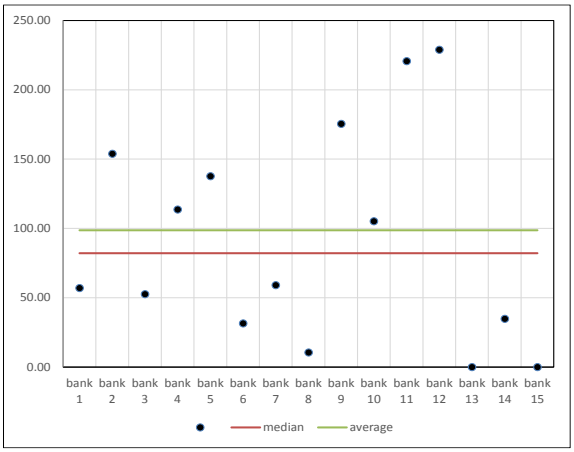
[4] Total materialization of the credit risk is calculated as the sum of annual changes in non-performing loans, regular restructured loans, non-restructured loans with a delay of 61 to 90 days, write-offs of claims and assets foreclosed on the basis of uncollected claims. Total change in gross loans refers to the annual change in gross loans including the change in the written-off loans and assets foreclosed on the basis of uncollected claims, as they were loans in the past.

Chart No. 4
Share of the large exposures to non-financial entities in banks' own funds
in %



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

Chart No. 5
Share of the large exposures to non-financial entities in banks' own funds, by bank
in %



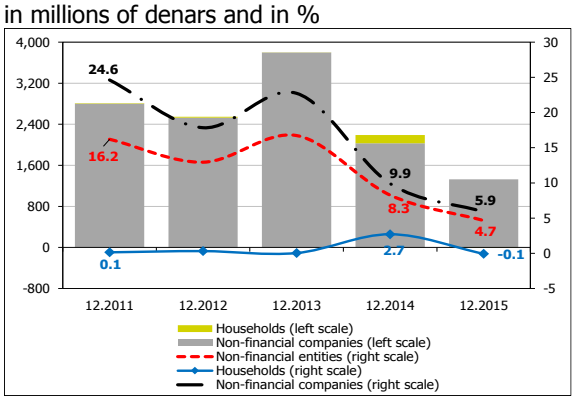
Source: National Bank, based on the data submitted by banks.

Most of the banks' exposure to credit risk arises from claims on non-financial companies. Typically, this exposure is characterized by a higher concentration level. Thus the share of the large exposures[5] in banks' own funds registers significant annual increase and on 31 December 2015 it equals 80.8%. The concentration is especially high with some banks (analyzed by bank, the share of large exposures to non-financial entities ranges from 0% to 228.9%).

By including the banks' exposures to financial institutions and investments in CB bills and government securities, the share of large exposures in the own funds of the banking system is significantly higher and at the end of 2015, it reached the level of 212%. Analyzed by bank, this share ranges between 34% and 493.8% and is within the maximum prescribed limit[6].

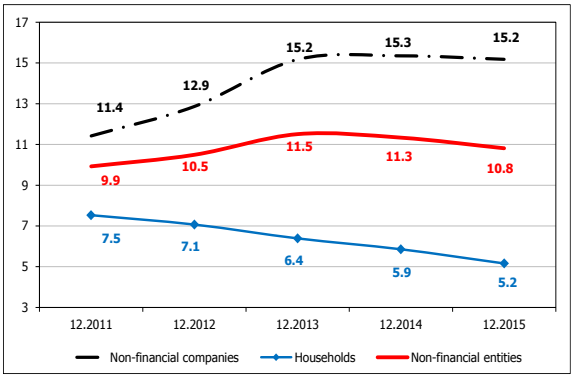
[5] Large exposure to a person or persons related thereto is an exposure equal to or higher than 10% of bank's own funds.
[6] The total amount of large exposures must not exceed eight times the amount of bank's own funds.

Chart No. 6
Annual growth in the non-performing loans (for non-financial entities)
in millions of denars and in %



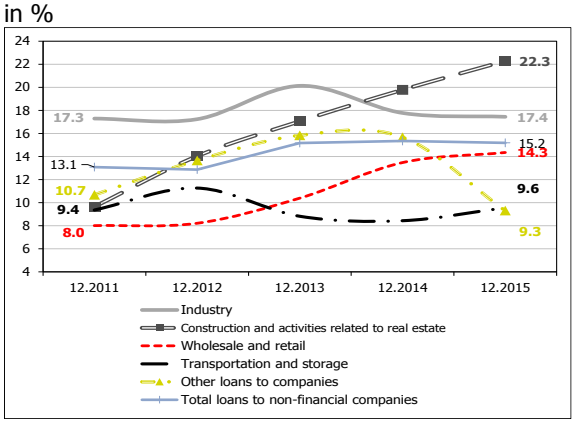
Source: NBRM, based on the data submitted by banks.

Chart No. 7
Share of non-performing loans in total loans (for non-financial entities)
in %



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

Chart No. 8
Share of non-performing loans in total loans of non-financial companies, by activity
in %



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

1.2 Non-performing loans (to the non-financial entities)

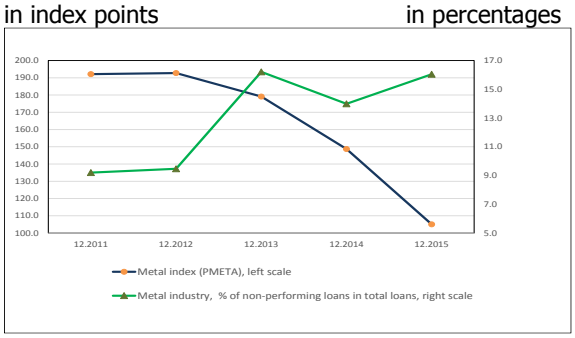
The quality of the banking system's loan portfolio, measured by the changes in non-performing loans to non-financial entities improved. In 2015, the annual growth rate of the non-performing loans fell by 4.7%, which is the lowest rate in the post-crisis period, after 2008.

The increase in the non-performing loans and its variability originates exclusively from the changes in the non-performing loans to non-financial companies, whose annual growth rate mainly registers downward trend and at the end of 2015 it equals 5.9%. The changes in the non-performing loans to households are relatively small and stable. In 2015, these loans reduced by 0.1%

The slower growth of non-performing loans amid the less accelerated growth of the bank lending activity contributed to the **decline in the share of non-performing loans in total loans to 10.8%.** Consequently, the largest share, or 89.2% of the loan portfolio (to non-financial entities) of banks is with regular (performing) status. Although the non-financial companies are the generator of the growth of total non-performing loans, their share has registered a minimal decrease, due to the faster growth of the total loans compared to non-performing loans. This indicator remained almost unchanged (minimally decreases) in the last three years, but at the end of 2015 it is still twice higher than when the crisis began (2008).

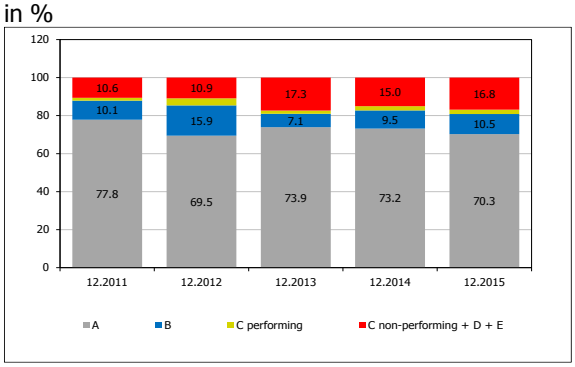
Chart No. 9
Metal industry - Global metals index and share of the non-performing in the total metal industry loans

in index points in percentages



Source: IMF, taken from website

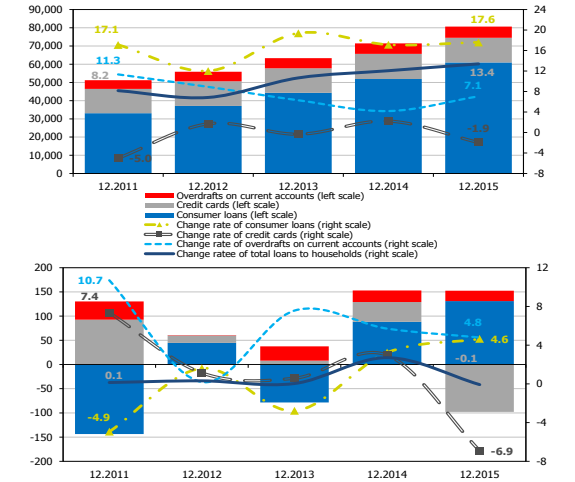
Chart No. 10
Metal industry - Exposure by risk categories
in %



Source: NBRM.

Chart No. 11
Annual increase in the consumer loans total (top) and non-performing (bottom)

in millions of Denars in percentage



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

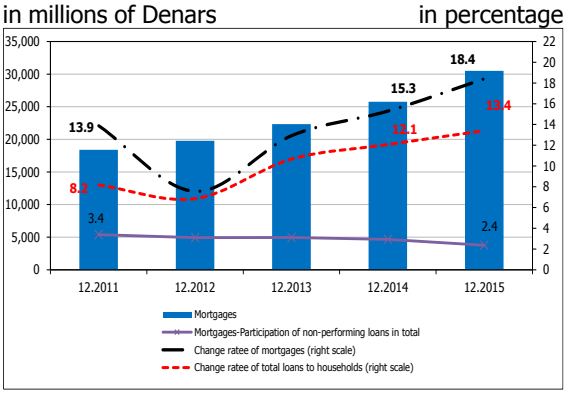
Within the loans of "non-financial companies" sector, in 2015 the increase in the share of the non-performing loans is especially characteristic for the activities "wholesale and retail trade", "construction" and "activities related to real estate" and "transport and storage". Certain stabilization in the level of non-performing loans was registered in industry. Within industry, deteriorated performance and increase in non-performing loans was recorded in metal and food industry, whereas in the chemical industry the high share stabilized, while the textile industry and other industries registered decrease in the share.

The data on the real sector in the last quarter of 2015[7] show certain improvement in these sectors ("wholesale and retail sale trade", "construction and activities related to real estate" and "transport and storage"). However, the effects of improved performance are still not materialized, since in January 2016, the share of non-performing loans in these sectors, except construction, is increasing.

A special overview was made on banks' exposure to metal industry, driven by the increased risks in this activity due to the downward movement of metal prices on world markets. The exposure to metal industry participates with 31% in the exposure to total industry. The performance in this sector is strongly connected with the price conditions on the global market. In the period 2011-2015, the index of metal prices decreased by 45%, while the share of the non-performing in the total metal industry loans in the Republic of Macedonia increased from 9.2% to 16%. On average, the banks' exposure to metal industry has been covered with provisions by 16.9%. In the absence of market expectations for metal price growth in near future, several simulations of deterioration of the credit performance of this activity have been made. In the most extreme simulation, for full uncollectibility of the claims from this activity, the own funds of the banking system would reduce by

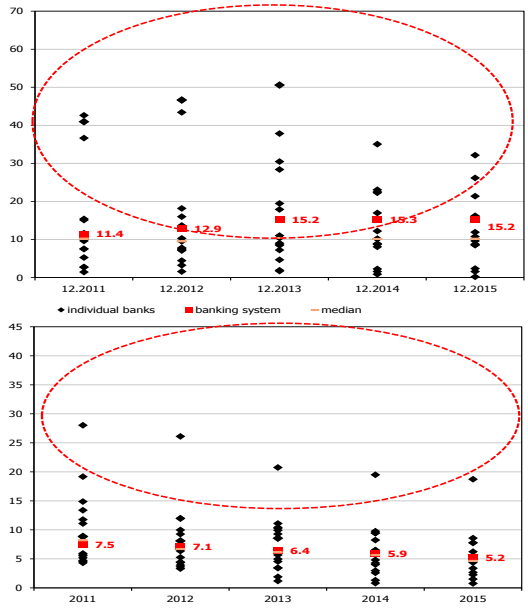
[7] Source: NBRM, Recent Macroeconomic Indicators, Review of the Current Situation, March 2016

Chart No. 12
Mortgages dynamics (annual growth)
in millions of Denars in percentage



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

Chart No. 13
Share of non-performing loans to total loans to companies (top) and households (below), by individual bank
in %



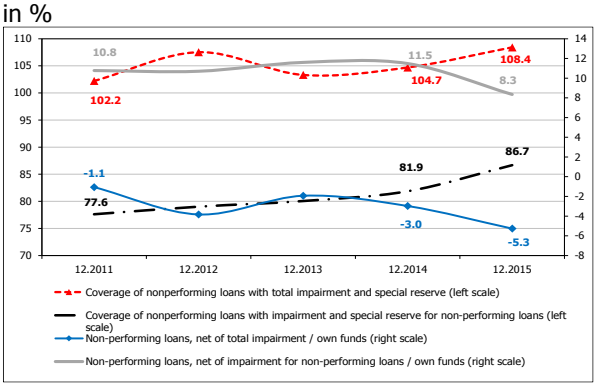
Source: National Bank, based on the data submitted by banks.

27.3%, while the capital adequacy ratio would be lowered by 4.2 percentage points.

Within the "households" sector, the fastest growing category in 2015 are the mortgages, with growth rates of 18.4%, annually. The already low share of the non-performing loans reduced from 2.9% to 2.4%. On the other hand, the fastest annual increase within the non-performing loans was registered in the overdrafts on the current accounts and consumer loans (4.8% and 4.6%, respectively). The highest share of the non-performing loans in the total loans by credit products was registered in the credits based on issued credit cards and overdrafts on the current accounts (9.7% and 7.5%, respectively). Regarding the consumer loans, the share of the non-performing consumer loans reduced from 5.4% to 4.8%.

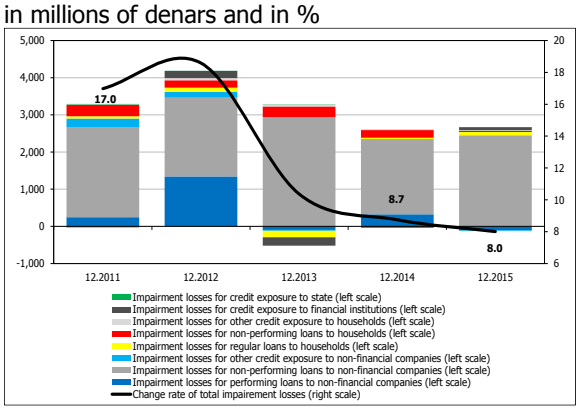
Credit risk is concentrated in several banks. Thus the share of the non-performing loans in the total loans of the non-financial companies is conditioned by several banks in which this share exceeds the banking system average. In 2015, the trend of convergence of non-performing loans rates (to companies and households) of individual banks to the median and to the rate at the level of the banking system, continues.

Chart No. 14
Coverage of non-performing loans and share of net non-performing loans in banks' own funds
in %



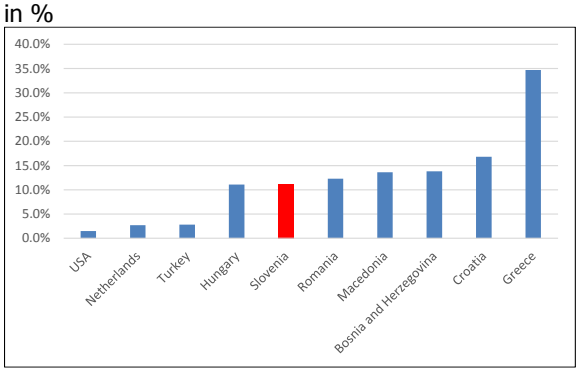
Source: National Bank, based on the data submitted by banks.

Chart No. 15
Annual change in the impairment, by sector
in millions of denars and in %



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

Chart No. 16
Share of non-performing loans in the total loans to non-financial entities by certain countries
in %



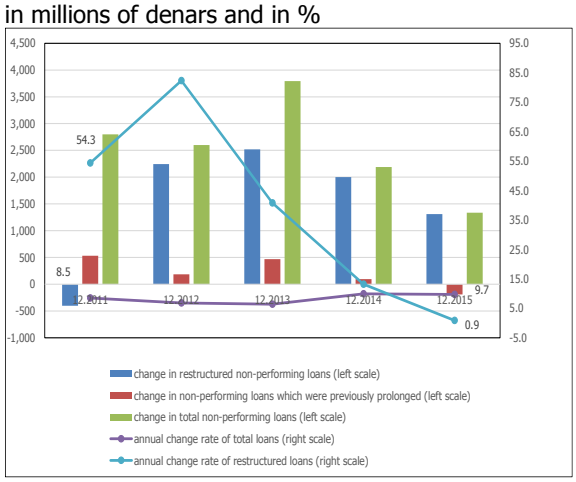
Source: Data from the IMF's website, as of 30 September 2015, for comparability.

The coverage of non-performing loans with allocated impairment is high, which indicates a satisfactory capacity of the banking system to absorb unexpected credit losses. At the end of 2015, the coverage of the non-performing loans with impairment for the non-performing loans increased from 81.9% to 86.7%. This is due to the faster increase in the impairment than the increase in the non-performing loans. The coverage of non-performing loans with their own impairment has registered a steadily upward trend since late 2009, indicating bank perceptions for mounting risks of these loans, primarily the non-financial companies. However, the high coverage enables significant resilience of the banking system to shocks. Thus, in case of an extreme assumption for inability to fully collect the non-performing loans, the own funds of the banking system would fall by 8.3%, and the capital adequacy ratio would reduce by 1.3 percentage points.

Compared to some countries from the neighborhood, the share of the total non-performing loans[8] in the total loans in the banking system of the Republic of Macedonia reduced. This indicator is more favorable in the banking system of the high developed countries (USA, the Netherlands), as well as Turkey.

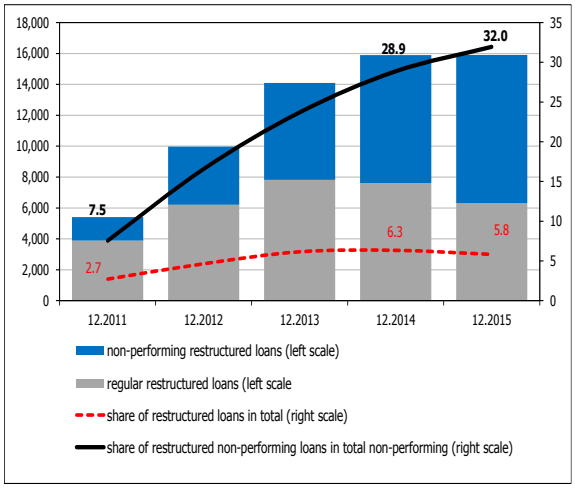
[8] Non-performing loans to financial and non-financial entities.

Chart No. 17
The share of the restructured and prolonged non-performing loans in the change of the non-performing loans, by year
in millions of denars and in %



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

Chart No. 18
Structure of restructured loans by their status (regular/non-performing), by year
in millions of denars and in %



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

1.3. Restructured and written-off loans

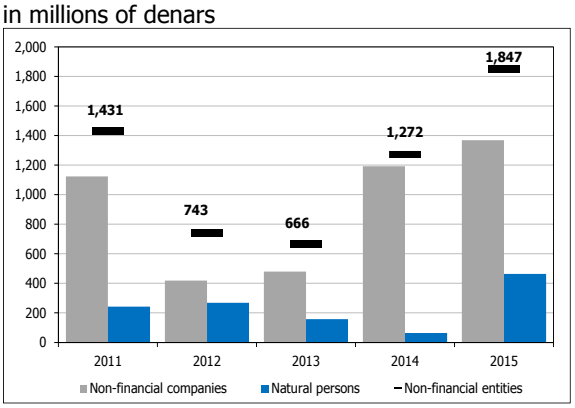
The movement in prolonged and restructured loans gives some indication that the deteriorated financial condition of the customers was not properly and/or timely perceived. According to regulations, the change in the contractual lending terms, by **extending the maturity,** is not associated with poor financial condition of customers. However, 10.1% of the total non-performing loans were previously prolonged, while the share of the prolonged non-performing loans in the total prolonged loans equals 13.7%. This percentage, does not indicate significant risks. The exclusively higher increase in the prolonged loans in 2015, which equals 52%, can be a signal for anticipated future increase in the non-performing loans on this basis[9].

Simultaneously, the increase in the prolonged loans ceases the upward trend of the **restructured loans,** which reduces to the annual growth rate of 1%, amid decrease in their share in the total loans of the non-financial entities from 6.3% to 5.8%.

In the last five years, the structure of the restructured loans by status deteriorated, i.e. increase in the non-performing loans and decrease in the regular restructured loans has been registered. As a result, the share of the restructured non-performing loans in the total restructured loans reached high 59.4%.

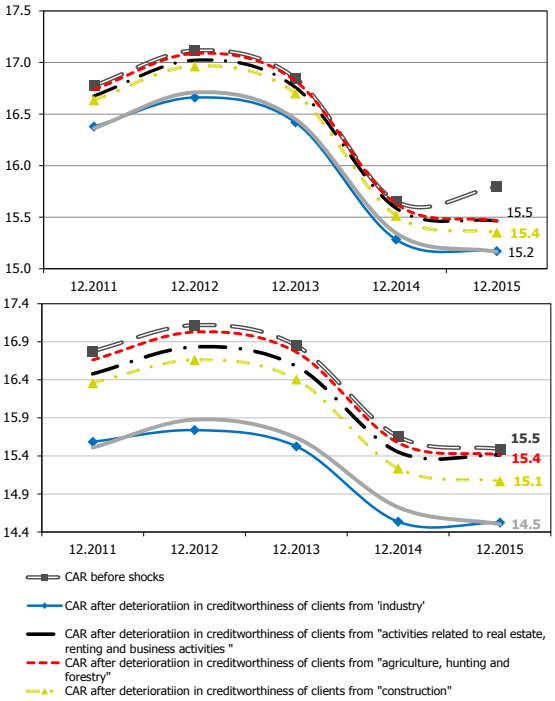
[9] The share of the rolled over in the total loans of the non-performing loans mounts from 5.8% to 8%.

Chart No. 19
Write-offs
in millions of denars



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

Chart No. 20
Capital adequacy ratio, by activity, before and after the first (top) and the second (bottom) simulation for both sectors
in %



Source: National Bank, based on the data submitted by banks.
Note: CAR stands for capital adequacy ratio.

In 2015, Denar 1,847 million were written-off, which is an increase of 45% compared to 2014[10]. The higher write-offs reduce the growth of non-performing loans. Thus if include the effect of write-offs, the annual growth rate of the non-performing loans would be higher by 1.7 percentage points. Most of the written-off claims (74%) refers to non-financial companies.

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

Stress tests conducted on a regular 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 simulations 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 show resilience of the banking system to simulated shocks, and analyzed according to the number of banks whose adequacy ratio fell below 12% and 10%, the results are minimally improved compared to the end of 2014.** The capital adequacy of the banking system is not falling below the regulatory minimum of 8% in none of the simulations. 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 (Annex 28).

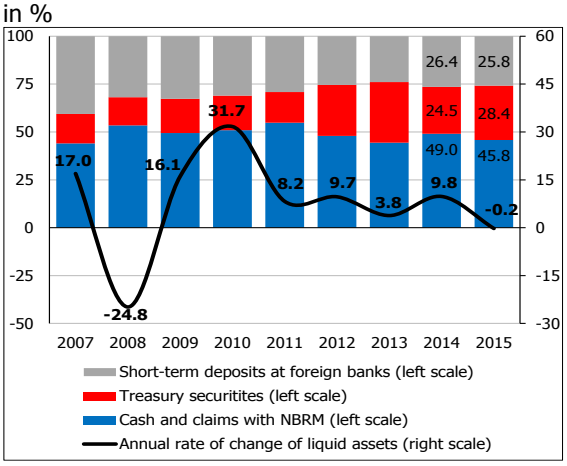
[10] The increase is partly due to the written-off claims pursuant to the Law on Single Write-Off of Household Debts (this type of write-offs accounted for 5.7% of total write-offs).

2. Liquidity risk

The banks in the Republic of Macedonia, also in 2015, manage liquidity risk in an appropriate manner and maintain liquidity at a level that ensures smooth operations. Despite the effect of non-economic factors, which surely affect the overall environment in which banks operate, the share of liquid assets in the total assets of the banking system remained stable. The global environment of low yields of the financial instruments, at both, domestic financial and international markets, was the reason for the banks to further incline toward lending in 2015, with simultaneous slight decrease in the volume of liquid assets. The only liquid assets component that registered an increase was the bank investments in government securities. These developments affected the liquidity indicators, which registered a downward trend, as well as the assets and liabilities structure according to their residual maturity, where the difference in segments with short maturity deepened. The simulations for the resilience of the banking system to liquidity shocks show that in case of combination of extreme hypothetical liquidity shock, the liquid assets of the banking system is fully absorbed.

2.1. Dynamics and composition of liquid assets

Chart No. 21
Liquid assets, structure and annual growth rate
in %



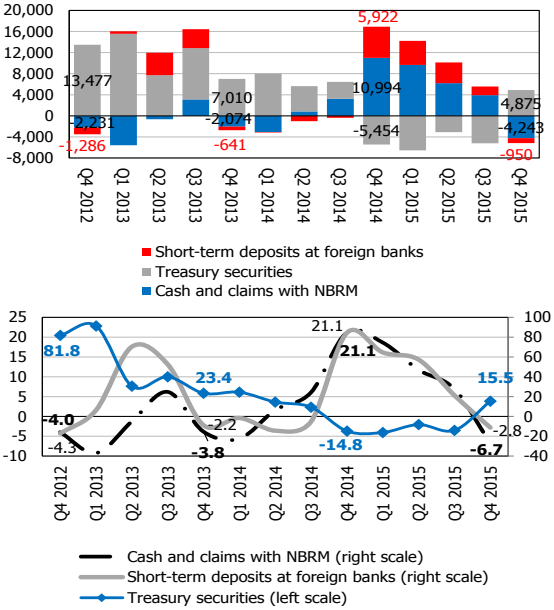
Source: National Bank, based on the data submitted by banks.

At the end of 2015, the liquid assets[11] at the level of the banking system amounted to Denar 128,181 million, which is a decrease of Denar 317 million, or 0.2%, on annual basis. Although this decrease is minor, it should be emphasized that the banks' liquid assets, at the end of the year, for the first time since 2008, have registered a decrease on annual basis. In terms of annual deposit growth of domestic non-financial entities, historically low interest rates on government securities and relatively low yields on international financial markets, the main cause for the decrease in liquid assets was the banks propensity for placing funds in the domestic economy through funding domestic economic agents. Such changes, in certain part, results also from the changes in the operational framework for monetary policy conduct, that the National Bank made in 2015[12],

[11] The liquid assets encompass: 1) assets and claims on the National Bank, which include cash, assets on the accounts of banks with the National Bank, deposit facility with the National Bank and CB bills; 2) short-term deposits with foreign banks, including the assets of the banks on their correspondent accounts abroad and 3) the carrying amount of the investments in securities issued by the central governments, i.e. government securities issued by the Republic of Macedonia and issued by foreign countries. For the purposes of analyzing the liquidity, assets and liabilities in denars with foreign exchange clause are considered denar assets and liabilities.

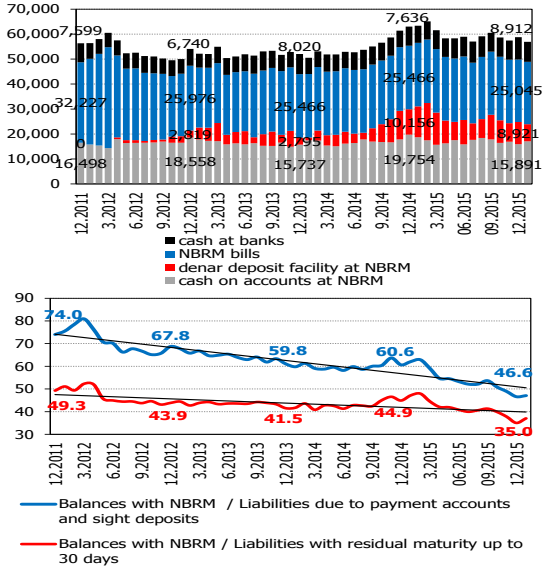
[12] Despite the reduction in interest rates on the banks' deposit facilities, in the first and in third quarter of 2015, the National Bank has also changed the manner of organizing the auctions of CB bills, specifically, it introduced a mechanism to limit the banks demand for this instrument. Also in the first quarter of 2015, the banks were allowed, as needed, on a daily basis, to fully use the funds on their account with the National Bank, while in the third quarter of 2015, reserve requirement ratio in the amount of 0% for liabilities to natural persons in domestic currency with contractual maturity of over one year was introduced.

Chart No. 22
Absolute (top) and relative (bottom) annual change in the liquid assets by components
in millions of denars and in %



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

Chart No. 23
Structure of cash and claims of banks on the National Bank (top) and their relative importance (bottom)
in millions of Denars and in percentage



Source: National Bank, based on the data submitted by banks.
Note: The linear trend of the indicators is presented in the chart below.

especially the decrease in the interest rate on the banks' overnight deposit facilities from 0.5% to 0.25% and the seven-day deposit facilities from 1.0% to 0.5%. It should be noted that non-economic factors influenced partially on the reduction in liquid assets in 2015, which have a negative impact on the overall environment the banks operate in, and limit opportunities for faster growth of the sources of funding for the banks.

The only component of liquid assets which registered an **increase in 2015, of 15.5%, were bank placements in government securities.** However, the annual growth of these financial instruments was registered in the last quarter of the year, when other components also had negative contribution to the overall growth of the banks' liquid assets. Thus, although in 2015, the investments in financial instruments with the National Bank and the placements in foreign assets in foreign banks registered annual growth, however, in the last quarter of 2015, they fell on an annual basis. Hence, their annual growth rate in 2015 was constantly reducing, thus becoming negative at the end of the year.

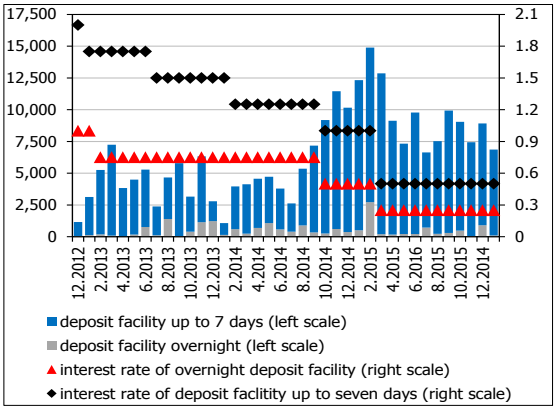
The main reason for the annual drop in the banks' liquid assets were both, **cash and the banks' claims on the National Bank.** These financial instruments registered a decrease in 2015 by 6.7%, due to which at the end of 2015, their share in the banks total liquid assets plunged, as well, by 3.2 percentage points, compared to the end of 2014. Moreover, their relative importance in the past few years registers an evident downward trend, which can be perceived through the relationship dynamics of these assets with certain liabilities categories characteristic for their higher volatility. Thus, the ratio of cash and the banks' claims on the National Bank with the banks' liabilities based on transaction accounts and sight deposits, and the ratio of these assets with

liabilities with residual maturity of up to 30 days register a several year downward trend.

However, despite this downward trend, cash and claims of the banks on the National Bank remain the most common component of banks' liquid assets. Within this, the largest amount accounts for the investments in CB bills.

During 2015, the National Bank continued organizing CB auctions through volume tender and restricted bid amount, which in conditions of more favorable yield compared to deposit facilities, contributed to maintaining their amount at a stable level. In contrast, the deposit facilities[13] in the National Bank and the funds on the accounts in the National Bank[14] registered a decrease in 2015, which, to certain extent, is effect from the changes in the operational framework pertaining to monetary policy conduct on the liquidity management by the banks[15], as well as due to the bank higher propensity for lending.

Chart No. 24
Amount and interest rate on the overnight deposit facilities with the National Bank
in millions of denars and in %



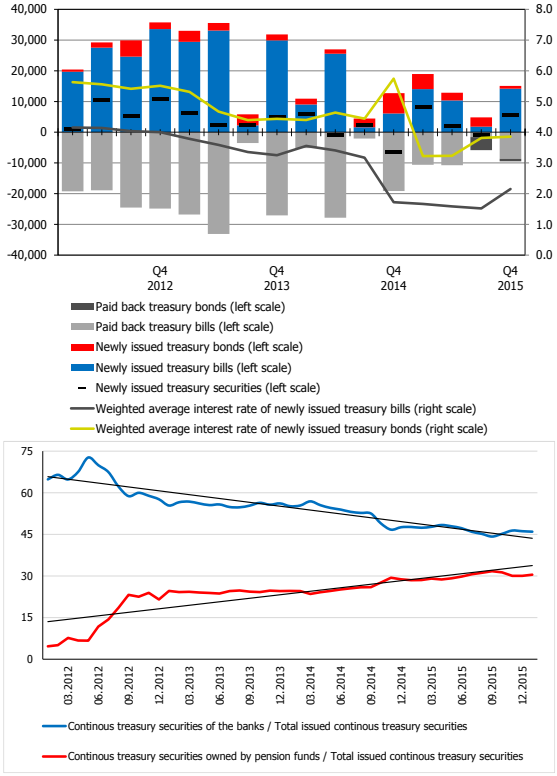
Source: National Bank

[13] According to the Decision on the deposit facility ("Official Gazette of the Republic of Macedonia" No. 49/12, 18/13, 50/13, 166/13 and 35/15), the banks could place deposits with the National Bank every working day with a maturity of one business day and once a week with a maturity of seven days. These deposits are placed without the possibility of partial or full early withdrawal. In 2014 and 2015, the interest rates on these deposits fell by 0.25 percentage points and from March 2015, they equal 0.25% on overnight deposits and 0.5% on seven-day deposits.

[14] According to the Decision on the reserve requirement ("Official Gazette of the Republic of Macedonia" No. 153/12, 98/13, 166/13, 143/14, 30/15 and 148/15), the average daily outstanding amounts on the bank account at the National Bank are used to meet the total calculated reserve requirement of banks based on their liabilities in denars and liabilities in denars with FX clause, as well as 30% of the calculated reserve requirements of banks on the basis of their foreign currency liabilities. Banks, on a daily basis, can fully utilize their assets on the account with the National Bank.

[15] Before the change in the manner of conducting the CB bills auctions in March 2015, the banks the claims of which exceeded the potential demand for CB bills, were required to place the difference as deposit facilities with maturity of up seven days with the National Bank.

Chart No. 25
Net issued amount of government securities (top) and share of banks in issued government securities (bottom)
in millions of denars and in %

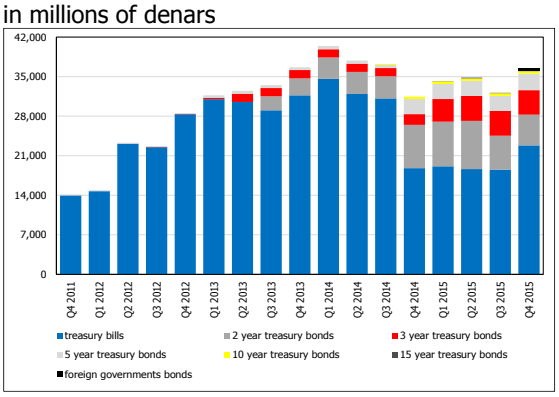


Source: National Bank and Ministry of Finance.
Note: The adequate nominal amount realized on each auction in the respective quarter has been taken as a weight in the calculation of the average interest rate on the newly issued securities in a particular quarter. The chart below presents also the linear trend of the respective shares. The calculations are made at the nominal value of the continuous government securities.

In comparison with 2014, in 2015 the offer of securities on the primary market of continuous **government securities** increased[16], registering positive net issued [17] amount of Denar 12,172. In 2015, the bid interest rates[18] on the government securities registered the historical minimum, with the downward trend ceasing in the last quarter of the year, when it registered a slight increase. In 2015, the short-term securities (treasury bills) and long-term securities (government bonds) contributed almost equally to the total net issued amount of government securities. In 2015, the downward trend of the banks' share in the primary market of government securities, continued, but less dynamic compared to the last year. Continuous reduction of the banks' share in the primary government securities market is compensated through the larger participation of institutional investors, especially pension funds.

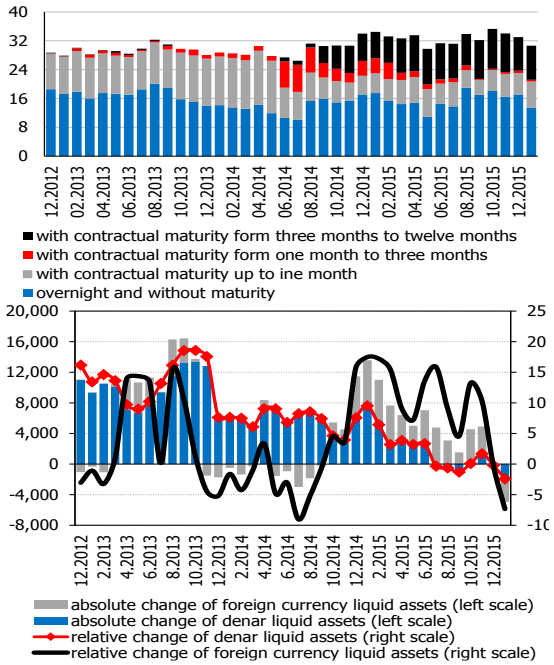
[16] As continuous government securities are considered the treasury bills and government bonds issued in the domestic financial market, not including the structural securities, i.e. denationalization bonds.
In 2015, the Ministry of Finance has conducted the fourteenth issue of denationalization bonds with a total face value of EUR 9.5 million.
[17] The net issued amount is derived as a difference between the realized amount at government securities auctions for a fixed period and the amount of government securities maturing in the identical period.
[18] In 2015, the auctions of treasury bills and the government bonds have been carried out on the basis of volume tenderwith predefined amount of the interest rate.

Chart No. 26
Dynamics and structure of continuous government securities owned by banks
in millions of denars



Source: National Bank, based on the data submitted by banks.
Note: The calculations are made at the nominal value of the continuous government securities.

Chart No. 27
Structure of the short-term deposits with foreign banks (top) and absolute annual change of the liquid assets by currency (bottom)
in millions of denars and in %



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

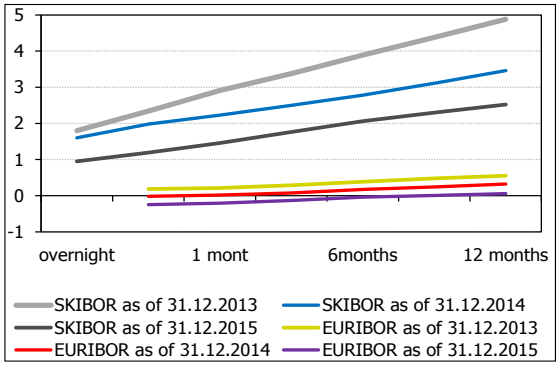
The bank interest to invest in government securities arises from the fact that these investments are increasing the options available in the operational management of their liquidity position[19], as well as because of the relatively more attractive yield of these instruments compared to other investment alternatives, especially in terms of investments in foreign banks. In 2015, about 80% of the growth of banks' investments in government securities is due to short-term treasury bills, with this offering being registered only in the last quarter of the year. The investments in bonds issued by the Republic of Macedonia accounted for about 12% of the total growth of banks' investments in government securities. It is evident that the banks' interest is mainly focused on bonds with relatively short maturity, i.e. two-year and three-year bonds, which together form over 70% of the total government bonds of banks.

In 2015, the structure of the banks' government securities involves also the **investments in bonds issued by foreign countries,** which according to their characteristics can be considered liquid instruments. These investments in foreign issuers' instruments participated about 8% in the total growth of banks' investments in government securities, but still have minimum contribution of 1.1% to total government securities owned by banks.

The short-term assets placed in foreign banks are still the core of the foreign exchange component of the banks' liquid assets[20]. Although these funds are usually cyclical, however during the year, the banks maintained them stable, which enables to be used not only for operational purposes, but for the balanced management of liquidity, currency and other risks, as well. In 2015, the trend of changes in the contractual maturity of short-term assets in

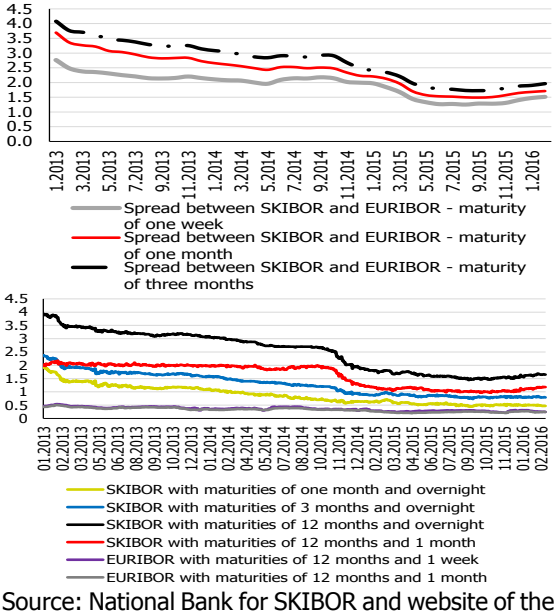
[19] Pursuant to the List of securities for implementing monetary operations ("Official Gazette" no. 126/11), the government securities can be used as security instrument when the National Bank performs monetary operations.
[20] Besides the short-term deposits with foreign banks, including the banks' funds on their correspondent accounts with foreign banks, the investments in government securities denominated in foreign currency, as well as the banks' foreign currency cash are included as part of the foreign currency liquid assets.

Chart No. 28
SKIBOR and EURIBOR yields curve for certain maturities
in %



Source: National Bank and website of the European Money Markets Institute for EURIBOR.

Chart No. 29
SKIBOR and EURIBOR spread (top) and spread between certain maturities for these rates (bottom)
in percentage points

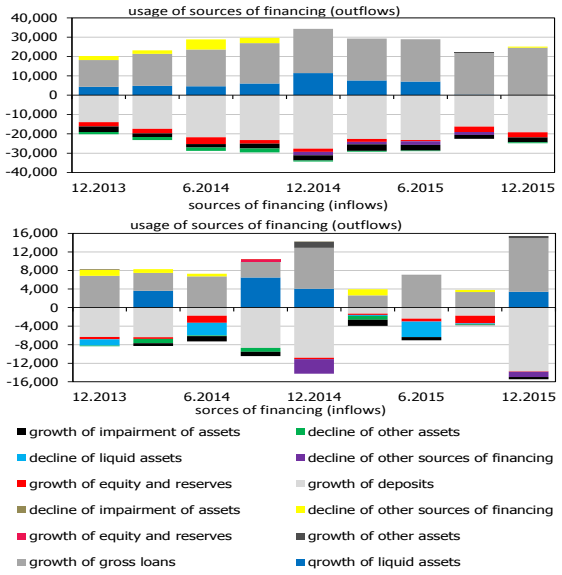


Source: National Bank for SKIBOR and website of the European Money Market Institute for EURIBOR.

foreign banks, i.e. the increase in the share of assets with three to twelve months maturity, continued. The prolongation of the contractual maturity of these funds stems from low and even negative yields that banks receive from these funds when invested on a short contractual run. At the end of 2015, the short-term deposits placed with foreign banks registered annual decrease of Denar 950 million, or 2.8%, which caused the liquid assets in foreign currency to decrease annually, regardless of their growth registered almost over the entire year. The share of the foreign currency liquid assets in the banks' total liquid assets as of the end of 2015 amounted to 28.6% and remained almost unchanged compared to the end of 2014.

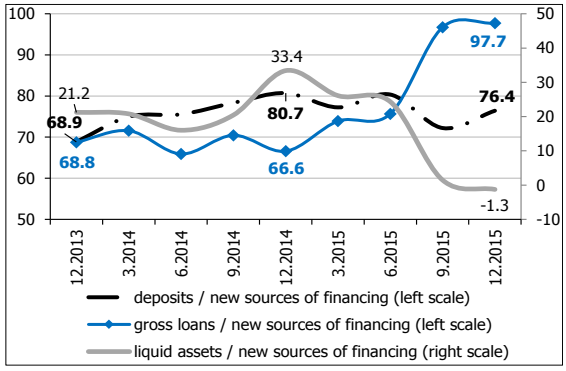
The changes in the banks' liquid assets in 2015 occurred amid **historically lowest interest rates** on both the domestic financial market, i.e. for financial instruments in domestic currency, and on the international financial markets. During 2015, the trend of decrease in the interest rates on the domestic interbank market (SKIBOR), which was more pronounced in the first quarter of the year, continued. The yield curve for SKIBOR dropped below the historical minimum. On the other hand, influenced by the measures taken by the European Central Bank and the expectations of market participants for further interventions, EURIBOR, as a key interbank rate in euros, penetrated further into the negative zone, in view of the connection of the movements in market interest rates and yields from the banks' liquid financial instruments practically reflects also on the bank income from investments in foreign currency liquid assets. Yield curves for SKIBOR have constantly been registering moderate positive inclination in 2015, causing a positive spread between the interest rates from the end (12 months) and beginning (overnight, 1 month) of the yield curve. On the other hand, the yield curves for EURIBOR inclined significantly less, which practically means small changes in the yield in case of prolonged maturity of the foreign currency liquid instruments. In 2015, the gradual narrowing of the spread between the denar interest rates in the domestic interbank market

Chart No. 30
New sources of funding of the banking system and their use - annual (top) and quarterly (bottom) basis
in millions of denars



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

Chart No. 31
Share of the new sources of funding, annually
in millions of denars



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

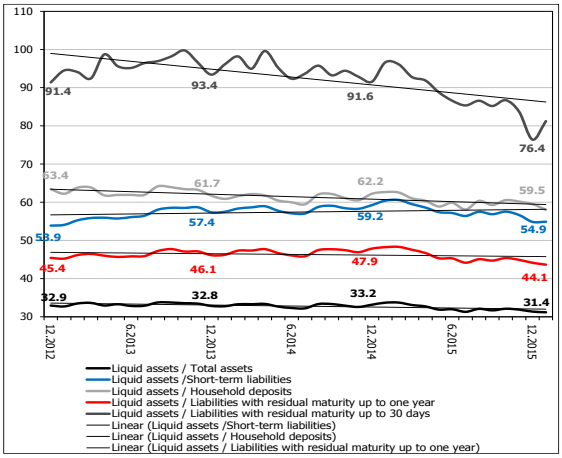
and the key interbank rates for euros in the euro area continued. In the third quarter of 2015 this spread reached the historical bottom, but in the last quarter of the year and at the beginning of 2016, it slightly increased, which coincides with the change in the monetary policy of the US Federal Reserve performed through increase in their key interest rate.

The volume of the new sources[21] of financing that the banks find, registers slight decline in comparison with the previous year. The decrease is primarily due to the slower dynamics of the deposits of non-financial entities, as main source of financing of the domestic banks. However, in 2015, the share of the annual change in the deposits of non-financial entities was constantly over three quarters in the structure of the new sources of financing of banks. The reduction (use) of liquid assets in 2015, contributes to "create" the banks' sources of funding, which was particularly evident in the first half of the year. The intensified lending appetite of the banks is best seen in their use of the sources of funding.

Thus, during 2015, the banks' tendency to take new credit risk intensified, followed by fall in the propensity to invest the new sources of funding in liquid financial instruments. This was especially evident in the second half of the year, when the banks have used the new sources of funding almost entirely for crediting.

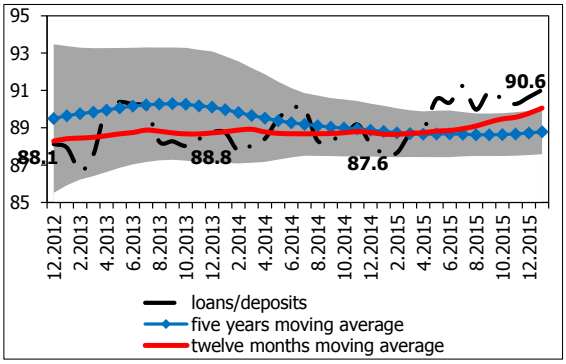
[21] The new sources of funding of the banks and their use are obtained in an indirect calculation, i.e. by changing the balances of individual accounts of the banks' balance sheet. The effect on the banks' cash flows, which is due to the income and expenditures that do not represent cash outflow or 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. The calculation does not include the effect of the domestic interbank claims and liabilities. * The category of other assets includes assets that are not loans to non-financial companies and are not included in the category of liquid assets (placements in securities that are not part of the liquid assets, long-term placements in foreign banks, reserve requirement in foreign currency, foreclosures, fixed assets, etc.) The category "other sources of financing" includes all sources of funding that are not included in the deposits of non-financial entities, capital and reserves, subordinated and hybrid capital instruments (deposits of foreign financial institutions, borrowings, other liabilities, current profit etc.) and the effect of the change in impairment of assets.

Chart No. 32
Indicators of solvency of the banking system
in %



Source: National Bank, based on the data submitted by banks.
Note: Linear trend of individual indicators is presented.

Chart No. 33
Dynamics of the ratio loans/deposits of non-financial entities,
in %



Source: National Bank, 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.

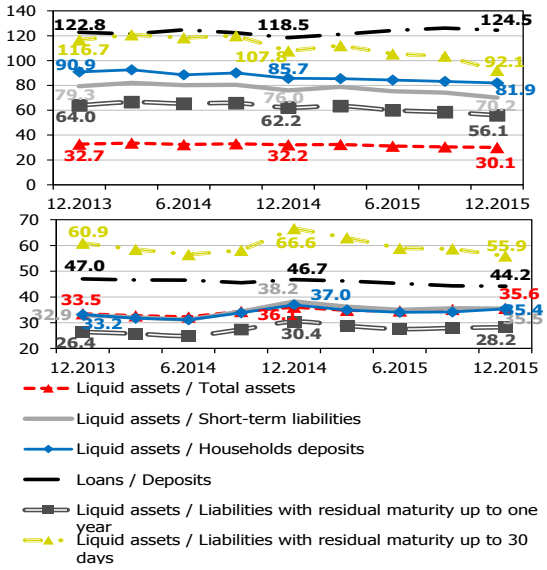
2.2. Liquidity indicators

The fall in the liquid assets in 2015 resulted in a decrease in the liquidity indicators of the banking system[22]. The downward trend dynamics, however, was not equal with some of the indicators, primarily due to different dynamics of certain categories of bank liabilities. The most obvious is the fall in the coverage of liabilities with contractual residual maturity up to 30 days with liquid assets, with slightly more moderate reduction being registered in the coverage of the liabilities with residual maturity up to one year and total short-term liabilities to banks with liquid assets. **However, despite their reduction, the liquid assets participate with over 30% in the banks' total assets, simultaneously covering almost 60% of the total household deposits, which is a satisfactory level which enables the banks to pay the operating liquidity outflows.**

The credit-to-deposit ratio of the non-financial entities registered an increase in 2015. At the end of the year, this ratio equals 90.6% and it is almost by 3 percentages higher compared to the end of 2014. The growth generator of this indicator was the larger growth of bank loans, with an annual rate that is higher by almost three percentage points compared to the growth rate of the deposits of non-financial entities. Moreover, it is worth mentioning that **in the second half of 2015, this indicator has been consistently more than one standard deviation above its five-year moving average.** The growth endurance of thus indicator, in circumstances where it is over 90%, could be a signal of rapid credit growth that is not accompanied by an equal deposit growth, or is financed by a non-deposit sources, which by their nature and features, can be less stable and have restrictions on their constant availability[23]. This is

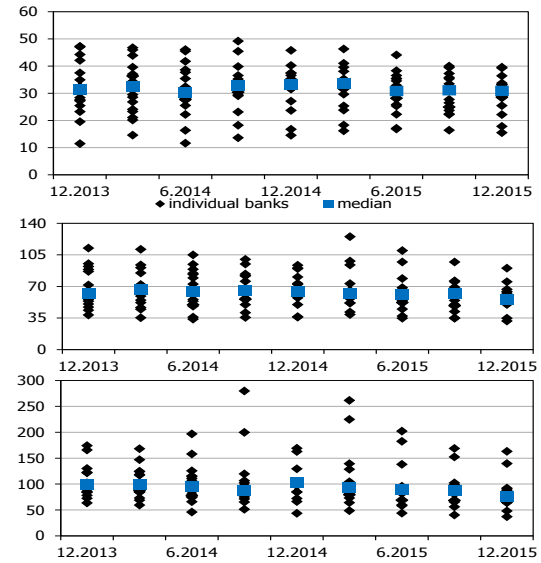
[22] The calculation of the liquidity of the banking system does not take into account the resident interbank assets and liabilities.
[23] More information about the characteristics and significance of the loans-to-deposit ratio indicator (or their inverse ratio), as an indicator of financial stability, can be found in the "Financial Soundness Indicators Guidelines," of the International Monetary Fund. In addition, the loans/deposits indicator is part of an indicative list of the European Systemic Risk Board for the macro prudential policy instruments, released in the EBSR recommendations from 4 April 2013 in the Official Journal of the European Union no. 2013/C 170/01.

Chart No. 34
Banking system liquidity ratios, according to currency structure - Denars (top) and FX (bottom)
in %



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

Chart No. 35
Share of liquid in total assets (top), coverage of short-term liabilities with liquid assets (middle) and liabilities with residual contractual maturity up to 30 days (bottom), by bank
in %



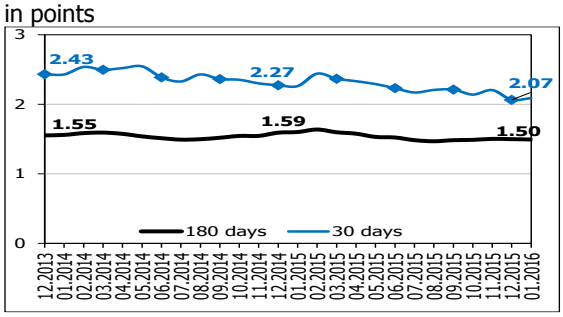
Source: National Bank, based on the data submitted by banks.

proved by the fact that at the end of 2015, in six banks with a joint share in total assets of 23.8%, the loans-to-deposit ratio is above 100% (at the end of 2014, four banks constituting 16.4%). By bank, at the end of 2015, this indicator ranges from 72.5% to 128.7% (from 72.3% to 127.2% at the end of 2014).

From the aspect of the assets and liabilities currency features, in 2015 the liquidity indicators registered a decrease, but with evident differences in dynamics. Namely, the **denar liquidity indicators registered larger decrease compared to the foreign currency liquidity. The indicators for the denar liquidity remain higher than the foreign currency liquidity indicators,** which is due to the higher structural share of the liquid denar assets in the total bank liquid assets.

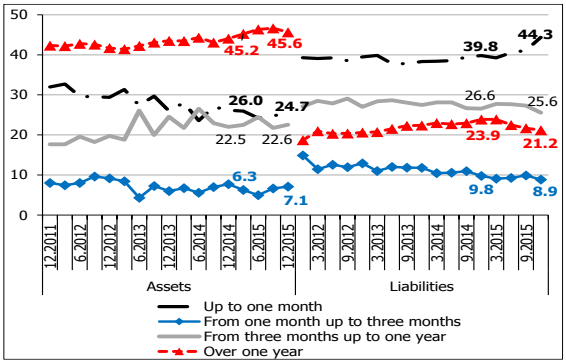
In 2015, the liquidity indicators by bank registered trend of decrease, which can be perceived through the movement of indicators' median. At the end of 2015 the share of liquid assets in the total assets ranges from 15.5% to 39.6%, the coverage of short-term liabilities with liquid assets ranges from 31.7% to 90,3%, while the coverage of liabilities with residual contractual maturity up to 30 days from 36.9% to 163.1%.

Chart No. 36
Liquidity ratios of the banking system
in points



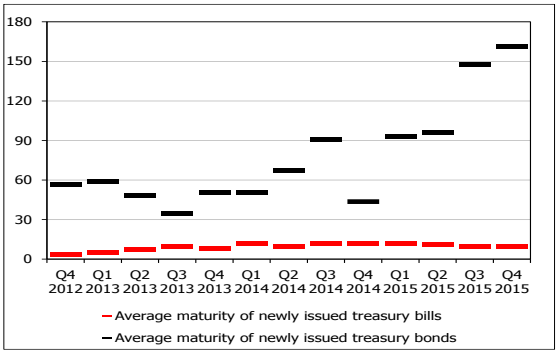
Source: National Bank, based on the data submitted by banks.

Chart No. 37
Structure of banks' assets and liabilities by their contractual residual maturity
in %



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

Chart No. 38
Average maturity of newly issued continuous government securities
in months



Source: NBRM, based on data from auctions of government securities.

The banking system liquidity ratios[24] presented as a ratio between assets and liabilities that fall due in the next 30 days and 180 days, at the end of 2015 equaled 2.1 and 1.5 respectively, which is higher than 1, as the prescribed minimum. Having in mind the decrease in liquid assets, in 2015 liquidity ratios registered a slight fall during the year, as well.

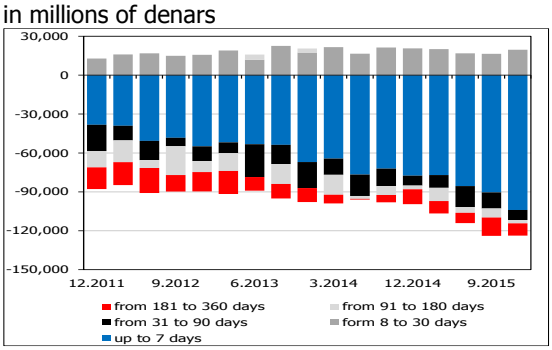
2.3. Maturity structure of assets and liabilities

The structure of banks' assets and liabilities by contractual residual maturity underwent certain changes in 2015. The decrease in liquid assets, primarily the fall of banks' funds with the NBRM, prolonged the trend of reducing the share of assets with residual maturity up to one month. Changes in the supply of financial instruments on the domestic market also had such effect, especially the increase in the average maturity of outstanding continuous government securities over the past few years. On the other hand, in 2015, the trend of improvement of bank liabilities that dominated over the past few years changed. Namely, the share of liabilities with residual maturity of up to one month increased annually, while the share of liabilities with residual maturity greater than one year decreased.

Such changes in the maturity structure of banks' assets and liabilities **extended the gap according to the contractual residual maturity.** The maturity mismatch between assets and liabilities with residual maturity of up to 7 days was the largest. This difference is usually due to the inclusion of banks' demand liabilities and without defined maturity in this maturity bucket. Increasing maturity of banks' liquid assets due to the propensity to invest in longer-term instruments also increased the gap in the contractual residual maturity of assets and liabilities.

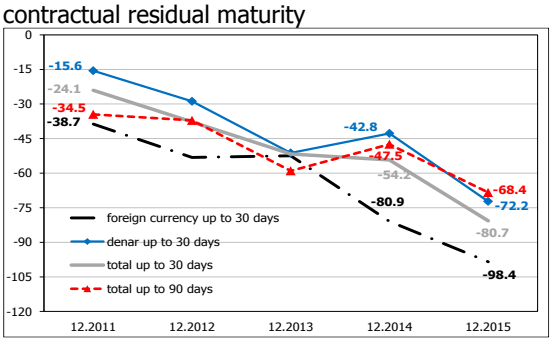
[24] The method of calculation of liquidity ratios up to 30 and up to 180 days is determined by the Decision on the liquidity risk management of banks ("Official Gazette of the Republic of Macedonia" no. 126/11, 19/12 and 151/13).

Chart No. 39
Contractual residual maturity (mis)match between assets and liabilities, by maturity bucket
in millions of denars



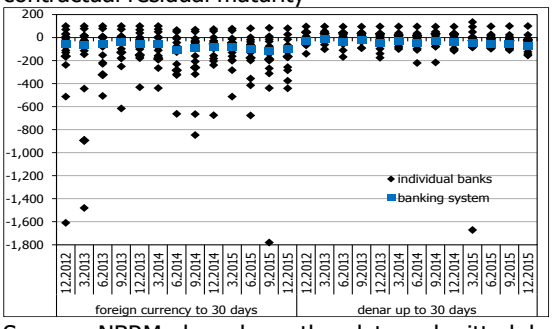
Source: NBRM, based on the data submitted by banks.

Chart No. 40
Relative importance of the cumulative difference between banks' assets and liabilities according to the contractual residual maturity
percentage of cumulative assets with the same contractual residual maturity



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

Chart No. 41
Contractual residual maturity (mis)match between assets and liabilities up to 30 days, by currency
percentage of cumulative assets with same contractual residual maturity



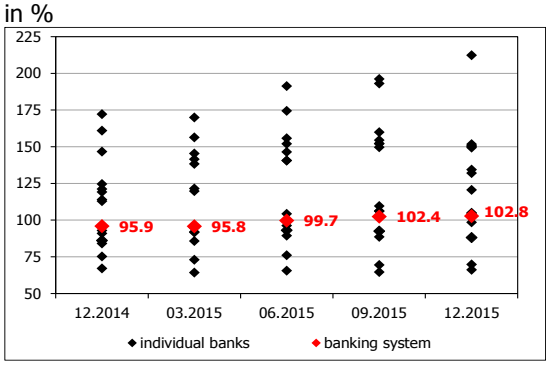
Source: NBRM, based on the data submitted by banks.

Hence, the ratio between the aggregate negative difference between assets and liabilities according to their contractual residual maturity and total assets with the same residual maturity increased in 2015, compared with the end of 2014. Thus, in buckets with residual maturity up to 30 days and up to 90 days, this ratio increased annually by 26.5 percentage points and by 20.9 percentage points, respectively. Such movement was also registered in both Denar and foreign currency component of assets and liabilities by residual maturity. The mismatch between assets and liabilities with currency component is significantly higher than the Denar component, which stems from the business model of domestic banks, which, *inter alia,* is based on the currency and maturity transformation of foreign currency deposits of domestic non-financial entities. Given the distinct differences in contractual residual maturity mismatch between foreign currency assets and liabilities up to 30 days observed in some banks, there might be pressure on their earnings, if amid low or even negative yields on foreign currency liquid assets a need occurs of increased volume of their foreign currency liquidity.

In 2015, banks expressed strong expectations for positive difference between assets and liabilities, both aggregately and as per maturity bucket (Annex 31). In other words, regardless of the existence of internal and external factors, which could trigger greater fluctuations in deposits and influence the motives of the depositors' confidence, banks still expect a relatively high stability of deposits as their main source of funding. Thus, banks expect 82.8% of time deposits with residual maturity up to three months as of 31 December 2015 (85.1% as of 31 December 2014) to be stable, i.e. to remain in the banks. The percentage of expected stability of total deposits is almost the same as in the previous year (82.7%).

2.4. Stress-simulations for liquidity shocks

Chart No. 42
Reduction of liquid assets in the simulation of combined liquidity shocks
in %



Source: NBRM calculations, based on data submitted by banks

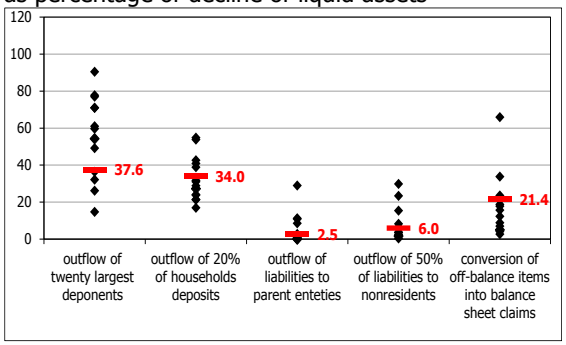
The results of the simulations for assumed extreme liquidity shocks in the form of series of outflows of funding sources[25] outside banks in a time horizon of 30 days show a satisfactory level of resistance of the Macedonian banks. Across the banking system, the combination of such extreme liquidity shocks and simultaneous liquidity outflow has fully absorbed liquid assets (over 100%), but in case of assumed individual liquidity shocks, the Macedonian banks have held enough liquid assets to cover outflows. If, for the purpose of this simulation, the coverage of liquid assets extends over other financial instruments[26] owned by banks, assumed to be collectible or convertible into liquid assets within a time horizon of 30 days, the liquid assets of the banking system would reduce by 90.9%. Any such integrated liquidity shock causes liquidity shortage in ten banks (of Denar 16,441 million) whose share in total assets of the banking system at the end of 2015 was 54.9%. In the other four banks, after such an integrated liquidity shock, the share of liquid assets in the total assets would range from 0.6% to 16.6%, while the coverage of short-term liabilities with liquid assets would range from 1.1% to 27,5%.

Analyzing individual liquidity shocks combined for the needs of this simulation, the simulated outflow of deposits of 20 largest depositors is usually the most relevant, accounting for 37.6% of the total outflow, followed by the outflow of 20% of household deposits (34.0% of the total simulated outflow) and the potential conversion of some banks' off-balance sheet exposures to on-balance sheet assets (21.4% of

[25] 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 limited, 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 exclude MBDP AD Skopje, because of the legal restriction to serve in a deposit market and hence in the presentation of results this bank is excluded in all indicators.

[26] 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: term deposits in foreign banks, money market instruments issued by foreign non-government issuers, loans with contractual residual maturity of up to 30 days and the effect of reducing the reserve requirement for foreign currency liabilities of banks, which is allocated in foreign currency due to the simulated outflow of households' foreign currency deposits.

Chart No. 43
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



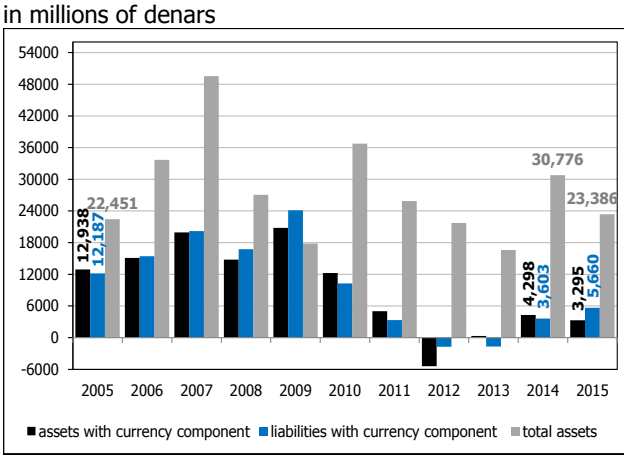
Source: NBRM, based on the data submitted by banks.

the total simulated outflow). Due to the modest share in the total sources of funding of the liabilities to non-residents, as well as sources of funding from parent entities, the associated shocks have moderate impact on the overall result of the simulation. Given the significance of the deposits as a source of funding for the Macedonian banks, simulations of liquidity shocks clearly show that there is a close link between the liquidity management of banks and their strategy for market, reputation and ethical behavior that affect the level of confidence of the economic agents in the Macedonian banks. Hence, the sustainability of the liquidity position of banks, and hence their stability, is directly related to this confidence.

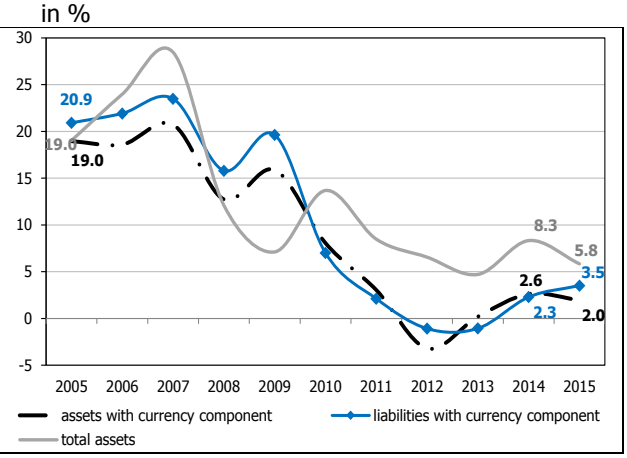
3. Currency risk

In 2015, the exposure of the banking system in the Republic of Macedonia to currency risk decreased. As of 31 December 2015, assets and liabilities with currency component increased, but the gap between them reduced, same as its ratio to banks' own funds. Aggregate currency position to own funds ratio for each bank is within the requirement (30% of banks' own funds). The trend of deeuroization continued, seen through the share of assets and liabilities with currency component in the total assets of the banking system. The appreciation of the US dollar, Swiss franc and British pound against the denar did not affect the banks' currency risk, as these currencies have a small share in their balance sheets. The euro is the most common foreign currency in the banks' balance sheets. Extremely important for the currency risk banks are exposed to is the strategy of maintaining a stable nominal exchange rate of the denar against the euro.

Chart No. 44
Annual growth of assets and liabilities with currency component
in millions of denars

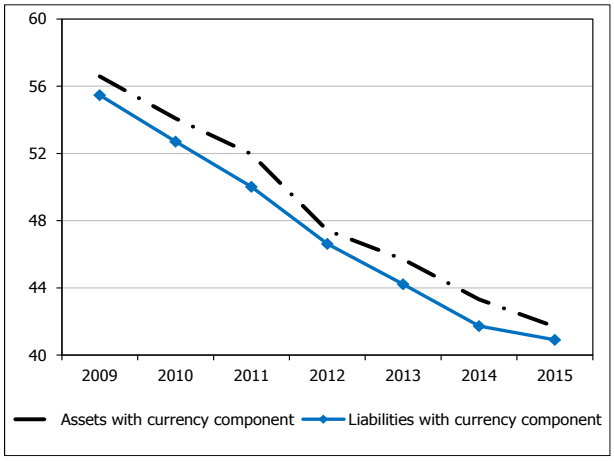


in %



Source: NBRM, based on data submitted by banks.

Chart No. 45
Share of assets and liabilities with currency component* in total assets of banks
in %

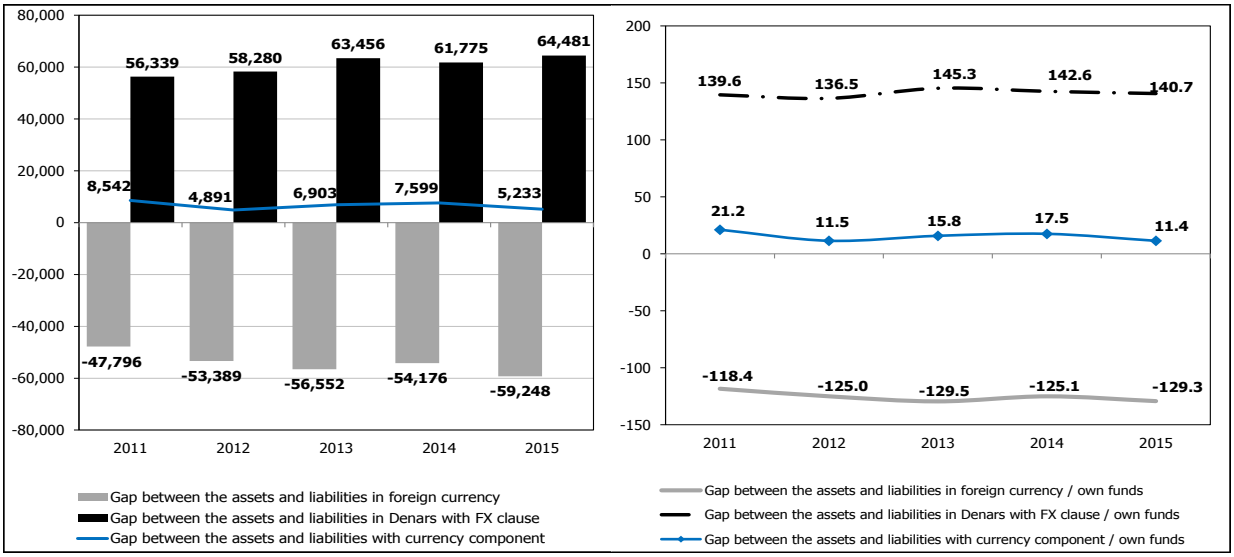


Source: NBRM, based on data submitted by banks.
*Within the assets, loans are shown on a net basis i.e. adjusted for the impairment. MBDP AD Skopje is not included.

As of 31 December 2015, the gap between assets and liabilities with currency component decreased compared to the previous year, resulting from the faster growth of liabilities with currency component (of Denar 5,660 million)[27] compared to the growth of assets with currency component (of Denar 3,295 million)[28]. Thus at the end of the year, the gap amounted to Denar 5,233 million.

Despite the growth of assets and liabilities with currency component over the last two years, this growth is still far below the growth in the pre-crisis period. These movements are accompanied by the downward trend of the shares of assets and liabilities with currency component in the total assets of banks. The growth of assets, or liabilities with currency component is by about four and seven times lower than the growth of total assets of the banks.

Chart No. 46
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

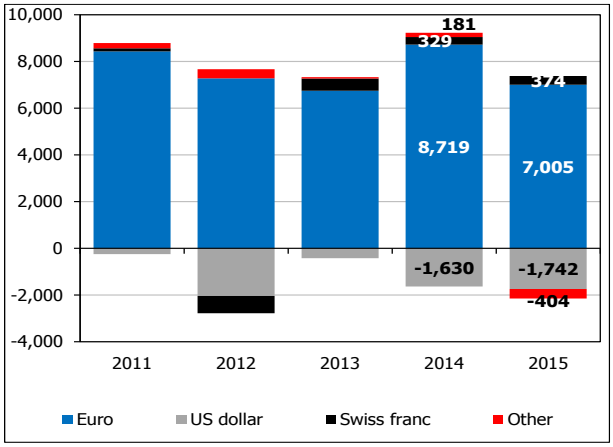


in %

Source: NBRM, based on data submitted by banks.

[27] Transaction accounts of non-financial companies and transaction accounts of households increased to Denar 4,230 million and Denar 3,225 million, respectively. The deposits of natural persons, and deposits of financial institutions also increased by Denar 1,045 million each. On the other hand, a large bank made a repayment of a portion of a subordinated debt in euros to the parent entity (Denar 2,767 million). Also, there was a decrease in foreign currency deposits of non-resident and non-financial institutions of Denar 1,038 million and Denar 726 million, respectively.
[28] The fastest growth of the assets with currency component was seen in FX indexed Denar loans to non-financial entities (by Denar 3,828 million) and long-term banks' foreign currency loans (by Denar 1,012 million). On the other hand, FX indexed Denar government bonds decreased by Denar 1,889 million).

Chart No. 47
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.

Narrowing of the gap between assets and liabilities with currency component on the one hand (by Denar 2,365 million) and the growth of banks' own funds (by Denar 2,512 million)[29] on the other hand, reduced the share of this gap in the own funds of the banking system.

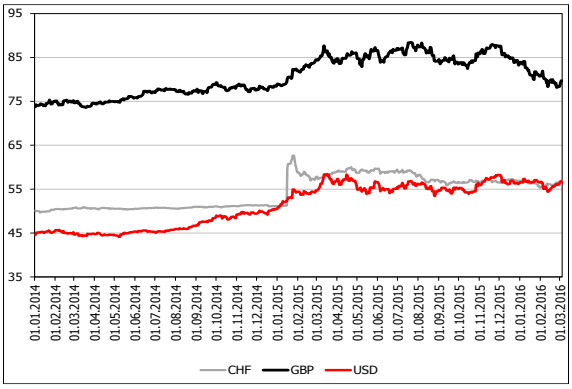
Analyzed by currency, **the euro, as the most common currency in the banking system and with the largest share in the gap between assets and liabilities with currency component, made the greatest contribution to the narrowing of this gap.**[30] While maintaining stable exchange rate against the euro, the domination of the euro in the structure of the gap between assets and liabilities with currency component reduces the threat of materialization of the assumed foreign exchange risk.

Table No. 1
Currency structure of assets and liabilities with currency component
in %

Currency	31.12.2014		31.12.2015	
	Assets	Liabilities	Assets	Liabilities
Euro	89.1	87.9	88.9	87.5
US dollar	6.1	7.4	6.7	8.0
Swiss franc	2.3	2.2	1.8	1.7
Other	2.5	2.5	2.5	2.9
Total	**100.0**	**100.0**	**100.0**	**100.0**

Source: NBRM, based on data submitted by banks.

Chart No. 48
Exchange rate of the denar against the US dollar, Swiss franc and the British pound
in denars



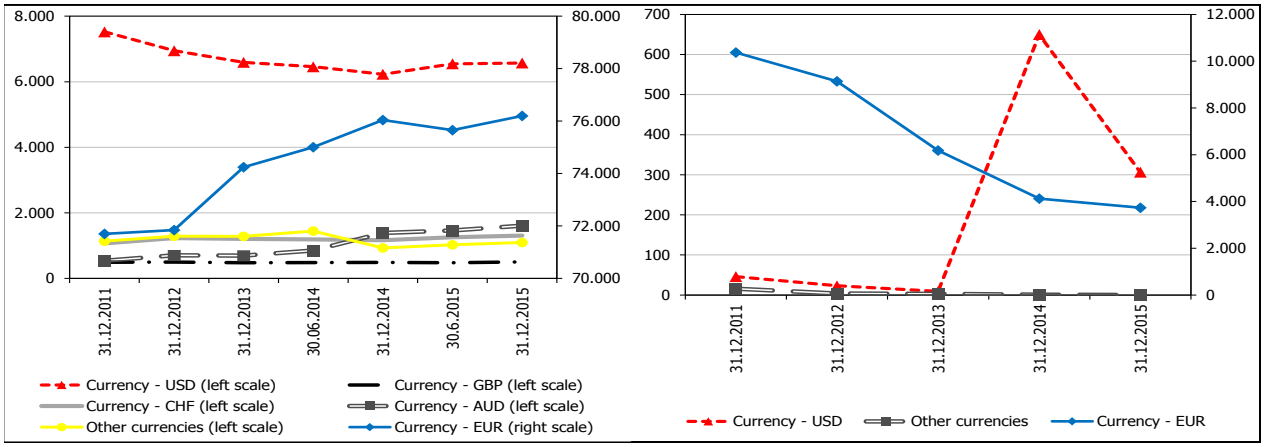
Source: NBRM.

The exchange rate of the denar against the US dollar, Swiss franc and British pound increased in 2015, but the changes in the exchange rates of these currencies against the denar pose no threat to the stability of the banking system, due to the low share of these currencies in the structure of assets and liabilities with currency component.

[29] MBDP is excluded from the calculation because this bank is not subject to the open exchange position regulations.
[30] The gap between assets and liabilities in euros went down by Denar 1,714 million.

The structure of assets with currency component is dominated by loans with currency component (74.4%), with the loans in US dollars, Swiss francs and British pounds, along with loans with foreign currency clause in dollars, francs and pounds, occupying only 2.3%. The share of these loans to total gross loans of the banking sector is consistently low, and as of 31 December 2015, it was 1.0%.

Chart No. 49
Deposits in foreign currency* 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

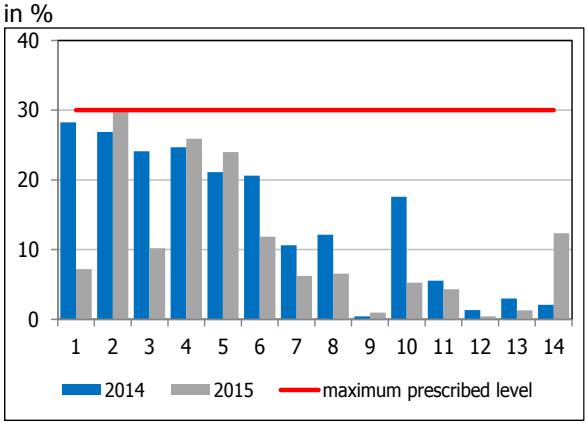
Also, banks' **deposits** did not experience significant impact from the increased exchange rate of the US dollar, Swiss franc and British pound, as deposits in these currencies jointly account for 9.6% of the foreign currency deposits of natural persons or 5.4% of total deposits of natural persons.

Table No. 2
Distribution of banks by share of open currency position, by currency and the aggregate currency position in own funds

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

Source: NBRM, based on data submitted by banks.

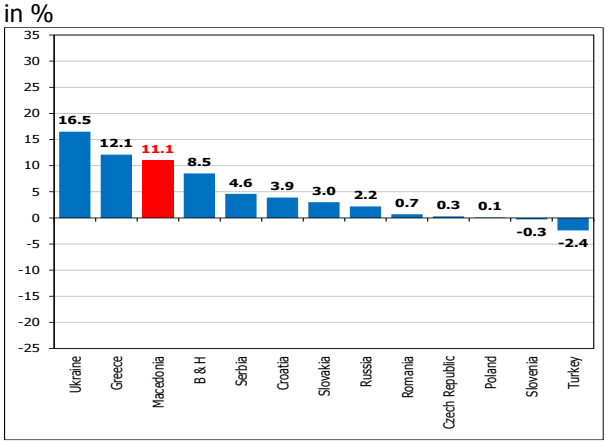
Chart No. 50
Aggregate currency position to own funds ratio, by bank
in %



Source: NBRM, based on data submitted by banks.

As of 31 December 2015, all banks have complied with the aggregate currency position requirement of 30% of own funds.

Chart No. 51
Open currency position to own funds ratio, by country
in %



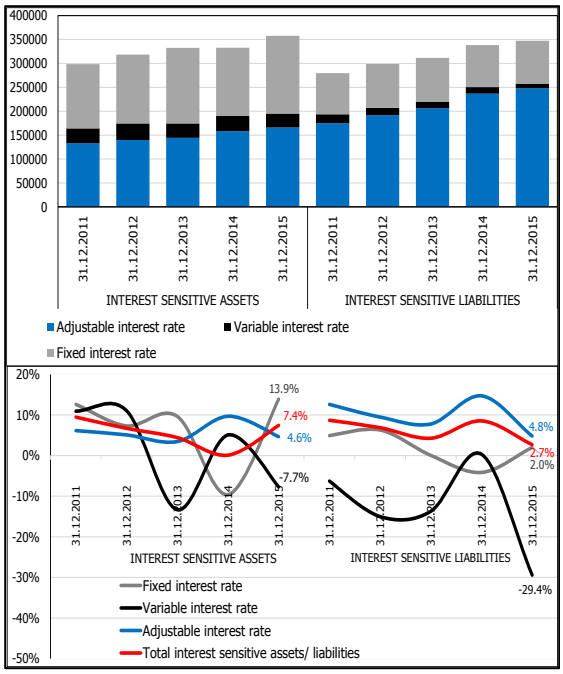
Source: NBRM, based on data submitted by banks; IMF (financial stability indicators).
Note: Data on Macedonia are as of 31 December 2015. Data on Poland are as of 30 June 2015, while for all other countries, data are as of 30 September 2015.

Among the analyzed countries, Macedonia belongs to the group of countries with higher share of open currency position in own funds, but it is still not high.

4. Interest rate risk in the banking book

In 2015, the relevance of interest rate risk in the risk profile of the banks in the Republic of Macedonia increased. The upward trend of interest-sensitive assets and liabilities was accompanied by increased use of fixed interest rates. These developments caused an increase in the ratio between the total weighted value of the banking book and own funds. However, this ratio is still at one-digit level and well below the requirement (20% of own funds) since the banks use adjustable interest rates. With this type of interest rates, banks tend to minimize the interest rate risk in their portfolios, but in turn the cost for their clients could increase and as a consequence, the indirect credit risk for the banks themselves.

Chart No. 52
Structure (up) and annual growth (down) of interest sensitive assets and liabilities, by type of interest rates
in millions of denars



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

In 2015, the share of interest sensitive assets and liabilities continued increasing in the balance sheets of banks. At the end of 2015, the annual growth of interest sensitive assets was three times as high as the growth of liabilities.

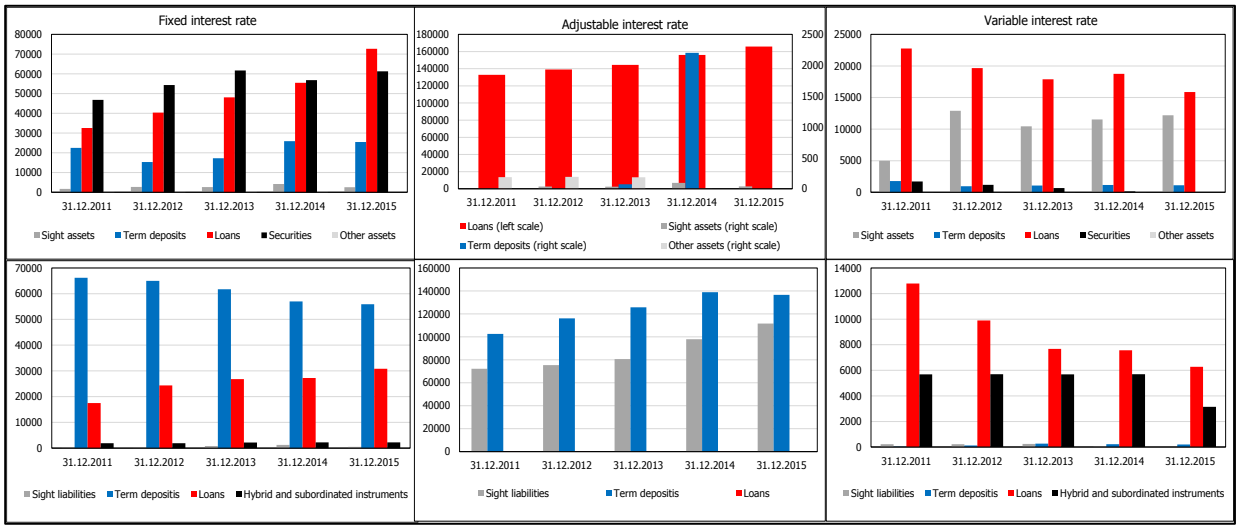
Observing interest sensitive activities, only interest sensitive positions with fixed[31] and adjustable[32] interest rate registered an annual growth in assets of 13.9% and 4.6%, respectively, and in liabilities of 2.0% and 4.8% respectively. The already low amount of assets and liabilities with variable interest rates declined further in 2015.

Assets with adjustable and fixed interest rate have been almost equally represented (46.4% and 45.4%, respectively) in the structure of interest-sensitive assets. In both types of interest rates, loans have the largest share which has been increasing. The highest annual growth of 31.1% was recorded in loans with fixed interest rate[33], while loans with adjustable interest rate registered an annual growth of 6.3%. The increasing use of fixed interest rates on loans extended by banks is a potential risk for loss of income in case of growth of lending interest rates in the market. However,

[31] Fixed interest rate - interest rate which remains unchanged over the entire period, i.e. the bank has no right to change the interest rate, which is nominally set in the contract.
[32] Adjustable interest rate - interest rate which is adjusted on the basis of a decision of the bank, rather than on the basis of the policy rate or index. Using unilaterally adjustable interest rates, banks pass their interest rate risk on their customers, and they may serve as an instrument for managing banks' liquidity and profitability.
[33] These are loans with relatively low fixed interest rate for the first few years of the loan repayment, which according to the regulation are treated as positions with fixed interest rate. After the expiry of the period in which the interest rate is fixed, these credits will be presented as positions with the corresponding interest rate (variable or adjustable).

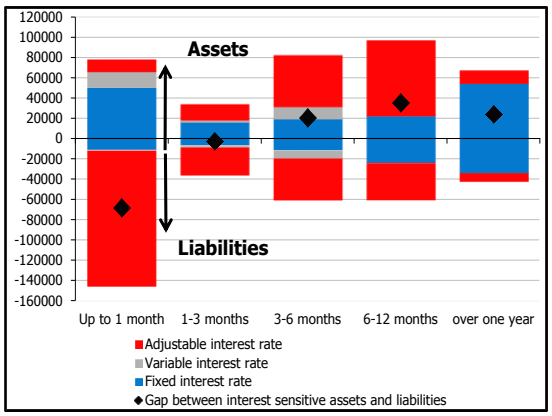
it should be borne in mind that these are interest rates that are fixed temporarily or only for a certain period, after which they become variable or adjustable.

Chart No. 53
Interest-sensitive assets (up) and liabilities (down), by on-balance sheet items and type of interest rates
in millions of denars



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

Chart No. 54
Composition of interest sensitive assets and liabilities, by maturity and type of interest rates
in millions of denars

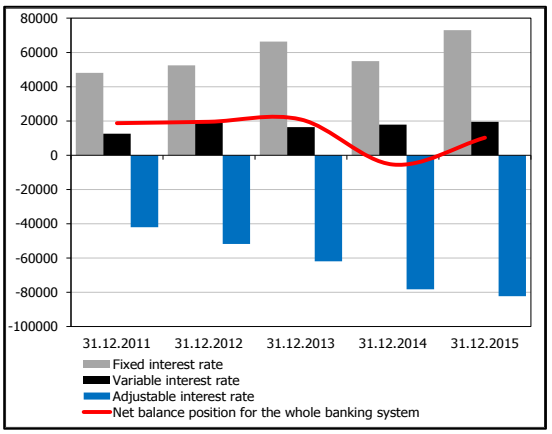


Source: NBRM, based on the data submitted by banks.

In the structure of interest sensitive liabilities, deposits with adjustable interest rates are the major source of funding, followed by deposits with fixed interest rate. Deposits with adjustable interest rate rose annually by 4.8%, solely due to sight deposits (transaction accounts registered an annual growth of 14%). Term deposits with fixed interest rate registered an annual decline of 1.9%. Regarding the interest sensitive liabilities with fixed interest rate, loan liabilities are the only ones that grew annually by 13.1% as a result of the credit facilities with a fixed interest rate of several international financial institutions.

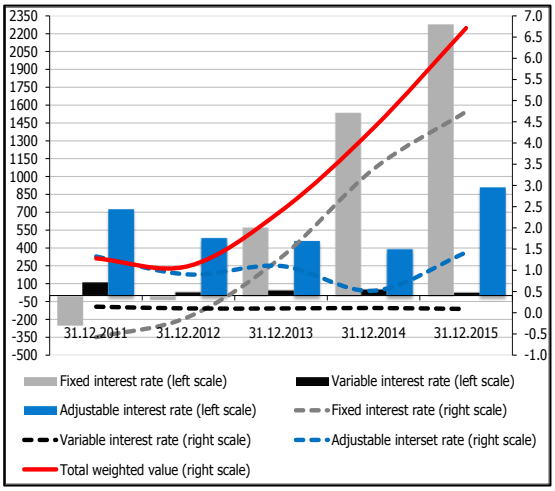
Maturity structure of interest sensitive assets and liabilities do not indicate any significant changes compared to last year. Thus, on the assets side, the share of assets with residual maturity of 6 to 12 months is the highest. Adjustable interest rates dominate the interest sensitive assets and liabilities in all maturity buckets up to one year.

Chart No. 55
Gap between interest sensitive assets and liabilities, by type of interest rate
in millions of denars



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

Chart No. 56
Weighted value (left scale) and total weighted value of banking book to own assets ratio (right scale), by type of interest rate
in millions of denars and in %



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

Assets and liabilities with fixed interest rate prevail in the longer run (over 1 year)[34]. In terms of assets, it is due to the aforementioned loans with fixed interest rate, which in the first few years are treated as assets with fixed interest rate, as well as due to the banks' investments in securities[35]. Liabilities with fixed interest rates in maturity bucket over 1 year are dominated by liabilities on loans from foreign banks.

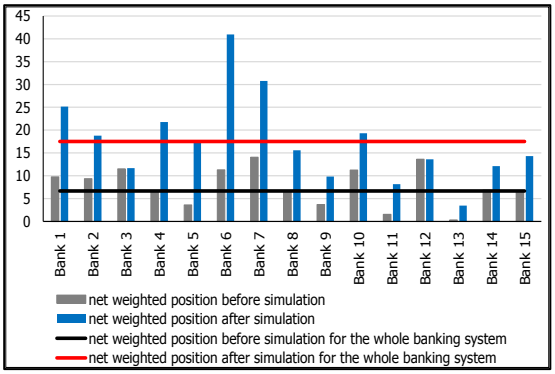
At the end of 2015, the gap between interest sensitive assets and liabilities was about five times as wide as the gap at the end of 2014. The increased gap is entirely due to the wider gap between positions with fixed interest rate (due to the higher loans in assets and the lower term deposits in liabilities).

Total weighted value of the banking book[36] to own funds ratio at the end of 2015 was 6.7% and was higher by 2.3 percentage points compared to 2014. Observed by bank, this ratio ranges from 0.3% to 14.1%, with a median of 6.4%, which is below the requirement of 20%.

Most of the growth in the total weighted value of the banking book is due to the positions with fixed interest rate. In the positions with adjustable interest rates, the ratio between total weighted value and own funds is still low.

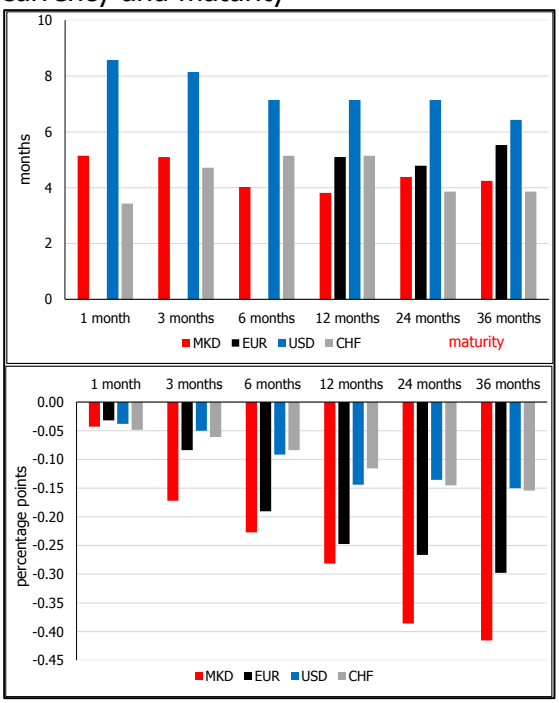
[34] Except assets with maturity of up to 1 month.
[35] Banks' investments in securities registered an annual growth of 7.9%, and at the end of 2015 accounted for 16.8% of total interest-sensitive assets with fixed interest rates.
[36] The total weighted value of the banking book shows the change of the economic value of this portfolio as a result of the assessment of the change in the interest rates using a standard interest rate shock (parallel positive or negative change in interest rates by 200 basis points). The total weighted value of the banking book of the banking system is obtained by aggregating the weighted values of the banking book of individual banks.

Chart No. 57
Ratio between total weighted value of the banking book and own funds, before and after simulations, by bank
in %



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

Chart No. 58
Frequency (up) and level (down) of change in interest rates on household deposits, by currency and maturity



Source: NBRM, based on the data submitted by banks.
*The analysis refers to interest rates on household deposits that are traditional deposits composed solely of deposits with adjustable interest rate for the period from January to December 2015, on a monthly basis.

Hypothetical simulation was developed for stress testing of banks' resilience to interest rate risk, taking into account the significant growth of assets with fixed interest rate, which assumes that all positions with adjustable interest rates of banks would be treated as positions with fixed interest rates (distributed in the balance sheets by their residual maturity)[37]. Total weighted value of the banking book to own funds ratio would increase in almost all banks. After the simulations, this ratio would range from 3.5% to 40.9% with a median of 15.6%. Four banks would exceed the requirement of 20%. The ratio between total weighted value of the banking book and own funds of the banking system would be 17.5% after the simulation, which is by 10.8 percentage points higher than the current ratio. **This brings to the fore the remarkable presence of interest rate risk in the banking book, where banks are not able to unilaterally adjust interest rates.**

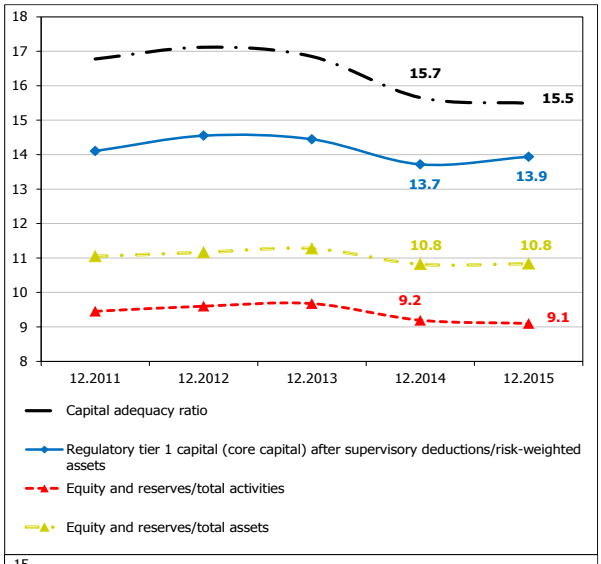
Over the past twelve months, banks have made many changes in interest rates on deposits of natural persons in US dollars, associated with the changing trends of the exchange rate of this currency against the euro. On average, banks in the Republic of Macedonia were changing interest rates on deposits of natural persons denominated in US dollars every other month. Sparsely, every four months, on average, they changed the interest rates on deposits denominated in Swiss francs. **All changes made by banks in interest rates on household deposits in 2015 were aimed at reducing, mostly Denar deposits, in almost all maturity buckets.**

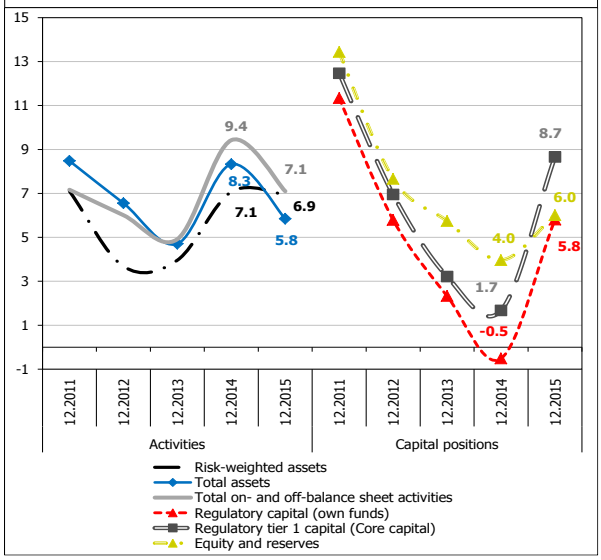
[37] It was assumed that banks use only fixed interest rates, where assets and liabilities on demand are distributed in the first maturity bucket, on-balance sheet and off-balance sheet claims based on overdrafts and credit cards are distributed by validity period/renewals and items with annuity repayment are classified by residual maturity of each individual annuity.

5. Insolvency risk

In 2015, solvency and capitalization indicators of the banking system did not record significant changes. The growth of own funds accelerated in 2015 after a few years of continuous slowdown of the annual growth rates, which is mostly conditioned by reinvested profits earned in previous years. One portion of the new own funds in 2015 was used to cover credit risk arising mostly from the growth of claims on other companies and retail portfolio. However, part of the new own funds was not engaged and remained "available", above the level required to cover risks. The results from the conducted stress test indicate satisfactory resilience of the banking system, although some banks show hypothetical need for recapitalization under simulated extreme shocks.

Chart No. 59
Indicators for solvency (up) and annual growth rates of their components (down)
in %





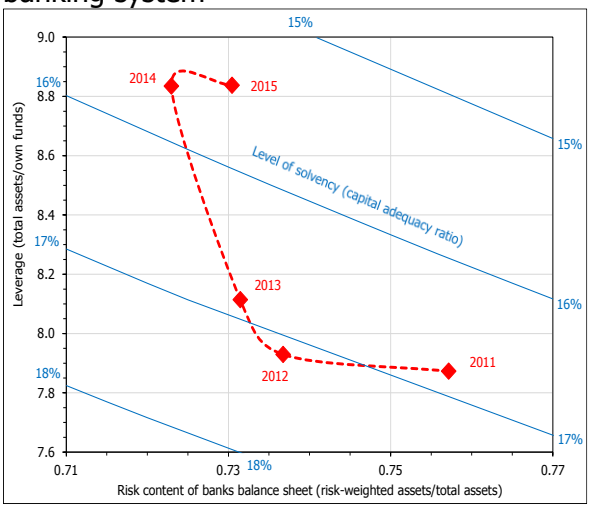
Source: NBRM, based on the data submitted by banks.

5.1. Indicators for solvency and capitalization of the banking system and risk level of the activities

In 2015, solvency and capitalization indicators of the banking system did not change much. The capital adequacy ratio decreased by 0.2 percentage points to 15.5%. Core capital to risk weighted assets ratio reached 13.9%, which is by 0.2 percentage points higher compared with the end of 2014. Ratio between equity and assets of the banking system remained unchanged on an annual basis (10.8%).

In 2015, the equity positions of the banking system accelerated the growth, after years of continuous slowdown of the annual growth rates. The own funds increased by 5.8%, compared to the decline in 2014, and the core capital of the banking system grew at a rate that is five times higher than that recorded in 2014. Capital and reserves registered an annual growth of 6%, which is by 2 percentage points more compared to the growth registered in 2014.

Chart No. 60
Leverage, riskiness and solvency of the banking system

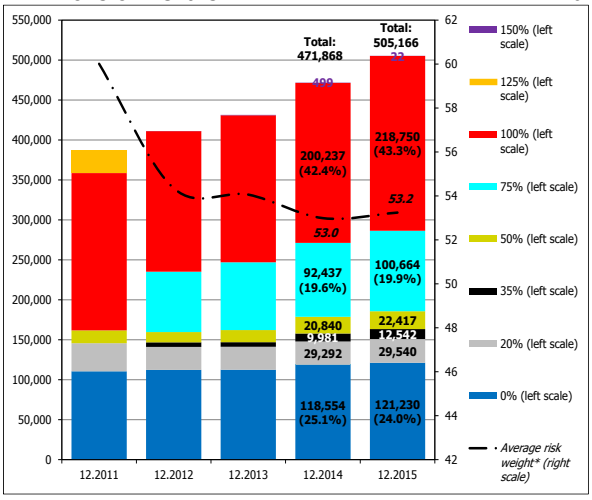


Source: NBRM, based on the data submitted by banks.

The slight decrease in the capital adequacy ratio of the banking system in 2015 was a result of the rising levels of risk of banking activities (an increase of risk weighted assets), after years of steady decline. At the same time, the level of indebtedness of the banking system remained unchanged, after a long period of continuous increase.

Chart No. 61
Stock and structure of the total on-balance sheet and off-balance sheet exposure, by risk weight**

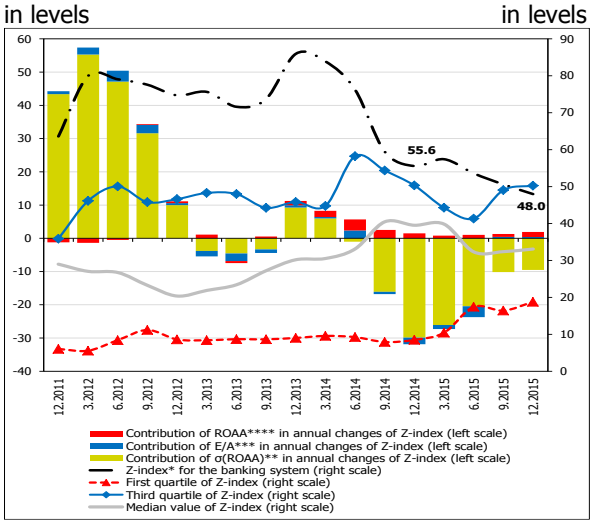
in millions of Denars in %



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.
** When comparing data for individual dates, one should bear in mind that the risk weight of 125% (introduced for claims on natural persons based on overdrafts and credit cards) was valid until 2011. In 2012, the regulations for determining capital requirements for credit risk was amended and the standardized approach of Basel 2 Capital Accord was introduced, which, *inter alia*, introduced several new risk weights and exposure categories.

The level of risk of the banking activities (or the average risk weight of banking activities), measured as a ratio between credit risk weighted assets and total on-balance sheet and off-balance sheet exposure increased by 0.2 percentage points and reached 53.2% as of 31 December 2015. In 2015, there was a strong growth of Denar 18.5 billion (9.2%) of the riskier banks' activities (with a risk weight of 100%). More than half (51.9%) of the annual growth of banks' activities with risk weight of 100% was concentrated in the last quarter of 2015. They are immediately followed by activities with risk weight of 75%, which in 2015 increased by Denar 8.2 billion (8.9%). In contrast, banks' activities with 0% risk weight included in the calculation of credit risk weighted assets, increased by Denar 2.7 billion (or 2.3%), which is twice less than the growth in 2014.

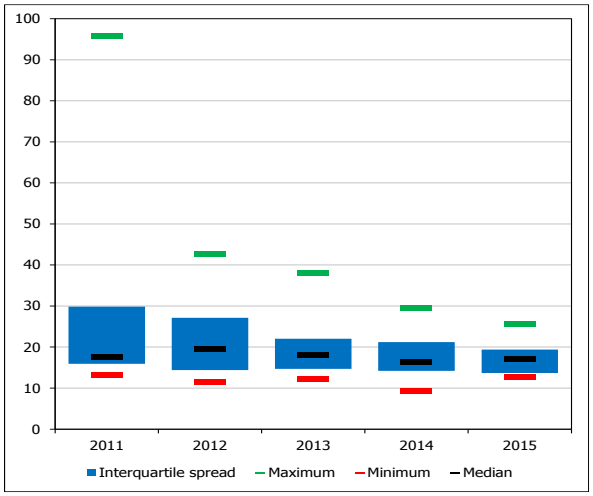
Chart No. 62
Z-index for the banking system
in levels in levels



Source: NBRM, based on the data submitted by banks.
The Z-index is calculated as follows: $Z = \frac{ROA+E/A}{\sigma(ROA)}$
** *σ(ROA)* is standard deviation of the rate of return on assets
*** E/A is equity to assets ratio
**** *ROA* is rate of return on assets.

The overall stability of the banking system, measured by the so-called Z-index[38] is relatively high. It requires a negative shock of at least 48 standard deviations from the rate of return on assets to fully exhaust the capital potential of the banking system. Z-index decreased in 2015, as a result of the greater volatility of bank earnings in 2015, as measured by the standard deviation from the rate of return on average assets.

Chart No. 63
Measures for distribution of capital adequacy ratio in the banking system
in %

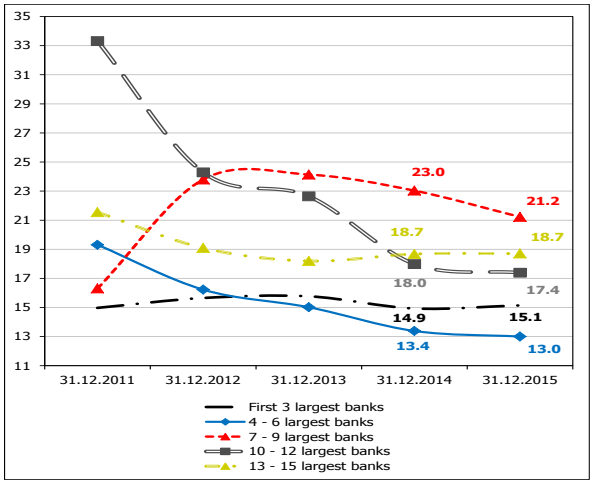


Source: NBRM, based on the data submitted by banks.

In 2015, the trend of convergence of domestic banks, according to the rate of capital adequacy, continued. Thus, the difference between the bank with the highest and with the lowest capital adequacy ratio fell by 7.2 percentage points and as of 31 December 2015 hit a record low of 12.9 percentage points. The lowest capital adequacy ratio registered at individual bank increased and reached 12.6% as of the end of 2015 (9.2% as of 31 December 2014).

[38] The Z-index is calculated as follows: $Z = \frac{ROA+E/A}{\sigma(ROA)}$, where *ROA* is the rate of return on assets, *E* is equity and reserves, *A* is assets and *σ(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 (*σ (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.

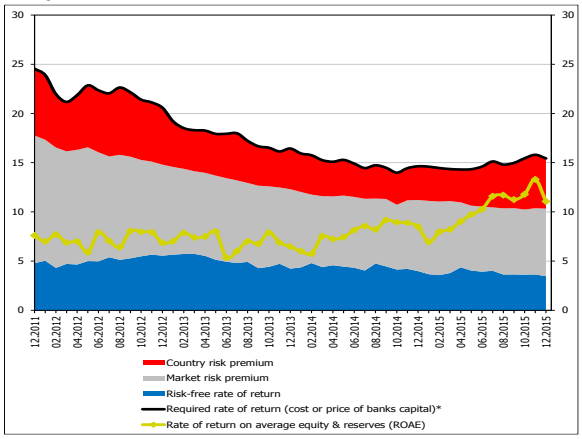
Chart No. 64
Capital adequacy of banks, by market share*
in %



Source: NBRM, based on the data submitted by banks.
* Banks in the chart are ranked by their market share in total assets of the banking system as of 31 December 2015.

Banks with higher market share in total assets operate with lower capital adequacy. In 2015, the three largest banks in the banking system improved their capital adequacy ratio. In recent years, the group of three banks which, by asset size, follows the "big three", operates with the lowest capital adequacy as a result of the more aggressive market approach of these banks and the constant increase in the volume of activities. In the same period, the three largest banks maintained a slightly higher capital adequacy ratio, which in 2015 further improved.

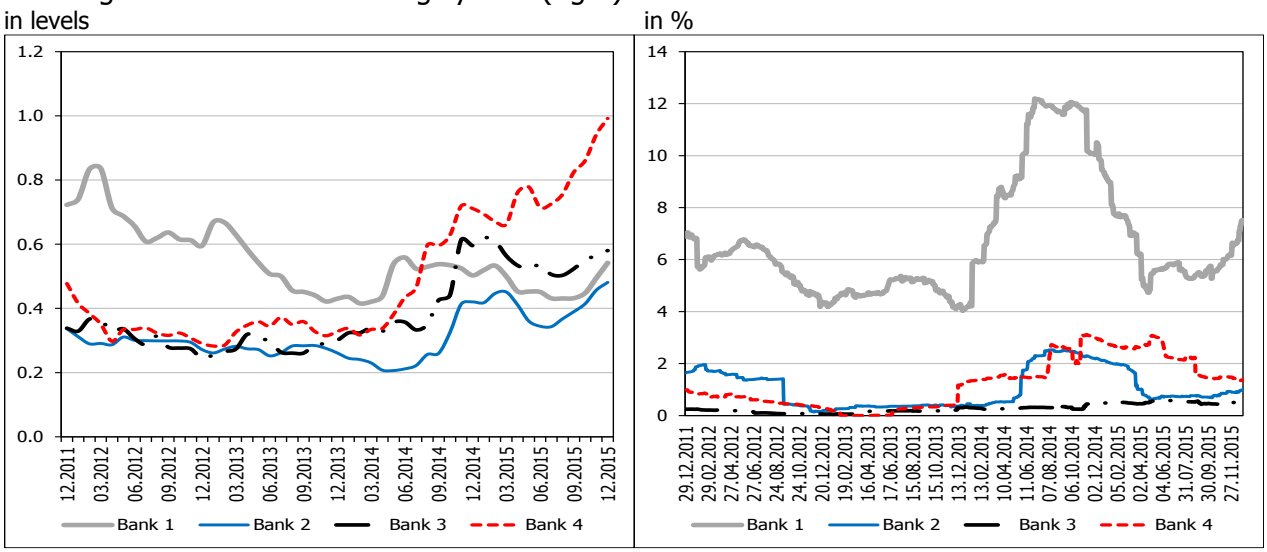
Chart No. 65
Level and structure of cost (price) of capital* of banks listed on the official market of the Macedonian Stock Exchange
in %



Source: NBRM, based on the data submitted by banks.
*Calculated using the so-called Capital-Asset Pricing Model (CAPM) where the price of capital is the sum of: 1) risk-free rate of return (determined as the average of the yields to maturity of government bonds listed on the Macedonian Stock Exchange), 2) the product of the stock's beta coefficient and the difference between market rate of return and risk-free rate (or market risk premium) and 3) country risk premium (defined as the difference between the yields of the Macedonian eurobonds and comparable German bonds). The calculation includes eight banks listed on the official market of the Macedonian Stock Exchange. Market risk premium is calculated as the average market risk premiums for each bank, weighted by the size of their assets.

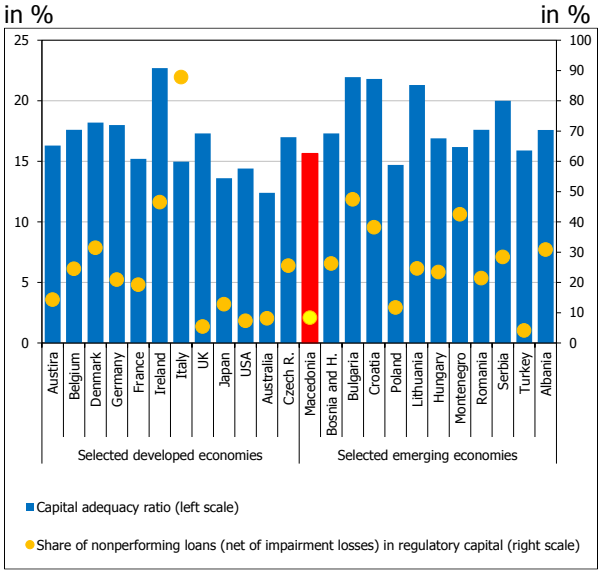
The cost of capital (required rate of return by investors in banks' stocks), calculated by applying the so-called CAPM model on a sample of eight banks, increased in 2015, as a result of the increase of country risk premium in the second half of the year. The cost of banks' capital, calculated by the above-mentioned model, increased by about 1 percentage point and reached 15.4% at the end of 2015, which was by about 4 percentage points more compared with the realized rate of return on equity of the banks included in the analysis. Higher required rate of return on stocks of banks results from the increase of the country risk premium by about 1.5 percentage points, in the second half of 2015. Trading with banks stocks registered no significant changes in 2015, and with the exception of one bank, the market prices of bank stocks remained (twice) below their book value.

Chart No. 66
Price-to-book ratio of the four largest banks in the banking system (left) and turnover ratio of the four largest banks in the banking system (right)



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

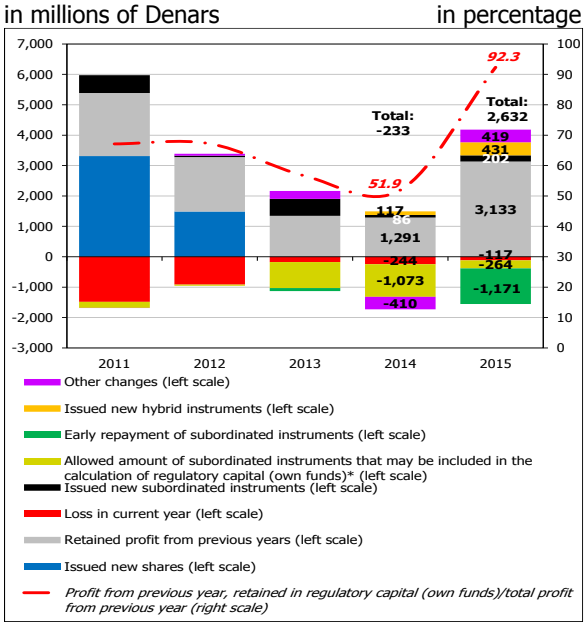
Chart No. 67
Capital adequacy ratio and share of net non-performing loans in own funds, for selected developed and emerging economies in 2015



Source: NBRM, IMF and websites of central banks of the countries.
* Note: Data as of 2014 on the share of non-performing loans (net of impairment) in their own funds in the banking systems of Germany, France and the United Kingdom.

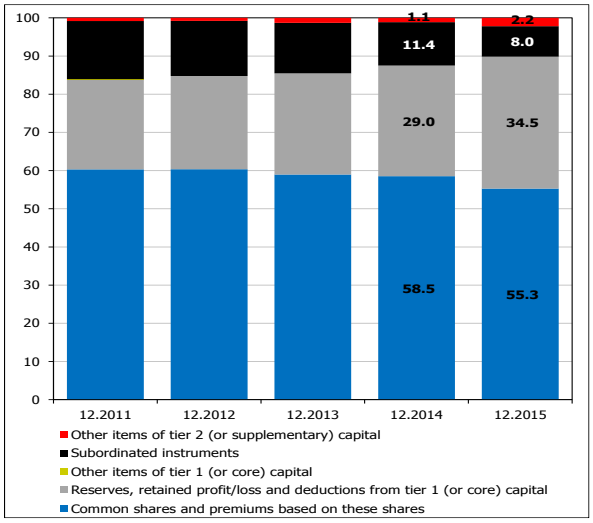
The Macedonian banking system has a higher capital adequacy ratio than the banking systems of only three (Italy, the United States and Australia) of the twelve analyzed developed economies and the banking system of only two (Poland and Turkey) of the selected twelve emerging markets. However, the analysis would be incomplete if we ignore the significantly higher level of conservatism of the Macedonian banks in determining the level of impairment for non-performing loans, which is among the highest in comparison with the banking systems of the twenty-four countries under observation. Thus, compared with the Macedonian banking system, only four (the United States, the United Kingdom, Australia and Turkey) of the total number of selected countries have a lower share of unprovisioned part of non-performing loans in the capital requirement. According to this indicator, the Macedonian banks are comparatively significantly better, especially compared to the banking systems of the emerging economies.

Chart No. 68
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 regulations for inclusion of these instruments in the calculation of own funds.

Chart No. 69
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 the own funds of the banking system

In 2015, the own funds of the banking system registered an annual growth of Denar 2,632 million (or 5.8%), which is mostly conditioned by reinvested profits of over Denar 3 billion earned in previous years. It is expected that the relatively high earnings generated in 2015 will be the main source of increasing the own funds also in the coming 2016. The early repayment of liabilities based on subordinated instruments issued by a bank from the group of large banks is another significant source of annual growth in the capital in 2015. Specifically, the bank first enhanced its own core capital by redistributing a part of retained earnings available for distribution, into earnings restricted for distribution to shareholders, which practically substituted the "depreciated"[39] subordinated instruments with a greater amount of higher quality capital. Such changes in own funds strengthened (by about 2 percentage points) the already high share of core capital in total own funds before deductions of core and supplementary capital, which as of 31 December 2015 year reached 89.8%.

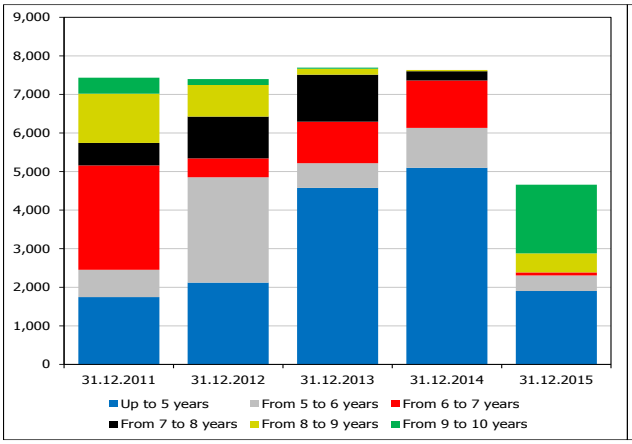
Besides reducing the total amount of banks' liabilities on outstanding subordinated instruments, in 2015 there was a significant improvement of the maturity profile of these instruments. Thus, as of 31 December 2015, 59.2% of the total liabilities on subordinated instruments have a residual maturity longer than five years (33.2% as of 31 December 2014), which allows banks by law, to include the full amount of these instruments in the calculation of own funds. Subordinated instruments continued to be one of the most expensive banks' sources of funding, since they contain a subordination clause[40].

[39] According to the regulation, subordinated instruments, which entered the last five years to maturity, are included at discounted value in the calculation of own funds (in each year of the last five years to maturity their value is discounted by 20%).
[40] According to the subordination clause in the event of bankruptcy or liquidation of the bank, subordinated liabilities will be paid before the settlement of liabilities to the bank's shareholders and holders of hybrid instruments, but after the settlement of liabilities to all other creditors.

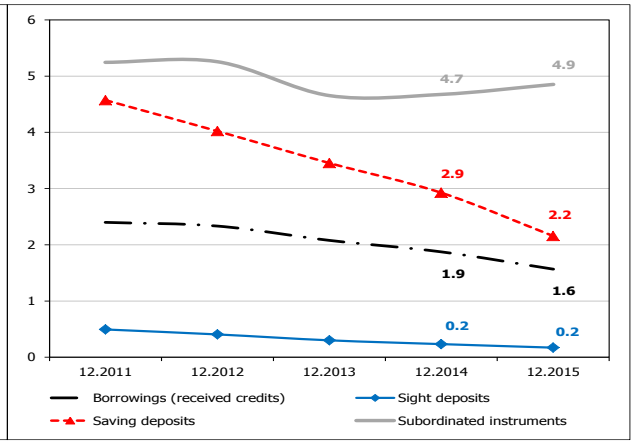
Chart No. 70

Stock and structure of total banks' liabilities on subordinated instruments, by residual maturity (left) and rate of interest expenses*, for certain types of funding sources (right)

in millions of denars



in %



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 incurred in the last four quarters (the cumulative flow of interest expenses incurred 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.

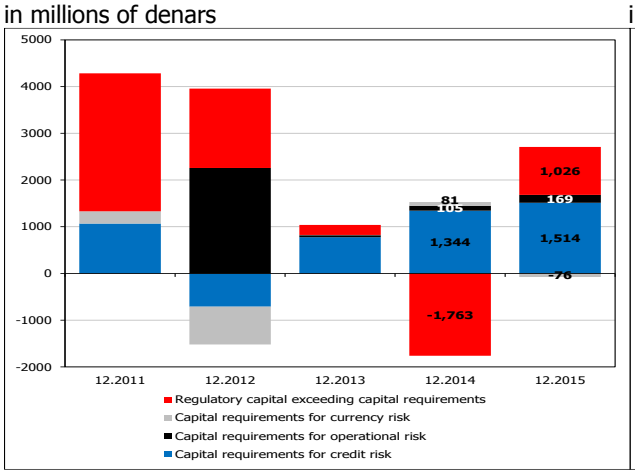
In 2016, the National Bank intends to amend the regulations so as to introduce capital reform of the new Basel Capital Accord 3. Given the prudence of the current Decision on the methodology for determining the capital adequacy in terms of capital structure, as well as the satisfactory level of capital currently available to banks, no significant changes are expected in the amount and structure of banks' own funds on this basis.

For more details about the level of own funds by group of banks see Annex 35.

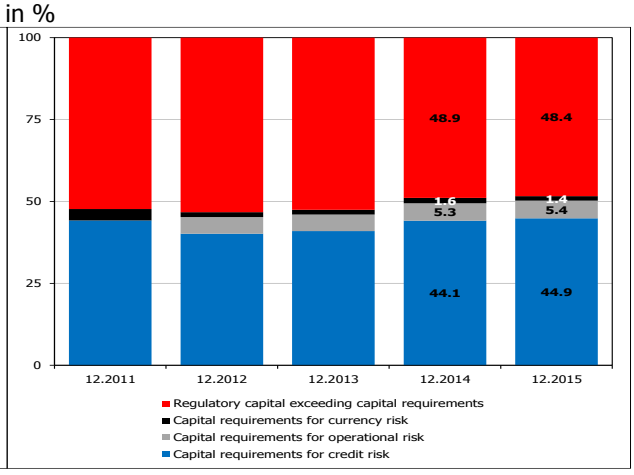
Chart No. 71

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

in millions of denars

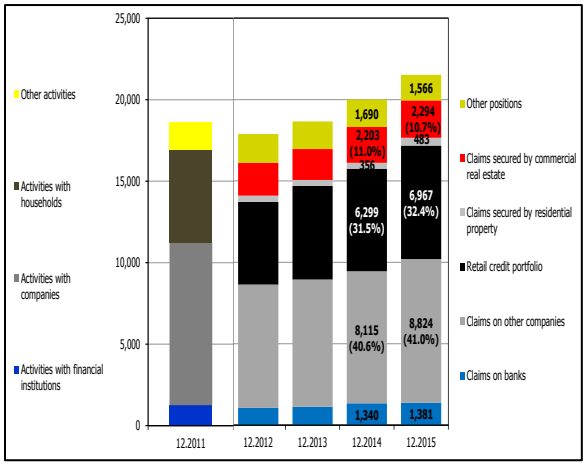


in %



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

Chart No. 72
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.
Note: *In 2012, the regulations for determining capital requirements for credit risk was amended in order to introduce the standardized approach from the Basel 2 Capital Accord, which, *inter alia*, changed certain exposure categories for which capital requirements for credit risk are determined.

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

In 2015, the regulatory capital required for covering risks increased by Denar 1,617 million (or 7.0%). However, one part of the new amount of own funds in 2015 was not engaged and remained "available", above the level required to cover risks. Most of the increase in capital requirements for covering risks is the result of the higher amount of regulatory capital requirement for credit risk, which is mostly a result of increased claims on other companies and growing retail portfolio. Own funds above the capital requirement for covering risks still make up most of the total own funds, of about 48%.

At the end of 2015, in order to slow down the high growth of non-earmarked lending to natural persons, the National Bank introduced higher capital requirements for the new long-term consumer loans (with maturities longer than eight years) approved after 1 January 2016, and for the growth of overdrafts and credit cards as of 31 December 2015. Meanwhile, NBRM introduced lower capital requirements for assumed off-balance sheet liabilities which guarantee payment in case of default of the debtor to a third party arising from a business relationship and for claims backed by commercial properties, if certain conditions are met. Hence, in the next period we can expect some changes in the stock and structure of capital requirements for banks' credit risk.

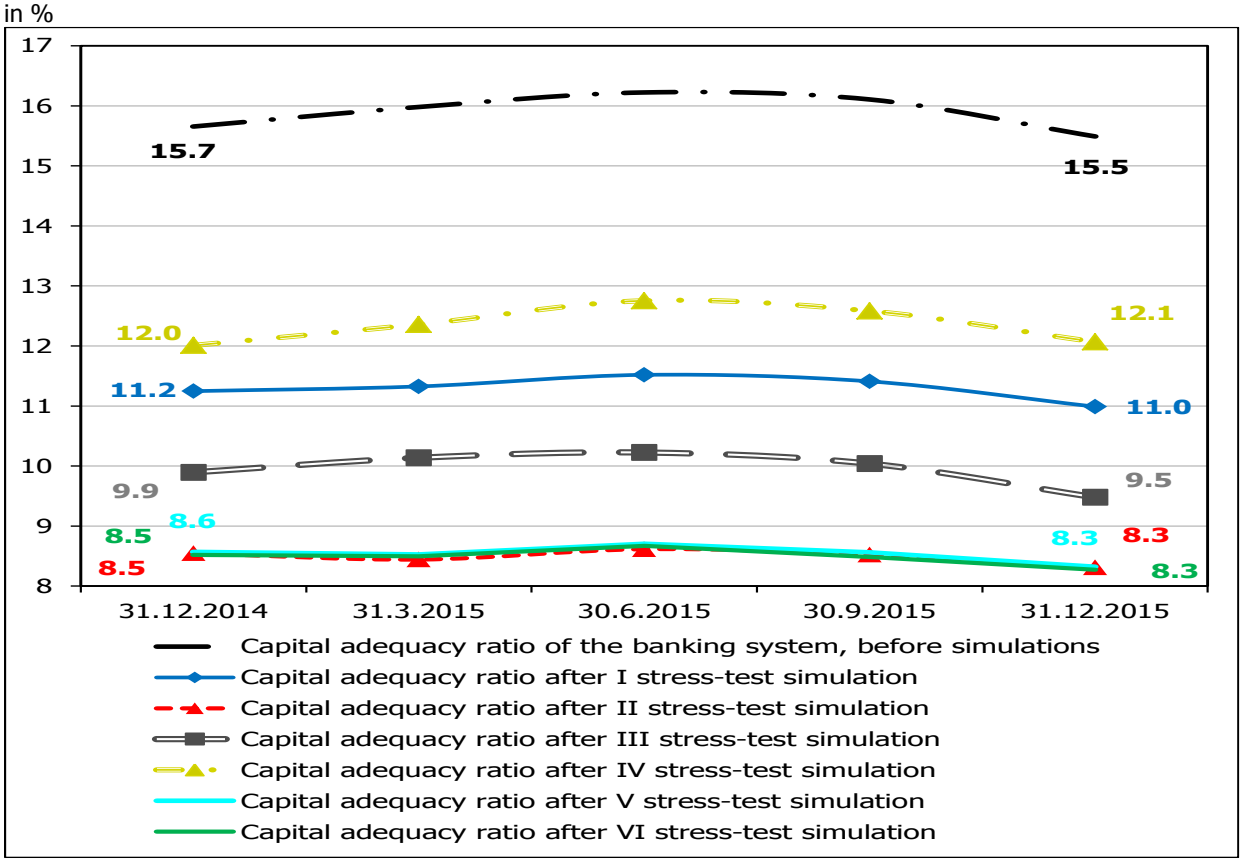
For more details on the capital requirements for covering risks and on the capital adequacy ratio, by group of banks, see Annex 36.

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

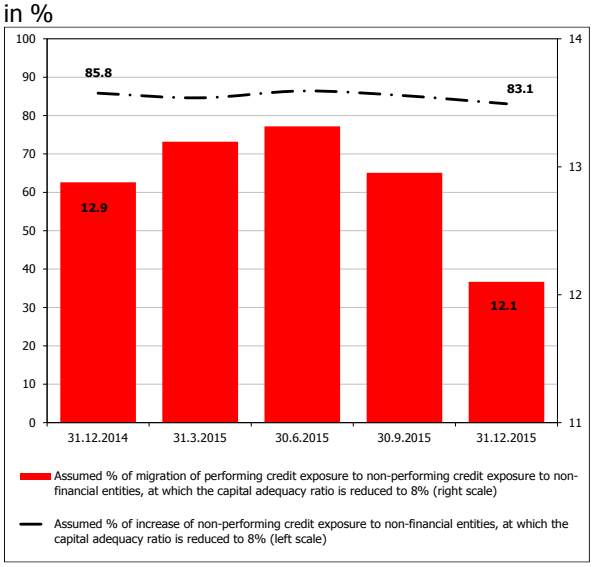
shocks indicates slightly poorer results compared to 31 December 2014. Such results of the stress-tests are mostly conditioned by decrease in the capital adequacy of the banking system in 2015 (before simulations). The capital adequacy of the banking system does not fall below 8% in any of the simulations, although individual banks reveal hypothetical need for recapitalization in the event of possible materialization of the simulated extreme shocks.

Chart No. 73
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: Increasing the non-performing credit exposure to non-financial entities by 50%;
II simulation: Increasing the non-performing credit exposure to non-financial entities by 80%;
III simulation: Migration of 10% of the regular to a non-performing credit exposure to non-financial entities;
IV simulation: Reclassification in C - non-performing of the five largest credit exposures to non-financial entities (including related entities);
V simulation: Increasing the non-performing credit exposure to non-financial entities by 80% and increase in interest rates from 1 to 5 pp.;
VI simulation: Increasing the non-performing credit exposure to non-financial entities by 80% depreciation of the Denar exchange rate by 30%, and increase in interest rates from 1 to 5 pp.;
**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.

Chart No. 74
Required deterioration of the quality of credit exposure for the capital adequacy of the banking system to drop to 8%
in %



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

The hypothetical shocks on the part of the credit risk have the greatest impact on the stability of the banking system. Within the credit exposure to non-financial entities, the simulations show that the capital adequacy of the banking system would drop to the regulatory requirement of 8% only if the non-performing credit exposure rises by 83.1%, i.e. in case of migration of 12.1% from regular to non-performing credit exposure. These simulations would almost double the share of non-performing in the total credit exposure to non-financial entities (from the current 9.4% to 17.1%). However, these are rather extreme and less likely simulations. For comparison, in the fourth quarter of 2015, only 0.4% of the regular credit exposure to non-financial entities migrated to non-performing exposure[41] (in the last seven years, the historic maximum for this data was 2.1% recorded in the second quarter of 2009).

[41] For the first, second and the third quarter of 2015, this figure is 0.6%, 0.6% and 1% respectively. Analyzed annually (31 December 2014 – 31 December 2015), only 1.7% of the regular credit exposure to nonfinancial companies, as of 31 December 2014, had a non-performing status at the end of 2015.

III. Structural features, significant balance sheet changes and profitability of the banking system

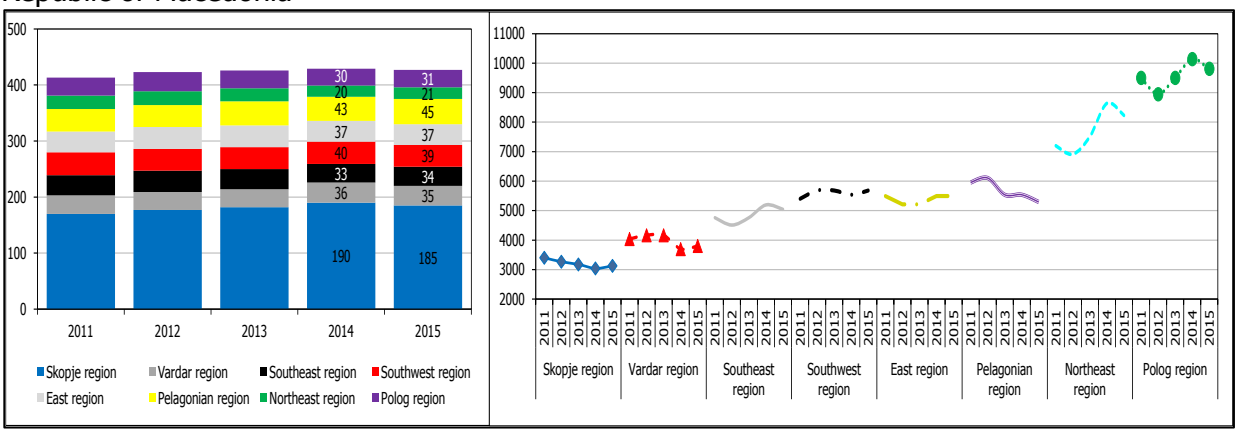
6. Structure of the banking system

6.1. Access to banking services

As of 31 December 2015, the banking system in the Republic of Macedonia consists of fifteen banks and three savings houses. The number of banks is unchanged, whereas the number of savings houses reduced by one[42] relative to the end of the previous year. The analysis of savings houses is not included in this report due to their insignificant share in the banking system[43].

The banking network, which is spread across almost all cities in the Republic of Macedonia, consists of 427 business units[44]. The total number of business units decreased by two (five new business units were opened and seven business units were closed).

Chart No. 75
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.

In the Skopje area are concentrated more than 40% of the total number of business units of banks in the country. Compared with other areas, the Skopje area still offers the best access to banking services as measured by the number of inhabitants per business unit. Most regions have improved access to banking services, with the exception of the Vardar and South-West Region.

[42] Upon completion of the procedure for transforming the savings house Al Kosa AD Stip into a financial company, in the first quarter of 2015, the number of savings houses reduced by one.
[43] The share of the savings houses accounts for only 0.6% of total assets of the depositary financial institutions (banks and savings houses), 0.8% of total loans and 0.3% of total deposits of natural persons in Denars and in Denars with FX clause.
[44] The number of business units includes the headquarters of banks, but excludes banks' windows.

Table No. 3
Comparative indicators on number of residents per credit institution and per business unit of banks

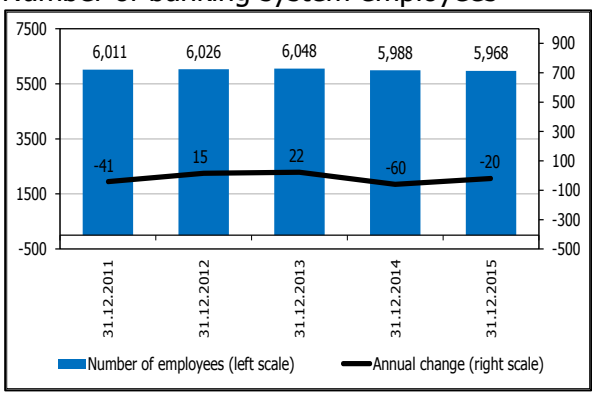
Country	Number of inhabitants by bank	Country	Number of inhabitants by business unit of banks
Luxembourgh	3.869	Spain	1.450
Austria	11.199	Cyprus	1.463
Cyprus	16.071	France	1.707
Malta	14.724	Portugal	1.752
Lithuania	32.422	Bulgaria	1.922
Germany	46.099	Italy	1.984
Denmark	49.649	Austris	2.015
Montenegro	52,083	Germany	2.315
Poland	60.231	Luxembourgh	2.585
Sweden	64.569	Poland	2.692
The Netherlands	76.629	Belgium	3.143
Latvia	77.923	Slovenia	3.485
Slovenia	85.958	Croatia	3.548
Estonia	87.733	Romania	3.745
Italy	93.474	Malta	3.882
Belgium	112.248	Serbia	4.059
Croatia	128.364	Greece	4.066
Macedonia	137.718	Slovakia	4.247
France	138.092	Denmark	4.772
Albania	172.500	Lithuania	4.784
Slovenia	187.034	Macedonia	4.838
The Czech Republic	188.018	Sweden	4.874
Slovakia	187.034	The Czech Republic	4.957
Spain	214.782	Albania	5.531
Bosnia and Hercegovina	227.235	Latvia	6.351
Serbia	247.034	The Netherlands	9.134
Bulgaria	255.929	Estonia	10.787
Greece	280.231	Montenegro	n.a.
Romania	496.525	Bosnia and Hercegovina	n.a.

Source: The NBRM, EU Structural Financial Indicators 2014, BSCEE Review 2014, IMF World Economic Outlook Database 2015, the Bank of Albania, (Supervision Annual Report 2014), the National Bank of Serbia (Banking sector in Serbia - Report on the First Quarter of 2015), the National Bank of Ukraine (Annual report 2014).
Note: Data on Macedonia are as of 31 December 2015, on Serbia as of 31 March 2015, and on other countries, they are as of 31 December 2014.

Banks in the Republic of Macedonia still have underdeveloped banking network compared to the majority of the countries covered in the analysis. According to the number of residents served by a bank, Macedonia is in the second half of this list, which is almost unchanged compared to the previous year.

6.2. Employment in the banking system

Chart No. 76
Number of banking system employees



Source: NBRM, based on data submitted by banks.

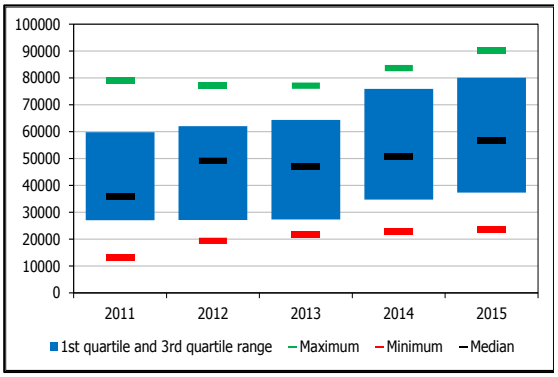
In 2015, the number of banking system employees, which is 5.968, decreased by 20, mainly due to the decrease that was faster[45] than the new increase[46] of employees.

Banking system productivity has been improving. In 2015, assets grew almost six times faster compared to the number of employees. Productivity, as measured by the amount of assets per employee has improved in thirteen banks. In eight of them this is due to the growth of their assets amid simultaneous reduction in the number of employees.

The differences between banks in terms of their productivity have increased in the last five years, which is perceived by the expansion of the range between the first and third quartile of the assets per employee ratio.

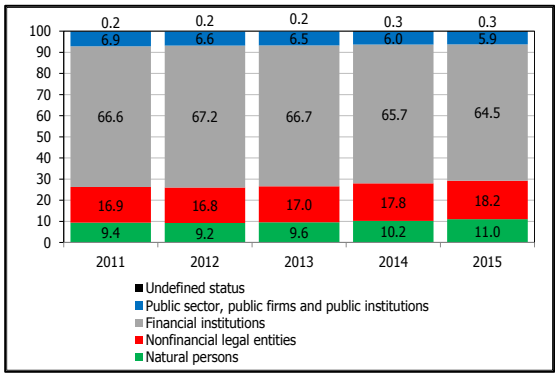
[45] The largest decrease was registered in one large bank (by 30 employees), mainly due to retirement and one middle-size bank (by 47 employees), due to the rationalization of operating costs.
[46] More pronounced growth of employees was registered in one large bank and one middle-size bank (by 33, respectively).

Chart No. 77
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.

Chart No. 78
Ownership structure of ordinary shares in the banking system
in %



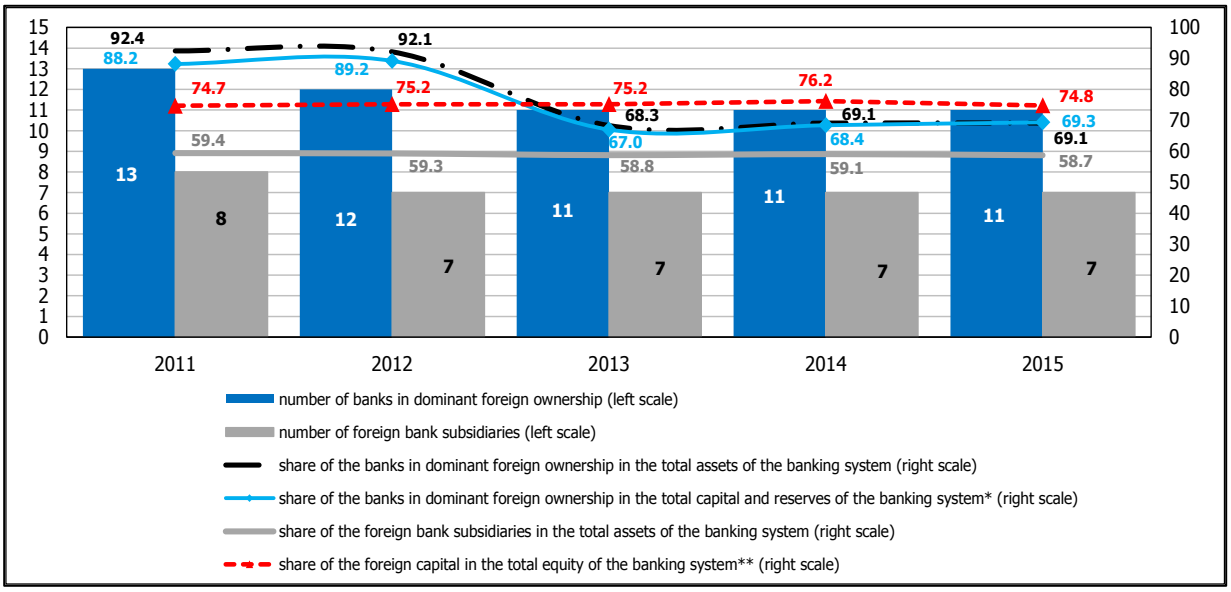
Source: NBRM, based on data submitted by banks.

The qualification structure of employees in the banking system continues to improve, where the share of employees with at least university education increased and reached 74.7% (Annex 4).

6.3. Ownership structure of the banking system

In 2015, there were no significant changes in the ownership structure of banks. Financial institutions continue to hold most of the ordinary shares of the banks, although their share compared to the previous year dropped by 1.2 percentage points, at the expense of the higher share of natural persons by 0.8 p.p.. These changes are due to the purchase of the ordinary shares by natural persons, that are held by an international financial institution, issued by a small bank.

Chart No. 79
Banks' market share in dominant foreign ownership and trend of foreign capital share in total capital*
in %

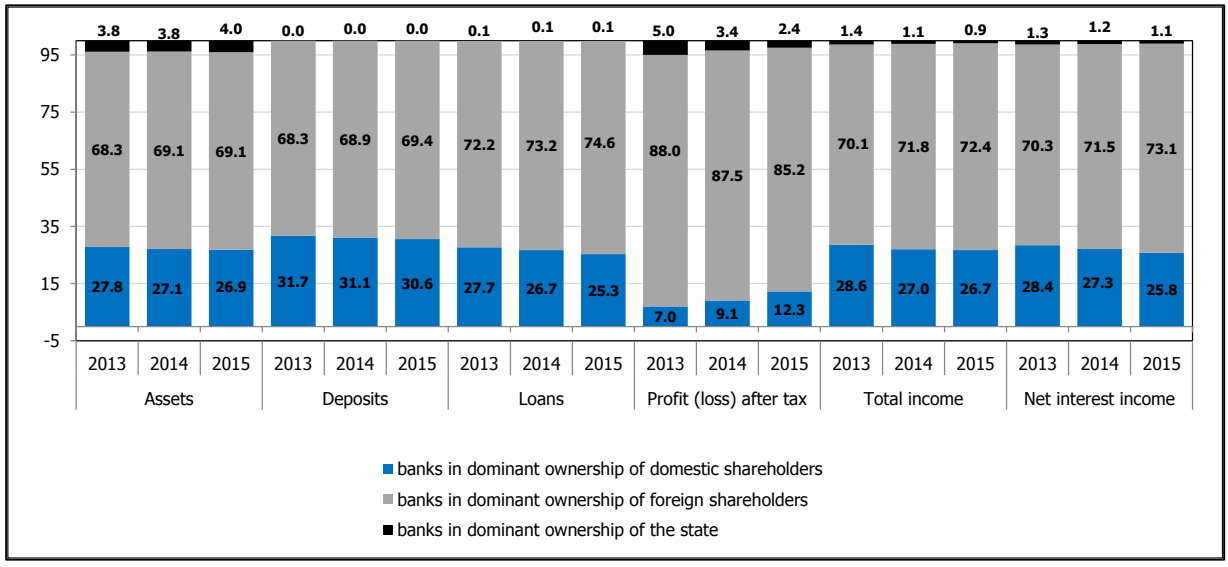


Source: NBRM, based on data submitted by banks.
*Capital and reserves comprise the share capital and premiums based on paid-in shares, reserve fund, retained earnings (accumulated loss) and revaluation reserves. Capital and reserves are reduced by the current loss.

The capital of the banks in the Republic of Macedonia is mostly foreign. During 2015, there were no changes in the number of banks that are predominantly owned by foreign shareholders and in those that are subsidiaries of foreign banks (eleven and seven, respectively). The share of foreign capital in total equity amounted to 74.8% and decreased compared to 2014 (by 1.4 percentage points), mostly due to the abovementioned change in ownership of the ordinary shares. The increase of 0.9 percentage points in the share of banks in dominant foreign ownership in the item "capital and reserves" is mostly due to the reinvesting profits for 2014 by one large bank.

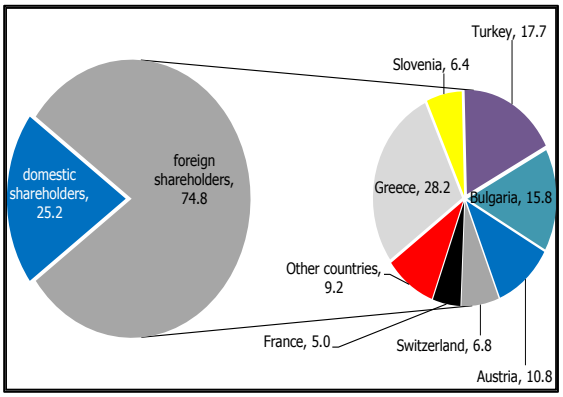
Banks with dominant foreign ownership have a leading role in the relevant items in the balance sheets of the banking system. Their share in all relevant items in the balance sheets registered little change. The dominance of banks in dominant foreign ownership in the total financial result continues to be the most pronounced, although their share fell by 2.3 percentage points. In 2015, all banks in dominant foreign ownership registered profits.

Chart No. 80
Structure of major banks' balance sheet positions, by their majority ownership
in %



Source: NBRM, based on data submitted by banks.
Note: The share in the capital is presented in the figure Chart No. **79**.

Chart No. 81
Banks' equity structure, by country of origin of the prevailing shareholder
in %

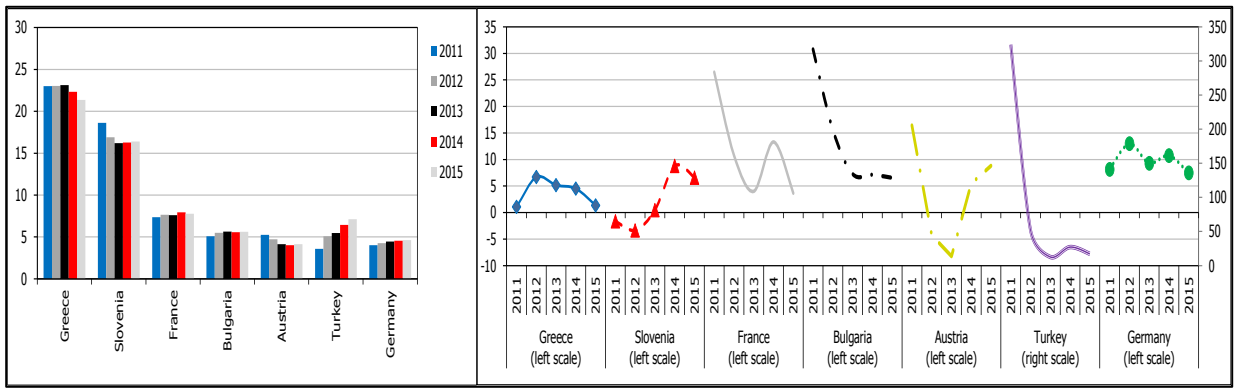


Source: NBRM, based on data submitted by banks.

Observing the country of origin of the prevailing foreign shareholder, small structural changes were registered compared to previous year, which are primarily the result of the purchase and sale of small volume of shares by institutional investors. The shareholders from Turkey and Bulgaria registered an increase in the share of equity in the total foreign equity (of 0.3 percentage points), while the share of capital originating from Slovenia decreased by 0.2 percentage points.

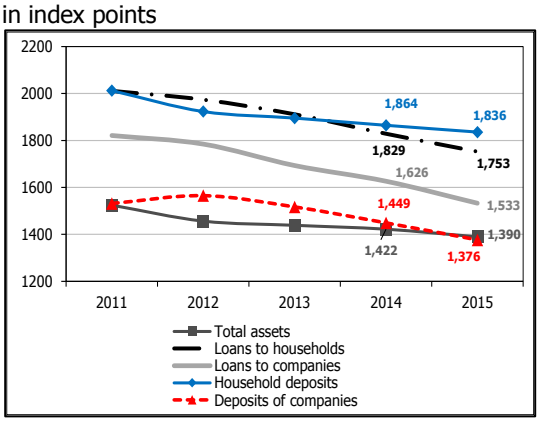
At the end of 2015, total market share (in assets) of banks in dominant foreign ownership is 69.1%, and is unchanged compared to 2014. In the past two years, the market share of banks with majority Greek ownership has decreased, which resulted from the slower growth of assets of these banks compared to the faster growth of assets of other banks.

Chart No. 82
Market share (assets) of banks (left) and growth rate of banks' assets (right) by country of origin of the prevailing foreign shareholder*
in %



Source: NBRM, based on data submitted by banks.
*The banks in domestic ownership and banks without prevailing owner are not included in the chart.
Note: In 2011, the high growth of the banks' assets dominated by the Turkish capital, was due to the "replacement" of the Netherlands with Turkish capital in one bank.

Chart No. 83
Herfindahl index
in index points



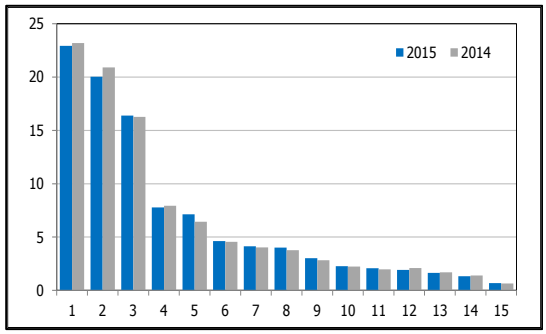
Source: NBRM, based on data submitted by banks.

The bank with majority Turkish ownership registered the highest growth in the market share, while changes in market shares of banks with prevailing ownership of other countries are insignificant.

Following the continuous decrease of the Herfindahl index[47] for almost all categories for which it is calculated over the years, it can be concluded that the concentration of the banking system moves from high to acceptable. Namely, only the household deposits index is above the limit, whereby the non-compliance is small.

[47] 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 is the total number of banks in the system. When the Herfindahl index ranges from 1,000 to 1,800 units, the concentration ratio in the banking system is considered acceptable.

Chart No. 84
Share of individual banks in the total assets of the banking system
in %



Source: NBRM, based on data submitted by banks.

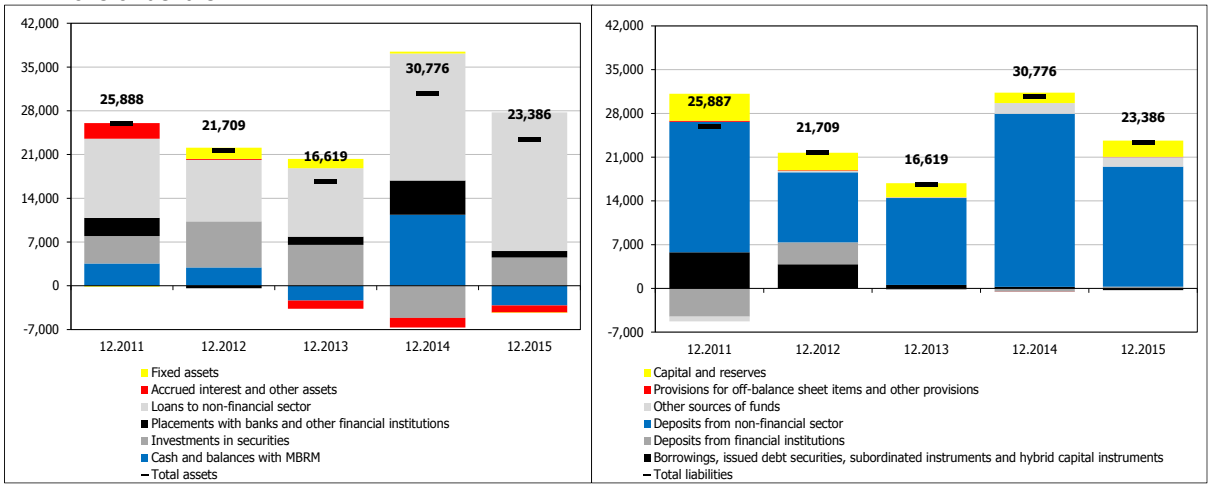
On the other hand, shares of individual banks, as well as of the three and five banks with largest assets in the total assets of the banking system, still indicate a high concentration in the banking system. The three largest banks make up almost 60% of the total assets, and the difference between the highest and the lowest share is significant (0.7% for the smallest bank and 22.9% for the largest bank). Almost half of the banks in the system have a share that constitutes up to 3%.

7. Banks' activities

In 2015, amid decelerated recovery of the global economy and maintaining solid economic growth in the country amid present uncertainty due to domestic political developments and events in Greece, the main role of the banks - intermediation between savers and borrowers from non-financial sector, continued to strengthen. Banks' activities in the domestic credit market recorded favorable trends and reached solid annual growth for second consecutive year. The upward movement in the bank lending activity is more evident in the segment of households, as opposed to the credit support to the corporate customers, whose annual growth slowed down. The banks continue to lend to this sector with great vigilance, thus increasingly financing non-earmarked consumption of households. Due to the decrease of the potential risks of a certain segment of consumer loans, which registered exceptionally high growth rates, the National Bank adopted a package of measures to slow down the high growth of the long-term consumer loans, to facilitate access to financial services for the corporate sector and prolonging the effectiveness of the non-standard monetary policy measure to support the lending to net exporters and domestic producers of electricity.

Domestic political developments and events in Greece reflected on the trends and structure of banks' deposit activity. Thus, in 2015, the permanent denarization of deposits with banks decelerated, while the increase in deposits in slightly larger part resulted from the growth of corporate deposits rather than households, although they had a significant contribution in the new savings. Also, despite the amendments to the Decision on reserve requirement aimed at encouraging long-term savings in the longer term, demand deposits were supporting category of the realized deposit growth for second consecutive year.

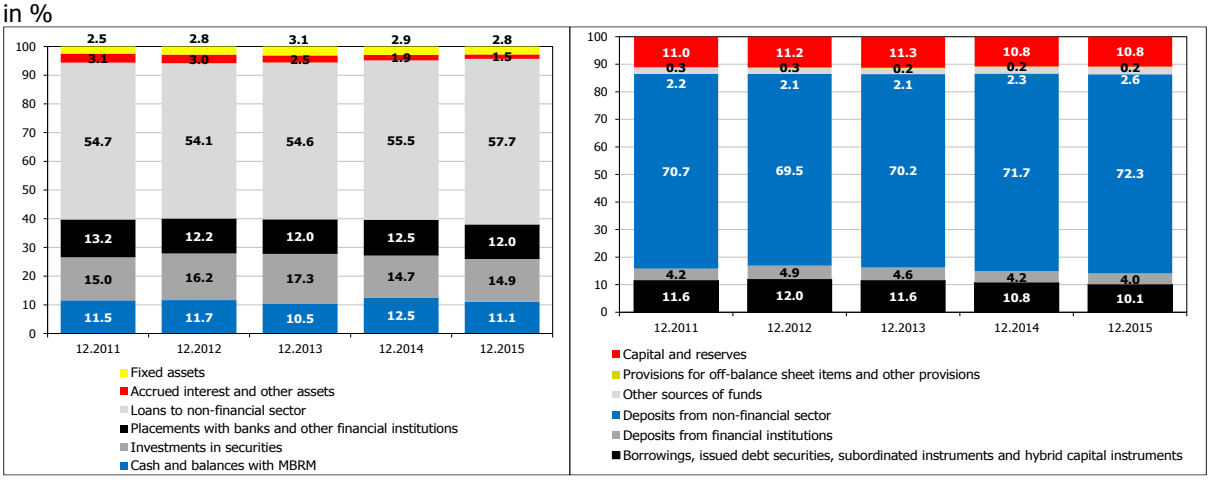
Chart No. 85
Absolute annual growth of the components of assets (left) and liabilities (right) of the banking system
in millions of denars



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

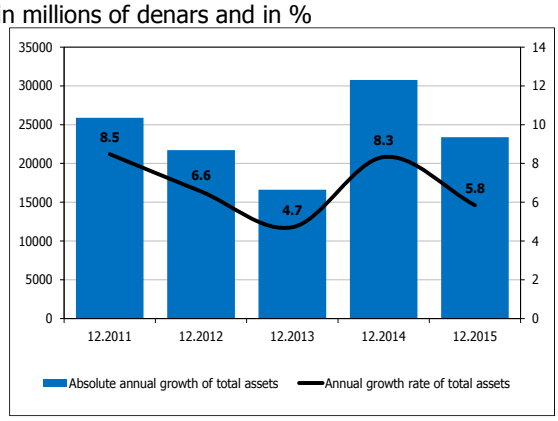
In 2015, banks increased investments in liquid short-term government securities, i.e. treasury bills.

Chart No. 86
Structure of the assets (left) and liabilities (right) of the banking system
in %



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

Chart No. 87
Annual change of assets of the banking system
in millions of denars and in %

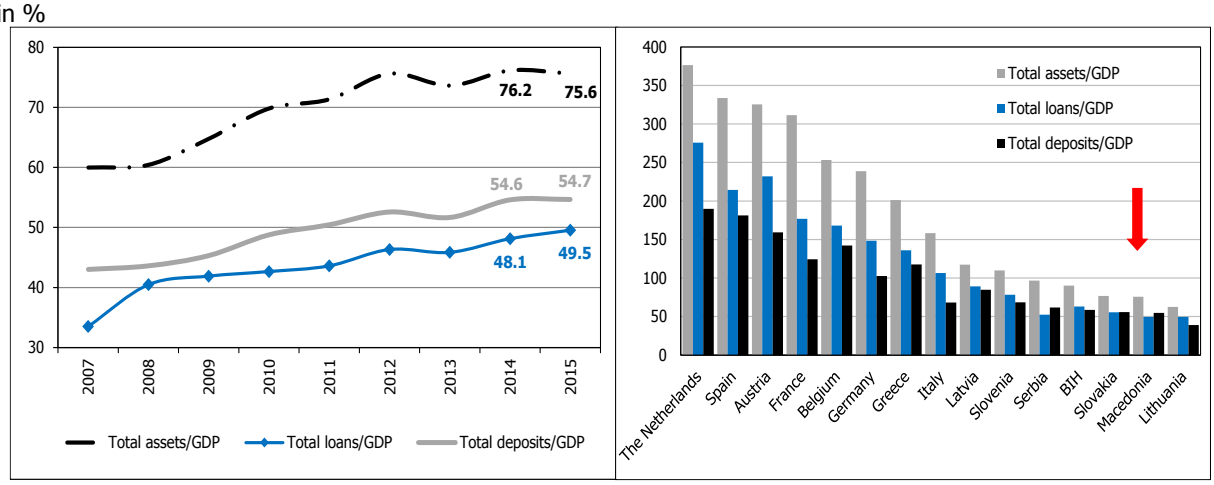


Source: NBRM, based on the data submitted by banks.

As of 31 December 2015, the total assets of the banking system amounted to Denar 423,668 million. The main categories in assets of banks registered growth (increased loans, growth of investments in treasury bills, modest increase in placements with banks and other financial institutions). In 2015, the growth of total assets of the banking system decelerated, compared to the growth in 2014, which mainly reflects the slower growth of deposits of non-financial entities.

In 2015, the overall role of the banking system as a financial intermediary registered certain growth, although the importance of banks' assets for economic activity slightly decreased. Compared with most EU countries under observation, financial intermediation in the Republic of Macedonia is lower, but similar to the level compared to some countries of the region.

Chart No. 88
Level of financial intermediation in the Republic of Macedonia
in %

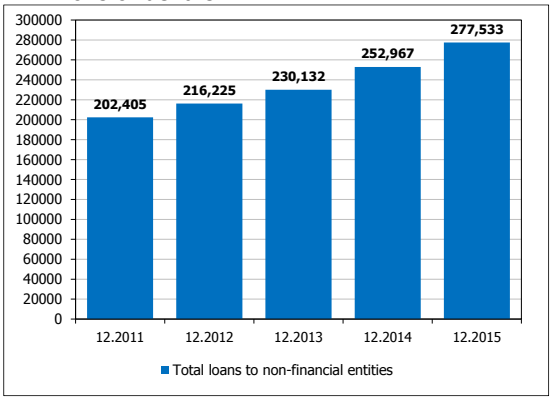


Source: NBRM, based on data submitted by banks, websites of IMF, ECB and central banks.
Note: Data refer to December 2014, with the exception of Macedonia and Slovakia (December 2015) and Serbia (September 2015).

7.1. Loans to non-financial entities

The favorable development in the domestic credit market continued in 2015. Amid solid and stable solvency and liquidity position of the banks and favorable shifts in the economy, loans granted to non-financial entities, for second consecutive year, realized growth of nearly ten percent.

Chart No. 89
Amount of loans to non-financial entities
in millions of denars

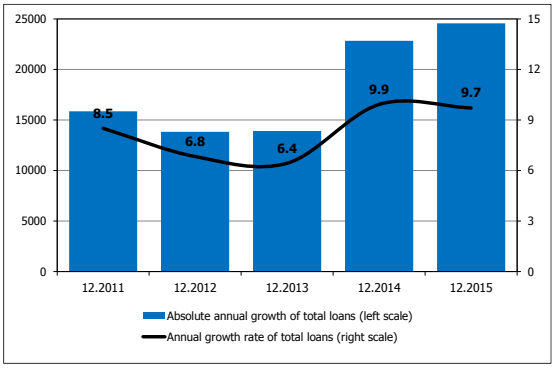


Source: NBRM, based on the data submitted by banks.

On an annual basis, bank lending activity to non-financial sector[48] increased by Denar 24,566 million (or, by 9.7%), which is minimal slowdown compared to the growth registered in 2014 (by 0.2 percentage points). The slowdown of the credit growth is mostly perceived by **decelerated credit support of banks to non-financial companies**[49], whose annual growth rate is almost twice lower than that of the household sector. Namely, in 2015, the growth rate of loans to households reached 13.4% (12.1% in 2014) and it is the highest in recent years. Accordingly, the contribution to the growth of lending to the

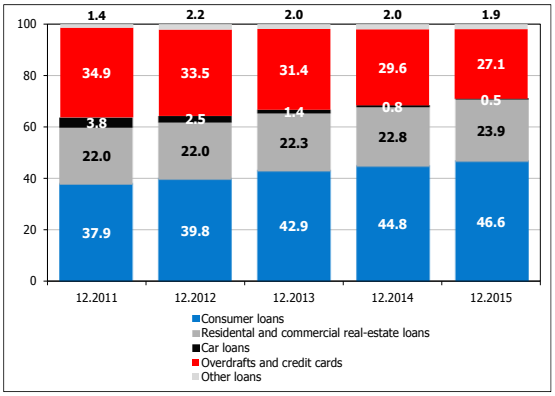
[48] Loans to non-financial entities include the loans to resident and non-resident non-financial entities, including loans to private and public non-financial companies, central government, local government, non-profit institutions serving households (loans to other clients), sole proprietors and natural persons (loans to households).
[49] Despite the certain revival in the last quarter of 2015, lending to non-financial companies grew slower on an annual basis (by Denar 10,382 million, or by 7.1%, compared to 8.6% in 2014).

Chart No. 90
Annual growth of loans to non-financial entities
in millions of denars and in %



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

Chart No. 91
Structure of loans to households, by product
in %



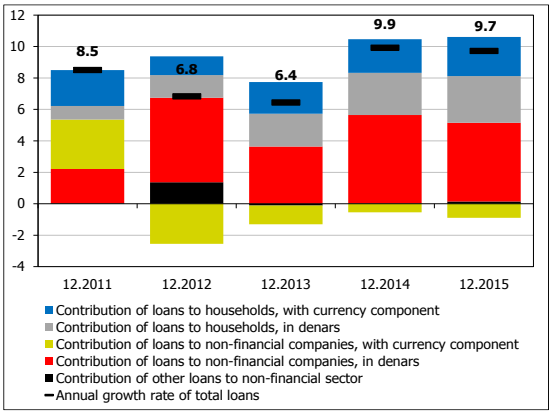
Source: NBRM, based on the data submitted by banks.

households[50] reached 56.2% (48.6% in 2014) in the annual growth of total lending activity of banks to non-financial entities. In the past few years there were changes in the strategic objectives of more and more banks, which directed their focus on lending to households due to lower risks compared to the corporate sector. Moreover, more than 70% of household loans are used to finance (non-earmarked) consumption of natural persons. Because of the registered exceptionally high growth of long-term consumer loans (which in some quarters was close to 50%, on an annual basis) in December 2015, the National Bank adopted a package of preventive macroprudent measures to slow down the high growth of the long-term consumer loans[51], as well as facilitating access to financial services for the corporate sector[52] (including SMEs), and prolonging the effectiveness of the non-standard monetary policy measure to support the lending to net exporters and domestic producers of electricity for additional two years[53].

Denarization of lending typical for the past few years (above all for 2014) continued in 2015, but with a slight slowdown at the expense of the faster growth of Denar loans with FX clause. Denarization was more present in the credit support to the corporate sector, whose contribution to the growth of total Denar loans[54] was almost twice as high (61.6%) as that of the household sector (36.7%). On the other hand, in 2015, the growth of loans in foreign currency

[50] Consumer loans and loans for the purchase and renovation of residential property are the most widely used credit products in the households.
[51] With the Decision amending the Decision on the methodology for determining the capital adequacy (Official Gazette of the Republic of Macedonia No. 223/15) there were introduced measures to limit any risk arising from the rapid growth of long-term consumer loans. The main objective of these measures was to influence preventively on signals for potential future growing risks of these loans, of both the quality of banks' loan portfolio and the level of indebtedness of the population, because the indebtedness of the existing borrowers, rather than new borrowers, grows. The measure increased capital requirements for banks on long-term consumer loans with maturity equal to or longer than eight years. This measure is aimed only at newly approved consumer loans with maturity equal to or longer than eight years approved after 1 January 2016, whereby the prolongations and restructuring are covered. In order to prevent the possibility this measure to cause diversion of borrowing to credit cards and overdraft bank accounts (which have quite stable and moderate growth), a higher capital requirement was introduced for the growth of overdraft bank accounts and credit cards realized in relation to 31 December 2015.
[52] With the same decision, the capital requirement for guarantees issued by banks was reduced, which guarantees payment based on a certain business relationship of the client and banks' claims backed by commercial property that meets certain conditions.
[53] According to the Decision amending the Decision on reserve requirement (Official Gazette of the Republic of Macedonia No. 223/15), the application of non-standard measure for reduction of the reserve requirement base of banks for the amount of new loans to net exporters and domestic electricity producers is extended to 31 December 2017.
[54] On an annual basis, total Denar loans increased by Denar 20.521 million, or 16.0%.

Chart No. 92
Contribution of individual components to the annual growth of total loans of non-financial entities
in %

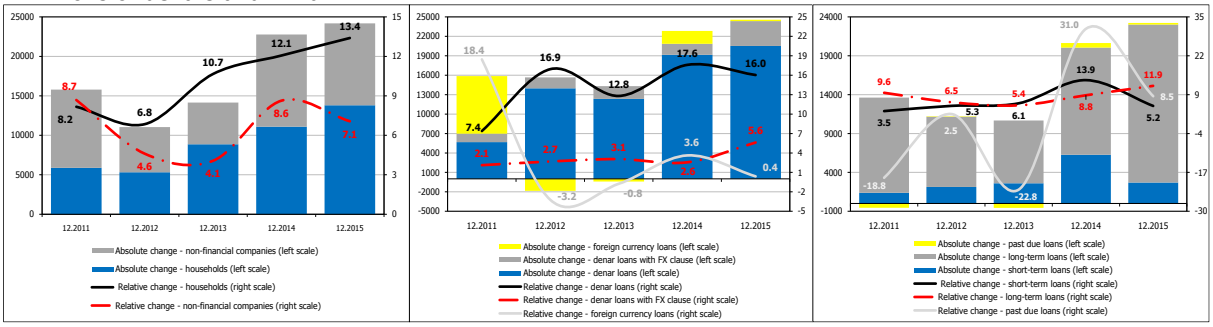


Source: NBRM, based on the data submitted by banks.

slowed down significantly (from 3.6% in 2014 to 0.4% in 2015), which was entirely due to non-financial companies. In the currency structure of loans, Denar loans retained the major role, with so far the highest share of 53.5%.

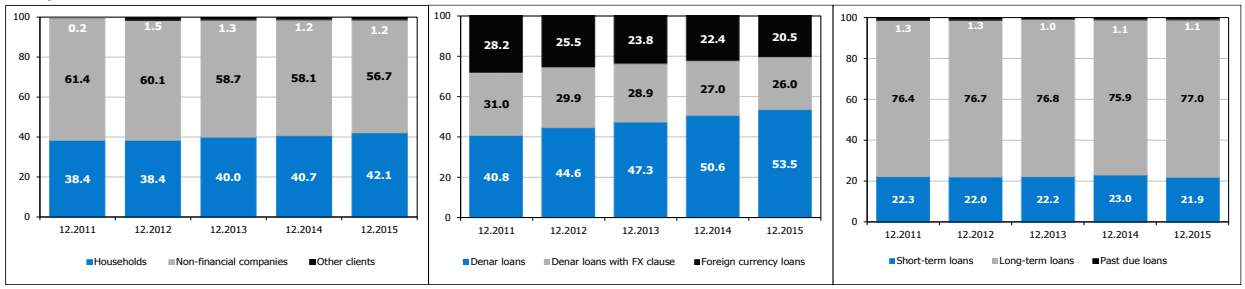
In terms of maturity, long-term lending[55] remains the main driver of the overall increase in total loans to non-financial entities, whose contribution in 2015 further increased (to 82.7% from 60.3% in 2014). The rise in long-term loans is completely (64.4%) a result of the household sector[56]. With the introduction of the measure to slow down the high growth of the long-term consumer loans (see footnote **Error! Bookmark not defined.**), it is xpected that banks will follow the signal of the

Chart No. 93
Annual change of loans by sector, currency and maturity
in millions of denars and in %



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

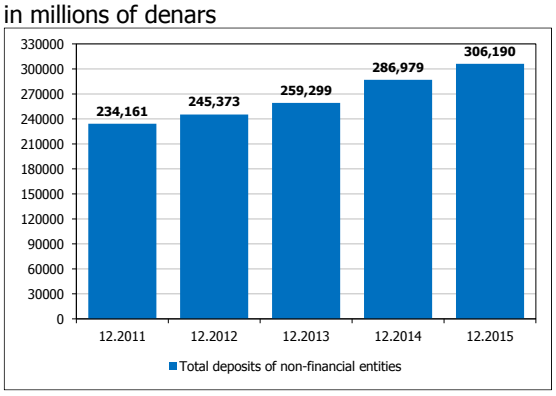
Chart No. 94
Structure of total loans, by sector (left) and currency (middle), and by regular loans, by maturity (right)
in %



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

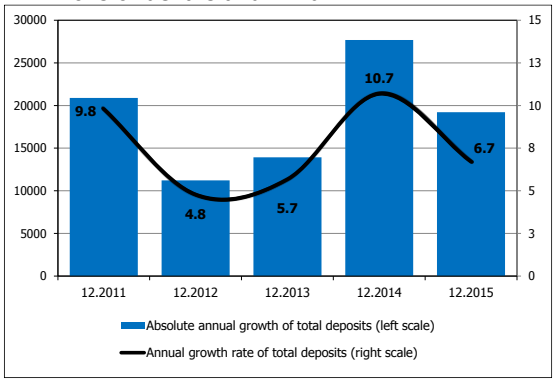
[55] In 2015, long-term loans registered an accelerated growth of Denar 20,325 million, or 11.9% (of 8.8% in 2014).
[56] Long-term loans to households registered an annual increase of Denar 13,080 million, which largely resulted from the growth of long-term Denar loans to households (about Denar 6,774 million) and less from the growth of long-term Denar loans with FX clause to households (about Denar 5,730 million).

Chart No. 95
Stock of deposits of non-financial entities
in millions of denars



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

Chart No. 96
Annual change of deposits of non-financial entities
in millions of denars and in %



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

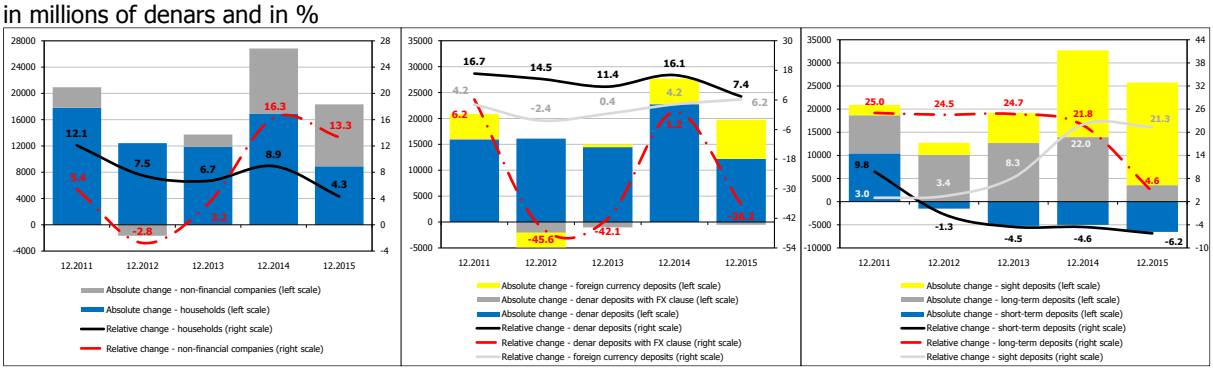
National Bank and will contribute to slowing down the rapid growth of these loans.

7.2. Deposits of non-financial entities

The impact of specific factors of the domestic and external environment (internal political developments and developments in Greece), which was particularly intensive in the middle of 2015, contributed to the apparent slowdown in banks' deposit potential. On annual basis, total deposit base of banks increased by Denar 19,211 million, or by 6.7%, a slowdown compared to the annual growth achieved the previous year, by 4 percentage points. However, in 2015, banks' deposit potential was again stable and the main funding source for banking activities (72.3% of total assets).

By sector, slightly greater contribution to the growth of total deposits in 2015 was made by corporate deposits[57], and the growth of household deposits was significant, which mainly resulted from increased local currency deposits. Deposits from non-financial companies, which are usually more variable source category under the influence of the liquidity needs of the corporate sector, despite the slowdown, grew with a double-digit annual rate (13.3%), which was mostly contributed exactly by Denar sight deposits. Households, which traditionally are the most important bank depositors (accounting for 70.4%

Chart No. 97
Annual change of deposits by sector, currency and maturity
in millions of denars and in %



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

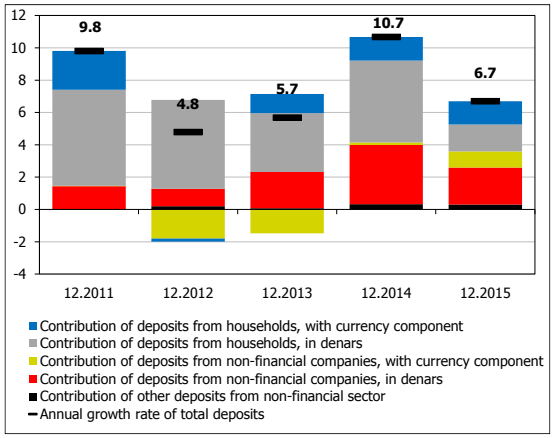
[57] On an annual basis, the growth of deposits of non-financial companies amounted to Denar 9.424 million, while the growth of household deposits was Denar 8.900 million.

of total deposits as of 31 December 2015), in 2015, were more oriented towards keeping savings in banks (without making them fixed-term deposits) and the growth of deposits of this sector is significant in the long term.

The annual growth rate of household deposits was more than halved compared to the previous year, and is at the lowest level in the last decade.

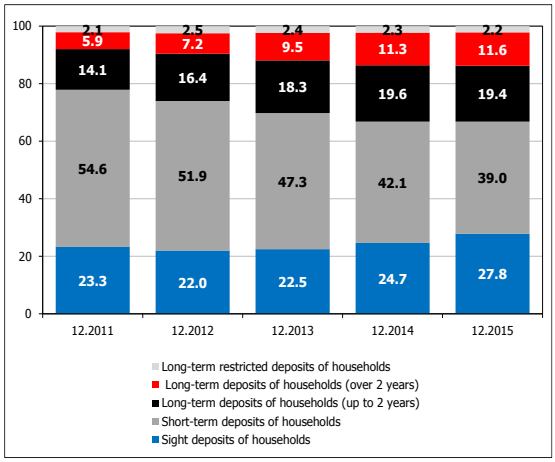
Denarization of banks' deposit activity decelerated much more than denarization in credit activity. This is perceived primarily by the growth rate of Denar deposits, which was more than halved compared to the previous year, while the growth of foreign currency deposits accelerated. However the propensity of depositors to save in domestic currency continued in 2015[58]. Namely, in 2015, Denar deposits increased by Denar 12,192 million, or by 7.4% (Denar 22,741 million, or 16.1% in 2014) making the largest contribution, or 63.5% to the growth of total deposit base (the contribution to the total growth in 2014 was 82.2%). Most of the growth of total Denar deposits is conditioned by the growth of Denar corporate deposits (by Denar 6,561 million or 12.6%), and Denar deposits of the household sector increased by Denar 4,784 million, or 4.5% (deceleration by 9.5 percentage points, compared to the previous year). As of 2010, Denar deposits have registered constantly higher growth rates compared to the deposits with currency component, on which the conclusion of public confidence was mainly based, not only in the domestic currency and domestic monetary policy, but also in the overall domestic environment. However, in 2015, under the influence of specific domestic environment factors, as well as the developments in Greece, growth rates on foreign currency deposits came closer to the growth rates on Denar deposits. Hence, in order to stimulate household savings in domestic currency and in the longer term, at the beginning of the third quarter of 2015, the implementation of

Chart No. 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.

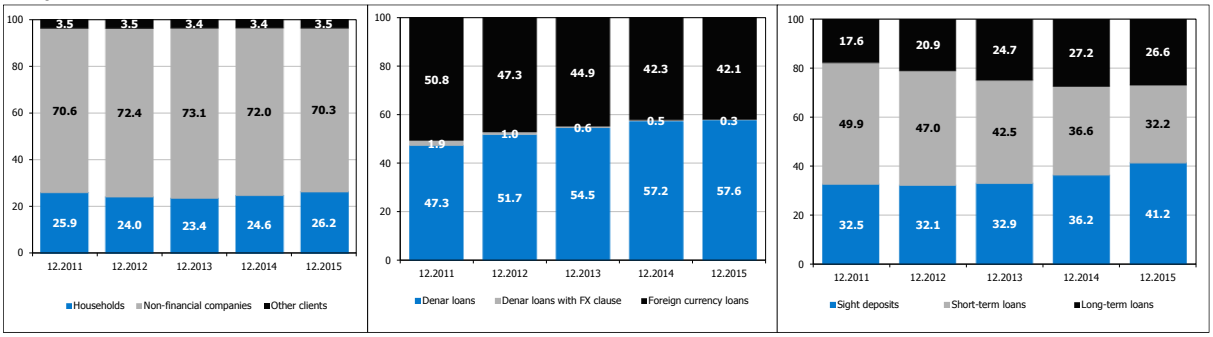
Chart No. 99
Maturity structure of household deposits
in %



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

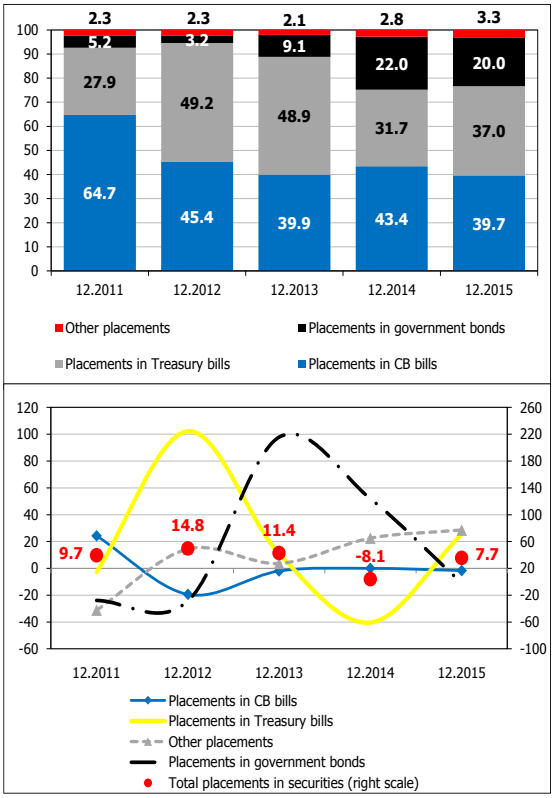
[58] prised of Denar deposits, of which 63.4% are household deposits.

Chart No. 100
Total deposit structure by sector, currency and maturity
in %



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

Chart No. 101
Structure (top) and annual growth rate (bottom) of the securities portfolio
in %



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

the recent amendments to the Decision on reserve requirement started, which reduced the reserve requirement rate for banks' liabilities to natural persons in domestic currency with contractual maturity of over one year, from 8% to 0% (for Denar and foreign currency liabilities with maturity of over two years, from 2012, rate of 0% was applied). This setup of the reserve requirement rates aims to contribute to the extension of the maturity of banks' deposit base, primarily of household deposits with maturity over one year. Nearly two years after the introduction of the measure in 2012, long-term deposits grew rapidly and contributed to more than half in deposit growth. However, under the influence of the mentioned factors of the environment, starting from the end of 2014, and particularly pronounced and stronger from the second quarter of 2015, supporting category of the deposit growth were sight deposits[59].

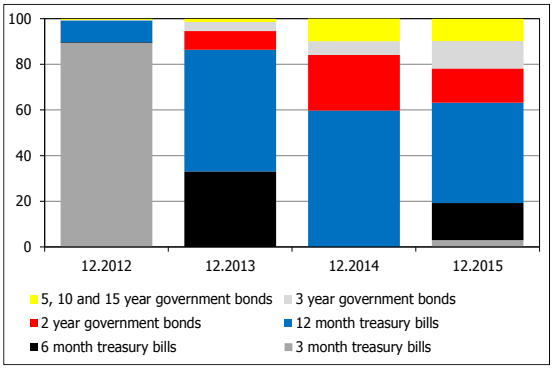
Short-term deposits have registered a negative growth rate for four consecutive years. By 2015, short-term deposits relock was aimed at longer terms, but in 2015 changed direction, so that the amount of short-term time deposits was redirected in sight deposits.

7.3. Other activities

The interest of banks in the Republic of Macedonia to invest in domestic debt

[59] On an annual basis, sight deposits increased by Denar 22,187 million, or by 21.3%, whereby the contribution of non-financial companies and households to their growth amounted to 56.5% and 40.7%, respectively.

Chart No. 102
Maturity structure of banks' investments in government securities
in %

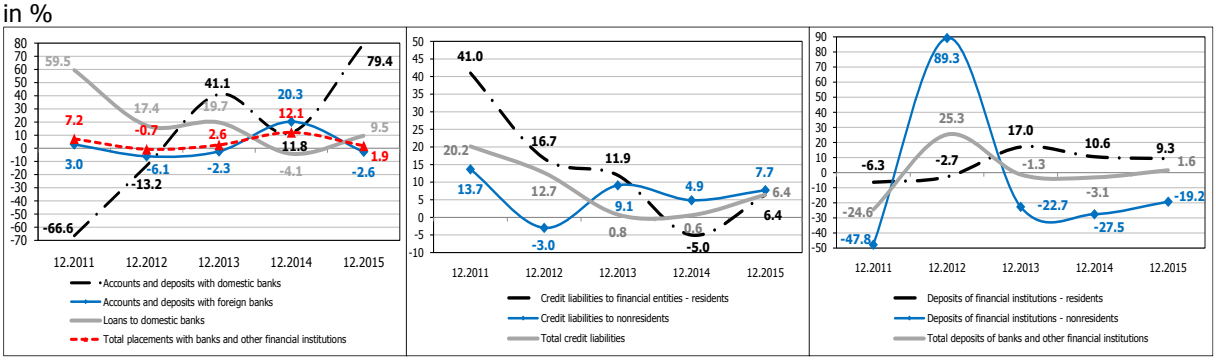


Source: NBRM, based on the data submitted by banks.

securities was present during 2015. Thus, the banks' securities portfolio, reached Denar 63,132 million at the end of 2015, and its share in total assets was 14.9% (14.6% in 2014). The faster annual growth of investments in treasury bills[60] caused an annual increase of the total portfolio of Denar 4,518 million, or 7.7%. On the other hand, banks' investments in CB bills (given the unchanged interest rate and amount of the offered CB bills) registered minimal reduction. Despite the significant absolute and relative growth of the securities portfolio during 2015 (compared to the decrease in 2014), as its main characteristic remains the non-diversification and leading position of CB bills and debt securities issued by the Republic of Macedonia.

On an annual basis, placements with banks and other financial institutions increased (by Denar 955 million, or 1,9%), which is a slowdown compared to the growth of the previous year. The increase in long-term loans of domestic banks in foreign currency with maturity of over two years, as well as time deposits in domestic banks in foreign currency from one to three months, determined most part of the increase in total placements with banks and other financial institutions.

Chart No. 103
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.

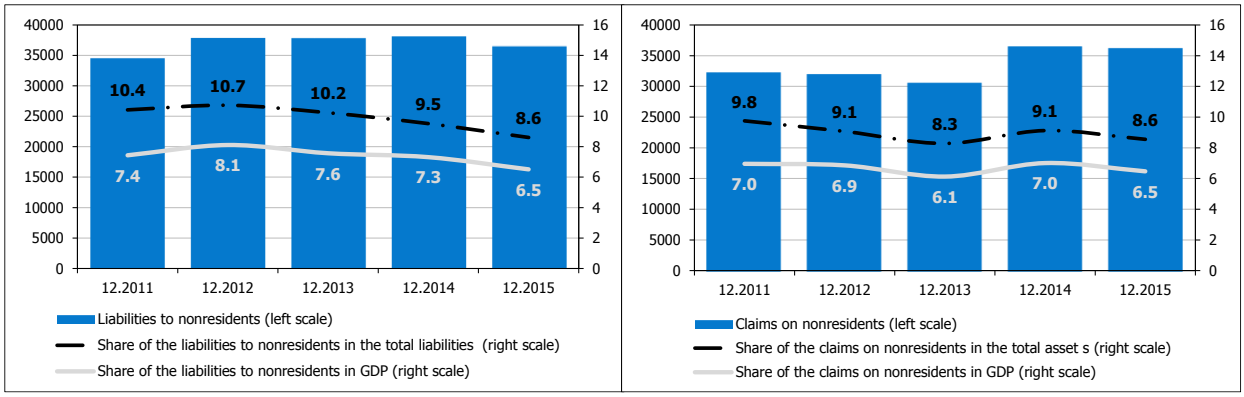
Within the liabilities, **loan liabilities** increased (by Denar 2.258 million, or 6.4%),

[60] As of 31 December 2015, the banks' investments in treasury bills amounted to Denar 23,346 million, which is an increase of Denar 4,754 million, or 25.6% compared to 31 December 2014.

completely a result of increased long-term loan liabilities of non-resident financial institutions, and less from long-term loans in foreign currency to domestic banks, as a result of increased liabilities on credit lines marketed through MBDP AD Skopje.

Deposits from banks and other financial institutions are very small source of funding for banks (3.7% of total funding sources), which in 2015, increased, predominantly due to the increased short-term deposits of domestic banks[61].

Chart No. 104
Liabilities to (left) and claims on (right) non-residents
in millions of denars and in %



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

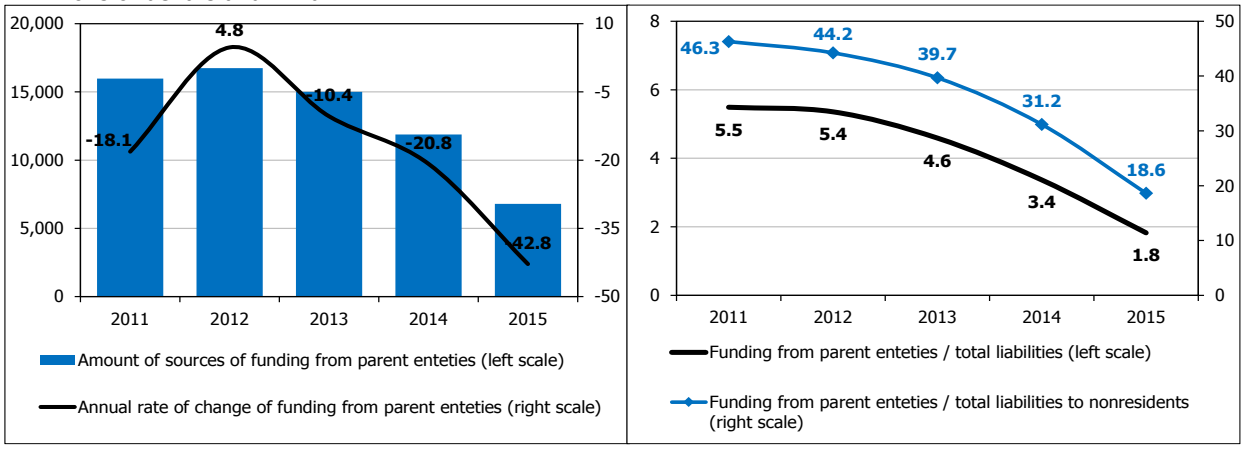
In 2015, banks in the Republic of Macedonia continued to carry out their activities mainly on the domestic market. Claims on and liabilities to non-residents are low, and in 2015 they further declined[62]. For years, the banking system owed more than it claimed on non-residents, although in 2015 liabilities to non-residents were almost equaled with claims on non-residents. Accordingly, the shares of claims and liabilities of banks on and to non-residents in the total assets/liabilities (8.6%) were equaled[63].

The Macedonian banking system is characterized by the gradual reduction of

[61] On an annual basis, short-term deposits of domestic banks were more than twice higher, mostly due to increased short-term deposits in foreign currency of domestic banks (from one to three months), and less of those up to one month.
[62] Banks' liabilities to non-residents decreased by Denar 1,637 million, or 4.3%, while the reduction in claims on non-residents was lower and amounted to Denar 284 million (or 0.8%).
[63] Analyzed by individual bank, the share of banks' claims on non-residents in total assets ranges from 0.6% to 18.6%, while the share of banks' liabilities to non-residents in the total liabilities ranges from 0.3% to 14.8%. "MBDP" AD Skopje was excluded from this analysis.

the importance of the sources of funding provided by parent entities. Thus, the share of liabilities to parent entities (including subordinated liabilities and hybrid capital instruments) in the total liabilities of the domestic banking system, as well as liabilities to non-residents, in 2015 was nearly halved, and reduced to 1.8% and 18.6%,

Chart No. 105
Liabilities to parent entities of banks
in millions of denars and in %



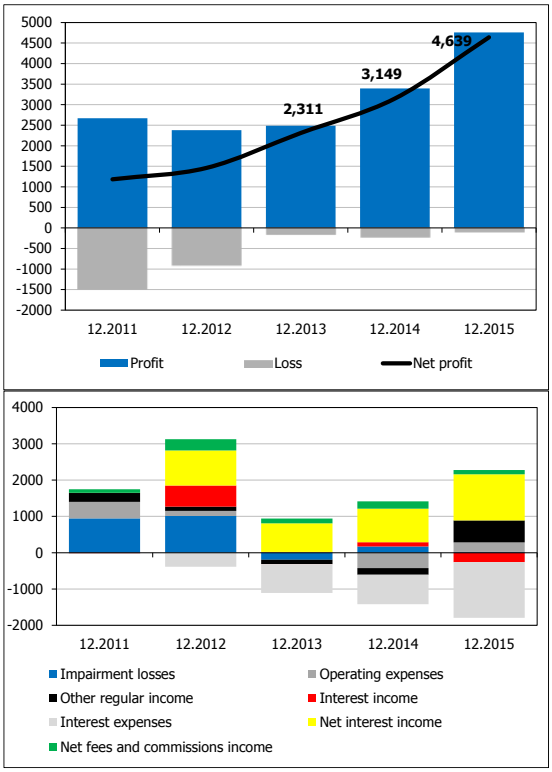
Source: NBRM, based on the data submitted by banks.

respectively (3.4% and 31.2%, respectively in 2014).

8. Profitability

Profitability of banks in the Republic of Macedonia continued to strengthen, whereby profit after tax earned in 2015 increased by Denar 1,490 million or 47.3%, compared to profits last year. The reason for the increased profit are the significantly decreased interest expenses that caused growth of the net interest income, as well as the growth of other regular income. Net interest income that banks earn in the process of financial intermediation, expressed through the net interest margin, went up to 4.1% at the end of 2015, which was enough to significantly improve the overall profitability of the banking system. Profitability indicators have improved, and the banks' operational capability of generating revenues that cover the costs of operation has increased. Reduced loan impairment on a net basis had positive impact, due to the growth of reversed impairment for losses on loans, which corresponds to almost halved annual growth rate of non-performing loans in 2015. Compared with 2014, the number of banks that have made profits increased from eleven to thirteen, and their share in total assets of the banking system from 93.9% amounted to 96.7%. Positive financial results are generated mainly by larger banks, with about 80% of the total financial result being concentrated. The reduction in lending and deposit interest rates continued in 2015. In an environment of low and falling interest rates, one of the major challenges for banks in terms of profitability is their capacity for further maintenance growing net interest income.

Chart No. 106
Net profit after taxation (top) and annual change in main income and expenses (bottom)
in millions of denars



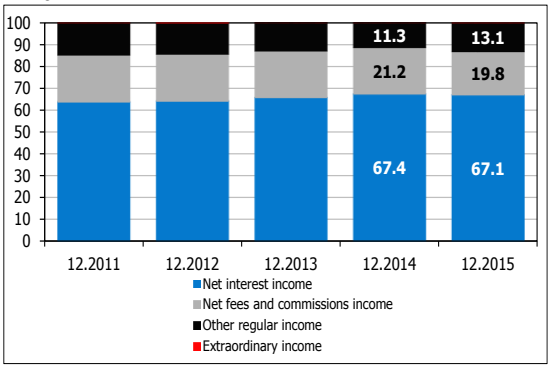
Source: NBRM, based on the data submitted by banks.

8.1. Income, expenses and indicators of profitability and efficiency of the banking system

In 2015, the growth rate of **total banks' income** (total regular income[64] and extraordinary income) was twice higher than the rate in the previous year, i.e. they increased by Denar 1,995 million, or 10.3%, and reached Denar 21,397 million. Over 63% of the increase in income

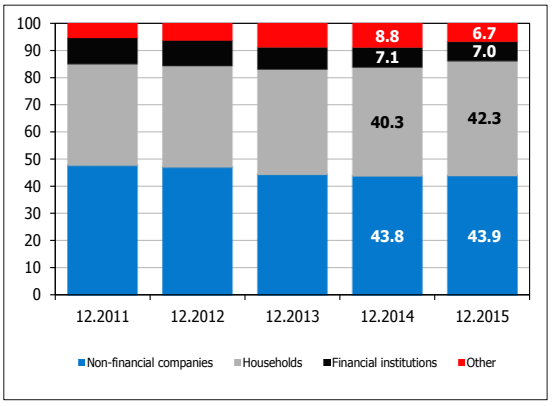
[64] Total regular income includes: net interest income, net commission income and other regular income (net trading income, net income from financial instruments carried at fair value, net income from exchange rate differentials, income from dividends and equity investments, net gains from sale of financial assets available for sale, capital gains from assets sales, release of provisions for off-balance sheet items, release of other provisions, income from other sources and income based on collected claims previously written off).

Chart No. 107
Structure of total income
in %



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

Chart No. 108
Sector structure of interest expenses
in %



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

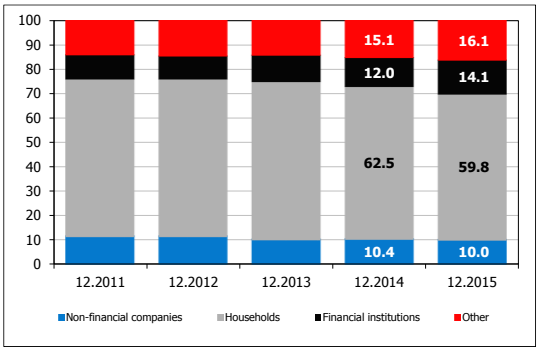
resulted from the growth of net interest income (which increased by Denar 1,268 million, or 9.7%), which is a result of the stronger annual reduction in interest expenses (of Denar 1,531 million, or 21.5%) amid smaller decrease in interest income (of Denar 262.3 million, or 1.3%). Additional contribution (30.4%) to the increase of banks' income was made by other regular income, which rose annually by Denar 606.3 million, or 27.6%[65]. Net income from fees and commissions rose annually by Denar 116.4 million or 2.8%.

The structure of total income in 2015 remained almost unchanged compared to the previous year, and the net interest income had the largest share in total banks' income (67.1%).

Decrease in interest income in 2015 primarily results from the decrease in interest income from other entities and impairment of interest, and less from the decrease in interest income from financial companies. **Interest income from other entities[66] declined** by Denar 400 million or 23,6%, corresponding to the reduced average annual amount of investments in treasury bills and intensity of investments in government bonds[67]. **Impairment of interest income[68]** decreased by Denar 214.1 million, or 22.9%. **Interest income from financial companies** also declined (by Denar 35.9 million, or 2.6%) due to lower interest rates on overnight deposit facility and deposit facility up to seven days with the National Bank[69]. The fall in these interest income was mitigated by the growth of interest income from households and the growth

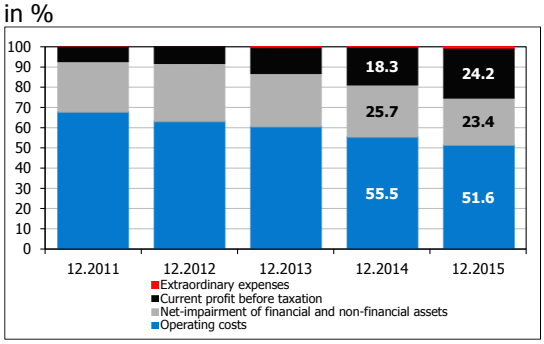
[65] The growth of other regular income (about 60%) is due to the capital profit from sale of fixed assets of one bank.
[66] This category includes interest income from investments in government securities.
[67] When comparing December 2015 with December 2014, there was growth of government securities which was completely determined by the growth of treasury bills. However, the average amount of investments in treasury bills in 2015 was lower by Denar 8,801 million (or 30.6%) than the average amount in 2014. Also, although treasury bills accounted for approximately 65% in the structure of government securities, the intensity of investments in government bonds contributed to the reduction in income. Thus, in 2014, the growth of government bonds amounted to Denar 7.146 million, and in 2015, decreased by Denar 284 million. The interest rate on government bonds is almost twice higher than the interest rate on treasury bills. In 2014, it amounted to 5.3%, and in 2015 to 4%, while in 2014, the highest rate on treasury bills was 3.6%, and 2.5% in 2015.
[68] This is net impairment of interest, which in addition to allocated impairment of interest, includes the release of impairment (for interest receipts, as well as interests previously written off).
[69] During 2014, the interest rate on deposit facility with the National Bank overnight decreased from 0.75% to 0.5% (October 2014) and this level was maintained until February 2015, and from March 2015 decreased to 0.25% and remained at this level until the end of 2015. During 2014, the interest rate on deposits up to 7 days reduced twice, from 1.5% to 1.25% and as of December was 1.0%. In March 2015, the interest rate decreased to 0.5% and remained at this level until the end of 2015.

Chart No. 109
Sector structure of interest expenses
in %



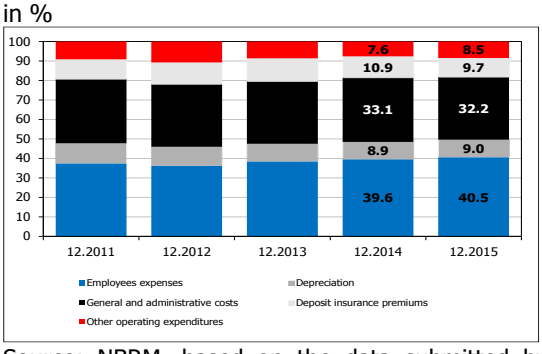
Source: NBRM, based on the data submitted by banks.

Chart No. 110
Usage of total income
in %



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

Chart No. 111
Structure of operating costs
in %



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

of interest income from non-financial companies had small contribution. **The growth of interest income from households** (of Denar 379.0 million, or 4.9%) is mainly due to the credit growth to this sector, given the fact that interest rates on total loans and new loans to households were mostly downward[70]. Income from non-financial companies minimally increased, by 0.1%.

In 2015, the largest contribution (72.3%) to the decline in the total interest expenses is that of interest expenses from the household sector, which registered an annual decline of Denar 1,106.8 million, or 24.8%, amid slower growth in household deposits[71] and decline in interest rates[72] on received deposits from this sector. In spite of the decrease, **interest expenses from the household sector still have the greatest share in the structure of interest expenses.** Contribution (of 11.9%) to the reduction of interest expenses of banks was also made by the reduction in interest expenses from non-financial companies (based on time deposits), and interest expenses from other entities (mainly expenses based on non-resident financial companies' interests on loan liabilities and subordinated debt), which contributed with 11.4% to the total decrease. Interest expenses from financial companies (for term deposits of pension funds and insurance companies) also contributed (with 4.4%) to the reduction in total interest expenses.

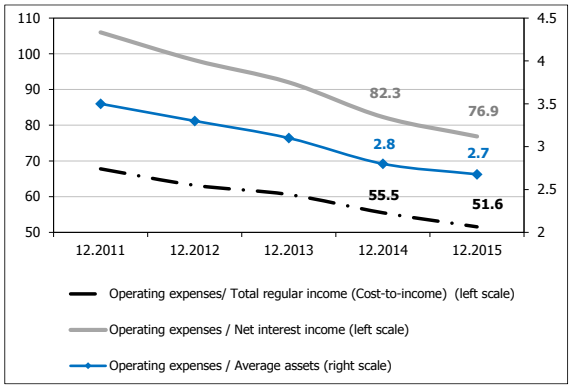
The largest portion of total income of banks was spent to cover operating costs[73] and impairment, despite the reduction in their share in total income, compared to the previous year.

However, despite the lower share in total income, in 2015, banks' operating costs increased by Denar 263 million, or 2.4% relative to the previous year. The increase was

ıe website of the National Bank.
ion 7.1.2 on Deposits of non-financial entities.
st rates on the amount of total deposits decreased, interest rates on

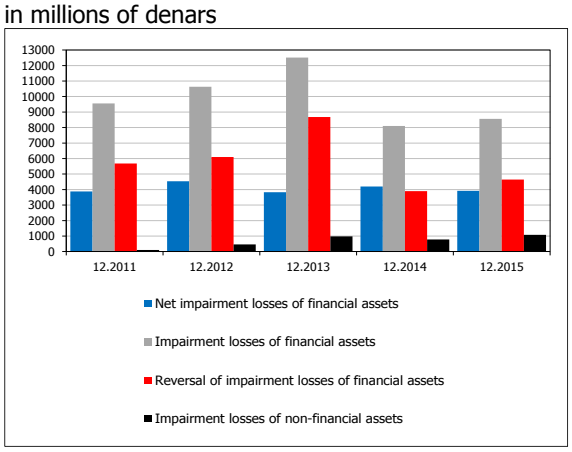
[73] Banks' operating costs include: staff costs, depreciation, general and administrative expenses, deposit insurance premiums and other operating costs, except extraordinary expenses.

Chart No. 112
Bank efficiency indicators
in %



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

Chart No. 113
Impairment of financial and non-financial assets
in millions of denars



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

mainly conditioned by the growth of staff costs (of Denar 214 million or 5%), as well as the growth of other operating costs[74] (of Denar 119 million or 14.5%) and depreciation (of Denar 42 million or 4.4%). In contrast, within the operating costs, there was a decline in deposit insurance premiums[75] (by Denar 96 million, or 8.2%) and general and administrative expenses (by Denar 15 million or 0.4%).

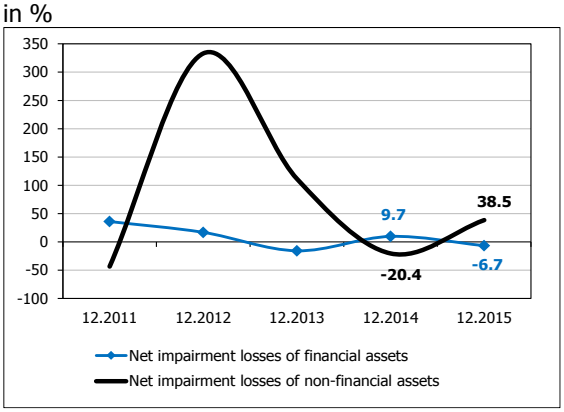
No major changes have been noticed in the structure of operating costs. Staff costs and general and administrative expenses have further main share (72.7%).

The trend of improving banks' operational efficiency continued in 2015, due to the significantly faster growth of total regular income than the growth of operating costs, whereby the amount of total regular income used to cover operating costs significantly reduced. Also, other ratios registered an improvement (decrease), which additionally confirms the improved operational efficiency of banks.

In 2015, banks allocated less impairment of financial assets, by Denar 279.3 million, or 6.7%[76]. The decrease in net impairment is due to the strong increase of released impairment than the increase in gross impairment (which is related to slower growth in non-performing loans)[77]. Accordingly, the share of net interest income used to cover the impairment of financial assets decreased from 32.1% (as of 31 December 2014) to 27.3% (as of 31 December 2015).

[74] Other operating costs consist of: special reserve for off-balance sheet exposure, other provisions and expenses from other sources (which are the generator of growth of other operating costs in 2015).
[75] As of 1 June 2014, the rate of deposit insurance premium was lower by 0.2 percentage points and equals 0.5% annually, but the fall in deposits as the basis for calculating the premium has also caused a reduction of these costs.
[76] For comparison, in 2014, net impairment of financial assets (loans and other similar claims), increased by Denar 371.7 million, or by 9.7%, on an annual basis.
[77] In 2014, non-performing loans increased by 8.3%, while in 2015, the rate was almost halved and amounted to 4.7%.

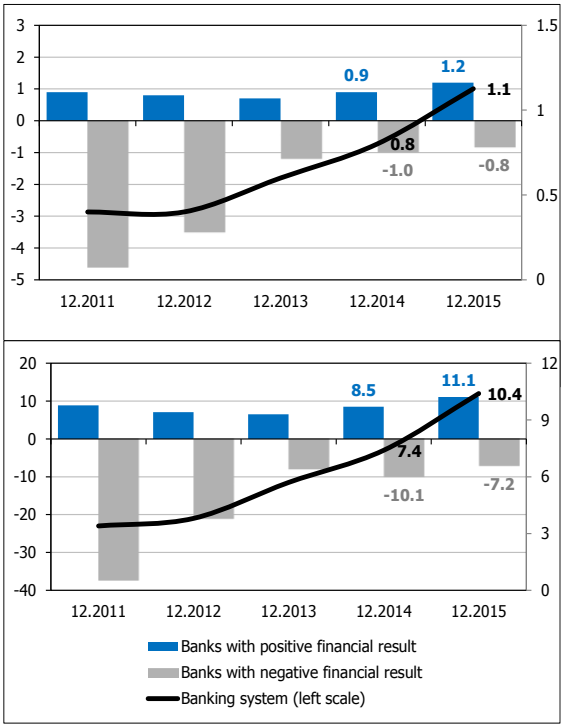
Chart No. 114
Annual growth rate of impairment loss
in %



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

Impairment of non-financial assets (foreclosed assets) increased by Denar 300.8 million, or by 38.5%, compared to the same period last year, and at the end of 2015, amounted to Denar 1,081 million. This increase is mainly due to the compulsory annual impairment of foreclosed assets of at least 20%.

Chart No. 115
Rates of return on assets - ROAA (up) and equity - ROAE (down), by (positive/negative) financial result
in %



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

In 2015, the increased profit of the banking system had a positive impact on the main indicators of banks' profitability. Compared to the previous year rates of return on assets and equity have increased, and also, banks' profit margin[78] has significantly improved.

In 2015, productivity in the banking system improved, indicating better utilization of resources. Profit per employee increased by Denar 0.3 million, and an increase was registered also in the total income per employee. The only operating costs per employee remained unchanged compared to the previous year.

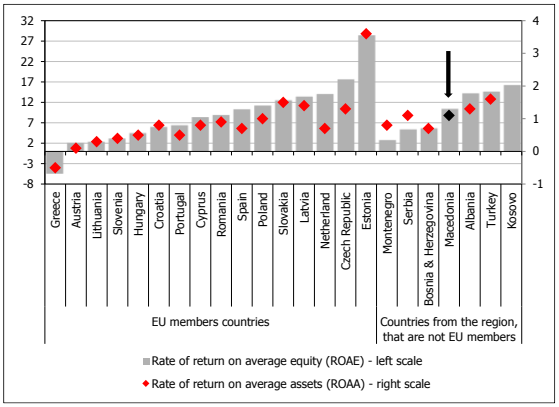
[78] Profit margin is the ratio of operating profit (loss) to total regular income.

Table No. 4
Profitability and efficiency indicators of the banking system
in %

	12.2014	12.2015
Rate of return on average assets (ROAA)	0.8	1.1
Rate of return on average equity (ROAE)	7.4	10.4
Cost-to-income ratio	55.5	51.6
Non-interest expenses/Total regular income	61.8	58.5
Labor costs /Total regular income	22.0	20.9
Labor costs /Operating expenses	39.6	40.5
Impairment losses of financial and non-financial assets /Net interest income	38.1	34.9
Net interest income /Total regular income	67.4	67.1
Net interest income /Non-interest expenses	109.2	114.8
Non-interest income/Total regular income	38.8	39.8
Financial result/Total regular income	16.2	21.7
Number of employees	5,988	5,968
Financial results per employee (in millions of Denars)	0.5	0.8
Total income per employee (in millions of Denars)	3.2	3.6
Operating costs per employee (in millions of Denars)	1.8	1.8

Source: NBRM, based on the data submitted by banks.
Indicators by groups of banks are shown in Annex 37.

Chart No. 116
Return on assets and return on equity, by country
in %



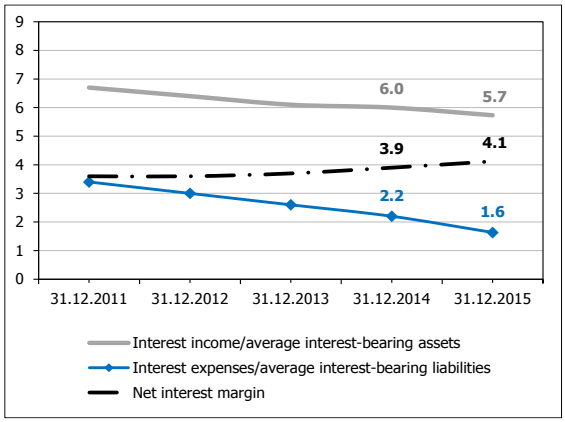
Source: NBRM, based on data submitted by banks, website of IMF, Global Financial Stability Report, October 2015.
Note: Data refer to March and June 2014, with the exception of Macedonia.

Rates of return on assets and equity place the banking system of the Republic of Macedonia in the middle of the list, as compared with the banking systems in the region and some EU member states.

The annual increase in net interest margin[79] reflects the more pronounced annual growth of net interest income (by 9.7%) than the growth of average interest-bearing assets (of 3.6%), mainly due to the reduction in interest expenses, which in turn contributed to annual decrease in the expense per unit of interest-bearing liabilities. On the other hand, there was a decrease in interest income per unit of interest-

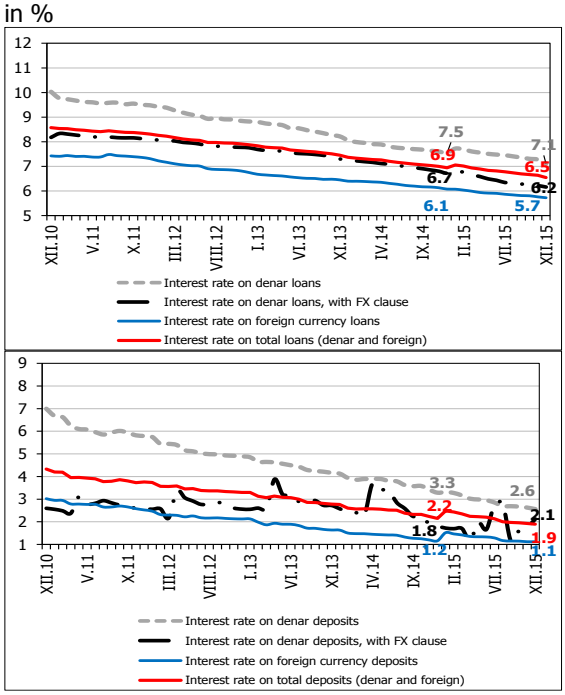
[79] Net interest margin is calculated as a ratio between net interest income and average interest-bearing assets. Average interest-bearing assets are calculated as an arithmetic mean of the amounts of interest-bearing assets at the end of the current year and at the end of the previous year.

Chart No. 117
Net interest margin
in %



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

Chart No. 118
Lending (up) and deposit (down) interest rates
in %



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

bearing assets due to lower lending interest rates. Analyzing by banks, nine of fifteen banks reported equal or higher net interest margin than the net interest margin earned by the banking system, which stood at 4.1% as of 31 December 2015.

8.2. Movements in interest rates and interest rate spread

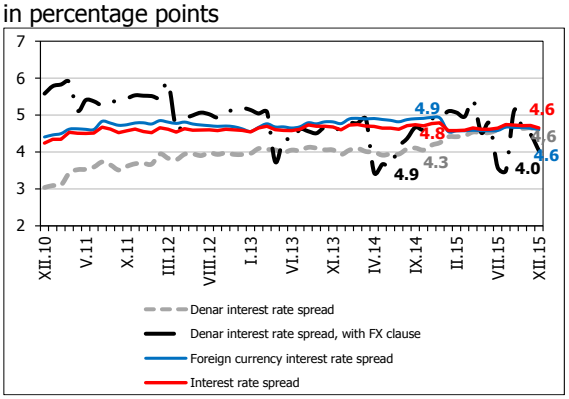
Lending and deposit interest rates of banks[80] have been steadily declining in 2015, amid unchanged level of the policy rate of the National bank[81] and some loosening in other instruments[82]. Compared to December 2014, all currencies declined with the exception of the increase in interest rates on Denar deposits with FX clause. The decline was mostly pronounced in interest rates on Denar deposits (of 0.7 percentage points), while the smallest decrease was made in interest rates on foreign currency deposits (of 0.04 percentage points), on an annual basis. When comparing December 2015 with December 2014, it is being noticed that the decrease in interest rates on total loans (0.4 percentage points) was more pronounced than the decrease in interest rates on total deposits (0.26 percentage points).

[80] As of January 2015, interest rate data of banks and savings houses have been collected under the new interest rate methodology, while data for the previous period were collected under the old methodology. The data under the new and previous methodology cannot be fully compared, so that the annual difference despite the change in the relevant interest, includes itself the effect of the 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, on 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.

[81] Since the last change in July 2013, the interest rate on CB bills (3.25%) remained unchanged.

[82] For more details, see Annex 1. Timeline of the changes in the setup of the NBRM monetary instruments and selected supervisory decisions adopted in the period 2013 - 2015, page 36 of the Information on Recent Macroeconomic Indicators of March, 2016, on the website of the National Bank.

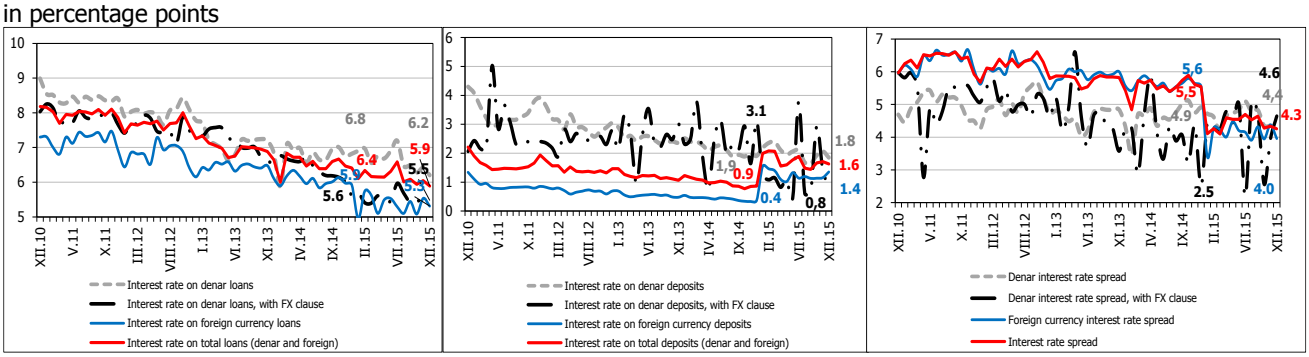
Chart No. 119
Interest rate spread, by currency
in percentage points



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

During 2015, **interest rate spreads have made minor changes**, except for the interest rate spread on Denar interests with FX clause which recorded greater variability and the greatest narrowing of 0.9 percentage points compared to December 2014. Interest rate spread on foreign interests fell by 0.3 percentage points, and the interest rate spread between total loans and deposits by 0.1 percentage point. In contrast, the interest rate spread in Denars increased by 0.3 percentage points, as a result of the faster decrease in interest rates on Denar deposits (0.7 percentage points), versus the somewhat slower decline in interest rates on Denar loans (0.4 percentage points), which is essentially the basis for growth in the net interest margin, given the largest share of loans and deposits in Denars[83].

Chart No. 120
Lending and deposit interest rates and interest rate spread, by currency of new loans and newly accepted deposits
in percentage points



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

The intensity of changes (decrease and increase) in lending and deposit interest rates was more apparent when analyzing only new loans and newly accepted deposits (and not the stock of total loans and deposits). The interest rate spread narrowed by 1.3 percentage points, mainly due to the growth of interest rates on total deposits, with a decline in interest rates on total loans. The aforementioned methodological changes affected the determining of the interest rates, as well.

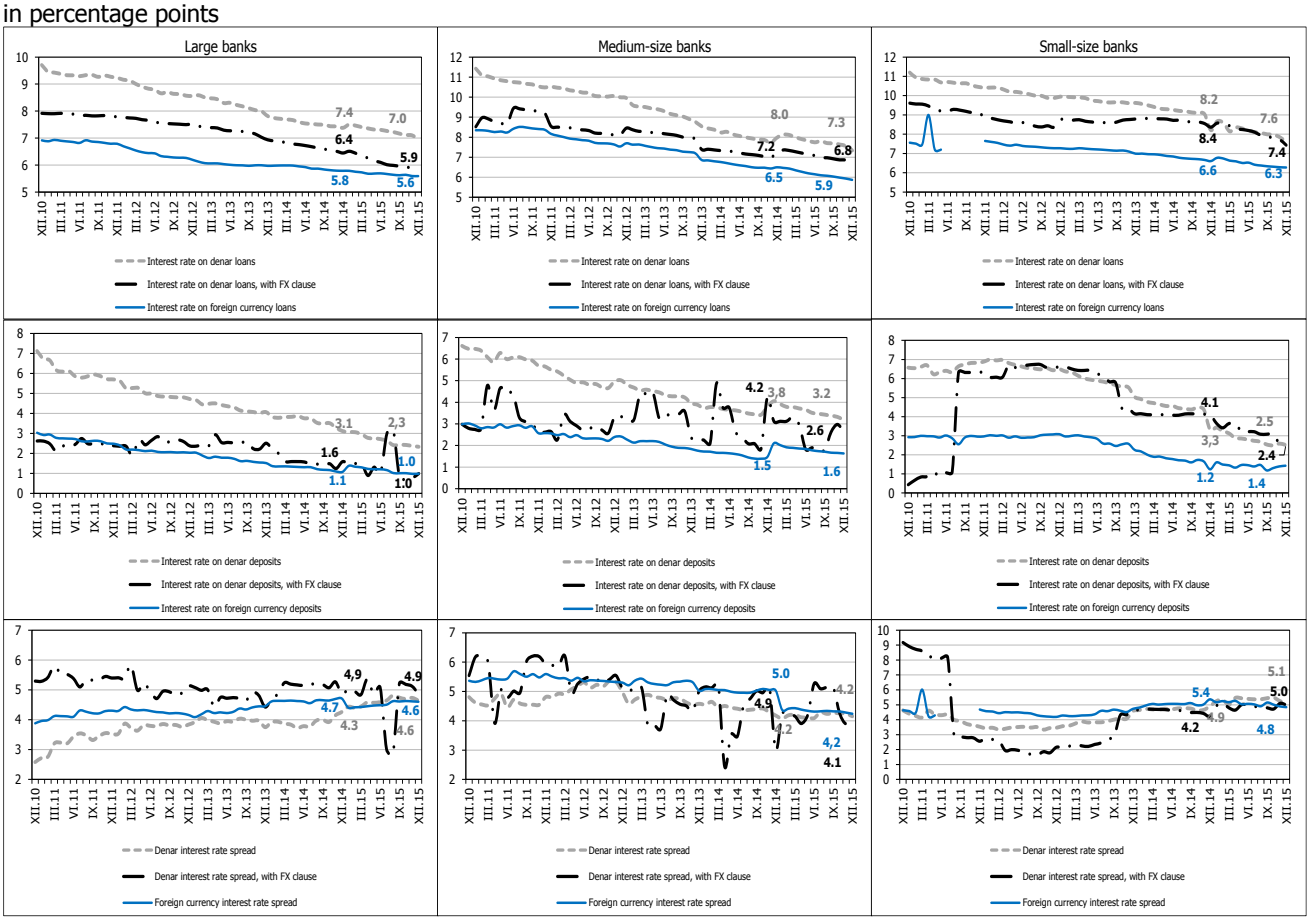
[83] As of 31 December 2015, the share of Denar loans in total loans is over 53%, and of Denar deposits about 57% in total deposits. For more details, see section 6. Banks' activities.

During 2015, all groups of banks have seen a downward trend in lending and deposit interest rates, with the exception of interest rates on foreign currency deposits with middle-size and small banks, which in December 2015, were slightly higher than in December 2014. The stronger reduction in deposit interest rates in Denars (with and without currency clause) than the reduction in lending interest rates in Denars (with and without currency clause) determined widening of the interest rate spread in Denars in all groups of banks. In contrast, the interest rate spread in foreign currency decreased in all groups of banks. The fall in Denar deposit interests (with currency clause) is higher in large and small banks than that of middle-size banks, while large banks reported a smaller decline in Denar loan interests (without currency clause) than the reduction in middle-size and small banks. The decrease in Denar deposit interest rates (with currency clause) in middle-size and small banks is more pronounced than the decrease in large banks. The group of small banks registered a sharper decline in Denar loan interests (with currency clause) than the fall in the group of large and middle-size banks. There was a decrease in deposit interest rates in foreign currency only in large banks, while small banks decreased lending interest rates in foreign currency. Large banks pay least for accepted deposits and charge least for granted loans which is associated with their market share and the loan and deposit market competitiveness and the trend of interest rates.

Chart No. 121

Lending and deposit interest rates and interest rate spread, by currency and by group of banks

in percentage points



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

IV. ANNEXES