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This Report presents the analysis and assessment of threats to financial system stability in Poland. Financial system stability is a situation when the system performs its functions in a continuous and efficient way, even when unexpected, highly adverse and low-probability disturbances occur on a significant scale. The maintenance of financial system stability requires the monitoring of systemic risk occurring in the financial system or in its environment, as well as the implementation of measures eliminating or reducing the risk. Systemic risk is a disruption in the functioning of the financial system, which – if materialised – interferes with the functioning of the financial system and the national economy as a whole (Article 4(15) of the Act on Macroprudential Supervision of the Financial System and Crisis Management).

The stability of the financial system is a necessary condition for ensuring sustainable economic growth in the long term. The stability of the banking system, which accounts for two thirds of assets of the Polish financial system, is of particular importance for financial system stability in Poland. Banks play a crucial role in financing the economy and settling payments. They also perform another important function by providing numerous products that allow other entities to manage their financial risk. Therefore, special emphasis is put on the analysis and assessment of threats to banking system stability.

Financial system stability is of particular interest to NBP due to its statutory tasks to eliminate or reduce systemic risk, establish the conditions necessary for the development of the banking system and contribute to the stability of the domestic financial system (Article 3 paragraph 2 items 6, 6a and 6b of the Act on Narodowy Bank Polski). While fulfilling these tasks, NBP participates in macroprudential supervision of the financial system, and in the event of a direct threat to financial system stability it may also participate in the implementation of crisis management measures. The aim of macroprudential supervision is, in particular, to strengthen the resilience of the financial system to the materialisation of systemic risk and thus to support long-term sustainable economic growth of Poland (Article 1(2) of the Act on Macroprudential Supervision of the Financial System and Crisis Management).

Financial system stability is an important precondition for the central bank to implement its primary task, i.e. maintaining price stability. The financial system plays a key role in the transmission of monetary impulses to the real economy. Financial system stability may hamper the efficient implementation of the monetary policy. The analysis of the financial system also constitutes a necessary element of an efficient regulatory and supervisory policy in the development of which NBP plays an important role, which together with the monetary policy, contributes to maintaining sustainable economic growth. Another reason for NBP’s actions supporting the stable functioning of the financial system is the implementation of its task to organise payments (Article 3(2)(1) of the Act on NBP). The stable functioning of financial institutions that are integral components of payment systems is a necessary condition for the smooth and safe operation of these systems.

The “Financial Stability Report” is addressed to financial market participants, other policymakers, as well as to other persons and institutions interested in the subject. Disseminating this knowledge should support the maintenance of financial stability through, among others, better understanding of the scale and scope of risk in the financial system. This enhances the probability of a spontaneous adjustment of the behaviour of those market participants who undertake excessive risks, without the need of the intervention of public entities into market mechanisms. Thus, the communication policy of the central bank is an important
instrument for maintaining financial system stability. The Report is also submitted to the Financial Stability Committee, which is the macroprudential supervision body.

Identification of systemic risk requires analysing the situation in the financial system in a way comprising not only sectoral analysis, but also the processes influencing the whole financial system, including intralinkages, as well as interactions of the financial system with its domestic and global environment. The structure of systemic risk analysis is set by the intermediate objectives of macroprudential supervision. The Financial Stability Committee, bearing in mind the recommendations of the European Systemic Risk Board as well as taking into account the specific nature of the Polish financial system, detailed the following intermediate objectives of macroprudential supervision¹:

- mitigation of risk arising from excessive growth or size of debt or leverage,
- mitigation of risk arising from excessive maturity mismatch of assets and liabilities or of the risk of illiquidity of financial markets,
- mitigation of risk arising from excessive concentration of exposures to entities or risk factors and the related interconnectedness between financial system entities,
- mitigation of risk arising from misaligned incentives influencing the behaviour of financial institutions or their clients,
- ensuring the adequate resilience of the financial infrastructure.

Systemic risk assessment comprises the identification of potential areas of weakness (vulnerabilities) in the financial system, factors amplifying or mitigating risks as well as an assessment of the resilience of the analysed financial institutions to the materialisation of risks. In addition, the Report discusses the possible sources of shocks which may lead to the materialisation of risks.

The areas related to the first four intermediate objectives are analysed. In the area of the fifth intermediate objective, i.e. the resilience of the financial infrastructure, NBP examines the functioning of payment systems together with securities clearing and settlement systems. The results of these analyses are presented in a separate publication – “Report on Oversight of the Polish Payment System” and, in part, in “Assessment of the functioning of the Polish payment system”.

The analysis conducted in this Report is based on data available up to 31 March 2019 (cut-off date). The Report was approved by the Management Board of Narodowy Bank Polski at a meeting on 30 May 2019.

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Executive summary

Both the real economy and financial system of Poland remain balanced. The banking sector as a whole is functioning in a stable manner. As banks are the main source of financing for the economy and bank deposits are the largest component of households’ financial assets, banking sector stability determines Poland’s financial stability. Systemic risk associated with non-credit financial institutions is limited due to their size and business models, which currently do not generate significant risk to the stability of the entire system. Against this background, three phenomena need to be particularly monitored, namely: (1) structural changes in the loan portfolio of banks, (2) low profitability of a portion of banks and (3) the greater role of the government sector in the financial system.

The rate of lending growth and debt levels neither created imbalances in the economy and in the financial system, nor impeded economic growth. Credit growth is financed by banks from stable funding sources and no restrictions on access to credit have been identified. There are no signs of a significant easing of lending policy by banks, and the analysis of the credit cycle in Poland shows that the risk of excessive lending is low. As a result, the countercyclical buffer remains at 0%. However, trends in certain credit categories require deeper analysis.

The growing share of high-value consumer loans with long maturities need to be particularly monitored. This type of credit is characterised by higher risk than other consumer loans, and the expected slowdown of the pace of economic growth is additionally increasing the probability of materialization of credit losses. At the same time, exposure to high-value consumer loans is concentrated in several banks.

As the interest rates are persistently low and activity observed on the real estate is robust, new housing loans also have to be closely monitored. Regulatory action taken recently, including recommendations on the LTV limits and creditworthiness assessment methods, limited the risk of excessive expansion in this segment. Nevertheless, persistently low interest rates contribute to greater accessibility of credit, and robust activity on the real estate market and higher home price growth are an additional risk factor.

The risk associated with foreign currency mortgage loans is abating. The portfolio of foreign currency mortgage loans still accounts for a significant portion of banks’ assets, but its value has steadily decreased, and the quality of the portfolio remains very good, as is the case with the financial situation of the majority of borrowers. As the legislative process has not come to an end, this portfolio may still generate systemic risk in the context of certain proposals of legal solutions, especially those that provide for the mandatory conversion of the loans at an exchange rate significantly different from the current exchange rate.

The capital position of Poland’s banking system is good and is accompanied by low leverage. In the period under analysis, banks continued to increase their regulatory capital, maintaining its high
quality. The average total capital ratio remains at the level of 18%. At the same time, the average risk weight is higher than in most EU countries, which translates into a relatively higher resilience of banks to shocks.

The low profitability of Polish banks, especially smaller ones, may pose a challenge. The profitability of Polish banks continues to be above the EU average, but has fallen significantly in recent years and – despite adjustment measures taken by banks – remains below the estimated cost of raising capital on the market. In such situation, banks’ capacity to increase capital, meet the MREL requirement and also finance their development may pose a challenge for banks in the future. The latter will be of particular importance in the long run in the context of competition from fintech entities, including those that operate on a cross-border basis. Return on equity is particularly low among smaller and medium-sized banks, which enhances their sensitivity to shocks, and reduces their capacity to absorb losses and rebuild capital in the future. In the situation of negative shocks, such a situation generates the risk of an increased burden on the whole banking sector, through the guaranteed deposit payment funding or resolution mechanism, and continued pressure on its profitability.

While the cooperative banking sector is functioning in a stable manner, it faces a number of short-term and long-term challenges. Cooperative banks in most cases meet the supervisory and liquidity requirements. Nevertheless, the sector’s low efficiency associated with its business model and its low integration pose a challenge to the profitability of cooperative banks and their capacity to expand in the medium term. The fact that a number of cooperative banks remain outside the institutional protection schemes (IPS structure) is worrying, especially in view of the expiry towards the end of 2018 of existing association agreements. Moreover, the key role of associating banks in the IPSs and their strong impact on the whole sector via capital links with cooperative banks indicate that it is important to ensure a safe operation of associating banks via, among other things, high-quality risk management and adequate capital levels.

While restructuring in the credit union sector continues, its dynamics has become stable. Although the sector itself is relatively small (0.5% of banking sector assets) and its assets continue to fall, it can negatively impact the whole financial system as credit unions’ failure leads to the need for replenishment of the deposit guarantee fund by banks, pushes up their costs, and reduces the ability to increase capital. Past actions supporting the takeover of insolvent credit unions by stronger ones or banks with the participation of the Bank Guarantee Fund (BFG) have a positive influence on reducing the cost of the restructuring, because they help to avoid costlier payments of deposits.

The risks to domestic financial system stability are mainly of an external nature. Uncertainty persisting in Poland’s external economic environment indicates the possibility of negative shocks occurring which may slow the economic growth of the country. The Polish banking system’s direct foreign exposures are limited; however, the growth of the Polish economy is significantly determined by economic conditions in the EU, and additionally, foreign funding of the banking sector, the government sector, and enterprises remains very important. Should the global economy and financial system be hit by shocks, this could also affect the Polish market. However, the results of the stress tests indicate that
banks in Poland – due to consistent capital accumulation – remain relatively resilient. Only a small group of banks would report minor capital shortfalls in terms of Pillar 1 and 2 capital requirements. The remaining banks would still be solvent and could provide financing to the economy.

**The structural features of the domestic financial system support its stability.** The level of concentration remains moderate, but there are reasons to expect consolidation processes, particularly in the banking sector. The magnitude and nature of direct linkages between various types of financial institutions result in a low likelihood of contagion for individual institutions. This observation is confirmed by the analyses of the possibility of a domino effect arising in the banking sector. The magnitude of cross-sectoral linkages has recently increased following the establishment of the PZU financial conglomerate controlled by the State Treasury. At the current juncture, it is difficult to estimate the impact of this development on systemic risk, therefore the capital group’s actions need to be closely monitored by financial safety net institutions.

**The growing role of the state in the financial sector is a significant development and, at the current juncture, it is hard to estimate it in the context of systemic consequences.** This role manifests itself in the simultaneous supervision of a number of large financial entities, including in the banking and insurance sectors, and a dominant role in the decision-making body of microprudential supervision of the entities. Potential diverging goals between the ownership and supervisory functions may adversely impact financial stability if the owner’s interest prevails. The potential emergence of diverging goals alone gives rise to misaligned incentives on the part of financial institutions and their clients. The government sector, is a significant debtor of the financial system (due to a large portfolio of government bonds on the balance sheets of financial institutions). In the event of extraordinary circumstances (a potential crisis situation), the linkages discussed earlier in the text may trigger a negative feedback loop between the banking and government sectors and cause the impact and cost of a crisis to grow.

**The adjustment of the WIBOR and WIBID reference rates to the requirements of the BMR\(^2\) remains an important issue for the domestic financial system.** This means, among other things, that it is necessary to modify the methodology for the rates’ determination and submit, in a timely manner, a complete application to the KNF for an authorisation in order to ensure continuity of operations. The extension of the transitional period for critical benchmarks, which since 26 March 2019 include the WIBOR rate, was agreed in 2019 Q2, and it pushes back the possible materialisation of risk associated with the non-compliance of the benchmark with the requirements of the said regulation. The WIBID rate is not a critical benchmark, therefore the transitional period for that index ends on 1 January 2020.

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Recommendations

In addition to identifying and assessing risk in the financial system, the role of the Report is to offer measures aimed at eliminating or mitigating systemic risk. This is one of the methods to fulfil the statutory mandate of NBP which includes acting to maintain domestic financial stability (Article 3 paragraph 2 items 6a and 6b of the Act on NBP). In the opinion of Narodowy Bank Polski, the implementation of the following recommendations will support the maintenance of the stability of the Polish financial system:

1. **Due to the importance of WIBOR reference rates for financial system stability in Poland and the close relationship between WIBOR and WIBID indices it is advisable that GPW Benchmark S.A. completes work on the new method of their determination, and submits an application for the authorisation as benchmark administrator by the end of 2019, which would be coherent with the expectations of the competent authority and in line with the schedule provided by the company. Moreover, the domestic financial market stakeholders should intensify actions aimed at developing alternative money market benchmarks. Developing such indicators would limit the risk of discontinuity of financial contracts and financial instruments in which WIBOR and WIBID reference rates are currently used.**

2. **Banks should closely monitor the risk associated with the portfolio of consumer loans, in particular in the part relating to the rapidly growing high-value loans and loans with long maturities.** Banks should analyze in detail and verify the purpose of these loans. Long maturity increases the probability of a change in interest rates and borrowers' income during the loan repayment period, therefore banks should take a more prudent approach to creditworthiness assessment in such cases.

3. **Banks should pursue a particularly prudent policy in real estate lending.** It is important in the context of robust activity in the residential property market. Banks should also require borrowers to have adequate income buffers to enable repayment of loans even at significantly higher level of interest rates than currently observed, irrespective of the loan rate formula and the value of its collateral.

4. **Taking into account that the portfolio of foreign currency housing loans does not create systemic risk, possible restructuring of these loans should take place through voluntary agreements between banks and clients.** Legislative solutions involving interference into loan agreements, such as forced currency conversion of the loans at an exchange rate different from the current market conditions could generate a significant risk to financial stability, reduce borrowers' propensity to enter into voluntary agreements, and negatively impact the cost of funding of banking activity.
5. **In order to strengthen the cooperative banking sector integration intensification of entities from this sector is required.** Low efficiency of the cooperative banking sector resulting among others from relatively high operating costs prevents meeting the challenges of the rapidly growing financial services market and growing competition. The way to improve effectiveness enabling market position maintenance and sector development may be further integration within functioning affiliations, for example in the case of ICT infrastructure and marketing projects.

6. **It is advisable to continue the restructuring of the SKOK sector by its own means, in particular by increasing and improving the capital structure.** The current structure of own funds precludes full loss absorption. The change should increase positions that better absorb losses, i.e. shares of its members and a resource fund. Such structural change requires the development of stable profit sources and operations efficiency improvement.

7. **Banks should consistently strive to fulfil MREL requirements and to meet them with properly diversified liabilities.** Their gradual implementation will foster the feasibility of resolution plans and will allow avoiding the cliff effect just before the deadline set for 2023. An adequate share of eligible liabilities in banks’ balance sheets is advisable from the resolution efficiency perspective including cost and risk reduction for depositors.

8. **In the context of the growing role of the government sector in the financial system, it is desirable to limit the risk, which may be caused by the divergence of objectives between supervisory and ownership functions, through their clear separation.** This could be achieved through the reintegration of financial market supervision with the NBP. This would ensure supervision independence that is guaranteed to the central bank by the constitution and European treaties. Such change would be in line with global trends on placing the micro-prudential supervision in the central bank.
1. Financial institutions’ economic environment

1.1. Macroeconomic developments

In the second half of 2018, the global economic conditions remained favourable, although GDP growth was lower than in the first half of the year. In particular, the second half of the year saw a decrease in GDP growth in the euro area (to 1.6% y/y in 2018 Q3 and 1.3% y/y in 2018 Q4), mostly as a result of sluggish exports. In the United States, in turn, the economic situation remained favourable (GDP growth amounted to 3.0% y/y in the third and fourth quarters of 2018), mainly as a result of stable growth of private consumption. On the other hand, China’s GDP growth gradually declined in 2018 (in the third and fourth quarters of 2018 it reached, respectively, 6.5% y/y and 6.4% y/y).

The March NBP projection assumes lower GDP growth in the environment of the Polish economy in 2019, especially in the euro area. At the same time inflation abroad will remain subdued. The source of uncertainty for the economic situation in the external environment of the Polish economy remains the trade policies of major world economies.

In the second half of 2018, Poland’s GDP growth continued at a relatively high level (5.1% y/y and 4.9% y/y in the third and fourth quarters of 2018, respectively). An important growth component was rising consumer demand – albeit slower than in the two previous quarters of 2018 – supported by a rising employment and wages as well as very good consumer sentiment.

Despite relatively high economic growth and wages rising faster than in previous years, annual consumer price growth remains low (in February 2019, CPI inflation reached 1.2% y/y).

The relatively high economic growth in Poland was conducive to a drop in the unemployment rate to its historically low level (3.6% in the 2018 Q4, seasonally adjusted). This was accompanied by higher growth in household income (by 7.7% y/y in 2018 Q3), which was a result of stronger wage growth in the public sector and stable wage growth in the corporate sector (7.0% in 2018 Q4).

The continued good condition of the labour market translated into a further improvement in the financial situation of households. The rapid increase in household disposable income (by 6.8% y/y in the 2018 Q3) and optimistic consumer sentiment contributed to continued private consumption growth, even though the growth of consumption and retail sales somewhat weakened. At the same time, the financial assets of households continued to grow (by 2.2% y/y in 2018 Q3), and households increased their exposure to safe forms of placing their savings with considerably high liquidity (cash and short-term deposits) and to housing investments. This was concurrent with further growth in households’ financial liabilities (by 5.2% y/y in 2018 Q3), as a result of which their net financial assets declined slightly (by 1.1% y/y at the end of 2018 Q3). Simultaneously, their debt-to-disposable income ratio remained moderate (at around 60.1% in 2018 Q3).
In the second half of 2018, the situation of the non-financial corporate sector was still favourable, despite slightly worse financial results than a year earlier. Domestic demand was the main source of growth of sales revenue, which in 2018 Q4 increased by 7.3% y/y. However, in the context of significant hikes in the prices of commodities, materials and goods, as well as soaring labour costs, operational costs grew faster (7.6% y/y) than sales revenue. As a result, net sales revenue increased by merely 2.1% y/y, whereas the sales profitability ratio declined in annual terms and amounted to 4.6%. At the same time, the percentage of profit-making enterprises was close to that reported in the corresponding period of 2017 (80.6% as compared with 80.9%).

In 2018, the non-financial corporate sector was still characterised by high liquidity and debt servicing capacity. This is confirmed by the substantial share of companies declaring timely repayment of liabilities towards banks (94.6% in 2018 Q4). In 2018 the financing structure remained stable, and the overall debt indicator expressed as the ratio of liabilities and provisions for liabilities to total assets reached a safe level of around 50%. In the context of moderate growth of corporate debt towards financial institutions, its level to GDP remained low at approx. 41% at the end of 2018 Q3.

The condition of the general government sector in 2018 was very good. The general government sector deficit decreased in 2018 to the lowest level in history (from 1.5% of GDP in 2017 to 0.4% of GDP according to ESA2010). The good condition of the sector resulted from robust growth in tax revenues (by 10.2% y/y) and social insurance contributions (by 8.3% y/y), which were facilitated by strong economic activity and very favourable developments in the labour market, amid moderate growth in public expenditure (7.1% y/y).

According to the March NBP projection, GDP growth in 2019-2021 will decline gradually (to 4.0% y/y in 2019, 3.7% y/y in 2020 and 3.5% y/y in 2021). Economic growth will be hampered by an economic downturn abroad and the lower pace of utilisation of EU funds financing fixed assets. The scale of the slowdown in GDP growth will be mitigated by a fiscal stimulus to be introduced in 2019. An important growth component will remain private consumption, supported by favourable developments in the labour market – from the point of view of employees – and additional social benefits. CPI inflation will continue at a low level (1.7% y/y) in 2019, increasing to 2.7% in 2020, to fall to around 2.5% y/y at the end of the projection horizon. The main source of uncertainty for the projection are future global economic conditions, the size of net inflow of immigrants, price developments in the global energy commodities market as well as regulations having an impact on the domestic electricity market.

1.2. Global factors

The vulnerabilities in Poland’s external environment, the materialisation of which could carry a risk to the stability of Poland’s economy and the domestic financial system, have not changed significantly compared to the previous edition of the Report.
The most important global risk factor is the expected world-wide economic slowdown. The majority of international financial institutions\(^3\) forecast a fall in the GDP growth rate in 2019 in the USA, China, and also in the euro area, which is Poland’s main trading partner. The economic slowdown may result from the decline in the growth of world trade (leading to a fall in investment and economic activity) as well as increased uncertainty about the stance and future direction of economic policy of the world’s major economies\(^4\). The fall in confidence of producers and consumers is reflected in indicators such as the PMI, the BCI and the CCI\(^5\) (see Figure 1.1).

**Figure 1.1.** Economic activity and private sector’s confidence indicators

![Graph showing economic activity and private sector’s confidence indicators](image)

Note: private sector’s confidence indicators – normalised data; economic activity indicators – 3-month moving average, annualised change %. 
Source: NBP calculations based on IMF World Economic Outlook (April 2019) and OECD data.

Despite the correction, the global financial markets still seem to underestimate the price of risk in certain segments (see Figure 1.2). The announcements that the Fed will maintain a neutral monetary policy stance and that the ECB will continue its accommodative monetary policy may still push financial institutions to search for yield – in particular, by increasing the scale of investment in higher yielding, riskier assets. This process exacerbates the negative effects of a possible fall in the price of securities.

**Indebtedness of the world’s major economies continues to grow.** This process is observed in public and private debt of both developed and emerging countries. At the end of 2018 global debt reached USD 184 trillion, the equivalent of 225 per cent of GDP in 2017\(^6\), and is approx. 30 percentage points higher than before the last financial crisis. In this context, there is a noticeable rapid increase in lending – particularly in the USA, but also in the euro area – to enterprises with low ratings and high debt

\(^3\) See European Commission, Winter 2019 Economic Forecast; World Economic Outlook, IMF, April 2019; Interim Economic Outlook, OECD, March 2019.


\(^5\) Purchasing Managers’ Index, Business Confidence Index, Customer Confidence Index.

Financial institutions’ economic environment

(leveraged lending). Lending conditions for these enterprises are being relaxed, which, among others, is manifested in less restrictive covenants. Apart from banks, these enterprises are increasingly financed by a less-regulated non-banking sector. In addition, a significant part of these liabilities of enterprises is purchased by institutional investors in the form of so-called Collateralized Loan Obligations (CLOs). This increases the interconnectedness between the sectors of the financial system and creates new channels for the transmission of shocks. In the USA and the euro area, the share of corporate bonds with a low rating (BBB and lower) in investors’ portfolios is also rising. The issued corporate bonds are also characterised by a shorter maturity. In the case of a sharp fall in economic growth and a deterioration in lending conditions, the ability of borrowers to service their debts may decline, triggering an increase in the price of risk in financial markets. This, in turn, will mean a further deterioration in the availability of financing, increasing the strength of the shock.

Structural problems persist in some banking sectors of the EU countries. The profitability of banks in the EU is still meagre, as a result of the low interest rate environment, relatively high costs, and the still high level of non-performing loans in some countries. The average profitability of European banks is below the cost of capital. The financial results of banks may be additionally lowered by an increase in credit risk (if economic activity falls sharply) and higher risk premia for financial instruments (in case of sudden risk repricing). In the second case, the consequences would be particularly acute for financial institutions, in which their assets hold a significant share of instruments issued by countries with a high level of public debt (e.g. Italy). All this could lead to an increase in the cost of funding for banks, reduced availability of finance to the economy and a slowdown in economic growth.

Triggers which could lead to the materialisation of the risks

The scenario that could potentially have the most negative impact is a much sharper slowdown of the world’s major economies than expected by the markets. This could also cause the materialisation of the remaining risks and would affect the environment in which the banks in the EU operate. Together with the increase in geopolitical tensions and the escalation of protectionism, this could lead to a significant change in the risk appetite in the global financial markets. A sharper economic slowdown could result, among others, from a deterioration in the growth expectations for the US economy or the unsuccessful macroeconomic policy aimed at mitigating the declining GDP growth in China. The growth of geopolitical tensions and uncertainty about, for example, the fiscal policy of certain euro area countries or the process of Brexit, could have a significant negative impact on market expectations.

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Table 1.1. External risks and their potential effects on the Polish financial system

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<td>Deterioration of debt servicing capacity of major economies</td>
<td>- weaker global trade</td>
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<td>Persistence of the EU banking sector vulnerabilities</td>
<td>- growing geopolitical tensions</td>
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<tr>
<td></td>
<td>- tensions on the Eurozone treasury bonds markets</td>
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<td></td>
<td>- shocks on corporate debt markets</td>
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Potential effects of risk materialisation for Poland’s financial system

<table>
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<th>Credit channel:</th>
<th>increase in credit risk due to the economic slowdown in Poland, caused by the economic downturn in the EU</th>
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<td>Market channel:</td>
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<td>- decrease in value of debt instruments in banks’ balance sheets</td>
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</table>

Source: NBP.

1.3. Developments in the domestic financial market

1.3.1. Global markets

The price of risk in the global financial market, following a temporary increase in 2018 Q4, returned to the levels considered as moderate, although in some segments it remains low (see Figure 1.2). Heightened risk aversion in 2018 Q4 resulted from rising concerns related to weaker economic activity around the world on the back of the release of lower than expected economic data amid lingering uncertainty related to the trade policies of the major world economies, as well as political uncertainty (see Figure 1.3). Growing concerns related to the scale of economic slowdown in the United States were accompanied by lower expectations of a hike in FED rates and a levelling off of the yield curve of US Treasury bonds (see Figure 1.8). In the euro area, an important role in postponing the first ECB rate
hikes expected by market participants, apart from the observed slowdown in economic activity, was still played by the risk of a hard Brexit.

**Figure 1.2. Risk index on the global financial markets**

Note: Risk indicator based on normalised distribution of empirical measures of selected risk categories, according to weights established on the basis of an analysis of main components: stock exchange volatility - index VIX, bond volatility - index MOVE, currency volatility - index JPM G7 volatility, economic risk - TED spread, credit risk - credit spread of corporate bonds; grey area means a risk neutral level, below 22 points - risk appetite, above 55 points - risk aversion; grey area marks the risk-neutral level, below 22 points - risk appetite, above 55 points - risk aversion.

*Source: Bloomberg data, NBP estimates based on Morgan Stanley Research "EM Risk Indicator: A Regime-Switching Model Approach".*

**Despite a temporary increase in 2018 Q4, credit risk pricing as reflected in the yields on bonds of companies with lower creditworthiness remains relatively low compared to other risk categories.** In recent years, in the context of a low interest rates environment and the related demand among investors for higher-yielding assets (the search for yield phenomenon), companies with lower creditworthiness made widespread use of debt financing in the financial market. Despite persistent concerns regarding economic slowdown, yields and credit spreads on these securities only increased temporarily (see Figure 1.4). This indicates that the phenomenon of debt financing of companies may persist and can become one of the areas of risks on a global scale.
1.3.2. Financial market in Poland

Prices of Polish Treasury bonds were stable. The observed drop in the yields of long-term Treasury bonds mainly stemmed from the relatively low supply and trends in prices on global markets, primarily in Germany and the USA. Also weakening market expectations concerning interest rates hikes in Poland played a role, which was reflected in lower FRA quotations, among others. The pricing of credit risk of T-bonds as measured by CDS quotations did not significantly change. On the other hand, the growing difference between the yields of Polish bonds, issued both in zloty and euro, against German Bunds, was more a reflection of external macroeconomic factors than a shift in Poland’s risk assessment (see Figure 1.5).

At the beginning of 2019, the exposure of non-residents, mostly central banks, to the domestic Treasury securities market decreased (see Figure 1.6). It took place despite the simultaneous increased inflow of portfolio capital into emerging markets. Yet it had no significant impact on bond prices or exchange rates of the zloty, and the excess supply on the Treasury securities market was primarily absorbed by domestic banks.

The scaling down of expectations related to interest rate hikes in Poland brought about the levelling off of the yield curve. A deterioration in the economic outlook of the euro area, lack of expectations concerning the tightening of monetary policy by the ECB and the FED in 2019 supported by each bank’s forward guidance, combined with the announcements of Poland’s Monetary Policy Council on the possible maintenance of interest rates at an unchanged level over a long-term horizon, resulted in the
disappearance of market expectations for interest rate hikes in Poland over the coming 2 years (see Figure 1.7). This translated into a reduction in the difference between IRS rates and the reference rate of the central bank, as in the euro area and the countries of the CEE region (see Figure 1.8).

**Figure 1.5.** Yields on 10-year Treasury securities against CDS quotations and spread to German Bunds

**Figure 1.6.** Structure of investors in the domestic Treasuries market

![Graph showing yields and structure of investors](image)

Note: The spread in the yields of Polish bonds in zloty and euro to German Treasury bonds in percentage points. Source: Thomson Reuters.

Source: Ministry of Finance.

The exchange rate of the zloty remains stable and resistant to adverse external factors. The volatility and range of change in the exchange rate of the zloty against the euro in the second half of 2018 dropped significantly, despite a temporary rise in the global pricing of risk. As a result, in the context of good condition of the Polish economy, the zloty was one of the currencies least susceptible to a change in the pricing of risk on the global financial markets (see Figure 1.9). This stabilised, among others, the cost of servicing mortgage loans denominated in foreign currencies by households, including in CHF. Moreover, the cost of obtaining CHF for PLN in CIRS basis transactions, thanks to which domestic banks could hedge financing of, among others, foreign currency denominated mortgage loans, remained stable and low.

The pricing of shares in Poland also remained relatively resilient to negative signals from the developed markets. The growth in risk aversion in stock markets at the end of 2018, which caused major sales on the stock exchanges of developed economies, did not bring about similarly large price drops on the emerging markets, including the Warsaw Stock Exchange, which was to a large extent the effect of marked falls in the prices of stocks on emerging markets in the preceding months (see Figure 1.10).
Figure 1.7. Changes in the expected rate of WIBOR 1M implied from FRA

Source: Bloomberg, NBP calculations.

Figure 1.8. Spread between the rates of IRS 10Y and the central bank reference rates for selected currencies

Source: Thomson Reuters, NBP calculations.

Figure 1.9. Zloty exchange rates against EUR and CHF and EUR/PLN implied volatility

Note: Exchange rates normalised to 100 as of the end of 2017. Source: Thomson Reuters.

Figure 1.10. Change in stock indexes on developed and emerging markets and in Poland

Note: Stock exchanges indexes: global (MSCI), emerging markets (MSCI EM) and WIG were normalised to 100 as of the end of 2017. Source: Thomson Reuters.
Financial institutions’ economic environment

Box 1.1. The adjustment of WIBOR and WIBID rates to the requirements of the BMR

WIBOR and WIBID rates in the Polish financial system

WIBOR rates are the most important interest rate indices in Poland. Zloty-denominated assets of the domestic banking sector with a variable interest rate, whose pricing is chiefly dependent on those rates, reached PLN 975bn (68% of the zloty-denominated assets of the domestic banking sector) at the end of 2018. Corporate loans constitute a substantial part of that amount. The total value of housing loans, whose interest rates are based on these indices, amounted to around PLN 297bn. WIBOR rates also form the base for the pricing and determination of financial flows of a number of derivatives denominated in zloty or based on the zloty exchange rate, particularly IRS, FRA and CIRS. As at the end of 2018, the nominal value of off-balance sheet items of domestic banks resulting from such transactions amounted to at least PLN 1,672bn. Moreover, an important category of instruments linked to WIBOR rates are floating-rate debt securities issued by: the State Treasury (around PLN 173bn), local government units (around PLN 20bn), banks (around PLN 32bn) and non-financial enterprises (around PLN 60bn).

WIBID rates play a significantly lesser role in the domestic financial system. They are used mainly as benchmarks to measure the performance of investment funds. According to Analizy Online, 244 domestic investment funds referred to WIBID rates when setting benchmark for their performance in 2018 (11 investment funds referred to WIBOR). Furthermore, both WIBID and WIBOR rates are commonly used by banks in assets and liabilities management for fund transfer pricing.

WIBOR rates are set as the arithmetical mean of interest rate quotes at which domestic banks participating in their fixing are ready to place deposits for specific periods with other fixing participants (offer). The corresponding WIBID rates are the arithmetical mean of interest rate quotes at which fixing participants are ready to accept such deposits (bid). In accordance with the WIBID and WIBOR Fixing Participant Code of Conduct\(^\text{10}\) there is a maximum bid-offer spread of 30 basis points for O/N and T/N, and 20 basis points for other maturities. Within 15 minutes of setting WIBOR and WIBID rates, each fixing participant is obliged to enter into transactions with other fixing participants, at their request, at a rate not worse than the one contributed as quote to administrator for the purpose of the fixing. This obligation, among others, prevents fixing participants from unjustified quoting off the market.

Regulatory requirements for money market benchmarks

The cases of manipulation of LIBOR and EURIBOR rates unveiled by financial supervisors have exposed a need to formulate rules of setting money market benchmarks. In the EU, these rules are set

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forth by the regulation on indices used as benchmarks\textsuperscript{11} (hereinafter BMR). The BMR, together with the issued implementing acts, governs the process of determining benchmarks, their publication and use, including additional obligations imposed both on indices administrators and contributors of input data for the purpose of the calculation of indices.

According to the regulation, an administrator is expected to ensure that the benchmark, to the extent possible, represents an active market or measures specific economic reality. This should be effected by the use of data on actual transactions, and not just committed quotes, in the method of benchmark calculation. Annex I to the BMR regulation contains detailed guidelines concerning the determination of interest rate indices, for example specifying the hierarchy of input data for the purpose of their calculation. In accordance with this hierarchy, to ensure the credibility and accuracy of the indices, the method should first make use of the data on transactions concluded in the market for instruments to which the benchmark refers (so-called underlying market), and then on transactions in markets related to the underlying market. Moreover, on top of the rules applicable to all indices, the regulation sets forth additional, more restrictive requirements for critical benchmarks, i.e. for the benchmarks whose failure can adversely impact market integrity, financial stability, the real economy, consumers’ interests, or the financing of households and businesses in Member States.

The BMR entered into force on 30 June 2016, and applies from 1 January 2018. Administrators of existing benchmarks are entitled to a transitional period, which originally allowed them to apply to the competent authority for authorisation as benchmark administrators by 1 January 2020. Until the competent authority issues the said authorisation, administrators can continue benchmarks calculation, and supervised entities may use the benchmarks in financial contracts and financial instruments.

**Reform of WIBOR and WIBID reference rates**

Since 30 June 2017, GPW Benchmark S.A. has been the administrator for the WIBOR and WIBID rates. It is entitled to use the above mentioned transitional period to adjust the organisation of the benchmarks’ calculation to the new regulatory measures. In the second half of 2017, the company prepared new documentation of the indices, including the *WIBID and WIBOR Fixing Participant Code of Conduct* with annexes, and *Regulations for the WIBID and WIBOR Reference Rates*\textsuperscript{12}. These amendments only partly adjusted the fixing organisation to the requirements of the BMR. In accordance with the hierarchy of input data defined therein, the method should first make use of the data on transactions


concluded in the unsecured interbank deposits market. However, due to the structure and liquidity of individual segments of the market, the data on actual transactions in this market as the only source of input for the calculation for WIBOR and WIBID rates may not ensure compliance of the rate determination methodology with the requirements of the BMR.

In order to determine the direction of the implemented reform, in September 2018 GPW Benchmark S.A. released a consultation document to the WIBOR and WIBID fixing participants outlining potential changes in the rate calculation methodology and posing questions related to the changes under consideration. The received replies indicated that, among other things, banks consider it crucial to ensure the existing WIBOR and WIBID rates’ continuity and to avoid any material changes in the methodology of their calculation. Moreover, fixing participants pointed out that the existence of a money market yield curve is essential for the functioning of financial instruments and contracts referring to a variable interest rate.

By the end of 2018 Q3, GPW Benchmark S.A. had not acquired appropriate time series of data capturing the activity in various segments of the domestic money market. At this stage the company did not provide a detailed schedule of the rates’ reform either, whereas the experience of entities determining other IBOR-type benchmarks in the EU clearly indicate that the reform of such indices requires a lot of time, significant work on the part of the administrator and involvement of many stakeholders.

**Risk for the Polish financial system related to the potential belated adjustment of WIBOR and WIBID rates to the requirements of BMR regulation**

A potential delay by GPW Benchmark S.A. in preparing a new methodology of WIBOR rates’ calculation that would be compatible with the BMR, or the failure to submit – well ahead of the end of the transitional period – an application for the authorisation as administrator of the benchmarks, could give rise to systemic risk. Such negligence could have a negative impact on the stability of the banking sector and the functioning of the markets of certain zloty-denominated financial instruments. These rates could no longer be referred to in new contracts and financial instruments as defined in Article 3 of the BMR. Banks would therefore have significant problems granting new loans based on variable interest rates, as in Poland there is no money market reference rate alternative to the WIBOR rate with respect to tenors other than O/N (POLONIA rate). As a consequence, banks would be forced to use other, self-determined rates or indices, which would translate into a significant rise in the legal risk of contracts and lower transparency of the credit market – the limited comparability of offers would reduce market competition to the detriment of clients. Furthermore, owing to the widespread use of WIBOR indices in transfer pricing, the discontinuation of these rates could make assets and liabilities management by domestic banks more difficult, exposing them to the so-called basis risk.
The majority of transactions in derivatives related to WIBOR benchmarks are concluded with foreign banks which are market makers. A drop in their confidence in WIBOR benchmarks or discontinuation thereof would lead to lower activity of market makers in the zloty derivatives market. As a result, the liquidity of the market for those derivatives could decline and, on the side of domestic financial institutions, the cost of hedging against market risk using such instruments could rise. This, in turn, could adversely affect the engagement of these institutions in debt instruments with a variable interest rate, which prevalent in the domestic corporate and municipality bond markets. The coupons of Polish floating-rate Treasury bonds are also linked to WIBOR rates. In case of concerns regarding the continuation of the publication of the benchmarks or the robustness of the methodology of their calculation, some investors, especially non-residents, might reduce the share of such instruments in their portfolios. Lower demand for the above mentioned Treasury bonds and a limited possibility of hedging against interest rate risk could eventually lead to an increase in the cost of servicing the State Treasury debt.

Bearing in mind the small scale of the use of WIBID rates as benchmarks (under the BMR) in the domestic financial system, non-compliance of the methodology of their calculation with the EU requirements would primarily give rise to legal risk in the investment funds sector, yet this risk would not be systemic. This would necessitate making appropriate amendments in the statutes of the investment funds which use the above mentioned indices to measure their performance. Under such circumstances, the WIBID rates could still be used as indices in contracts and financial instruments which do not fall under Article 3 of the BMR.

In December 2018 the Financial Stability Committee, in its capacity as macroprudential authority (KSF-M), informed that it has identified risk related to the necessity of a timely adjustment of domestic money market benchmarks to the requirements of BMR. In January 2019 KSF-M issued its opinion on this matter to GPW Benchmark S.A., and in the press release following the meeting indicated that it is monitoring the progress of work conducted by the company. Moreover, in February 2019, a Working Team on the Reform of Benchmarks was established at the Financial Market Development Council. Its purpose is, among others, to facilitate the dialogue on the changes in the methodology of determining the WIBOR and WIBID rates between their administrator and their stakeholders, including primarily all domestic banks whose involvement in the reform is critical to its efficient implementation.

Taking into account, among others, the above initiatives GPW Benchmark S.A. intensified its work on the reform of the WIBOR and WIBID benchmarks in 2019 Q1. This included preparing and adopting a detailed schedule, obtaining the necessary data from fixing participants and undertaking data analysis aimed at developing the final methodology of those rates’ determination that would be compliant with the BMR.
Changes concerning the transitional period for WIBOR rates

In 2019 Q2, a new wording of Articles 51(4a) and 51(4b) of the BMR was agreed, according to which the transitional period for adjusting critical benchmarks to the requirements of this regulation has been extended until 31 December 2021. Moreover, on 26 March 2019 a Commission implementing regulation added WIBOR to the list of critical benchmarks. This pushes back the potential materialisation of the described risk of lack of compliance of WIBOR rates with the requirements of the BMR. The WIBID rate is not a critical benchmark and therefore the transitional period for this index (which is binding for GPW Benchmark S.A. and the users of the benchmark) ends on 1 January 2020.

Due to the significance of WIBOR rates for the stability of the financial system in Poland, and the close link between WIBOR and WIBID rates (resulting from the documentation and the method of their calculation), in the context of different periods for their adjustment to the requirements of the BMR, it is justified that GPW Benchmark S.A. continues the reform of the methodology of determination of both those money market benchmarks in line with the detailed schedule adopted by the company in February 2019. Following the example of other IBOR-type indices, the schedule assumes that broad consultations should be carried out with all stakeholders of WIBOR and WIBID rates, and the application for the authorisation as benchmark administrator should be submitted by the end of 2019, which would be coherent with the expectations of the competent authority. In its press release issued on 28 March 2019, the Office of the Polish Financial Supervision Authority (UKNF) announced that “with a view to safeguarding financial stability and security of trading in the Polish financial market, [UKNF] expects that the adjustment of the determination processes for all benchmarks developed by GK GPW companies (including WIBOR) to the BMR requirements be completed and that the appropriate applications for authorisation as the administrator be submitted in 2019”.

In its response, GPW Benchmark S.A. confirmed that in line with the schedule it intends to file the appropriate application to

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13 The press release following the KSF-M meeting held on 17 December 2018 is available at the following address: https://www.nbp.pl/macroprudentialsupervision/komunikaty/2018-12-17.aspx.
14 The press release following the KSF-M meeting held on 25 January 2019 is available at the following address: https://www.nbp.pl/macroprudentialsupervision/komunikaty/2019-01-25.aspx.
17 The press release is available at the following address: https://www.knf.gov.pl/o_nas/komunikaty?articleId=65192&p_id=18.
the Polish Financial Supervision Authority by the end of 2019. A successful implementation of this intention would significantly lower the risk of belated adjustment of WIBOR and WIBID rates to the requirements of the BMR.

Successful reform of WIBOR and WIBID reference rates also depends to a large extent on the involvement of domestic banks, in particular the fixing participants. The stakeholders of the domestic financial market should intensify actions aimed at developing alternative money market benchmarks, including such that would approximate the risk-free rate. This need results, among others, from the requirements of Article 28(2) of the BMR. Developing alternative money market benchmarks would limit the risk of discontinuity of financial contracts and financial instruments in which WIBOR and WIBID reference rates are currently used.

1.4. Situation in the real estate market

The residential real estate market in Poland remained in the expansion phase. High demand, including investment demand, continued to be observed in the largest cities. It translated into a marked increase in real estate prices in nominal terms in 2018; yet, in real terms – as measured taking into account income, rent rates and deviation from the trend – no strong tensions or imbalances were seen. At the same time, lending growth is markedly lower as compared with the previous expansion phase (the years 2006-2008), and high demand is financed, to a significant extent, with buyers’ own funds.

The commercial office real estate continues to see an oversupply of office space. Yet, there are signs of stabilisation in the office market where vacancies are mostly seen in the poorer quality stock. This market segment sees intense investment and construction activity – subsequent, new commercial projects are being launched. High activity of investors, amid low interest rates in the international markets, boosts prices of commercial real estate amid practically stable rents. This leads to lower capitalisation rates (measured as net rent to the price of the building), which have fallen to historically low 4% levels in the case of the best office buildings in Warsaw.

Average transaction rates per square metre of housing, both in the primary and the secondary market rose in 2018 (see Figure 1.11). This was partly due to the changed market structure, i.e. a large number of transactions involving real estate in better locations. The second half of the year was marked by a significant decline in the number of transactions involving cheaper housing sold under the government-subsidized housing scheme Housing for the Young terminated in December 2018. In the

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18 The information is available at the following address: https://gpwbenchmark.pl/aktualnosci_czyta?cmn_id=1034.

19 This provision imposes on entities that use a given benchmark the obligation to produce written plans setting out the actions that they would take in the event of material changes or cessation of the benchmark. These plans, where feasible and appropriate, should nominate one or several alternative benchmarks.

20 For more information on the current situation on real estate market in Poland, see „Information on home prices and the situation in the residential and commercial real estate in Poland in 2018 Q4”, available on the bank’s website: https://www.nbp.pl/homen.aspx?f=/en/publikacje/inne/real_estate_market_q.html.
fourth quarter of 2018, the prices per square metre of comparable housing, determined with the use of the hedonic price index, rose in the group of six cities by approx. 2.4% q/q and by 12.1% y/y. In Warsaw, hedonic prices – determined on the basis of a significantly smaller sample – rose by 5.7% q/q and by 12.1% y/y. The level of transaction prices in large cities continues to be lower or comparable to the level observed at the end of the previous expansion phase in nominal terms, amid a considerably higher income level. As a result, despite marked annual price increases, home prices in real terms are now markedly lower than during the last expansion phase in the housing market. In smaller cities, price increases in nominal terms slightly exceeded levels recorded in the previous cycle. The whole year 2018 saw a rise also in average home rental rates (see Figure 1.12).

**Figure 1.11.** Transaction prices of dwellings in the primary market (PM) and secondary market (SM) in selected groups of cities in Poland

**Figure 1.12.** Average (offer and transaction) rates of home rental in selected groups of cities in Poland

The year 2018 saw a high level of demand for housing, both consumption and investment demand. As a result of price growth, despite a slight increase in the level of estimated maximum availability of residential mortgage loans, the estimated availability of loan-financed housing in Warsaw and in six cities\(^2\) declined. At the end of the fourth quarter of 2018, the average availability of housing in the largest cities, measured by the average monthly wages in the enterprise sector, declined to 0.80 sqm. Yet, it was still higher by 0.32 sqm than the minimum level observed in the third quarter of 2007.

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\(^2\) Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław.
The impact of regulatory environment on housing demand declined. At the beginning of 2018, the impact of the government-subsidized housing scheme “Housing for the Young” faded away. Currently, under the commercial pillar of the housing scheme “Housing Plus”, BGK Nieruchomości realizes investments on land owned by local government units and private entities. In January 2019, a new housing scheme “Housing for the start” was launched with a view to subsidizing rental payments for new dwellings. So far, these schemes have had little impact on the housing market.

**Figure 1.13.** Return on home rental (average in seven cities) compared to households’ deposits, residential mortgage loans, 10-year Treasury bonds and capitalisation rates on commercial real estate (office and retail space)

![Graph showing return on home rental compared to other financial assets](image)

Note: The chart presents the difference in the rate of return of individual assets in percentage points (in the case of Treasury bonds, the current yield to maturity was taken into account). This analysis does not take into account the high transaction costs in the housing market and the potentially long exit time for such an investment. Seven cities include Warsaw, Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław.

*Source: Statistics Poland.*

**Figure 1.14.** Estimated rate of return on equity from investment into 50 sqm housing in Warsaw

![Graph showing estimated rate of return](image)

Assumptions: Transaction price of one square metre of housing in the primary market was increased with finishing costs (+PLN 800/sqm). Residential mortgage loans in PLN for 25 years, equal instalments payable 4 times a year. Amortisation of 1.5% (two general overhauls in the period of 100 years). Occupancy 95%. The calculated capitalisation includes amortisation costs. Taxable with a lump sum tax of 8.5%. ROE means net profit on equity.

*Source: NBP, MF.*

Investment demand for housing is driven by households’ expectations of higher rates of return on home rental than rates of return on financial assets. Owing to low interest on deposits and Treasury bonds, housing investment, despite low liquidity and tenant’s protection laws, continues to be seen as an attractive investment (see Figure 1.13). As a result, an increased use of households’ own funds in the purchase of rental housing has been observed. The estimated rate of return on equity from investment in a 50 sqm. housing in Warsaw, taking into account costs and taxes (see Figure 1.14) shows that it

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22 Under the government scheme of subsidizing the construction of owner-occupied housing “Housing for the Young” in the years 2014-2018, the total of 109.4 thousand borrowers benefited from subsidies totalling approx. PLN 2.9 billion, including PLN 0.85 billion in secondary market housing.
grows together with growing share of the buyer’s own contribution as the internal rate of return on investment is slightly lower than the cost of credit.

**No impact of speculative demand in the housing market has been observed so far.**

In recent years, the supply of dwellings has adjusted flexibly to demand, but in 2018 there were signs of barriers to further supply growth. The increase in the supply of dwellings was supported by the continued estimated high profitability of developer projects in housing construction in Poland’s six largest cities (see Figure 1.15), but it slightly decreased to about 19% in the second half of 2018 (from 20% in the first half of 2018 and from 21% in the second half of 2017). This was due to increases in the prices of production factors, that is building materials, land and, especially, labour costs being higher than increases in home prices.

**Taking into account the current level of demand, the time needed to sell the entire housing stock put on the primary market, despite having slightly extended, is still less than one year** (see Figure 1.16). Sales in the primary market are shifting towards earlier production stages, which means that the buffer absorbing some of the demand shocks is being reduced.

**Figure 1.15. ROE on investment projects in six cities in Poland**

**Figure 1.16. Time needed to sell available stock, the number of housing units put on the primary market, sold and remaining on offer in the six largest markets in Poland**

Note: The six largest cities include: Kraków, Łódź, Poznań, Tricity Agglomeration of Gdańsk-Sopot-Gdynia, Warsaw and Wrocław.

*Source: Statistics Poland.*
2. Banking sector

2.1. Lending

The growth rate of lending to the non-financial sector has remained moderate, thus it neither led to the build-up of imbalances jeopardising financial stability nor impeded economic development. Lending to the non-financial sector\(^{23}\) (see Figure 2.1) grew at a slightly slower pace than the nominal GDP. Loan growth remained supported by, among others, high economic growth, favourable developments in the labour market, the low interest rate environment and banking sector’s ample capital levels. The ratio of non-financial sector credit to GDP has remained at a low level (about 50%, Figure 2.2) compared to the EU average (about 84%).

**Figure 2.1.** Growth rate of nominal GDP (left-hand panel) and selected categories of loans to the non-financial sector (right-hand panel), y/y

![Graph of GDP and loans growth](image)

Notes: loans* – annual growth rate, 3-month moving average; loans** – annual growth rate after adjusting for foreign exchange rate changes, 3-month moving average.

Source: Statistic Poland, NBP.

The growth rate of housing loans to households, which rendered the largest share in the banking sector’s assets, continued to rise (see Figure 2.3), but it has not been accompanied by increased risk appetite of banks. Growth in the value of new loans did not result from an easing of lending policy and remained close to GDP and wage growth (see Figure 2.4). Higher lending ensued, among others, as a result of continued high demand for loans underpinned by a favorable financial situation of households. Loan-financed housing demand was primarily driven by buyers covering their residential needs. The scale of purchases for investment purposes remained at a high level\(^{24}\), but these were mainly

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\(^{23}\) Percentage changes in loan volumes referred to in Chapter 2.1 relate to data after adjusting for foreign exchange rate changes. Unless otherwise indicated, the period analysed in Chapter 2 covers the period from 30 June 2018 to 31 December 2018.

\(^{24}\) See “Information on home prices and the situation in the residential and commercial real estate market in Poland – 4th quarter 2018”, March 2019, NBP.
financed from own funds. The growing demand was accompanied by a tightening of credit standards and only a slight easing of some credit terms (among others, reduction of non-interest costs). Despite a rise in the share of higher amount loans in the structure of new loans, the share of loans with the LTV ratio above 80% decreased in 2018.

Figure 2.2. Value of selected loan categories to GDP

![Graph showing the value of selected loan categories to GDP](image)

Figure 2.3. Changes in stock and growth rate of housing loans, y/y

![Graph showing changes in stock and growth rate of housing loans](image)

Notes: the ratio of stock of selected loan categories to cumulated nominal GDP from the last four quarters.

Source: NBP.

FX housing loans are being systematically repaid (see Figure 2.3), however they still constitute a substantial part of the non-financial sector loan portfolio (around 12%). CHF-denominated loans accounted for about 82% of the FX housing loan portfolio. Value of these loans, expressed in the currency of the loan, kept declining at a rate similar to that observed in previous years (see Figure 2.5). The share of new FX loans in the value of all housing loans granted in the second half of 2018 remained marginal and amounted to less than 2%.

The annual growth rate of consumer loans remained relatively high. Consumer loans rising at a higher pace were mainly a consequence of the business cycle phase and reflected the structure, in which private consumption prevailed, of economic growth. Consumer confidence remained high and demand for loans was increasing in parallel to growing wages (see Figure 2.4). At the same time, due to increased external burdens weighing on the long-term profitability, banks tended to increase their exposure to high margin products, consumer loans in particular.

25 For more information on the factors influencing changes in lending policy and its developments, see: “Senior loan officer opinion survey on bank lending practices and credit conditions. 4th quarter 2018”, October 2018 and “Senior loan officer opinion survey on bank lending practices and credit conditions. 1st quarter 2018.”, January 2019, NBP.

26 See “Raport AMRON-SARFIN 4/2018. Ogólnopolski raport o kredytach mieszkaniowych i cenach transakcyjnych nieruchomości” (Nationwide report on housing loans and real estate transaction prices), February 2019, ZBP.
Figure 2.4. Value of new consumer and housing loans to nominal GDP and wage bill

Notes: loans/GDP – the ratio of new consumer/housing loans originated in a given quarter to quarterly nominal GDP; loans/wage bill – the ratio of new consumer/housing loans originated in a given quarter to total value of remuneration in the national economy in a given quarter.
Source: NBP calculations based on Statistics Poland, NBP and ZBP data.

Figure 2.5. Value of CHF loans in relation to banking sector assets and GDP

Notes: CHF loans/assets* – the value of CHF housing loans expressed in zlotys in relation to banking sector assets; CHF loans/GDP** – the value of CHF housing loans expressed in zlotys in relation to nominal GDP.
Source: NBP, GUS.

Lending policy relating to consumer loans did not change substantially and no clear symptoms of increased risk appetite of banks were observed. In the second half of 2018, banks slightly loosened lending standards, citing, among others, competitive pressure and product profitability. Some banks tightened their lending terms, justifying their action by limiting the maximum acceptable risk level, while other banks slightly loosened them by mainly extending their maximum maturity and reducing credit spreads. However, it does not seem that a decrease in interest rates on consumer loans, observed in the last two months of the year, should signal a permanent shift in lending policy. This could merely exhibit a development typical for the year-end period – after the Christmas time, and elevated competitive pressure related to it, credit spreads usually return to higher levels.

The risk of banking sector’s consumer loan portfolio is largely determined by both enduring increased growth in high-value and long-term loans and high market concentration. For several quarters, banks have been granting loans in higher amounts and with correspondingly longer maturities. The growth rate of loans with contract maturity over 5 years was significantly higher than for other loans, therefore their share in the consumer loan portfolio continued to rise (65% at the end of December 2018). Despite a relatively rapid rise of high-value consumer loans in recent years, the share of largest ones (over 100,000 PLN upon origination) in the entire non-financial sector loan portfolio has been relatively low and amounted to around 4%. Yet, a high concentration can be observed in the segment of high-value loans (see Figure 2.6). At the same time, in case of some banks with high exposure to this segment, these loans constitute a considerable share of their assets and thus can pose a substantial risk.
As regards lending to enterprises, no risk-altering developments were noticed (see Figure 2.8). Favourable economic conditions did not translate into increased loan demand from enterprises. In the entire 2018 the value of new loans was approximately 10% lower than in the previous year, which was mainly influenced by the persistently limited propensity of enterprises to take out loans. Banks tightened lending policy, but the percentage of approved loan applications has not changed significantly. Guarantees provided by the Bank Gospodarstwa Krajowego continued to limit the risk related to lending to small and medium-sized enterprises (SMEs). Loans covered by the de minimis guarantees accounted for approximately 12% of total loans extended to enterprises in the second half of 2018 (similarly to previous half-year periods).

Lending developments in the cooperative banking sector differed from those identified at the aggregate banking sector level. Unlike in commercial banks, there was no heightened growth in consumer loans in cooperative banks. Housing loans remained to grow at a higher rate than in commercial banks (see Figure 2.7) – which could be attributable to a low base effect, but may also point to expanding activity in less risky loan segments. Even assuming the above, housing loans increased at a pace visibly lower than during 2007-2008 credit boom.

Source: NBP.
Figure 2.8. Cumulated index of changes in banks’ credit standards – loans to households (left-hand panel) and corporate loans (right-hand panel)

Notes: upward slope of the index indicates an easing in credit standards in a given period, downward slope indicates a tightening. Source: NBP.

Macroeconomic forecasts and structural factors indicate that the risk of an excessive increase in total lending is low. The expected slowdown in the pace of economic growth with its successive stabilisation within 2021 horizon should have a limiting effect on demand for loans. Survey data indicates that both the ratios of enterprises relying on loans and enterprises applying for loans is falling, and there are no premises suggesting a change in these trends in the medium term27. In addition, the lending outlook remains subject to the uncertainty relating to conclusions on some legislative proposals regarding FX housing loans.

2.2. Credit risk

The good situation of non-financial sector agents, especially households, contributed to a lower materialisation of credit risk28, but the unfolding trends in the loan portfolio structure might signal a possible future uptick in the risk, particularly with a view to an expected economic slowdown. This shift is being exhibited by an increase in the share of the most risky consumer loans, including high-value and long-term ones. Changes in the structure of new corporate loans had an opposite effect – the share of loans to large enterprises, carrying lower risk, increased, while the share of SMEs decreased.

27 See “NBP Quick Monitoring. Analysis of the situation in the enterprise sector. No 01/19”, January 2019, NBP.

28 The value of credit risk indicators was influenced by the implementation of IFRS 9 from the beginning of 2018 (See Box 2.2 in “Financial Stability Report. December 2018”, p. 36). In the case of the annualised indicators (e.g. the ratio of loan losses to net loans) this effect also took place in the second half of 2018. The purchases of loan portfolios of certain banks in the second half of 2018 were also the factor influencing the growth of credit risk indicators. After the purchases the banks increased the provisions on loans from the acquired portfolios.
2.2.1. Credit risk of loans to households

In the second half of 2018, loan losses on the households loan portfolio (see Figure 2.9) declined while in case of the consumer loan portfolio a minor increase in loan losses and short arrears (31-90 days – see Figure 2.11) was observed. However, the profitability of the consumer loan portfolio is still the highest among the main types of loans to the non-financial sector.

Divergent changes in the quality of housing and consumer loan portfolios may be explained by different tendencies in the restrictiveness of lending policy (credit standards) in recent years. In that period, the standards on housing loans were tightened significantly, which has been demonstrated by a substantial rise of minimum expenses assumed by banks during creditworthiness assessment and reduced share of new loans with high LTV ratios.  At the same time, credit standards on consumer loans barely changed and were even loosened slightly in 2018 (see Chapter 2.1).

The easing of lending policy in banks due to competitiveness pressure and increasing exposure to high-margin products may somewhat resemble the 2007-2008 period. Despite high margins on those loans, a too liberal lending policy in 2007-2008 led in 2009-2010 to a considerable increase in loan losses or even negative financial results in some banks, which specialized in consumer finance (see Figure 2.10). Unlike in 2007-2008 however, the growth rate of the consumer loan portfolio is nowadays lower, and both lending policy and creditworthiness assessment are more restrictive. Nevertheless, the trends in that loan category need an in-depth monitoring.

29 More information on changes in lending policy in the housing loan segment can be found in Box 3 in “Financial Stability Report. June 2018”, NBP.

30 The main reason for high losses on consumer loan portfolios in some banks specialising in consumer finance in 2009-2010 was an aggressive growth model accompanied by a relaxed lending policy, including lack of full creditworthiness verification. Substantial loan losses on the consumer loan portfolio in consumer finance banks was in part due to the economic downturn, however to the largest extent – they resulted from a too relaxed lending policy in the earlier growth phase of cycle, which is confirmed by a considerable difference between the losses recorded in consumer finance banks and other banks.

31 One of the negative phenomena identified in the course of creditworthiness assessment was that consumer loans were granted without taking into account of customers’ total indebtedness in other banks. This led to over-indebtedness of a considerable number of customers whose positive credit history was however maintained due to repayment of previous loans with new ones (see “Raporty o sytuacji banków” from the years 2009-2010 (Reports on the condition of banks from 2009-2010), UKNF and “Kredyt Trendy - raporty Biura Informacji Kredytowej z lat 2010-2011” (Credit trends. Credit Information Bureau reports from 2010-2011). In addition, the banks served mostly external customers whose creditworthiness assessment is more difficult. The risk materialised after banks had tightened lending policy, which made it more difficult to finance repayment of previously taken loans with new ones.
The portfolio of high-value consumer loans particularly is distinguished by an elevated risk. Banking sector’s average quality of that portfolio remains, however, strongly influenced by a few banks, which feature above the average impaired loan ratios, also with regard to high-value consumer loans. The concentration in high-value loans segment is significantly higher than in the whole consumer loan portfolio.

The growth of loan losses in the portfolio of loans for individual entrepreneurs also point to an elevation in risk. The growth of loan losses was in part caused by regulatory factors, like the implementation of IFRS 9, changes in the models of provisions for expected loan losses and takeovers of the loan portfolios of other banks. A spike in risk is, however, also confirmed by an increase in short arrears (i.e. 31-90 days). The significant part of the increase in loan losses was encountered in one bank specialising in this type of loans.

The decline, observed in the second half of 2018, in the impaired loan ratio for housing and consumer loans and loans to individual entrepreneurs (see Figure 2.12) was strongly affected by factors unrelated to changes in the financial standing of borrowers. Those included chiefly the sales of debt (1.5 zloty billion for consumer loans and 0.7 zloty billion for housing loans) and transfers of loans to off-balance sheet (0.6 zloty billion and 0.1 zloty billion respectively). Operations mentioned were of high value in comparison to the changes in the value of impaired housing and consumer loans (-0.3 zloty billion and -0.2 zloty billion respectively) and had a significant impact on the changes in the impaired loan ratios.

The risk of the FX housing loan portfolio did not change. FX housing loans displayed a slightly higher share of impaired loans than PLN loans. This resulted, however, from the ageing of FX loans and a relatively high growth of PLN loans (see Figure 2.15). On average, the financial standing of FX borrowers remained better comparing to PLN borrowers, and considerably better comparing to the rest of borrowers. The impact of CHF exchange rate increase (compared to exchange rate at the moment of loans origination) on the value of repayments has been mitigated by low interest rates applicable to this currency (see Figure 2.14).

A considerable share of the CHF housing loan portfolio features a relatively low collateral level, which might pose a risk to banks should loans quality deteriorate and necessity of large-scale debt collection occur. Still, the impact of high Ltv ratios on the financial results of banks was limited – mainly due to a good quality of this loan portfolio. In the second half of 2018, the coverage of loans with collateral improved somewhat. This was mainly attributable to capital repayments and a rise in real estate prices, as loans value expressed in PLN increased only slightly due to negligible depreciation.

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32 According to the UKNF survey performed on banks with a 95% share in the banking sector’s consumer loan portfolio, the share of those banks in loans with a nominal value over 50,000 PLN and over 100,000 PLN upon origination was 28% and 34% respectively as of the end of 2018. In turn, the shares of four largest banks in that segment were 54% and 58% respectively.


34 See Figure 2.14, “Financial Stability Report. June 2018”, p. 41.
of PLN towards CHF (1.2%). At the end of 2018 estimated shares of loans with LtV over 100% and 120% were 34% and 21% respectively.

**Figure 2.9. Loan losses and their relation to net value of household loans**

![Graph showing loan losses](image)

Notes: Loans to entrepreneurs and individual farmers for purposes other than housing. The ratio of loan losses to net loans – annualised data.
Source: NBP.

**Figure 2.10. The ratio of loan losses to net value of consumer loans in banks specializing in consumer finance and in other banks**

![Graph showing loan losses](image)

Notes: Annualised data. Consumer finance banks are defined as banks in which consumer loans to assets ratio is over 25%.
Source: NBP.

**Figure 2.11. Shares of loans in consecutive arrears classes from 31 days to 1 year in consumer (left panel), housing (middle panel) and entrepreneurs loans (right panel)**

![Graph showing loan losses](image)

Notes: Arrears for consumer loans – estimates.
Source: NBP.

Over few recent years, the quality of loans to individual farmers deteriorated, which was accompanied by an increase in credit losses and arrears. This was partly a result of gradual fall in the share of subsidized loans in the agriculture sector loan portfolio (from a level of 60% at the end of 2013 to 31%
at the end of 2018). Risk associated with subsidized loans is smaller due to interest surcharges, guarantees and partial capital repayments provided by the Agencja Restrukturyzacji i Modernizacji Rolnictwa (Agency for Restructuring and Modernisation of Agriculture). It should be noted, however, that the individual farmers loan portfolio still exhibits good quality when compared to other types of loans.

**Figure 2.12.** Impaired loan ratios of particular categories of household loans

**Figure 2.13.** Impaired household loan ratios in particular types of banks

Within the horizon of NBP’s macroeconomic projection loss provisions should stabilize in relation to the value of household loans. This will be underpinned by an expected further improvement in the labor market (e.g. a decrease in unemployment and an increase in real wages) as well as by an increase in household incomes due to expansion of 500+ program, increased allowances and pensions, as well as a reduction in personal income taxes. The scale of expected improvement on the labor market will be, however, slightly smaller than in the preceding years. On the other hand, further loosening of banks’ lending policy towards consumer loans and – in the long run – forecasted decrease in the rate of economic growth, might, if came to pass, contribute to an increase in loan losses.
**Figure 2.14.** Increase in the value of CHF housing loan instalment compared to the instalment in the month of loan origination against the values of these loans and wage growth in the corporate sector from the month of loan origination

![Graph](image_url)

Notes: A Swiss franc-denominated housing loan with maturity of 25 years, repaid in constant total instalments or constant principal instalments; the instalment calculated on the basis of the Swiss franc exchange rate and the LIBOR 3M rate of 30 December 2018 and average spread on Swiss franc-denominated loans and loan origination. Points on a horizontal axis mark the month of loan origination. Bars present the zloty value (at the end of December 2018) of Swiss franc-denominated housing loans taken out in a given month marked in the horizontal axis.

Source: NBP’s estimates based on NBP, Thomson Reuters, GUS and BIK.

**Figure 2.15.** Impaired loan ratios and value of foreign currency and zloty housing loans

![Graph](image_url)

Source: NBP.

2.2.2. Credit risk of corporate loans portfolio

Credit risk related to the corporate loan portfolio did not change significantly. The financial standing of the enterprises sector was good, although some profitability and liquidity indicators have been subject to a slight deterioration. In the 4th quarter of 2018, loan losses fell in comparison to the preceding year, resulting in a decrease in the loan losses to loan value ratio (y/y) (see Figure 2.16). The shares of loans in arrears, however, did not exhibit any significant change – after a considerable decline earlier, they barely changed over last three years (see Figure 2.17). The ratios of impaired loans inflows (see Figure 2.19) fell in the second half of 2018 and were close to average levels observed in 2016-2017.

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35 See „Szybki monitoring NBP. Analiza sytuacji sektora przedsiębiorstw“ („NBP Quick Monitoring Survey - Economic climate in the enterprise sector“), April 2019, NBP.
In the recent quarters loan forbearance did not add to increased credit portfolio risk. The share of non-impaired loans in forborne loans fell to 22.5% at the end of 2018. The vast majority (around 90%) of loan forbearance consisted of changes in conditions and terms of loan agreements and did not involve refinancing entities in financial distress, which could be used for concealing loan losses.

Figure 2.16. Loan losses and their relations to net values of corporate loans

![Loan losses and their relations to net values of corporate loans](image)

Notes: Relationship – annualized.
Source: NBP.

In commercial banks, the share of impaired corporate loans slightly decreased in the second half of 2018 (see Figure 2.20), however, that change was affected by factors not related to changes in the credit risk, since it was attributable to debt sales and high repayments of impaired loans (not resulting in the change of loan classification to non-impaired). The quality deteriorated mainly in some business sectors with small shares in the loan portfolio, whereas sectors with the biggest share did not experience a substantial change. In the long run the decline in the shares of some branches featuring lower credit quality (i.e. building and mining sectors) was favorable from the credit risk point of view.

After an earlier growth, the corporate loan portfolio risk in cooperative banks did not change significantly in the second half of 2018. The overall quality was subject to a slight deterioration (see Figure 2.20), however, the coverage of impaired loans by provisions increased (see Figure 2.21) and changes in the share of loans in arrears were marginal. The quality of loans is still particularly low in some big cooperative banks and banks not associated in IPS. Moreover, big cooperative banks display the lowest coverage of impaired loans by provisions, which might point to a risk of under-provisioning. Nevertheless, the coverage rose significantly in the last year, and the difference against other banks – decreased (see Figure 2.21).

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36 A high share of non-impaired loans in forborne loans might indicate that banks hide loan losses – the so called evergreening (see „Financial Stability Report. June 2018”, NBP, Box 5, p. 61).
The most likely scenario for the forthcoming quarters is either a stabilization or a slight growth of loan losses in the corporate loan portfolio. The main factor behind it will be the forecasted gradual decrease in the growth rate of the GDP. Forecasted deterioration of the corporate economic situation also point to a possibility of increased loan provisions. On the other hand, the portfolio risk may be positively influenced by tightening lending policy in 2018, mainly towards SMEs.

37 The annual ratio of inflow of impaired loans is defined as follows: annual ratio of inflow of impaired loans=$I_t/B_{t-4}$, where $I_t$ stands for a sum of values of exposures requalified from non-impaired to impaired, from quarter t-4 to quarter t (viz. within 4 quarters) and this is true only for the exposures that existed in the base (viz. exposure for a given company in a given bank), both in period t-4 and t. $B_{t-4}$ stands for the sum of values of non-impaired exposures in quarter t-4 which were still in the base in quarter t. The annual net ratio of inflow of impaired loans takes into consideration also the values of exposures requalified from impaired to non-impaired, from quarter t-4 to quarter t. Such values are subtracted from the value of $I_t$ in the ratio numerator (see definition of the quarterly ratio of inflow of receivables with value loss shown in the “Financial Stability Report. December 2017”, p. 50).

38 See „Szybki monitoring NBP. Analiza sytuacji sektora przedsiębiorstw” („NBP Quick Monitoring Survey - Economic climate in the enterprise sector”), April 2019, NBP.
Box 2.1. Exposures of the Polish banking sector to the commercial real estate market

Preface

Historical experience shows that the real estate market developments can affect financial stability. With this in mind, the European Systemic Risk Board (ESRB) issued a recommendation in October 2016 on closing real estate data gaps. The Recommendation requires the national macro-prudential authorities to regularly monitor risks in the real estate market, both residential and commercial (CRE), using a range of indicators. One of the effects of the ESRB recommendation will be the adoption of a set of common indicators and definitions to allow comparison of the situation in different countries, including the unification of the CRE definition itself. Currently, in various places (e.g. in the KNF’s recommendation, ESRB recommendation and other materials or in the CRR Regulation), commercial real estate loans are defined in various ways, which makes it difficult to directly compare data, analyse them and then inference.

The portfolio of commercial real estate loans

The exposure of Polish banks to the CRE market is relatively small compared to the portfolio of loans for residential real estate. The value of loans granted to enterprises for the purchase or construc-
ion of commercial real estate at the end of 2018 amounted to approximately PLN 64 billion (see Figure 2.22), or approximately 3.5% of banks’ assets. The largest part were loans for the purchase or construction of retail, office and other real estate types (in total, they amounted to over PLN 50 billion). Loans for residential real estate for enterprises (loans for developers) and financing of warehouse and industrial facilities were clearly smaller.

**Banks’ exposure to the commercial real estate market may also result from other loans (for example, working capital loans), which are secured by commercial real estate.** The ability to repay such loans is less dependent on the real estate market, although the market valuation of real estate affects the quality of collateral and their price. At the end of 2018, the value of loans to enterprises fully secured on commercial real estate was almost PLN 130 billion (see Figure 2.23).

**Figure 2.22.** Portfolio of loans for the purchase of commercial real estate (in PLN billion)

**Figure 2.23.** The value of loans secured on commercial real estate (in PLN billion)

**Flow of loans**

In 2017, the surveyed banks\(^3\) granted less than PLN 21 billion loans for the purchase of CRE or using CRE as collateral. This constituted as much as 40% of the value of the portfolio of such loans at the end

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\(^3\)The main data source is surveys performed in 2018 by UKNF among selected commercial banks. Note: due to different definitions in the UKNF survey and FINREP package, the data on the portfolio of CRE loans are not entirely comparable with the data given above. In line with the definition used in the ESRB recommendations, in the UKNF survey loans for commercial real estate include both loans for buying or construction of a real estate as well as loans for other purposes, but collateralized on a CRE. Moreover, real estate owned by the end user are excluded from the survey (e.g. omitted was a loan granted to a company for building its own seat or a production site).
of 2017. The high value of new loans granted, with a stable level of the whole CRE loan portfolio may prove that commercial properties are used to secure short-term working capital loans by banks. Such a conclusion is supported by data showing that approx. 90% of the analysed portfolio are loans for other purposes than the purchase of a given real estate. The largest share of loans for the purchase of commercial real estate can be observed in the office segment (almost 83% of loans granted were granted to buy real estate) and residential (almost 50%). On the other hand, industrial and warehouse properties were mainly used to secure other loans granted by banks (only 1% of such loans were granted to buy real estate).

A relatively large variation in lending in terms of the CRE segments financed by the market, reduces the risk of banks, as they are not exposed to the situation in one segment only. More than half of loans related to commercial real estate granted in 2017 are loans related to office and retail properties. The value of loans granted in each of these segments is less than PLN 6 billion, together they accounted for 54% of credit activity related to CRE (i.e. loans for purchase or secured on CRE) in 2017 (see Figure 2.24). Loans granted to enterprises related to residential real estate were slightly lower (in this category, among others, loans for developers for the construction of apartments are contained).

The factor that increases the risk is the strong geographical concentration of lending in some segments - the majority of financing is related to real estate located in and around Warsaw. This is particularly evident in the case of loans related to office properties (in Warsaw and the surrounding area there are the largest number of offices and they are the most expensive) and - to a slightly smaller extent - commercial housing real estate. In turn, loans related to real estate located outside the Warsaw agglomeration dominate in the segment of loans for warehouse real estate.

**Figure 2.24.** Flow of loans in 2017, by individual types of commercial real estate

Source: NBP calculations based on UKNF data.
**Lending standards in CRE financing**

Banks financing the commercial real estate market have been conducting a prudent lending policy\(^{40}\). The loan ratios analysed did not differ from the levels generally considered safe (see Figure 2.25). The average LTV of new loans was around 60% in 2017 (see Figure 2.22), clearly below the limit of 75% specified by KNF in Recommendation S. Individual banks were relatively homogeneous in this respect. The average (weighted by credit activity) DSCR ratio\(^{41}\) of loans granted was around 150%, which means that the borrowers had a 50% income buffer, which can be considered as a safe level according to commercial sector standards. In the case of the ICR\(^{42}\), the largest differentiation between banks is visible (see Figure 5) - on average it was slightly above 250%, which is clearly more than the 120% safe in the literature. This means that the borrower’s income exceeded more than twice the costs of paying interest, i.e. financing costs.

**Figure 2.25.** Average prudential indicators of new CRE loans

![Figure 2.25. Average prudential indicators of new CRE loans](image)

**Figure 2.26.** Diversification of prudential indicators among banks

![Figure 2.26. Diversification of prudential indicators among banks](image)

\(^{40}\) Such standards are assessed, among others, by the ratios referred to in the recommendation ESRB – LTV, DSCR and ICR (detailed definitions are given in the recommendation said). However, such ratios – although commonly used – does not cover all aspects related to riskiness of lending activity.

\(^{41}\) DSCR is the inverse of DSTI, it shows the investor’s income shock buffer or increase in loan costs. The higher the ratio, the safer the situation; it should exceed 1.2, which means that there is at least 20% buffer at the beginning of a project.

\(^{42}\) ICR is calculated analogously to DSCR but includes is only the interest repayment in the denominator.
The terms of granting loans in Poland do not differ significantly from those applied in other EU countries (see Figure 2.27, Figure 2.28 and Figure 2.29). Compared to other CEE countries, banks in Poland demand lower risk premiums, using lower loan spreads, closer to those observed in developed markets.

**Figure 2.27.** Prudential indicators of new CRE loans in the EU - LTV ratio

![LTV ratio chart](chart1.png)

**Note:** LTV refers to loans for existing real estate.
**Source:** KPMG Property Lending Barometer 2016 – 2018.

**Figure 2.28.** Prudential indicators of new CRE loans in the EU - DSCR ratio

![DSCR ratio chart](chart2.png)

**Source:** KPMG Property Lending Barometer 2016 – 2018.
Conclusions

The available data do not indicate excessive risk for the banking sector resulting from the financing of the commercial real estate market. The exposures of Polish banks to this market are relatively low and there are no symptoms of excessive lending (although the analysis is hampered by the lack of historical data). In particular, banks are lowly involved in financing the purchase or construction of commercial real estate. Stability should also be favoured by the relatively high diversification of loans granted in terms of CRE segments.

Banks’ lending standards do not differ significantly from the generally accepted levels (also compared to other EU countries) and the implemented macro-prudential instruments should positively influence the stability of banks. Poland is one of the two EU countries with LTV limits for CRE loans\(^43\), and increased risk weights relative to the minimum requirements set out in the CRR\(^44\).

The dynamic growth of supply on this market, especially in Warsaw, may have an adverse effect on the stability of the portfolio of commercial real estate loans. As new, better buildings emerge, there may be problems with obtaining tenants or the level of income from older and lower quality properties, which may translate into problems with debt servicing by investors.

\(^{43}\) See: Report on vulnerabilities in the EU commercial real estate sector, ESRB 2018.
\(^{44}\) Since December 2017, the risk weight on commercial real estate has been 100% instead of 50%.
2.3. Market risk

Banks’ exposure to market risk has not changed. The main sources of risk are: mark-to-market debt securities portfolio (mainly government bonds, see Table 2.1), mismatch of the repricing dates of the interest-bearing assets and liabilities, as well as the currency structure mismatch of the balance sheet. However, the scale of banks’ trading activity remains limited — which is indicated by an insignificant share of assets held for trading in banks’ assets and a low value of the capital requirement for the market risk (see Figure 2.30).45

Table 2.1. Balance sheet value of debt securities by issuer and accounting classification (PLN billion)

<table>
<thead>
<tr>
<th></th>
<th>Held for Trading</th>
<th>Fair Value through Profit and Loss</th>
<th>Fair Value through Other Comprehensive Income</th>
<th>Amortized Cost</th>
<th>Total</th>
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<td>0.4</td>
<td>29.5</td>
<td>14.0</td>
<td>43.9</td>
</tr>
<tr>
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<td>0.5</td>
<td>11.4</td>
<td>9.5</td>
<td>22.0</td>
</tr>
<tr>
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<td>0.3</td>
<td>6.0</td>
<td>9.0</td>
<td>15.6</td>
</tr>
<tr>
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<td>0.9</td>
<td>208.1</td>
<td>59.7</td>
<td>281.7</td>
</tr>
<tr>
<td>Municipalities</td>
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<td>0.0</td>
<td>8.9</td>
<td>10.1</td>
<td>19.0</td>
</tr>
<tr>
<td>Total</td>
<td>13.9</td>
<td>2.1</td>
<td>263.9</td>
<td>102.3</td>
<td>382.2</td>
</tr>
</tbody>
</table>

Notes: data as of the end of 2018 for the domestic banking sector with foreign branches excluding BGK.
Source: NBP.

Figure 2.30. Capital requirement for market risk and mark-to-market debt securities share of banks’ assets

Note: domestic banking sector with foreign branches excluding BGK.
Source: NBP.

Banks reduce the risk of an adverse market valuation of the debt securities portfolio stemming from interest rate changes by a relatively short duration of government bonds (below 2 years)46 and the manner of accounting classification. The duration of the government bond portfolio is lowered, among others, by floating-rate bonds. According to the available data, they account for 40% of the

45 The regulatory market risk requirement regards partially to risks unrelated to trading activity, as well as market credit risk valuation adjustment (CVA).
portfolio. Moreover, approximately 27% of the debt securities portfolio is valued at amortized cost and is not marked-to-market. Additionally, financial results and banks’ equity sensitivity to changes in bonds market prices due to variation in interest rates is partially limited through derivative transactions.

**Banks’ substantial exposure to Treasury debt carries also the concentration risk.** The average share of the government bonds in assets of the domestic banking sector amounts to approximately 17%. In five commercial banks – whose assets constitute approximately 30% of the sectors’ assets – the share of such bonds in their assets is even higher and exceeds 20% (see Figure 2.31). Nevertheless, moderate level of public debt and good capital levels in banks allows to assess that the risk of materialization of a feedback loop between the public sector and the banking sector is currently low.

**The excess of assets over the liabilities with relatively short repricing dates (positive interest rate gap) means that banks’ net interest income is sensitive to decrease in interest rates.** Simultaneously, banks have a relatively high share of bank-managed interest rate liabilities, which allows them to set the interest rate margin partly independently of the changes in market interest rates (see Figure 2.33). The room for further decrease of interest rate of liabilities is hindered by the competition for depositors’ funds and remaining very low interest rates of funds on current accounts though.

**Figure 2.31.** Distribution of assets of the domestic banking sector by the share of government bonds in banks’ assets

![Graph of asset distribution by government bonds share](image1)

**Figure 2.32.** The share of government debt securities in assets of the banking systems of EU member states

![Graph of government debt securities as % of banking assets](image2)

Note: domestic banking sector with foreign branches excluding BGK.

Source: NBP.

Note: banking systems of the EU member states, for Poland, including BGK. The point size corresponds with the values of ratios of domestic banking system assets in a country to its GDP. The average EU15 is the average for the member states with accession year before 2004.

Source: NBP estimates based on data from ECB and Eurostat for 2018 Q3.
Cooperative banks are more sensitive to interest rate changes as result of the bigger share of their net interest income in net income from banking activity and the high value of short-term deposits in the associating banks. Higher and more concentrated in short repricing dates positive interest rate gap of the cooperative banks implies that the impact of interest rate changes on their interest margin is faster than in commercial banks.

The risk of losses arising directly from foreign exchange rates fluctuations is insignificant because banks maintain virtually closed foreign exchange position (see Figure 2.34). In the second half of 2018, the share of foreign currency assets and liabilities in the balance sheet of the domestic banking sector diminished after a bank was sold and its portfolio of mortgage loans denominated in foreign currencies was taken over by the banks’ foreign parent company. Open foreign currency balance sheet position, amounting to approximately 1.8% of the domestic banking sector assets, remains to be balanced through derivative transactions (FX swap and CIRS). The reliance on foreign exchange derivative markets involves the risk of roll over and rise in banks’ funding costs in the event of financial market turmoil, as well as the necessity of meeting the margin requirement.

Figure 2.33. Interest rate gap in relation to interest bearing assets
Figure 2.34. Foreign currency position in relation to the domestic banking sector assets

2.4. Funding structure and liquidity risk

The financing structure of the banking sector was stable and did not change substantially in the period under analysis. Deposits of the non-financial sector were still the dominant sources of banks’ funding sources, as liabilities to financial entities, mostly banks, were less dominant (see Figure 2.35). The role of other funding sources, including deposits of the general government in particular, and own issues of debt instruments remained insignificant. Therefore, the risk concerning funding of banks was
mostly associated with the maturity mismatch of assets and liabilities (see Figure 2.36) as well as the need to steadily renew the maturing deposits.

The risk related to the contractual mismatch of assets and liabilities was however limited by the highly stable deposit base arising, among others, from a high share of guaranteed retail funds. In the second half of 2018, the growth of deposits in the non-financial sector, including retail deposits, was rising gradually (see Figure 2.37). However, in a longer-term perspective, maintaining low interest rates on deposits may weaken the propensity of households to deposit money with banks and possibly contribute to increase deposits’ variability, which would be unfavorable in the case of maturity mismatch in the balance sheet. Some depositors may be interested in looking for alternative forms of saving and investments\(^{47}\) (e.g. on the real estate and capital markets). However, so far this phenomenon has not been observed.

Figure 2.35 Structure of the banking sector liabilities

![Figure 2.35](Source: NBP.)

Figure 2.36 Term structure of the banking sector assets and liabilities

![Figure 2.36](Source: NBP.)

\(^{47}\) In the second half of 2018, demand remained high on the residential real estate market (with a high share of own funds, see NBP’s periodical publication “Information on home prices and the situation in the residential and commercial real estate market in Poland”) and on the capital market, among others for savings bonds (the sale of savings bonds in 2018 amounted to approximately 12.7 billion zlotys (increase by 85% in comparison with 2017.), see [https://mf-arch2.mf.gov.pl/ministerstwo-finansow/wiadomosci3/komunikaty/-/asset_publisher/6Wwm/content/wyniki-sprzedazy-obligacji-oszczednosciowych-w-grudniu-2018-roku?redirect=https%3A%2F%2Fmf-arch2.mf.gov.pl%2Fministerstwo-finansow%2Fwiadomosci%2Fkomunikaty%3Fp_id%3D101_INSTANCE_6Wwm%26p_asset_publisher%3D6Wwm%26p_lifecycle%3D0%26p_mode%3Dview%26p_col_id%3Dcolumn-2%26p_col_count%3D1%26p_id%3D101_INSTANCE_6Wwm](https://mf-arch2.mf.gov.pl/ministerstwo-finansow/wiadomosci3/komunikaty/-/asset_publisher/6Wwm/content/wyniki-sprzedazy-obligacji-oszczednosciowych-w-grudniu-2018-roku?redirect=https%3A%2F%2Fmf-arch2.mf.gov.pl%2Fministerstwo-finansow%2Fwiadomosci%2Fkomunikaty%3Fp_id%3D101_INSTANCE_6Wwm%26p_asset_publisher%3D6Wwm%26p_lifecycle%3D0%26p_mode%3Dview%26p_col_id%3Dcolumn-2%26p_col_count%3D1%26p_id%3D101_INSTANCE_6Wwm).
The continuation of changes of the term structure of deposits of the non-financial sector towards an increased share of current deposits\textsuperscript{48} did not have a substantial impact on liquidity risk in the banking sector. The maturity structure of deposits of the non-financial sector was dominated by current deposits and deposits with short terms (up to 3 months), whose share in the total deposits was around 78%. Such a deposit term structure is favorable for banks due to lower funding costs; however, on the other hand, it increases the maturity mismatch of assets and liabilities. Nevertheless, the experience of Polish banks has shown so far that in normal conditions household deposits are characterized with a relatively good stability.

However, banks funded with deposits of the non-financial sector are exposed to the risk of an abrupt outflow of part of the deposits resulting from a bank run which may be brought about by some factors that are directly dependent or independent of the bank. At the end of 2018, two banks were hit by a considerable outflow of deposits. Those banks received a refinancing loans from NPB which, when the situation stabilized and the deposit base had been rebuilt – were entirely repaid in the first quarter of 2019.\textsuperscript{49} The idiosyncratic nature of that shock is evidenced by the fact that the vast majority of deposits withdrawn from the above mentioned banks were transferred to other domestic banks and did not flow outside the banking system (see Box 2.2.).

**Box 2.2. Central bank as a lender of last resort**

One of the main challenges in the operations of banks is liquidity risk management. A special feature of banks is the term structure of their balance sheets, characterized by the fact that the majority of liabilities are usually short-term or payable on demand (deposits, accounts), while assets (loans) are usually long-term and payable according to the maturity date. As the banks base their activity mainly on external sources of financing, they should manage their balance sheet in a way that allows for timely meeting their obligations to depositors and other investors who entrusted their funds to them. This is a basic condition for maintaining trust in banks and, consequently, continuing their operations.

For this reason, this area is subject to far-reaching regulatory and supervisory requirements. One of the requirements introduced after the financial crisis is the so-called LCR (Liquidity Coverage Ratio)

\textsuperscript{48} The category of “current deposits” includes all funds payable on demand, accumulated both on saving and settlement accounts and saving accounts. Part of the shift of funds to current deposits may result from “replacing” short-term deposits with more flexible and higher liquidity savings accounts bearing a similar interest rate, while at the same time offering the possibility to withdraw funds without a loss of interest. These accounts are treated as a substitute for term deposits.

index, defining the minimum requirement of the bank’s resilience to the shock scenario regarding the outflow of funds in a monthly perspective. In the LCR, non-financial sector deposits are - as a rule - treated as a stable source of financing, even if they are of a current nature. Fulfilling the LCR requirement by the bank, however, does not guarantee that the bank is immune to outflow of external funds and liquidity risk in all circumstances. The systemic solution that should limit the tendency of the majority of depositors to withdraw funds from banks - regardless of the circumstances - are public deposit guarantees (up to an amount of EUR 100,000). However, experience shows that no solution can fully protect the bank against mass, accumulated in time, outflow of funds. Not all funds deposited with banks are covered by guarantees, and the behaviour of depositors, even those covered by 100% guarantees, is not always rational. In particularly negative circumstances, characterised by a shock - a systemic one or specific for a given bank - depositors may withdraw funds, resulting in the necessity to make disbursements on a higher scale than would result from the maturity of liabilities. Then, banks - in order to cope with increased payments - are forced to sell assets (in the first place liquid), at prices acceptable by the market, not necessarily beneficial for the bank itself (fire sales), and to borrow funds on the interbank market. In the event of loss of trust, the last source of financing is usually not available to them.

Then, the ultimate source of liquidity can be only the central bank, which acts as the lender of last resort for banks (lender of last resort, LoLR). Nowadays, the LoLR function is also referred to as emergency liquidity assistance (ELA).

The National Bank of Poland performs the LoLR function by granting a refinancing loan. In principle, refinancing loan is provided as extraordinary liquidity support provided to banks only in exceptional circumstances, after exhausting other possible sources of liquidity included in their contingency plans.

The refinancing loan is granted on application of a bank and on the basis of the sovereign decision of the National Bank of Poland, taking into account a number of formal and economic conditions. The refinancing loan is not granted automatically. The bank applying for the loan should be solvent. According to the rules adopted at the NBP, two basic criteria are taken into account when making a decision on granting a refinancing loan:

- assessment of the bank’s ability to repay the loan together with interest on contractual repayment dates, and

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90 In the Polish banking system, the judgement to determine the stable part of deposit base continue to be on a high level (in tests with extreme conditions, it was assumed to be around 70–80%).
90Legal base - Art. 42 para. 4 point 3 (in conjunction with Art. 3. para. 2. point 6a and 6b) of the Act on Narodowy Bank Polski.
assessment of the potential impact of the bank’s crisis situation on the stability of the domestic financial system\textsuperscript{52}.

The purpose of the refinancing loan is to temporarily replenish the bank’s money holdings. Thus, it cannot be a source of long-term financing and substitute for market financing. Therefore, in accordance with the terms adopted by the National Bank of Poland, a refinancing loan may be granted:

- **short-term** - the loan maturity is up to 90 days (in special cases the NBP’s Management Board may agree to its extension);

- **at a higher cost** than standard operations carried out by the central bank - the interest rate on the loan is set at the level of the rate for the Lombard loan + 1 p.p.

The receipt of liquidity support is also conditional upon the provision of adequate collateral for the repayment of the refinancing loan to the NBP. The range of collateral for this loan is wider than for standard operations with the central bank.

The main principles and conditions applied as part of the LoLR function by the NBP are consistent with the guidelines in force in the Eurosystem as defined by the European Central Bank\textsuperscript{53}.

The NBP intervention in the LoLR function is a rare phenomenon and occurs under special conditions. In November 2018, under the influence of the publication of unfavourable information, two banks experienced a significant outflow of deposits and applied to the NBP for refinancing loans. After fulfilling the above-mentioned requirements, i.e. providing adequate collateral and fulfilling the condition of being able to repay, the loans were granted and, after stabilizing the situation and rebuilding the deposit base, fully repaid in the first quarter of 2019.

The actions of the National Bank of Poland as the lender of last resort allowed the banks to regain liquidity and effectively prevented any possible spreading of problems to other banking sector institutions. The influence of the situation that took place in the afore-mentioned banks on the stability of the domestic financial system was effectively limited. Thus, the assumed objective of granting liquidity support was achieved.

The share of funds obtained from financial institutions, mainly from foreign entities has diminished in the banks’ balance sheets. The implementation of the tax on assets has also contributed to intensify the change of the structure of deposits and loans from financial institutions. The amount of funds from the so-called other financial institutions has been systematically increased. At the end of

\textsuperscript{52} According to Art. 3 para. 2 point 6a of the Act on Narodowy Bank Polski, the task of the central bank are actions towards supporting the stability of financial system; therefore, while making decisions on granting or refusing to grant a refinancing loan, the central bank aims at the protection of stability of the entire financial system, not a particular bank.

\textsuperscript{53} Document EBC Agreement on emergency liquidity assistance, published in June 2017.
2018, it reached 55% of deposits and loans from the financial sector (at the end of 2010 – 28%). Thus, the relations of those institutions with the banking sector were strengthened. (see Chapter 4).

The share of funds raised from foreign related financial institutions in liabilities towards foreign financial institutions was falling gradually (see Figure 2.38). On the one hand, such changes may be regarded as unfavorable given the higher rollover risk and costs related with this form of funding. Nevertheless, in the period under analysis, to a larger extent, the drop in the share of inter-group funding resulted from the ownership changes. But as a rule, the hitherto shareholders commit themselves to keep the financing in foreign currencies, which means that the risk of rolling them is not high. The demand for financing in currencies had been systematically declining due to steady amortization of foreign currency loan portfolio.

The funding gap at the level of the entire banking system remained closed, which diminished the banks’ susceptibility to risks arising from the change in the sentiments on the financial markets. Cooperative banks were traditionally characterized with a deeply negative funding gap (see Figure 2.39). The surplus of funds in relation of loans was mainly invested in associating banks and in safe debt instruments (among others, in government bonds and NBP bills).

The liquidity position of the banking sector remained favorable. The average share of liquid assets in the total balance-sheet was high and stable. In the case of the value and share of liquid assets in the

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54 When a bank is sold, the financing obtained from the previous owner will no longer be classified as an inter-group obligation. In the 2nd half of 2018, Getin Noble Banku SA merged with BPI Bank Polskich Inwestycji SA, and BGŻ BNP Paribas SA took over Raiffeisen Bank Polska SA.
balance sheets the differentiation between banks is visible (see Figure 2.40). Nevertheless, the vast majority of banks complied with both the LCR and NSFR standards in excess.

The assets of banks with an LCR above the required minimum accounted for approximately 97% of the banking sector’s assets (see Figure 2.41). The standard was satisfied by all cooperative banks which are obliged to keep the LCR on an individual basis, and both IPS complied with the standard on a consolidated basis. As of the end of 2018, the LCR for the SGB Affiliation of Cooperative Banks and BPS Affiliation of Cooperative Banks markedly exceeded the regulatory minimum. One commercial bank did not comply with the LCR minimum level. It is worth noticing that before experiencing a rapid outflow of deposits, that bank had relatively high short-term liquidity ratios, which implies the crucial importance of the customer trust for the banks’ liquidity position.

**Figure 2.39. Funding gap**

![Funding gap chart](chart1)

**Figure 2.40. Share of domestic government securities and NBP bills in the commercial banks’ assets**

![Asset share chart](chart2)

Despite a maturity mismatch of assets and liabilities, most commercial banks complied with the long term liquidity standard. This was supported by the structure of the standard which assigns high stable funding weights to retail deposits – irrespective of their maturity. The average value of the net stable funding ratio for commercial banks amounted to approximately 123% at the end of December 2018. Four specialist banks, including mortgage banks, had ratios under 100%, which, however, will not imply any excessive liquidity risk. In the case of specialist banks, there occurs the problem of mismatch of NSFR standard itself (structure of weights accepted) to the type of bank activity. In the longer perspective, the risk arising from the maturity mismatch of assets and liabilities should decrease.

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55 Cooperative banks participating in the Institutional Protection Scheme (IPS) are exempted, upon KNF’s consent, from the obligation to comply with the LCR liquidity ratio on an individual basis. The affiliating bank was obliged to meet the required level of the LCR index (and its reporting) based on the consolidated situation of all participants of the IPS, pursuant to Article 8 of the CRR.


together with the increasing value of covered bonds issues. The legal changes introduced in 2016 removed some barriers to growth for this market. Consequently, new mortgage banks were set up under the existing capital groups, and universal banks on a larger scale moved their own housing loans portfolios to these banks. The growth of the housing loan portfolio enabled to increase the volume of covered bonds issued by mortgage banks. In 2017 and 2018 the total covered bonds outstanding significantly increased – respectively by 68% and 30% (they amounted to 16.5 billion PLN and 21.5 billion PLN at the end of the year).

Figure 2.41. Distribution of commercial banks’ assets (left-hand panel) and cooperative banks’ assets with LCR on an individual basis (right-hand panel) in the respective intervals of LCR

Note: data for commercial banks with BGK and associated banks excluded. The assets of cooperative banks which have to comply with LCR on an individual basis had an approximately a 15% share in the total assets of cooperative banks and associating banks.

Source: NBP.

Complying with the MREL requirement will pose a challenge for banks in a several years’ time because of debt instruments issue. The MREL requirement aims at ensuring feasibility of bank’s resolution plans, and thus limiting the contagion risk in the banking sector and the necessity for state intervention. Banks are required to hold ample level of own funds and eligible liabilities, however the requirement does not specify the minimum share of each category. With a view to resolution efficiency, however, it seems advisable that in addition to own funds, banks meet the requirement also with debt instruments classified as eligible liabilities. This would limit the risk of high losses absorbing most of the bank’s own funds, while there are no sufficient convertible or bail-in able liabilities to deploy in an effective resolution.

BFG set a deadline to meet the MREL requirement for 1st January 2023. More information on this can be found here: https://www.bfg.pl/2017/07/21/metodologia-wyznaczania-poziomu-mrel-dla-bankow-komercyjnych
Meeting the requirement by issuing debt will result in an increase in the share of long-term funding sources in the liabilities structure. This will have a positive effect on reduction of the structural liquidity risk. However, an issue of eligible liabilities on an adequate scale may be hampered by, among others, a relatively low extent of development of the domestic market for debt securities, restricted access to international markets, higher funding cost due to greater expectations of investors whose debt could be bailed in.

2.5. Earnings

Earnings and profitability ratios of the banking sector in 2018 were lower than in the preceding year (see Figure 2.42). This development was mostly caused by losses posted by some banks, particularly Idea Bank\(^59\) (without its loss the total earnings of the banking sector would have increased by ca. 9.5%). Institutions with an aggregate share of 7.3% in the sector assets recorded negative earnings (vs. 4.3% in 2017). The losses of a few of those institutions burdened their capitals considerably, which jeopardized the prospects for continuance of their activity.

**Figure 2.42.** Annual earnings in the banking sector

![Graph showing annual earnings in the banking sector from 2010 to 2018.](image)

Note: An empty marker is used to show banks' net earnings adjusted for the estimated impact of one-off large-scale events (in 2018 – inter alia the loss of Idea Bank).

Source: NBP.

**Figure 2.43.** Return on capital in groups of domestic commercial banks by size

![Graph showing return on capital in groups of domestic commercial banks from 2008 to 2018.](image)

Note: Annualized data. “m” stands for ROE median for domestic commercial banks, „4” – of 5 largest banks, „3” – of other banks with assets above median, „2” – of other banks with assets above first quartile, „1” – of other banks.

Source: NBP.

The standing of the individual banks in view of profitability ratios remained strongly diversified, like in the period described in the preceding edition of Report. Among commercial banks the profitability was positively correlated with the institution size (see Figure 2.43). The profit concentration in the biggest entities increased – five biggest commercial banks\(^60\), controlling almost 50% of banking sector assets, reached a 2/3 share in the sector earnings. The analysis of reasons for a higher profitability

\(^{59}\) More information on the financial results of this bank can be found on the website [www.relacje.ideabank.pl](http://www.relacje.ideabank.pl)

\(^{60}\) Without BGK.
of large entities (incl. first of all a better cost efficiency) confirms the existence of economies of scale in the banking activity. An insufficient profitability (if compared to the investors’ expectations) and a possibility of tapping economies of scale led to mergers and takeovers. Some international banking groups left the Polish market (or their presence was considerably limited). These processes increased the concentration and may be expected to continue in the forthcoming years.

**Figure 2.44.** ROA at domestic commercial banks (left-hand panel) and cooperative banks (right-hand panel)

Average returns on cooperative banks’ assets were similar to the median of ratios for commercial banks (see Figure 2.44). In spite of economies of scale, big cooperative banks (as well as associating banks) reached on average worse profitability ratios, which in part was due to a worse quality of assets resulting from excessive loan expansion in the past in the absence of sufficient competence in risk management. A relatively lower profitability was also typical of banks which before 2018 operated in associations but did not join the IPS.

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62 In the 4th quarter of 2018 most activities of Deutsche Bank Polska were bought by Santander Bank Polska, and in the case of Raiffeisen Bank Polska – by BNP Paribas. Loan portfolios which were not covered by those transactions are chiefly housing loans. In turn, in 2019 Eurobank is scheduled to be taken over by Millenium bank, followed by a merger.
63 See UKNF, „Informacja o sytuacji banków spółdzielczych i zrzeszających w trzech kwartałach 2018 r.”, February 2019.
The main reasons for decreased profitability of domestic banking sector capital\(^{64}\) in the 2\(^{nd}\) half of 2018 were: a drop in the non-interest margin and increased burden of taxes and other costs, and the opposite trend was followed by increased net interest margin (see Figure 2.45). Cost and tax increases affected mostly two commercial banks that recognized impairment of investment in associates and decreased their deferred tax assets. Other trends were noticed among cooperative banks where the interest margin diminished, and the profitability was supported, first of all, by a lower burden of charges to loan loss provisions (although their coverage of loans with provisions is smaller than for commercial banks).

The drop in the non-interest margin regarded, first of all, commission and fees. Lower earnings from commissions resulted from the changed settlement procedure for the remuneration due for the distribution of investment funds shares after the introduction of new MIFID law. It was related to the uncertainty regarding the possibility that investment fund companies offer certain incentives, e.g. in the form of a part of charges for fund management. The implementation of PSD2\(^{65}\) directive, which facilitates non-banking entities (incl. those performing cross-border transactions) to offer payments services, may increase the competition on that market, which means further reduction of non-interest margin. It could be expected that banks will try to face that challenge by broadening the product portfolio and its better adaptation to the clients’ needs, which will entail, however, sustaining the R&D costs, fees for suppliers or acquisition of companies from FinTech sector. This may contribute to strengthening the advantage of largest and most profitable entities, should they use part of their profits to cover development expenses.

An increase in the interest margin continued to result, first of all, from changes in the structure of credit portfolio and liabilities. Housing loans in foreign currencies, gradually repaid, were replaced

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\(^{64}\) An analysis of RORC changes does not include BGK and branches of loan institutions operating in Poland.

\(^{65}\) 10 May 2018 act on changing the law on payment services and certain other laws, Dz. U. z 2018 r., poz. 1075.
by newly granted PLN loans with higher margins, incl. consumer loans (see Figure 2.47). On the side of the liabilities, the clients shifted their funds from fixed term deposits (usually, with lower interest rates) to current accounts. The interest rates on deposits and loans did not record significant changes against June 2018.\textsuperscript{66} Due to lack of expectations for increases in market interest rates, further rise in the net interest margin depends upon the banks’ ability of continuing the changes in the balance sheet structure towards loans with higher interest rates and receivables with lower rates of interest.

The banks’ profitability is reduced by extra public burdens, like tax on certain financial institutions or BFG contributions (see Table 2.2), which are not acknowledged as deductibles while settling the \textit{corporate income tax}. In 2018 that burden did not change considerably in comparison to 2017, but in 2019 BFG total contributions to deposit guarantee fund and resolution fund (BFG) will increase by 600 million PLN\textsuperscript{67}. The banks also sustained some costs related to sealing tax system through split payment of VAT and the establishment of Information System of the Settlement Chamber (STIR). An average return on capital for the banks operating in Poland is lower than for non-financial enterprises, among others, due to above-mentioned high public levies.

\textbf{Evaluation of prospects related to an improvement of banks’ profitability is burdened with high uncertainty related to the bills of law under consideration and possible effects of the operating risk materialization.} In the case of banks with large FX housing loan portfolios, a considerable financial challenge may occur in case the bills of law concerning those loans should be passed. Negative effects upon the earnings might be also exerted by possible building up of reserves in relation to court proceedings related to the irregularities in selling loans and other financial instruments.

\textbf{In the long run, the funding costs may be influenced by the expected issuance of bank debt instruments (e.g. in relation to the necessary compliance with MREL), incl. gaining extra Tier I (AT1) and Tier II capital.} Hitherto home issue of Polish banks\textsuperscript{68}, so far scanty, indicate that gaining funds in such a way is usually more expensive than deposit funding, especially in the case of households deposits. In turn, attempts at wining investors on foreign markets, where so far most Polish banks have not been active, may be hampered by the competitive European banks, especially in case of ECB’ eventually tightening its monetary policy.

\textsuperscript{67} The BGF Council set the total contribution to the deposit guarantee fund for 2019 at 791 million zloty (1.240 billion zloty in 2018) and to the resolution fund at 2 billion zloty (960 million zloty in 2018).
\textsuperscript{68} More on the scale of issue of Polish banks in: „Rozwój sektora finansowego w Polsce w 2017 r.“, 2018, NBP, p. 223 and 268-271.
Table 2.2. Selected operating indicators of the banking sector

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<tbody>
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<td>Net interest income</td>
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<td>0.12</td>
<td>0.12</td>
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<tr>
<td>Net earnings</td>
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<td>8.5</td>
<td>7.8</td>
</tr>
<tr>
<td><strong>As % of accounting capital (ROE)</strong></td>
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<td></td>
</tr>
<tr>
<td>Pre-tax earnings</td>
<td>9.8</td>
<td>10.1</td>
<td>10.1</td>
<td>10.2</td>
<td>9.5</td>
</tr>
<tr>
<td>Net earnings</td>
<td>7.2</td>
<td>7.5</td>
<td>7.5</td>
<td>7.6</td>
<td>6.9</td>
</tr>
</tbody>
</table>

Note: annualized data. Ratios based on Tier 1 capital or accounting capital do not cover BGK and branches of credit institutions operating in Poland. „Net charges to credit risk provisions” before 2018 include both charges to impairment provisions and to IBNR provisions.

Source: NBP.
Figure 2.46. Estimated profitability of consumer loans (upper left-hand panel), housing loans (upper right-hand panel), other loans to households (lower left-hand panel) and corporate loans (lower right-hand panel)

Note: annualised data.
The values of the adjusted net interest margin shown in this figure should be regarded only as an approximation of the actual profitability of particular credit products. Identical funding costs (effective interest on funding) were assumed for each credit category. This calculation takes no account of operating costs, the cost of capital to cover the capital requirements, fee and commission income (including income related to cross-selling) and profits earned on foreign currency loans due to the difference between the bid and offer prices of currencies (FX spread).
The “Result of closing open currency position” for housing loans are the estimated net gains/losses on closing an open on-balance FX position (related to granting Swiss franc-denominated housing loans), assuming that rolled-over 3-month CHF/USD and USD/PLN swaps are used.
“The adjusted margin after subtracting the tax” was calculated by subtracting the nominal rate of the tax on certain financial institutions of 0.44% (re-scaled to factor in the term of the tax) from the adjusted net interest margin.
Source: NBP.
Cooperative banking is an important element of the domestic financial system, despite a relatively low share in the banking sector’s assets - 7.3%. This is due to the historically determined role played by cooperative banks in local communities, their significant share in the financing of agriculture (53%), and their relatively high involvement in financing small and medium-sized enterprises (9.1%).

Cooperative banking in Poland is facing the need to make changes to the existing business model. It stems from various challenges related both to the current situation of the sector, i.e.:

- declining profitability in the environment of low interest rates and rising costs of credit risk,
- high operating costs in relation to the scale of operations and achieved results,
- deterioration of the situation of some system participants, in particular associating banks,

as well as structural factors:

- institutional changes, including the creation of institutional protection systems,
- growing competition,
- progressive technological changes.

Indication of the desired changes in the current model of operation of cooperative banks in Poland requires the determination of related opportunities (strengths) and challenges (weaknesses). In particular, it should be specified which elements decide about the potential of cooperative banks and may constitute the foundation for their further functioning. The selection permits that some features previously perceived as strengths may in the future be a burden and require appropriate adaptation policies on the part of banks. The target business model should, therefore, minimize existing weaknesses and also respond to emerging calls for more long-term.

The opportunities (strengths) of the current model of operation of cooperative banks include:

**Good knowledge of the local market, extensive network of branches - relationship banking**

Knowledge of the local market and close, long-term relationships with clients allow a more flexible approach of cooperative banks to meet the clients’ needs. Acting in accordance with the principles of relationship banking is supported by an extensive network of branches, which covers the area of the whole country, and at the same time allows the preservation of "local". Over 1/3 of banking outlets in Poland belong to the cooperative sector, which is still important for many customers who prefer traditional contact with the bank. In the case of smaller cooperative banks, which, due to their size,
operate primarily in communes and small towns, the locality also has a positive impact on the quality of the loan portfolio.

**An established position in the provision of financial services for agriculture and local government units (JST)**

Cooperative banks remain in their regions as important settlement, loan and deposit centres - especially for farmers, small enterprises and local government units. A strong position on the agricultural crediting market results, among others, from the role of cooperative banks in the distribution of ARiMR funds under preferential credits and subsidies to agricultural production and scales of bank guarantees provided by them, necessary for some agency’s assistance programs. Local government units traditionally use the financial services of cooperative banks, constituting a fixed group of clients.

**Traditional business model**

With the exception of some larger banks that have historically engaged in large-scale commercial projects, cooperative banks run a traditional business based on deposit taking and lending to local populations. Thanks to this - while maintaining appropriate standards of credit risk management - the scale of risk to which cooperative banks are exposed in their activities is limited and possible to efficiently identify and manage.

**Liquidity position**

The high share of retail financing in cooperative banks (higher than in the commercial banks sector) is beneficial from the point of view of financing stability. At the same time, the stability of household deposits is conducive to their fragmentation, increasing the subject diversification. A significant share of local government units’ funds is an additional, permanent source of financing for cooperative banks. However, in this context, it should be noted that these funds - due to the fact that they are not guaranteed and because of higher unit volumes - in some circumstances are characterized by higher instability. The increase in deposits in the cooperative sector, which is higher than in the case of loans, generates high overliquidity and a growing negative financing gap. On the one hand, this may indicate that clients’ trust in cooperative banks is maintained, and on the other hand, it is a potential to develop lending.

**Regulatory requirements**

Thanks to the creation of institutional protection systems, cooperative banks, which are their mem-
bers, can benefit from concessions within the scope:

- capital requirements,
- individual liquidity requirements,
- the amount of contributions for BFG funds.

In addition, due to their size, cooperative banks are not tax payers of other financial institutions. This is a simplification in the context of the need to reduce the costs of operations in relation to the results achieved.

Among the challenges (weaknesses) of the current model of operation of cooperative banks, the most important are:

**Credit risk and low quality of the corporate loans portfolio**

The risk of lending activities undertaken by some, especially large cooperative banks, in many cases turned out to be too high in relation to the competencies in the scope of credit risk management. It resulted, among others, from cooperating with new clients, whose situation was not fully recognized, or crediting industries with a potentially high rate of return, at the same time burdened with high risk. The low quality of credit risk management by cooperative banks is reflected in, among others, in improper classification and measurement of credit exposures, often its incorrect identification, insufficient measurement and monitoring of credit risk, dubious valuation of collateral value as well as excessive concentration of credit risk.

This results in the low quality of the loan portfolio (especially for enterprises) in the context of the commercial banks sector, with a high level of sectoral and entity concentration of the portfolio being the result of an improper recognition of capital and personal connections of credit entities. Poor quality of corporate loans is accompanied by a relatively low coverage of impaired loans.

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69 A decrease in the risk weight to the level of 0% (from the preceding level of 50% or 20%) for the exposure towards other scheme participants, failure to deduct from the funds own capital shares already held in other banks belonging to IPS (for calculating own funds on an individual rule), exoneration from cooperative banks from the duty of individual compliance with the standards of short term liquidity – LCR (associating banks have been obliged to LCR reporting basing upon a consolidated situation of all participants of protection system). In the case of cooperative banks belonging to IPS, the aggregate risk weight taken into consideration for calculating contributions for the deposit guarantee fund is reduced by 50%. In turn, in the case of obligatory restructuring fund, the IPS membership enables not only exclusion the liabilities towards other IPS members from the base for calculating contributions but also a reduction of risk ratio, and eventually, all cooperative banks comply with the criteria allowing the application of a lump sum fee for that fund.

70 This tax is imposed upon bank assets exceeding 4 billion PLN. Nowadays, no cooperative bank has such assets.
Profitability and efficiency of operation

Weaker compared to commercial banks, the profitability of cooperative banks results from their low cost efficiency, technological weakness and fragmentation (no scale effect). The following factors affect the continued high costs of operating the cooperative banking sector:

- fragmentation of the sector and limited possibilities of using economies of scale,
- a relatively low degree of computerization,
- a large number of outlets and a high level of employment.

It should be emphasized that an extensive network of branches, being one of the advantages of cooperative banking, contributes to the high costs of their functioning at the same time, thus lowering the efficiency indicators. In the recent period, some changes in the legal environment negatively influenced the profitability of cooperative banks, including regulations limiting trade in agricultural land, provisions of the act on restructuring of debt of entities running an agricultural holding, changes in the scope of the possibility of pursuing claims, or regulations related to the market of renewable energy sources.

Sensitivity to changes in interest rates

The high share of net interest income in net income from banking activity increases the sensitivity of cooperative banks to the interest rate risk (in particular to their decline). Low interest rates have a negative impact on the interest margin of cooperative banks. They reduce the spread between the bank’s margin on credit products and the cost of obtaining deposits, in particular for loans to SMEs and for farmers, often provided at low margins.

Historically, cooperative banks had almost twice the level of net interest margin in comparison to commercial banks, which was the main source of their financial results and allowed to compensate for high operating costs. At present, the difference in the margin between the cooperative and commercial sector is very small. As a result, the business model based mainly on the interest margin in low interest rates environment, dynamic technological changes and strong competition, is becoming more ineffective.

Availability of capital

The capital position of cooperative banks, despite favorable capital adequacy ratios, is relatively weak. Persisting low profitability limits their ability to increase own funds by accumulating profits. The low average return on capital creates significant restrictions for acquiring new shareholders and potential investors. The outflow of shareholders from cooperative banks observed for several years
causes a reduction in the value of the participation fund, and consequently a reduction in its share in the equity capital of the sector. In the absence of a strategy to promote membership in a cooperative bank and the lack of preferential treatment of shareholders, the level of dividend paid out is the only financial stimulus that can attract new investors. However, the dividend rate at cooperative banks has remained low in recent years due to the complex capital position of banks, KNF’s dividend recommendations and limited profit opportunities.

**Insufficient cooperation as part of the association**

Problems with developing common solutions for cooperative banks arise, among others, from the lack of willingness of banks to develop and finance available for all solutions, especially in the field of IT. Lack of a unified approach and a common initiative in the field of IT solutions exposes cooperative banks to additional, high costs associated with the implementation of modern technological solutions at an individual level and affects development delays in this field.

**Increasing competitive pressure**

Pressure from commercial banks and other entities providing financial services (including from the fintech sector and loan companies), is intensifying along with the growing role of electronic distribution channels and the universality of mobile applications and in relation to the implemented regulations (e.g. PSD2 directive). This pressure reduces the chances of maintaining the deposit and credit business models traditionally used by cooperative banks. They will be gradually replaced by new models, which due to the use of innovative technological solutions are characterized by greater efficiency and flexibility.

The source of increasing competitive pressure are also demographic and cultural changes in rural areas and in small towns (including migrations of young people from rural areas, taking on the difference between smaller cities and agglomerations). As a result of these changes, there is a need to redefine the bank’s relationship with clients - also in the context of the following digitization of financial services. Digitization of distribution channels, personalization of customer relations and the resulting need to expand IT systems and automation of operational processes can be a challenge beyond the self-sustaining capacity of most, especially small, cooperative banks.

**The development of information technology and cybersecurity**

Cooperative banks have limited resources for investments related to new technologies and systems in the field of cyber security. High costs of implementing new technological solutions and ensuring the security of services provided via remote access channels put cooperative banks on the need to seek common solutions within associations. Improving the quality of technological infrastructure and adapting the way of providing services to the changing market environment is necessary in order to effectively compete for new, young and more mobile customers. In addition, the lack of adequate
investments in these areas may lead to a gradual loss of market position in a situation of growing
pressure from the use of modern IT solutions of commercial banks.

**Figure 2.47.** Return on assets (left panel) and C/I ratio (right panel) in domestic commercial and co-
operative banks.

![Graph showing Return on assets and C/I ratio for commercial and cooperative banks]

*Source: NBP.*

**Model of the cooperative banking sector in Poland - desired directions of change**

The direction of changes in the operating model of the cooperative banking sector should take into
account the following issues:

- continuation of the use of the current potential and strengths of cooperative banks, i.e. knowledge of local markets and a significant role in providing services for agriculture, small and medium-sized enterprises and local government units;

- avoiding attempts to go beyond existing and well-recognized markets;

- increasing integration and cooperation within associations (joint credit consortia, IT projects, marketing, financial products) as a way to reduce operating costs;

- consolidation in the case of small banks as a way to increase the efficiency and the ability to develop business;

- use of affiliating banks as banks focused on services for cooperative banks (apex) with limited independent commercial activity;

- strengthening the control and assistance functions of IPS for the affiliated banks.
2.6. Banks' capital position

Capital endowment of domestic banks\(^1\) enabled them compliance with the existing Pillar 1 and Pillar 2 capital requirements as well as combined capital buffer requirement. At the end of December 2018, the Pillar 1 and Pillar 2 capital requirements were not satisfied by seven banks, incl. two small commercial banks. Their total share in the sector’s assets did not exceed 1.4%. The combined capital buffer requirement was not met by 24 banks (their aggregate share in the banking sector assets being under 8%), incl. five commercial banks\(^2\) (see Figure 2.48). The deficit of Common Equity Tier 1 capital in those banks totaled approx. 2.8 billion PLN. Taking into consideration the increase of conservation buffer up to its target level of 2.5% from the beginning of 2019, one may estimate that the deficit of Common Equity Tier 1 on the unconsolidated level occurs in 29 banks, incl. five commercial banks, and reaches approx. 3.2 billion PLN.

Excess of capital allowed banks to continue lending growth and constituted a good safeguard against an unexpected increase in credit losses (see Figure 2.48 and Figure 2.49). Excesses of Common Equity Tier 1 capital increased slightly since June 2018, mainly because of structural changes in the sector – transformations of two commercial banks into branches of foreign credit institutions\(^3\) and sale of the organized part of banking activity to a domestic bank – and issue of new capital instruments. An additional factor favoring the increase of excess was a reduction\(^4\) of Pillar 2 capital surcharges, inclusion of a part of interim profits to Common Equity Tier 1 in some commercial banks and optimization of the capital requirement for credit risk related to the housing loan portfolio in the currency in which the borrower receives their income. In turn, the aggregate requirements related to OSII buffer increased in the 3\(^{rd}\) quarter of 2018.\(^5\)

\(^1\) Unless otherwise stated, the analysis includes data from unconsolidated statements of commercial banks with their foreign branches and cooperative banks (foreign branches’ assets account for approx. 0.3% of the banking sector’s assets and slightly below 1% of the three banks that have foreign branches). The analysis excludes branches of foreign credit institutions (their total share in the sector’s assets is below 2.5%) and BGK, as it is not subject to the CRDIV/CRR regulatory package to the same extent as other banks.

\(^2\) The consequences of non-compliance with the capital requirements and combined buffer requirement are specified in Box 4 in “Financial Stability Report. June 2017”, NBP, p. 122.

\(^3\) In October 2018, Raiffeisen Bank International AG sold the majority of its activities operated in Poland in a form of a bank - Raiffeisen Bank Polska S.A. – and the remaining part were transformed into a branch of a foreign credit institution. The buyer of a part of the divided bank was Bank BGŻ BNP Paribas. In September 2018, Volkswagen Bank Polska S.A. was also transformed into a branch of a foreign credit institution. Upon such a transformation, the regulator capital and exposures of those institutions ceased to be a part of the Polish sector.

\(^4\) The values of add’ons to the total capital ratio (in p.p.) were reduced in the banks where foreign currency housing loan portfolio is covered by the standardized approach for determining capital requirement for credit risk. This change resulted from the adaptation to regulatory increase of risk weight for the exposure related to that portfolio, introduced in December 20017.

The total risk exposure amount declined, which resulted mainly from the structural changes in the sector, and to a lesser extent, from the optimization of capital requirements (see Figure 2.54). In the group of commercial banks, changes in distributions of the exposures by exposure classes (within standardised approach) focused around the housing loans portfolio denominated in the currency in which the borrower receives their income (see Figure 2.51 and see Figure 2.52). Some banks continued reclassification of part of exposures related to residential real estate that are fully secured by immovable property from the retail exposure class (the risk weight of 75%) to the class of exposures secured by mortgages on by immovable property (the risk weight of 35%). In the group of cooperative banks there was a rise in the share of exposures with a 0% risk weight. It mainly resulted from further process of integration of the sector under the existing Institutional Protection Schemes (IPS) and the fact that new IPS members were gradually obtaining KNF’s approval for the use of the preferential risk weight for reciprocal exposure of the members within an IPS.
For regulatory purposes, the capital position of banks should be also examined on the prudentially consolidated basis. A relatively small scale of activity of entities from outside of the banking sector under prudential consolidation and a relatively low value of intragroup transactions causes the situation on this basis is close to the situation on the unconsolidated basis. However, it seems that in the case of a few capital group the activity of entities outside of banking sector (e.g. leasing companies whose assets are a considerable source of credit risk exposure) is significant enough to exert an adverse effect upon excesses of capital. Especially, one capital group in which the consolidating bank satisfies all capital requirements on the individual level does not comply with the combined buffer requirement on prudentially consolidated level. In addition, the aggregated value of excess of Common Equity Tier 1, after satisfying the combined buffer requirement, is in the case of prudentially consolidated sector by 9.7 billion PLN smaller than in the case of the unconsolidated sector (see Figure 2.49), and the sum of deficits of Common Equity Tier 1 is higher by 0.1 billion PLN.

Note: dashed line presents the data for the prudentially consolidated banking sector. The graph includes only banks or capital groups with excess of Common Equity Tier 1. The total deficit of Common Equity Tier 1 as of the end of December 2018, on unconsolidated basis, amounted to approx. 2.8 billion PLN, and on the prudentially consolidated basis – around 2.9 billion PLN.

Source: NBP.
Figure 2.50. Capital requirements

Notes: since 2014 the capital requirement for market risk covers the requirement for the following risks: position in debt instruments, position in equities, foreign exchange, CVA, specific risk in securitization, specific risk in the correlation trading portfolio; the requirement for counterparty credit risk before 2014 cannot be isolated from the credit risk requirement; the equivalent of the Pillar 2 capital requirement corresponds to surcharges for banks significantly involved in household loans in foreign currencies to unhedged households, this equivalent does not constitute part of total exposure amount, it only increases TCR.

Source: NBP.

Figure 2.51. Average credit risk weights for exposures to the non-financial sector

Notes: the calculations of average risk weights take into account the impact of SME supporting factor

Source: NBP.

The level of own funds in the banking sector at the end of December 2018 decreased compared to the mid-year level, which was chiefly the consequence of the situation of two commercial banks and structural changes at the end of the year (see Figure 2.53 and Figure 2.54). The source of increase in the own funds were mainly: issue of shares and debt instruments included in capital Tier 2 or subordinated loans qualified as Tier 2 capital, earned profits and increase of Common Equity Tier 1 capital connected with valuation of financial assets (through accumulated other comprehensive incomes), and to a lightly lesser extent – an increase in the temporary adjustment in the Common Equity Tier 1 in commercial banks making use of transitional arrangements for mitigating the impact of the introduction of a new accounting standard IFRS 9.79 In the opposite direction acted redemption of shares of the

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79 Capital adjustments allow for mitigation of the impact of the introduction of IFRS 9 accounting standard on own funds. These adjustments should decrease gradually in the predetermined proportion until 2022. (see Regulation (EU) 2017/2395 of the Parliament and of the Council of 12 December 2017 amending Regulation (EU) No 575/2013 as regards transitional arrangements for mitigating the impact of the introduction of IFRS 9 on own funds and for the large exposures treatment of certain public sector exposures denominated in the...
banks converted to branches\textsuperscript{86}, elimination of part of own funds components because of impending maturities of bonds and subordinated loans in Tier 2 capital and losses recorded by some banks (see Chapter 2.5).

**Figure 2.52.** Distribution of credit exposures by credit risk weight in the group of domestic commercial banks (left-hand panel) and cooperative banks (right-hand panel)

Note: Values of exposures after risk mitigation techniques and credit conversion factors were used; before risk weighting and the use of the SME supporting factor. The figure does not include exposures assigned by banks in supervisory reporting to “other risk weights” category of exposures under standardized approach. The value of these exposures at the end of December 2018 was around 1 billion zlotys and their share in the sum of exposures did not exceed 1%.

Source: NBP.

The level of leverage ratio of domestic banks did not change significantly (see Figure 2.55). Its slight drop in the commercial banks mainly resulted from the conversion of a medium size bank to a branch of a foreign credit institution (its capital is no longer included in the leverage ratio) accompanied by the sale of a part of its assets (incl. treasury bonds) to a domestic commercial bank (the acquired assets increase the ratio denominator).

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\textit{domestic currency of any Member State}. At the end of 2018 value of this add-back at commercial banks totaled 5.6 billion PLN and was present in the regulatory capital of 20 banks.

\textsuperscript{86} Bank BGŻ BNP Paribas performed quite a large issue of new shares connected with the transaction of acquisition of the organized part of banking activity from an institution which withdrew from activity in Poland (Raiffeisen Bank Polska SA). Most shares from this issue was acquired by Raiffeisen Bank International AG which sold his bank in Poland (in November 2018, those shares were sold to BNP Paribas SA, BNP Paribas Fortis SA/NV and EBRD). This issue of shares did not contribute to raising the own funds in the sector because of earlier redemption of shares of bank being transformed into branch.
Banks may find it challenging to continue to increase capital in the forthcoming years. Increased capital is indispensable for expanding business and can also be used to meet MREL. Retained earnings will probably remain the main source of increase in own funds but, due to lower profitability in recent years, they may be insufficient. This is particularly true in the case of banks whose profitability is under average. The possibility of raising capital externally may be hindered by the fact that profitability is below the estimated implied cost of capital (see Figure 2.56), and in the case of issuance of instruments classified as additional Tier 1 (AT1) and Tier 2 capital – statutory restrictions, insufficiently developed domestic market of debt instruments and difficulties of smaller banks in competing for an investor on global markets. In the case of cooperative banks the factor limiting the possible increase in the Common Equity Tier 1, apart from a low profitability, is often the lack of real incentives for the shareholders to increase their financial engagement in the operation of a cooperative bank.

81A restriction to the issuance of instruments classified as additional Tier 1 capital (AT1) is the lack of solutions in the Polish law on bonds which would allow to cancel individual obligation resulting from an issued instrument, without causing issuer’s default. neither there is a possibility of a contractual conversion of an issued instrument to shares and a possibility of lowering the nominal value of that instrument [write-off]. A common limitation for the foreign issues of bonds classified as Tier 2 capital and additional Tier 1 capital are still unfavorable tax regulations pertinent to withholding tax.
Banking sector

**Figure 2.55.** Leverage ratio at commercial banks (left-hand panel) and cooperative banks (right-hand panel)

![Graph showing leverage ratio over time for commercial and cooperative banks.]

Note: The leverage ratio prior 2014 is based on estimates.
Source: NBP.

**Figure 2.56.** Cost of capital compared to return on equity

![Graph showing cost of capital and return on equity over time for selected banks.]

Notes: Banks listed on the GPW which at the same time form part of the WIG-banks index were considered. The assets of selected banks at the end of December 2018 accounted for approx. 75% of the banking sector under analysis. Return on Regulatory Capital (RORC) based on Tier 1 capital and ROE after eliminating one-off events. Values of the indices shown in this figure are weighted average values.
Source: NBP calculations based on Bloomberg data.

### 2.7. Market assessment of Polish banks

The **market valuation of Polish banks is higher than that of European banks in general.** The share prices of Polish banks – to a larger extent – were subject to changes according to the trends on global stock exchanges; after some short-term fluctuations in the end of 2018, their values returned to the levels as of the end of September 2018 (see Figure 2.57). The ‘price-to-book ratio’ stabilized at a level close to 1.3 albeit it continued to be under the long-term average (see Figure 2.58). More than twice those high values of that ratio for the domestic banks, if compared to the average ratio for European banks, imply that the potential of Polish banks for generating profits is still greater.
The good economic situation in Poland and global factors had a significant impact on maintaining the positive valuation of banks. However, market analysts raised their concerns that banks’ earnings may worsen due to the perseverance of low interest rates and the consequences of economic slowdown in the countries which are Poland’s main trade partners. The deterioration in share valuation of some banks was affected by the uncertainty about possible legislative solutions regarding the restructuring of loans in foreign currencies.

Figure 2.57. Prices of WIG-banki and EURO STOXX Banks indices (left-hand panel) and of shares of Polish banks (right-hand panel)

Notes: Prices of indices and bank shares re-scaled to 100 at the start of the financial crisis of 15 September 2008. 
*Source: NBP calculations based on Thomson Reuters.*

Figure 2.58. The price-to-book ratio for WIG-banki and EURO STOXX Banks indices (left-hand panel) and Polish banks (right-hand panel)

Notes: Average value calculated out of indices’ values from 2008-2019. 
*Source: NBP calculations based on Thomson Reuters and Bloomberg.*
The rating agencies confirmed the good situation of the Polish banking sector and maintained the ratings of the majority of assessed banks (see Table 2.3). Confirming Poland’s rating, Fitch agency indicated a positive support for that evaluation from a stable banking system. Good assessment of individual banks resulted, among others, from banks’ high liquidity, cheap deposit funding from the non-financial sector and good asset quality. In the agency’s opinion, high level of capital and improving banks’ profitability will allow neutralizing negative results arising from a possible increase in the costs of restructuring loans in a foreign currency.

Table 2.3. Ratings of Polish banks assessed in the period from 1 October 2018 to 31 March 2019

<table>
<thead>
<tr>
<th>Moody’s</th>
<th>Baseline credit assessment</th>
<th>Long-term deposit rating</th>
<th>Short-term deposit rating</th>
<th>Outlook</th>
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</thead>
<tbody>
<tr>
<td>Bank Millennium¹</td>
<td>ba1 (ba2)</td>
<td>Baa2 (Baa3)</td>
<td>P-2 (P-3)</td>
<td>POZ (POZ)</td>
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<tr>
<td>Getin Noble Bank²</td>
<td>caa1 (b2)</td>
<td>B2 (Ba3)</td>
<td>NP (NP)</td>
<td>NEG (NEG)</td>
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</table>

<table>
<thead>
<tr>
<th>Fitch</th>
<th>Viability rating</th>
<th>Long-term rating</th>
<th>Short-term rating</th>
<th>Outlook</th>
</tr>
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<tbody>
<tr>
<td>Bank Pekao³</td>
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<td>BBB+ (A-)</td>
<td>F2 (F2)</td>
<td>STA (NEG)</td>
</tr>
<tr>
<td>Santander Bank Polska</td>
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<td>BBB+ (BBB+)</td>
<td>F2 (F2)</td>
<td>STA (STA)</td>
</tr>
<tr>
<td>mBank</td>
<td>bbb- (bbb-)</td>
<td>BBB (BBB)</td>
<td>F2 (F2)</td>
<td>STA (STA)</td>
</tr>
<tr>
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<td>A (A)</td>
<td>F1 (F1)</td>
<td>STA (STA)</td>
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<tr>
<td>Bank Millennium</td>
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<td>BBB- (BBB-)</td>
<td>F3 (F3)</td>
<td>STA (STA)</td>
</tr>
<tr>
<td>Getin Noble Bank²</td>
<td>b- (b+)</td>
<td>B- (B+)</td>
<td>B (B)</td>
<td>STA (STA)</td>
</tr>
<tr>
<td>Alior Bank⁴</td>
<td>bb (bb)</td>
<td>BB (BB)</td>
<td>B (B)</td>
<td>STA (POZ)</td>
</tr>
<tr>
<td>Bank Handlowy</td>
<td>a- (a-)</td>
<td>A- (A-)</td>
<td>F1 (F1)</td>
<td>STA (STA)</td>
</tr>
<tr>
<td>BOŚ⁵</td>
<td>bb- (b+)</td>
<td>BB- (B+)</td>
<td>B (B)</td>
<td>STA (STA)</td>
</tr>
<tr>
<td>mBank Hipoteczny</td>
<td>brak (brak)</td>
<td>BBB (BBB)</td>
<td>F2 (F2)</td>
<td>STA (STA)</td>
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<tr>
<td>Pekao Bank Hipoteczny⁶</td>
<td>brak (brak)</td>
<td>BBB+ (A-)</td>
<td>F2 (F2)</td>
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<tr>
<td>Bank Pekao</td>
<td>bbb (bbb)</td>
<td>BBB+ (BBB+)</td>
<td>A-2 (A-2)</td>
<td>STA (STA)</td>
</tr>
</tbody>
</table>

1. Bank Millennium: raising of the rating for the majority investor – a Portuguese bank BCP
2. Getin Noble Bank: considerable deterioration of profitability and periodic failure to comply with capital standards
3. Bank Pekao: capital ratio reduced to the average levels for a bank’s comparative group
4. Alior Bank: increased risk appetite and impaired loan ratios up to the levels higher than the average for a bank’s comparative group
5. BOŚ: considerable improvement of the capital position and profitability
6. Pekao Bank Hipoteczny: downgrade of Bank Pekao’s rating

Note: in the brackets entered are the data as of the end of September 2018. Definition of ratings – in the glossary.


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¹ Fitch announcement from March 29, 2019, “Fitch Affirms Poland at A-; Outlook Stable” [https://www.fitchratings.com/site/pr/10063923].
2.8. Selected ratios to describe the situation of the banking sector (domestic commercial banks and cooperative banks)

Table 2.4. Banking sector

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Return on assets (ROA)</td>
<td>0.79</td>
<td>0.81</td>
<td>0.82</td>
<td>0.82</td>
<td>0.73</td>
</tr>
<tr>
<td>Return on Tier 1 capital (RORC)</td>
<td>8.2</td>
<td>8.5</td>
<td>8.4</td>
<td>8.5</td>
<td>7.8</td>
</tr>
<tr>
<td>Return on accounting capital (ROE)</td>
<td>7.2</td>
<td>7.5</td>
<td>7.5</td>
<td>7.6</td>
<td>6.9</td>
</tr>
<tr>
<td>Net interest margin (NIM)</td>
<td>2.44</td>
<td>2.47</td>
<td>2.49</td>
<td>2.50</td>
<td>2.51</td>
</tr>
<tr>
<td>Operating costs to net income from banking activity (CTI)</td>
<td>57.9</td>
<td>58.0</td>
<td>57.7</td>
<td>57.9</td>
<td>58.8</td>
</tr>
<tr>
<td>Net charges to credit risk provisions to net income from banking activity</td>
<td>13.5</td>
<td>13.3</td>
<td>13.7</td>
<td>13.4</td>
<td>14.3</td>
</tr>
</tbody>
</table>

Return growth rates (y/y)
- Nonfinancial sector: 6.0, 5.9, 5.3, 5.7, 5.8
- Households: 5.1, 5.2, 5.1, 5.2, 5.5
- Consumer loans: 7.4, 7.9, 9.5, 9.3, 9.1
- Housing loans: 3.4, 3.6, 3.9, 4.2, 4.9
- Enterprises: 8.0, 7.4, 5.6, 6.7, 6.5

Impaired loan ratios
- Nonfinancial sector: 6.8, 7.7, 7.1, 7.0, 6.9
- Households: 6.1, 6.6, 6.1, 6.0, 5.9
- Consumer loans: 11.1, 12.0, 11.1, 11.0, 10.8
- Housing loans: 2.8, 2.9, 2.6, 2.5, 2.5
- Enterprises: 8.3, 9.6, 9.0, 9.0, 8.7

Net charges to credit risk provisions to net value of loans
- Nonfinancial sector: 0.84, 0.85, 0.89, 0.87, 0.88
- Households: 0.82, 0.84, 0.87, 0.86, 0.98
- Consumer loans: 1.94, 2.07, 2.13, 2.17, 2.38
- Housing loans: 0.25, 0.22, 0.21, 0.17, 0.14
- Enterprises: 0.88, 0.87, 0.92, 0.89, 0.71

Funding gap
- 0.3, 1.7, 2.4, 3.2, 1.5

Total capital ratio
- 18.0, 18.1, 18.1, 18.4, 18.3

Tier 1 capital ratio
- 16.2, 16.1, 16.1, 16.4, 16.3

Core Equity Tier 1 capital ratio
- 16.2, 16.1, 16.1, 16.4, 16.3

Financial leverage
- 10.0, 9.8, 9.8, 9.7, 10.2

Note: ROA, RORC, NIM, CTI and the result of provisions for expected net credit losses/net income from banking activity – annualized data. Capital-related ratios and returns on capitals calculated for home commercial banks, without BGK. Growth rate of loans granted after elimination of effects from changes of foreign currency exchange rates.

Source: NBP.
Table 2.5. Domestic commercial banks

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Return on assets (ROA)</td>
<td>0.81</td>
<td>0.84</td>
<td>0.85</td>
<td>0.85</td>
<td>0.76</td>
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<tr>
<td>Return on Tier 1 capital (RORC)</td>
<td>8.4</td>
<td>8.7</td>
<td>8.7</td>
<td>8.7</td>
<td>7.9</td>
</tr>
<tr>
<td>Return on accounting capital (ROE)</td>
<td>7.4</td>
<td>7.7</td>
<td>7.7</td>
<td>7.8</td>
<td>7.0</td>
</tr>
<tr>
<td>Net interest margin (NIM)</td>
<td>2.45</td>
<td>2.48</td>
<td>2.50</td>
<td>2.52</td>
<td>2.54</td>
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<tr>
<td>The share of net interest income in net income from banking activity</td>
<td>68.4</td>
<td>69.2</td>
<td>69.4</td>
<td>69.8</td>
<td>71.4</td>
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<tr>
<td>The share of net noninterest income in net income from banking activity</td>
<td>31.6</td>
<td>30.8</td>
<td>30.6</td>
<td>30.2</td>
<td>28.6</td>
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<tr>
<td>Operating costs to net income from banking activity (CTI)</td>
<td>54.5</td>
<td>54.5</td>
<td>54.0</td>
<td>54.0</td>
<td>54.8</td>
</tr>
<tr>
<td>Net charges to credit risk provisions to net income from banking activity</td>
<td>13.6</td>
<td>13.4</td>
<td>13.7</td>
<td>13.4</td>
<td>14.3</td>
</tr>
<tr>
<td>Loan growth rates (y/y)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- nonfinancial sector</td>
<td>6.2</td>
<td>6.1</td>
<td>5.4</td>
<td>5.8</td>
<td>6.1</td>
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<tr>
<td>- households</td>
<td>5.1</td>
<td>5.3</td>
<td>5.2</td>
<td>5.3</td>
<td>5.7</td>
</tr>
<tr>
<td>- consumer loans</td>
<td>8.0</td>
<td>8.4</td>
<td>9.5</td>
<td>9.4</td>
<td>9.2</td>
</tr>
<tr>
<td>- housing loans</td>
<td>3.1</td>
<td>3.4</td>
<td>3.6</td>
<td>4.0</td>
<td>4.7</td>
</tr>
<tr>
<td>- enterprises</td>
<td>8.6</td>
<td>8.0</td>
<td>5.8</td>
<td>7.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Impaired loan ratios</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- nonfinancial sector</td>
<td>6.9</td>
<td>7.8</td>
<td>7.1</td>
<td>7.1</td>
<td>6.9</td>
</tr>
<tr>
<td>- households</td>
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<td>6.7</td>
<td>6.2</td>
<td>6.1</td>
<td>6.0</td>
</tr>
<tr>
<td>- consumer loans</td>
<td>11.3</td>
<td>12.2</td>
<td>11.4</td>
<td>11.2</td>
<td>11.1</td>
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<tr>
<td>- housing loans</td>
<td>2.8</td>
<td>2.9</td>
<td>2.7</td>
<td>2.5</td>
<td>2.5</td>
</tr>
<tr>
<td>- enterprises</td>
<td>8.2</td>
<td>9.9</td>
<td>9.0</td>
<td>9.0</td>
<td>8.6</td>
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<tr>
<td>Net charges to credit risk provisions to net value of loans</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>- nonfinancial sector</td>
<td>0.84</td>
<td>0.85</td>
<td>0.88</td>
<td>0.86</td>
<td>0.88</td>
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<tr>
<td>- households</td>
<td>0.84</td>
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<td>2.18</td>
<td>2.22</td>
<td>2.43</td>
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<td>- housing loans</td>
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<td>0.21</td>
<td>0.17</td>
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<td>- enterprises</td>
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<td>0.84</td>
<td>0.90</td>
<td>0.86</td>
<td>0.69</td>
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<td>Funding gap</td>
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<td>4.4</td>
<td>5.1</td>
<td>5.7</td>
<td>2.9</td>
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<tr>
<td>Total capital ratio</td>
<td>18.1</td>
<td>18.1</td>
<td>18.1</td>
<td>18.5</td>
<td>18.4</td>
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<tr>
<td>Tier 1 capital ratio</td>
<td>16.2</td>
<td>16.1</td>
<td>16.0</td>
<td>16.4</td>
<td>16.3</td>
</tr>
<tr>
<td>Core Equity Tier 1 capital ratio</td>
<td>16.2</td>
<td>16.1</td>
<td>16.0</td>
<td>16.4</td>
<td>16.3</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>9.8</td>
<td>9.7</td>
<td>9.7</td>
<td>9.6</td>
<td>10.1</td>
</tr>
</tbody>
</table>

Note: ROA, RORC, NIM, CTI and the result of provisions for expected net credit losses/ net income from banking activity – annualized data. Capital-related ratios and returns on capitals calculated for home commercial banks, without BGK. Growth rate of loans granted after elimination of effects from changes of foreign currency exchange rates.

Source: NBP.
Table 2.6. Cooperative banks

<table>
<thead>
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<th></th>
</tr>
</thead>
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<tr>
<td>Return on assets (ROA)</td>
<td>0.51</td>
<td>0.47</td>
<td>0.44</td>
<td>0.42</td>
<td>0.47</td>
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<td>Return on Tier 1 capital (RORC)</td>
<td>5.9</td>
<td>5.5</td>
<td>5.1</td>
<td>5.0</td>
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<tr>
<td>Return on accounting capital (ROA)</td>
<td>5.2</td>
<td>4.9</td>
<td>4.6</td>
<td>4.6</td>
<td>5.1</td>
</tr>
<tr>
<td>Net interest margin (NIM)</td>
<td>2.88</td>
<td>2.88</td>
<td>2.87</td>
<td>2.86</td>
<td>2.80</td>
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<td>The share of net interest income in net income from banking activity</td>
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<td>76.9</td>
<td>77.3</td>
<td>77.6</td>
<td>77.4</td>
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<tr>
<td>The share of net noninterest income in net income from banking activity</td>
<td>23.3</td>
<td>23.1</td>
<td>22.7</td>
<td>22.4</td>
<td>22.6</td>
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<tr>
<td>Operating costs to net income from banking activity (CTI)</td>
<td>68.3</td>
<td>68.3</td>
<td>68.7</td>
<td>69.0</td>
<td>69.8</td>
</tr>
<tr>
<td>Net charges to credit risk provisions to net income from banking activity</td>
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<td>15.4</td>
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<td>13.3</td>
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<td>Loan growth rates (y/y)</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>- nonfinancial sector</td>
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<td>3.8</td>
<td>3.5</td>
<td>2.9</td>
<td>2.3</td>
</tr>
<tr>
<td>- households</td>
<td>5.3</td>
<td>3.9</td>
<td>3.5</td>
<td>3.3</td>
<td>3.0</td>
</tr>
<tr>
<td>- consumer loans</td>
<td>3.1</td>
<td>0.9</td>
<td>1.8</td>
<td>1.5</td>
<td>1.9</td>
</tr>
<tr>
<td>- housing loans</td>
<td>16.3</td>
<td>16.8</td>
<td>15.4</td>
<td>14.6</td>
<td>14.2</td>
</tr>
<tr>
<td>- enterprises</td>
<td>0.6</td>
<td>3.5</td>
<td>3.5</td>
<td>1.9</td>
<td>0.4</td>
</tr>
<tr>
<td>Impaired loan ratios</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- nonfinancial sector</td>
<td>8.5</td>
<td>8.6</td>
<td>8.8</td>
<td>8.8</td>
<td>9.0</td>
</tr>
<tr>
<td>- households</td>
<td>4.9</td>
<td>5.0</td>
<td>5.1</td>
<td>5.2</td>
<td>5.3</td>
</tr>
<tr>
<td>- consumer loans</td>
<td>5.7</td>
<td>6.0</td>
<td>5.9</td>
<td>6.0</td>
<td>6.0</td>
</tr>
<tr>
<td>- housing loans</td>
<td>1.7</td>
<td>1.7</td>
<td>1.8</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>- enterprises</td>
<td>17.2</td>
<td>16.9</td>
<td>17.3</td>
<td>17.5</td>
<td>18.0</td>
</tr>
<tr>
<td>Net charges to credit risk provisions to net value of loans</td>
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<td>- nonfinancial sector</td>
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<td>1.14</td>
<td>1.18</td>
<td>1.19</td>
<td>1.00</td>
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<td>- households</td>
<td>0.57</td>
<td>0.63</td>
<td>0.70</td>
<td>0.70</td>
<td>0.61</td>
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<tr>
<td>- consumer loans</td>
<td>0.93</td>
<td>0.99</td>
<td>1.01</td>
<td>0.98</td>
<td>0.77</td>
</tr>
<tr>
<td>- housing loans</td>
<td>0.16</td>
<td>0.16</td>
<td>0.17</td>
<td>0.18</td>
<td>0.13</td>
</tr>
<tr>
<td>- enterprises</td>
<td>2.26</td>
<td>2.36</td>
<td>2.36</td>
<td>2.37</td>
<td>1.96</td>
</tr>
<tr>
<td>Funding gap</td>
<td>-62.1</td>
<td>-55.9</td>
<td>-54.3</td>
<td>-53.3</td>
<td>-57.8</td>
</tr>
<tr>
<td>Total capital ratio</td>
<td>17.1</td>
<td>17.1</td>
<td>17.8</td>
<td>17.6</td>
<td>17.7</td>
</tr>
<tr>
<td>Tier 1 capital ratio</td>
<td>16.2</td>
<td>16.1</td>
<td>16.9</td>
<td>16.7</td>
<td>16.8</td>
</tr>
<tr>
<td>Core Equity Tier 1 capital ratio</td>
<td>16.1</td>
<td>16.1</td>
<td>16.8</td>
<td>16.7</td>
<td>16.8</td>
</tr>
<tr>
<td>Financial leverage</td>
<td>12.0</td>
<td>12.0</td>
<td>11.5</td>
<td>11.6</td>
<td>12.0</td>
</tr>
</tbody>
</table>

Note: ROA, RORC, NIM, CTI and the result of provisions for expected net credit losses/net income from banking activity – annualized data. Growth rate of loans granted after elimination of effects from changes of foreign currency exchange rates.

Source: NBP.

Financial Stability Report
3. Credit union sector

3.1.1. Profile of the credit union sector

The credit union situation did not have a significant (direct) impact on domestic financial stability as the scale of sector's activity is insignificant and has further decreased. At the end of 2018, the value of assets of credit unions amounted to 9.6 billion zlotys (which accounted for approx. 0.5% of assets of the banking sector) and in the second half of the year it diminished by less than 3%. The fall of the sector’s balance-sheet total mainly resulted from the termination of the activity of one of the credit unions, while assets of credit unions which carried on their operations dropped by 0.7% (see Figure 3.1). Credit unions still did not record liabilities to banks on their balance sheets, while the value of their deposits in the banking sector shrank to approx. 2% of credit unions’ assets.

**Figure 3.1.** Assets of credit unions sector (PLN bn)

![Graph showing assets of credit unions sector](image)

Source: UKNF.

As the number of active credit unions decreased, the sector’s concentration rate increased. At the end of 2018, there were 30 active credit unions – the number of credit unions dropped by two, which led to a rise of the level of concentration in the sector. The growth in the sector’s concentration contributes to an increase in the influence of the materialisation of risk of the largest credit unions on the position

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83 The analysis of the situation of the credit union sector was based on reporting data provided from the KNF and its quarterly release of *Informacje o sytuacji spółdzielczych kas oszczędnościowo-kredytowych*. The reporting data do not fully take account of all the reservations reported by the KNF under its supervision mandate. The differences between data presented in the previous editions of the Report result from the adjustments gradually implemented by specific credit unions and from the change in the number of credit unions in the group under analysis. Moreover, due to the entry into force of 1 January 2018 of the new reporting rules for the sector of credit unions, data for 2017 and 2018 are not fully comparable.

84 Upon the KNF decision, as of 1 November 2018 SKOK Piast was taken over by Bank Millennium.

85 For the purposes of the report, the group of credit unions that continued to operate, i.e. credit unions that carried on operation at the end of 2018, was separated to eliminate the statistical impact of the credit unions that discontinued operations (i.e. credit unions taken over by banks or credit unions which were suspended).

86 In addition to SKOK Piast, SKOK Belchatów also discontinued operation, and upon KNF’s consent was acquired by SKOK Wisła as of 1 October 2018.
of the remaining entities of the sector. Half of the active credit unions had assets below 50 million zlotys and their share in the sector’s assets amounted to merely 3.4%. On the other hand, the share of assets of the two largest credit unions was more than 80% (see Table 3.1).

Table 3.1. The credit union sector by groups according to asset value (end of December 2018)

<table>
<thead>
<tr>
<th>Credit union sector, therein:</th>
<th>Number of credit unions in the group</th>
<th>Assets (PLN mn)</th>
<th>Share in sector’s assets</th>
<th>Net income (PLN mn)</th>
<th>Regulatory capital (PLN mn)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>credit unions with assets of up to PLN 50 mn</td>
<td>15</td>
<td>327.60</td>
<td>3.41%</td>
<td>0.91</td>
<td>28.55</td>
</tr>
<tr>
<td>incl. small credit unions (assets below PLN 20 mn)</td>
<td>8</td>
<td>83.38</td>
<td>0.87%</td>
<td>0.30</td>
<td>6.38</td>
</tr>
<tr>
<td>credit unions with assets from at least PLN 50 mn to PLN 200 mn</td>
<td>11</td>
<td>1 039.83</td>
<td>10.82%</td>
<td>4.91</td>
<td>81.21</td>
</tr>
<tr>
<td>credit unions with assets from at least PLN 200 mn</td>
<td>4</td>
<td>8 241.71</td>
<td>85.77%</td>
<td>-8.52</td>
<td>277.42</td>
</tr>
</tbody>
</table>

Source: UKNF.

3.1.2. Credit risk in the credit union sector

The size and structure of the loan portfolio of credit unions has not changes significantly. The receivables of members were the main item of assets of credit unions. Their value at the end of 2018 was 5.9 billion zlotys and was slightly lower than at the end of the first half of the year (by 0.5%). Therefore, their share in credit unions’ assets remained at approx. 61%. Consumer loans (92%) still prevail in the loan portfolio, and their value at the end of 2018 was 5.5 billion zlotys. Receivables from the financial sector were the second largest item of credit unions’ assets as their value rose (by 15.7% to over 1.9 billion zlotys) as a result of the increase in credit unions’ funds deposited at accounts of the National Association. The item’s share in total assets grew to 19.4%, as credit unions’ exposure to capital and debt instruments fell (see Figure 3.2).

The persistent poor quality of the loan portfolio had a crucial impact on the financial position of the credit union sector. The impaired loan share in the loan portfolio at the end of 2018 amounted to 14.5% and was by 0.3 p.p. lower than in the middle of the year (see Figure 3.3). Its fall was largely driven by the sale of a portion of overdue debt by some credit unions. At the same time, credit union have a high ratio of coverage of impaired loans by provisions, because the majority of the loan portfolio is not collateralised. The coverage ratio of overdue loans amounted to 76%, and for loans overdue more than 12 months the ratio is 97% (the loans represent 64% of the impaired loan portfolio).

87 In 2018, credit unions sold debts whose gross value was 0.3 billion zlotys, of which approx. 80% were loans overdue by more than 12 months.
3.1.3. Funding and liquidity risk

**The liquidity position of the credit union sector was stable.** The downward trend of deposits of the non-financial sector weakened in the second half of 2018 (see Figure 3.4). At the end of 2018, their value stood at 9.1 billion zlotys, that is 1% lower than at the end of June (in y/y terms, the decline in deposits amounted to almost 4% after a significant decrease in the first half of the year). As a result of the stabilization of deposit values, at the end of the year the sector’s liquidity ratios remained at levels similar to mid-2018— the liquid reserve ratio was 11.7%, and the liquid assets to total assets ratio amounted to 21.8% (see Figure 3.5).

**Deposits at the National Association remain the major item of liquid assets of credit unions.** Their value rose (by over 20% to 1.4 billion zlotys) due to the lower exposure of credit unions to units of money market funds by over 90% (from approx. 300 million zlotys to merely less than 20 million zlotys at the end of 2018).
3.1.4. Credit unions’ efficiency

The persisting low efficiency of credit unions’ core operations reduces the possibility of replenishing regulatory capital and poses a risk to the sector’s stability and development potential. At the end of 2018, the credit union sector posted a loss of -2.7 million zlotys, which was primarily composed of the adjustments of loan portfolio valuation of one of the credit unions under restructuring\(^{88}\) and the resulting increase in provisions (see Figure 3.6). After excluding the impact of the take-over of a credit union, the sector would generate a profit of almost 31 million zlotys, comprising positive results of 24 credit unions. However, the positive financial result did not result from credit unions’ core operations and was mainly driven by the sale of overdue debt by some entities.

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\(^{88}\) On 31 January 2019, the Polish Financial Supervisory Authority took the decision on Alior Bank’s take-over of SKOK Jaworzno as of 1 April 2019. In connection with the take-over process, adjustments of loan portfolio valuation and the related adjustment of provisions were introduced into the credit union’s accounting books as of 31.12.2018. This led to an increase in the loss shown by the credit union and a further decrease in its already negative regulatory capital. The data adjustment had a negative influence on the result of the whole credit union sector at the end of 2018.
3.1.5. The capital position of credit unions

The capital ratios of the credit union sector increased. The sector’s capital adequacy ratio ran at 4.6%, however after eliminating the impact of the merging credit union, it would amount to nearly 6.1% and would be higher than the regulatory minimum. At the end of 2018, 26 out of 30 active credit unions had the capital adequacy ratio above the minimum level of 5%, and their share in the sector’s assets was 87%. For comparison, in the middle of the year the minimum capital requirement was met by 23 credit unions in this group, and their share in the sector amounted to 15.3%.

However, the structure of regulatory capital still made it impossible to fully absorb credit unions’ losses of previous years. At the end of 2018, the value of their regulatory capital totaled 387 million zlotys and in the second half of the year it diminished by 18 million zlotys (see Figure 3.7) – this fall was significantly influenced by the situation of the merging credit union. After eliminating this factor, regulatory capital would rise to over 500 million zlotys, which in turn was driven by a decrease in the sector’s loss of previous years and an increase in subordinated debt (classified as regulatory capital following KNF’s consent). This growth in the value of regulatory capital did not improve the structure of the regulatory capital of credit unions – the revaluation fund prevails in the structure (see Figure 3.8). Therefore, an improvement in the sector’s capital position would not improve the ability of credit unions to absorb losses – only approximately 23% of the losses of previous years can be covered from the share fund and resource fund (including optional participation – approx. 80%).
**Figure 3.7.** Regulatory capital and capital adequacy ratio (credit unions continuing operation) (PLN mn)

Note: “Capital shortage” means the lack of capital to achieve the regulatory capital adequacy ratio of at least 5%.

*Source: UKNF.*

**Figure 3.8.** Structure of regulatory capital of credit unions (credit unions continuing operation) (PLN mn)

Note: “Other items” include subordinated debt and the amount of additional responsibility of credit union members (included to funds upon obtaining KNF’s consent).

*Source: UKNF.*
4. Non-credit financial institutions

In the second half of 2018, assets of non-credit financial institutions\(^9\) were decreasing at a higher rate than in the 1st half of the year. Investment funds experienced the largest decrease. The sector of non-credit financial institutions still does not play such an important role in the domestic financial system as in more developed European Union countries. When compared to the end of June 2018, the ratio of NIF assets to banking sector’s assets decreased to 35%, reaching the lowest level since 2011.

4.1. Insurance companies\(^{90}\)

4.1.1. Maturity structure of assets and liabilities

In the second half of 2018, the assets and liabilities of the insurance sector decreased. Life insurance companies experienced a decrease in provisions. This resulted mostly from the lower value of assets of unit-linked insurance (UFK). The provisions of insurance with profit participation also decreased slightly (see Figure 4.1). The decrease in insurance provisions due to, among others, lower inflow of funds to UFK, also lead to a higher technical and financial results. Non-life insurance companies have shown an increase in the value of provisions, which was mostly due to higher motor vehicle liabilities (OC) (see Figure 4.2).

**Figure 4.1.** Technical provisions – life insurance sector

**Figure 4.2.** Technical provisions – non-life insurance sector

Life insurance liabilities had longer maturities than the assets of these institutions. The longest resulted from individually continued insurance – qualified to the business line “other life insurance”. On

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\(^{9}\) This chapter is devoted to domestic insurance companies, investment funds, investment fund management companies, open pension funds and pension fund management companies.

\(^{90}\) Annual data for 2018 has been included only in the part on solvency.
the other hand, insurance in which the risk was borne by the insurer had the shortest duration. Unit-linked insurance is a long-term contract, but clients can withdraw their funds earlier. The maturity of provisions in the non-life insurance was over 6 years longer than the duration of assets in this sector. In turn, in non-life insurance liabilities were characterised by shorter maturity than assets. Provisions from annuities, stemming from motor vehicle insurance were an exception. At the end of 2018, their share in provisions of the non-life insurance sector reached 18%.

The maturity of Treasury debt securities owned by the insurance sector did not change significantly in the second half of 2018. Life insurance companies (without unit-linked insurance) had debt securities with longer maturities (5.7 years) than non-life insurance entities. Their liabilities therefore had longer maturities than the liabilities of non-life insurance companies.

The insurance sector continued to be more sensitive to an increase than to a decrease in interest rates. At the end of 2018, only three life insurance companies remained sensitive to the risk of a decrease in interest rates. In non-life insurance, for seven entities a decline in interest rates would mean a reduction in the surplus of assets over liabilities, despite the fact that the entire sector was characterised by higher sensitivity to an increase in interest rates (see Figure 4.4). In life insurance, the aggregated value of the requirement for interest rate risk at the end of 2018 decreased to 0.7 billion zlotys (compared to 1 billion zlotys at the end of the first half of 2018), while in non-life insurance the requirement remained at 1.1 billion zlotys (see Figure 4.3). Both sectors recorded a large surplus of assets sensitive to interest rate risk over liabilities.

Interest rate risk had a limited influence on the Solvency Capital Requirement (SCR) of the entire sector. The share of this risk in the capital requirement for market risk decreased slightly to 13.5% (from 17.2%), and the share in the solvency requirement dropped to 6% (from 8.5%). Interest rate risk played
a bigger role in life insurance than in non-life insurance. It constituted respectively 26% and 10% of the capital requirement for market risk.

4.1.2. Market risk and financing of the economy

In the second half of 2018, the value of investments of life insurance companies decreased. The decrease was observed both in unit-linked assets (by 4.3 billion zlotys) and investments without UFK\(^9\) (by almost 0.7 billion zlotys) (see Figure 4.5). Treasury securities still constituted the largest share in the portfolio, but their value dropped. The value of the investment funds’ shares held by life insurance companies also decreased. This was mostly affected by a drop in the equities prices held by investment funds.

**Figure 4.5.** Unit-linked assets and life insurance sector investments

<table>
<thead>
<tr>
<th>Year</th>
<th>Unit-linked Assets (zloty billion)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>100</td>
</tr>
<tr>
<td>2017</td>
<td>90</td>
</tr>
<tr>
<td>2018</td>
<td>80</td>
</tr>
</tbody>
</table>

**Figure 4.6.** Investments – non-life insurance sector

<table>
<thead>
<tr>
<th>Year</th>
<th>Other</th>
<th>Investment funds’ shares</th>
<th>Cash and deposits</th>
<th>Shares</th>
<th>Loans and mortgages</th>
<th>Government and municipal bonds</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td>100</td>
<td>25</td>
<td>20</td>
<td>15</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2017</td>
<td>90</td>
<td>20</td>
<td>15</td>
<td>10</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2018</td>
<td>80</td>
<td>15</td>
<td>10</td>
<td>5</td>
<td>20</td>
<td>20</td>
</tr>
</tbody>
</table>

**Source:** UKNF.

The value of investments in non-life insurance increased (see Figure 4.6). The increase stemmed from the purchase of Treasury securities and also from the higher value of deposits. The exposure of non-life insurance companies to foreign bank securities also increased (by 0.4 billion zlotys). The value of mortgages granted by non-life insurance entities decreased by 1 billion zlotys, while the value of buy-sell back transactions increased by 0.9 billion zlotys.

The capital requirement for equity risk continued to decrease in the second half of 2018, especially in life insurance. At the end of 2018, the SCR for this risk in the case of life insurance dropped from 1.9 billion zlotys to 1.5 billion zlotys, while for non-life insurance it dropped from 6.4 billion zlotys to 6.1 billion zlotys (see Figure 4.7 and Figure 4.8). Equity risk was still much higher than interest rate risk. This submodule was the most significant component of the market risk module for life insurance and one of the most significant for non-life insurance. SCR for this submodule constituted over half of the

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\(^9\) Investments of insurance companies also include loans, real estate used for own purposes and cash. Bonds issued by BGK for KFD are included into treasury bonds.

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capital requirement for market risk and almost 33% of the basic capital requirement. In this submodule structure prevailed the requirement for unlisted shares and those assets for which the insurance company did not use look through approach.

**Figure 4.7.** Capital requirement for equity risk – life insurance sector

**Figure 4.8.** Capital requirement for equity risk – non-life insurance sector

Mostly non-life insurance institutions were exposed to currency risk. These entities were primarily sensitive to a drop in the exchange rate of the Polish zloty. In the case of the non-life insurance sector, the foreign exchange risk was the third market risk module in value terms, but it was generated mainly by one entity. Insurance companies displayed sensitivity to the depreciation of foreign currencies; however, the value of the requirement for this risk was low. Over half of it resulted from the portfolio of one insurance company offering almost exclusively unit-linked insurance.

The importance of insurance companies as buyers of bank debt securities diminished considerably in the second half of 2018. This resulted mostly from the increase in outstanding value of the bank debt. A further increase in the share of insurance companies in the market of Treasury and local government bonds was observed. The share of the equity portfolio listed on markets organised by the WSE against capitalisation also experienced a decrease. The companies allocated 0.7 billion zlotys to the national real economy, which constituted 0.03% of GDP.

The scale of insurance sector debt financing of the national real economy decreased at the end of 2018. Granted loans and non-Treasury debt securities still accounted for a small part of the sector’s assets (see Figure 4.9). The greatest changes were observed in the value of loans secured by a mortgage, which were granted to real economy entities. Their value decreased by almost 70%. The level of exposure of insurance companies to the corporate bond market remained very low (see Figure 4.10).
4.1.3. Liquidity risk

A surplus of premiums over claims was still observed in non-unit-linked life insurance contracts and in non-life insurance. Companies financed their activity from their current revenues (see Figure 4.11). Premiums decreased in life insurance, whereas they increased in non-life insurance. The decline concerned only unit-linked insurance in the life insurance sector. The decline was accompanied by an increase in claims, which resulted in a negative balance of cash flows for this business line. Outflows from unit-linked insurance resulted from a reduction in the sale of single-premium policies and termination of current contracts. As a consequence of the drop in share prices, many policyholders decided to surrender their funds.

In the case of life insurance, the share of liquid assets remained at a very high level which exceeded 80%, whereas in non-life insurance it reached almost 60% (see Figure 4.12). Life insurance companies invested in non-liquid financial instruments, including debt securities issued by non-financial enterprises, as they did not have motivation to search for yield. In the second half of 2018, the involvement in BBB (and lower) rated debt securities decreased from 7.5 billion zlotys to 3.5 billion zlotys, including non-Treasury securities from 3.8 billion zlotys to 1.8 billion zlotys. Liquid assets prevailed in unit-linked contracts. However, the potential lapse risk would be passed onto investment funds in whose shares unit-linked assets were invested.
The high share of expected profits in future premiums in own funds (about 25%) was maintained in life insurance sector entities. The expected profits present a change in value of own funds under the conditions in which the policyholder does not pay the future premiums.\(^92\) The high share of expected profits in future premiums may pose a risk for the insurance companies, especially in times of economic downturn. Unlike in the case of life insurance entities, non-life insurance companies showed a low share of expected profits in future premiums in own funds.

### 4.1.4. Leverage

The leverage level in the insurance sector was low, and it did not change significantly. The level of leverage,\(^93\) measured as a ratio of financial liabilities to own funds, was definitely higher in non-life insurance than in life insurance (see Figure 4.13). The difference resulted from a substantial value of subordinated bonds issued by non-life insurance entities and from loans taken by them. On the other hand, the ratio of own funds to total assets (non-unit-linked assets) was higher in the life insurance sector than in non-life insurance sector and also higher compared to insurance sectors in many EU countries.

In the second half of 2018, a further drop in exposure of insurance companies on the derivative market was observed. Interest rate instruments, including especially IRS transactions, prevailed in the structure of derivative transactions. Entities in this sector also held positions in FX forward contracts, and their share in the derivatives structure increased slightly. The vast majority of derivatives held by

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\(^92\) Insurance companies are obliged to calculate their provisions assuming that they would not receive premiums in future, and that the insurance would become non-contributory. The difference in these provisions is defined as expected profits in future premiums.

\(^93\) EIOPA defines leverage in the following three ways: as own funds to total assets, insurance liabilities to own funds and non-insurance liabilities to own funds. See Other potential macroprudential tools and measures to enhance the current framework, 2018, EIOPA.
the sector were used for effective portfolio management. The minor part of instruments was used to hedge the portfolios (see Figure 4.14).

Life insurance companies were less active on the derivative market than non-life insurance institutions. Life insurance companies concluded derivatives transactions mainly within unit-linked contracts. The derivatives portfolio was very highly concentrated in few entities from the sector. These instruments were held by 13 insurance companies from both sectors. Foreign banks were major counterparties in the derivatives transactions.

**Figure 4.13.** Leverage ratio in the insurance sector

**Figure 4.14.** Structure of derivatives used by insurance companies, by nominal value

4.1.5. Linkages with financial institutions

The exposure of insurance companies to financial institutions has not changed and amounted to about 50% of assets. Linkages with investment funds were of the greatest significance to the insurance sector (see Figure 4.15). Both assets held in unit-linked contracts and in other contracts were invested in funds shares. Over 80% of unit-linked assets were held in these financial instruments. Companies were often participants of funds created for the purpose of entities from their own capital group.

The exposure of insurance companies to the domestic banking sector was still low. Shares prevailed in the structure of assets to the banking sector. The value of deposits of insurance companies increased, especially in non-life insurance. Non-life insurance entities maintained more liquid assets in banks, as they must have the means for payment of claims within a short period of time after damage occurs (see Figure 4.16). There was a high concentration of deposits of particular insurance companies in one chosen bank. Insurers often used the services of banks from the same capital group. The value of conditional transactions, in which domestic banks were counterparty, increased in the first half of 2018. In turn, the value of structured products which were in the unit-linked portfolio decreased considerably.
The source of relationship with the banking sector was also distribution of insurance products. Compared to previous periods, the significance of bancassurance in the life insurance sector diminished slightly.

**Figure 4.15.** Exposure of insurance companies to financial institutions

**Figure 4.16.** Structure of insurance companies’ exposure to the domestic banking sector

4.1.6. Financial results

In 2018, the insurance sector reported positive financial and technical results. Revenues from premiums and return on investments decreased in life insurance, but they were compensated by an increase in revenues from released unit-linked provisions (see Figure 4.17). As a result, insurance companies experienced a profit of 2.4 billion zlotys (2.3 billion zlotys in 2017). Premium revenues, payments and costs increased in non-life insurance. The high price of motor vehicle insurance contributed to a further improvement in the technical result of the business line and also of the whole sector. The record profit of non-life insurance companies (4.2 billion zlotys compared to 2.5 billion zlotys in 2017) was highly dependent on dividends received by non-life insurance institutions from subordinate entities (see Figure 4.18).

The insurance sector was characterised by high dispersion of financial results. The largest insurance group had a decisive impact on the sector’s results. Most companies experienced modest profit or small loss.

The ROE ratio remained high. Return on equity improved in 2018 (see Figure 4.19 and Figure 4.20). Life insurance was characterised by a higher ROE than non-life insurance due to a high share of high-income employee group insurance and individually continued insurance. The increase in insurance prices in the previous years contributed to the higher ROE in the non-life insurance sector. The ROE of
the insurance sector was higher than that of the banking or corporate sector, but lower than that of the asset management sector.

**Figure 4.17. Financial results – life insurance**

**Figure 4.18. Financial results – non-life insurance**

A factor which could reduce the profitability of life insurance companies in the future is the possibility of mass surrender of unit-linked contracts by policyholders. This type of insurance shows a high share of costs and commissions charged against clients. Thus, unit-linked insurance is a significant source of profits for intermediaries and also insurance companies. Clients’ mass lapses would result in a decrease in the results, particularly of those companies which hold a large number of unit-linked contracts.

**Figure 4.19. ROE – life insurance**

**Figure 4.20. ROE – non-life insurance**

Source: UKNF.
The unpredictability related to establishing the amount of compensation still constitutes a significant risk to the profitability of non-life insurance companies providing motor vehicle insurance. Due to an increase in the price of auto casco and third-party insurance policies (AC and OC) between 2016 and 2018, the COR ratio was gradually decreasing (see Figure 4.21). The potential increase in claims could make it necessary to adjust upwards the provisions for claims incurred in the previous reporting periods but not reported yet and for insufficient provisions for claims incurred. This would lead to higher COR and lower ROE.

**Figure 4.21. COR ratio**

![COR ratio diagram]

*Note: the COR ratio represents the relation of claims and costs of operating activities to premiums earned.*

*Source: UKNF.*

**4.1.7. Solvency**

The value of own funds in the insurance sector dropped at the end of 2018. The non-life insurance sector had own funds which were nearly 60% higher than the funds of the life insurance sector (see Figure 4.22 and Figure 4.23). In the life insurance sector almost all own funds were classified to the highest category. In the non-life insurance sector subordinated liabilities, including especially subordinated bonds, constituted only an insignificant part.

The value of the Solvency Capital Requirement for non-life insurance companies increased considerably in the second half of 2018. The value of SCR in this sector reached the highest level since the introduction of new solvency rules. The increase was a result of the concentration risk requirement more than doubling. This requirement had the highest share in the market risk of this sector. The SCR remained at a similar level in life insurance. In the second half of 2018, the ratio of coverage of the Solvency Capital Requirement decreased. Life and non-life insurance sector demonstrated the lowest coverage of SCR since the end of 2016.
The most important component of the Capital Solvency Requirement was still the underwriting risk requirement, both in life insurance and non-life insurance (see Figure 4.24 and Figure 4.25). In both sectors the requirement for this risk increased. For the non-life underwriting risk, the highest requirement comprised the premium and reserve risk, the level of which was related to the extent of activity pursued. Considering the significant share of unit-linked contracts, life insurance companies recorded the highest capital requirement with regard to the underwriting risk due to withdrawal from contracts, especially mass ones. The SCR for lapse risk in life insurance was twice as high as mortality risk. Life insurance companies were exposed to longevity risk only to a small extent. Non-life insurance companies had higher requirement for this risk due to annuities stemming from motor insurance contracts.

The capital requirement for counterparty default risk resulted mainly from reinsurance contracts. There was no reinsurance in the life insurance sector, and companies had low exposure to derivatives. In the non-life insurance sector, however, this requirement was over seven times higher than in the life insurance sector. However, in both sectors the requirement for this risk decreased in the second half of 2018.

All life insurance companies had own funds to meet the Solvency Capital Requirement. For life insurance, this SCR rate decreased at the end of 2018 when compared to the end of the first half of 2018, and reached 311% and more life insurance entities had higher solvency indicators than at the end of June 2018 (see Figure 4.26). In the non-life insurance, the rate was 208%, 30 percentage points higher than at the end of the first half of 2018. In life insurance, the SCR in most companies exceeded 200%, while in non-life insurance companies it was below 200%. Only few non-life insurance companies had the solvency ratio above 300% (see Figure 4.27). These were small and medium entities with high own equity or just starting their business activity.
In Poland, the ratio of coverage of the Solvency Capital Requirement by eligible own funds was slightly higher than the average in the EU countries. However, unlike Polish entities, European ones used transitional measures and LTG tools. The solvency ratio of domestic life insurance companies was higher than that of non-life insurance ones, despite them having a lower value of own funds to cover the Capital Solvency Requirement than non-life insurance companies. The life insurance companies offered mainly insurance products which generated low risk for insurers. Employee group or individually continued insurance, as well as unit-linked insurance, had a big share. Insurance with guaranteed rates of return accounted for only an insignificant part of the product offer. Life insurance companies conducted less risky activity than non-life insurance companies.

**Figure 4.24.** Solvency Capital Requirement structure – life insurance

**Figure 4.25.** Solvency Capital Requirement structure – non-life insurance

**Figure 4.26.** Structure of the Solvency Capital Requirement ratio – life insurance

**Figure 4.27.** Structure of the Solvency Capital Requirement ratio – non-life insurance

Source: UKNF.
4.2. Investment funds

4.2.1. Liquidity risk

The liquidity position of the investment funds sector did not change substantially. The liquidity risk concerns mostly open-ended investment funds, as they redeem their units on demand. Their share in the sector increased mostly due to a decrease in closed-ended investment fund assets (see Figure 4.28). At the same time, the value of liquid assets held by open-ended investment funds dropped (by 0.5 billion zlotys), but to a lesser extent than the value of assets with limited liquidity (by 2 billion zlotys). As at the end of 2018, the liquidity level of these entities was still below the three-year average (see Figure 4.29).

**Figure 4.28 Investment funds sector by redemption profile**

![Investment funds sector by redemption profile](image1)

Note: the average presented is a three-year moving average.

*Source: NBP.*

**Figure 4.29 The share of liquid assets in total assets of open-ended investment funds**

![The share of liquid assets in total assets of open-ended investment funds](image2)

Note: liquid assets include: deposits (including funds on current accounts and margins), Treasury securities, shares listed on organised markets, participation units of domestic funds and units of foreign collective investment schemes. The average presented is a three-year moving average.

*Source: NBP.*

Among open-ended investment funds only debt funds experienced a net inflow. About 9 billion zlotys were payed into funds of this type in 2018 (see Figure 4.30), with most payments coming from households. At the same time, assets of debt funds were characterised by the lowest liquidity. As in past years, the main part of liquid assets in open-ended investment funds were Treasury securities (see Figure 4.31). As at the end of 2018, they constituted almost half of assets of such entities. The level of

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94 According to Art. 113 para. 2 of the *Act of 27 May 2004 on investment funds and alternative investment fund management* (consolidated text, Journal of Laws of 2018, item 1355, as amended), in the case of a specialised open-ended investment funds, the statute may determine conditions at which the participants may require the repurchase of units. There are no additional conditions in the event of requesting redemption of the open-ended investment fund units.
most liquid assets, i.e. cash and deposits which could be directly used by funds for unit redemption, decreased from 7.8 billion zlotys (6.8% of assets) at the end of June to 6.8 billion zlotys at the end of 2018 (6.1% of assets).

**Figure 4.30** Inflows and outflows to/from open-ended investment funds

![Inflows and outflows to/from open-ended investment funds](image)

Source: NBP.

**Figure 4.31** The structure of liquid assets in open-ended investment funds

![The structure of liquid assets in open-ended investment funds](image)

Note: the average presented is a three-year moving average.

Source: NBP.

**4.2.2. Market risk and financing of the economy**

Debt securities dominated in the structure of open-ended funds’ assets; however, assets of closed-ended funds contributed more to debt financing of the real economy. The main component of open-ended fund assets were still domestic Treasury bonds (see Figure 4.32). Their significance additionally increased at the end of 2018. The duration of fixed coupon bonds, which constituted over half of Treasury bonds in open-ended funds’ assets, did not change considerably. Therefore, the sensitivity of this part of the portfolio to the change in interest rates remained at a similar level as at the end of June 2018. The closed-ended funds invested the greatest part of their assets in shares not listed on organised markets. The majority of debt securities owned by these funds were instruments issued by non-financial corporations. Investment funds allocated almost 12% of their assets (about 35 billion zlotys) to debt financing of the real economy, which constituted about 1.6% of GDP (see Figure 4.33). The value of debt securities of non-financial corporations, owned by funds, decreased, whereas the value of loans granted to these entities increased in the second half of 2018.

The share of investment funds in the market of domestic Treasury securities and domestic debt securities of banks increased in 2018. On the other hand, involvement of investment funds – both open-ended and closed-ended ones – on the Warsaw Stock Exchange decreased as a result, among other things, of net outflows from equity funds. This translated into a reduction of the significance of
investment funds for markets organised by the Warsaw Stock Exchange (see Figure 4.34). Despite the fall in the share in the turnover at the Main Market of the Warsaw Stock Exchange, investment funds still remained the most active domestic institutional investors. The reduced importance of the funds on the market of debt securities of non-financial corporations (see Figure 4.35) was connected to large outflows from a few closed-ended private equity funds.

**Figure 4.32 Structure of assets of investment funds**

Note: open-ended investment funds and specialised open-ended investment funds were included in the group of open-ended funds. The item – Cash and deposits also comprises margins. The item – Loans granted also comprises those granted in the repo transactions. The item – Debt securities of banks does not comprise state-guaranteed infrastructure bonds issued by BGK for KFD, these instruments were included in the item – Domestic Treasury securities. Due to the adjustments made, the data may differ from those presented in the previous versions of the Report.

Source: NBP.

**Figure 4.33 Financing of the economy by investment funds (credit intermediation)**

Note: the chart presents the share of debt instruments issued by domestic non-financial corporations and non-profit institutions, operating for the benefit of households, loans granted to these entities and households in total assets of funds. The average presented is a three-year moving average. Due to the adjustments made, the data may differ from those presented in the previous versions of the Report.

Source: NBP.
An important source of leverage in the investment fund sector were repo transactions. Liabilities arising from these transactions were significantly higher than those from loans taken out by the funds and bond issues. In the second half of 2018, the level of leverage, measured as the ratio of total assets to net assets, decreased and was almost equal to the three-year average at the end of December (see Figure 4.36).

Open-ended funds used derivatives on a larger scale than closed-ended funds. The share of entities, measured in net assets, using the derivatives was close to 90% for open-ended funds and about 17% for closed-ended funds (see Figure 4.37). In relation to net assets, the nominal value of these instruments was also much higher (over four times) in the case of open-ended funds than in the case of closed-ended funds. FX derivatives had the greatest importance for both types of funds, and interest rate instruments were also of high importance.
4.2.4. Linkages with financial institutions

Open-ended funds were interconnected with the financial sector to a higher extent than closed-ended funds. In the structure of buyers of shares in investment funds, both closed-ended and open-ended, insurance companies were the most important financial institutions (see Figure 4.38). They invested both unit-linked and non-unit-linked assets, often within the same capital groups. The value of shares in investment funds owned by domestic banks decreased, and amounted to 3.8 billion zlotys at the end of 2018, with the major part of that amount in the form of investment certificates. Linkages with the banking sector had a greater importance for the assets of investment funds (see Figure 4.39).

Investment funds’ exposure to domestic banking sector was above the three-year average, and it further increased in the second half of 2018. In the second half of 2018, the value of domestic bank liabilities owned by investment funds increased to about 55 billion zlotys, which constituted about 18% of funds’ assets (see Figure 4.40). The change stemmed mostly from an increase in value of bank debt securities held by investment funds. The vast majority of these instruments were found in portfolios of open-ended funds, and over half were owned by entities managed by three investment fund management companies.95 Open-ended funds mostly held debt securities of banks, while the most important item in the portfolio of closed-ended funds was cash and deposits (see Figure 4.41). Moreover, domestic banks were important counterparties of investment funds in derivative transactions. These institutions

95 It should be stressed that, according to the Act on investment funds and alternative investment fund management, investment funds cannot invest assets in securities and liabilities of shareholders and parent entities or subsidiaries of the investment fund management company which is their body or body of their shareholders, unless it is in the interest of their shareholders and does not create a conflict of interest.
were also dominant among the distributors of shares and depositories of investment funds. Such relations created reputational risk for both the investment funds sector and the banking sector.

**Figure 4.38** Share of financial institutions among investors of investment funds

![Graph showing share of financial institutions among investors of investment funds.](image)

Source: NBP.

**Figure 4.39** Exposure of investment funds to financial institutions

![Graph showing exposure of investment funds to financial institutions.](image)

Source: NBP.

**Figure 4.40** Investment funds’ exposure to domestic monetary financial institutions

![Graph showing investment funds’ exposure to domestic monetary financial institutions.](image)

Source: NBP.

**Figure 4.41** The structure of investment funds’ exposure to domestic monetary financial institutions

![Graph showing the structure of investment funds’ exposure to domestic monetary financial institutions.](image)

Note: assets associated with the monetary financial institutions sector include: deposits (including funds on current accounts and margins), receivables from loans granted to banks (including in repo transactions) as well as equity and debt securities issued by banks. The item – Debt securities of banks comprises state-guaranteed infrastructure bonds issued by BGK for KFD. The average presented is a three-year moving average.

Source: NBP.

Note: the item – Cash and deposits also comprises margins. The item – Loans granted also comprises those granted in the repo transactions. The item – Debt securities does not include bonds issued by BGK for KFD.

Source: NBP.
4.3. Open pension funds

4.3.1. Liquidity risk

There was no liquidity risk in the sector of open pension funds (OFE), due to the fact that the rapid withdrawal of funds by their members was not possible. The balance of cash flows between OFE and ZUS remained negative. The value of redemptions resulting from the security slider mechanism in the 3rd and 4th quarter of 2018 was over twice as high as of contributions transferred from ZUS to OFE (see Figure 4.43). However, the situation did not mean that the funds were forced to sell off the elements of their investment portfolio, as the funds had a liquidity buffer in the form of bank deposits and cash (in total 9.0 billion zlotys at the end of the 4th quarter), which was funded by dividends and interests (in total 4.3 billion zlotys at the end of the 4th quarter). The share of sector’s liquid assets in net assets remained high (see Figure 4.42).

![Figure 4.42. Liquid assets of open pension funds](image)

**Figure 4.42. Liquid assets of open pension funds**

![Figure 4.43. Inflows and outflows to/from open pension funds](image)

**Figure 4.43. Inflows and outflows to/from open pension funds**

Note: liquid assets include: deposits, funds on current accounts, shares listed on organised markets (domestic and foreign), participation units of domestic funds and units of foreign collective investment schemes.

Source: UKNF.

4.3.2. Market risk and financing of the economy

Due to investment restrictions for open pension funds, the structure of their investment portfolio remained stable and poorly diversified, with clear dominance of domestic equity securities (see Figure 4.44). As at the end of the second half of 2018, the equity part constituted about 80% of the investment portfolio, compared to 8.6% of the debt part. The exposure of OFE in equity instruments was mostly related to shares of the largest companies from the Warsaw Stock Exchange’s Main Market. The importance of OFE for markets organised by the Warsaw Stock Exchange increased once again (see...
The increase took place in the conditions of a decrease in the capitalisation of these markets and a decrease in the value of the OFE share portfolio. At the same time, the share of funds in the turnover at the Main Market of the Warsaw Stock Exchange decreased. In terms of exposure value, OFE remained a significant investor on the domestic stock market. This meant both substantial exposure of this sector to market risk and no possibility of rapid restructuring of the investment portfolio without affecting share prices.

**Figure 4.44.** Structure of open pension funds’ investment portfolio

Note: the item – Domestic equity securities comprises domestic shares, allotment certificates, pre-emptive rights, convertible bonds and investment certificates.
Source: UKNF.

**Figure 4.45.** The relevance of open pension funds for the markets organised by the GPW

Note: capitalisation comprises shares and allotment certificates of domestic companies listed on the GPW Main Market and NewConnect.
Source: UKNF, GPW.

In the 2nd and 3rd quarter of 2018, the balance of OFE purchase and sale transactions in equity securities was positive. Both in the conditions of increase and decrease of prices on the domestic stock market, the purchase transactions of equities listed on the Warsaw Stock Exchange conducted by OFE exceeded the sale transactions (see Figure 4.46).
The importance of open pension funds for debt financing of the real economy remained low. As at the end of December 2018, bonds issued by domestic non-financial corporations comprised only 1.7% of total OFE assets, corresponding to only 0.1% of GDP (see Figure 4.47). The highest exposure of funds to the market of non-Treasury debt instruments was still related to securities issued by domestic banks, however, the increase of this exposure was mainly due to their purchase of covered bonds. The analysis of changes in the value of debt instruments in OFE investment portfolios in conjunction with the situation on the debt market indicates that the role of open pension funds as buyers of these instruments has been steadily decreasing in recent years, especially with regard to bonds of non-financial enterprises which are characterised by higher investment risk (see Figure 4.48). The small scale of purchase of these instruments by open pension funds, like in the case of municipal bonds, was due to their low supply on the domestic market, which did not correspond with the investment needs of the funds.
Figure 4.47. Financing of the economy by open pension funds (credit intermediation)

![Graph showing financing of the economy by open pension funds.](image)

Note: the share of debt securities of non-financial enterprises at the end of Q1, Q2 and Q3 was estimated on the basis of the data for Q4.

Source: NBP estimates based on UKNF data.

Figure 4.48. Share of open pension funds in domestic debt securities market

![Graph showing share of open pension funds in debt securities market.](image)

Note: the share of debt securities of non-financial enterprises at the end of Q1, Q2 and Q3 was estimated on the basis of the data for Q4. The chart presents the portfolio of debt securities compared to the value of markets of these instruments.

Source: NBP estimates based on UKNF and NBP data.

4.3.3. Linkages with financial institutions

The open pension funds sector had strong links with other domestic financial institutions. As at the end of December 2018, shares, debt securities issued by domestic financial institutions and also deposits and funds in domestic banks constituted about 43% of OFE total assets (that is 67 billion zlotys). The predominant part of the exposure (i.e. 58 billion zlotys) was comprised of bank liabilities owned by pension funds. The structure of open pension funds’ exposure to domestic banks has not changed. The majority of them, about 70%, constituted shares listed on the domestic regulated market (see Figure 4.50).
**Figure 4.49.** Open pension funds’ exposure to domestic financial institutions

**Figure 4.50.** Structure of open pension funds’ exposure to domestic banking sector

*Source: UKNF.*
5. Assessment of systemic risk in the Polish financial system

The assessment of systemic risk in Poland is focused on the banking sector due to the structural characteristics of the balance sheet of banks and their dominating role in the financial system and in financing the economy. Systemic risk associated with other financial institutions is limited by their size and business models which, at present, do not seem to create significant risks to the stability of the whole system.

5.1. Risk areas

There are five basic areas of systemic risk from the perspective of which the analysis is carried out. They relate to risk associated with: (1) the level and growth of indebtedness, (2) the structure of assets and liabilities and liquidity, (3) interconnectedness and concentration, (4) moral hazard (the structure of incentives) and (5) the resilience of the financial infrastructure. No risks directly jeopardising financial stability have been identified in any of the areas; however, certain phenomena need to be particularly monitored. These include structural changes in banks’ loan portfolios, the low profitability of some banks and the increased role of the government sector in the financial system. The risk of the whole portfolio is increased by high-value consumer loans with long maturities, which are increasingly common, and are characterised by higher risk than the remaining types of loans. New housing loans granted in the environment of low interest rates and robust activity in the real estate market also require increased attention. At the same time, the low profitability of some (mainly small and medium-sized) banks limits their ability to absorb losses and thus increases the risk of increased burdens on the whole of the banking sector in the case of negative shocks (via contributions related to the costs of paying guaranteed deposits or resolution). In turn, the increased role of the government sector as owner of a large part of the financial sector (including, above all, the banking sector) and at the same time its role as regulator, supervisor and debtor (via the Treasury bond portfolio) poses new challenges for long-term stability.

5.1.1. Risk arising from excessive growth of the value of indebtedness or leverage

The analysis of the credit cycle in Poland indicates that the risk of excessive growth of lending is low. The deviation of measures of the credit cycle from the long-term trend, calculated for growth in total credit, the value of the credit gap and the debt service ratio, is small. Non-financial sector debt remained moderate and was growing at a rate similar to or lower than the long-term trend. As a result,

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96 In the fifth area of risk – the resilience of the financial infrastructure – NBP examines the functioning of payment systems and payment patterns together with securities clearing and settlement systems. The results of the analyses are presented in a separate publication – “Polish payment system oversight report” and partly in “Assessment of the functioning of the Polish payment system”.

the credit gap remained negative⁹⁷ or close to zero (see left-hand panel of Figure 5.1). Early warning models also indicate that in the horizon of 1 year to 4 years the risk of a crisis arising from excessive credit growth is low (see right-hand panel in Figure 5.1).⁹⁸ As a result, the countercyclical buffer remains at the level of 0%.

**Figure 5.1.** Position in the credit cycle (left-hand panel) and the results of early warning models for Poland (right-hand panel)

Notes: last real observation in 2018 Q4 and extrapolations using ARIMA models for the period 2019 Q1-Q2 (left-hand panel). The credit gap is a deviation in the value of credit to GDP ratio from the long-run trend, which was specified using a recursive HP filter with the smoothing parameter corresponding to the length of the financial cycle in Poland (i.e. from 5.5 to 10.5 years). The right-hand panel presents the average (signal quality-weighted) value of probability obtained on the basis of 148 models including domestic variables and the cut-off threshold which, when exceeded, signals the threat of a banking crisis (it has been assumed, following ESRB studies, that the cost of the lack of a signal warning against a crisis is 3 times higher than the cost of a wrong signal about a crisis if no crisis occurs). The green shaded areas denote the range of values of probability (not weighted by signal quality) for all models, excluding the models which show the lowest and highest probability of a banking crisis in Poland in every period. The average value of probability (the black line) weighted by the quality of signals of the models sometimes runs below the line of 30th percentile of probabilities (right-hand panel), because better models have indicated a lower probability of a crisis in these periods and above the line of the 60th percentile of probabilities (left-hand panel), because better signal quality models have indicated a higher probability of a crisis in these periods. Source: NBP, BIS, Eurostat and GUS.

**Risk in the consumer loans segment is steadily rising.** Consumer loan growth exceeds the GDP growth rate, while the credit gap for this category of loans remains positive. Poland has one of the highest ratios of debt to GDP for this credit category in the EU.⁹⁹ For this reason, a deterioration in the quality of the portfolio of consumer loans may potentially have more systemic consequences than in other EU countries. The growth in debt value is accompanied by a shift in the structure of the consumer loan portfolio, where the share of high-value loans with extended (several years) maturity is growing. The quality of these loans is currently slightly lower than that of other consumer loans, which may

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⁹⁷ The standardised credit gap (i.e. compliant with the ESRB recommendation (2014/1) and calculated based on the broad credit measure with the parameter λ ~ 400,000, which corresponds to fluctuations lasting 20 years and more) amounted to ~ 8.3%.

⁹⁸ Historical analysis implies that the risk should be assessed as significant when probability is higher than 25%, whereas it is now below 5%.

⁹⁹ See Financial Stability Report, December 2018, Box 2.1. “Consumer loans in Poland compared to EU countries”.

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Narodowy Bank Polski
enhance the level of risk of the whole portfolio. Taking into account the phase of the business cycle and the expected slowdown in GDP growth, the probability of credit losses increases. At the same time, exposure to high-value consumer loans is concentrated in several banks. Deeper analysis is required of the causes of these changes. Certain EU countries (among others, Croatia and Slovenia), which observe a similar phenomenon, have decided to introduce macroeconomic tools aimed at mitigating the risk in this credit segment.¹⁰⁰

**New housing loans granted amid low interest rates need to be closely monitored and have to meet appropriate credit standards.** Low interest rates increase the accessibility of credit as a result of a reduction in its current servicing costs. This is reflected, among other things, in the high value of individual loans. The NBP simulations show that in the event of an increase in interest rates of not more than 3 p.p., the rise in the servicing costs of debt should not cause problems with its servicing, especially in view of the already realised wage growth and wage growth expected in the future. On the other hand, an increase in interest rates above that level could pose a challenge for some borrowers.

**The real estate market, including the residential and commercial property, remains highly robust.** Balance is still observed in the residential property market; however, it seems to be less stable than in the past due to tensions on the supply side. Despite increased price growth in recent quarters, there are no signs of significant tensions – taking into account, among others, the ratio of price to income and to rent – and high demand in the housing market is, to a large extent, financed with own funds, which reduces risk to financial stability. Increasing credit funding and the emergence of speculative demand associated with home price growth expectations would be a risk factor. Risk associated with the commercial property market is currently low due to limited exposure of the domestic banking sector to this segment.

**Risk associated with foreign currency mortgage lending is steadily declining.** The portfolio of FX mortgage loans still accounts for a relatively large portion of banks’ assets (6.8%), but its value is diminishing at the rate of 8% y/y. The quality of the portfolio remains very good, and so is the financial condition of most borrowers. However, the situation regarding the planned regulatory changes, which could have an impact on the operating costs of banks, has not been resolved.

¹⁰⁰ In Slovenia, in 2018, DSTI limits were introduced (50% - 67% depending on the borrower’s income) and the maximum maturity for newly granted consumer loans (10 years) was specified. In Croatia, in 2019, a recommendation was issued according to which, when granting non-housing consumer loans with maturity equal to or longer than 5 years, credit institutions have to use the same (and therefore more stringent) criteria for assessing creditworthiness of borrowers as for housing consumer loans. These criteria include among others considering the minimum costs of living.
5.1.2. Risk arising from excessive maturity mismatch of assets and liabilities or the illiquidity of markets

Risk associated with the transformation of maturities by credit institutions and liquidity risk remain at a low level. Banks mainly finance their operations with deposits from the nonfinancial sector, which, as a rule, are stable. The credit to deposit ratio remained at a level close to 100%. Banks also hold sufficient liquidity buffers – the buffer of liquid assets amounted to 20.7% at the end of 2018 and was higher than the average in the EU (11.0%)\textsuperscript{101} and is mainly composed of high quality securities, i.e. NBP bills and government bonds.

Market risk for banks in Poland remains low and results mainly from interest rate risk and FX risk. Most banks are characterised by a positive interest rate gap, which means that a fall in interest rates causes a decline in banks’ earnings, and a growth in interest rates – an improvement in earnings. The fact that the interest on some deposits is set by banks themselves, which enables them to partially compensate for the adverse changes in market interest rates, is a risk-constraining factor. However, the interest rate of checking and savings accounts, which is already close to zero, reduces banks’ flexibility in that matter. The currency mismatch associated with loans extended in foreign currency is hedged using derivatives transactions. In the case of turbulences in financial markets, banks may, however, be exposed to increased liquidity needs when the need arises to roll over the transactions or to call deposit margins, as well as exposed to increased costs of hedging.

5.1.3. Risk arising from excessive concentration of exposures and interconnectedness between financial system entities

The entity concentration of banks’ credit exposures is not a material source of risk. Simulations performed by NBP show that most banks hold sufficient capital that enables them to absorb the consequences of the potential bankruptcy of the largest borrowers. One exception is the group of large cooperative banks, which exhibit increased sensitivity to such risk.

Due to the structure of cross-sectoral linkages of the financial sector, the risk of conveying shocks between its elements is limited, and the banking sector plays a key role. The banking sector is dominant in terms of size and linked to all the other sectors, most strongly with the household sector. Foreign links remain a significant channel of the direct propagation of shocks from global markets – through foreign investors’ exposure to government bonds and financing provided to Polish enterprises and banks. On the other hand, from a systemic point of view the propagation of shocks between the non-banking sector and the real economy or the banking sector seems to be limited.

Indirect linkages play an important role in the transmission of shocks in the financial system, including through exposure to Treasury bonds and contributions to the deposit guarantee system and resolution. In the case of the whole financial system, Treasury bonds are a significant asset type that

\textsuperscript{101} The indicator is calculated as a ratio of liquid assets to total assets.
constitutes a substantial part of the balance sheets of all financial institutions. The magnitude of indirect linkages, related to portfolios of government bonds, has risen in recent years, especially in the banking sector (see Figure 5.2). The risk of Treasury securities depends on the state of public finances and the size of the public debt and currently seems to be limited. FX housing loans are another area of banks’ exposures to a common risk area; however, the scale of the exposure is falling and the quality of the portfolio is high. An important channel of indirect linkages between banks is the manner of the financing of the deposit guarantee system and the resolution system. The necessity to supplement the BFG by the banks when bank guarantees are paid out or in the case of resolution would have an impact on the profitability of the sector (these payments are not recognised as tax deductible). The scale of impact depends on the objective and size of the BFG funds that are committed. Amid an economic slowdown and low profitability of some institutions, such a risk of burdening the whole sector increases.

Figure 5.2. Share of Treasury bonds in banks’ assets (Poland compared to the EU)

Source: Eurostat, EBC.

The existence of Poland’s largest capital group, comprising banks and insurance sector entities, is of major importance for the structure and scale of linkages in the financial system. Although intra-group linkages do not have to translate automatically into an increase in risk, they do, however, create new challenges. International experience suggests that the systemic risk arising from the insurance sector is usually limited. Above all, it is manifested when insurance companies engage in credit activity or sell insurance products that create exposure to macroeconomic risk. So far, it seems that these phenomena are not emerging or are limited; nevertheless, due to its size and linkages with the banking sector, the activities of the group need to be monitored with special attention by financial safety net institutions. The fact that the State Treasury, and thus the government sector, is a controlling

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102 The PZU group is a financial conglomerate which includes, among others, 40% of assets of the domestic insurance sector and two large banks which were responsible for almost 15% of the domestic sector’s assets and have been identified by the Polish Financial Supervision Authority as systemically important institutions.

shareholder in the group creates an additional challenge for micro- and macroprudential supervision (see Box 5.1).

**Financial links (capital and deposit) between associating banks and cooperative banks are an important channel of transmission of shocks in the banking sector.** Cooperative banks are directly involved in associating banks via ownership of shares and bonds of these banks. As a result, the problems of associating banks could have consequences for the banks that are associated in them. In addition, associating banks fulfil a key role in the monetary settlements of cooperative banks and the depositing of their available funds. Combined with the key role of associating banks in institutional protection schemes, this determines their systemic significance. At the same time, the capital position of associating banks is not strong and they are characterised by lower profitability, which makes the cooperative sector more vulnerable to shocks than commercial banks.

**An indirect channel of linkages between banks and between the banking sector and credit unions is the manner of the financing of the deposit guarantee system and the resolution system.** The deposit guarantee system enhances financial system stability by reducing the probability of a bank run, but at the same time potential pay-outs of guaranteed deposits will, in the first instance, affect the funds accumulated by the BFG. The necessity of rebuilding BFG’s resources after the pay-outs would require raising contributions by credit institutions, which, in turn, would affect their earnings and capacity to increase capital. Therefore, actions supporting the takeover of insolvent credit unions by other stronger credit unions or banks with the support provided by the BFG have a positive impact on the reduction of restructuring costs, because they help to avoid bankruptcies, which, as a rule, are more costly.

**The adjustment of WIBOR and WIBID money market reference rates to the requirements of the BMR remains an important issue for the domestic financial system.** This means, among other things, that it is necessary to modify the methodology for the rates’ determination and submit, in a timely manner, a complete application to the KNF for an authorisation in order to ensure their continuity. The extension of the transitional period for critical benchmarks, including the WIBOR rate, which was agreed in 2019 Q2 at the EU level, reduces the possibility of the materialisation of risk related to non-compliance of this benchmark with the requirements of the regulation. The WIBID rate is not a critical benchmark, therefore the transitional period for this index ends on 1 January 2020.

5.1.4. **Risk arising from misaligned incentives influencing the behaviour of financial institutions or their clients**

Risk arising from moral hazard remains limited, but it may grow due to: (i) the continued concentration of the banking sector, (ii) the growing share of entities controlled by state institutions, and (iii) the existence of a large financial conglomerate combining the insurance and banking sector. The above-mentioned risk mainly occurs when the entities do not fully bear the consequences of the risk that they have incurred – an incentive then appears to incur excessive risk. Such a situation arises, among others, in the case of institutions that are “too big to fail” or, more broadly, a presumption of
government guarantees. Compared to other EU countries, the Polish banking sector is still characterised by low concentration, which leaves room for the further consolidation of smaller institutions, without creating excessive risk to financial stability. The growing share of financial institutions controlled by the state may encourage riskier behaviour, and the fact that they are large entities means it is necessary to monitor them closely. The likely occurrence of moral hazard risk associated with systemically important institutions is, in part, reduced, by the imposition of additional capital buffers (so-called O-SII buffers) and current regulations related to resolution.

Possible unintended systemic consequences of the growing role of the government sector in the financial system and the financial safety net are a new long-term challenge. It manifests itself in a simultaneous dominant ownership participation in a number of large financial entities, among others in the banking and insurance sectors, and in the presence of the government sector representation in the financial safety net, including its dominant role as supervisor. The aim of the owner, as a rule, is to maximise profit, while the aim of the supervisor is to limit risk (including systemic risk). The discrepancy between these objectives may negatively impact on financial stability if the interest of the owner is dominant. At the same time, the mere possibility of the occurrence of such a conflict creates misaligned incentives on the part of financial institutions and their clients (see Box 5.1). The government sector, through the Ministry of Finance, also remains the regulator of the financial sector and its debtor (due to the Treasury bonds held by the financial institutions), which additionally increases the complexity of relations with the banking system.

Box 5.1. Growing share of government sector in the financial sector and the financial safety net

In recent years the share and role of the government sector in the financial sector have grown markedly due to:

- a significant increase in the share of financial entities controlled directly or indirectly by the State Treasury in the assets of the financial sector (particularly the banking sector),
- increased representation of the government sector in the KNF,
- an increase in the share of financial liabilities of the State Treasury in the assets of financial institutions (particularly of banks).

At the same time, the establishment of the financial conglomerate controlled by the State Treasury, comprising systemically important banking and insurance institutions, has increased the scale of intra-sectoral linkages in the financial system.

As a result of the ownership changes that took place in the Polish banking sector in recent years, approx. 40% of the assets of the banking sector (an increase of 16 p.p. since the end of 2015) are controlled directly or indirectly by the State Treasury (Figure 5.3, left panel). There are 3 systemically important institutions (O-SII banks) in the group of these banks. In the insurance sector the share of
the largest entity controlled by the State Treasury exceeds 41%. In the investment fund sector the share of entities controlled by the state amounts to over 30%.

At the same time, as a result of the recent legislative changes\(^{104}\) the composition of the Polish Financial Supervision Authority (KNF) was expanded to include a representative of the President of the Council of Ministers. As a result, representation of government representatives among the members of the KNF with voting rights has increased from 38% (3/8) to almost 45% (4/9), which translates into greater influence of government representatives on the voting results.

In recent years the share of the liabilities of the State Treasury in the assets of financial institutions has also risen. In particular, Treasury securities pay an important role in the balance sheets of financial institutions. At the end of December 2018, they constituted almost 17% of assets in the banks, almost 38% of assets in insurance companies, and almost 21% of assets in investment funds. In the longer term it can be observed that the banks controlled by the State Treasury hold relatively fewer Treasury bonds compared to the remaining units (see Figure 5.3, right panel).

The situation in which the government may play the role of owner and supervisor at the same time, as well as an important borrower (via Treasury securities held by the banks) in relation to systemically important institutions poses a series of challenges from the point of view of financial stability.

**Figure 5.3. Ownership structure of banks (left panel) and share of Treasury securities in banks’ assets (right panel) in the years 2010-2018**

Source: NBP.

**The state as owner**

The literature on this subject mentions three main arguments that explain the benefits from the functioning of state-owned banks.\(^{105}\) The first of these points out that in countries with a low level of development, greater state involvement could act as an incentive to develop financial services and

\(^{104}\) See the Act of 9 November 2018 on amending certain acts in connection with the strengthening supervision over the financial market and investor protection on the Polish market (Journal of Laws of 2018 item 2243).

lead to a reduction in financial exclusion. The second underlines that state-owned banks can strengthen the rate of economic development, playing a key role in the allocation of resources to strategic sectors which the private sector cannot or does not want to finance. In this way, they help to eliminate the failures of the market and support investment that has positive external effects. The third argues that there are circumstances indicating that state-owned banks can play a stabilising role in times of recession. As far as the causes of the financial crisis are mainly external, these banks can act countercyclically, maintaining the supply of credit to the economy and particularly to the more vulnerable sectors, such as SMEs.

At the same time, it is possible to distinguish two alternative views which suggest that state control of banks can lead to the ineffective use of resources. According to “agency theory”, even when the state has the best intentions, agency costs related to state bureaucracy can lead to operational ineffectiveness and inappropriate allocation of resources. A related theory suggests that state-owned banks serve to achieve the objectives selected by politicians, which leads to inappropriate allocation of resources and economic ineffectiveness. Many empirical studies conducted at an international level indicate that state-owned banks are characterised by relatively low effectiveness and higher rates of risk than private banks. However, there is no conclusive evidence that state ownership in itself has an impact on the frequency of banking crises.

**The state as a borrower**

The global financial crisis and the debt crisis in the euro area showed that the condition of the public finance sector and the banking sector are closely related. The mechanism of shock transmission is bi-directional and results mainly from exposure of banks to state debt. The deterioration of the creditworthiness of the state has a negative impact on the valuation of Treasury bonds held in the banks’ portfolios. This results in losses in domestic banks and increased probability of public assistance, which at the same time puts pressure on the financial stability of the state (see the example of Greece, Portugal and Spain). In addition, the banks that suffer the biggest losses restrict lending, which has an adverse effect on economic activity, leads to a deterioration in the financial condition of borrowers, and translates into lower tax revenue. From the point of view of financial stability, the presence of the state among the shareholders of the banks may strengthen the negative feedback between the public finance sector and the banking sector, given the fact that the main owner may be subject to market pressure to recapitalise the bank when it faces financial difficulties (e.g. as a result of tensions on the debt market).

108 See R. Cull, et, al. op. cit.
The government as owner and supervision authority

In the face of the dual role of the state in the financial sector (as owner and borrower) it is essential to have suitable control mechanism that will guarantee that the above-mentioned risk factors will be identified quickly enough and mitigated, regardless of the ownership structure of the bank. This can be ensured by effective and independent bank supervision equipped with suitable instruments.

At the end of 2018 the composition of the KNF was expanded to include a representative of the President of the Council of Ministers and three non-voting members. As a result, the number of KNF members with voting rights increased from 8 to 9, and the number of government representatives with voting rights increased from 3 to 4. This change means that, assuming a common position of the government representatives, the results of most of the voting will be in accordance with the position of the government representatives, while earlier, due to the deciding vote of the Chairman, the votes of the representatives of the UKNF played the dominant role (see Table 5.1). Consequently, the direct influence of the government on the decision-making process in the financial system supervisory institutions has been strengthened.

Table 5.1. Simulation of compliance of vote of individual institutions with the final voting result of the KNF (assuming a common position of the government representatives).

<table>
<thead>
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<th>UKNF</th>
<th>Government</th>
<th>NBP</th>
<th>President</th>
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<tbody>
<tr>
<td>Current composition of the KNF</td>
<td></td>
<td></td>
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<tr>
<td>– 4 government representatives</td>
<td>63%</td>
<td>88%</td>
<td>63%</td>
<td>63%</td>
</tr>
<tr>
<td>Previous composition of the KNF</td>
<td></td>
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</tr>
<tr>
<td>– 3 government representatives</td>
<td>88%</td>
<td>63%</td>
<td>63%</td>
<td>63%</td>
</tr>
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</table>

Notes: KNF composition (members with voting rights): UKNF – 3 members: Chairman and two Deputies, Government – 4 members: representative of the President of the Council of Ministers, representative of the minister responsible for financial institutions, representative of the minister responsible for the economy, representative of the minister responsible for social security, NBP – 1 member: Board Member of Narodowy Bank Polski, President – 1 member: representative of the President of the Republic of Poland. It was assumed that all the members are present, all the institutions vote according to their opinion (there is no coalition between members), and all government representatives vote the same way.

Source: NBP.

The need to separate the supervisory and ownership functions results from the divergence of objectives – the objective of the owner is, as a rule, to maximise profit, while the objective of the supervisor is to reduce risk. It is precisely due to this conflict of interest that representatives of the banking sector (e.g. the ZBP) are not represented in supervisory institutions and in the Board of the BFG.

109 See the Act of 9 November 2018 on amending certain acts in connection with the strengthening supervision over the financial market and investor protection on the Polish market (Journal of Laws of 2018 item 2243).
This phenomenon may lead to the creation of moral hazard on the side of both the financial institutions and their clients. The management boards of institutions in which the State Treasury is a significant shareholder could be guided by the conviction that they should achieve the objectives expected by the owner (including those related to the government’s economic policy), at the same time assuming that in the case of problems the owner will provide assistance. Clients of such institutions may also perceive the problem in a similar way, perceiving financial institutions owned by the State Treasury as safer entities than those owned by private capital. Representatives of the government sector in supervisory institutions may also be subject to moral hazard in situations of conflict between the achievement of the economic objectives of the government and the effective mitigation of risk in the banks controlled by the government sector. In the long term, such a system of moral hazard may create systemic risk.

5.2. Risk triggers

The risk triggers identified in this report refer primarily to trends in the external environment of the Polish economy and their impact on Poland’s economic situation. The triggers may affect the domestic financial system via the credit channel and the market channel.

Materialisation of credit risk (i.e. growth of impaired loans) could be caused by the weakening of the pace of economic growth in Poland, resulting indirectly from the economic slowdown in the EU and a fall in export. A worse economic growth outlook for the EU would also have a negative impact on the availability of cross-border funding for entities in Poland.

Materialisation of market risk might manifest itself in the form of a weaker zloty exchange rate, market interest rate increases, a fall of financial asset prices, or higher pressure on raising the interest on deposits. A depreciation of the zloty and an increases of interest rates on global markets would lead to a rise in FX debt servicing costs, both for banks and their clients. Banks would also have to increase the value of margin deposits in derivatives transactions in international markets, which may push up costs of those transactions. Should the rise in global interest rates be accompanied by an increase in domestic market interest rates, banks’ earnings would be decreased due to a drop in the valuation of bank’s debt securities portfolios. The need to post higher margins in derivatives transactions could also imply banks’ increased liquidity needs and more intense competition for clients’ deposits. Such a situation occurred in late 2008 and early 2009 after the collapse of the Lehman Brothers, when the interest on interbank deposits and on customer deposits rose substantially.
5.3. Resilience of the banking sector to shocks

5.3.1. Single-factor simulations of materialisation of the credit exposure concentration risk

In order to assess the resilience of the banking sector to the materialisation of credit exposure concentration risk, simulations were performed to examine the impact on banks of a simultaneous bankruptcy of the three largest borrowers of each of the banks and the three largest domestic borrowers of the whole sector\(^\text{110}\).

The simulation of the bankruptcy of the three largest borrowers at each bank shows that bankruptcy-related losses would neither jeopardise solvency of the majority of the domestic banking sector nor its capacity to keep the required level of Common Equity Tier 1 capital for capital buffers purpose. A shortage of capital necessary to meet the Pillar 1 and Pillar 2 requirements would be reported by a small commercial bank and 62 cooperative banks with a total share in the banking sector’s assets below 2.8%. The total shortage of capital, together with banks having capital shortages before the simulation, would reach 1.2 billion zlotys (i.e. approx. 34% of regulatory capital of the group of banks in which such a shortage occurred). A shortfall of Common Equity Tier 1 capital needed to meet the current capital buffer requirements would be recorded by seven commercial banks and 295 cooperative banks with an approx. 9% share in the banking sector’s assets. The total shortage of Common Equity Tier 1 capital for capital buffers, together with banks having capital shortages before the simulation, would amount to approx. 6.5 billion zlotys.

The simulation assuming additionally that the borrowers would cease to service their total credit obligations also towards all the other banks shows that credit concentration risk largely concerns cooperative banks. A shortage of capital necessary to meet the Pillar 1 and Pillar 2 requirements would occur in six commercial banks and 146 cooperative banks with a total share of 10.5% in the banking sector’s assets. The total shortage of capital, together with banks having capital shortages before the simulation, would amount to 3.6 billion zlotys (22.9% of regulatory capital of the group of banks in which the shortage occurred). A shortfall of Common Equity Tier 1 capital needed to meet current capital buffer requirements would be recorded by another nine commercial banks and 314 cooperative banks with a total share in the banking sector’s assets of 23%. The total shortage of Common Equity Tier 1 capital for capital buffers, together with banks having capital shortages before the simulation, would be approx. 11.8 billion zlotys (approx. 6.4% of own funds at the end of 2018).

A comparison of the simulation results with simulations based on June 2018 data is evidence of a growing credit exposure concentration risk in banks with low capital excess. The results indicate that the amount of a potential shortage of capital for the Pillar 1 and Pillar 2 requirements has risen more than the amount of shortage of Common Equity Tier 1 capital exclusively for capital buffers.

\(^{110}\) The results of simulations and stress tests are referred to the Pillar 1 and Pillar 2 capital standards and, additionally, to the combined buffer requirement. The methodology and assumptions of the simulations and stress tests are specified in Appendix I “Financial Stability Report. December 2018”, NBP.
The materialisation of the scenario of a simultaneous bankruptcy of the three largest non-financial borrowers of the banking sector would not significantly impact the solvency of creditor domestic banks or their capacity to absorb shocks via their capital buffers. Such borrowers’ indebtedness is still relatively small in relation to the size of domestic banks’ assets and their capital levels. Liabilities of the three borrowers under analysis are held in the portfolios of 12 commercial banks (representing a share of approx. 73% in the banking sector’s assets). The losses arising from the bankruptcy of these borrowers (totalling approx. 11 billion zlotys) would not cause capital shortages in banks, neither with regard to the capital adequacy ratios nor capital buffers.

**Table 5.2.** Simulation of the impact of a hypothetical bankruptcy of the three largest borrowers of each bank

<table>
<thead>
<tr>
<th></th>
<th>Before simulation June 2018</th>
<th>After simulation</th>
<th>exposures in particular bank</th>
<th>exposures in all banks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit losses after simulation (zloty billion)</td>
<td>-</td>
<td>25.3</td>
<td>40.5</td>
<td></td>
</tr>
<tr>
<td>Share of banks in banking sector assets that are not compliant with capital ratios standards (pillar 1 and pillar 2)</td>
<td>1.4%</td>
<td>4.3%</td>
<td>11.8%</td>
<td></td>
</tr>
<tr>
<td>Share of banks in banking sector assets that are not compliant with combined buffer requirement</td>
<td>7.7%</td>
<td>16.5%</td>
<td>30.9%</td>
<td></td>
</tr>
</tbody>
</table>

*Source: NBP.*

**5.3.2. Single-factor simulation of materialisation of risk stemming from a significant change in the fair value of government bonds**

Due to substantial treasury securities share of banks’ assets, a simulation was conducted of a change in valuation of debt instruments issued by the central government and classified by banks as assets measured at fair value through other comprehensive income (their change in value is reflected in Common Equity Tier 1 capital). The simulation illustrates the potential impact size of fall in value of the treasury securities portfolio on banks regulatory capital value. The estimates do not take into account the effects of hedging the portfolio with derivative instruments.

The simulation results show that commercial banks are sensitive to changes in the market valuation of securities portfolios. A 10% decrease in the value of the portfolio may cause a breach of the combined buffer requirements in banks holding 17% of assets of the domestic banking sector, and a change in the value of the portfolio by an additional 5% begins to cause a breach of the Pillar 1 and Pillar 2 capital standards in banks with a 6% share in the sector’s assets. However, historical volatility of yield changes of government bonds suggests that the likelihood of such sharp fall in the value of government bonds is small.

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111 Bonds and Treasury bills of the government of the Republic of Poland and government bonds of other countries.
Figure 5.4. Breach of the capital requirements or the combined buffer requirement due to fall in the value of government bonds

Notes: The figure shows the results of a simulation for the banking sector at the unconsolidated level. Some banks do not comply with the Pillar I and Pillar 2 capital requirement or the combined buffer requirement already before the simulation (see Table 5.2).

Source: NBP.

5.3.3. Stress tests

Stress tests encompassing macroeconomic, market and liquidity shocks were carried out to assess the resilience of domestic commercial banks\textsuperscript{112} to negative shocks. The analysis was aimed at quantifying the effects of hypothetical shocks on domestic commercial banks from the first quarter of 2019 to the end of 2021. The results of the simulation for the reference scenario as well as other simulations contained in this chapter should not be regarded as a forecast of the situation in the banking sector.

Reference scenario and shock scenario

Stress tests were carried out on the basis of two scenarios: a reference scenario and a shock scenario. The central path of the NBP macroeconomic projection from the “Inflation Report. March 2019”, prepared under the assumption of constant interest rates, served as the reference scenario. A significant deterioration of the economic outlook was assumed in the macroeconomic shock scenario, stemming from the materialisation of the risk factors in the global economy discussed in the previous chapters. Under such assumptions, a significant decline in the pace of economic growth in Poland (see Table 5.3) and an increase in risk aversion in the financial markets would be observed, which would result in a substantial deterioration of conditions for the operating activity of banks. The probability of such a combination of shocks and economic slowdown as severe as the one resulting from the shock scenario is, however, small (see Figure 5.5).

\textsuperscript{112} The tests cover domestic commercial banks, including associating banks (except for BGK).
Table 5.3. Key economic indicators considered in the macroeconomic scenarios (in %)

<table>
<thead>
<tr>
<th></th>
<th>2019</th>
<th>2020</th>
<th>2021</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP growth rate (YoY)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reference scenario</td>
<td>4.0</td>
<td>3.7</td>
<td>3.5</td>
</tr>
<tr>
<td>shock scenario</td>
<td>2.5</td>
<td>1.4</td>
<td>1.3</td>
</tr>
<tr>
<td>Labour force survey</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>unemployment rate</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reference scenario</td>
<td>3.4</td>
<td>3.2</td>
<td>3.0</td>
</tr>
<tr>
<td>shock scenario</td>
<td>3.8</td>
<td>4.6</td>
<td>5.4</td>
</tr>
<tr>
<td>CPI inflation (YoY)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reference scenario</td>
<td>1.7</td>
<td>2.7</td>
<td>2.5</td>
</tr>
<tr>
<td>shock scenario</td>
<td>2.5</td>
<td>3.7</td>
<td>1.7</td>
</tr>
<tr>
<td>WIBOR3M</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>reference scenario</td>
<td>1.7</td>
<td>1.7</td>
<td>1.7</td>
</tr>
<tr>
<td>shock scenario</td>
<td>1.6</td>
<td>1.1</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Source: NBP.

Figure 5.5. Macroeconomic shock scenario against the fan chart of GDP presented in “Inflation Report. March 2019”

Notes: 30%, 60% and 90% is the likelihood of observing the GDP growth within a given band as projected by NBP in accordance with the notes to Figure 4.1 of “Inflation Report. March 2019”.
Source: NBP.

Results

The vast majority of banks examined in the simulations would hold sufficient capital resources to expand their businesses if the reference scenario were to materialise. The average total capital ratio would drop from 18.4% to 17.1%. The capital ratios of the majority of banks would decrease (see Figure 5.7) due, among others, to the growth in lending and the related increase in risk exposure. Only one
bank would fail to meet the Pillar 1 and Pillar 2 capital ratios at the end of the simulation period. At the same time, nine banks, representing a 14% share in the banking sector’s assets, would fail to meet the combined buffer requirement (see Table 5.4). The estimated value of the capital shortfall would amount to 5.7 billion zlotys, i.e. 21% of their regulatory capital at the end of 2018. A common feature of the majority of the banks which do not comply with the combined buffer requirement in the reference scenario is their relatively low initial level of capital surplus combined with low (and sometimes negative) profitability ratios, which reduces their capacity to accumulate capital from retained earnings as well as obtain funding from investors.

Table 5.4. The results of the NBP macro stress tests

<table>
<thead>
<tr>
<th></th>
<th>Historical data for the period Q1 2018 - Q4 2018</th>
<th>Simulation results for the period Q1 2019 - Q4 2021</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Reference scenario</td>
<td>Shock scenario</td>
</tr>
<tr>
<td>On average per year (as % assets)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charges to loan impairment provisions</td>
<td>0.5</td>
<td>0.9</td>
</tr>
<tr>
<td>Net interest income</td>
<td>2.4</td>
<td>2.4</td>
</tr>
<tr>
<td>Net earnings</td>
<td>0.8</td>
<td>0.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capital shortage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pillar 1 and 2 capital shortfall (zloty billion)</td>
<td>0.5</td>
<td>1.6</td>
</tr>
<tr>
<td>Pillar 1 and 2 increased by the combined buffer requirement capital shortfall (zloty billion)</td>
<td>2.6</td>
<td>5.7</td>
</tr>
<tr>
<td>Banks that do not meet Pillar 1 and 2 capital requirements</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- number of banks</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>- share of the banking sector assets (%)</td>
<td>1.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Banks that meet Pillar 1 and 2 capital requirements but do not meet the combined buffer requirement</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- number of banks</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>- share of the banking sector assets (%)</td>
<td>5.0</td>
<td>13.6</td>
</tr>
<tr>
<td>Additional information – market shock in the simulation period (zloty billion)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in bond value recognized in the profit and loss account</td>
<td>n/d</td>
<td>n/d</td>
</tr>
<tr>
<td>Change in bond value recognized in capital</td>
<td>n/d</td>
<td>n/d</td>
</tr>
<tr>
<td>Zloty depreciation impact (impairment charges to households FX loans) recognized in the profit and loss account</td>
<td>n/d</td>
<td>n/d</td>
</tr>
</tbody>
</table>

Notes: (1) The scenario is based on the central path of the NBP macroeconomic projection from “Inflation report. March 2019”. (2) “Net interest income” includes fees and commissions income on granted loans, but does not include interest income on debt securities. (3) “Capital needs” result from the macroeconomic and market shock and the domino effect. The result of the simulation for the reference scenario or other simulations contained in this section should not be considered as a forecast of the condition of the banking sector. Source: NBP.

The scenario of a significant slowdown in economic growth and increased risk aversion would lead to a sharp fall in the profitability of banks, and losses in some institutions, which would have to be covered from available capital (see Figure 5.6). The average total capital ratio would drop from 18.4% to 14.8%. The overwhelming majority of entities would experience a fall in their total capital ratio (see Figure 5.7). Six banks would fail to meet the Pillar 1 and Pillar 2 capital ratios, representing a 7.6% share in the banking sector’s assets. The shortfall in regulatory capital would amount to 4.2 billion zlotys (i.e. approx. 36% of their regulatory capital as at the end of December 2018). Moreover, another 11 banks, with a 15.5% share in the assets of the banking sector, would use part of their capital buffers collected under the combined buffer requirement. In the case of all these 17 banks, the shortfall in capital needed to meet again the combined buffer requirement would amount to 16.6 billion zlotys (i.e. approx. 37%...
of their own funds). However, it should be pointed out that one of the main objectives of capital buffers is to increase the capacity of banks to absorb losses in stress conditions and limit the likelihood of decline in lending in the economy. Therefore, the temporary use of capital buffers by banks in times of crisis should not be perceived as a negative development.\footnote{\textsuperscript{113}}

**Figure 5.6.** Accumulated changes in the total capital ratio in the shock scenario (% of risk-weighted assets)

Notes: Purple bars represent the value of the total capital ratio of banks analysed at the beginning and the end of the simulation period under the shock scenario. Factors with a positive influence on the average total capital ratio over the simulation period are marked with green bars, and those with an adverse influence – with red bars. The influence of these factors is expressed in percentage points. “\textit{Retained earnings of 2018 H1}” are an assumed increase in the capital of banks by a part of undistributed (end of June 2018) profit earned prior to the start of the simulation. “\textit{Earnings before impairment charges and tax on assets}” are equivalent to net income from banking activity, less, among others, operating costs. “\textit{Tax on assets}” is the estimated amount of a tax on certain financial institutions, which would be paid by banks in the simulation period. It is assumed that a bank that records a loss in two subsequent quarters will be subject to a recovery plan, which will exempt it from paying tax over the remaining projection period. **Source:** NBP.

\textbf{The results of the additional analysis indicate that even if the shock scenario were to materialise, no contagion effect would occur between banks.} In the adverse scenario, only two banks would meet the conditions which were assumed in the analysis for defaulting on repayment of liabilities to other banks\footnote{\textsuperscript{114}} but the other surveyed banks had no exposure to these entities.

\footnote{\textsuperscript{113} In accordance with the provisions of the CRDIV/CRR package, banks not complying with the supervisory capital buffers requirements, despite the fact that they have to prepare capital conservation plans specifying the manner of replenishing capital shortfalls, can carry on their operations, while retaining a relatively high autonomy. The consequences of non-compliance with the combined buffer requirements are discussed in detail in Box 4 in the “Financial Stability Report. June 2017”. In the context of the analysis of the shock scenario, it should also be pointed out that the basic assumption of buffers is the build-up of adequate capital surpluses over the requirements of Pillar 1 and Pillar 2 so that they can be used in the event of a shock.}

\footnote{\textsuperscript{114} The simulation assumes that a decrease in the bank’s total capital ratio below 4\% is such a condition.}
The results of the liquidity shock simulation have indicated that the resilience of domestic commercial banks is good and has improved in relation to the assessment presented in the previous issue of the Report. Banks hold adequate buffers of liquid assets to face situations of stress related to financing. However, there is a group of banks with an elevated liquidity risk profile, with a share of approximately 6% in the banking sector’s assets. These banks could have problems with covering their liabilities with available liquid assets if foreign funding is limited, the zloty is depreciated, and customer confidence falls (see Figure 5.8). Their shortfall of liquid assets would total approx. 10.5 billion zlotys. At the same time, it is worth underlining that the probability and scale of the potential liquidity shock in the case of individual banks may not be uniform and may be the result of many factors, including factors not directly related to the liquidity profile of the bank.

Figure 5.7. Distribution of banks covered by stress tests according to the total capital ratio

Figure 5.8. Assets of domestic commercial banks by coverage of funds’ outflow with a buffer of liquid assets in the NBP’s shock scenario

The results of the stress tests indicate that the likelihood of materialisation of systemic risk and a disruption in the provision of financial intermediation services by banks is low. The relatively high initial levels of capital ratios would allow the majority of banks to absorb losses arising from the materialisation of external risk factors and continue lending. Only a small group of banks would face capital shortfalls in relation to the Pillar 1 and Pillar 2 capital requirements. The direct linkages of these institutions with the rest of the sector are insignificant; however, their situation could have an impact on the remaining banks via indirect channels, including via the funds contribution mechanism to the BFG and the customer confidence channel.
Glossary

6 cities - six capitals of provinces with the largest population, constituting developed, active housing markets (Gdańsk, Gdynia, Kraków, Łódź, Poznań, Wrocław).

10 cities – ten, rest capitals of provinces with the largest population, constituting active housing markets (Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin i Zielona Góra).

Adjusted net interest margin – the ratio of net interest income on a given loan portfolio posted in a given period less net charges to provisions for expected loan losses created in this period to the average value of this portfolio over this period.

Annualised data – in the case of data on flows – the value of flow in the preceding 12 months; in the case of data on balance (stock) – the average value of balance in the preceding 12 months.

Auto casco insurance AC – comprehensive auto insurance of land vehicles, excluding track vehicles, covering damage in automobiles or land vehicles lacking own drive – Class 3 of the non-life insurance sector according to the Act on Insurance Activity.

Automobile third party liability insurance OC – third party liability insurance for land vehicles with own drive – Class 10 of the non-life insurance sector according to the Act on Insurance Activity.

Banking sector – all domestically incorporated commercial and cooperative banks as well as branches of foreign credit institutions active in Poland.

Baseline credit assessment (BCA) – a main measure developed by Moody’s designed for the assessment of banks. Calculated in accordance with the new methodology (implemented in March 2015), the measure replaced the financial strength rating. It represents the probability of default of the bank without any external support and its scale depends on the financial profile of the bank’s activity, qualitative factors, such as the level of business diversification and complexity, and corporate practices, as well as the status of the macroeconomic environment in which the banks operate.

Collateralized Loan Obligations (CLOs) – debt instruments issued by a special purpose entity in the process of securitization of purchased loan claims. The CLOs are secured by these loan claims – mainly loans made to the non-financial corporations with low credit rating and high debt.

Commercial banks – all domestically incorporated commercial banks and branches of foreign credit institutions.

Consumer loans – loans granted to natural persons for personal use in the consumption of goods and services (including overdrafts and credit card loans).
Core deposits – stable part of deposits of the non-financial sector.

Covenants – loan agreement provisions obliging the borrower to maintain certain financial ratios on a specified level (e.g. debt-to-equity or debt-to-assets, loan-service-payments to gross earnings before interest and depreciation), or to refrain from taking specified actions (e.g. making payments to shareholders, selling or encumbering assets, merging with other entities).

Credit availability of housing - a measure of the number of square meters of housing that can be purchased using a housing loan with an average monthly salary in the enterprise sector on a given market (CSO), taking into account bank’s credit requirements and loan parameters (interest rate, depreciation period, minimum remuneration as minimum income after repayment of loan installments) at the average transaction price of a flat (40% from Poland and 60% from RW) on a given market (BaRN). The pace of changes in the index and the spread between markets is of pivotal importance.

Credit Default Swap (CDS) – a derivative transaction under which the issuer undertakes to pay the buyer contractually specified compensation in the case of a credit event pertaining to a third party (the reference entity) in return for remuneration in the form of a single/upfront payment or periodic payments (so called premiums). The value of remuneration paid to the issuer of the CDS is interpreted as a measure of the perceived credit risk of the reference entity.

Credit losses – in banks applying the IFRS – balance of provisions created or (-) released for expected credit losses (until the end of 2017, charges to provisions for impaired loans); in banks applying the Polish Accounting Standards – balance of specific provisions created or released. Credit losses also include net income on write-downs of a financial asset in the amount of the difference between the value of the financial asset written down and the value of provision/specific provision, as well as recovery of assets written down earlier.

Cross-Currency Interest Rate Swap – a derivative transaction under which the parties are obliged to the periodic exchange of interest payments calculated on the basis of an agreed nominal amount for a set period of time. Interest payments are denominated in different currencies and calculated on the basis of interest rates for each currency. Such a transaction may involve the exchange of the nominal amount at the start or at the end of the transaction (at a predetermined exchange rate).

Deposit rating (long-term) – a measure of the capacity of a financial institution to repay its liabilities with a maturity of 1 year or more. It reflects the risk of default and the scale of possible losses in the case of default of the financial institution.

Deposit rating (short-term) – a measure of the capacity of a financial institution to repay its liabilities with a maturity of less than 1 year. It reflects the risk of default and the scale of possible losses in the case of default of the financial institution.

Domestic banking sector – domestic commercial banks and cooperative banks.
**Domestic commercial banks** – domestically incorporated banks operating in the legal form of a joint-stock company or a state bank.

**Earned premium** – the written premium less the change in unearned premium provisions.

**Effective interest rate** – the ratio of interest income (cost) to average value of claims (liabilities) in a given period.

**Fee and commission margin** – the ratio of net fees and commissions income in a given period to the average value of assets in the period.

**Forward Rate Agreement** – a derivative transaction under which the parties are obliged to exchange the difference between the FRA rate (forward rate determined at the date of the transaction) and the reference rate that was binding two working days before the date of settlement (fixing date), calculated on the basis of an agreed nominal amount for a set period of time starting in the future. **FX Swap** – a derivative transaction under which the parties are obliged to exchange an amount of currencies at a settled exchange rate on a specified date and then repurchase the previously exchanged amounts at a predetermined exchange rate and date.

**Funding gap** – the difference between the amount of loans to the non-financial sector and the general government sector, and the amount of deposits accepted from those sectors, expressed as percentage of the value of loans.

**Housing loans** – loans on residential real estate for households.

**Individual rating (Stand-Alone Credit Profile, SACP)** – (a rating of the rating agency S&P) a measure of the long-term capacity of a financial institution to perform its activities without the support of third parties, calculated on the basis of the assessment of the risk of operation in different countries in which it is active and the individual characteristics of this financial institution.

**Interest rate gap** – the difference between interest bearing assets and liabilities repriced in a given time bucket and in a given currency.

**Interquartile range** – the difference between the value of the third quartile and the value of the first quartile in the distribution of a variable.

**JPM G7 Volatility Index, JPM EM Volatility Index** – risk indices for the FX market calculated by J.P. Morgan Chase & Co. as the weighted average of 90-day implied volatility derived from at-the-money FX options for USD against, respectively, the 9 most liquid currencies from the developed countries and 14 most liquid currencies from emerging markets. The weightings of individual currencies within the indices are based on turnover data in the global market for FX options.

**Leverage (banks)** – according to CRDIV/CRR, the leverage ratio is calculated as the ratio of Tier I capital to the exposure measure that includes both on- and off-balance-sheet exposures.
**Leverage (investment funds)** – the ratio of total assets to net assets of a fund expressed in percentages.

**Liquid reserve of credit unions** – funds amounting to no less than 10% of the saving-loan fund (which comprises own funds of members and their savings), kept by credit unions in the form of: cash, funds on separate accounts with the National Association, and units of money market funds.

**Loan-to-Value** – the ratio of the value of loan outstanding to the current value of the property on which the loan was secured.

**Loans with identified impairment** – in banks applying the IFRS – loans from portfolio B are credit-impaired loans, if an event/events having a negative influence on the estimated future cash flows on such loans occurred (Stage 3) (by the end of 2017 – loans from portfolio B for which objective evidence of impairment and a decrease in the value of expected cash flows have been recognised); in banks applying the Polish Accounting Standards – loans from portfolio B classified as irregular pursuant to the Regulation of the Minister of Finance regarding the principles for creating provisions for the risk of banking activity.

**Net income from banking activity** – the sum of net interest income and net non-interest income.

**Net interest margin** – the ratio of net interest income in a given period to average assets in this period.

**Maximum availability of housing loans** on a given market is a measure expressed in thousands of zlotys, taking into account bank’s credit requirements and loan parameters (ie interest rate, depreciation period of 25 years, minimum remuneration as the minimum income after repayment of loan installments). The estimate does not take into account changes in the lending policy of banks, including the granting criteria and loan terms.

**MOVE** – risk index for the US Treasury bond market calculated by Bank of America Merrill Lynch on the basis of a 30-day implied volatility derived from Treasury options. The share of Treasury bond options of 2-year, 5-year, 10-year and 30-year maturities in the index amounts to 20%, 20%, 40% and 20%, respectively.

**MSCI EM** – the stock index calculated by Morgan Stanley Capital International on the basis of stock indices of 23 emerging markets, weighted by the free float value of these instruments in a given market.

**Net charges to provisions for impaired loans** – charges to provisions for impaired loans less releases of provisions for impaired loans in a given period.

**Non-interest income** – the sum on income on fees and commissions, revenue from dividends, income on valuation of instruments measured at fair value, gains/losses from the derecognition of financial instruments other than instruments measured at fair value through profit and loss, and foreign exchange rate differences.
**Operating costs** – the sum of the bank’s general expenses and amortisation.

**Own funds of insurance undertaking** – the sum of basic own funds which include the excess of assets over liabilities and subordinated liabilities, and ancillary own funds which comprise unpaid share capital or initial fund that has not been called up, letters of credit and guarantees and also any other legally binding commitments received by insurance undertakings (or reinsurance undertakings).

**Portfolio B** – a portfolio of assets separated in banks’ prudential reporting, comprising – since 2018 – for banks applying the IAS/IFRS the whole portfolio “Financial assets measured at amortised cost” and claims from the portfolio “Financial assets measured at fair value through other comprehensive income”, and for banks applying the Polish Accounting Standards – the whole portfolio “Loans and other receivables”, “Financial assets held to maturity” and claims from the portfolio “Financial assets available for sale”. Until 2017, portfolio B comprised claims classified as available for sale or held to maturity as well as all financial instruments (including debt securities) classified as loans and receivables.

**Price-to-book value ratio** – the ratio of the price of one share of a company to the accounting value of capital per share.

**Small credit union** – a credit union with assets at the end of the financial year below 20 million zlotys and an average annual number of members below 10 thousand persons.

**Small and medium-sized enterprises** – enterprises that employ fewer than 250 persons.

**Solvency Capital Requirement (SCR)** – corresponds to one-year Value-at-Risk (with a confidence level of 99.5%) of a change of basic own funds of an insurance or reinsurance undertaking.

**Systemic risk** – a risk of disruption in the functioning of the financial system, which in the case of its materialisation, interferes with the functioning of the financial system and the national economy as a whole (Article 4(15) of the Act on Macroprudential Supervision of the Financial System and Crisis Management).

**Technical provisions** – the amount of liabilities arising from insurance contracts.

**Technical result** – the difference between income from premiums as well as certain income from deposits and other technical income and claims and benefits paid, changes in insurance provisions, the costs of insurance activity and other technical costs.

**Viability rating** – an individual rating assigned to institutions by Fitch Ratings advising of the financial condition of single entities.

**VIX** – risk index for the equity market calculated by the Chicago Board Options Exchange on the basis of a 30-day implied volatility derived from the out-of-the-money options for equities included in the S&P 500 index. A high level of the index indicates an elevated level of risk aversion.
**VXEEM** – risk index for equity markets of emerging economies calculated by the Chicago Board Options Exchange on the basis of a 30-day implied volatility derived from the out-of-the-money options on the units of MSCI EM exchange-traded fund.
## Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>auto casco</td>
</tr>
<tr>
<td>AFI</td>
<td>Alternative Investment Fund</td>
</tr>
<tr>
<td>AMA</td>
<td>Advanced Measurement Approach</td>
</tr>
<tr>
<td>ASF</td>
<td>Available stable funding</td>
</tr>
<tr>
<td>BAEL</td>
<td>Badania Aktywności Ekonomicznej Ludności (Labour Force Survey)</td>
</tr>
<tr>
<td>BEA</td>
<td>U.S. Bureau of Economic Analysis</td>
</tr>
<tr>
<td>BFG</td>
<td>Bank Guarantee Fund</td>
</tr>
<tr>
<td>BGK</td>
<td>Bank Gospodarstwa Krajowego</td>
</tr>
<tr>
<td>BIK</td>
<td>Credit Information Bureau</td>
</tr>
<tr>
<td>BIS</td>
<td>Bank for International Settlements</td>
</tr>
<tr>
<td>CDS</td>
<td>Credit Default Swap</td>
</tr>
<tr>
<td>CLO</td>
<td>Collateralized Debt Obligation</td>
</tr>
<tr>
<td>CIRS</td>
<td>Cross-currency Interest Rate Swap</td>
</tr>
<tr>
<td>CPI</td>
<td>Consumer Price Index</td>
</tr>
<tr>
<td>CCP</td>
<td>Central Counterparty</td>
</tr>
<tr>
<td>CRD</td>
<td>Capital Requirements Directive</td>
</tr>
<tr>
<td>CRR</td>
<td>Capital Requirements Regulation</td>
</tr>
<tr>
<td>EBA</td>
<td>European Banking Authority</td>
</tr>
<tr>
<td>ECB</td>
<td>European Central Bank</td>
</tr>
<tr>
<td>EIOPA</td>
<td>European Insurance and Occupational Pensions Authority</td>
</tr>
<tr>
<td>ESRB</td>
<td>European Systemic Risk Board</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>EURIBOR</td>
<td>Euro Interbank Offered Rate</td>
</tr>
<tr>
<td>EURO STOXX 50</td>
<td>Stock index of the 50 biggest companies in the euro area by value of shares in free float</td>
</tr>
<tr>
<td>EURO STOXX Banks</td>
<td>Stock index of the biggest banks in the euro area</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
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</tr>
<tr>
<td>FE</td>
<td>Pension Fund</td>
</tr>
<tr>
<td>Fed</td>
<td>Federal Reserve System</td>
</tr>
<tr>
<td>FI</td>
<td>Investment Fund</td>
</tr>
<tr>
<td>FIO</td>
<td>Open-ended Investment Fund</td>
</tr>
<tr>
<td>FOMC</td>
<td>Federal Open Market Committee</td>
</tr>
<tr>
<td>FRA</td>
<td>Forward Rate Agreement</td>
</tr>
<tr>
<td>FSC</td>
<td>Financial Stability Committee</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GPW</td>
<td>Warsaw Stock Exchange</td>
</tr>
<tr>
<td>GUS</td>
<td>Central Statistical Office of Poland</td>
</tr>
<tr>
<td>IBOR</td>
<td>Interbank Offered Rate</td>
</tr>
<tr>
<td>HH</td>
<td>Households</td>
</tr>
<tr>
<td>IBNR</td>
<td>Incurred But Not Reported (provisions)</td>
</tr>
<tr>
<td>IFRS</td>
<td>International Financial Reporting Standards</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>IPS</td>
<td>Institutional Protection Scheme</td>
</tr>
<tr>
<td>IRB</td>
<td>Internal Ratings Based Approach</td>
</tr>
<tr>
<td>IRS</td>
<td>Interest Rate Swap</td>
</tr>
<tr>
<td>KDPW</td>
<td>Central Securities Depository of Poland</td>
</tr>
<tr>
<td>KFD</td>
<td>National Road Fund</td>
</tr>
<tr>
<td>KNF</td>
<td>Polish Financial Supervisory Authority</td>
</tr>
<tr>
<td>KSKOK (National Association)</td>
<td>National Association of Credit Unions</td>
</tr>
<tr>
<td>LCR</td>
<td>Liquidity Coverage Ratio</td>
</tr>
<tr>
<td>LIBOR</td>
<td>London Interbank Offered Rate</td>
</tr>
<tr>
<td>LtV</td>
<td>Loan-to-Value ratio</td>
</tr>
<tr>
<td>MFI</td>
<td>Monetary Financial Institution</td>
</tr>
<tr>
<td>MPC</td>
<td>Monetary Policy Council</td>
</tr>
<tr>
<td>MREL</td>
<td>Minimum Requirement for Own Funds and Eligible Liabilities</td>
</tr>
<tr>
<td>mWIG40</td>
<td>Warsaw Stock Exchange index of medium-sized companies</td>
</tr>
</tbody>
</table>
NAV | Net Asset Value
---|---
NBP | Narodowy Bank Polski
NEG | negative rating outlook – expected downgrade
NIF | Non-credit Financial Institution
NIM | Net Interest Margin
NP. | Not Prime
NSFR | Net Stable Funding Ratio
O/N | Overnight
OC | third party liability insurance
OECD | Organisation for Economic Co-operation and Development
OFE | Open Pension Fund
OIS | Overnight Index Swap
OSII | Other Systemically Important Institution
PDA | right to shares
P&L account | profit and loss account
PM | primary housing market
POLONIA | Polish Overnight Index Average
PSR | Polish Accounting Standards
PZU | Powszechny Zakład Ubezpieczeń
ROA | Return on Assets
ROE | Return on Equity
RORC | Return on Regulatory Capital
S&P | Standard & Poor’s
S&P500 | Stock index of 500 companies listed on NYSE and NASDAQ with the highest value of shares in free float
SACP | Stand-Alone Credit Profile
SCR | Solvency Capital Requirement
SKOK | credit union
SM | Existing stock housing market
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>SME</td>
<td>Small and medium-sized enterprise</td>
</tr>
<tr>
<td>STA</td>
<td>stable rating outlook</td>
</tr>
<tr>
<td>STOXX Europe 600</td>
<td>Stock index of 600 largest companies from European developed markets</td>
</tr>
<tr>
<td>sWIG80</td>
<td>Warsaw Stock Exchange index of small companies</td>
</tr>
<tr>
<td>TCR</td>
<td>Total Capital Ratio</td>
</tr>
<tr>
<td>TLTRO</td>
<td>Targeted longer-term refinancing operations</td>
</tr>
<tr>
<td>UFK</td>
<td>insurance investment fund</td>
</tr>
<tr>
<td>UKNF</td>
<td>Office of the Polish Financial Supervisory Authority</td>
</tr>
<tr>
<td>VIX</td>
<td>Chicago Board Options Exchange Market Volatility Index</td>
</tr>
<tr>
<td>WIBID</td>
<td>Warsaw Interbank Bid Rate</td>
</tr>
<tr>
<td>WIBOR</td>
<td>Warsaw Interbank Offered Rate</td>
</tr>
<tr>
<td>WIG</td>
<td>Main index of the Warsaw Stock Exchange</td>
</tr>
<tr>
<td>WIG20</td>
<td>Warsaw Stock Exchange index of 20 largest companies by the value of shares in free float</td>
</tr>
<tr>
<td>WIG-banki</td>
<td>Warsaw Stock Exchange index of banks</td>
</tr>
<tr>
<td>ZBP</td>
<td>Polish Bank Association</td>
</tr>
<tr>
<td>ZU</td>
<td>insurance company</td>
</tr>
<tr>
<td>ZUS</td>
<td>Social Insurance Institution</td>
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</tbody>
</table>