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BANK POLSKI

December 2022

Financial Stability Report

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Financial Stability Department
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This Report presents the analysis and assessment of threats to Financial system stability in Poland.

Financial system stability is defined as 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 analysis conducted in this issue of the report is based on data available up to 31 October 2022 (cut-off date). The Report was approved by the Management Board of Narodowy Bank Polski on 2nd December 2022.

Table of Contents

List of Boxes

Executive summary

Poland's banking sector remains resilient, however the balance of risks is deteriorating. The bleaker macroeconomic outlook creates unfavourable environment. Moreover, the changing legal circumstances and regulatory conditions are a source of uncertainty and additional burdens for banks.

Banks' capital is sufficient to absorb potential losses arising from the materialisation of even extreme macroeconomic scenarios. The sector's liquidity position also remains stable. However, significantly reduced levels of surplus capital above the total capital requirements may become a new challenge for the banking sector. This could reduce the propensity and capacity of banks to provide financing to the economy.

The legal risk associated with the portfolio of FX housing loans **remains the main risk for domestic banking sector stability**. The costs of this risk will remain high in the coming years, however they should not endanger the financial stability. An important source of uncertainty is the right to remuneration for the borrowed capital in the event of a court ruling on the invalidity of the loan agreement. The lack of such entitlement would cause a significant increase in costs and undermine the capital position of banks. This might additionally result in increasing moral hazard for borrowers in the future. In this context, a major circumstance on this issue in 2023 will be a ruling by the Court of Justice of the European Union (CJEU).

The expected decline in economic activity in Poland has not yet been reflected in a rise in provisions for credit risk in banks, but they are expected to grow in the near future. The material increase of risk costs might be expected mainly in corporate or consumer loan portfolios. In the housing loans portfolio, the risk will be limited in 2022 and 2023, among others, due to the borrowers right to use the loan repayment holidays mechanism. After 2023, the situation will depend on the level of interest rates and macroeconomic conditions.

Despite the considerable improvement in banks' interest income following the interest rate increases, banks' profitability decreased considerably. In some cases banks showed losses. This was mainly caused by the costs of loan repayment holidays and provisions for the legal risk of FX housing loans. When combined with a possible rise in credit losses in the future, this will put pressure on banks' earnings, and, via this channel, on their capacity to accumulate capital internally.

Lending growth is significantly wakening due to persisting uncertainty in the economy, worse macroeconomic outlook, rising costs of credit and tighter supervisory requirements. A particularly strong contraction can be expected in the area of lending to households, whereas lending to the corporate sector may continue to recover for some time after the pandemic on the back of increased demand for working capital loans.

For the first time in a long time, the domestic banking sector may experience a significant fall in capital surpluses above the total capital requirements. Current capital augmented with future profits

will be sufficient to fulfil the MREL and the combined buffer requirements for most banks. However, the amount of excess capital in the sector may decline considerably in 2024 provided that banks use capital surpluses to meet the MREL requirement in its entirety. This may be the banks' preferred strategy because they already hold capital surpluses and issuance of MREL eligible instrument is difficult in the current market conditions. Nevertheless, the fulfilment of the MREL requirement with capital is less favourable from the perspective of potential resolution processes efficiency. The related shrinking of excess capital above the total capital requirements (due to its use to cover the MREL) may result in credit rationing by banks.

From the point of view of financial stability, banks' considerable investment in Treasury bonds or State-guaranteed bonds (approx. 20% of assets) remains an important issue. Banks' exposure to bonds has contributed to depleting their capital significantly due the revaluation of the securities during the period of interest rate increases. Amid the decreasing excess capital, the propensity of banks to continue increasing the exposure may become strengthened by banks optimising their capital requirements, i.e. by reducing the share of risk-weighted assets (loans) in favour of the share of zero risk assets (bonds) which are additionally excluded from the tax base of the tax on certain financial institutions. This would increase the nexus between the situation of public finance and the condition of the banking system.

At the current juncture, the contagion risk stemming from the vulnerabilities of some institutions has been eliminated as a result of the successful resolution of Getin Noble Bank. Consequently, potential burdens on the banking sector due to the vulnerability of weaker entities have been reduced. At this stage there are no identified financial institutions whose financial condition would be a source of systemic risk.

Last year brought the weakening of the credit contract, one of the main sources of financing the economy. This is reflected in the widespread loan repayment holidays available to all natural persons, regardless their financial situation and the emerging attempts to undermine loans based on the WIBOR rate. The continuation of such a situation may constitute a risk for financial stability in the future.

The lack of regulatory restrictions on the double gearing of capital and a high share of expected profits included in future premiums (EPIFPF) in own funds are those factors that undermine the resilience of insurance companies. Due to the significant scale of occurrence of the two phenomena in the domestic insurance sector, which is well beyond the EU average, high solvency ratios may inadequately reflect insurers' loss-absorption capacity. Restrictions on double gearing and eliminating EPIFP would result in a decline in the sector's SCR solvency ratio from 225% to 153%.

Excessive liquidity transformation remains a risk for UCITS. In the case of most open-ended funds, the liquidity ratio of high-quality assets has improved slightly. The share of deposits, which are the most liquid assets, is still running at a low level. There are still active open-ended funds whose liquidity ratio is close to zero.

Recommendations

In addition to identifying and assessing risk in the financial system, the role of the Report is to offer measures aimed at mitigating systemic risk. This is one of the ways 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 Narodowy Bank Polski). In the opinion of NBP, implementation of the following recommendations will be conducive to maintaining the stability of Poland's financial system.

1. Settlements in FX housing loans

Banks and borrowers should continue to reach settlements in FX housing loan cases, thus contributing to accelerating the pace of dispute resolution. If taken, such an approach may benefit both parties as it reduces uncertainty related to lengthy court procedures and the shape of final rulings and their financial implications.

2. The MREL

Banks should step up their action aimed at complying with the MREL timely, seeking to meet the requirement with eligible debt instruments, and not only with capital. Inclusion of debt instruments in the MREL would enable the achievement of the MREL objective and smooth implementation of the restructuring processes in the future. At the same time, this would also reduce the scale of the decline of excess capital above the combined capital requirements in the banking system, limiting pro-cyclicality and the risk of a credit crunch in the economy.

3. Reduction in the risk of moral hazard and the risk of credit crunch

The aim should be to reduce the uncertainty of the legal and regulatory environment and eliminate incentives to take excessive risk by market participants. Action aimed at the protection and support of consumers of financial services should target the financially distressed groups that meet specific conditions. The universal elimination of the costs of risk for one party provides incentives to take excessive risk in the future. Predictability of the environment in which the financial system functions will have a favourable impact on the access to credit and to other financial services in the economy, which is of particular importance when macroeconomic uncertainty is high.

4. Coordination of activities within macroprudential policy

The restrictiveness of supervisory and regulatory requirements towards banks should take into consideration possible systemic implications and should be coordinated within the macroprudential policy. This would contribute to limiting banks' pro-cyclical activities, in particular those resulting in constraints on the provision of funding to the economy.

5. Consolidation of the cooperative banking sector

It is desirable to continue activities aimed at increasing the degree of integration of the cooperative banking sector and its consolidation. Recently, a favourable trend of increasing integration of the sector has been observed, actively supported by associations and the protection schemes**.** However**,** from the point of a further improvement of the efficiency of the sector, it is also desirable to intensify voluntary mergers between healthy banks, based on economic calculation, in contrast to the observed intensification of mergers under the recovery process. When taking merger decisions, bank management members keep in mind the prospects of increasing the market position and competitiveness of the banks they manage.

6. Insurance companies

When making their solvency assessments, insurance companies should consider the risk of double gearing of capital and the high share of EPIFP in own funds. The loss-absorption capacity of capital originating from double gearing and EPIFP is limited.

7. Investment funds

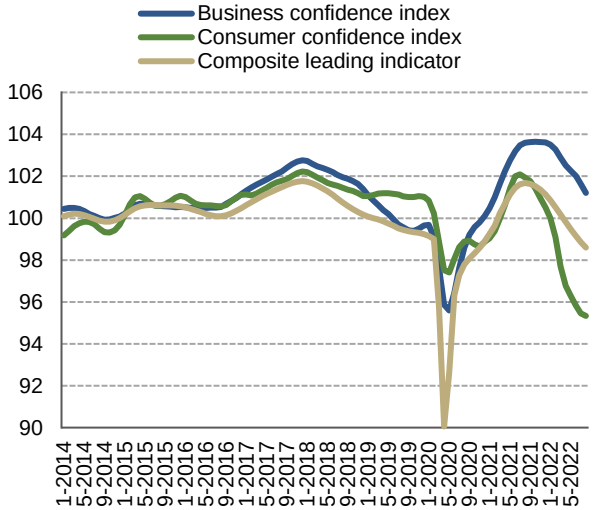
Investment funds that redeem participation units upon request should reduce the scale of liquidity transformation and increase their liquid asset buffers. The composition of investment funds' portfolios should be better adjusted to the frequency of unit redemption. If the share of liquid assets were higher, this would reduce the risk of no redemptions in the event of liquidity stress on the market.

1. Macroeconomic and external factor

1.1. External factors

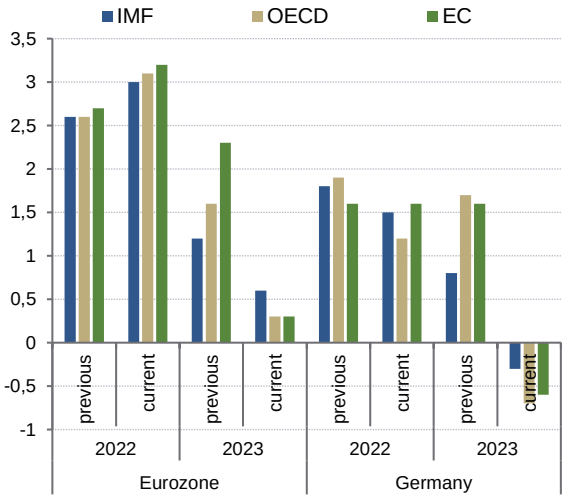
The macrofinancial effects of geopolitical tensions remain the main source of risks to the stability of the financial system in EU countries. Russia's military aggression against Ukraine caused a significant drop in the supply of energy commodities from Russia to the EU, deepened further price hikes of commodities on global markets and led to an increase of economic uncertainty worldwide. This negative supply-side shock started inflationary processes, which are beginning to affect an ever growing group of goods and services. At the same time, the European Commission[1] points out that high energy prices in Europe might persist in the near future, while BIS draws attention to the difficulties with quickly replacing Russia as a supplier of oil on the global markets.[2]

Figure 1.1. OECD confidence indicators



Source: OECD.

Figure 1.2. Comparison of the 2022 and 2023 GDP growth projections for the euro area and Germany



Source: IMF, OECD and European Commission.

Global rise of inflation has a negative impact on the real economy. The decline in real household income and rising production costs of enterprises lead to a reduction in consumer and investment spending and a fall in confidence indicators among producers and consumers (see Figure 1.1). At the same time, the monetary policy tightening in major economies results in a deterioration of the financing conditions and lower investment growth, especially on housing market**.** As a result, despite a still relatively robust job market, all the leading international institutions expect 2023 to see a significant slowdown in global economic growth, including in Poland's main economic partners (see Figure 1.2). The forecasted scale of economic slowdown varies in individual EU countries and depends i.a. on the extent to which those economies are dependent on the supply of energy commodities from Russia and on the

[1] Cf. European Economic Forecast Summer, July 2022, p. 5.
[2] Cf. BIS Quarterly Review, September 2022.

pace of growth in energy prices. Economic growth forecasts are characterised by significant uncertainty, resulting primarily from the different scenarios regarding the future development of the conflict in Ukraine and also – as indicated by the IMF[3] – the future inflationary processes and the respective monetary policy response from major central banks, as well as the anti-COVID-19 measures taken by the Chinese authorities.

Strong inflationary pressure has prompted the world's major central banks to begin the process of monetary policy tightening. After high debt growth during the COVID-19 pandemic, higher interest rates amid slowing pace of economic growth may adversely affect the debt servicing capacity of households and enterprises, which may lead to a significant increase in credit risk. The worsening of the economic outlook compounded with high price dynamics may also cause a further fall in securities prices, especially in the case of lower liquidity and increased volatility in financial markets. The risk of such scenarios materialising would rise if fiscal policy were to increase its expansionary stance. In case of emerging markets, the appreciation of the US dollar is also a major negative factor , as significant portion of corporate debt is denominated in USD.

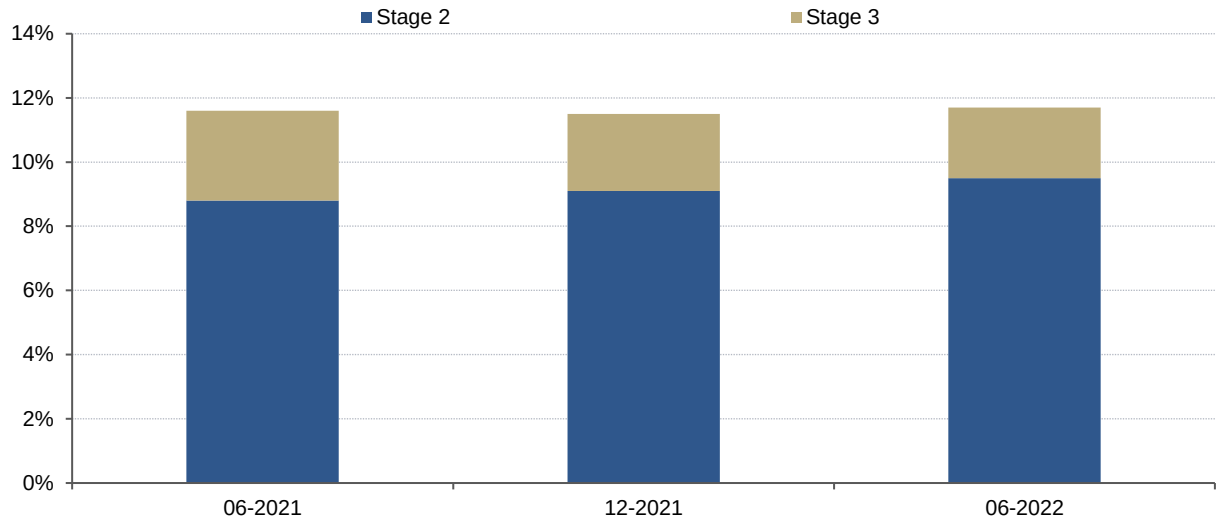
The increased severity of the above-mentioned external risks may adversely affect the condition of the European banking sector. The share of the Stage 2 loans in banks' portfolios is beginning to exceed the levels observed during the pandemic (see Figure 1.3). Bank exposures to enterprises in the energy sector are most exposed to the deterioration of credit quality. In the EU banking sector, loans and advances towards energy companies have increased by as much as 18% y/y and account for 5.2% of total loans towards non-financial corporations (as of June 2022). The energy industry, along with the mining and quarrying, were the only sectors for which the non-performing loans ratio deteriorated in the second quarter of 2022 in quarterly terms. High inflation in the EU also puts pressure on banks' operating costs, while the impact of rising interest rates is not unequivocally positive. On the one hand, they improve net interest income. On the other hand, rising costs of bank market funding and the deteriorating debt-servicing capacity of borrowers herald an increase in costs of credit risk in the future.

The European Systemic Risk Board (ESRB) also warned against an escalation of systemic risks in the EU (see Box 1.1). The threats identified by the ESRB are building up as a result of the war in Ukraine, high inflation and the significant deterioration in the economic growth outlook in the EU. Therefore, the ESRB calls on financial institutions and the relevant authorities to ensure the resilience of the financial system against shocks. Despite identified risk factors, the resilience of the EU's banking sector seems satisfactory, as evidenced by the stable and relatively high levels of capital adequacy and liquidity ratios. The resilience of the global banking system (particularly in advanced economies) in the event of economic slowdown and high inflation is also confirmed by the results of stress tests conducted by the IMF.[4]

[3] Cf. IMF World Economic Outlook, October 2020, Global Financial Stability Report, October 2022.
[4] IMF Global Financial Stability Report, October 2022.

To sum up, the tightening cycle of the monetary policy and the worsening economic outlook translate into the expected increase in credit risk and the fall in valuations of fixed income assets. Banking sectors in many countries are – to a large extent – resilient to these turbulences.

Figure 1.3. Share of loans in Stage 2 and Stage 3 (according to the IFRS 9) in total loans in the EU



Source: EBA, Risk Dashboard 2Q2022.

Box 1.1. ESRB warning on risk in the EU financial system

On 29 September 2022, the ESRB published a warning[5] on vulnerabilities in the Union financial system. The warning was published in response to the increase in systemic risks in the EU since the beginning of 2022 as a result of the geopolitical tensions, which are leading to disruptions in energy markets and adversely affecting the condition of enterprises and households. Moreover, the persistence of higher-than-expected inflation is impairing financial conditions in the real economy.

The warning is aimed at a wide range of addressees, including primarily market participants, financial institutions, and European and national supervisory authorities. It indicates that, despite the current resilience of the EU's financial system, it is necessary for the addressees to prepare for the materialisation of negative macro-financial scenarios. Preserving or enhancing the resilience of the EU's financial system is thus essential so that it can continue to support the real economy if risks materialise. The warning underlines the need for close coordination between relevant authorities and for prudent risk management practices, while avoiding causing market fragmentation and negative externalities for other Member States.

In particular, the ESRB identifies the following systemic risks to EU financial stability, which may materialise simultaneously:

[5] Warning of the European Systemic Risk Board of 22 September 2022 on vulnerabilities in the Union financial system (ESRB/2022/7).

- the deterioration in the macroeconomic outlook and the tightening of financial conditions, especially in sectors and Member States that are most affected by rising energy prices; these developments lower the debt-servicing capacity of enterprises and households;
- a sharp fall in asset prices, potentially triggering a large reduction in balance sheet values of financial institutions and increasing liquidity strains. The increase in the level and volatility of energy and commodity prices has generated large margin calls for participants in these markets, which has created liquidity strains for some participants;
- the deterioration in asset quality and the profitability outlook of credit institutions as a result of the economic slowdown at a time when some credit institutions are experiencing the consequences of the COVID-19 pandemic. The resilience of credit institutions is also reduced by structural factors, including competition from new providers of financial services as well as exposure to cyber and climate risks.
- vulnerabilities in the residential and commercial real estate sectors. In the case of residential real estate, these vulnerabilities result from the rise in real estate prices and high mortgage lending growth alongside the worsening in debt-servicing capacity due to a decline in real household income. In case of commercial real estate, the vulnerabilities result from rising financing costs and construction prices, bottlenecks in the supply of construction materials, as well as lower demand for office space, which could render commercial real estate investment projects nonprofitable.
- an increased probability of large-scale cyber incidents, which may disrupt critical economic and financial infrastructures, and impair the provision of key economic and financial services.

Therefore, in order to mitigate the abovementioned risk factors, the ESRB in its warning calls for the following action:

a) to ensure that credit institutions apply their provisioning practices and capital planning to account for expected and unexpected losses that may be caused by the deterioration in the risk environment. Credit institutions should also monitor short-term liquidity risk and prepare concrete contingency plans to tackle these risks. To ensure the resilience of credit institutions, micro- and macroprudential capital buffers may also be built-up. Macroprudential capital buffers could be released when risks materialise in order to maintain the provision of critical financial services to the real economy. Macroprudential policy decisions should be made considering each Member State's specificities in order to limit the risk of procyclicality.

b) to increase the resilience of non-banking financial institutions. The relevant authorities should closely monitor risk, and if necessary, tighten requirements for supervised institutions. It is underlined that risk related to structural liquidity mismatches or leverage in certain types of

investment funds should be monitored, and fund managers should be encouraged to make use of the available liquidity management tools if necessary. In case of insurance companies, it is essential to monitor market and liquidity risks amid increased market volatility and heightened risk of insurance contract lapses by households. In the case of central counterparties (CCPs), clearing members and their clients, it is necessary to monitor derivative exposures as well as address concentration risk and procyclicality in margining practices. It is also necessary to reduce liquidity strains for non-financial corporations participating in the energy derivatives markets. However, this should not come at the cost of relaxing prudential requirements for central clearing systems.

1.2. Macroeconomic situation in Poland

Following a robust rebound in economic activity, Poland entered a phase of economic downturn influenced by the global supply shock, strengthened by the consequences of Russia's military aggression against Ukraine. In the second quarter of 2022, GDP was still growing at a high level of 5.8% y/y; however, it was markedly lower than the growth rate observed in the first quarter of 2022 (8.6% y/y), due to the decline in inventories and slight slowdown in consumer demand growth. The downturn is also confirmed by the Statistics Poland flash estimate of GDP for the third quarter of 2022, which stood at 3.5% y/y.

Under the impact of the global supply shock, growth in consumer prices in Poland, as in other economies around the world, has risen significantly, reaching the highest levels for many years in recent months. In September 2022 the CPI index for Poland stood at 17.2% y/y, and 17.9% y/y in October 2022. High inflation is primarily the result of the sharp rise in energy and food prices – largely due to the energy crisis, which at the beginning of 2022 has driven up prices of oil, natural gas, coal and electricity in the whole of Europe to levels not previously seen. Prices were also boosted by demand-side factors related to the rapid recovery of economic activity after a period of strict pandemic restrictions during the COVID-19 pandemic. However, the scale of current inflation is reduced by the lowering of some tax rates under the Anti-Inflation Shield and the cap on gas price increases for households.

According to the November 2022 "Inflation and GDP projection" – prepared under the assumption of unchanged NBP interest rates[6] – the economic growth rate in 2023 will run at 0.7% y/y, i.e. significantly lower than the forecast for 2022 (4.6% y/y). In the coming quarters, the economic conditions will remain influenced by the strong negative supply shock, reflected in rapid price growth of many commodities and goods and services. The marked slowdown abroad, particularly in the German economy, will also have a negative impact on economic activity in Poland. However, the magnitude of the downturn will be mitigated by a series of shielding measures for households and economic agents

[6] The projection was drawn up under the assumption of unchanged NBP interest rates, taking into account data available until 21 October 2022 and planned legislative changes announced by 7 November 2022 (thus, the level of the reference rate was assumed at 6.75%).

vulnerable to the rise in prices of energy carriers. Under the influence of the gradual fading of negative supply shocks and the rebound of activity abroad, in 2024-2025 economic growth will pick up slightly (to 2.0% y/y and 3.1% y/y, respectively). However, according to the indications of the projection, the Polish economy will develop below its potential, which will contribute towards declining CPI inflation in the coming years.

After a further rise in inflation in the first quarter of 2023, in the following quarters its level will begin to decline, as the impact of the global shocks currently boosting prices fades, and also under the impact of a slowdown in domestic and foreign economic activity spread out over time. Price growth in the coming quarters will be significantly affected by the government measures. On the one hand, the planned withdrawal of a large part of the solutions under the Anti-Inflation Shield will contribute to higher inflation, and on the other hand this effect will be offset by significant caps on tariffs on selected energy carriers planned for 2023. Despite the expected gradual decline, in accordance with the November projection, CPI inflation will not return to the band of deviations from the NBP inflation target defined as 2.5% +/-1 p.p. until the second half of 2025. The current period in which inflation is at its highest for many years increases its persistence by raising inflation expectations, translating into increased acceptance of price increases in many sectors of the economy.

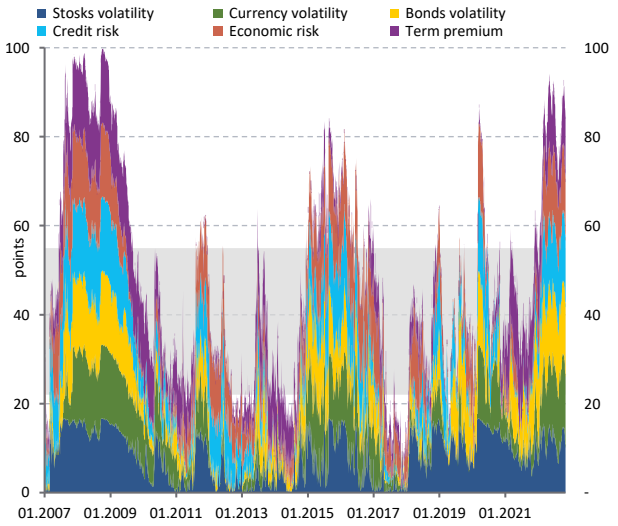
The future economic situation and CPI inflation path in Poland are largely dependent on the scale of disruptions in the global economy triggered by Russia's military aggression against Ukraine. In the case of inflation, the future anti-inflation policy of central banks and governments is also a significant source of risk.

1.3. Financial markets

1.3.1. Global markets

The military conflict in Ukraine, which has continued since February 2022, along with the deteriorating macroeconomic outlook and expectations of further monetary policy tightening by the major central banks, have contributed to a significant correction of bond yields, a weakening of the exchange rates of the majority of currencies against the US dollar and a fall in equity prices in the global financial markets. Uncertainty about the further developments in Ukraine and developments in the parameters of monetary policy and fiscal policy in the major economies is causing a high level of risk aversion, comparable to the 2007-2009 period (see Figure 1.4). At the same time, bond yield curves in many countries have been inverted, which signals recessionary expectations among market participants (see Figure 1.5). This phenomenon has a broad character – it concerns countries representing a large part of global GDP, both developed countries (the United States, United Kingdom, Canada, certain EU countries) and developing countries (e.g. Mexico, South Korea).

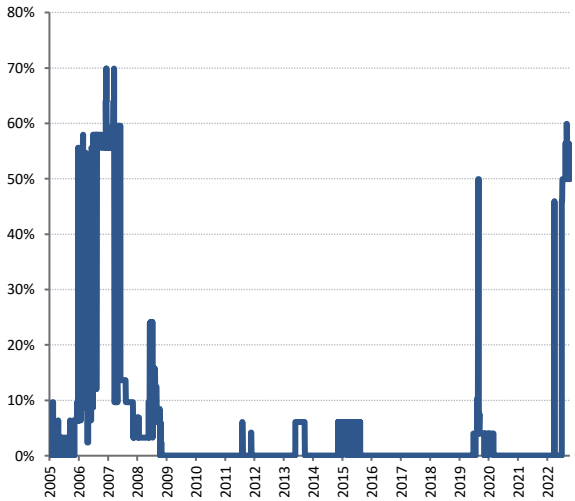
Figure 1.4. Risk pricing on the global financial markets



Notes: Risk index estimate based on normalised distribution of empirical measures of selected risk categories according to weights defined on the basis of the analysis of the main components: stock market volatility – the VIX index, bond volatility – the MOVE index, currency volatility – the JPM G7 index volatility, economic risk – TED spread, credit risk – the credit spread of corporate bonds; the grey area denotes risk-neutral levels, below 22 points – risk appetite, above 55 points – risk aversion.

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

Figure 1.5. Percentage of countries with an inverted bond yield curve



Notes: Percentages calculated on a sample of 11 countries from the G20 group with liquid bond markets, their GDP weighted as at the end of 2021. Share of GDP of these countries in global GDP – 52%. Countries included in the sample: Australia, Canada, France, Germany, India, Indonesia, Italy, Japan, South Korea, United States, United Kingdom. Slope calculated as the difference between yields on 10-year and 2-year bonds.

Source: Bloomberg, IMF, own calculations.

1.3.2. Financial market in Poland

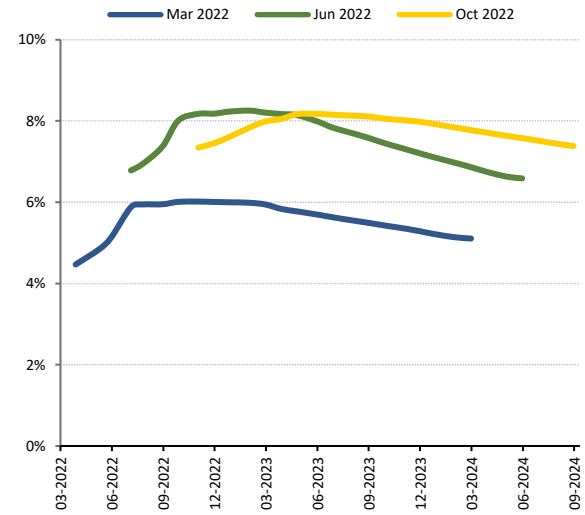
In the face of the deteriorating macroeconomic outlook, market expectations of further significant tightening of the domestic monetary policy weakened. At the end of October 2022, the expected target level of the NBP reference rate remained at 8%, the same as in June 2022 (see Figure 1.6).

However, following a temporary decline at the beginning of October 2022, Polish Treasury bond yields rose significantly to exceed 8%. This was the result of growing inflationary pressure and NBP's monetary policy tightening, as well as concerns about the government's growing borrowing needs in the face of the increased scale of shielding measures, future defence spending and the possible failure to confirm the access to the funds of the National Recovery and Resilience Plan. Consequently, the spread between yields on Polish bonds, denominated in both PLN and EUR, and German Bunds has risen considerably (see Figure 1.7).

The share of foreign investors on the domestic Treasury securities market increased slightly, but remained below the pre-pandemic levels. At the end of August 2022, the share of foreign investors accounted for 14%, and domestic banks (except for NBP) declined by 3.1p.p. y/y to 42% of the whole of the Treasury securities and Treasury-guaranteed securities market (see Figure 1.8). The domestic Treasury securities market remains liquid, although since the beginning of the cycle of interest rate increases

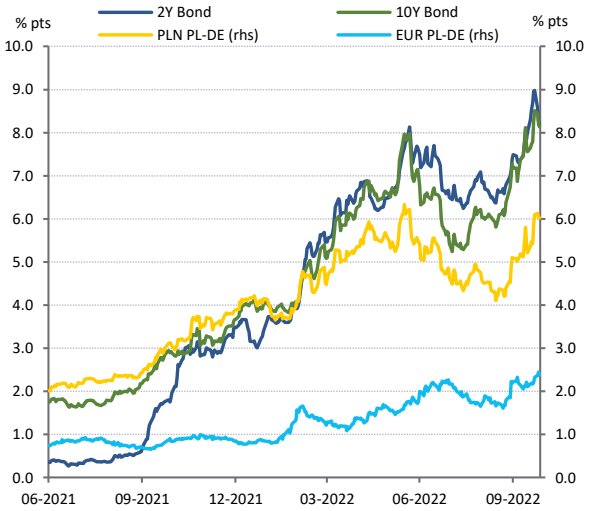
in October 2021, a slight widening of the bid/offer spread for 5-year benchmark bonds can be observed (see Figure 1.9).

Figure 1.6. Changes in the FRA-implied expected WIBOR 1M rate



Source: Thomson Reuters, own calculations.

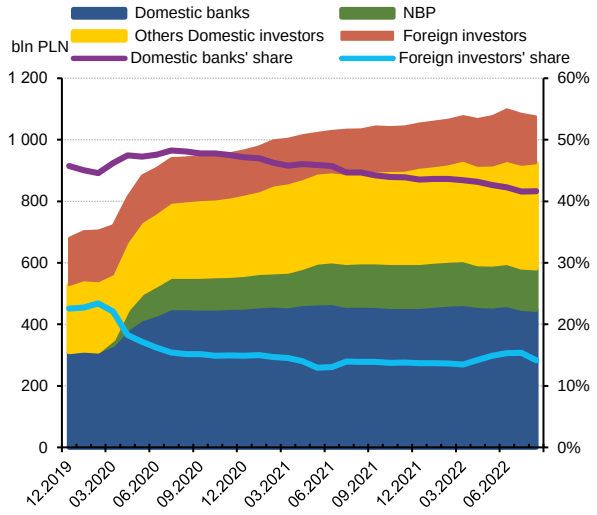
Figure 1.7. Yields on Treasury securities and spread to German Bunds



Notes: The spread in the yields on Polish bonds denominated in PLN and in EUR to German Bunds.

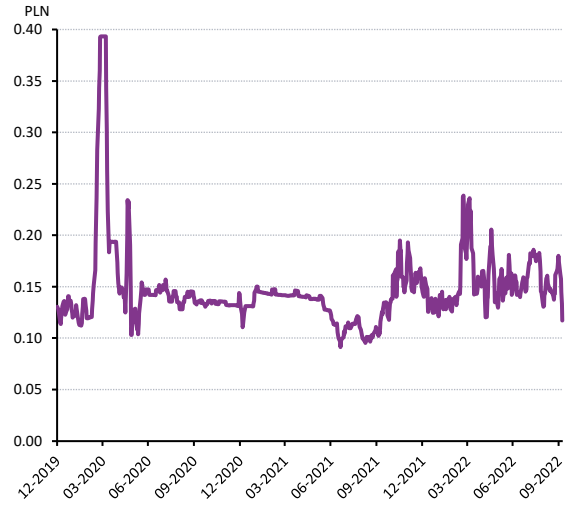
Source: Thomson Reuters.

Figure 1.8. Structure of investors in the domestic Treasuries market



Source: Central Securities Depository of Poland.

Figure 1.9. Bid/offer spread for 5-year benchmark bonds

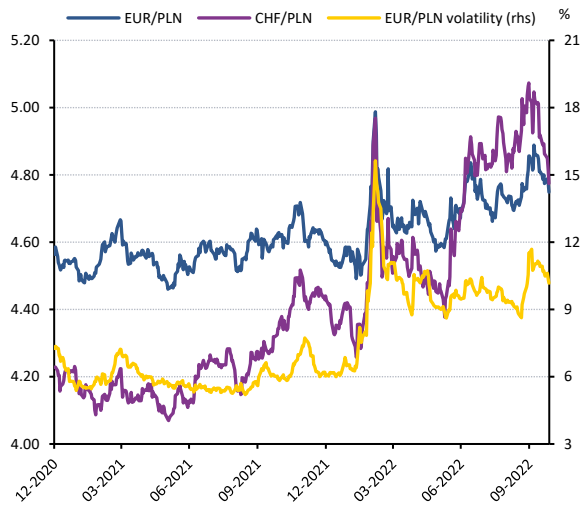


Source: Thomson Reuters..

Throughout most of the analysed period, the zloty exchange rate against the major currencies weakened in the wake of the dynamic appreciation of the US dollar and Swiss franc, which are treated as safe havens. The value of the zloty was also affected by domestic factors, among others, uncertainty about the return path to the inflation target and lack of confirmation of agreement on the disbursement of funds from the National Recovery and Resilience Plan, as well as other EU funds. The high volatility

and wide range of zloty fluctuations against EUR and CHF persist due to the ongoing war in Ukraine and Poland's deteriorating macroeconomic outlook (see Figure 1.10).

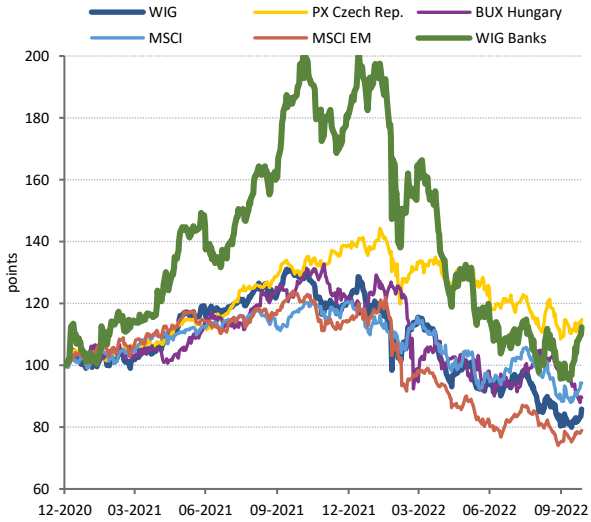
Figure 1.10. Zloty exchange rates against EUR and CHF and implied EUR/PLN volatility



Note: EUR/PLN exchange rate volatility implied from 3M options.

Source: Thomson Reuters

Figure 1.11. Change in the WIG index against regional indices and indices of emerging markets



Note: Stock exchange indices: the global index (MSCI), indices of selected emerging markets (MSCI EM), WIG, WIG Banks, PX and BUX were normalised to 100 as at the end of 2020.

Source: Thomson Reuters.

The domestic equities market, in parallel with the global markets, remained in a downward trend due to the growing concerns about the economic growth outlook in the face of further monetary policy tightening by the major central banks, the risk of an energy crisis in the winter season and the announcement of a windfall tax (see Figure 1.11). WSE-listed banks experienced sharp falls in share prices, which were caused by the costs of provisions for FX loans, as well as unfavourable changes in the regulatory environment, adversely affecting the profitability of banks, i.e. the introduction of repayment holidays for mortgage borrowers, additional contributions to the Borrower Support Fund, the costs of creating the Polish Commercial Banks' Protection System etc. (see Chapter 2.8 Market assessment of banks).

Box 1.2. WIBOR and WIRON

WIBOR reference rate meets the requirements of the EU regulation on indices used as benchmarks (BMR)[7] and is widely used in financial contracts and in financial instruments, including housing loans. In December 2020, the KNF authorised GPW Benchmark as the administrator of the WIBOR

[7] Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and Regulation (EU) No 596/2014 (OJ L171 of 2016, p. 1, as amended).

benchmark[8], thus confirming that the methodology of its determination is in accordance with the aforementioned regulation and ensures that the benchmark is robust and reliable. Work on preparing an alternative benchmark to WIBOR has recently begun, in line with the recommendations of international organisations regarding IBOR-type benchmarks used around the world, the structural determinants of the domestic deposit transactions market, and the measures taken in other jurisdictions. As early as June 2019, NBP urged the domestic financial market stakeholders to intensify efforts aimed at developing alternative money market benchmarks.[9] An alternative benchmark is to be based on an O/N rate, which is considered risk-free. There are two ways a possible replacement of the WIBOR reference rate with an alternative benchmark in existing financial contracts which do not contain fallback provisions describing the procedures in the event of the cessation of the benchmark applied in these contracts may be conducted: (i) as a result of the voluntary annexing of contracts, or (ii) by regulatory means under applicable legal provisions. The amendment of the BMR[10] empowered the European Commission and the domestic authorities of EU Member States to designate replacements for critical benchmarks. The EC has already used these powers, issuing in 2021 an implementing regulation which determined the replacement for the CHF LIBOR benchmark, a critical reference rate for the EU, used, among others, in Poland in housing loan agreements. The prerequisites for the regulatory replacement in existing contracts of a benchmark critical for one Member State, such as WIBOR, are strictly laid down in Article 23c of the BMR. Such a replacement would be effective without the need to annex the contracts and would guarantee their continuity.[11]

International experience shows that the process of an orderly replacement of a reference rate takes several years and requires the involvement of both the administrator and market participants, as well as public institutions. In July 2022, the National Working Group for benchmark reform was established in Poland which coordinates actions aimed at introducing a new interest rate benchmark in Poland based on O/N deposit transactions data, as well as ensuring that the replacement of the WI-

[8] Decision of KNF available at: https://dziennikurzedowy.knf.gov.pl/DU_KNF/2020/32/akt.pdf (in Polish). The corresponding press release available at: https://www.knf.gov.pl/knf/pl/komponenty/img/The_KNF_Board_has_authorised_GPW_Benchmark_SA_as_administrator_of_interest_rate_benchmarks_71985.pdf.

[9] *Financial Stability Report*, June 2019, NBP, p. 10, available at: https://www.nbp.pl/systemfinansowy/fsr201906.pdf.

[10] Regulation (EU) 2021/168 of the European Parliament and of the Council of 10 February 2021 amending Regulation (EU) 2016/1011 as regards the exemption of certain third-country spot foreign exchange benchmarks and the designation of replacements for certain benchmarks in cessation, and amending Regulation (EU) No 648/2012 (OJ L49 of 2021, p. 1).

[11] More on the subject of replacing critical benchmarks in: Rozwój systemu finansowego w Polsce w 2021 r., NBP, Warsaw 2022, Box 5.1.1. Zastępowanie wskaźników referencyjnych typu IBOR indeksami risk-free (in Polish), pp. 236–241. Available at: https://www.nbp.pl/systemfinansowy/rozwoj2021.pdf.

BOR and WIBID benchmarks is smooth and safe.[12] In September, the Steering Committee of the above mentioned group adopted a road map[13] for the replacement of WIBOR and WIBID benchmarks with WIRON index (Warsaw Interest Rate Overnight)[14] and indices for predefined terms calculated based on WIRON. This map sets the timetable for key actions and for the preparation of market participants for the upcoming changes. One of these actions should be to establish, in consultation with market participants, including from abroad, the methods for determining the spread adjustment to correct for the structural differences between the WIBOR benchmark and the new reference rate. In line with international practice, such a spread would be used both in bilaterally annexed contracts and in the case of the regulatory designation of the replacement rate for the WIBOR benchmark with respect to contracts without suitable fallback provisions. Applying the spread adjustment to the new reference rate which will replace the WIBOR benchmark is meant to reduce to a minimum the economic effects of introducing the replacement rate, namely to ensure that the interest terms on loans and other financial products will not change significantly. Until then, WIBOR, which is considered to be a robust and reliable benchmark, will continue to be applied in the existing contracts.

1.4. Real estate market

In the third quarter of 2022 the activity in the real estate market in the major cities slackened greatly[15]**.** Home sales were significantly lower than in the third quarter of 2021 as a result of rising home prices and costs of financing. Costs of housing construction continued to rise rapidly, especially as regards materials and labour. Since March 2022, as a result of Russia's military aggression against Ukraine there has been a shortage of construction workers, which may hinder timely completion of development projects, and consequently reduce the supply of housing. The primary and the secondary housing market of large cities has seen a further considerable growth in average transaction prices per square metre of housing in year-on-year terms. In the commercial real estate market, the previously observed trends have continued, i.e. all markets have seen a fall in real rental rates.

[12] Information on the work of the group is published on the website: https://www.knf.gov.pl/en/MARKET/Activities_of_the_National_Working_Group_for_benchmark_reform.

[13] The document of the National Working Team on the Reform of Benchmarks is available on the website: https://www.knf.gov.pl/dla_rynku/Wskazniki_referencyjne/aktualnosci?articleId=79727&p_id=18.

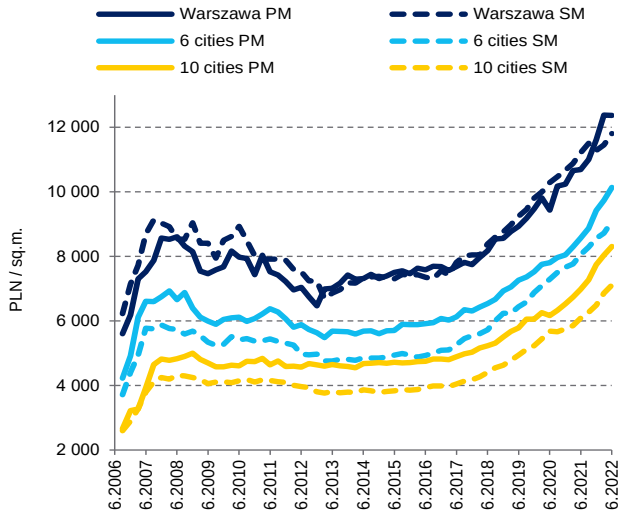
[14] The methodology of determining the WIRON index calculated by GPW Benchmark and the values of the index are available on the administrator's website: https://gpwbenchmark.pl/index-data-and-statistics.

[15] More information about the situation in the residential and commercial real estate market in Poland in the second quarter of 2022 and information about real estate prices in individual analysed cities may be found on the NBP website: https://www.nbp.pl/home.aspx?f=/publikacje/rynek_nieruchomosci/index2.html.

1.4.1. Residential real estate market

In the primary market in the third quarter of 2022, nominal transaction and asking prices were on the rise in all groups of cities and high price growth continued. In the secondary market, transaction and asking prices of dwellings also posted double-digit growth, yet this growth has been gradually slowing down. In real terms (CPI deflated) prices have been slightly falling.

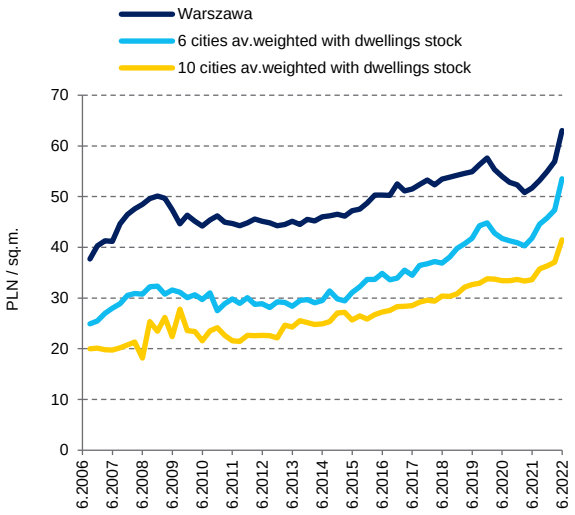
Figure 1.12. Transaction prices of dwellings in the primary and secondary market in selected groups of cities in Poland



Note: Six cities include: Gdańsk, Gdynia, Kraków, Łódź, Poznań and Wrocław, and 10 cities include: Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin and Zielona Góra.

Source: NBP.

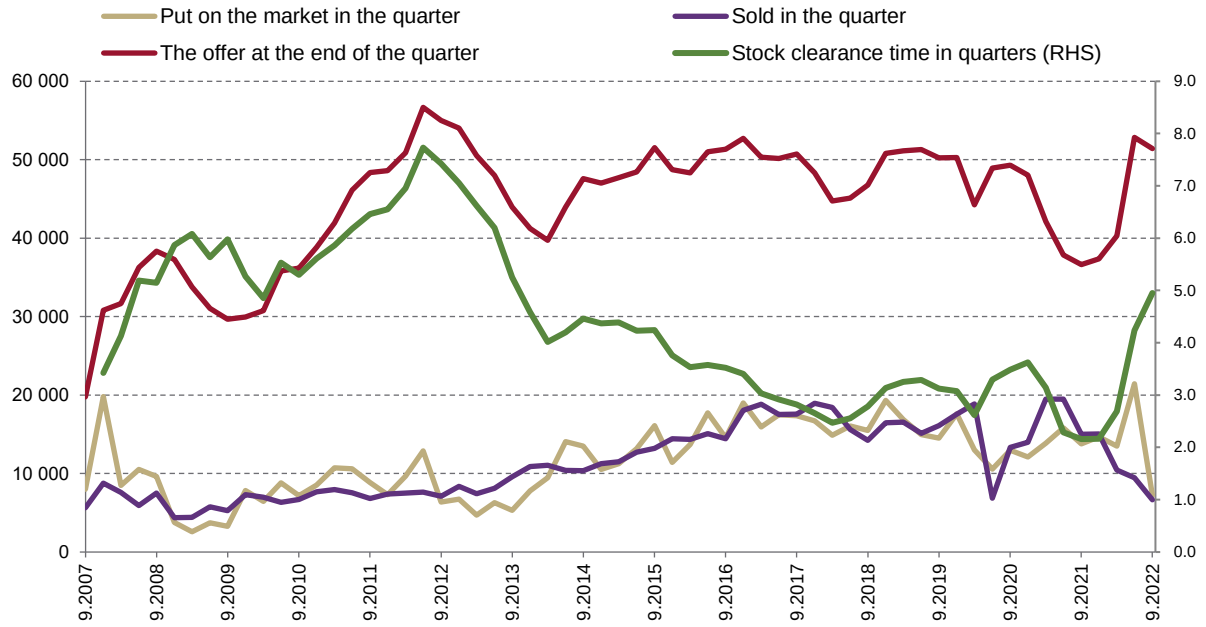
Figure 1.13. Average (asking and transaction) rental rates in selected groups of cities in Poland



Source: NBP.

A considerable rise in demand for rental (as a result of students returning to colleges and universities after the pandemic was suppressed as well as demand from war migrants after the outbreak of the war in Ukraine) and a rise in general inflation boosted rental rates in the largest cities yet again. In view of the simultaneous interest rate hikes since autumn 2021, in the third quarter of 2022 the profitability of investment in loan-financed rental housing changed considerably. At the end of the third quarter of 2022 the estimated capitalisation rate (annual rental to the price of housing) on investment financed with own funds (including savings) reached approx. 6%. With rising cost of credit, profitability indicators for loan-financed investment changed to the detriment for investors, reaching even -21% at LTV=80%. For home buyers financing home purchase with cash, such investment may be profitable whereas it may bring losses to those who finance home purchase with a loan.

Figure 1.14. Length of time needed to sell the available housing stock, the number of housing unit put on the primary market, sold and remaining on offer in the six largest markets in Poland



Source: NBP based on JLL.

1.4.2. Commercial real estate market

The commercial real estate market got back to a normal functioning, yet mobility restrictions imposed during the pandemic accelerated the previously observed changes. Remote work has become more popular, driving down demand for office space. Tenants are looking for high-standard office buildings in prime locations. With e-commerce growing in popularity, for the past few years there has been a very small growth in new retail space and a very large growth in warehousing space.

In the second quarter of 2022, the largest office real estate markets saw a slight growth in price imbalances resulting from the excessive supply of rental office space compared to demand. In the second quarter of 2022, the retail real estate sector returned to the situation observed before the outbreak of the COVID-19 pandemic. The modern warehousing space market in Poland has seen dynamic growth for another consecutive quarter. New warehouses are located close to large cities or even within their boundaries in order to ensure quick deliveries to customers.

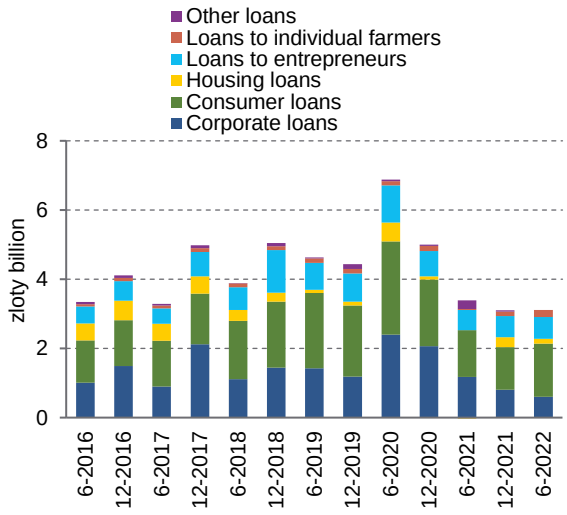
Older office and retail real estate in poorer locations may need to decrease their rents in order to keep tenants. This risk has been seen in credit risk indicators in the case of loan-financed office and retail real estate. These indicators increased considerably during the pandemic but returned to their pre-pandemic levels already in the second quarter of 2022 (see Chapter 2.1 and Figure 1.14). The office real estate market also runs a risk of older buildings in poorer locations being crowded out by modern, energy efficient office buildings. Demolitions of some buildings to make room for the construction of residential real estate can already be seen.

2. Main risk areas in the banking sector

2.1. Credit risk

Despite the deteriorating economic situation and the first signs of deterioration in the real sector entities[16], as well as the increase in loan servicing costs, the costs of credit risk in the first half of 2022 did not go up. Credit losses and the share of loans in arrears in the entire aggregate of loans to the non-financial sector were close to the historically low levels of 2021 and significantly lower than before the pandemic (see Figure 2.1, Figure 2.2 and Figure 2.3). The share of loans with a significant increase in the credit risk (Stage 2), the impaired loan ratios (Stage 3) and the share of forborne loans (see Figure 2.4 and Figure 2.5) also remained at a lower or similar level. However, charges to provisions created by banks may not entirely reflect future credit losses, taking into account the expected significant economic slowdown.

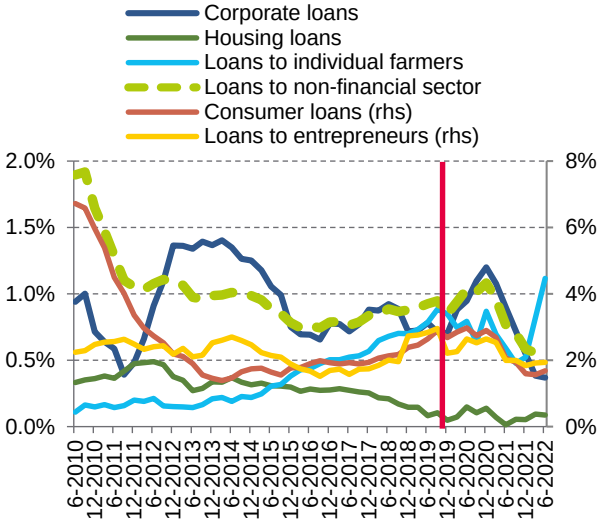
Figure 2.1. Loan losses by semi-annual periods



Notes: Data for loans to individual entrepreneurs and farmers, excluding housing loans. Data on housing loan losses, as shown in this figure and the next figure, are presented after excluding an impact of the costs of provisions for the legal risk of FX loans, recognised as loan losses by few banks.

Source: NBP.

Figure 2.2. Loan losses to net loans ratio

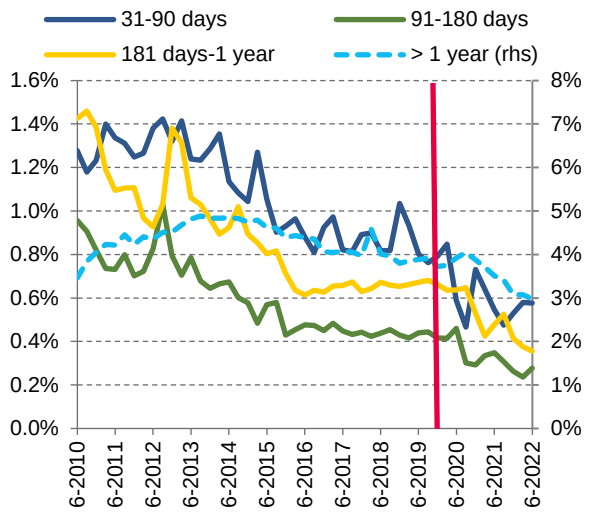


Notes: Annualised data. Loans to individual entrepreneurs and farmers, excluding housing loans. Red vertical line – the date of the latest data before the outbreak of the pandemic – as shown in this figure and the following for quarterly data (as above) – 12-2019, for monthly data – 02-2020.

Source: NBP.

[16] Information and assessments on the situation of enterprises surveyed by NBP, their demand for loans and the reasons for changes in the demand referred to in this chapter come from: "Szybki Monitoring NBP. Analiza sytuacji sektora przedsiębiorstw" ["NBP Quick Monitoring Survey. Economic Climate in the enterprise sector"], October 2022" and its preceding issues, NBP, available at nbp.pl. Assessment of the situation of households based on "Inflation Report. November 2022".

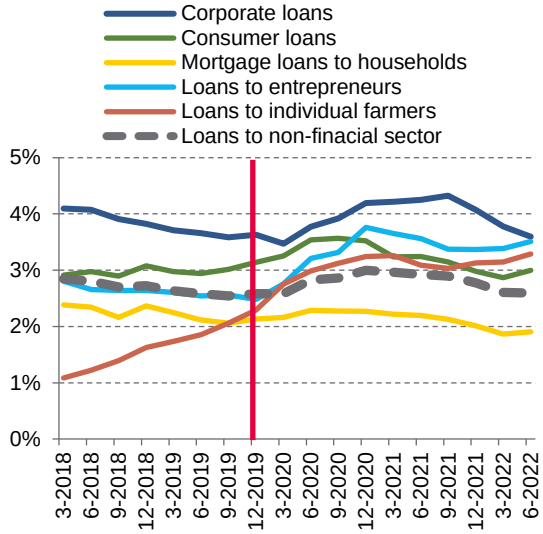
Figure 2.3. Shares of loans in arrears to the non-financial sector in individual arrears classes



Notes: Red vertical line – the date of the last data before the outbreak of the pandemic (quarterly data).

Source: NBP.

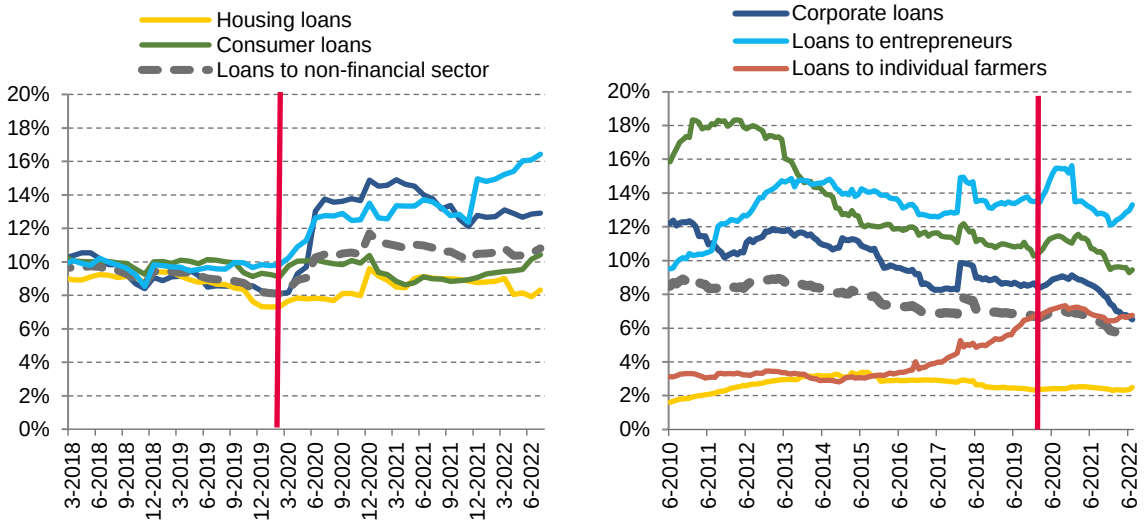
Figure 2.4. Share of forborne loans for individual types of loans and for the entire aggregate of loans to the non-financial sector



Notes: Red vertical line – the date of the last data before the outbreak of the pandemic (quarterly data).

Source: NBP.

Figure 2.5. Share of Stage 2 loans (left-hand panel) and Stage 3 loans (right-hand panel) in individual types of loans and for the aggregate of loans to the non-financial sector



Notes: Share of Stage 2 loans – data for banks applying IAS/IFRS. Share of Stage 3 loans (impaired loans ratio) – data for the whole banking sector. Red vertical line – the date of the last data before the outbreak of the pandemic (monthly data).

Source: NBP.

The expected deterioration in the economic situation is however likely to result in credit losses increasing in the following quarters. According to the forecast provided, the rate of economic growth is

expected to slow down significantly[17] and the situation of enterprises, including their profitability and liquidity, to deteriorate. The most common problem reported by enterprises is the increase in prices of commodities and in costs of energy. A drop and subsequently slow growth in real wages and the expected labour market downturn, including a gradual increase in unemployment, may have an adverse impact on the risk to loans to households.

Loans to business entities

Although the costs of credit risk of the entire portfolio of loans to the non-financial sector remained low, credit risk increased for certain types of loans and borrowers. This concerned, in particular, two lower-value loan portfolios, namely loans to farmers and loans to individual entrepreneurs. These portfolios experienced an increase in the impaired loans ratio and in loan losses (see Figure 2.5). For loans to farmers, this resulted from a drop in the profitability on farm produce and from deterioration in the situation of farmers, especially during the previous year.[18] In turn, the times of pandemic affected in particular micro-enterprises (including individual entrepreneurs), mainly those active in the services sector.[19] In the third quarter of 2022, micro-enterprises indicated that their capacity to service their debts on a timely manner deteriorated markedly.

The risk also increased in relation to loans to industries strongly affected by high prices of commodities and energy. The share of Stage 2 loans increased significantly (up to 20-30%) in loans to the health care sector (mainly hospitals), loans provided to the commercial real estate market[20] (see Figure 2.6 and Figure 2.7) and loans to the automotive industry. Significant increases (up to 30-40%) were also recorded in the shares of Stage 2 loans in some manufacturing industries which were heavily hit by high prices of commodities and energy, such as the manufacture of fertilisers, glass and ceramic tiles. This also concerned, to a lesser degree, the heating sector (part of Section D).

Elevated risk persisted in industries most seriously affected by restrictions during the pandemic. This applied, in particular, to Accommodation and food service activities, Arts, entertainment and recreation, as well as other services and also loans for retail real estate (in particular, shopping malls).

[17] In the first and second quarter of 2022, the GDP growth on a year-to-year basis (y/y) was high, i.e. 8.6% and 5.8%, respectively. According to "Inflation Report. November 2022", the pace of economic growth y/y is expected to decline to 3.0% and 1.5% in the third and fourth quarter of 2022 and to 0,7% and 2.0% and 3,1% in 2023- 2025, respectively.

[18] See "Koniunktura w gospodarstwach rolnych w I półroczu 2022 r." [Business Tendency in Agricultural Farms in H1 2022] and preceding issues, GUS, available at https://stat.gov.pl/obszary-tematyczne/rolnictwo-lesnictwo/rolnictwo/koniunktura-w-gospodarstwach-rolnych-w-pierwszym-polroczu-2022-roku,10,20.html.

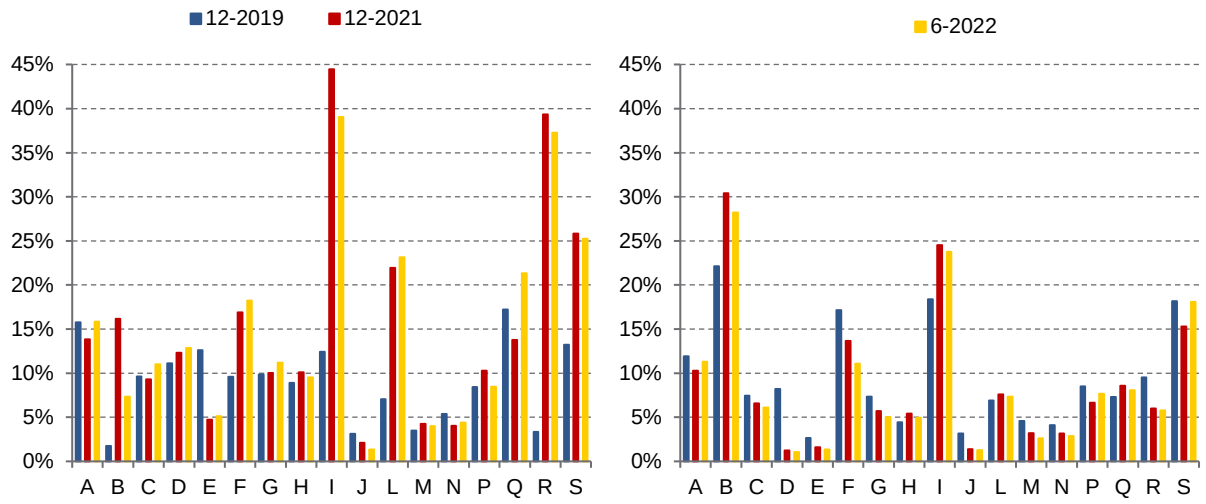
[19] See "Szybki Monitoring NBP. Analiza sytuacji sektora przedsiębiorstw"["NBP Quick Monitoring Survey. Economic Climate in the enterprise sector"], January 2022, NBP, available at www.nbp.pl.

[20] Forming largely part of Section L.

Portfolios of loans to enterprises operating in these industries are characterised by very high shares of Stage 2 loans (see Figure 2.6).

The total share of these credit exposures with higher shares of Stage 2 loans was 5.3% of all loans to the non-financial sector.

Figure 2.6. Share of Stage 2 loans (left-hand panel) and Stage 3 loans (right-hand panel) in loans to individual NACE sections



Notes: Data for banks applying IAS/IFRS. Estimates of shares in loans based on the reporting of large exposures. Data also includes part of the loans to entrepreneurs and individual farmers. Sections: A – Agriculture, B – Mining, C – Manufacturing, D – Electricity, gas and heating supply, E – Water supply, sewerage and waste management, F – Construction, G – Trade and repairs, H – Transportation and storage, I – Accommodation and food service activities, J – Information and communication, L – Real estate activities, M – Professional, scientific and technical activities, N – Administration and support service activities, P – Education, Q – Health care, R – Arts, entertainment and recreation, S – Other services.

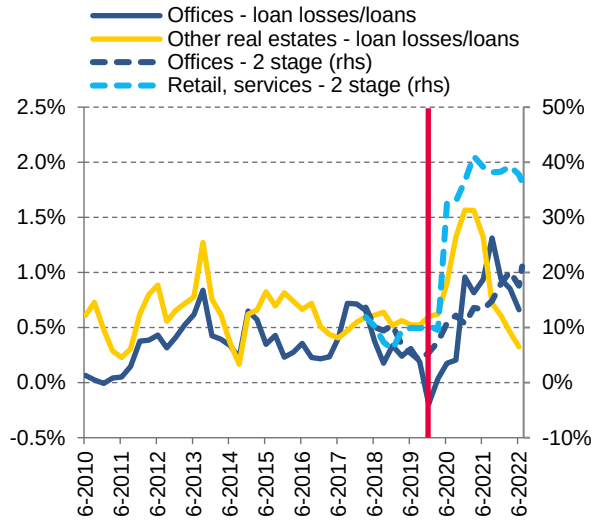
Source: NBP.

A direct impact of the increase in interest rates on the credit risk of enterprises has so far been insignificant. An estimated share of the costs of interest in the total costs incurred by corporate borrowers was insignificant (approx. 0.6% in the second quarter of 2022), which resulted from a relatively low level of indebtedness in this sector. The shares of the costs of interest were considerably higher than the average levels, mainly in the rental and leasing sectors (7.8% and 4.0%) and in telecommunications, with the total share of 2.5% for loans to the non-financial sector.[21] However, these industries are relatively profitable and their credit risk is low, and therefore their impaired loan ratios and their share of Stage 2 loans were 2.3% and 0.4% and 2.1% and 0.4%, respectively. Therefore, it can be said that any further moderate increase in the interest rates could have *ceteris paribus* a limited impact on the quality

[21] The share of the costs of interest is relatively high (3-4%) also in other NACE sections; however, the total value of bank loans for these sections is very low (in total 0.2% of the share of loans to the non-financial sector). The share of the costs of interest in the total costs incurred by corporate borrowers in other NACE sections did not exceed 2.5% in the second quarter of 2022.

of the portfolio. It seems that a higher risk to the economic situation of enterprises and a credit risk to banks are triggered by other factors, including the rising prices of commodities and energy.[22]

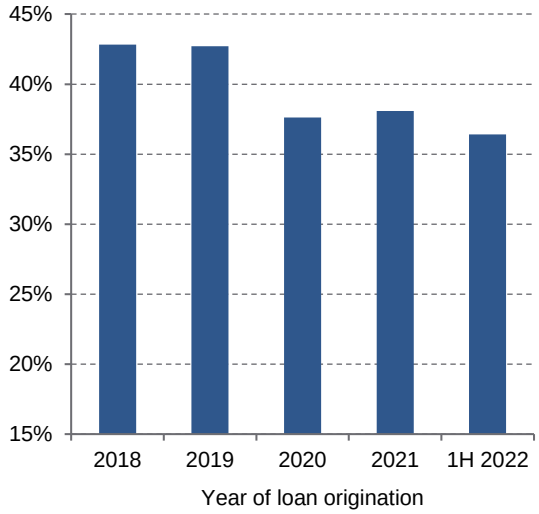
Figure 2.7. Ratio of loan losses to net loans and share of Stage 2 loans in loans by individual types of real estate (according to their purpose)



Notes: Red vertical line – the date of the last data before the outbreak of the pandemic (quarterly data). Share of Stage 2 loans – for banks applying IAS/IFRS. Other real estate – other than residential or office (including, commercial and retail) real estate.

Source: NBP.

Figure 2.8. Share of high-value loans in new consumer loans granted in 2018-2022



Notes: large consumer loans – loans with the value above 50,000 zlotys as at the loan origination date. Estimates for periods earlier than the first half of 2022 have been made by indexation of the 50,000 zloty threshold adjusted (downwards) by the wage growth index.

Source: NBP estimates based on UKNF non-standard reporting data and Statistics Poland data.

Loans to households

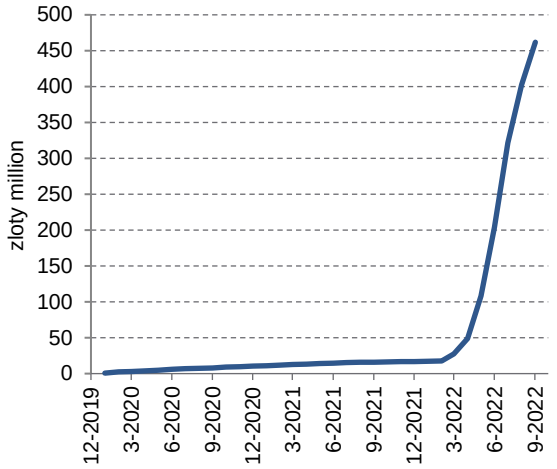
In the first half of 2022, credit losses and share of Stage 2 loans for consumer loans increased slightly (see Figure 2.1, Figure 2.2 and Figure 2.5), which could be related to the sensitivity of borrowers to a scenario of a high increase in the costs of living, low growth in real wages and increase in costs of loan servicing. An average level of income buffers of consumer loan borrowers is significantly lower than that of mortgage borrowers, and in the case of consumer loan borrowers who have no mortgage loans, such a level is even lower than that of households without any bank loan at all.[23] Consumer borrowers are therefore more sensitive to current and future (in the nearest quarters) high increases in

[22] See "Szybki Monitoring NBP. Analiza sytuacji sektora przedsiębiorstw" ["NBP Quick Monitoring Survey. Economic Climate in the enterprise sector"], October 2022, NBP, available at www.nbp.pl.

[23] In line with the results of the Statistics Poland survey on household budgets in 2021, an average income equivalent per person, net of loan instalments in households of mortgage borrowers was 3 665.77 zlotys and in households of consumer loan borrowers was 2 999.67 zlotys (including, those without mortgage loans, 2 758.30 zlotys). In households without bank loans it was 2 884.33 zlotys.

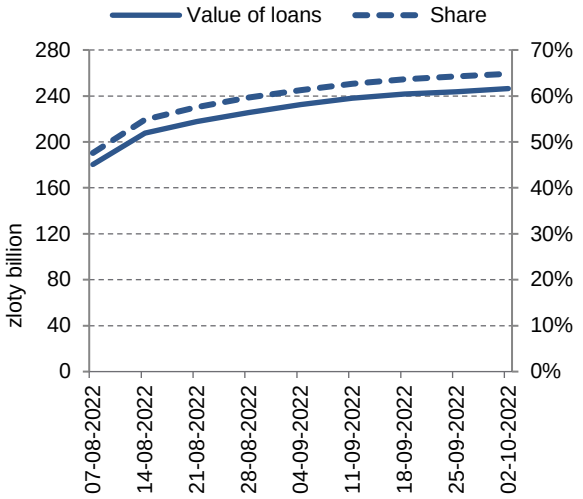
the costs of living and decreases in real wages. This applies in particular to borrowers in a rather fragile position in the labour market where a growth in real wages may be lower than the average. A high (the highest ever) differentiation of growth dynamics of wages is evident in the breakdown of employment industries in which in some NACE divisions (in 6 out of 76) a high increase in the costs of living was accompanied by even nominal decline in wages.[24] In the circumstances, in which budgets of households are stretched, the rising interest rates further increase the credit risk, in particular, that relating to liabilities incurred before the commencement of a monetary policy tightening cycle.[25] Factors favourable from the point of view of the credit risk may include a further slight decline in the share of high-value loans in new consumer loans in the first half year of 2022 (see Figure 2.8).

Figure 2.9. Cumulative value of support granted under the Borrower Support Fund in 2020-2022



Source: BGK.

Figure 2.10. Value of loans under loan repayment holidays and their share in the zloty housing loan portfolio



Source: UKNF non-standard reporting data.

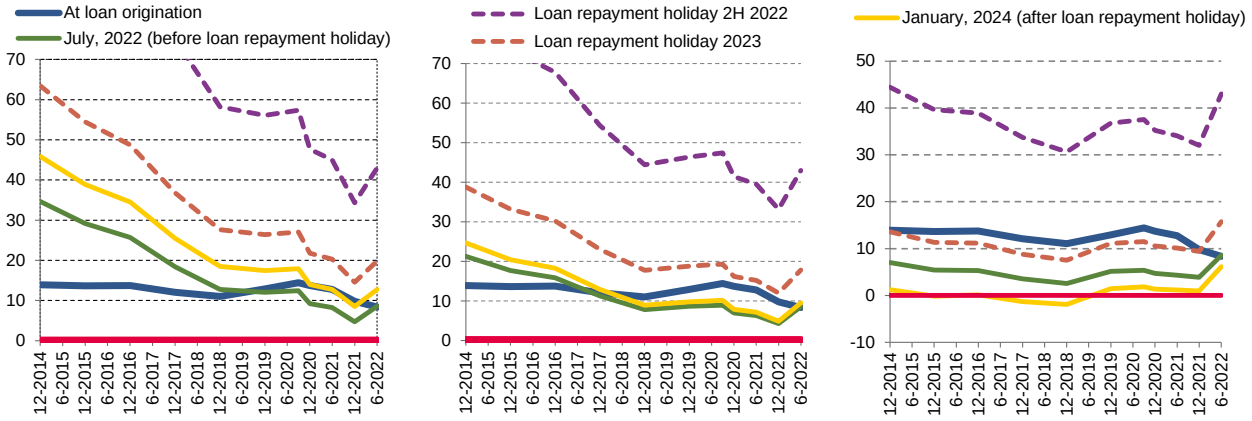
The increase in the costs of servicing of zloty housing loans was not reflected in banks' credit losses. In the first half of 2022, the losses remained low and the loan servicing rate was still very good (see Figure 2.1 and Figure 2.2). Recent increases in interest rates have not yet been fully reflected in an increase in the interest rate on loans bearing a floating rate due to the fact that they are spread over time and delayed by 3-6 months in relation to the changes in the WIBOR 3M and WIBOR 6M market rates.

[24] See "Szybki Monitoring NBP. Analiza sytuacji sektora przedsiębiorstw" ["NBP Quick Monitoring Survey. Economic Climate in the enterprise sector"], October 2022, NBP, available at www.nbp.pl.

[25] Although, as pointed out in the previous issue of the Report, increases in the instalments of typical consumer loans resulting from the rising interest rates are relatively low due to the fact that the average loan value is low (9.5 thousand zlotys as at the end of the first half of 2022) and that in some cases (29% in value) their interest rate is fixed or temporarily fixed, if the financial situation of some of the borrowers deteriorates, this factor may also however cause a further considerable increase in the credit risk.

Furthermore, the response of loan servicing indicators to an increase in instalments is delayed, because borrowers repay the instalments, at least on a temporary basis, using sources of income other than current income, for example, savings or financial help from family members, and because households assign priority to the servicing of housing loans.

Figure 2.11. Estimated historical and forecast buffer against interest rate increases (in p.p.) for *the average housing loan in 2014-2022* at various scenarios of wage increases from the loan origination date



Notes: The figures show the estimated historical (on the loan origination date and in July 2022) and forecast during (in August 2022 and in February 2023 – respectively during loan repayment holidays in the second half of 2022 and in 2023 with the instalment reduced by 2/3 and 1/3) – and upon the termination of loan repayment holidays buffer against interest rate increases for loans taken out in individual months of the 2014-2022 period (horizontal axis) with average parameters (value, margin and maturity), by household with the average income and average number of members. Buffer against interest rate increases – by how much higher (in p.p.) the interest rate could be in relation to its value in the buffer calculation month, so that the household could be able to service the loan concerned – i.e. the income less instalments would not be lower than the minimum cost of living calculated on the basis of the social minimum figure determined by the Institute of Labour and Social Studies (IPiSS). Wage increases and inflation from the second half of 2022 according to the forecast in "Inflation Report. November 2022". Calculation of instalments from September 2022 at WIBOR 3M applicable in August 2022. Increase in the cost of living from the loan origination date, according to CPI. Increases in borrowers' income from the loan origination date – by average, half of the average increase in wages in the economy (left-hand and middle panels) or if wages do not increase from the loan origination date (right-hand panel).

The buffer lower than zero (under the red line) means a borrower is not able to cover from its current income increased (as the result of interest rate increases) cost of loan servicing after covering its basic living costs at the level of social minimum.

Sources: NBP, Statistics Poland, UKNF non-standard reporting data.

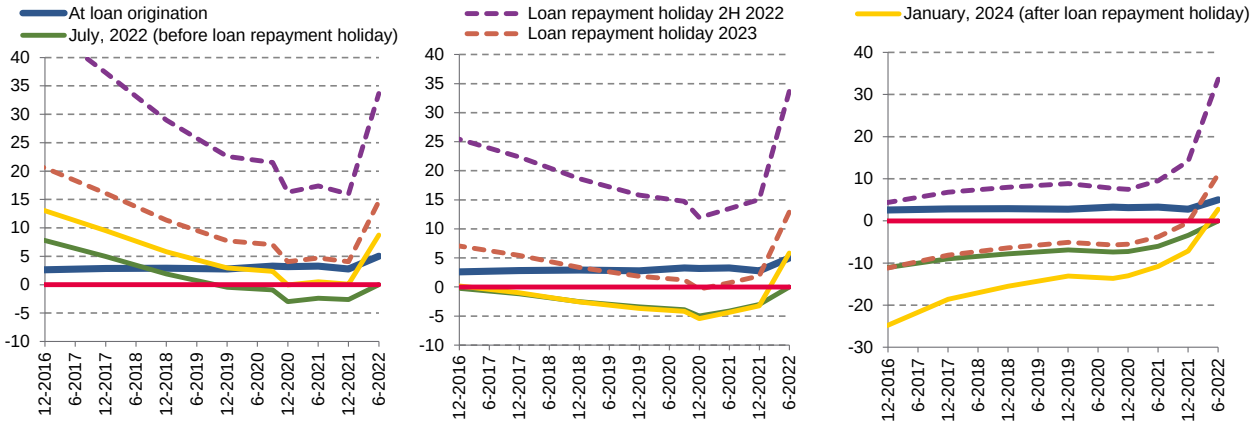
One of the factors that caused the limitation in banks' credit losses in the first half year of 2022 was also the increased use of financial aid provided under the Borrowers Support Fund. Until 2021, the amount of support provided was insignificant, but this changed considerably in the first three quarters of 2022 (see Figure 2.9). Higher instalments of housing loans caused by an increase in the interest rates resulted in the growing number of borrowers eligible for support under the Borrower Support Fund.[26] The growing awareness of the availability of support as a result of a public debate on the increasing

[26] Increases in the instalment payments result in the growing number of borrowers becoming eligible for support under the Borrower Support Fund, having met two out of three eligibility criteria: the level of 50% of the loan service-to-income ratio exceeded and the minimum income threshold after deducting housing loan instalments exceeded.

costs of loan repayments for borrowers also contributed to the increased use of the Fund. Following a very rapid increase until July 2022, the amounts of support decreased in August and September 2022. This was probably related to the launch of loan repayment holidays. However, the amounts of support were still much higher than in the previous years.

Upon the expiry of loan repayment holidays in 2023, the borrowers' interest in the support provided under the Borrower Support Fund is expected to grow again. A real scale of the borrowers' interest and its impact on the banking sector's costs are difficult to determine in a precise manner. In line with the results of the UKNF non-standard reporting data at the end of June 2022, banks estimated that loans taken out by borrowers for which the current housing loan-service-to-income ratio exceeded 50% were approx. 50 bn zlotys. However, the amounts of loans estimated on the basis of this data, eligible for support under the Borrower Support Fund, had already been very high in the past[27], and at the same time the use of the Fund's support as at the end of February 2022 was marginal.

Figure 2.12. Estimated historical and forecast buffer against interest rate increases (in p. p.) for loans taken out with the required minimum buffer against interest rate increases in 2016-2022, at various scenarios of wage increases from the loan origination date



Notes: Estimates for loans taken out in individual months of the 2016-2022 period with the average parameters (value, margin and maturity), to a typical 3-person household with income at the loan origination date at the limit of its creditworthiness, allowing for the minimum cost of living (social minimum figure) to be covered, along with instalments at the interest rate as at the loan origination date, increased by the minimum required buffer against interest rate increases. Other assumptions as those adopted in the preceding figure.

Source: NBP, Statistics Poland, UKNF non-standard reporting data.

Loan repayment holidays in 2022-2023 have reduced significantly the risk of deterioration in servicing zloty housing loans. The total impact of loan repayment holidays and the income buffer against interest rate increases, required by banks as at the granting of a loan, causes that in the majority of the analysed scenarios of wage increases, even for loans granted almost at the limit of creditworthiness, the current income should be sufficient for covering both the minimum cost of living and housing loan instalments (see Figure 2.11 and Figure 2.12).

[27] In line with the UKNF non-standard reporting data, at the end of 2021 the level of 50% of the LSTI ratio was exceeded for housing loans in the amount of 31 bn zlotys.

However, it can be expected that upon the termination of loan repayment holidays, the scale of problems related to the servicing of loans will increase and apply mainly to the loans with high loan repayment burden already at their origination date. At the level of average loans from 2014-2022 cohorts, the buffers against the interest rate increases can be considered high. Only in the extreme scenario in which income does not increase since the loan origination date, average 2015, 2017 and 2018 loans, after the end of loan repayment holiday, would have (unless interest rates fall significantly by then) small negative buffers against interest rate increases (see Figure 2.11). Problems may affect mainly borrowers with low buffers already as at the loan origination date; in particular, if loans are taken out almost at the limit of creditworthiness, in the case of which wage increases in the period from the loan origination date are significantly lower than the average in the economy (see Figure 2.12). In most scenarios analysed, loans granted in 2020-2021 had the lowest income buffers.

It should be noted that the potential savings of banks on the credit risk costs due to loan repayment holidays and the support funding provided by the Borrower Support Fund are associated with significant costs in other P&L items. The possibility of benefiting from loan repayment holidays is not subject to any condition relating to income or loan servicing capacity. The only restriction is loan repayment holidays must be applied in relation to the loan financing a property acquired to meet one's own housing needs. Therefore, because of high benefits for borrowers, the participation in the programme is high, i.e. 65% in early October 2022 (see Figure 2.10). The cost to the banks concerned at this level of participation was approx. 13 bn zlotys. The cost of the Borrower Support Fund is also high for banks. Due to the redemption of 31% of the capital[28] and the loss because of the time value of money[29], loans provided under the FWK generate a significant economic loss, which is de facto a loss for the banking sector financing the FWK. At the current level of interest rates and the cancelation of part of the instalments, a loss on such a loan in the maximum amount of 36 monthly instalments of the average zloty housing loan is 64% of its value, or 19% of the value of the housing loan. The cost of restructuring the borrowers' debt in this way is therefore significant.

2.2. Legal risk associated with the portfolio of FX housing loans and its economic impact

Legal circumstances

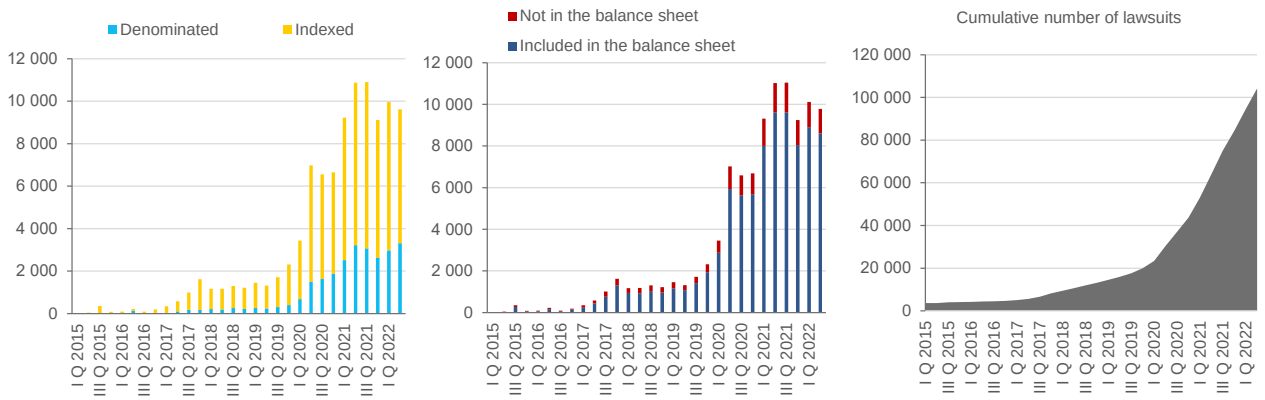
The number of FX housing loan agreements subject to civil litigation is steadily increasing. More than 100,000 actions have been so far brought before a court, of which approx. 20,000 in the first half of 2022 (see Figure 2.13). The dynamics of the new actions being brought, however, has slowed down a bit over the last few quarters, which is likely to be caused by a gradual increase in the interest of customers in the settlements offered by banks. The vast majority of actions (85%) relate to loans included

[28] The FWK aid is the interest-free 12-year loan with a 2-year grace period following the disbursement of the last tranche and the option of cancellation of the last 44 instalments.

[29] The discount rate was the average interest rate for a typical zloty housing loan, calculated at the current WIBOR rate.

in banks' balance sheets (i.e. still being repaid), although this percentage in relation to actions concerning the off-balance sheet loans has fallen recently due to the aforementioned increase in the interest of customers in the amicable settlement of disputes (settlements are only offered to borrowers still repaying their loans). In the following quarters, the dynamics of the new actions brought is expected to remain high. This is supported by the line of judgement by the common courts in favour of borrowers. An additional factor favouring a challenge of agreements in civil litigations is the high Swiss franc exchange rate and also the rising interest rates in this currency. This causes, despite regular repayment of principal and interest instalments, a lack of progress in reduction of the amount of debt expressed in the zloty. A high level of interest rates in the Polish zloty also discourages the voluntary conversion of loans into the Polish zloty and makes borrowers more willing to bring actions against banks.

Figure 2.13. Quarterly number of new lawsuits concerning FX housing loans, broken down into FX-indexed loans and FX-denominated loans (left-hand panel) and into balance sheet and other loans (middle panel), and the cumulative number of lawsuits (right-hand panel)



Source: NBP based on UKNF non-standard reporting data.

Common courts continue to issue decisions favourable to borrowers. Courts issuing decisions on FX loans, when ruling in favour of borrowers, most frequently rule that the agreement between the parties is invalid (ineffective). Currently, the majority of proceedings are brought before courts of first instance (around 85,000 cases compared to around 15,000 cases brought before courts of second instance). Relatively a small number of decisions becomes final and binding (approx. 4,000 judgements).

Serious doubts still exist about judicial decisions on disputes arising from FX housing loans.[30] In the absence of their resolution by a full bench of the Civil Chamber of the Supreme Court, common courts make rulings based on the existing case law of the CJEU and the Supreme Court of the Republic of Poland. New legal questions are also addressed to the CJEU or the Supreme Court on legal issues related to FX loans, such as the question on the limitation of mutual claims for repayment of the principal

[30] See the request of the First President of the Supreme Court of the Republic of Poland of 29 January 2021, ref. BSA I-4110-4/20. For more information on the aforementioned proposal and the financial implications of potential settlement scenarios, see "Financial Stability Report. June 2021", NBP, pp. 43-47.

provided in the performance of an invalid loan agreement[31] or remuneration for the use of such a principal.[32] Answers to these questions will have important implications for future judgements and the distribution of costs between banks and borrowers, with further implications for financial stability.

In view of the potentially serious consequences of the CJEU judgments for the stability of the financial system in Poland, the Chairman of the Polish Financial Supervision Authority presented his position in Case C-520/21 concerning the possibility for banks to claim remuneration for the use of capital provided in the performance of an invalid credit agreement.[33] The potential negation of the banks' ability to claim remuneration from capital would entail a one-off cost for banks holding FX loan portfolios of around 100 bn zlotys. In an extreme case, costs of this magnitude could lead to the collapse of the banking sector, resulting in the real economy being cut off from funding. The KNF Chairman opposed the instrumental use of an abusive nature of conversion clauses, pointing out – as did NBP in its opinion for the Supreme Court[34] – that it is not the design of exchange rate clauses, but the significant appreciation of the Swiss franc against the Polish zloty that is the source of the problem of FX loans.

The majority of banks holding portfolios of FX housing loans offer borrowers amicable ways to settle disputes. Around 32,000 settlements have been so far reached, half of them on terms in line with the proposal of the KNF Chairman and the remaining on individual terms agreed between the bank and the customer.[35]

Financial aspect of the legal risk

Banks involved in FX housing loans have created provisions to cover the risk of this portfolio for a long time. As at the end of June 2022, the accumulated provisions, recognised mainly for active loan agreements, concerned on average around 30% of Swiss franc loans (see Figure 2.14 and Figure 2.15). The majority of banks also had capital to cover the requirement for the higher risk weight assigned to FX loans (150%), as well as an additional regulatory capital requirement under Pillar 2 (P2R).[36] The

[31] Case C-28/22; for further information please visit https://curia.europa.eu/jcms/jcms/j_6/pl/.

[32] Case C-520/21; for further information please visit https://curia.europa.eu/jcms/jcms/j_6/pl/. The CJEU Advocate General's opinion in the case is due to be issued on 16 February 2023.

[33] Standpoint of the Chairman of the Polish Financial Supervision Authority prepared for the hearing before the Court of Justice of the European Union in Case C-520/21 on 12 October 2022: https://www.knf.gov.pl/knf/pl/komponenty/img/Stanowisko_przygotowane_na_rozprawe_%20przed_Trybunalem_Sprawiedliwosci_Unii_Europejskiej_ws_C-520_21.pdf.

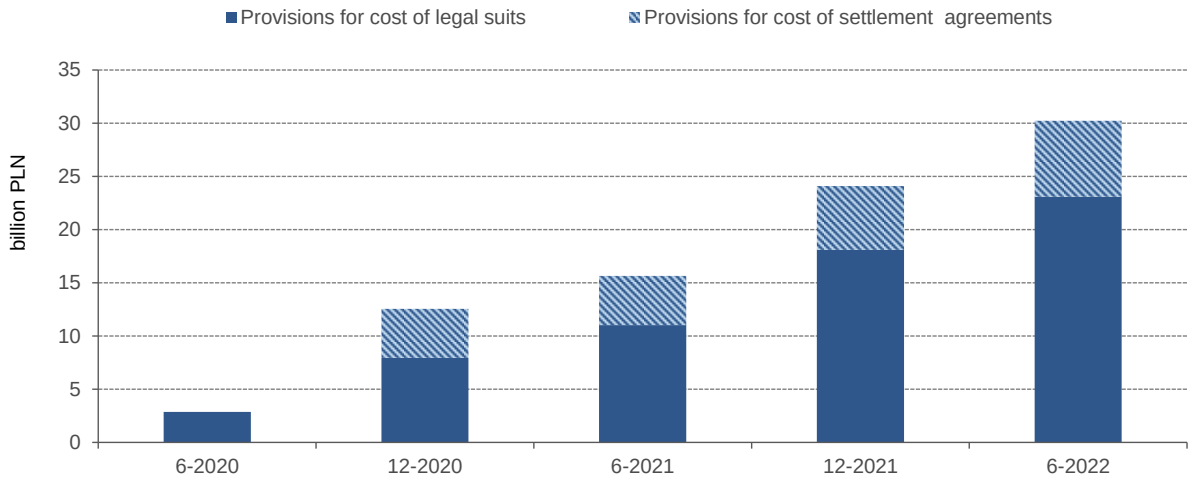
[34] https://www.nbp.pl/aktualnosci/wiadomosci_2021/sn.pdf.

[35] https://www.bankier.pl/wiadomosc/Jastrzebski-KNF-proponuje-bankom-zawieranie-z-klientami-ugod-ws-kredytow-frankowych-8016744.html.

[36] Capital requirements are not an equivalent to provisions, as they constitute only a few percent of the loan principal.

value of provisions and of the aforementioned capital requirements corresponded to approximately 40% of the portfolio value (see Figure 2.15).

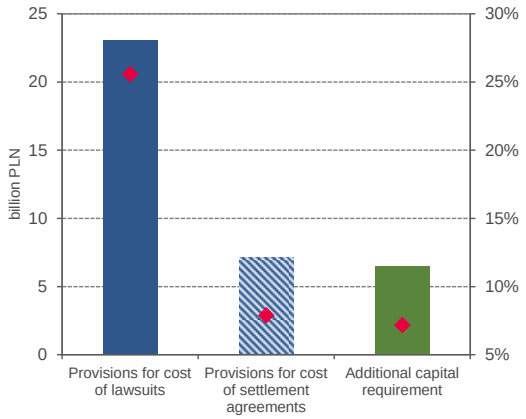
Figure 2.14. Provisions for legal risk of FX housing loans



Source: NBP estimates and UKNF non-standard reporting data.

Provisions accumulated so far make banks better prepared to face challenges of the materialisation of the legal risk of FX housing loan portfolios, nevertheless this risk will continue to be one of the most important factors shaping the situation of banks in the years to come.

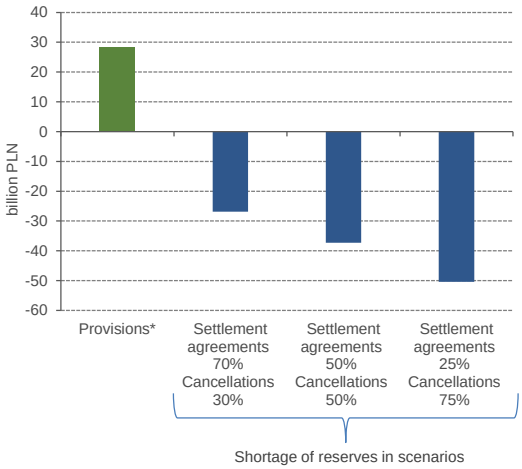
Figure 2.15. Provisions and capital requirements for legal risk of FX housing loans, June 2022



Legend: Bars represent amounts, rhomboids – estimated percentage of value of CHF housing loans. * P2R and an estimate of the capital requirement of 8% for the part of the exposure above the risk weight of 100%.

Source: NBP estimates and UKNF non-standard reporting data.

Figure 2.16. Provisions for legal risk as at the end of June 2022 and the shortfall over these provisions in individual scenarios



* Provisions for loans shown in the balance sheet.
Notes: The simulation was carried out at the Swiss franc exchange rate of 30 September 2022 (5.0714). The cancellation conservatively assumes no remuneration to the parties for the use of the principal. Estimates do not include repaid loans. The cost of litigation as related to the value of a loan assumed to be equal historical data up to the 1 half of 2022.

Source: NBP estimates based on UKNF non-standard reporting data .

The magnitude of needs for further provisions will depend on the final number of agreements questioned by the borrowers and the proportion of settlements and litigation in the process of restructuring FX housing loan portfolios. It can be estimated that the value of the necessary provisions for legal risks is sensitive to the proportion of settlements and litigation: a 5% increase in the proportion of litigation increases the need for provisions by about 2.5 billion zlotys on average. With the current structure of court settlements and litigation, and assuming that the legal risk associated with the CHF housing loans still in repayment is eliminated entirely, the scale of additional provisions needed may range from about 27 billion zlotys with a preponderance of settlements to around 50 billion zlotys with a preponderance of litigation (see Figure 2.16).[37] Paradoxically, a reduction in the length of court proceedings, e.g. as a result of the establishment of a prevailing line of jurisprudence and the elimination of legal uncertainties by the Supreme Court or the CJEU, could, in an extreme case, result in costs cumulation for banks, which would increase the scale of costs and risks to financial stability.

It should be pointed out that banks' losses when loan agreements are ruled ineffective or banks reach settlements with customers are also strongly influenced by the exchange rate at which the loan is written off the balance sheet or converted into zloty. With a significant depreciation of the Polish zloty, the value of provisions recognised at a certain point in time may become insufficient. It is estimated that a 1% depreciation of the zloty against the Swiss franc increases the banks' needs by between 400 million and 550 million zlotys, depending on the scenario considered for the proportion of settlements and litigation.

2.3. Lending

The post-pandemic recovery in lending to the non-financial sector in the second half of 2021 proved to be transitory. In May 2022, the annual growth rate for all the loans to entities in this sector started to decline under the influence of adverse developments in the economy and as a consequence of increased supervisory expectations (Figure 2.17).[38] However, the trends observed across the individual loan categories were not uniform. Until April 2022, the increasingly lower growth rate of loans to households was counterbalanced by the rapidly growing indebtedness of non-financial corporations at banks.

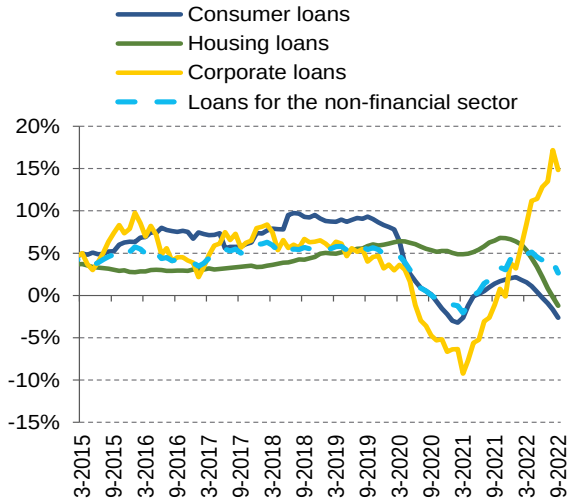
In the housing loans segment negative monthly and annual growth rates are observed, having their origins, among others, in the credit costs rising as a result of an increase in official interest rates, the entry into force of the amended guidelines of the Polish Financial Supervision Authority (UKNF) affecting the manner in which banks calculate minimum creditworthiness, and the rising costs of living of households. These factors determined the tightening of lending standards in the first half of

[37] The simulation was carried out at the Swiss franc exchange rate of 30 September 2022 (5.0714). The estimates do not cover repaid loans. The cancellation conservatively assumes no remuneration to the parties for the use of the principal.

[38] Unless otherwise stated, the percentage changes in loan values referred to in this chapter refer to data after eliminating the impact of exchange rate changes.

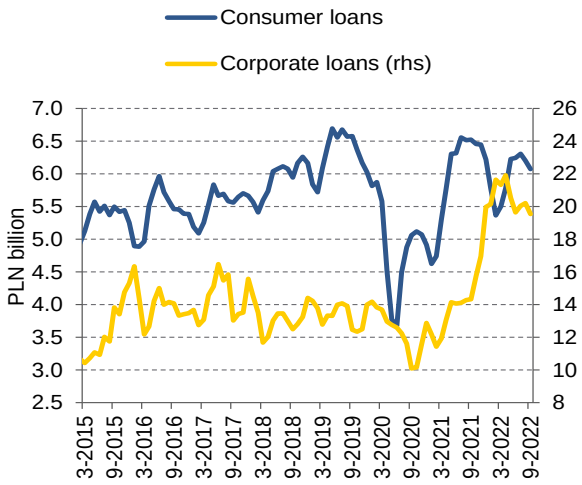
2022.[39] According to the new UKNF guidelines[40], aimed at reducing credit risk, in the creditworthiness assessment process banks were obliged to increase the interest rate by 5 p.p. from its current level (previously 2.5 p.p.[41]). In addition, the supervisory authority recommended providing an additional household spendings buffer, adequate to inflation expectations and loan maturity. An increase in the lending rates due to the NBP interest rate increases, and the banks' adjustments to the new UKNF guidelines (by the end of March 2022) resulted in a significant reduction in the amount of credit available (Figure 2.19) and a further marked decrease in the acceptance rate of loan applications. From the point of view of financial stability, a decrease in the share of loans with the riskiest LtV ratio to historically low levels (Figure 2.20) was a favourable effect of the lending policy.

Figure 2.17. Growth rate of selected categories of loans to the non-financial sector, y/y



Source: NBP.

Figure 2.18. Value of new loans (three-month moving average)



Note: Loans on current account and working capital loans are not included in the statistics of new corporate loans.

Source: NBP.

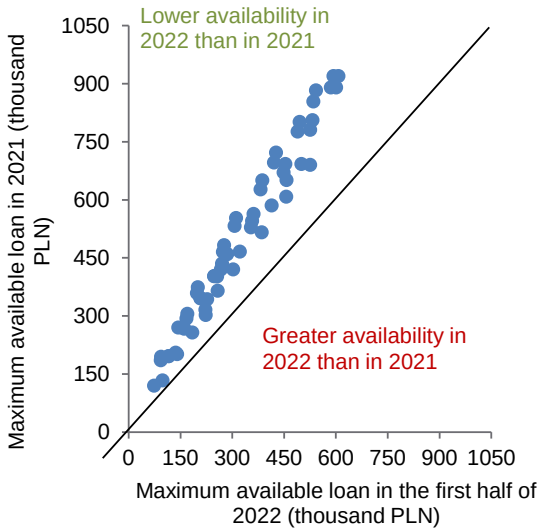
[39] Unless another source has been indicated, information concerning changes in banks' lending policies and their opinion on the direction of changes in loan demand, as well as reasons for such changes is derived from the following studies: "Senior loan officer opinion survey on bank lending practices and credit conditions", July 2022, October 2022, NBP.

[40] Stanowisko UKNF skierowane do Prezesów Zarządów Banków oraz Dyrektorów oddziałów instytucji kredytowych ws. działań mających na celu ograniczenie poziomu ryzyka kredytowego" ["Position of the UKNF addressed to Presidents of the Management Boards and directors of branches of credit institutions on measures aimed at reducing the level of credit risk"], 7 March 2022, available at: https://www.knf.gov.pl/knf/pl/komponenty/img/Stanowisko_UKNF_do_bankow_ws_ryzyka_kredytowego.pdf.

[41] See Rekomendacja S dotycząca dobrych praktyk w zakresie zarządzania ekspozycjami kredytowymi zabezpieczonymi hipotecznie [„Recommendation S concerning good practices related to mortgage-secured credit exposures"], December 2019, KNF, available at: https://www.knf.gov.pl/knf/pl/komponenty/img/Nowelizacja_Rekomendacja_S_23-07-2020_70340.pdf.

The deteriorating economic situation and creditworthiness of households, as well as their concerns about future economic conditions, combined with high (nominal) housing prices, have simultaneously contributed to a deep decline in demand for housing loans. The number of submitted loan applications has been declining on an annual basis, every month since the beginning of 2022, at a rate not seen since BIK started to compile such data. In September, the decline reached almost 70% (Figure 2.22). A strong reduction in demand for housing loans was also reflected in the banks' responses to the NBP survey on bank lending practices in each of the first three quarters of 2022.

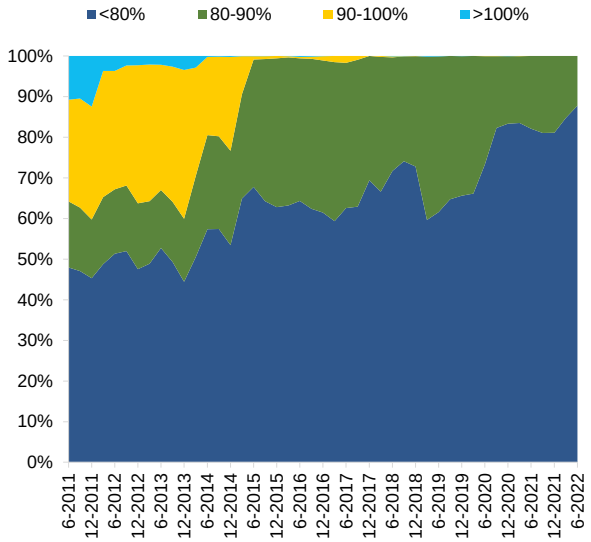
Figure 2.19. Maximum value of loan offered by banks in in the first half of 2022 compared to 2021



Note: Dots reflect the maximum amount of a loan that banks would be ready to provide to households with the selected characteristics (number of persons, age, and income).

Source: NBP based on UKNF non-standard reporting data.

Figure 2.20. LtV of new loans



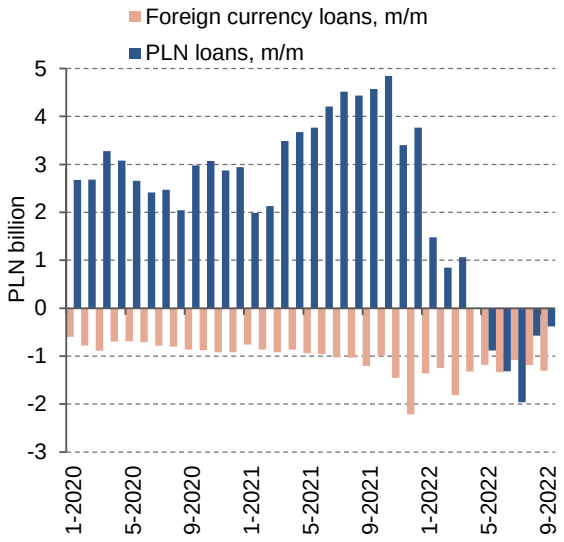
Source: NBP based on UKNF non-standard reporting data.

As a consequence of the aforementioned phenomena, lending in the housing loans segment came to a halt on a scale not seen in the last two decades. The growth rate of total housing loans was negative on a monthly (from February 2022) and annual (from August 2022) basis. The value of new PLN loans decreased (in September it was around 71% lower than a year earlier) and a decline in FX loans continued (Figure 2.21 and Figure 2.22). On the other hand, the scale of overpayments and early repayments of loans has been increasing – in June 2022 it was around three times higher than before the start of the cycle of interest rate increases in October 2022.[42] At the same time, the popularity of fixed-rate loans has increased among households that have decided to apply for housing loans. Nearly 43% of

[42] In June 2022, the value of overpayments and prepayments was 6.3 bn zlotys. See "Podsumowanie I półrocza 2022 roku na rynku kredytów i pożyczek" ["Loan market. Summary of the first half-year of 2022"], 27/07/2022, BIK, available at: https://media.bik.pl/informacje-prasowe/att/2265346.

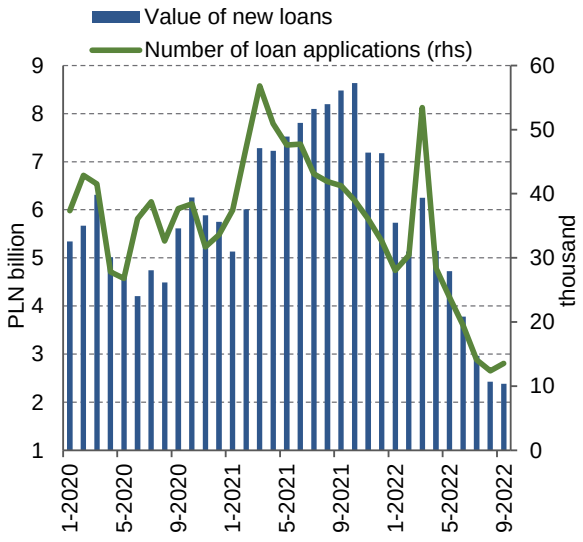
housing loans granted in the first half of 2022 were periodically fixed-rate loans (as compared to 5% in the entire 2021).

Figure 2.21. Changes in value of housing loans on the balance sheet of the banking sector



Source: NBP.

Figure 2.22. Value of new housing loans and number of loan applications



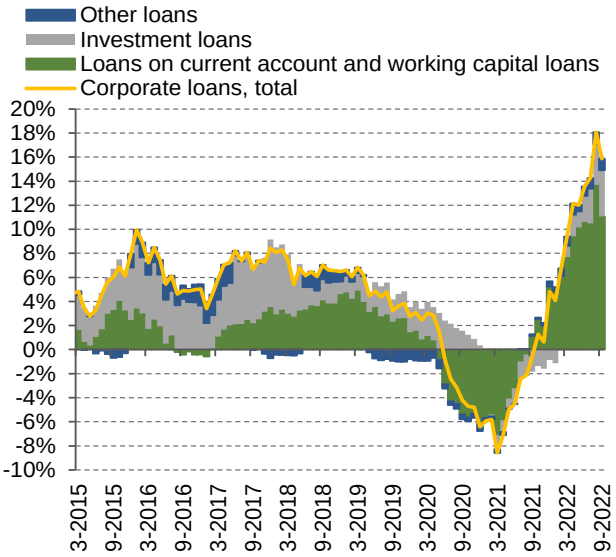
Source: BIK.

The annual growth rate of consumer loans started to decline in February and turned negative in June 2022, having failed to recover permanently from the strong declines in the early period of the pandemic. From January 2022 onwards, the demand for loans measured with a number of submitted loan applications has been decreasing each month in comparison to that in the previous year. In the first half of 2022, the number of low-value (up to 5,000 zlotys) cash loans granted was higher than in the preceding year and, at the same time, the number of loans granted for amounts above 50,000 zlotys declined. Banks tightened their lending policy considerably, which as they explained, resulted from the increase in interest rates and the deterioration in the economic outlook. As a result of the aforementioned changes, a continuous decrease in the value of new loans granted, as compared to the corresponding period of 2021, was also observed from May onwards (Figure 2.18).

In the first three quarters of 2022, the annual growth rate of loans to the non-financial corporations sector grew significantly, as a result of, among others, a gradual recovery of lending in that segment after the pandemic and as a result of one-off events. The increase in loans to enterprises was driven by loans on current account and working capital loans (Figure 2.23). The growth rate of investment loans also increased, returning to the levels close to those recorded before the outbreak of the pandemic. A very high growth rate of loans on current account and working capital loans had its origins in: the termination of government aid schemes, the return by enterprises to their standard operations after the difficult period of pandemic, rising inflation, and also difficulties with availability of certain commodities and semi-finished products. This contributed to an elevated demand for financing of the day-to-day operations, including purchases of inventories for fear of further increases in prices or disruptions

in supply chains. An increase in the growth rate of corporate loans (loans on current account and working capital loans as well as investment loans) was also driven to a large extent by high-value loans granted to several large companies, including in connection with high prices of energy carriers. The demand for corporate loans may have still been affected by the substantial funds deposited in enterprises' bank accounts (corporate deposits continued to be higher than the loans granted) (Figure 2.24).

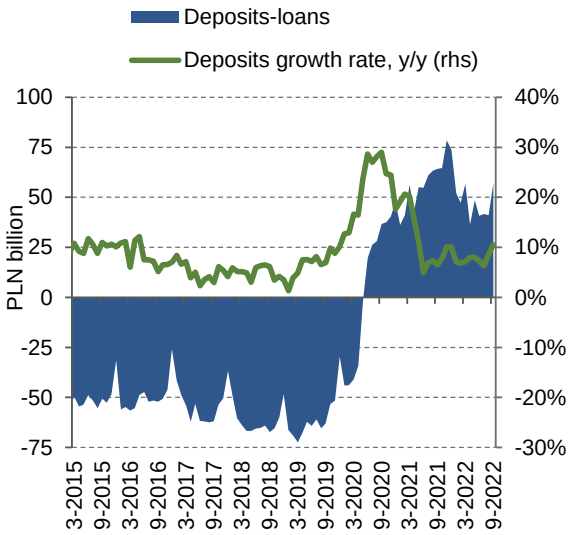
Figure 2.23. Growth rate of loans to the corporate sector and contribution of main components, y/y



Note: The figure shows the growth rate including transactional changes only.

Source: NBP.

Figure 2.24. Corporate deposits



Source: NBP.

A strong increase in lending in the segment of corporate loans in the first three quarters of 2022 was accompanied by the tightening of lending policy by banks. The tightening of lending standards was caused by the NBP monetary policy decisions, by an increase in industry-specific risk, and also by the worsening of the economic outlook. The rate of the accepted loan applications in this period decreased (on a quarterly basis).[43] Lack of creditworthiness and factors remaining beyond the enterprises' control remained the main reasons for credit refusals.

Outlook

The lower GDP growth rate projected in the coming quarters, persistently high inflation and the associated pessimism of economic agents undermine their willingness and ability to borrow from banks.

[43] Information concerning the situation of enterprises surveyed by NBP, their demand for loans and the reasons for its changes referred to in this chapter comes from: "Szybki Monitoring NBP. Analiza sytuacji sektora przedsiębiorstw" ["NBP Quick Monitoring Survey. Economic climate in the enterprise sector"], issues: July and October 2022, available at www.nbp.pl.

The growth rate of housing loans is expected to weaken. The increasingly difficult situation of households, combined with the market expectations that interest rates will remain at high levels, and with the UKNF's March 2022 guidelines remaining in force, will not contribute to the improvement in the creditworthiness of individual bank customers. This will have a negative impact on the households' demand for loans. A scale of loan overpayments is also expected to grow in the following quarters as consumers declared to use the funds freed up as a result of the introduction of loan repayment holidays for this purpose.[44]

Factors unfavourable to the increase in lending will also prevail in the consumer loans segment. The expected by households deterioration in their financial situation, in the economic situation of the country and in unemployment trends in the following months[45] may have an adverse effect on the growth rate of consumer loans. The data indicate that the household sentiments and the consumer loan trends are interrelated.

In the case of corporate loans, a gradual weakening of lending can be expected in the medium term due to the phasing out of the base effect and to weaker investment sentiment[46]. In the short term, a further increase in loans granted for the purpose of financing day-to-day operations is expected. In view of the inflationary processes taking place in the economy, the costs of enterprises will continue to rise. Due to the anticipated weakening of domestic demand, it may be difficult to fully compensate the increase by rising the final prices. The demand for long-term loans can be expected to decline. This is because the percentage of companies planning to commence investment projects remains low and, historically, loans have been a rather insignificant source of new projects financing for this sector.

On the credit supply side, a limitation in the capacity of some banks to provide credit in the future can be expected as a result of a reduction in capital surpluses being an effect of legal and regulatory events in 2022 (see Chapter 2.4 and Chapter 2.5).

2.4. Liquidity risk and funding

The liquidity position of the banking sector as a whole was favourable, although liquidity ratios declined slightly. This decrease in banking sector resulted mainly from the following two reason: an

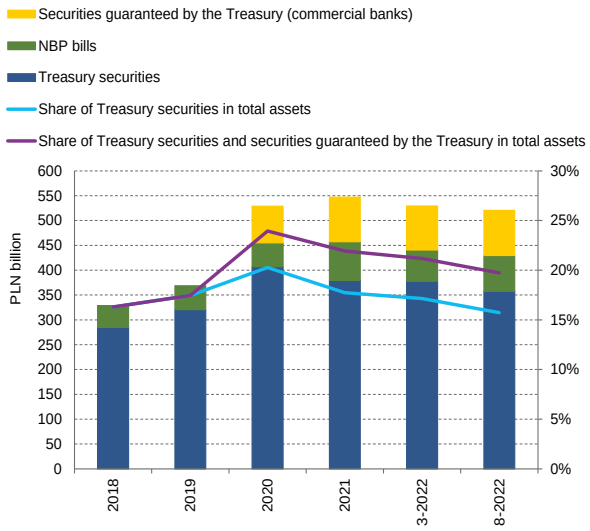
[44] Results of the opinion poll "Zobowiązania kredytowe Polaków" ["Poles and their Loan Commitments"] conducted by Quality Watch on 18 July 2022 on behalf of BIK, available at: https://media.bik.pl/informacje-prasowe/758555/prawie-co-czwarty-kredytobiorca-w-polsce-moze-skorzystac-z-wakacji-kredytowych.

[45] For components of the Leading Consumer Confidence Indicator describing the expected trends in individual consumption in the coming months, see "Consumer tendency – September 2022"], Statistics Poland, available at: https://stat.gov.pl/en/topics/business-tendency/business-tendency/consumer-tendency-september-2022,3,33.html.

[46] See "Szybki Monitoring NBP. Analiza sytuacji sektora przedsiębiorstw" ["NBP Quick Monitoring Survey. Economic climate in the enterprise sector"], October 2022, available at www.nbp.pl.

increase in the reserve requirement ratio to the pre-pandemic levels, i.e. from 2% to 3.5%[47]and a drop in the market value of Treasury bonds disclosed in the banks' balance sheets. An increase in the demand for currency following the outbreak of the war in Ukraine was largely temporary and currently has a lesser impact on the banks' liquidity. As a result of the increase in the reserve requirement ratio, the value of the required reserve almost doubled This change required that some banks, which had not so far maintained significant surpluses of funds on their accounts with the NBP above the reserve requirement level, adjust their asset's structure. After the outbreak of the war in Ukraine, the value of currency in circulation increased sharply (an increase by 11% within a week, i.e. around PLN 40 billion). Then the situation reversed and the amount of currency in circulation began to decline. In November 2022, the cumulative growth of currency in circulation (since the beginning of the year) is close to the figures observed in 2018 and 2019. In turn, an increase in interest rates reduced the value of the large portfolio of bank Treasury debt securities, whose share in assets increased significantly after the outbreak of the pandemic. Since the beginning of the cycle of interest rate increases by the MPC, the market value of the banks' entire Treasury bond portfolio has fallen by around PLN 50 billion. As a result of above two factors, the estimated excess in liquid assets[48] decreased from PLN 210 billion in December 2021 to PLN 167 billion in August 2022.

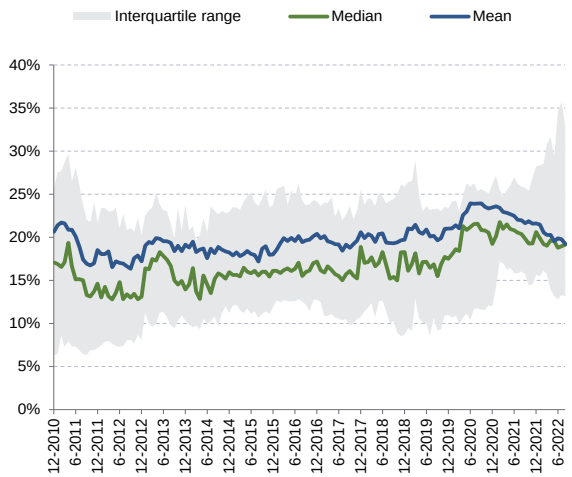
Figure 2.25. NBP bills, Treasury securities/guaranteed by the Treasury



Note: Data excluding BGK.

Source: NBP.

Figure 2.26. Share of domestic Treasury securities and NBP bills in total assets of commercial banks



Note: Data excluding BGK and branches of credit institutions.

Source: NBP.

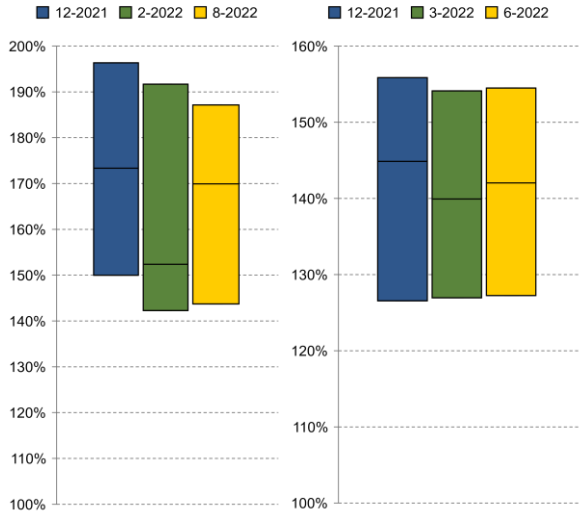
The value of the banking sector's portfolio of liquid assets continues to be high in relation to the total balance sheet (see Figure 2.25 and Figure 2.26). At the end of August 2022, almost a quarter of

[47] The MPC's decision of 8 February 2022 applied starting from the reserve requirement maintained since 31 March 2022.
[48] Excess of liquid assets understood as an excess of liquid assets under the condition that the LCR of 100% is met.

the banking sector's balance sheet (excluding BGK) consisted of Treasury securities and securities guaranteed by the Treasury and also NBP bills (around 16%, 4% and 3% of the sector's assets, respectively).

In August 2022, the short-term liquidity ratios (LCR) of all banks were above the supervisory minima however, there are significant differences in the level of this surplus in individual banks (see Figure 2.27**).** At the end of August 2022, the average LCR for commercial banks[49] was 158%, for cooperative banks operating on their own – 477% and for the Institutional Protection Schemes (IPS-BS) – 325% and 297%. However, it should be pointed out that the situation of individual banks is not homogeneous, as they differ considerably in terms of the size and structure of their liquid asset portfolios.

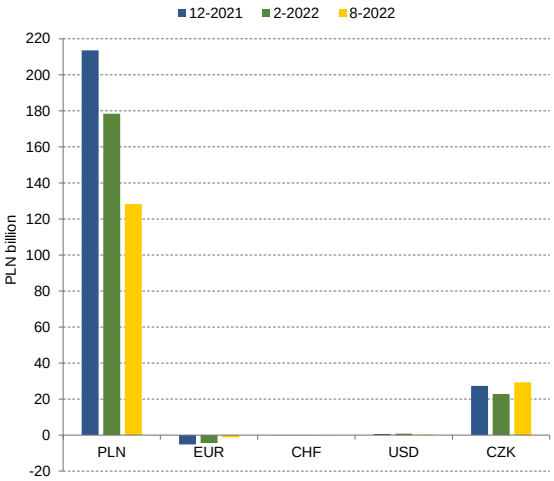
Figure 2.27. The LCR ratios of domestic commercial banks (left-hand panel) and NSFR (right-hand panel)



Notes: The horizontal lines indicate individual quarters and the height of the box indicates the interquartile range. Banks with high LCRs were excluded from the sample: for commercial banks – over 500%. Data excluding BGK and associating banks.

Source: NBP.

Figure 2.28. Excess/shortage of liquid assets by significant currencies at domestic commercial banks



Notes: Excess/shortage of liquid assets understood as excess of liquidity assets under the condition that LCR=100%. Data exclude BGK and associating banks. Significant currency: an institution holds total liabilities denominated in a given currency, the amount of which is at least 5% of the institution's total liabilities.

Source: NBP.

After a significant increase in excess liquidity during the pandemic, the sector's liquidity levels appear to be returning to those reported in the preceding periods. Despite liquidity shortage in some currencies, the surplus of funds in the PLN was adequately high to enable banks to cover their potential liquidity needs in these currencies (see Figure 2.28).

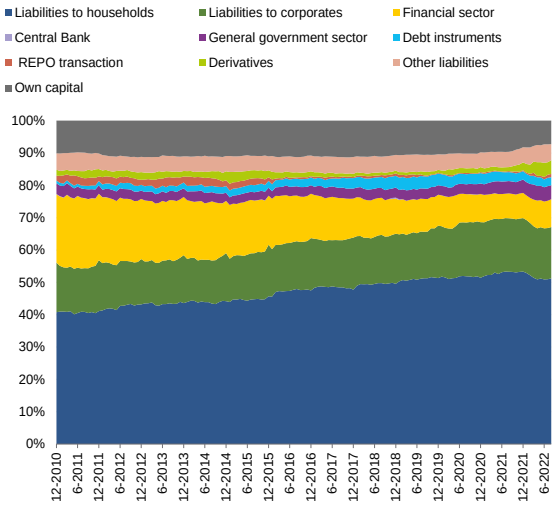
In the long term, banks' liquidity needs depend on the structure of their funding sources (see Figure 2.29). The main source of funding for banks in Poland continues to be deposits from the non-financial sector (57% of the total assets as at the end of August 2022). At the same time, the significance of the

[49] Excluding BGK and associating banks.

second most important source of funding for banks, namely funds from entities from the financial sector, decreased. The role of other sources of funding, especially the issuance of other debt instruments, remained insignificant.

From early 2022 onwards, the growth rate of non-financial sector deposits is reported to decline however, the scale of this decline is currently not a cause for concern. The continuously higher growth of deposits than of loans over the past few years has contributed to the decreasing of the banks' funding gap. From the mid-2019 onwards, the funding gap continues to be negative, which means that the amount of the deposits accumulated in the banking sector is higher than the amount of the loans granted. In the middle of 2020, due to a significant increase in deposits and a decrease in the loan growth, there was a rapid deepening of the gap and was around -18% at the end of August 2022. The maturity mismatch between the assets and liabilities related to the financing of long-term assets with liabilities of increasingly shorter maturities diminished. The share of term liabilities increased by 6 p.p. over the year to 44% in June 2022. However, the share of medium- and long-term liabilities is still low, as the majority of banks' liabilities, which are around the three fourths of the total liabilities, mature within up to 1 year (see Figure 2.30).

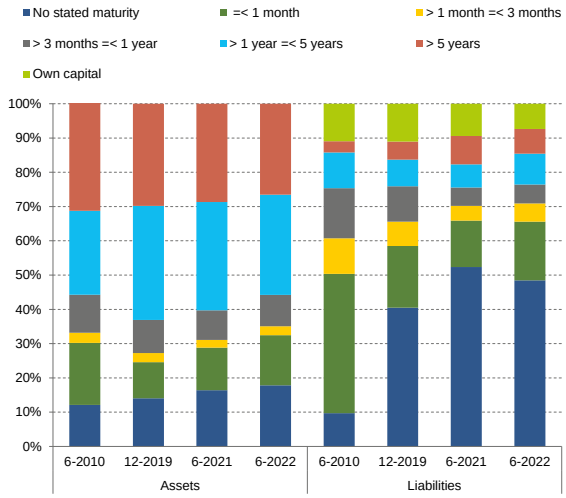
Figure 2.29. Structure of the banking sector liabilities



Note: Data excluding BGK.

Source: NBP.

Figure 2.30. Term structure of the banking sector assets and liabilities

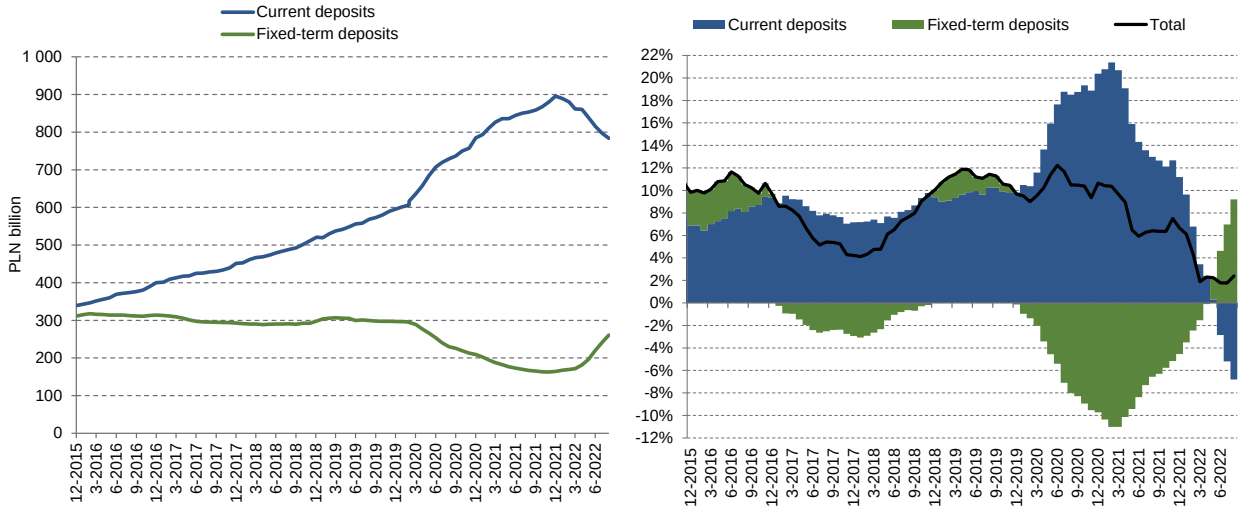


Source: NBP.

A decline in the rate of change in the non-financial sector deposits was caused mainly by changes in households deposits. A lower rate of increases in the households deposits was noticeable from February 2022 onwards (falling to 1.2% y/y in August 2022) (see Figure 2.31). This was mainly driven by the rising inflation and the deepening of negative real interest rates on deposits, as well as by concerns about the adverse effects of the war in Ukraine. These factors had a significant impact on the investments made by households: (i) an increase in the demand for cash in the early months of the year and

(ii) an increased interest in the retail Treasury bonds and (iii) foreign currency deposits. The acceleration of repayments and overpayments of housing loans as a result of an increase in the interest rates on the floating-rate loans also had a limiting effect on the growth of deposits. From November 2021 onwards, a noticeable increase is reported in early repayments and overpayments of housing loans (from PLN 1.8 bn and PLN 1 bn to PLN 3.7 bn and PLN 2.6 bn , respectively in June 2022[50]).

Figure 2.31. Value (left-hand panel) and growth rate of households deposits (y/y) and contribution of individual components to deposit growth (right-hand panel) - term structure



Source: NBP.

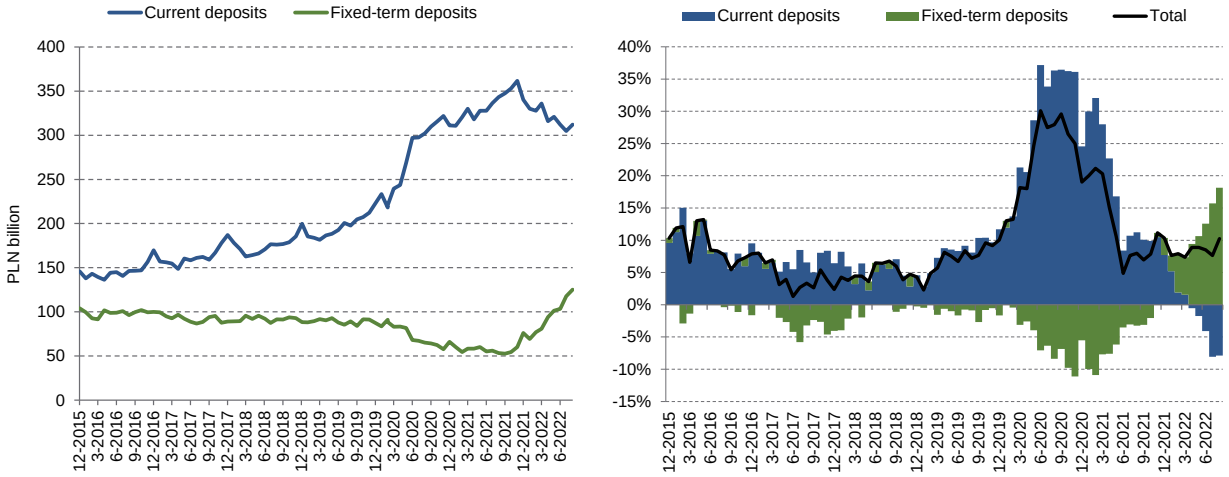
A gradual recovery in households term deposits was supported by an increase in interest rates. At the end of August 2022, term deposits accounted for 25% of households deposits (16% in the preceding year) (see Figure 2.31). The value of new[51] term deposits gradually increased: from PLN 14 bn on average per month in September 2021 to PLN 56 bn in August 2022. As a result, from June 2022 onwards, for the first time in at least 15 years, the value of current deposits (y/y) decreased.

A change in the term structure of deposits in the enterprise sector was also evident (corporate term deposits accounted for 29% of deposits at the end of August 2022, as compared to 13% in the previous year) (see Figure 2.32). The end of the period of financial support disbursements under the anti-crisis shields saw the beginning of a decline in current deposits. At the same time, the value of new corporate term deposits increased gradually: from PLN 11 bn on average per month in September 2021 to PLN 40 bn in August 2022. The worse economic prospects and weaker investment optimism than a year ago are not conducive to investment planning, which in turn may have an impact on a further increase in term deposits.

[50] "Summary of the first half of 2022 on the loan and credit market", BIK (https://media.bik.pl/informacje-prasowe/att/2265346)

[51] New deposits are understood to be contracts concluded during the reporting period and pre-existing contracts for which the interest rate terms have been changed.

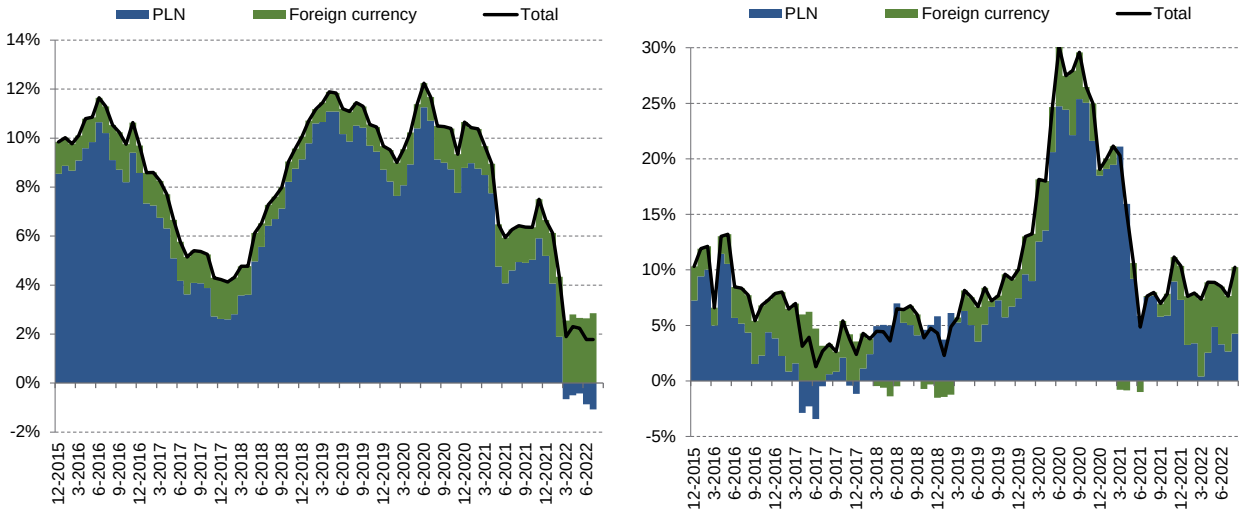
Figure 2.32. Value (left-hand panel) and growth rate of corporates deposits (y/y) and contribution of individual components to deposit growth (right-hand panel) - term structure



Source: NBP.

A change in the currency composition has also been noticeable in recent months, with a decline in the value of zloty deposits, especially in the household sector, in favour of foreign currency deposits (see Figure 2.33). The main reason for this phenomenon was probably a prudential approach caused by the outbreak of war in Ukraine as well as the strong weakening of the Polish currency. From early 2022 onwards, households zloty deposits fell by almost PLN 38 bn s, while foreign currency deposits have increased by PLN 23 bn (for enterprises: a decrease of PLN 2 bn and an increase of PLN 23 bn, respectively). The increasing interest in foreign currency deposits has not yet affected the liquidity or the currency position of the banking sector, but it is a phenomenon that needs to be monitored.

Figure 2.33. Growth rate of deposits (y/y) and contribution of individual components to households deposit growth (left-hand panel) and the corporates deposit growth (right-hand panel) - currency structure



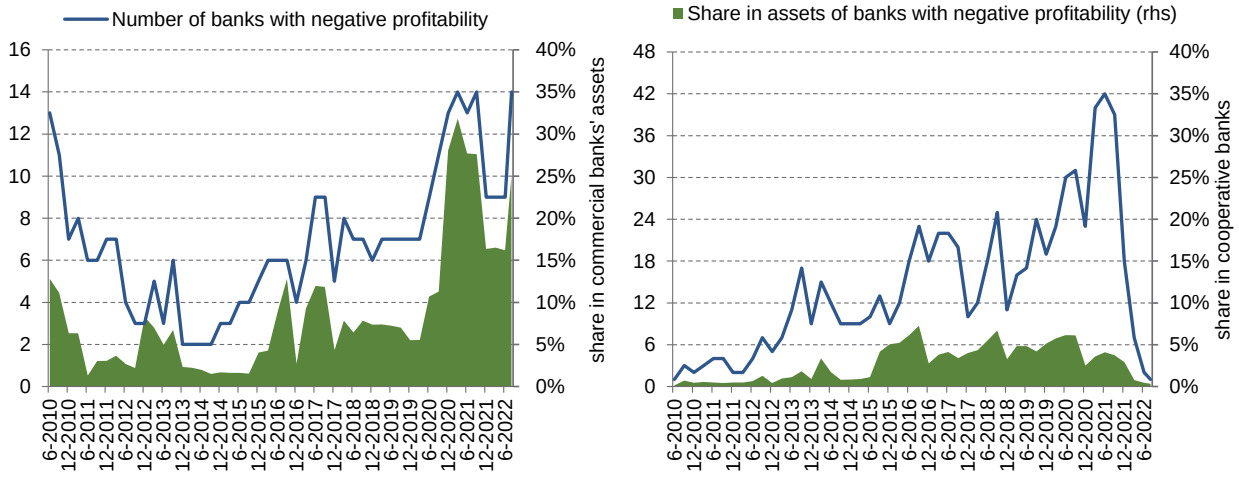
Source: NBP.

If the aforementioned developments continue, including the declining rate of growth of deposits, banks will have to offer much higher deposit rates than before. This is beneficial from the point of view of the effectiveness of monetary policy transmission, but it may be a burden on banks' earnings, especially for weaker banks, perceived by depositors as riskier, or for banks with small surpluses of liquid assets.

2.5. Earnings and capital adequacy

In June and July 2022, the upward trend in the net earnings and profitability indicators of the banking sector broke down. The recovery in banks' profitability, which began in 2021, accelerated significantly in early 2022, inter alia due to rising interest income. However, the monthly earnings of the sector in June and July 2022 were negative, which resulted in the earnings for the first eight months of 2022 being lower than on average in previous years. The number and share in assets of commercial banks with negative profitability returned to relatively high levels (see **Figure 2.34**). At the same time, the profitability of cooperative banks continued to increase rapidly (see Figure 2.35).

Figure 2.34. Number of domestic commercial banks (left-hand panel) and cooperative banks (right-hand panel) with negative profitability and their share in assets of the respective group of banks



Note: Profitability over a 12-month horizon.

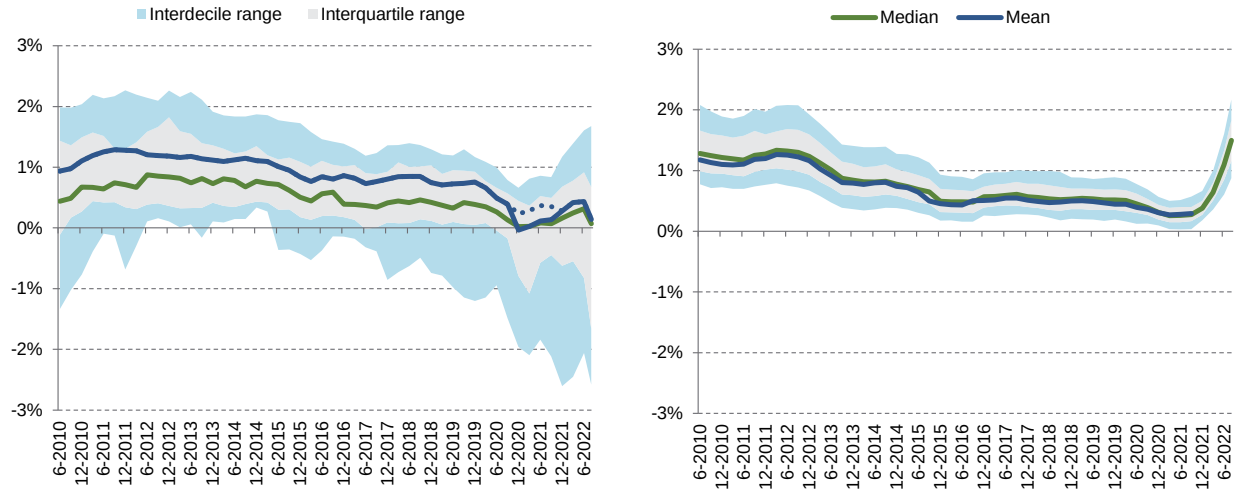
Source: NBP.

The main reason for the decline in the sector's profitability was the costs of loan repayment holidays (introduced by law[52]), which were recognised in banks' earnings in July 2022. These costs (approx.

[52] Pursuant to the Act of 7 July 2022 on Crowdfunding for Business Ventures and Aid to Borrowers (Journal of Laws 2022, item 1488), effective from 29 July 2022, the "loan repayment holidays" in case of zloty housing loans may be taken for two months in the third quarter and for two months in the fourth quarter of 2022, and for one month in each quarter of 2023. The existing accounting and financial reporting regulations impose an obligation on banks to recognise the total expected costs of loan repayment holidays upfront on a one-off basis and to verify the amount recognised accordingly as necessary if new information becomes available.

13 bn zlotys) reflected the banks' expectations on utilisation of loan repayment holidays by customers over their entire term (2022-2023) and applied in particular to commercial banks with large portfolios of zloty housing loans. Banks recognised these costs as a loss on loan modification or as a reduction in net interest income (see Figure 2.36). According to the UKNF data, around 65% of borrowers benefited from loan repayment holidays by mid-October 2022. According to the current reports of some listed banks, the interest of their customers in loan repayment holidays has been higher than that expected before the law came into force, which would translate into additional costs for these banks. It cannot be ruled out that the borrowers' interest in loan repayment holidays in the following months exceeds the level currently anticipated by banks, especially if interest rates rise further.

Figure 2.35. Return on assets in domestic commercial banks (left-hand panel) and cooperative banks (right-hand panel)



Notes: Annualised data. Data for cooperative banks excluding banks that were subject to resolution in 2020 (PBS in Sanok and BS in Przemków). The dotted line presents the value of the ratio excluding the change in the PKO BP earnings for 2020 as a result of the decision to offer settlements to borrowers with FX housing loans.

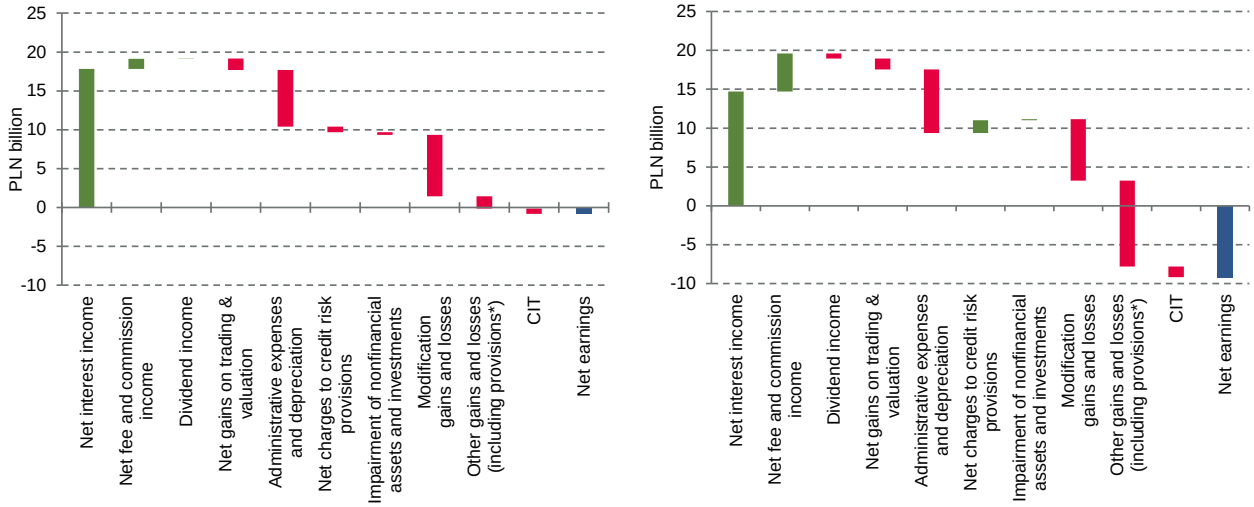
Source: NBP.

Charges to provisions for the legal risk relating to FX housing loans continued to be a significant burden on the earnings of a few commercial banks. The total cost of this risk, recognised in the current earnings of the sector, was similar to that recognised a year ago (see Chapter 2.2), while most of the costs were concentrated in a few banks. The banks that made the highest increases in such provisions were the majority in the group of banks with the largest nominal negative net earnings. In the next quarters, the earnings of banks are expected to continue to be heavily affected by these costs, especially for those of them whose portfolios have so far been covered by provisions to a little degree.

Contributions to the Polish Commercial Banks' Protection System (SOBK) also added to the decline in the banking sector's profit in June 2022; however, as a result of this, current and future contributions to the BFG guarantee fund will be lower. The costs of contributions to the SOBK (approx. 3.4 bn zlotys) were borne by the eight commercial banks participating in the system. These funds were used in the resolution of Getin Noble Bank SA (see Box 2.2). Contributions to the protection scheme's assistance fund, unlike contributions to the BFG's guarantee fund and the resolution fund, are recognised

as tax-deductible expenses in the corporate income tax, which will reduce the impact of this contribution on the earnings of the banks involved. The establishment of the SOBK and the use of its assistance fund to carry out effective restructuring of banks without the need to pay out deposits held in them was one of the arguments for the BFG Council to lower the target level of the deposit guarantee fund in October 2022 and, as a consequence, also the contributions to this fund for 2022.[53] Future contributions to this fund will also be lower.

Figure 2.36. Change in net earnings of the banking sector and decomposition of the change – year-to-date amounts (left-hand panel) and 12-month flows (right-hand panel) until August 2022



* Including provisions for legal risk of FX housing loans – except for banks which recognised them jointly with the provisions for credit risk.

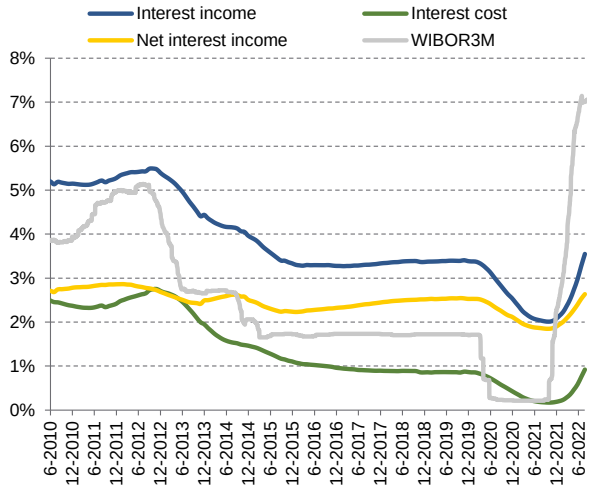
Notes: The height of green and red bars indicates a y/y change in the relevant P&L item of the banking sector relative to the corresponding period of a year earlier. Respective P&L items are measured as year-to-date amounts (left-hand panel) or 12 month flows (right-hand panel). A negative change in cost items indicates increasing cost, which translates into lower net earnings. "Modification gains and losses" (resulting mostly from loan repayment holidays) and "Other gains and losses (including provisions)" may take both positive and negative values, so it can only be inferred from the figure whether a change in this item had a positive or negative effect on the earnings.

Source: NBP.

[53] At the beginning of 2022, the BFG Council set the contribution to the banks' guarantee fund in 2022 at 2 bn zlotys and to the banks' resolution fund at 1.7 bn zlotys (in 2021, 1 bn zlotys and 1.2 bn zlotys, respectively; in 2020, 1.6 bn zlotys to each fund). The majority of banks recognised the higher contribution to the resolution fund in their earnings for the first months of 2022. As a rule, the contribution to the guarantee fund is reported on a pro rata basis during the year, but in 2022 the contribution for the second and third quarters was exceptionally deferred until the end of October (Article 34 of the Act amending the Act on mortgage bonds and mortgage banks and certain other acts of 7 April 2022, Journal of Laws of 2022, item 872). On 26 October 2022, the BFG Council decided to reduce the target level of the deposit guarantee scheme to 1.6% of the amount of the guaranteed deposits, as well as to reduce the contribution to the guarantee fund down to 502 million zlotys.

Before the end of 2022, banks' earnings will be affected by the costs of increasing the Borrower Support Fund and the reimbursement of the margins charged during the period of waiting for the mortgage to be entered in the land and mortgage register. Contributions to the FWK in 2022 will amount to 1.4 bn zlotys[54], while the total costs of reimbursing customers who have mortgage-secured loans for the increased margins charged during the period of waiting for the mortgage to be entered in the land and mortgage register[55] are currently difficult to estimate.

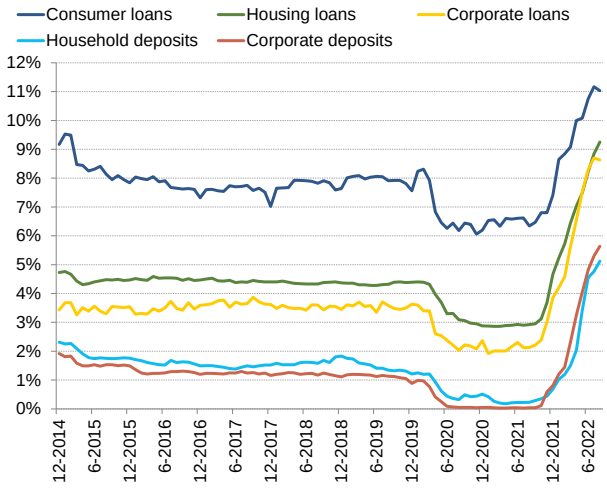
Figure 2.37. Interest income and interest cost in relation to assets vs. WIBOR rate



Note: Data on income, cost and net interest income annualised. Figures for July and August 2022 excluding the reduction in interest income and increase in interest cost associated with the recognition by some banks of the impact of loan repayment holidays in these P&L items.

Source: NBP.

Figure 2.38. Interest rate on new agreements



Source: NBP.

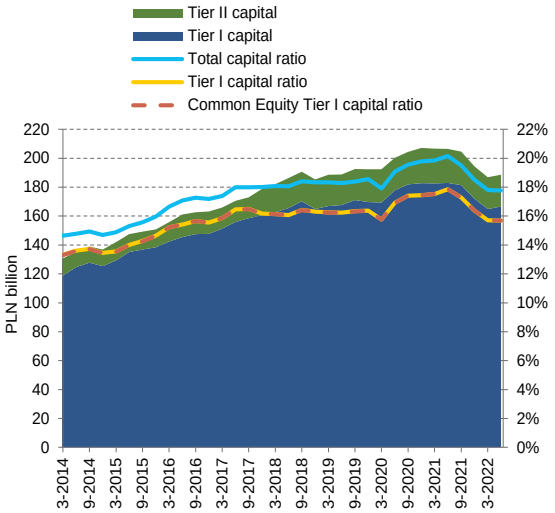
The main factor that has a positive effect on the profitability of banks in Poland was the increase in interest rates, which, *ceteris paribus*, enables banks to increase their net interest income and net interest margin (see Figure 2.37) due to the difference in the interest rates on assets and liabilities. The interest rates on the majority of banks' assets are contractually linked to the WIBOR rates and are updated several times a year, and therefore an impact of interest rate increases on the loan instalments can be delayed. Interest rates on the majority of liabilities are not contractually linked to the money market rates. Despite the fact that most banks have significant surpluses of deposits over the loans granted, the interest rates on new deposits at banks have risen noticeably (see Figure 2.38). The net

[54] Act on Crowdfunding for Business Ventures and on Aid to Borrowers of 7 July 2022, Journal of Laws 2022, item 1488, which entered into force on 29 July 2022.

[55] The provisions on reimbursement were introduced by the Act amending the Act on Mortgage Credit and the Supervision of Mortgage Loan and Supervision over Mortgage Brokers and Agents and the Act amending the Act on Personal Income Tax, the Act on Corporate Income Tax and certain other acts of 5 August 2022 (Journal of Laws 2022, item 1719), which entered into force on 17 September 2022.

interest income of cooperative banks is more sensitive to changes in interest rates, as the interest rates on assets in these banks respond more quickly to changes in the market interest rates than is the case in commercial banks. Some commercial banks use strategies to hedge part of their interest income against an effect of interest rate changes with the use of derivatives, making the earnings of these banks lower in the current environment than in the absence of such hedging. It should also be noted that the interest on housing loans covered by loan repayment holidays is recognised as income on an accrual basis and, at the same time, the costs of loan repayment holidays are recognised by most banks as non-interest, with the result that, despite the reported increase in the net interest margin, the banks' final net earnings are low.

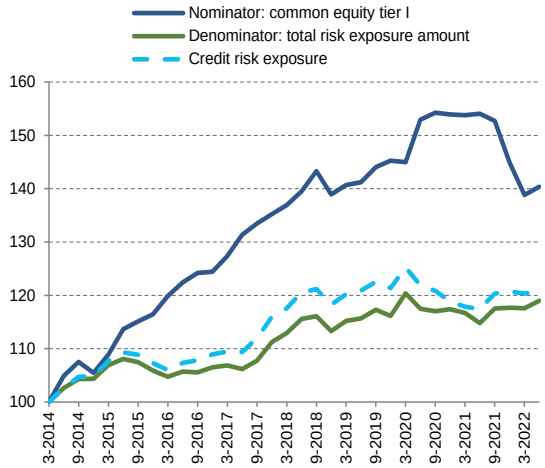
Figure 2.39. Main components of own funds and capital ratios



Note: in the part on capital adequacy, figures show data for the group of commercial banks (excluding BGK) and cooperative banks .

Source: NBP.

Figure 2.40. Changes in the Common Equity Tier 1 capital ratio components



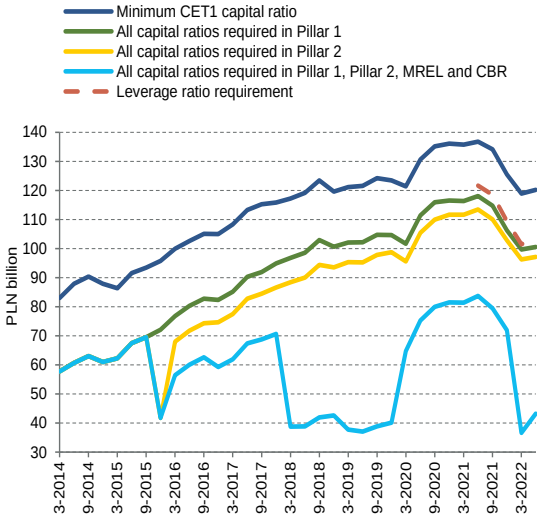
Note: 2014 Q1 = 100

Source: NBP.

Other factors contributing to the profitability of the banking sector were low loan losses and higher fee and commission income (see Figure 2.36). However, opportunities to further increase the earnings in those areas may be limited by adverse effects of the expected deterioration in the economic situation and an increase in the debt service charges on borrowers. These factors will contribute to increasing loan losses over several quarters (see Chapter 2.1). In the case of housing loans, the impact of the economic downturn on banks' loan losses may be limited by the utilisation of loan repayment holidays and support under the FWK. However, the costs of loan repayment holidays and the increases in the FWK will be recognised in the banks' earnings as soon as in the second half of 2022. It can also be expected that the costs of loan repayment holidays will be several times higher than the reduction in loan losses (that would be incurred as a result of the higher interest on loans), achieved through the adoption of this scheme.

The banking sector's own funds and capital ratios were adversely affected by the decline in the balance sheet value of bonds measured through other comprehensive income (OCI) (see Figure 2.39). The value of Treasury bonds measured through OCI decreased between December 2021 and June 2022 by approx. 15 bn zlotys[56], which corresponded to a 1.4 p.p. decrease in the TCR, to 17.8% at the end of the second quarter of 2022 (see Figure 2.40). In June 2022, capital ratios remained at the same level as in March 2022. The decline of ratios was stopped, among others, thanks to an increase in the reserves, which offset the lower valuation of bonds on banks' balance sheets.

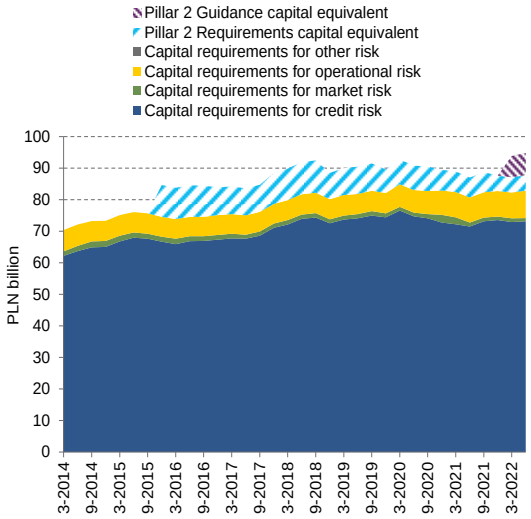
Figure 2.41. Excess of Common Equity Tier 1 capital in the domestic banking sector after meeting capital requirements and capital buffers



Notes: the decrease in the excess of CET1 after meeting the combined buffer requirement in 2018-2019 resulted from the obligation to maintain the systemic risk buffer of 3% of total risk exposure amount; the red line indicates the intermediate MREL coming into force.

Source: NBP, BFG.

Figure 2.42. Pillar 1 capital requirements, P2R and P2G



Notes: banks should fulfill P2G after meeting the combined buffer requirement.

Source: NBP.

The domestic banking sector's excess capital above the applicable regulatory and supervisory requirements decreased significantly after the intermediate MREL had come into force. However, in the majority of banks own funds still considerably exceed the requirements. The obligation to meet the MREL[57] resulted in an decline from 70 bn zlotys to 43 bn zlotys in excess capital above the regulatory requirements based on the total risk exposure amount (TREA) (see Figure 2.41). As a result of the

[56] In 2022, pursuant to Article 468 of the CRR, banks can benefit from a 40% adjustment to reduce the impact of losses from declines in the portfolio of debt instruments recognised through other comprehensive income in the regulatory capital.

[57] According to June 2022 data, the value of eligible liabilities issued was low, which resulted in the MREL having to be covered mainly with own funds. If the MREL were to be met with eligible liabilities, this requirement would not affect the decline in the excess capital.

implementation of this requirement, banks with a combined share of 18% in the sector's assets experienced a deficit of capital and/or eligible liabilities against all requirements totalling approx. 6.5 bn zlotys.[58]

Due to adverse market conditions, some banks may find it difficult to meet the intermediate MREL not only in 2022, but also at the end of 2023. Costs incurred by banks due to, among others, loan repayment holidays and the legal risks of FX housing loans limit the ability to accumulate capital from undistributed profits. In the wake of an increase in the estimated cost of capital and of difficult market conditions, opportunities to increase capital by issuing own funds or debt instruments are limited. The estimated deficit of capital/eligible liabilities from the beginning of 2023 would, *ceteris paribus*, be almost twice as high as in June 2022. Due to the challenging operating environment for banks, the BFG has changed the so-called roadmap to the fully loaded MREL and set the transitional MREL requirement for 2023 at the level of the 2022 intermediate MREL.[59] However, from 31 December 2023 banks will have to meet the fully applicable requirement, which means that their MREL capital needs will only be postponed by a few quarters. Banks are expected to take steps during 2023 to issue debt instruments or increase capital. For some banks (around 19% of the banking sector's assets) with the SPE approach[60], it will be possible to issue eligible instruments intended for acquisition by parent banks.

In February 2022, the KNF recommended banks to hold additional capital for Pillar 2 Guidance (P2G) to cover risks not included in the capital requirements. As a result of the sensitivity to an adverse macroeconomic scenario in the stress tests and the credit risk associated with the increase interest rates, 26 commercial banks received the P2G recommendations. The total capital equivalent for P2G amounts to approx. 7 bn zlotys (see Figure 2.42). The recommendation should be met above the Pillar 1, Pillar 2 and the combined buffer requirements (see Box 2.1).

[58] A significant part of the shortfall at the end of June 2022 can be attributed to Getin Noble Bank, which has been under a compulsory restructuring process since 30 September 2022 - more in Box 2.2.

[59] More information on changes to the BFG's methodology is available in the announcement: https://www.bfg.pl/metodyka-mrel-zmiana-zasad-wyznaczania-srodokresowego-wymogu-mreltrea/.

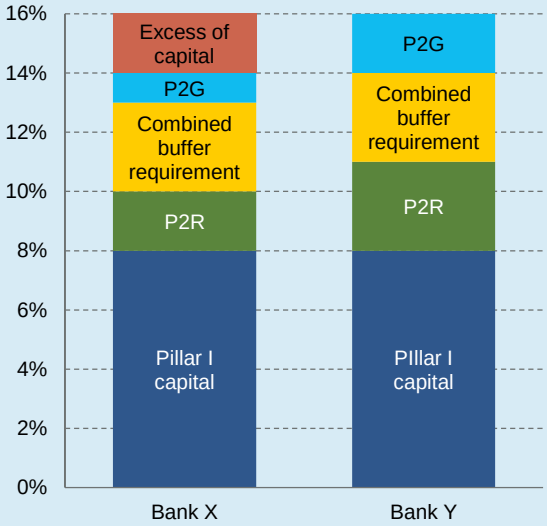
[60] *Single Point of Entry* – a resolution strategy in which restructuring activities against the entire banking group are carried out at the parent entity level by its parent resolution authority.

Box 2.1. Pillar 2 capital requirements and recommendations

Banks operating in the European Union are obliged to maintain capital ratios. Their required level derives from the CRD/CRR minimum capital requirements uniform for all institutions, microprudential requirements and recommendations, as well as macroprudential buffers. The microprudential tools applied to individual credit institutions include Pillar 2 Requirements (P2R) and Pillar 2 Guidance (P2G).[61]

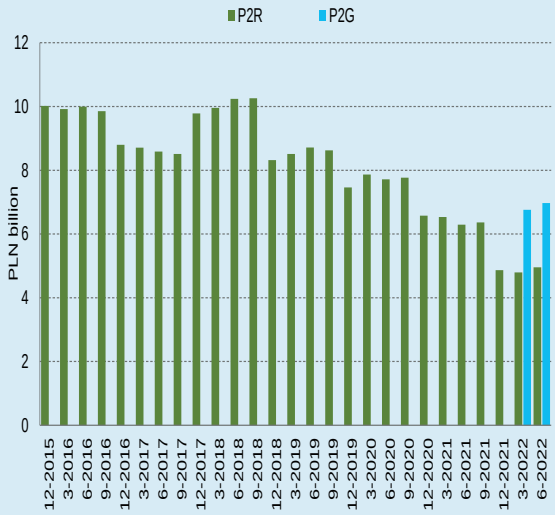
The Pillar 2 requirements and recommendations and the capital buffers[62] increase the required TCR in percentage points. They therefore do not increase the total risk exposure amount, but (when multiplied by TREA) indicate the level of additional capital to be held by a given bank. Therefore, banks which maintain the same level of TCR can simultaneously have different levels of risks and thus different amounts of excess capital. **Due to the fact that P2R, P2G and certain buffers are imposed on individual basis on separate banks, the absolute levels of capital ratios across banks should not be directly compared and used to draw conclusions about the capital positions of these institutions.**

Chart 2.1. Comparison of banks with the same capital ratios but different capital requirements



Source: NBP

Figure 2.43. Quantitative equivalent of Pillar 2 requirements and recommendations in the Polish banking sector



Note: data based on banks' individual financial statements.

Source: NBP.

[61] See Articles 104a and 104b of the CRD.

[62] In Poland, the combined buffer requirement (CBR) currently comprises the capital conservation buffer, the O-SII buffer and an institution-specific countercyclical capital buffer. The capital conservation buffer (2.5 p.p. TCR) is imposed on

The excess capital (relative to TREA) after meeting all capital standards and requirements is more appropriate for comparisons of banks' capital positions. For example, Chart 2.1 shows the capital position of hypothetical banks X and Y, whose capital ratios are equal (16% each), but bank Y has to cover higher P2R and P2G than bank X. Thus, despite the fact that the level of TCR is the same for both banks, bank X is in a much better capital position as it has excess capital after meeting the requirements, and bank Y does not have any excess capital.

Pillar 2 capital requirements and recommendations in Poland

Towards the end of 2015, the KNF instructed banks for the first time to hold capital for Pillar 2 capital add-ons. This concerned 14 banks materially involved in FX housing loans.[63] The amount of the Pillar 2 capital add-on depends on the risk level of the bank concerned.[64]

The Pillar 2 capital requirements imposed by the KNF are subject to change over time. It is not only because of changes in methodology but also recognising provisions for credit and legal risks of FX housing loans and to the gradual reduction of the portfolio due to repayments or write-offs of loans. At the end of the first half of 2022, the capital add-ons for nine banks (on an individual basis) ranged from 0.12 to 3.75 p.p. of TCR.[65]

In comparison to the capital add-ons first imposed, the capital equivalent of P2R in June 2022 was twice as low and amounted almost to 5 bn zlotys (Figure 2.43). It is expected that the progress of banks in reaching settlements with borrowers, as well as the gradual enforcement of final judgments in cases brought before the courts, will accelerate the reduction in the value of P2R requirements and their capital equivalent.

The KNF may also recommend banks to maintain additional capital for risks not covered by capital at the level of requirements and buffers, among others due to bank's sensitivity to the interest rate risk. The amount of the P2G is determined through the supervisory review and evaluation process (SREP). P2G does not have to be immediately fulfilled, nevertheless a bank should strive to meet this recommendation. For the first time, the KNF imposed P2G on 26 commercial banks in February 2022. At the end of June 2022, the level of P2G ranged from 0.13 to 3.57 p.p., depending on the bank, and the capital equivalent of it was approx. 7 bn zlotys. The recommendation were made

all banks. However, the value of the CBR in p.p. may vary from bank to bank, as only some banks are obliged to meet the other two buffers, values of which vary depending on the situation of the individual bank.

[63] From 2016 onwards, the P2R requirement is imposed by administrative decisions.

[64] Principles for calculating additional capital requirements for FX housing loans: https://www.knf.gov.pl/knf/pl/komponenty/img/Zalacznik_4_do_metodyki_BION.pdf.

[65] The amounts quoted were added above the value of the total capital ratio (8%). The add-ons for CET1 and T1 capital were smaller and represented 56% and 75% of the add-on value to the TCR, respectively.

by the KNF as part of its dividend policy for 2022. The failure to meet P2G is associated with a restriction on the ability to pay dividends, but is not in itself an obstacle to business growth. In the event of a prolonged state of non-compliance by a bank with the recommendation imposed, the Banking Law Act allows for the P2G to be exchanged into the P2R.

2.6. Stress tests

Top-down stress tests were conducted to assess the resilience of domestic commercial banks[66] to an impact of adverse macroeconomic and market shocks and the costs of legal risk of FX housing loans. Two scenarios of economic developments over the period from the third quarter of 2022 to the end of 2024 were considered. The stress tests and other analyses described in this chapter aim at identifying and assessing those sensitive areas that could enhance the impact of risk materialisation. Therefore, the results of the stress tests conducted should not be treated as a forecast of the situation of the banking sector.

Main assumptions adopted in the stress tests

The analysis was carried out for two scenarios – **reference** and **adverse** scenario. The central path of the NBP macroeconomic projection from "Inflation Report. November 2022", prepared under the assumption of fixed interest rates, was used as the reference scenario. **The adverse scenario** was developed with the macroeconomic model NECMOD used for NBP macroeconomic projections and historical developments of macroeconomic variables in periods of financial crises in other countries. The paths of selected macroeconomic variables in both scenarios are presented in Figure 2.44 and Table 2.1. It is worth noting that even if reference scenario materialized the economic situation would significantly deteriorate. In addition, the adverse scenario assumed an increase in the risk aversion, which caused a lasting depreciation of the zloty by 30%, as well as an immediate increase in the credit spread of Treasury bonds by 300 basis points (gradually easing over the simulation period to 120 basis points at the end of 2024). It was also assumed that banks' capital– as a result of Treasury bonds measured at fair value through other comprehensive income maturing over the period analysed – would no longer be diminished by the accumulated negative valuation of maturing bonds. .

Unlike stress tests described in the previous *Reports*, in this edition the developments of lending growth rates are based on the projections from Vector Error Correction Model (VECM)[67], which in turn were produced under the assumption of reference or shock scenario materialisation. Decrease in volume of loan portfolio would be allowed if indicated by the projection from the VECM. Other assets could increase by up to half of nominal GDP growth rate. The assumption was held that a bank can only expand

[66] Banks active at the end of June 2022, excluding BGK and Getin Noble Bank (subject to resolution). The analysis covered 28 commercial banks with a combined share of 72% in the banking sector's assets at the end of June 2022.

[67] The model is described in the annex to Chapter 6 of "Financial System in Poland 2020", NBP, Warsaw, 2021 (https://www.nbp.pl/systemfinansowy/rozwoj2020.pdf).

lending and increase volume of other assets as long as its capital level meets the Pillar 1 and Pillar 2 capital requirements, the MREL at the fully-loaded level and at least half of the combined buffer requirement.

The hypothetical future costs of legal risk in the banking system were estimated by adopting as a point of reference the highest coverage ratios of the CHF housing loan portfolio by the legal risk provisions and assuming their further increase in the analysed period. It was assumed that over the simulation horizon each bank increases their provisions for the legal risk until a banks' individual *ex-ante* target coverage ratio of the Swiss franc housing loans is reached. Individual target coverage ratio of a bank was equal to average of three highest provision coverage ratios in the banking sector as of June 2022 adjusted for this banks' deviation in the share of disputed loans from average share of loans in dispute of again three banks with the highest provision coverage ratios as of June 2022. Additionally, in the shock scenario it was assumed that depreciation of the zloty against the Swiss franc also impacts the value of provisions. The estimate of legal risk costs included in both stress test scenarios should not be treated as their forecast, but only as an assumption adopted for the purposes of simulation[68] (for more information on the legal risk of FX housing loans, see Chapter2.2).

Table 2.1. Major economic indicators in the macroeconomic scenarios

Scenario	2021	2022	2023	2024
GDP (y/y, in %)				
Reference	5.9	4.6	0.7	2.0
Adverse	5.9	2.1	-2.4	0.6
CPI (y/y, in %)				
Reference	5.1	14.5	13.1	5.9
Adverse	5.1	15.0	14.1	4.0
Employment (y/y, in %)				
Reference	2.6	0.8	-0.9	-1.5
Adverse	2.6	0.4	-1.8	-1.3
Real wages (y/y, in %)				
Reference	3.5	-2.8	-1.0	1.6
Adverse	3.5	-3.5	-5.2	1.1
WIBOR 3M (in %)				
Reference	0.5	5.9	7.0	7.0
Adverse	0.5	5.5	6.2	6.2

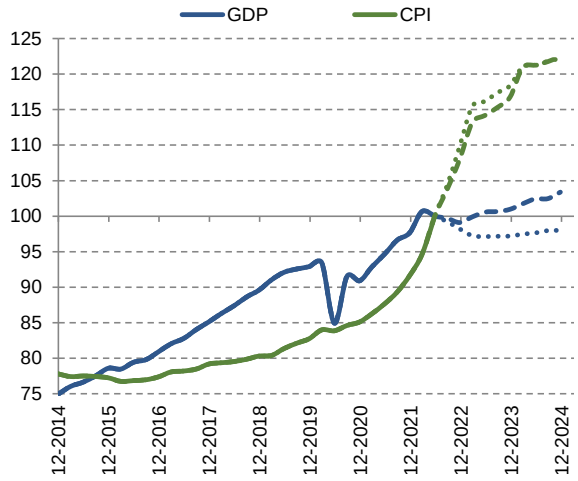
Source: NBP.

In the second half of 2022, banks' earnings were additionally affected by the costs of loan repayment holidays and contributions to the Borrower Support Fund. According to the Act on Crowdfunding for Business Ventures and on Aid to Borrowers, the total contributions of the banking sector to the FWK in 2022 are expected to stand at 1.4 bn zlotys. Distribution of these contributions across banks is not known yet. For the purposes of the stress tests the contributions were estimated on the basis of the housing loan data. The amounts reported by banks in their financial reports for July 2022 were adopted

[68] A detailed analysis of the potential range of legal risk costs of FX housing loans, depending on the variant of the resolution of legal disputes relating to such agreements, and the uncertainty associated with the scale of such costs has been presented in "Financial Stability Report. June 2021".

as costs of loan repayment holidays in the reference scenario (12 bn zlotys) but in the shock scenario borrowers' use of loan repayment holidays was assumed to be more frequent and cost 18 bn zlotys. It was also assumed that there would be no new contributions to the BFG deposit guarantee fund over the analysis horizon (see Chapter 2.5).

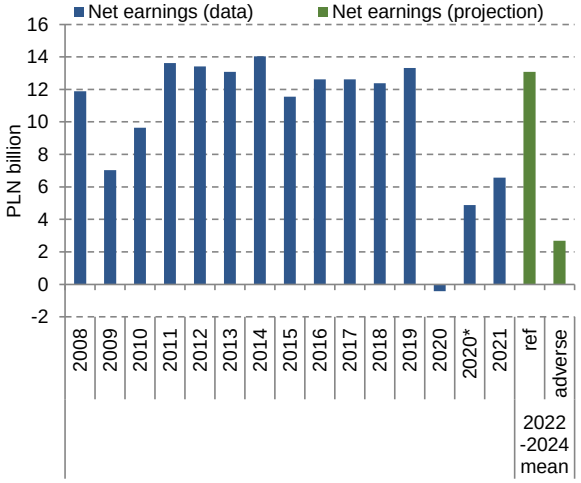
Figure 2.44. Real GDP level and CPI inflation in macroeconomic scenarios



Notes: The dashed line indicates the reference scenario and the dotted line indicates the adverse scenario. GDP and CPI level normalised to 100 in June 2022.

Source: NBP.

Figure 2.45. Net earnings of the analysed group of banks



Note: Green bars show the average annual value of net earnings in 2022-2024 in the reference and adverse scenarios for the 28 banks covered by the analysis. Two values are presented for 2020 – the bar with an asterisk represents the data excluding the effects of the resolution adopted by the PKO BP EGM, offering settlements in disputes concerning FX housing loans.

Source: NBP.

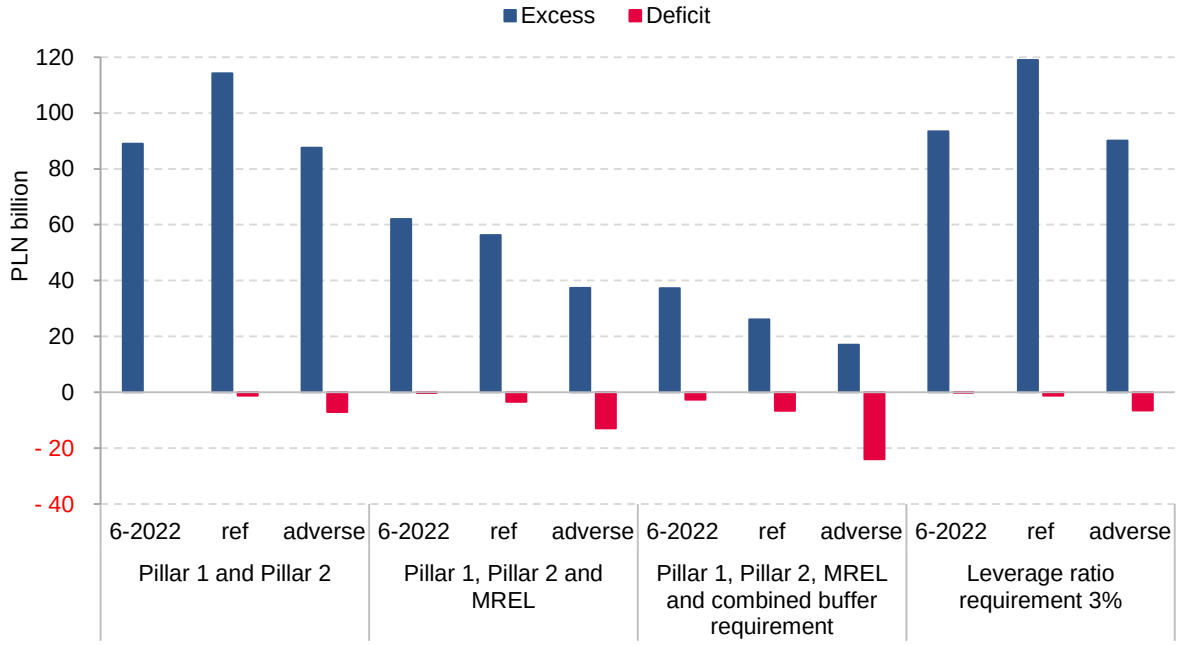
Stress tests results

If the adverse scenario materialised together with the assumed costs of legal risk, the total average net earnings of banks analysed in 2022-2024 would be significantly lower than in the preceding years (see Figure 2.45). Financial losses would be incurred by banks having a 20% share in the sector's assets. By comparison, in the reference scenario the annual average net earnings would be twice as high as in 2021 and close to average for 2011-2019. Share of banks with a negative profitability would amount to 8% of the sector's assets and would be lower than in June 2022 (13%).

The key factor that has a positive effect on the banks' earnings over the period analysed would be higher net interest income. On the other hand, high loan losses and costs of loan repayment holidays incurred in 2022 would have a negative impact. The increase in net interest income would result from the ongoing adjustment of the interest rates of loans and liabilities to the level of market interest rates, which is constant for a given scenario over the simulation horizon. Banks' profitability would also be supported by higher commissions and fees and by lower (than in previous years) contributions to the BFG. Charges to provisions for the legal risk of FX housing loans would still be high – in the shock

scenario they would slightly exceed the provisions for this purpose accumulated by the analysed banks until June 2022.

Figure 2.46. Total excess and deficit of Common Equity Tier 1 capital after meeting the regulatory requirements



Notes: Excess of CET1 and CET1 deficit for 28 banks analysed. Data for June 2022 relate to coverage of the transitional MREL level, including eligible liabilities. Excess of CET1 and CET1 shortfall in the reference and adverse scenarios were estimated under the assumption that the analysed banks will cover the MREL requirement at the target level themselves with their capital only.

Source: NBP.

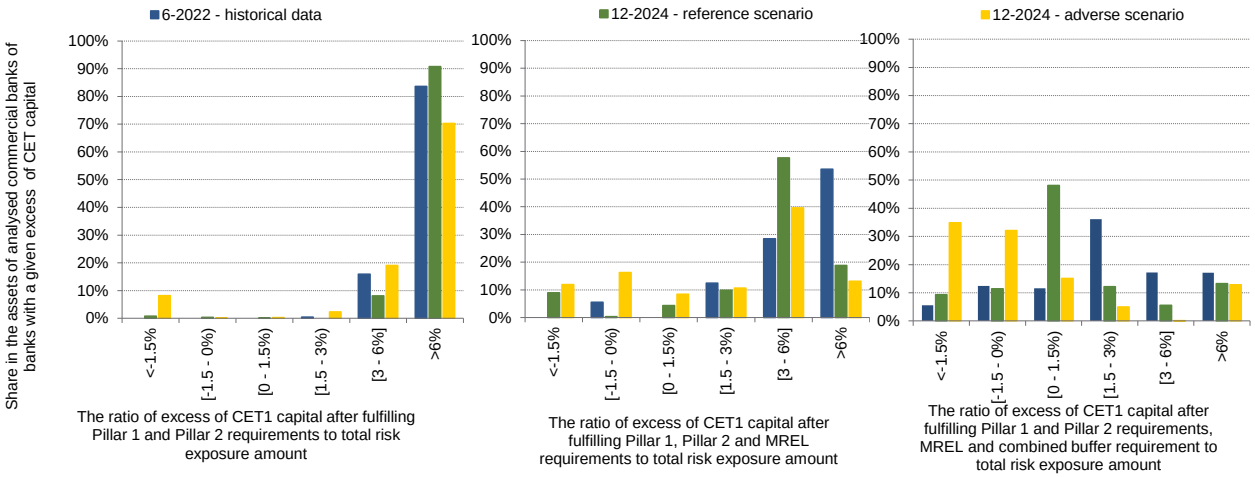
By retaining a significant part of the undistributed profit[69] and net earnings generated during the simulation period, average capital ratios and available excess capital at banks in relation to the Pillar 1 and Pillar 2 requirements and the leverage requirement would fall only slightly in the adverse scenario. **At the same time, capital shortfalls would emerge at a small group of banks.** Assuming that the rules resulting from the PFSA's position on the dividend policy in 2022[70] were applied throughout the simulation period, the majority of the undistributed profit generated before the projection period would be allocated to the regulatory capital, and dividend pay-outs from the profit generated during the projection period would be very low in both scenarios (see Figure 2.48).[71] At the end of 2024 in the adverse scenario, commercial banks with a total share of 6% of the sector's assets would fail to meet the Pillar 1 and Pillar 2 capital requirements, and the capital shortfall would be around 7.1 bn zlotys (1% and 1.3 bn zlotys, respectively, in the reference scenario, see Figure 2.46 and Figure 2.47). At the same time, banks with a 7% share in the sector's assets would fail to meet the leverage requirement, and the

[69] As at the end of June 2022.
[70] https://www.knf.gov.pl/knf/pl/komponenty/img/Stanowisko_KNF_ws_polityki_dywidendowej_w_2022_r.pdf
[71] Low dividend payments would also be affected by banks' lower starting point total capital ratiosthan in the past.

associated capital shortfall would amount to 6.5 bn zlotys (1% and 1.2 bn zlotys, respectively, in the reference scenario).

If the MREL requirement, becoming fully applicable from early 2024, were to be covered by Common Equity Tier 1 capital, it would significantly reduce the excess of this capital category available for combined buffer requirement and lending growth. By the end of the simulation period, a significant proportion of the banks analysed should meet the MREL, which is expected to be fully applicable from 2024 onwards. The stress tests assume an independent[72] fulfilment of the target MREL only with existing excess capital and retained earnings.[73] Under this assumption, total capital excess of analysed banks after meeting the MREL requirement in both scenarios would be half of that available after meeting the Pillar 1 and Pillar 2 requirements. The capital shortfall estimated in the shock scenario relative to the MREL requirement would increase to around 13.0 bn zlotys and would occur in commercial banks with a share of 20% in the sector's assets (3.4 bn zlotys and 7%, respectively, in the reference scenario). In contrast, the total excess capital remaining after meeting the MREL and combined buffer requirements would be lower than the amount of the total capital shortfall (17.0 bn zlotys and 24.0 bn zlotys, respectively). The capital shortfalls would occur in commercial banks covering almost half of the banking sector's assets (6.6 bn zlotys and 15% in the reference scenario) (see Figure 2.46 and Figure 2.47).

Figure 2.47. Distribution of assets of the commercial banks analysed by excess of Common Equity Tier 1 capital after fulfilment of Pillar 1 and 2 requirements (left-hand panel), MREL (middle panel) and combined buffer requirement (right-hand panel)



Notes: See Figure 2.46.

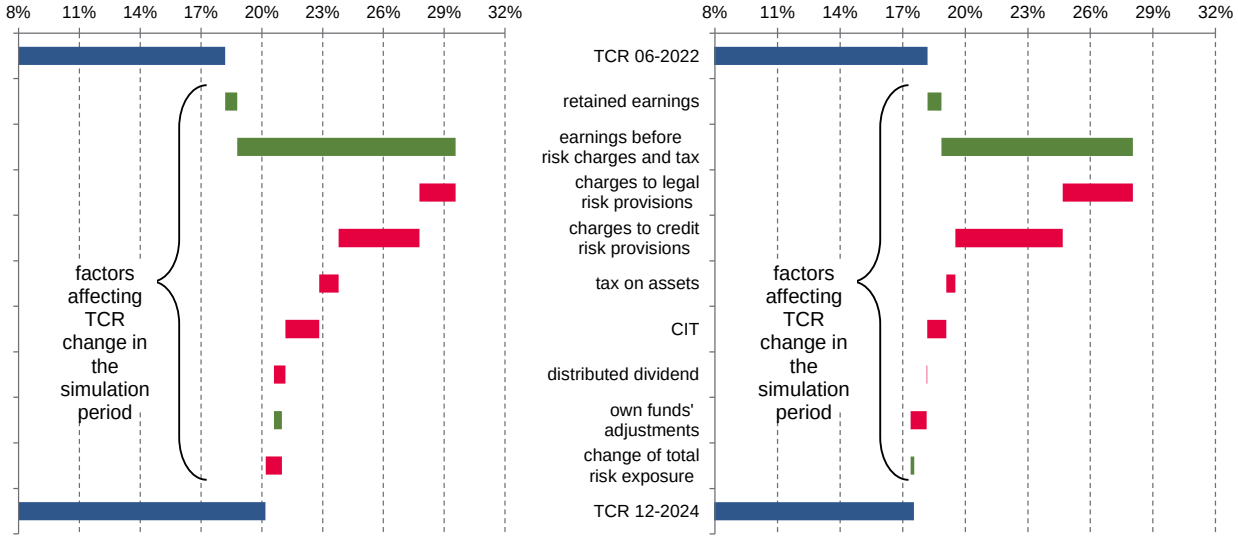
Source: NBP.

[72] This assumes that the bank meets the MREL on its own or as the parent of a group, and not just as part of a group whose parent is in another country.

[73] Banks can cover the MREL by means of available excess of own funds, profit retention, an increase in own funds raised from investors (including issuance of subordinated debt instruments) and/or raising additional eligible liabilities.

A significant reduction in banks' excess capital in the shock scenario would be a limiting factor for flexibility in lending both over the stress-testing horizon and beyond. Over the simulation period, several banks would have no excess capital to expand their lending.Over the longer horizon, if banks with a capital shortfall relative to the combined buffer requirement were to deleverage to meet this requirement, the aggregate net change in loan volume (resulting from a reduction in lending of such banks and an increase in lending at other analysed banks) could be negative. Even in the reference scenario, some of the analysed banks would not have sufficient excess capital to lend at the rate implied by the projections from the VECM. Materialization of such scenario would impede financing of the economy.

Figure 2.48. Total capital ratio of domestic commercial banks in the reference scenario (left-hand panel) and the adverse scenario (right-hand panel) and decomposition of its changes



Notes: Blue bars represent the total capital ratio of 28 banks analysed at the beginning and the end of the simulation period. Factors positively influencing the average total capital ratio over the simulation period are marked with green bars and those adversely impacting it – with red bars. The impact of these factors is shown in percentage points. "Retained earnings" is an increase in banks' capital by the undistributed profit (as of the end of June 2022) generated before the simulation period, arising from the adopted assumptions. "Earnings before risk charges and tax" is equivalent to earnings of banking activity, less, among others, operating costs. "Tax on assets" is the estimated amount of the tax on certain financial institutions that banks would pay during the simulation period. It is assumed that a bank that records a loss in two consecutive quarters shall be subject to the recovery plan, which relieves it from paying this tax for the rest of the projection period. The "Change of total risk exposure" mainly results from changes in the balance sheet total and structure of assets (including granting new loans and changes in the value of FX housing loans).

Source: NBP.

Given the assumptions, stress test results show that:

- **the current total excess capital of the analysed banks** (increased by most of the undistributed profits generated before the period analysed and profits made over the period analysed) **would be sufficient to absorb losses arising from the analysed scenarios and the assumed option of increasing the provisions for legal risk associated with FX housing loans. In most**

banks excess capital would also suffice to cover the MREL and the combined buffer requirement;

- **in both scenarios, there would be a significant fall in excess capital in the group of analysed banks. This is a new phenomenon which, given the banks' unwillingness to breach capital buffers requirements, could limit the room for lending, both over the horizon analysed in the simulation and in the longer term.**

However, the amount of estimated shortfall and excess capital is affected by the stress testing assumption that the entire MREL is covered by existing capital and retained earnings. A way of mitigating the above constraints may be issuance of capital instruments and also eligible debt instruments (eligible to cover MREL).

2.7. Vulnerability of certain institutions and the contagion effect

The long-observed risk to domestic sector stability arising from the vulnerability of certain institutions has been significantly reduced following the successful resolution of Getin Noble Bank S.A. at the end of September 2022 (see **Box 2.2**)**.** Until then, the assessment of the sector's stability had been significantly impacted by the uncertainty surrounding this bank's situation and potential ways of resolving it.

Box 2.2. Resolution of Getin Noble Bank S.A.

On 30 September 2022, the BFG started the resolution of Getin Noble Bank S.A. (GNB). This was the fourth such decision in Poland, but the first against a large commercial bank (with a balance sheet total of 43 bn zlotys, ranking 10th in the sector in this respect). Previous resolution decisions of the BFG taken in 2020 concerned cooperative banks (Podkarpacki Bank Spółdzielczy in Sanok and Bank Spółdzielczy in Przemków) and the commercial Idea Bank S.A., which belonged to the group of medium-sized banks (balance sheet total of 24.4 bn zlotys).

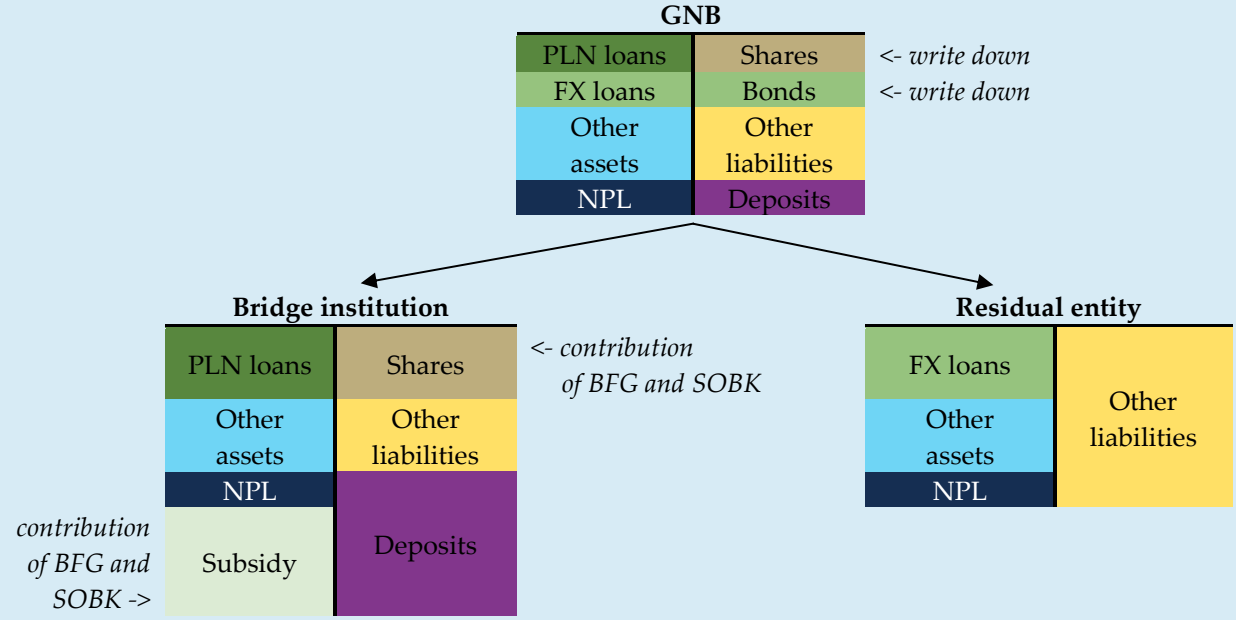
An innovative solution to support the resolution of GNB was the financial involvement of System Ochrony Banków Komercyjnych S.A. (SOBK) established by the eight largest commercial banks operating in Poland.[74]

On 3 October 2022, the activities of GNB were transferred to a bridge institution, Bank BFG S.A., owned by BFG (51% of shares) and SOBK (49% of shares). In particular, mortgage loans denominated or indexed to foreign currencies (CHF, EUR, USD, JPY) were excluded from the transfer – they remained with GNB in restructuring, the so-called residual entity. An amount of 10.34 bn zlotys of non-refundable support was provided to carry out the entire process (this amount was necessary to cover the loss, recapitalise the bank and make up the shortfall on the asset side after the transfer of the bank's activities to the bridge bank), of which 6.87 bn zlotys came from the BFG's funds and 3.47

[74] Regulation of the scheme is described further in *the Financial Stability Report. June 2022*, pp. 53-56.

bn zlotys from the SOBK's funds. In addition, in accordance with the statutory principle, GNB's shares and subordinated bonds were written down. The BFG appointed an administrator to oversee the day-to-day operations of the residual entity. The Management Board of GNB was dissolved, and the powers of the Supervisory Board were suspended.

Chart 2.2. The adopted method of the resolution



Source: NBP

The reason why the resolution was initiated was the simultaneous fulfilment of the three conditions indicated in Article 101 para. 7 of the Act on the Bank Guarantee Fund, the Deposit Guarantee Scheme and Resolution, i.e.:

1) the bank was at risk of insolvency – an assessment carried out by an independent entity showed that the bank's assets were insufficient to meet its liabilities and that its equity was -3.6 bn zlotys;

2) there were no reasons indicating that possible supervisory action or the bank's actions would remove the threat of insolvency in a timely manner - the KNF had taken all possible steps to improve the situation and no longer had supervisory measures in place to effectively remove the threat; and the bank's options for private capital raising had been exhausted;

3) it was necessary to undertake the resolution of the bank in the public interest, understood in particular as the stability of the financial sector and the limitation of the exposure of public funds, as well as to ensure the continuation of GNB's critical function of servicing the deposits of local government units.

Impact of the resolution on the financial stability

The resolution mechanism once again proved to be the right solution for a bank at risk of insolvency and helped to avoid the negative effects of insolvency on the remaining banks and the financial system as a whole. All deposits (amounting to nearly 40 bn zlotys) were protected, which would not have been possible in a bankruptcy process. Bankruptcy would have meant that the BFG would have had to pay out guaranteed deposits of approx. 36 bn zlotys and depositors would have lost their funds in accounts not subject to statutory protection and in amounts exceeding the guarantee limit.

The resolution process was carried out efficiently from the operational point of view. The operations of GNB were not suspended – transactions and operations were carried out on an ongoing basis and all the bank's products were active. Decisions and actions taken by the BFG were accompanied by an extensive communication policy.

Furthermore, and this confirms the assessment presented in *Financial Stability Report. June 2022*, thanks to the creation of a protection scheme by commercial banks, **the resolution process was able to obtain significant financial support from private sources**, thus avoiding the write-down of certain deposits not covered by the BFG statutory guarantees. This write-down would have been necessary in order for the BFG funds to be used in accordance with EU state aid rules. On 1 October 2022, the European Commission reported that the Fund's support under the resolution process of GNB was found to be in compliance with the rules governing state aid in EU.

The process did not result in any direct negative effects on other financial institutions and the financial sector. The takeover of an enterprise, which included all customer deposits and also a significant portion of assets, made it possible to ensure that access to services for customers remained uninterrupted.

Thus, in line with the assessment presented in previous versions of *Financial Stability Report*[75], the application of resolution tools has made it possible to limit the systemic effects resulting from the need to eliminate from the market an institution that does not meet minimum regulatory requirements.

This uncertainty stemmed from the fact that Getin Noble Bank was a large bank that had shown negative financial results for several years, which caused a systematic erosion of its capital. Its uncontrolled bankruptcy could have had negative consequences for the financial situation of other banks. A key factor was the size of this bank, especially the amount of accumulated guaranteed funds, which exceeded the amount of funds accumulated in the BFG's deposit guarantee fund. In the third quarter of 2022, Getin Noble Bank's share of the amount of guaranteed funds in the entire sector was

[75] *Financial Stability Report. December 2020* and *Financial Stability Report. June 2021*

approximately 3.5%. This was almost twice as much as the coverage ratio[76] of the banks' guarantee fund (about 1.9%). Thus, the liquidation of Getin Noble Bank under the standard insolvency procedure and the subsequent disbursement of guaranteed deposits would involve the exhaustion of the BFG's funds and the need for the other banks to rebuild them. This would imply additional costs for them, including among others, in relation to extraordinary contributions.

The resolution of Getin Noble Bank was carried out efficiently and effectively. There were no signs of liquidity disruption in the market – either among the other banks or the banking sector customers – which could have arisen as a result of depositors' concerns.

However, the resolution of Getin Noble Bank does not mean that all banking institutions showing vulnerability were eliminated. Indeed, there are still entities in the banking sector with low capital ratios. However, they are much smaller than Getin Noble Bank. Thus, the risks associated with contagion effects are very low.

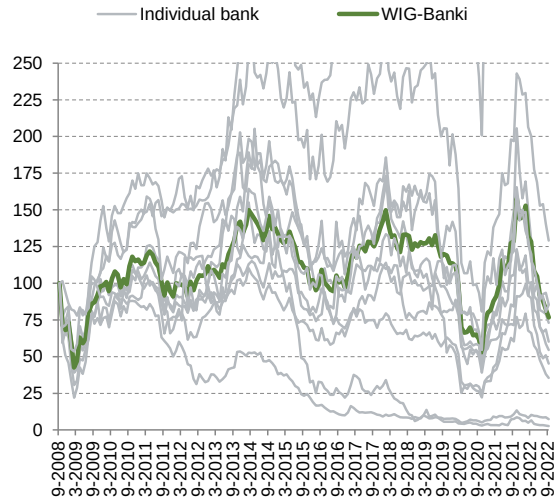
2.8. Market assessment of banks

The downward trend in the valuation of domestic bank shares caused by Russia's aggression against Ukraine continued as a result of growing fears of a global recession, as well as the introduction of costly measures for banks to support borrowers. Initially, changes in the share prices of Polish banks largely followed changes in global stock indices, but share price declines noticeably deepened after the announcement in April and the enactment in July of a law enabling support for borrowers with zloty housing loans. Investor pessimism dampened demand for Polish bank shares and caused the WIG-Banki index to return to levels seen during the COVID-19 pandemic in the second half of 2020 (see Figure 2.49).

Investor assessment of the domestic listed banks' ability to generate profits in the future has deteriorated. The booking of losses arising from customers' use of loan repayment holidays and the continuing legal risks associated with FX housing loan portfolios have clearly pushed back the prospect of dividend payments for 2022 and dampened investor optimism. The deterioration in the banking sector's current and projected profitability meant that, at the end of September, banks had lost more than 50% of their capitalisation from the beginning of 2022, and the price-to-book value ratio had fallen below 1 (see Figure 2.50). Nevertheless, the ratio still remained higher than the average for European banks. The relatively low returns on capital of WSE-listed banks compared to non-financial corporations (7.3% and 16.2%, respectively, at the end of June 2022) and the increase in the estimated cost of capital (see Box 2.3) may limit demand for bank shares and their ability to raise capital through new issues.

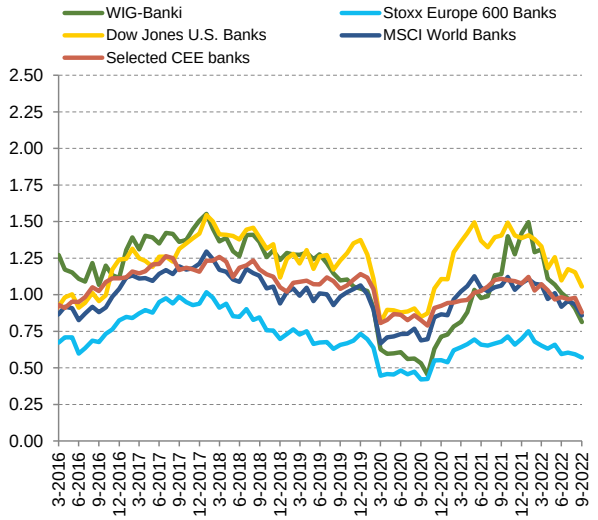
[76] Coverage ratio understood as the ratio of the funds of all deposit guarantee schemes in a country to the total guaranteed funds.

Figure 2.49. Prices of WIG-Banki index and shares of individual banks



Source: NBP calculations based on Refinitiv data.

Figure 2.50. "Price-to-book value" ratio for selected groups of banks



Note: Selected CEE banks – the arithmetic mean of the "price-to-book value" ratio for ten largest listed banks in CEE countries, excluding Poland.

Source: Refinitiv, Bloomberg.

The more difficult situation of the banking sector was reflected in the ratings agencies' assessments. On 2 November 2022, Moody's downgraded the outlook for the Polish banking sector to negative from stable. The rating change followed the deterioration of the economy's growth prospects as well as a significant increase in funding costs and high inflation. In the agency's view, the rising cost of living for borrowers and the sharp increase in interest rates will contribute to deterioration in the quality of the loan portfolio, particularly for loans taken during the period of historically low interest rates in 2020-2021. In July and August 2022, Fitch and Moody's downgraded the ratings of individual banks due to the deterioration of the environment in which they operate due to the imposition of further regulatory burdens on the banking sector and external pressure on the pricing of banking products. The factors negatively affecting ratings remained the legal risk resulting from disputed provisions in FX loan agreements and the increasing number of lawsuits filed in courts. The rating agencies point out that an increase in the net interest income resulting from a possible continuation of the interest rate increase cycle will not offset the heightened regulatory costs and may put the profitability, especially of medium-sized banks, at risk.

Box 2.3. Modelling the cost of capital of the banking sector

The cost of capital represents the remuneration that investors expect to receive for providing capital to finance a particular project. The required return on capital depends on, among other things, market factors (cost of purchasing a share of an investment, risk-free rate, valuation of systematic risk), expected future cash flows from the investment, as well as idiosyncratic factors.

The cost of capital is one of the parameters used in assessing financial stability.[77] When the banks' cost of capital significantly exceeds their profitability, it then becomes more difficult for them to carry out secondary share issues to raise equity capital. As a consequence, the ability to expand lending and perform financial intermediation functions, as well as to build up the necessary buffers against the effects of the materialisation of risk is limited.[78]

Unlike cost of debt capital, cost of equity capital is not a directly observable quantity and must be estimated. Two groups of models are used for estimation, i.e.: (i) factor-based models using historical market data and (ii) implied models based on earnings and dividend forecasts formulated by market analysts. Practical application of both methods has, however, shown the existence of some shortcomings in these approaches. Factor-based methods are criticised, among other things, for determining the cost of capital, which is a function of expected return on capital, using already realised historical data.[79] On the other hand, uncertainty about the estimates of implied methods arises from, among other things, excessive optimism that market analysts often show in formulating forecasts.[80] In addition, those different methods use data with varying time ranges, which alters their sensitivity to short-term and dynamic changes in capital markets.

To reduce the impact of the specific weaknesses of these groups of models, at the NBP cost of capital is being estimated by a combination of several methods. The estimation carried out for domestic banks listed at the WSE used two factor models, i.e. CAPE (*cyclically adjusted price-to-earnings ratio*)[81] and the three-factor Fama-French[82], as well as three implied discounted dividend models.[83] The final cost of capital was determined by calculating, in a first step, the arithmetic means for the factor and implied models separately, and then the arithmetic mean of the two.

[77] Adrian, T., Friedman, E., Muir, T. (2015). The Cost of Capital of the Financial Sector, Federal Reserve Bank of New York, Staff Report No. 755.

[78] ECB, (2021). Measuring the cost of equity of euro area banks, ECB Occasional Paper Series, No. 254.

[79] Elton, J. (1999). Expected return, realized return, and asset pricing tests. Journal of Finance, vol. 54, pp. 1199-1220.

[80] So, E.C. (2013). A new approach to predicting analyst forecast errors: do investors overweight analyst forecasts?, Journal of Financial Economics, vol. 108, No. 3, pp. 615-640.

[81] Campbell, J.Y., Shiller, R.J., (1998). Stock Prices, Earnings, and Expected Dividends, The Journal of Finance, vol. 43, No. 3, pp. 661-676.

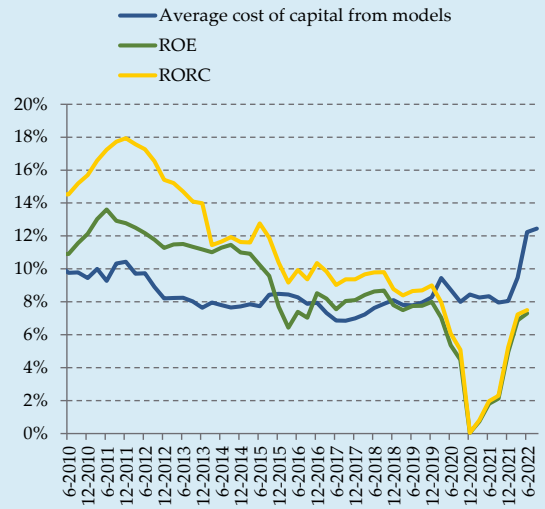
[82] Fama, E.F., and French, K.R. (1993). Common risk factors in the returns on stocks and bonds, Journal of Financial Economics, vol. 33, No. 1, pp. 3-56.

[83] Gode, D., Mohanram, P. (2003). Inferring the Cost of Capital Using the Ohlson-Juettner Model. Review of Accounting Studies, vol. 8, p. 399 to 431 and Ohlson, J.A., Juettner-Nauroth, B.E. (2005). Expected EPS and EPS growth as determinants of value, Review of Accounting Studies, vol. 10, pp. 349-365.

Results

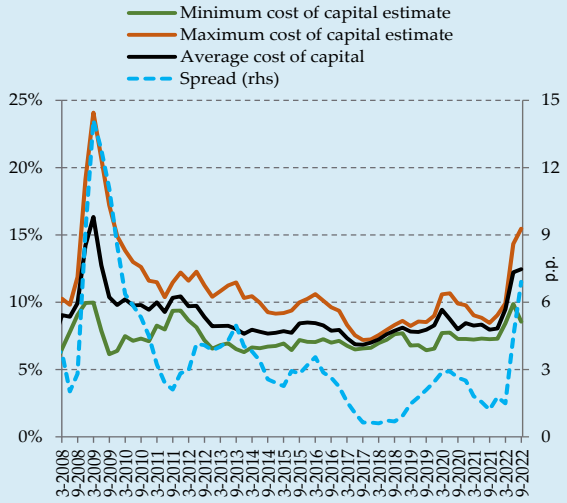
Since the outbreak of the COVID-19 pandemic, estimated cost of capital has been noticeably higher than the profitability ratios of the banking sector (see Figure 2.51). Despite the gradual decline, the sector's profitability has remained above or close to the estimated cost of capital for many years. This relationship was reversed by the sharp decline in the profitability of publicly listed banks at the WSE observed after the outbreak of the pandemic. Although banks' earnings started to improve in 2021, the excess of cost over return on capital again increased significantly in the first half of 2021 and continued to do so recently.

Figure 2.51. Cost of capital against return on capital



Source: NBP calculations based on NBP, Bloomberg and Refinitiv data.

Figure 2.52. Spread of results between various capital cost models



Notes: The minimum and maximum estimates of the cost of capital are the results of the models giving the lowest or highest result, respectively, in a given period. The spread is the difference between the minimum and maximum estimate over a given period.

Source: NBP calculations based on NBP, Bloomberg and Refinitiv data.

The estimated cost of capital increased markedly in the first half of this year across all models (albeit on a different scale):

- In the case of factor models, the increase in estimates was mainly driven by the monetary tightening cycle resulting in an increase in the risk-free rate and the recently observed increase in the expected market risk premium resulting from, among other things, a global increase in risk aversion.
- In contrast, the higher estimates obtained with the implied models should be mainly associated with the strong declines in bank share prices associated with the additional regulatory burden imposed on banks (see Chapter 2.8). With previously formulated expectations of

higher net interest income from interest rate increases, unexpected negative shocks to banks' market valuations translated into a strong increase in the estimated cost of capital.

The widening difference between the results from the various models since the beginning of 2022 indicates a rise in uncertainty in the estimation of the cost of capital (see Figure 2.52**)**. The historically high spread between the results of individual models suggests that assessment of return on capital demanded by investor is marked with high uncertainty. This uncertainty, caused by macroeconomic and global factors, is compounded by recently introduced unpredictability of regulatory environment for banks, including the imposition of further financial burdens on them. Nevertheless, all models indicate that the cost of capital is higher than the sector's return on capital.

The results of the models indicate that the estimated cost of equity capital is above WSE-listed banks profitability, which may make it difficult for them to raise capital. If this relationship continued in the long term (possible, among others, due to significant fiscal and regulatory burden on the banking sector – see Chapter 2.5) it could lead investors to treat banks as less attractive entities[84] and prevent them, also in times of economic expansion, from building up their capital to either expand lending or building necessary capital buffers through secondary share issues. Cost of capital in excess of profitability is also particularly disadvantageous now since banks will have to comply with MREL requirement at target level from 1 January 2024 (see Chapter 2.5).

[84] EBA, (2017). Risk assessment of the European banking system. European Banking Authority, November 2017.

2.9. Selected indicators describing the situation of the banking sector

Table 2.2. Banking sector

in %	6-2021	9-2021	12-2021	3-2022	6-2022
Return on assets (ROA) *	0.11	0.12	0.25	0.38	0.45
Return on Tier 1 capital (RORC) *	1.4	1.6	3.4	5.3	6.1
Return on accounting capital (ROE) *	1.3	1.5	3.2	5.0	5.8
Net interest margin (NIM) *	1.88	1.85	1.89	2.08	2.40
The share of net interest income in net income from banking activity *	66.4	65.9	67.0	69.6	73.3
The share of net noninterest income in net income from banking activity *	33.6	34.1	33.0	30.4	26.7
Operating costs to net income from banking activity (CTI) *	58.2	58.1	57.7	55.3	54.8
Net charges to credit risk provisions to net income from banking activity *	13.2	12.0	9.8	8.7	8.2
Loan growth rates (y/y)					
- nonfinancial sector	0.4	2.5	4.2	4.9	4.2
- households	3.0	4.1	4.4	3.3	0.5
- consumer loans	0.2	1.4	2.0	1.5	-0.3
- housing loans	5.4	6.5	6.6	5.3	2.2
- enterprises	-5.3	-1.1	3.8	8.5	12.8
Impaired loan ratios					
- nonfinancial sector	6.6	6.4	5.8	5.7	5.7
- households	5.7	5.5	5.1	5.1	5.1
- consumer loans	10.7	10.5	9.5	9.6	9.3
- housing loans	2.5	2.4	2.4	2.3	2.4
- enterprises	8.6	8.2	7.4	7.0	6.7
Net charges to credit risk provisions to net value of loans *					
- nonfinancial sector	0.76	0.70	0.58	0.55	0.55
- households	0.70	0.70	0.60	0.64	0.64
- consumer loans	2.06	1.93	1.59	1.56	1.68
- housing loans	0.01	0.05	0.05	0.09	0.09
- enterprises	0.90	0.72	0.55	0.38	0.37
Funding gap	-17.8	-20.0	-17.0	-16.4	-18.0
Total capital ratio	20.2	19.5	18.5	17.8	17.8
Tier 1 capital ratio	17.9	17.3	16.4	15.7	15.7
Core Equity Tier 1 capital ratio	17.9	17.3	16.4	15.7	15.7
Financial leverage (multiple)	10.8	11.1	12.1	13.0	13.0
Leverage ratio according to CRDIV/CRR	8.8	8.6	8.0	7.5	7.6

Note: annualized data are marked with an asterisk. Capital ratios and returns on equity calculated for domestic banks excluding BGK. The growth rate of loans after adjusting for foreign exchange rate changes.

Source: NBP.

Table 2.3. Domestic commercial banks

in %	6-2021	9-2021	12-2021	3-2022	6-2022
Return on assets (ROA) *	0.12	0.14	0.28	0.42	0.43
Return on Tier 1 capital (RORC) *	1.2	1.4	3.2	5.1	5.4
Return on accounting capital (ROE) *	1.1	1.3	3.0	4.8	5.1
Net interest margin (NIM) *	1.91	1.88	1.91	2.09	2.38
The share of net interest income in net income from banking activity *	66.4	66.0	67.1	69.6	73.0
The share of net noninterest income in net income from banking activity *	33.6	34.0	32.9	30.4	27.0
Operating costs to net income from banking activity (CTI) *	52.4	52.2	52.0	50.3	50.8
Net charges to credit risk provisions to net income from banking activity *	13.8	12.4	10.3	9.0	8.5
Loan growth rates (y/y)					
- nonfinancial sector	0.5	2.4	4.0	4.6	3.8
- households	3.0	3.9	4.1	2.9	0.1
- consumer loans	-0.3	0.9	1.4	1.0	-0.8
- housing loans	5.5	6.5	6.6	5.1	1.8
- enterprises	-5.5	-1.2	3.8	8.7	13.3
Impaired loan ratios					
- nonfinancial sector	6.6	6.3	5.8	5.7	5.6
- households	5.7	5.6	5.1	5.2	5.1
- consumer loans	11.1	10.9	9.8	10.0	9.6
- housing loans	2.5	2.4	2.4	2.3	2.4
- enterprises	8.5	8.0	7.4	6.9	6.6
Net charges to credit risk provisions to net value of loans *					
- nonfinancial sector	0.81	0.74	0.62	0.57	0.55
- households	0.77	0.73	0.63	0.66	0.67
- consumer loans	2.17	2.04	1.67	1.63	1.76
- housing loans	0.05	0.05	0.04	0.09	0.12
- enterprises	0.91	0.75	0.59	0.39	0.32
Funding gap	-15.9	-18.4	-14.7	-14.8	-16.9
LCR	200.8	198.7	176.5	153.6	154.2
Total capital ratio	20.2	19.6	18.5	17.8	17.6
Tier 1 capital ratio	17.8	17.2	16.3	15.5	15.5
Core Equity Tier 1 capital ratio	17.8	17.2	16.3	15.5	15.5
Financial leverage (multiple)	10.7	11.0	11.9	12.9	13.0
Leverage ratio according to CRDIV/CRR	8.9	8.6	8.1	7.5	7.5

Note: annualized data are marked with an asterisk. Capital ratios and return on equity calculated for domestic commercial banks excluding BGK, LCR additionally excluding the associating banks. The growth rate of loans after adjusting for foreign exchange rate changes.

Source: NBP.

Table 2.4. Cooperative banks

in %	6-2021	9-2021	12-2021	3-2022	6-2022
Return on assets (ROA) *	0.28	0.29	0.40	0.65	1.07
Return on Tier 1 capital (RORC) *	3.6	3.9	5.5	8.9	14.7
Return on accounting capital (ROE) *	3.4	3.7	5.2	8.4	13.6
Net interest margin (NIM) *	1.79	1.79	1.90	2.35	3.16
The share of net interest income in net income from banking activity *	71.9	71.9	73.6	77.8	82.3
The share of net noninterest income in net income from banking activity *	28.1	28.1	26.4	22.2	17.7
Operating costs to net income from banking activity (CTI) *	81.5	79.2	74.4	65.1	53.9
Net charges to credit risk provisions to net income from banking activity *	8.5	8.1	6.9	8.3	10.6
Loan growth rates (y/y)					
- nonfinancial sector	3.9	5.8	6.6	5.3	1.7
- households	4.7	6.1	7.4	5.7	1.3
- consumer loans	3.6	5.3	6.6	2.4	-1.5
- housing loans	15.9	18.2	19.1	18.5	13.2
- enterprises	2.1	5.2	4.5	4.2	2.6
Impaired loan ratios					
- nonfinancial sector	8.5	8.3	8.3	8.2	8.3
- households	5.1	4.9	4.9	5.0	5.1
- consumer loans	4.9	4.7	4.7	4.7	4.7
- housing loans	1.2	1.2	1.1	1.1	1.1
- enterprises	17.7	17.4	17.5	17.1	17.0
Net charges to credit risk provisions to net value of loans *					
- nonfinancial sector	0.54	0.52	0.47	0.66	1.06
- households	0.33	0.29	0.26	0.41	0.70
- consumer loans	0.15	0.11	0.22	0.36	0.48
- housing loans	0.05	0.05	0.03	0.05	0.07
- enterprises	1.12	1.16	1.08	1.37	2.13
Funding gap	-80.6	-78.6	-86.8	-77.3	-74.7
LCR on individual basis	443.5	451.5	485.5	479.9	439.9
LCR on consolidated basis	309.4	306.4	302.3	260.9	278.9
Total capital ratio	19.1	18.8	18.5	18.6	19.6
Tier 1 capital ratio	18.5	18.3	18.0	18.1	19.0
Core Equity Tier 1 capital ratio	18.5	18.2	18.0	18.1	19.0
Financial leverage (multiple)	13.2	13.4	14.4	14.0	13.2
Leverage ratio according to CRDIV/CRR	7.8	7.8	7.7	8.5	9.0

Note: annualized data are marked with an asterisk. Unconsolidated LCR – data for cooperative banks which must comply with the LCR standard on an unconsolidated basis. Consolidated LCR – data for cooperative banks that were permitted to comply with the LCR standard on a consolidated basis and for the associating banks. Changes in the LCR remain influenced by the varying composition of respective banking groups – individual banks are subsequently permitted to comply with the LCR standard on a consolidated basis.

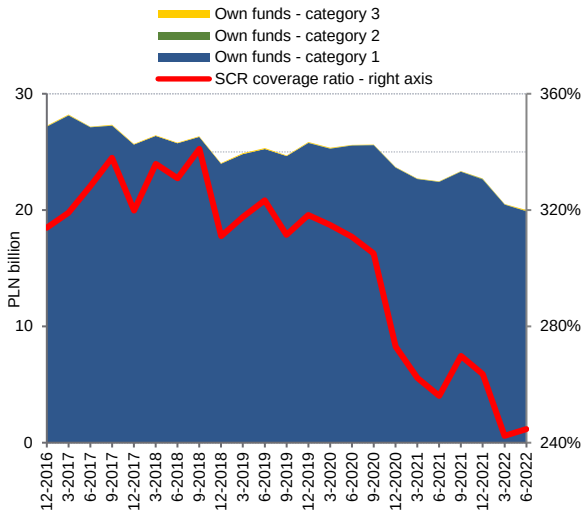
Source: NBP.

3. Main risk areas in the non-banking sector

3.1. Insurance companies

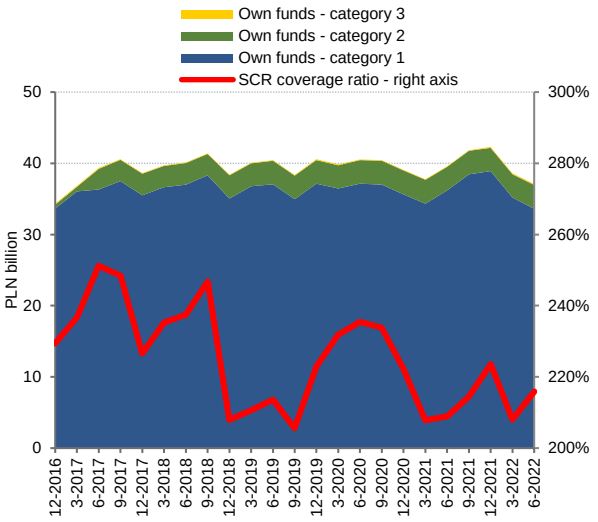
In the first half of 2022, the solvency of the insurance sector continued to deteriorate. At the end of June 2022, the coverage ratio of the solvency capital requirement was 245% in life insurance and 216% in non-life insurance, representing a decrease compared to the end of 2021 of 19 p.p. and 8 p.p., respectively. In life insurance, this was mainly due to a decrease in the value of own funds (see Figure 3.1), while in non-life insurance the decrease was partly compensated by a lower capital requirement (see Figure 3.2). Nevertheless, solvency ratios remained high. All domestic insurance companies had own funds above the Solvency Capital Requirement (SCR) and the Minimum Capital Requirement (MCR).

Figure 3.1. Own funds and the SCR coverage ratio – life insurance



Source: UKNF.

Figure 3.2. Own funds and the SCR coverage ratio – non-life insurance

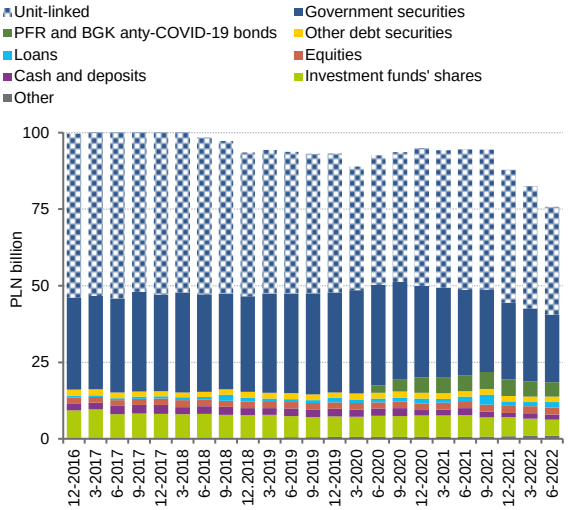


Source: UKNF.

In the first half of 2022, the own funds of insurance companies fell by a record 7.9 bn zlotys, the highest since the introduction of the Solvency II methodology. The capital of life insurers was 2.7 bn zlotys lower than at the end of 2021, and that of non-life insurers by 5.2 bn zlotys. The change in life insurance was mainly due to a decrease in the excess of assets over liabilities (by 2 bn zlotys), which in turn was due to higher liabilities, including in particular dividends. In addition, the decrease in the net assets of UFK (as a result of claims paid and lower valuations) resulted in a surplus decrease of 0.7 bn zlotys. Thus, the UFK generated less and less of the undertakings' own funds. While at the beginning of the Solvency II directive this business line was the source of more than 6 bn zlotys of excess of assets over liabilities, at the end of the second quarter of 2022 it provided 2.7 bn zlotys of capital. This is because the difference between the value of the assets of UFK and the value of its provisions in the Solvency II methodology is the discounted value of future income (including management fees) earned by life insurance companies. In the event of withdrawals or a decrease in the value of assets, these

profits decrease proportionally, which translates into a decrease in own funds. In non-life insurance, the decrease in the excess of assets over liabilities was mainly due to losses recorded on investments. This is because the rapid market changes caused a significant reduction in the value of these investments, both debt and equity instruments (see Figure 3.3 and Figure 3.4).

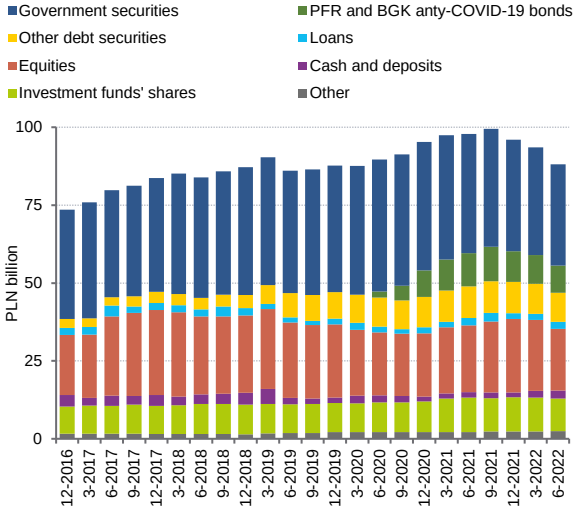
Figure 3.3. Investments and unit-linked assets – life insurance



Note: Government securities include securities issued or guaranteed by governments, central banks and supranational institutions without PFR and BGK bonds for the COVID-19 Response Fund.

Source: UKNF.

Figure 3.4. Investments – non-life insurance



Note: Government securities include securities issued or guaranteed by governments, central banks and supranational institutions without PFR and BGK bonds for the COVID-19 Response Fund.

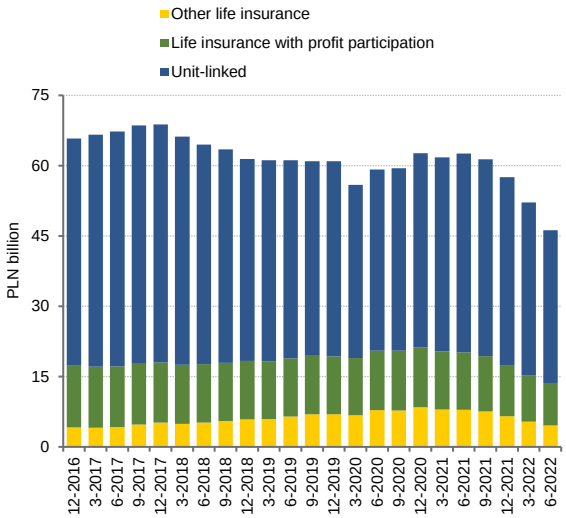
Source: UKNF.

As a result of the interest rate rises, the technical provisions of the life insurance and non-life insurance declined significantly. In the first half of 2022, provisions of life-insurance (excluding UFK) decreased by 21% and provisions of non-life insurance (excluding liability insurance annuity liabilities) by only 3%, due to differences in their maturity dates. Only the liability for third-party liability insurance annuities had a similar sensitivity to that of the life-insurance sector (Figure 3.5 and Figure 3.6). In life insurance, the main component of provisions (over 70%) were liabilities arising from insurance with UFK, the value of which decreased by 7.6 bn zlotys. On the other hand, the relatively largest decrease was recorded in provisions for other life insurance (over 30%).

The lower scale of risk borne by insurance companies was evidenced by the lower capital requirement. In the first half of 2022, the SCR of life insurance and non-life insurance decreased, with the requirement in life insurance companies still at a level more than twice as low as in non-life entities. At the end of June 2022, the solvency capital requirement amounted to 8.2 bn zlotys in life insurance and 17.2 bn zlotys in non-life insurance. The decrease in the SCR of non-life insurers (by 1.7 bn zlotys) was due to the lower stock market valuation of bank shares (by 3.3 bn zlotys), which resulted in a lower capital charge in the asset concentration and equity risk module. The reduction in the requirement in life insurance (by 0.4 bn zlotys), on the other hand, was due to a decrease in underwriting risk. The

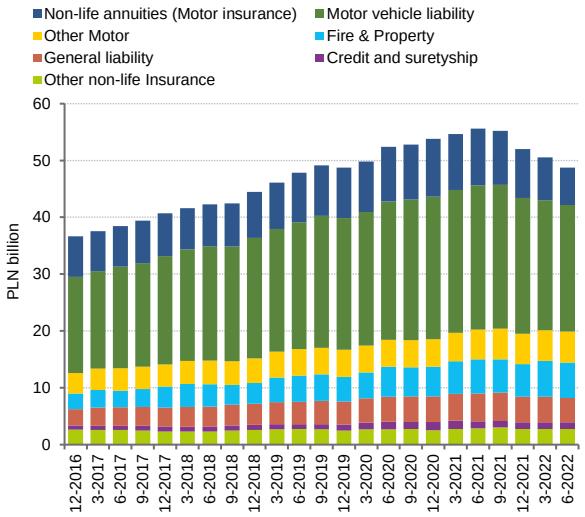
main components of the solvency capital requirement of both divisions were the underwriting risk modules.

Figure 3.5. Technical provisions – life-insurance



Source: UKNF.

Figure 3.6. Technical provisions – non-life insurance



Source: UKNF.

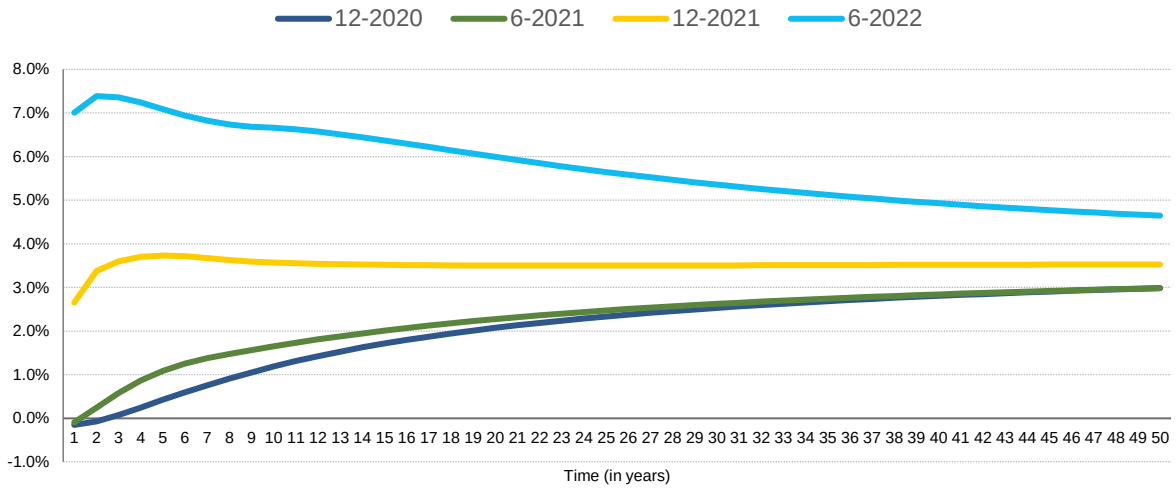
The magnitude of the materialisation of interest rate increase risk proved to be higher than the capital allocated for this purpose. In the first half of 2022, the risk-free rate increased significantly (see Figure 3.7). In particular, for initial maturities, interest rates were around 4 percentage points higher than six months earlier. Such an increase in the curve exceeded the level assumed in the calculation of the capital requirement for interest rate risk.[85] Meanwhile, the increase in interest rates in the first half of 2022 was twice as high as the top shock in the interest rate risk sub-module in the standardised approach. At the end of June 2022, the capital requirement for interest rate risk amounted to 1.8 bn zlotys in life insurance and 1.7 bn zlotys in non-life insurance, i.e. 0.6 bn zlotys and 0.8 bn zlotys more, respectively, compared to the end of 2021. The insurance undertakings responded to higher interest rates by reducing the duration of the domestic government bond portfolio, which shortened from 4.3 years at the end of 2021 to 4 years at the end of June 2022. Compared with the end of 2021, the value of government securities (including guaranteed securities) shrank by 3.8 bn zlotys in life insurance and 4.4 bn zlotys in non-life insurance.

The net outflow of funds from UFK, which has been ongoing since 2017, accelerated in the first half of 2022. In the analysed period, insurance companies collected almost 2 bn zlotys in premiums from unit-linked insurance and paid out more than 4.8 bn zlotys in claims. Thus, the balance of net outflows was at a level close to the highest ever (in 2018). The largest scale of cancellations concerned those products whose investment portfolios included a significant share of non-public investment certifi-

[85] The capital requirement is calibrated to absorb losses at 99.5% over a one-year horizon.

cates. The high net outflows were, among other things, a consequence of sharp declines in asset valuations and the introduction of a ban on the sale of certain insurance investment products from 2022 (product intervention).[86]

Figure 3.7. Term structure of the risk-free rate



Source: EIOPA.

The legal risks associated with UFK insurance continued to pose a significant threat to life insurers. It concerned both the issue of insufficient definition of the funds' investment policy and the limited cover component of these insurances. In terms of the investment policy, the product intervention limited the possibilities of investing in contingent convertibles (only held directly by the UFK, without including investment in these instruments through investment funds' shares), but the problem remained with products in which customers were not properly informed about the characteristics of the assets in which their funds were invested. Court judgements[87] relating to such insurance have resulted in the cancellation of contracts and the order to return the premiums paid plus interest. This line of judgement took into account the answers to the preliminary questions submitted to the CJEU.[88] Indeed, the Court ruled that the client should be given clear, precise and comprehensible information about in which financial instruments their money will be invested and what risks are involved. The absence of this information is grounds for contract invalidation. As in the case of an unspecified investment policy,

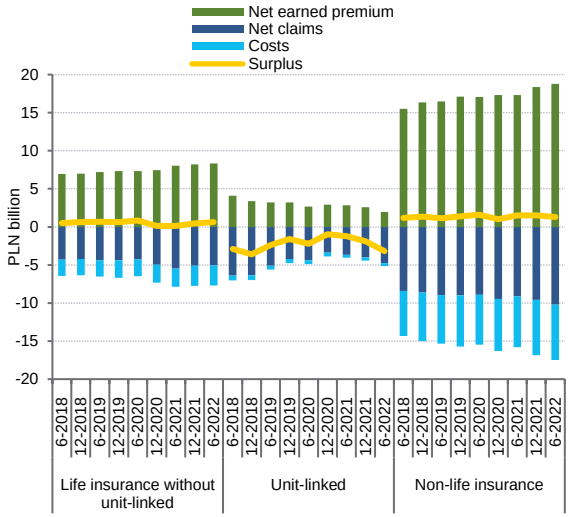
[86] The KNF announcement regarding prohibitions on the marketing, distribution and sale of insurance investment products – life insurance contracts if linked to an insurance assets: https://www.knf.gov.pl/knf/pl/komponenty/img/Komunikat_KNF_dot_interwencji_produktowej_UFK.pdf.

[87] Judgments of the District Court of Warsaw-Wola II (Case Ref. No. C 1771/18, II C 1758/18, II C 1782/18, II C 3259/17, II C 1769/18, II C 1689/18, I C 1703/21).

[88] Ref. No. C-143/20 and C-213/20.

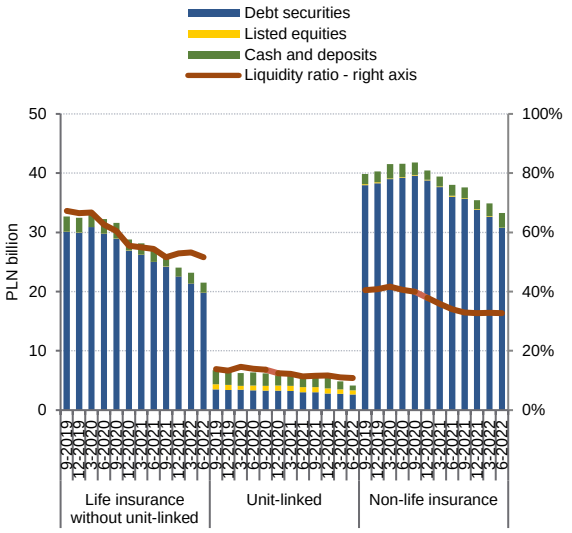
the absence of an essential cover component in a unit-linked insurance contract is also a reason to challenge the validity of the insurance contract.

Figure 3.8. Premium earned, claims, expenses and surplus funds in the half-year period



Source: UKNF.

Figure 3.9. Structure of liquid assets of the insurance sector



Note: The following assets have been classified as high quality liquid assets: deposits and cash, government securities, debt securities of central banks and equities listed on organised markets (excluding equities of financial institutions) recognised at a half of their value.

Source: UKNF.

The liquidity position of insurance companies did not change in the first half of 2022. The surplus of net premiums earned over claims paid and expenses incurred amounted to 0.6 bn zlotys and 1.3 bn zlotys in life insurance (excluding UFK) and non-life insurance, respectively (see Figure 3.8). This was a similar result to that observed in the previous six months. In insurance with UFK, outflows and lower premiums resulted in a shortfall of 3.2 bn zlotys, i.e. 1.3 bn zlotys more than in the second half of 2021. The value of high-quality liquid assets[89] decreased due to the decline in the valuation of debt securities (see Figure 3.9). At the end of June 2022, life insurance companies held 21.5 bn zlotys (2.5 bn zlotys less than at the end of 2021) of these instruments, and non-life insurance companies held 33.3 bn zlotys (2.1 bn zlotys less than in December 2021). Nevertheless, the assets of life insurers (excluding UFK) were characterised by the highest liquidity ratio – over 50%. In non-life insurers, despite the shorter maturity of liabilities, the said ratio was lower, reaching 33%. In contrast, UFK was characterised by the lowest

[89] The liquidity ratio of high quality assets measures the share of high quality liquid assets in the funds' total assets. The following assets have been classified as high-quality liquid assets : deposits and cash, securities issued by the central government, debt securities of central banks and shares listed on organised markets (excluding shares of financial institutions) recognised at half of their value.

proportion of liquid assets was characterised. Only just over 10% of assets were high-quality liquid instruments.

The financial result and technical result of the insurance sector declined in the first half of 2022. The decline concerned only non-life insurers, and was mostly generated by motor third-party liability insurance, which generated more than twice as much profit as in the first half of 2021 (0.2 bn zlotys). In contrast, the profits of life insurance companies, following the declines caused by the increased mortality associated with the COVID-19 pandemic, remained at a reduced level. Nevertheless, the financial results did not fully reflect changes in the market valuation of debt instruments. This is because the undertakings accounted for most debt instruments (including government bonds) at adjusted cost, so the losses associated with the price adjustment mainly affected the reduction in capital to cover the solvency requirements.

The resilience of the insurance sector may still be inadequately reflected by capital ratios due to the high proportion of expected profits included in future premiums and the double gearing of capital. The value of EPIFP in life insurance was 9.6 bn zlotys at the end of June 2022. Compared to the end of 2021, it has decreased by 2.6 bn zlotys due to the increase in interest rates. The EPIFP's share of own funds was still at a high level of almost 50%. However, the capital obtained by including profits from future premiums in own funds cannot be used to absorb every type of loss, although it is included in the highest quality category 1. Failure to include the EPIFP in own funds would result in a decrease in the solvency ratio of life insurance from 245% to 174%. In turn, the absence of a regulatory restriction on the double gearing of capital in the insurance sector poses a threat to non-insurance, which could have a knock-on effect and transfer losses of subsidiaries to parent companies. At the end of June 2022, non-life insurers held participations in other insurance companies and banks worth approx. 18 bn zlotys. Reducing double gearing in non-life insurance would result in a decrease in the solvency ratio from 216% to 143%.

3.2. Investment funds

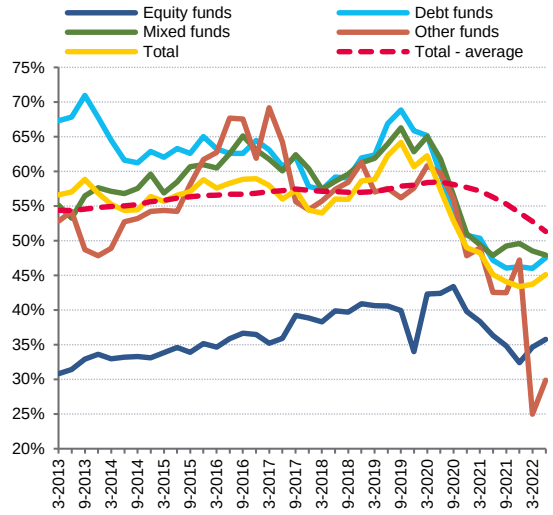
The liquidity position of open-ended funds[90] improved insignificantly in the first half of 2022. The liquidity ratio of high-quality assets[91] in UCITS increased by 1.7 percentage points and stood at 45.1% at the end of June, while in open-ended AIFs it increased by 2.2 percentage points to 36.7%. However, an analysis of this indicator over a longer horizon does not allow the conclusion of a sustainable improvement in the liquidity position of these entities. In both types of funds, equity funds and other funds continued to be characterised by the lowest share of liquid assets in relation to total assets (see

[90] Open-ended funds include UCITS and open-ended alternative investment funds (AIFs).

[91] The liquidity ratio of high-quality assets measures the share of high-quality liquid assets in total assets of the funds. The following are considered high-quality liquid assets: deposits, securities issued by central government institutions, debt securities of central banks and listed equities (excluding shares of financial institutions) at half of their value.

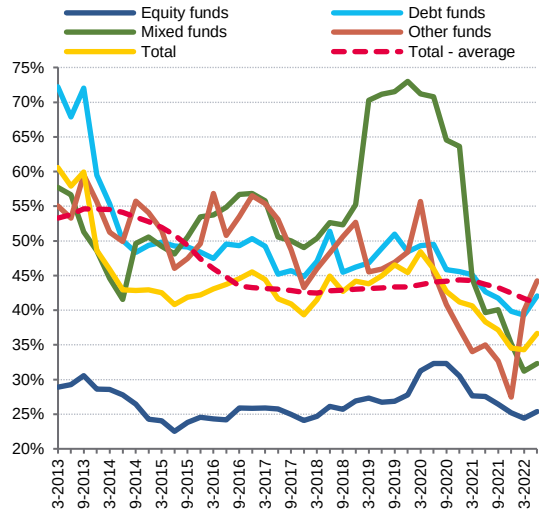
Figure 3.10 and Figure 3.11).[92] Significant outflows from the sector and declines in equity and bond prices did not encourage funds to rebuild their liquidity positions. In the first half of 2022, the net outflow of funds from UCITS amounted to 14.0 bn zlotys, and from open-ended AIFs – 5.1 bn zlotys, and in both types of funds concerned mainly entities pursuing an investment policy focused on debt instruments.[93] Most capital was withdrawn by households (14.5 bn zlotys).

Figure 3.10. Liquidity coverage ratio of high quality assets in UCITS



Source: NBP.

Figure 3.11. Liquidity coverage ratio of high quality assets in open-ended AIFs



Source: NBP.

The liquidity position of individual funds remained highly heterogeneous, especially among open-ended AIFs. The spread of the liquidity ratio of high-quality assets[94] for UCITS narrowed, which meant that this group of entities was less heterogeneous than at the end of 2021. At the same time, it was characterised by less diversity in terms of the value of the liquidity ratio than open-ended AIFs (see Figure 3.12). Nevertheless, among UCITS there were entities with both critically low levels of the most liquid assets and those with only such assets.[95] The lowest liquidity ratios were for funds that made investments almost exclusively in foreign UCITS-type funds (including ETFs). At the end of June 2022, a quarter of the population of FIOs had a maximum of 34.2% of liquid deposits in assets, and SFIOs – 12.7% or less. However, specialist open-ended investment funds also included those with lower withdrawal risk, i.e. funds involved in offering pension products. The average value of the high-quality

[92] The significant changes in the liquidity ratio of high-quality assets in other funds resulted from the reclassification of entities in terms of their investment policy.

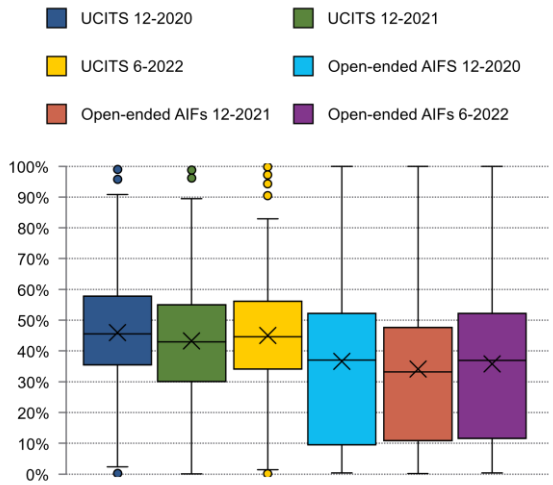
[93] Almost 16.3 bn zlotys (11.5 bn zlotys from UCITS and 4.8 bn zlotys from open-ended AIFs) outflew from debt funds.

[94] I.e. the gap between the first and third quartile of the value of this ratio in the population under study.

[95] At the end of June 2022, around 8% of all UCITS had the liquidity ratio of high-quality assets of 10% or less, and in around 5% of entities in this group the ratio was 90% or more. In the open-ended AIFs sector, around 22% of funds had the liquidity ratio of 10% or less, and in 4.3% of entities the ratio was 90% or more.

asset liquidity ratio for defined-date funds operating under employee capital plans (44.3%) was higher than the average recorded for SFIOs and similar to that observed in FIOs.

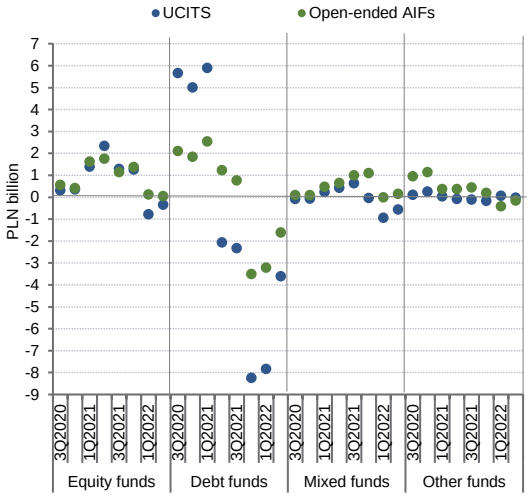
Figure 3.12. Distribution of the liquidity ratio for open-ended funds



Notes: The edges of the box mark the first and third quartile, the line inside the box marks the median, and the "x" symbol – the average value. The vertical line is determined between the minimum and maximum value, after elimination of outliers, while points outside the line are regarded as outliers. The method of determining the liquidity ratios is described in the footnote earlier in this chapter.

Source: NBP.

Figure 3.13. Inflows and outflows to/from open-ended funds



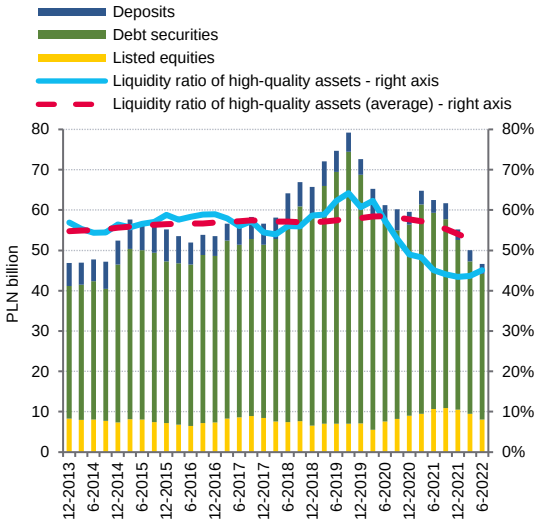
Source: NBP.

In the first half of 2022, open-ended funds continued to maintain low levels of deposits in relation to total assets (2.4% in UCITS, 2.7% in open-ended AIFs). In the case of UCITS, at the end of June the ratio was 0.4 percentage points higher than at the end of the year, but the low liquidity buffer in this form, not exceeding 3%, continued from the third quarter of 2020. In open-ended AIFs, the liquidity cushion was the smallest observed to date. Debt and mixed funds were the fund types with the lowest levels of deposits relative to assets. A small portfolio of high-quality liquid assets held by some of the sector's players raises liquidity risk, the materialisation of which could, in some cases, result in problems with fulfilling increased redemption requests.

There were no significant changes in the structure of the liquid assets of open-ended funds – Treasury bonds continued to dominate the structure, with the role of listed equities declining slightly. In the first half of 2022, as a result of further declines in valuations and sales transactions, the value of domestic Treasury securities held by open-ended funds declined (see Figure 3.14 and Figure 3.15). Due to significant outflows of funds, which particularly concerned those entities concentrating on debt instruments (see Figure 3.13), UCITS were forced to liquidate part of their bond portfolio. However, these entities disposed of relatively more bank and corporate bonds relative to their portfolio holdings than government bonds, even though the former were less liquid. In part, the decrease in exposure was due to the maturity of the securities analysed. Measures to reduce exposure to less liquid categories of assets

enabled the funds to maintain asset liquidity ratios at levels close to those observed at the end of December 2021. Declines in equity market valuations and net sales of these instruments resulted in a shrinkage of the equity portion of the funds' investment portfolio. While UCITS disposed of both listed shares and participation units, in open-ended AIFs the negative balance of transactions concerned only participation units, while these entities acquired, on a net basis, shares listed on the WSE worth 0.6 bn zlotys.

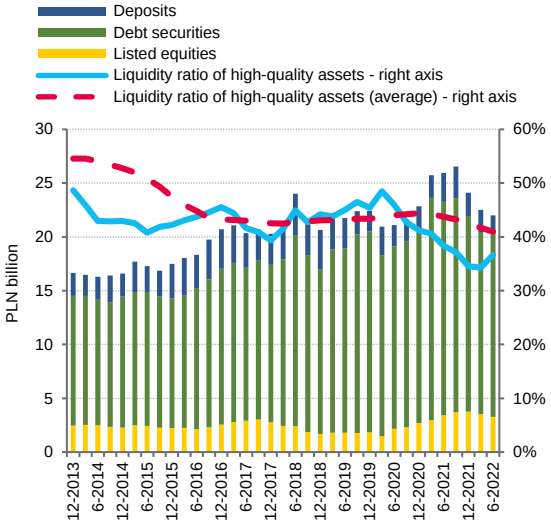
Figure 3.14. Structure of high quality liquid assets of UCITS



Notes: The method of determining the liquidity ratios is described in the footnote earlier in this chapter. The average seen in this graph is a three-year moving average.

Source: NBP.

Figure 3.15. Structure of high-quality liquid assets of open-ended AIFs



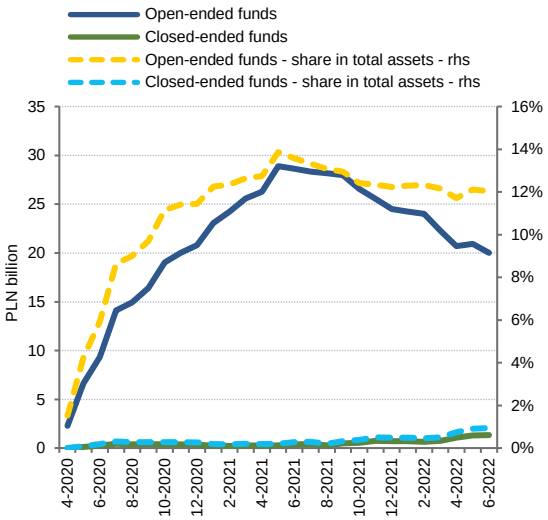
Notes: The method of determining the liquidity ratios is described in the footnote earlier in this chapter. The average seen in this graph is a three-year moving average.

Source: NBP.

The reallocation within the debt portfolio of the open-ended funds did not result in an increase in their exposure to the interest rate risk and to the credit risk. The continuation of price declines on the domestic securities market interacted with a marked increase in the yields on PFR and BGK bonds for the COVID-19 Response Fund. The majority of these instruments were fixed coupon bonds, so in the environment of rising interest rates, the open-ended funds were not interested in expanding this part of their investment portfolio. At the end of June 2022, their exposure to these instruments amounted to 21.4 bn zlotys and, as a result of sales and a drop in valuations, decreased by nearly 4 bn zlotys over six months (see Figure 3.16). However, these securities still constituted a relatively significant part of the funds' investments (nearly 13% in relation to total assets in the case of UCITS and 11% in open-ended AIFs) In the half-year under review, open-ended funds disposed mainly of fixed-interest rate government securities (similar to 2021). As a result, the predominance of floating-coupon bonds strengthened in the structure of the portfolio of domestic government bonds held by open-ended funds, while the duration of the fixed-coupon part of the government bond portfolio continued to shorten. Expectations of interest rate rises and net outflows from the sector were not conducive to increasing the funds' exposure to bonds issued by domestic non-financial corporations (see Figure 3.17). During the first half

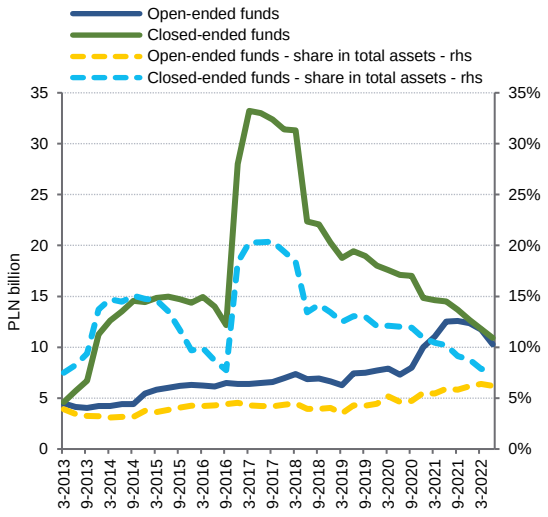
of the year, its value decreased in both UCITS and open-ended AIFs and at the end of June amounted to 6.8 bn zlotys and 3.5 bn zlotys, respectively.[96]

Figure 3.16. Exposure of investment funds to PFR and BGK bonds for the COVID-19 Response Fund



Source: NBP.

Figure 3.17. Exposure of investment funds to debt securities of domestic non-financial corporations



Source: NBP.

The armed conflict in Ukraine did not significantly affect the continuity of investment fund sector entities, nor did the announcement of the resolution of Getin Noble Bank. The funds' exposure to financial instruments of issuers from countries involved in the conflict as a proportion of their net assets did not exceed 0.5%. One equity sub-fund, after temporarily suspending the redemption of units, was liquidated. The other, due to a change in the benchmark and reallocation of the portfolio to Polish equities, was taken over by another fund within the same management company. The value of Getin Noble Bank shares remaining in the investment fund sector's portfolio at the end of June was less than 100 thousand zlotys.

[96] At the end of December 2021, 8.4 bn zlotys and 3.9 bn zlotys, respectively.

4. Systemic risk assessment

The domestic banking sector remains resilient, but the balance of factors that have an impact on systemic risk[97] in Poland has deteriorated.

Systemic risk in the domestic financial system is primarily affected by the following factors (see Chart 4.1): (1) costs of legal risk of FX housing loans, (2) a high share of Treasury bonds and State Treasury-guaranteed bonds in banks' assets and (3) a housing loan portfolio which is subject to uncertainty related to credit losses after the end of "loan repayment holidays". **A new phenomenon** has emerged in the form of **(4) a decline in the banking sector's excess capital above the combined regulatory and supervisory requirements[98],** which may negatively affect the propensity of banks to provide financing to the economy in the future and, as a result, curb economic growth.

The contagion risk which has been identified so far and which has stemmed from the weaknesses of some institutions, has been substantially limited by the successful resolution of Getin Noble Bank (see Box 2.2). Institutions with high capital deficits have been removed from the banking sector over the past two years. This reduces potential costs related to possible contagion effects from weaker institutions in the future. As a result, at this stage no financial institutions whose financial condition would be the source of systemic risk are identified.

Bleaker macroeconomic forecasts and the worse conditions in which banks operate as well as elevated uncertainty have a negative impact on the financial stability outlook in the forthcoming period. The forecasted economic slowdown could materialise in an increase in credit losses. The borrower-supporting regulations which were implemented – due to the universality of application – additionally reduced banks' profits significantly and their capacity to accumulate capital. Costs in the banking sector remain strongly driven by the need to create provisions for legal risk of FX housing loans. As a consequence, the positive impact of the rising interest margin on the banking sector's net earnings has been largely reduced.

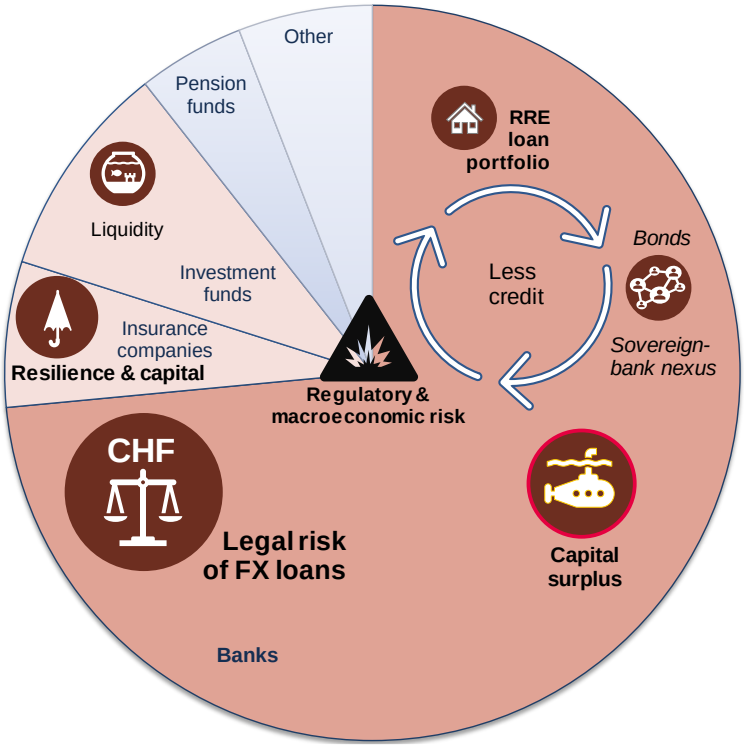
Although the entire banking sector is still characterised by high capital ratios, in view of the aforementioned increase in costs and the growth in capital needs arising from the entry into force of the MREL, excess capital above the regulatory and supervisory requirements is expected to decrease markedly. This is a new phenomenon in the Polish banking system which has until now held substan-

[97] Due to the dominant role of banks in the financial system and in funding the economy and the structural features of their balance sheets, systemic risk in Poland is determined by the situation in the banking sector. Developments in other sectors have a limited impact on domestic financial stability due to the smaller scale of operations and the different character of business models.

[98] Pillar 1 and Pillar 2 requirements, the MREL and the combined buffer requirement.

tial excess capital. Due to high costs of capital (see Box 2.3) and the difficult macroeconomic environment, the issuance of shares or subordinated bonds is highly problematic. This may mean a decrease in banks' resilience in the future and a reduction in their lending growth.

Chart 4.1. Main risks in Poland's financial system.



Notes: The share of individual sectors (banks, insurance companies, etc.) reflects the value of their assets. The size of the circles describing individual risks depends on the scale of risk (low, medium, high New risk is marked outlined in red. The colour of individual sectors reflects the intensity of systemic risk – from very low (blue), through low and moderate, to high (maroon).

Source: NBP.

4.1. Legal risk of FX loans

The legal risk of FX housing loans remains the main risk to financial stability. It should be expected that the risk provisioning will proceed, both in connection with court cases and with settlements that banks and customers may conclude.

For banks, the future costs associated with the legal risk of FX housing loans may be close to or higher than incurred so far, but the fact that they may be spread over time will cushion their effects for the stability of the sector. The number of court cases continues to rise and a significant number of them end in the annulment of loan agreements. Due to the number of the court cases (over 100,000) and the number of rulings in the course of a year (approx. 5-6 thousand per year), it can be assumed that final settlements will be lengthy. Nevertheless, accounting regulations require banks to factor in provisions for expected losses in advance, which means that there may be hikes in provisions as the line of jurisprudence and the expected number of lawsuits are changing. Agreements concluded between

banks and borrowers in order to reach an out-of-court settlement of their disputes seem to be a quicker and better alternative to the settlement of disputes in court. At the same time, by offering a settlement, banks can have a greater ability to control the costs incurred.

In this context, the possibility to obtain remuneration for the principal used by borrowers remains important when loan agreements are annulled in court. This will impact the final costs of court rulings for banks and customer propensity to challenge the loan agreements. In this context, the ruling of the Court of Justice of the European Union (CJEU), expected to be delivered next year, will be paramount. The CJEU will rule on whether parties to the loan agreement are bound to settle the use of the principal if the agreement is ruled invalid. Due to the gravity of the issue, the Chairman of the Polish Financial Supervision Authority (KNF) made an unprecedented move and pointed out before the CJEU that **a failure to award remuneration for the principal made available would mean an unjustified asymmetry between the situation of borrowers and banks.**[99] In the short-term, this would generate additional and significant costs for banks, and could result in losses of individual banks and, on a larger scale, jeopardise financial stability. The resulting costs would be borne by all the customers of the banking system, including depositors. At the same time, such a solution may cause an excessive rise in risk taken by some market participants in the future, leading to moral hazard.

4.2. Portfolio of government bonds

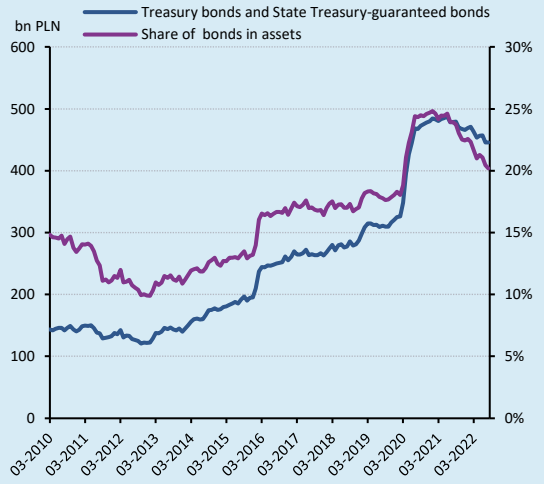
A significant share of Treasury bonds and State Treasury-guaranteed bonds in the banking sector's assets implies that banks are vulnerable to changes in bond valuation. A rise of over 700 basis points in bonds yields since the beginning of the fourth quarter of 2021 translated into a fall in the market value of the whole bond portfolio of banks by approx. 43 billion zlotys, of which around 15 bn zlotys was reflected in the decline of banks' capital (see Box 4.1). In the longer term, current negative changes in valuation will be balanced by higher prices of securities as they approach their maturity dates. Nevertheless, risk associated with a change in valuation of bond yields remains significant, especially in view of an expected rise in the supply of Treasury bonds and the sector's to date decline of excess capital. For this reason, further decreases in the valuation of bonds could cause capital shortfalls taking into account supervisory requirements at some banks.

[99] https://www.knf.gov.pl/knf/pl/komponenty/img/Stanowisko_przygotowane_na_rozprawe_%20przed_Trybunalem_Sprawiedliwosci_Unii_Europejskiej_ws_C-520_21.pdf.

Box 4.1. Banks' exposure and vulnerability to market change in bond valuation

This box aims to provide major information on the holdings of Treasury securities by banks and on the mechanism by which the assets influence the financial position of banks. The banking sector holds a substantial portion of its assets (approx. 20%) in Treasury bonds and State Treasury-guaranteed bonds of the book value of approx. 445 bn zlotys. This share temporarily rose strongly to 25% (see Figure 4.1) during the COVID-19 pandemic. The change in the market valuation of Treasury securities, observed since September 2021, is only partially reflected in the capital position and net interest income of banks. The accounting treatment of the securities on the bank's balance sheet is an important factor influencing the magnitude of the impact of Treasury securities' price (yield) changes.

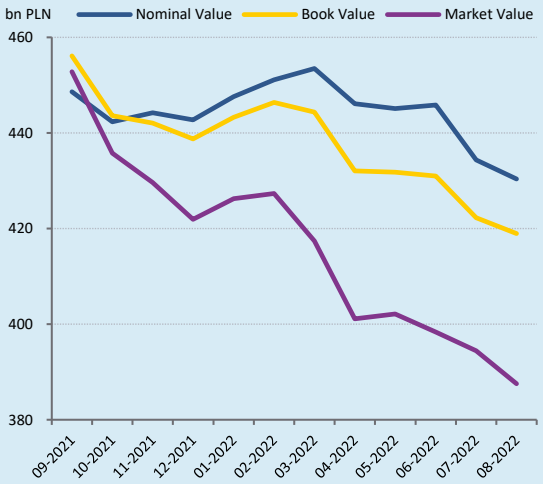
Figure 4.1. Share of Treasury bonds and State Treasury-guaranteed bonds in banking sector's assets



Note: Banking sector excluding BGK.

Source: NBP.

Figure 4.2. Portfolio of Treasury bonds and State Treasury-guaranteed bonds in banking sector assets at nominal, book and market value



Note: Banking sector excluding BGK.

Source: Central Securities Depository of Poland.

When banks hold portfolios of Treasury securities, they are guided by liquidity, income, capital and tax considerations:

i. **Liquidity issues**: in addition to NBP bills and funds in the NBP accounts, Treasury securities as High Quality Liquid Assets are the basis of the current liquidity buffer for banks (intraday credit, Lombard facility, repo and buy-sell-back transactions) and are used for LCR standard calculation purposes.

ii. **Income issues**: interest income on Treasury securities (irrespective of whether marked to market or held to maturity and valued at amortized cost) is a significant source of bank's interest income (approx. 15%) and interest margin generated by banks above the cost of deposits accepted. The role of the income increases especially in times of macroeconomic tur-

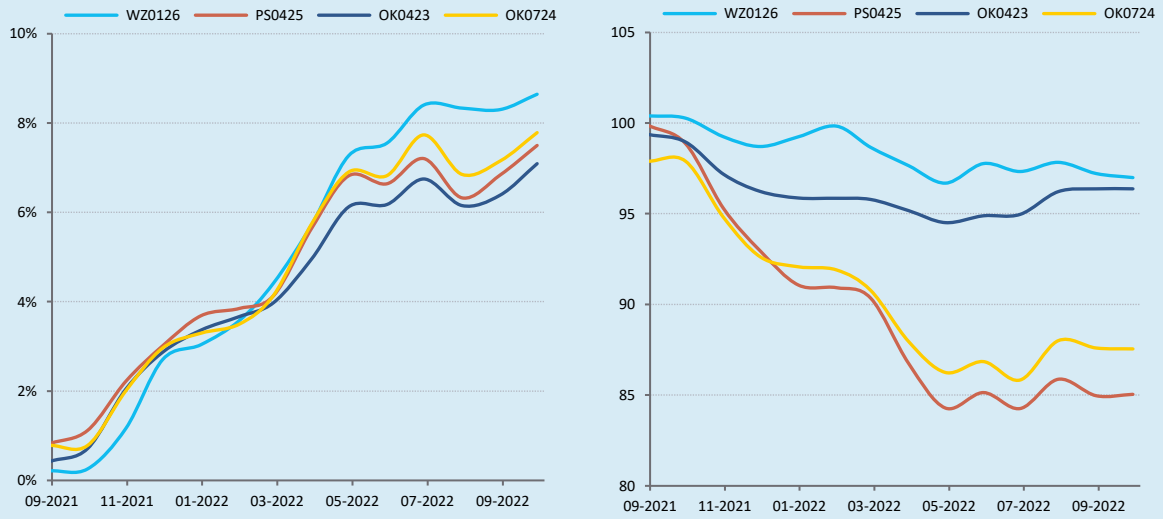
moil and an increase in the bank's credit losses.

iii. **Capital issues**: Treasury securities denominated in zloty[100] are not a burden on banks' capital requirements (0% risk weight), with the leverage ratio being the only limit for the value of bonds on banks' balance sheets.

iv. **Tax issues**: Treasury bonds (but not State Treasury-guaranteed bonds) are excluded from the tax base on the 2016 tax on certain financial institutions.

Changes in the yield curve of bonds (changes in the yields on bonds with various maturity dates) result from two factors: (i) market expectations about the future changes in the level of short-term NBP interest rates when the bonds mature, and (ii) risk premium – the credit risk premium, the liquidity premium.

Figure 4.3. Change in the yields (left-hand panel) and prices (right-hand panel) on Treasury bonds with a floating rate coupon (WZ0126), a fixed coupon (PS0425) a zero coupon (OK0423, OK0424)



Source: Thomson Reuters

The yields on bonds and prices of bonds are mutually, mathematically, strictly negatively linked – an increase in bond yields means an immediate decrease in bond prices (see Figure 4.3). The average expected level of the NBP interest rates, translating into changes in the bond yield curve, is usually responsible for the greatest impact on changes in the market value of Treasury securities, with the scale of the change depending on the bond profile, i.e. maturity date and type of coupon. The prices of fixed coupon bonds are vulnerable to changes in yields, as at fixed coupons a change in

[100] At the end of August 2022, bonds denominated in the zloty accounted for 96% of the whole portfolio of Treasury securities.

yields must be reflected in a change of price. At the same time, the more long-term bond, the greater the impact of a change in yields (given *per annum*) on price, because for long-term bonds the price cumulates for many years. On the other hand, the coupons of bonds with a floating rate coupon change together with interest rates and their prices are almost not vulnerable at all to changes in expected interest rates. The measure which roughly provides information on the impact of a change in yields on price is the average duration of bonds – a change in the interest rate multiplied by duration (with a minus sign) provides information on the approximate change of the price accompanying the given change in yields. In the longer term, as the maturity date of bonds approaches – irrespective of changes in yields – the price of bonds will approach the nominal value.

Market changes in prices (yields) of bonds do not directly translate into the situation of banks due to the accounting principles which enable Treasury securities to be treated in various ways, depending on the purpose for which the bank buys the given securities. Banks applying the IFRS, i.e. an overwhelming majority of commercial banks, may classify bonds into one of the three categories:

1) **financial instruments measured at fair value through financial result** – securities purchased for speculative purposes, held for trading for a relatively short period. They are measured at fair (market) value and a change in their value is systematically reflected in the bank's financial result. **They account for around 2% of banks' portfolios on zloty-denominated bonds.**
2) **financial instruments measured at fair value through other comprehensive income (OCI) whose changes are reflected in equity.** This portfolio of debt instruments is held for income considerations, liquidity requirements, the repricing and maturity structure of the balance sheet, etc. Valuation of this portfolio is also carried out according to fair (market) value, but is reflected directly on equity, among others, for the financial result to be not subject to significant fluctuations triggered by changes in the market value of debt instruments. **They account for around 48% of banks' portfolios of zloty-denominated bonds.**
3) **financial instruments measured at amortized acquisition cost.** They are securities whose purpose is similar to Category 2, which a bank, however, has decided to hold for maturity. The only difference is the lack of market valuation of the instruments. Debt instruments in this category are booked at acquisition price and as maturity approaches, their book value linearly converges to nominal value, irrespective of current changes in the market valuation of the given instrument. **They account for around 50% of banks' portfolios of zloty-denominated bonds.**

As a result of the aforementioned structure of the accounting classification of the bond portfolio, changes in the valuation of the securities affect mainly the level of bank capital. At the same time, only 25-30% of changes in the market valuation of bonds has translated, in accounting terms, into a decline in the result from bond portfolio valuation in banks' equity. This results from the fact that (i) almost half of the bond portfolio is measured at amortized cost and is not marked to market,

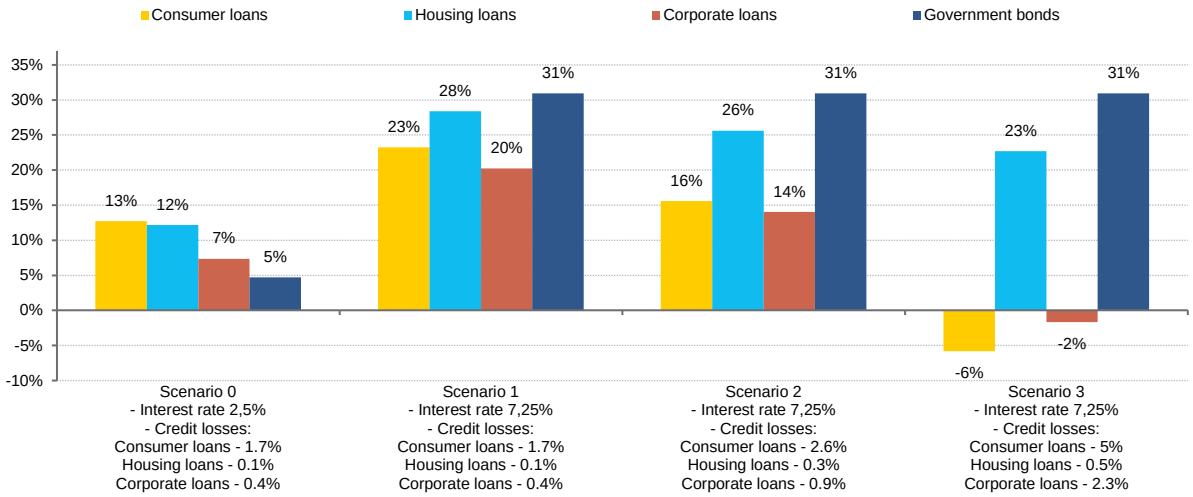
and (ii) as the average duration of the whole bond portfolio is 2 years, in the part of the bond portfolio marked to market bonds with a shorter duration prevail, as their price is less sensitive to interest rate changes. Banks' available reports do not include the structure of portfolios of bonds measured at amortized cost or marked to market. However, it can be presumed that the bonds that are more sensitive to valuation changes (bonds with longer average duration), are more frequently measured at amortized cost.

Although the impact of market valuation on the capital position of banks is largely limited by the accounting aspects, it may temporarily decrease the level of excess capital due to the scale of bond holdings of the banking sector. The rise in bond yields of over 700 basis points from the beginning of the fourth quarter of 2021 has translated into a decrease in the valuation of bonds for the whole banking sector (excluding BGK) by over 15 bn zlotys (see Figure 4.2) or around 3%. The decline in the market value of the whole bond portfolio of banks in that time amounted to around 43 bn zlotys or around 10%. The difference between a change in market valuation and a change in book valuation was just the result of an allocation of individual bond types and series to adequate accounting categories. Nevertheless, due to the scale of valuation changes observed and the fact that they have been immediately referred to in the balance sheet, the weight of bond valuation for the capital position of the sector, including especially those entities with lower excess capital or entities that struggle with complying with the MREL, in current conditions remains substantial.

In the next two years, assuming that the yield curve stabilises at current levels, the decline in the market value of the portfolio of Treasury securities observed so far will be offset by increases in bond prices toward their nominal value, as the maturity dates approach.

Amid a likely economic slowdown, banks' propensity to continue purchasing Treasury bonds may remain high. Treasury bonds are attractive because, among others, they are excluded from the tax base of the tax on certain financial institutions and the risk weights are zero. In the event of materialisation of macroeconomic risk and an increase in credit losses, investments in Treasury bonds will likely be characterised by a relatively higher return on equity (see Figure 4.4). The tax on certain financial institutions itself reduces the profitability of consumer and corporate loans by approx. 4-5 percentage points and by approx. 8 percentage points in the case of housing loans. As a result, when excess capital decreases, investments in bonds may become more attractive than granting/issuing loans. This can ultimately make banks reduce lending to the private sector, which will negatively affect economic growth.

Figure 4.4. ROE of assets against various levels of credit losses and of interest rate

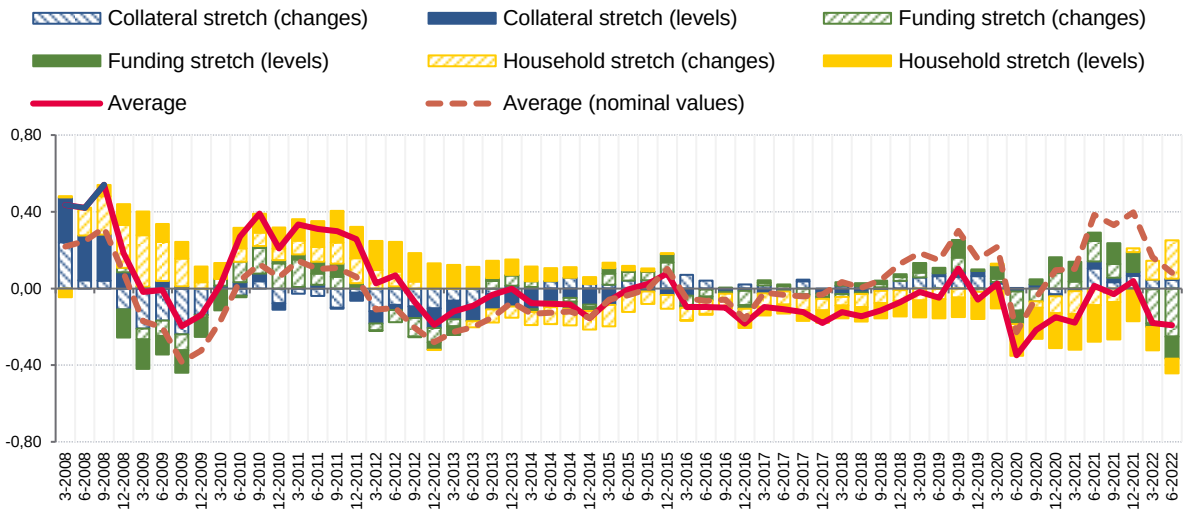


Notes: Credit losses in Scenario 3 are based on the shock scenario in stress tests. For ROE calculation purposes, required own capital for bonds adopted at the level of the leverage requirement. In line with the CRR, the requirement amounts to 3% of assets. The simulation assumed a credit margin at a fixed level, corresponding to the historical average from the beginning of 2014 amounting to, respectively, 6.1 p.p. for consumer loans, 2.7 p.p. for housing loans and 2.6 p.p. for corporate loans. In the simulation, a commission was assumed at a fixed level of, respectively, 6.9 p.p. for consumer loans, 0.5 p.p. for housing loans and 2.7 p.p. for corporate loans. The adopted amount of the commission was based on UKNF non-standard reporting data (consumer and housing loans) and on comparison website data (corporate loans).

Source: NBP and UKNF.

4.3. Residential real estate market and the portfolio of housing loans

Figure 4.5. Tensions in the residential real estate market



Source: Own calculations.

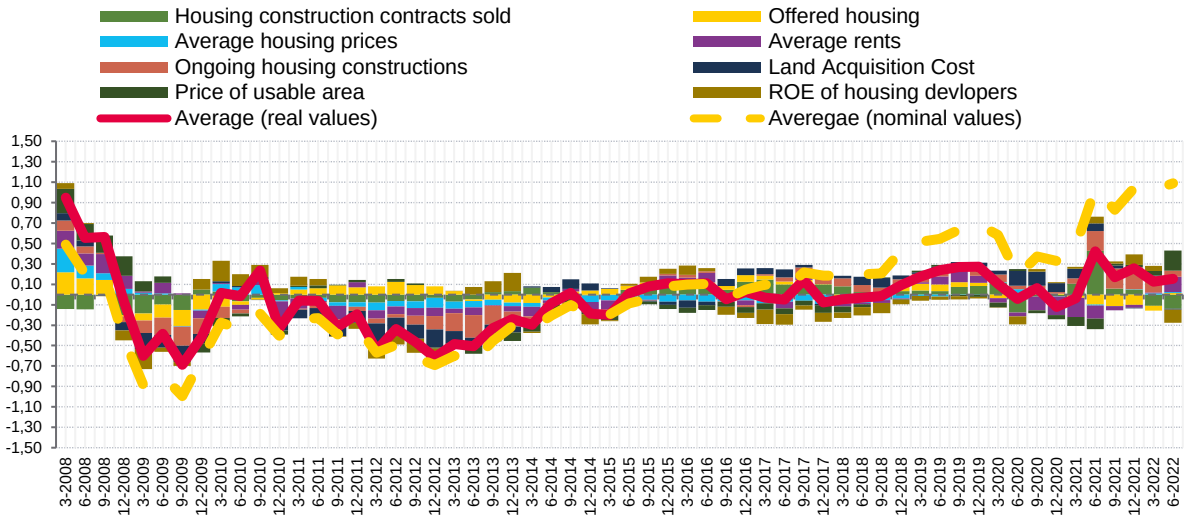
A regular impact assessment of residential real estate market developments on financial stability takes into account three aspects: (1) price developments on the real estate market (collateral stretch), (2) banks' policy in the area of funding real estate purchases (funding stretch), and (3) the level of household debt and the capacity of households to repay mortgages (household stretch).

Overall, real estate market tensions has markedly decreased in 2022. The tensions index[101] declined both in nominal and real terms (see Figure 4.5). Its decline was driven mainly by the funding stretch.

Collateral stretch

Activity declined in the residential real estate market. The number of transactions decreased, with the decrease largely driven by restrictions in the availability of housing loans. Tensions were observed on the supply side (they were related to the persistent increase in construction costs and availability of workforce) as well as reductions in the number of new investments under construction. These factors may also decrease the supply of dwellings in the future.

Figure 4.6. Collateral tensions



Notes: 6M means the 6 largest markets.

Source: Own calculations.

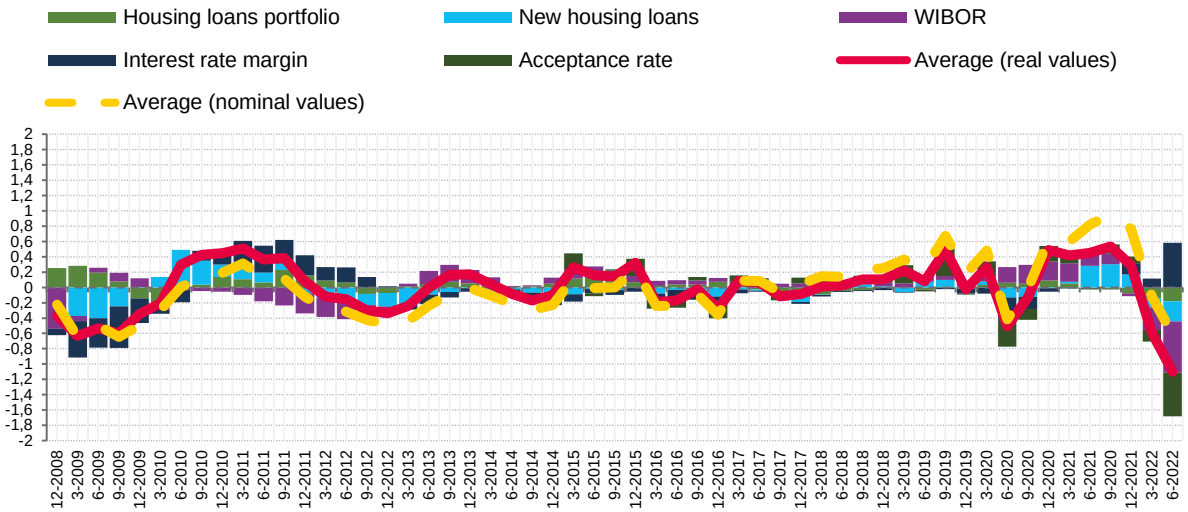
Current developments in the residential real estate market are not the source of risks to financial system stability (see Figure 4.6**).** There are no signs of price imbalances on the market. In the first half of 2022, residential real estate prices were rising sharply (in nominal terms), so the value of loan collateral did not decrease. In real terms, after taking into account wage rises, price changes in the first half of the year were moderate.

[101] Description of the index – see Financial Stability Report. December 2021. When compared to the version described in the report, indicators describing the situation of households have been added.

Funding stretch

Tensions regarding funding residential real estate purchases[102] declined markedly in 2022 (see Figure 4.7). In the first three quarters of 2022, the value of new bank loans dropped by 33% y/y and the number of loans granted in September 2022 fell by 70.6% y/y, which represented its lowest level since 2010. This led to a fall in the value of the banking sector's housing loan portfolio compared to the end of 2021.

Figure 4.7. Tensions in the funding stretch



Source: Own calculations.

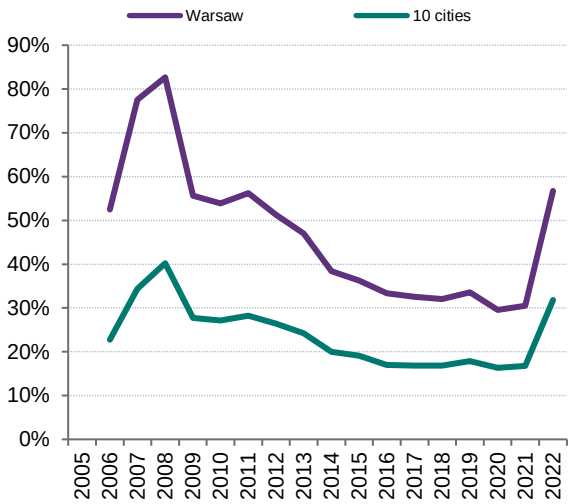
The availability of housing loans in the first half of 2022 dropped markedly. This was particularly due to: (i) the growth in the costs of credit on the back of the interest rate increases (ii) tighter supervisory requirements for banks. From October 2021 to September 2022, the instalment of a representative new housing loan[103] rose by 83%, from approx. 1,400 zlotys to approx. 2,560 zlotys. Rising interest rates translated into a marked increase in loan instalments, also in relation to average wages (see Figure 4.8). Additionally, the UKNF recommendation of April 2022 on examining the creditworthiness of customers applying for housing loans is a significant barrier to credit availability. This recommendation requires, among others, the adoption of a higher buffer against interest rate increases in the creditworthiness assessment (5.0 p.p. compared to 2.5 p.p. provided for in the provisions of Recommendation S). The introduction of this requirement at the advanced stage of interest rate increases had a pro-cyclical effect, further restricting credit availability. As a consequence, at the end of June 2022 banks said they

[102] Tensions in the funding stretch consist in excessive lending, therefore a fall in credit growth is interpreted as a decrease in tensions in this aspect of real estate analysis.

[103] A 330,000 zloty credit, granted for 25 years, interest equal to the interest on new housing loans in October 2021 August 2022, based on interest rate statistics of NBP.

were ready to grant loans whose value was markedly lower (by around 25-50% depending on household type) than at the end of 2021 (see Figure 4.9).

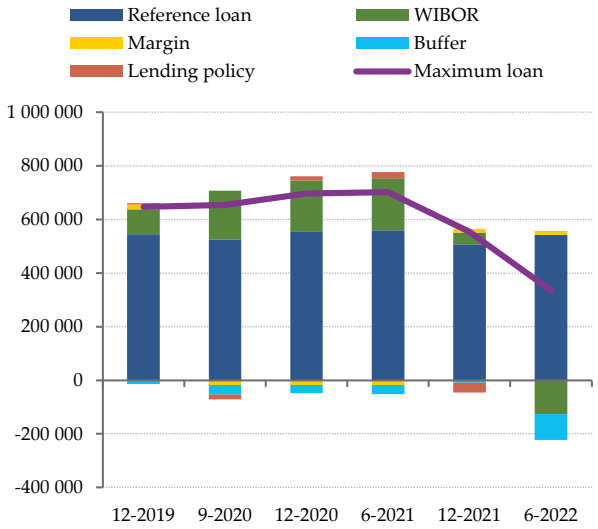
Figure 4.8. Loan instalment to average wage



Notes: Two-person household where each person earns an average salary in the enterprise sector (gross). The value of a 25Y loan equals the average value of a 65 square metre dwelling. Ten cities include Białystok, Bydgoszcz, Katowice, Kielce, Lublin, Olsztyn, Opole, Rzeszów, Szczecin and Zielona Góra.

Source: Own calculations based on NBP data.

Figure 4.9. Factors influencing change in credit availability



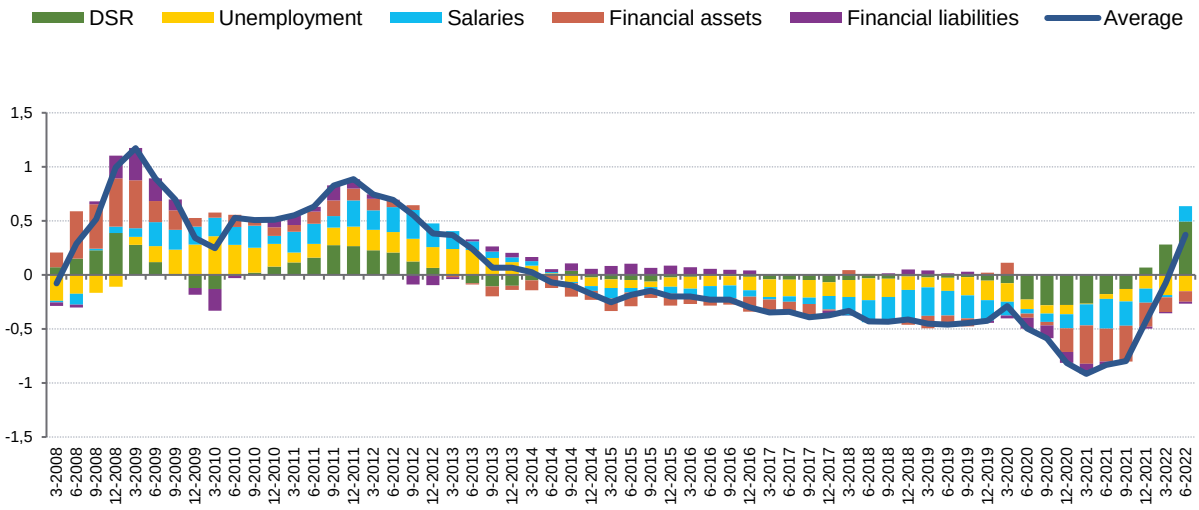
Notes: A reference loan is a hypothetical maximum amount of a loan that banks would be ready to provide to a representative household in a given year, at constant parameters (WIBOR = 3.5%, margin = 2.5%, interest rate buffer = 2.5%, income = 10 thousand zlotys). In the figure, the buffer means the change in the maximum available loan due to the buffer in response to an interest rate hike that banks have to assume during the borrower creditworthiness assessment; lending policy means a change in the maximum available loan due to a bank's lending policy; margin means the change in the maximum available loan due to changes in the margin.

Source: Own calculations based on UKNF non-standard regulatory reporting data.

Household stretch

Tensions in households grew (see Figure 4.10), but the growth should not contribute to a significant rise in credit risk in the coming years. Loan repayment holidays and the Borrower Support Fund reduce at the current juncture and delay potential debt servicing problems. Loan repayment holidays, which were introduced by law, will result in a periodical (i.e. till 2024) reduction of the probability of credit losses and, in some cases, also a reduction of risk exposures (as a result of repayment of a portion of zloty housing loans). Once the loan repayment holidays are over, the portfolio's credit risk may go up (unless the expected economic slowdown persists), but then some borrowers may still expect support from the Fund.

Figure 4.10. Tensions in the household stretch



Notes: DSR – debt service to income ratio.

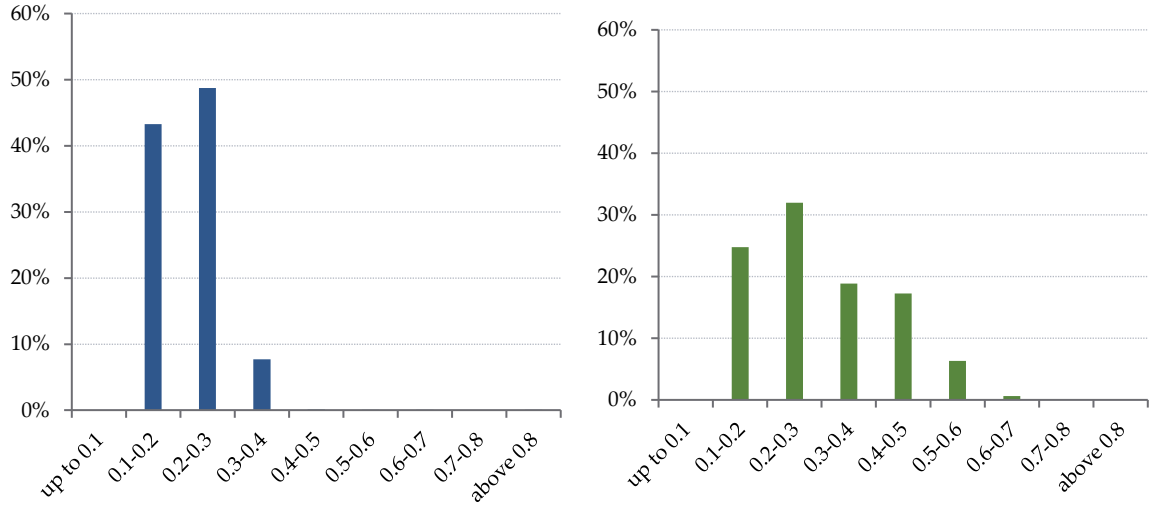
Source: Own calculations.

After the expiry of loan repayment holidays the risk of significant increase in debt service burden will rise. It will be however moderated by the increase in wages and loan amortization. Simulation for the portfolio of zloty housing loans granted between 2018 and 2021[104] (53,3% of the portfolio of zloty housing loans at the end of June 2022) shows that – assuming that interest rate remain at their current level and the increase in wages will be moderated[105] - almost 10% of loans could potentially be characterized with a high, exceeding 50%, ratio of installment income at the end of 2024 (see Figure 4.11, right panel).

[104] Data for the loans granted before 2018 are not available. However, for such borrowers, the impact of higher interest rates on loan service to income will be lower due to higher cumulated wage growth and longer amortization period since the inception of the loan.

[105] Assumption that wages grow only to those borrowers that at the moment of origination had income above the median income of all borrowers. For the remaining borrowers it is assumed that income remains at the same level as at the moment of origination.

Figure 4.11. Loan service to income at origination and simulated at the end of 2024



Notes: left panel – distribution of the loan service to income ratio (LSTI) ratio at the moment of loan origination, right panel – distribution of the simulated LSTI at the end of 2024 under the assumption that wages grow only for the borrowers with high income (i.e. above median income for all borrowers at the moment of loan origination) as forecasted in the Inflation Report November 2022.

Source: Own calculations based on UKNF non-standard regulatory reporting data.

4.4. Decline in excess capital

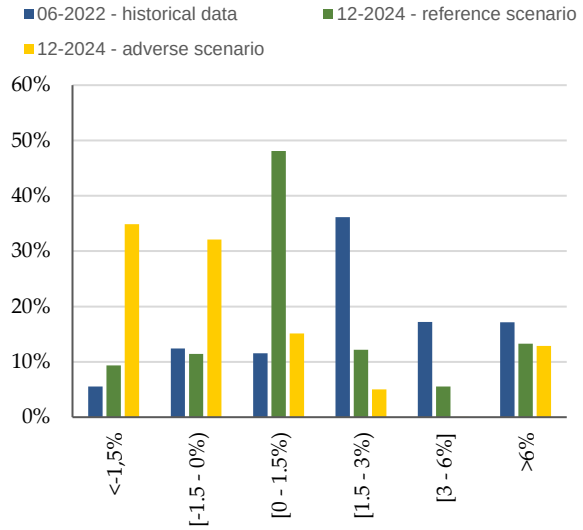
The excess capital decline over the regulatory and supervisory requirements is a new phenomenon in the domestic banking system that may lead to credit access restrictions in the future due to its rationing. Banks' capital is sufficient to absorb even substantial shocks (see Chapter 2.6), especially after the resolution of Getin Noble Bank. However, a number of factors contribute to reduction of banks' ability to accumulate capital and therefore to a surplus capital decline above the total supervisory requirements, and even to capital shortfalls in some banks (see Figure 4.12 and Figure 4.13). These factors include, in particular: (i) previous decline in the value of the portfolio of Treasury securities, (ii) additional burdens on banks' earnings (provisions for legal risk of FX housing loans, costs of loan repayment holidays, contributions to the Borrower Support Fund) and (iii) the necessity to fully comply with the MREL requirement from the beginning of 2024.

The MREL requirement – fully applicable from the beginning of 2024 – results in a significant increase of banks capital requirements (unless they fulfil it through the issuance of eligible debt) (see Figure 4.14). The issuance of instruments classified as MREL category has recently become hampered due to a general rise in the cost of capital (see Figure 4.15) as well as macroeconomic, regulatory and geopolitical uncertainty. As a result, many banks will try to fulfil the MREL requirement with their capital, which will increase their total capital requirements in practice.

Banks' capacity to increase own funds may also be limited. Despite the interest rate increase, which generates higher interest income for banks, the scale of costs related to FX housing loans and the support provided to housing loan holders is large enough to reduce bank's profits which, therefore, will

be able to increase their capital only to a small extent. On top of this, there are unfavourable macroeconomic factors that will result in higher provisions for credit risk. At the same time, market conditions are not conducive to issuing shares and bonds.

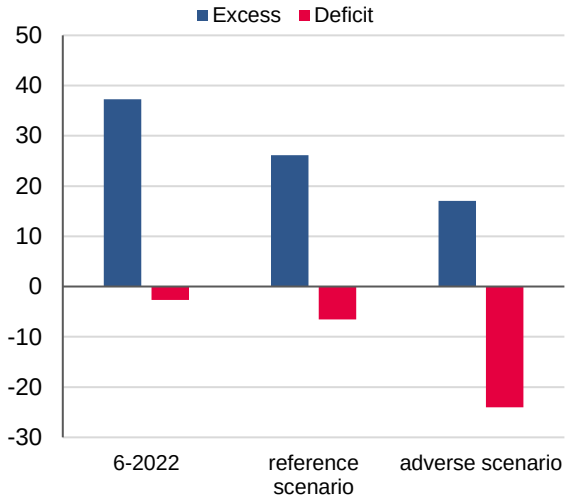
Figure 4.12. Resilience of the banking sector – estimated excess capital levels at individual banks in various scenarios



Notes: The ratio of excess of CET 1 capital after fulfilment of Pillar 1 and 2 requirements, MREL requirement and combined buffer requirement to total risk exposure amount.

Source: NBP.

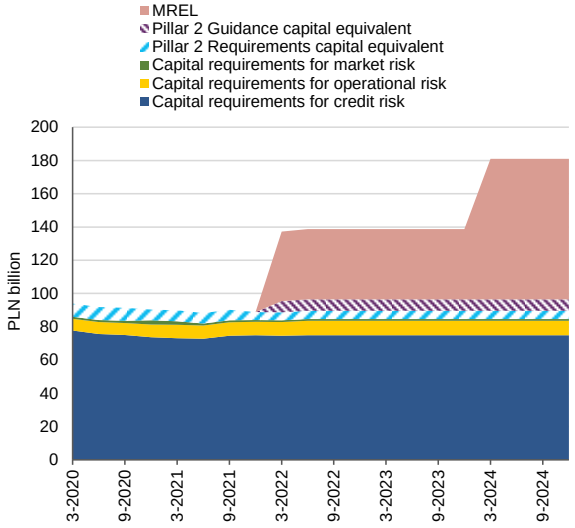
Figure 4.13. Estimated excess capital levels in the banking sector in various scenarios



Notes: The Figure shows the estimates assuming fulfilment of the MREL and the combined buffer requirements.

Source: NBP calculations.

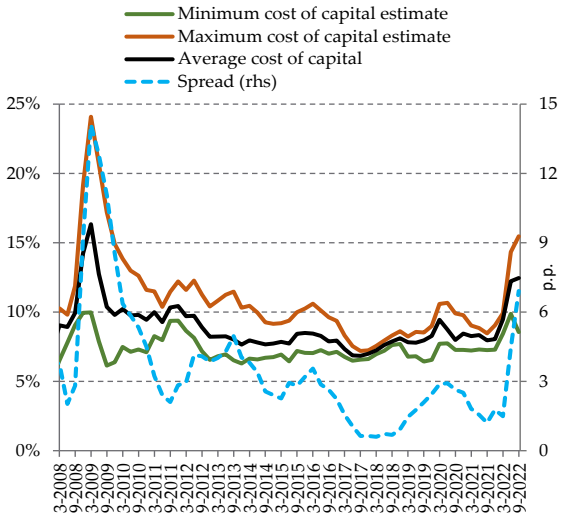
Figure 4.14. Level of capital requirements in Poland



Notes: Banks should fulfil P2G once the combined buffer requirement has been met.

Source: NBP.

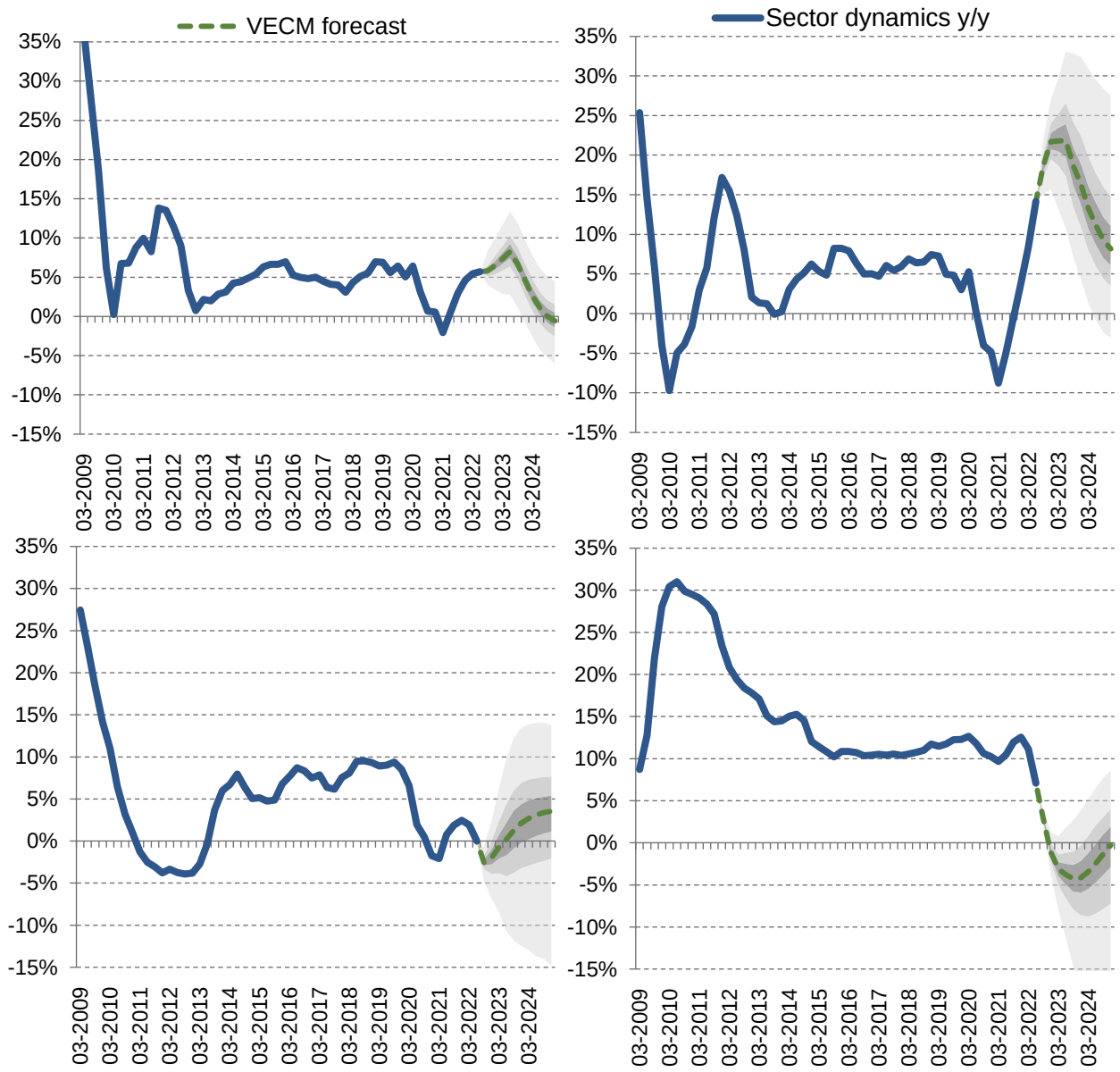
Figure 4.15. Estimated cost of capital in the banking sector



Notes: see Figure 2.51.

Source: NBP calculations based on NBP, Bloomberg and Refinitiv data.

Figure 4.16. Forecast growth of credit to the non-financial sector if no impact is assumed of possible decline in excess capital



Notes: Loans to the non-financial sector (upper left panel), loans to entrepreneurs (upper right panel), zloty consumer loans (bottom left panel), zloty housing loans (bottom right panel).

Source: NBP.

The decline in excess capital at banks above the combined supervisory requirements coincides with unfavourable macroeconomic factors. Besides due to the declining excess capital, lending growth is also expected to slow substantially, in particular for households, due to the deterioration in the economic growth outlook, high uncertainty and a relatively high nominal level of interest rates (see Figure 4.16).[106] In such a context, banks' optimisation of the level of risk-weighted assets to protect

[106] Loan growth forecasts are described in detail in Financial System in Poland 2021; see https://www.nbp.pl/system-finansowy/rozwoj2021.pdf.

capital would result in an excessive restriction in the availability of capital in the economy. In consequence, a portion of households and companies might not be able to obtain credit despite their capacity to repay it. A reduced credit supply by some banks may be offset by an increased credit supply by institutions that hold excess capital. When potential unexpected costs or capital burdens in the sector crop up, as seen in recent quarters, this may be a risk factor for the capacity of other banks to maintain lending.

In addition to the medium-term risk factors, there has been a rise in structural risk resulting from moral hazard-strengthening incentives. Moral hazard in the domestic financial system may stem from several factors, which means that one of the parties benefits at the expense of the other irrespective of the level of awareness of the risk taken at contract inception. This concerns, among others, (i) a number of aspects of FX housing loans, where a part of (or all) costs of credit is passed onto the borrower, (ii) universally applicable loan repayment holidays introduced by law which pass a portion of the cost of interest rate risk, contrary to contractual provisions, onto the borrower. Recently, have also occurred signals about attempts to question PLN housing loan agreements based on the WIBOR rate.

The decision to award no remuneration for making capital available in FX housing loan agreements, which were ruled invalid due to abusive indexation clauses, could be an incentive that might potentially amplify moral hazard risk. The lack of entitlement to remuneration for the use of the principal would mean that the borrower was simply granted a housing loan for free. This means that it was granted in a manner that does not take into account the cost of capital and of credit risk, that banks are required to cover to, among others, ensure the safety of funds entrusted by depositors.

Moral hazard is the phenomenon that generates unfavourable effects both on a micro (one of the parties benefits at the expense of the other party) and macro scale. In the long term, moral hazard means that incentives to take decisions when concluding contracts on the financial market are not strictly economic, but take into account expected compensation for the possible costs of unreasonable decisions. This will ultimately lead to sub-optimal allocation of capital in the economy.

Glossary

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 (AC) insurance – 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.

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

Bridge bank – a resolution tool to be used when finding a buyer willing to take over the business of an entity under resolution is impossible. A resolution authority establishes a bridge bank in order to transfer onto it the equity rights of the entity under resolution, its enterprise or its property rights and/or liabilities to continue, in whole or in part, the business of the entity under resolution. The bridge bank carries out its operations on a temporary basis – following the stabilization of the situation, the resolution authority seeks to sell shares or business of the bridge bank.

Commercial banks – domestic commercial banks and branches of credit institutions.

Consumer loans – loans granted to natural persons for personal use in the consumption of goods (including overdrafts and credit card loans).

Costs of credit risk – see Credit losses.

Credit losses – in banks applying the IFRS – the 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 PSR – the 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 assets written down and the value of provision/specific provision as well as recovery of assets written down earlier.

Domestic commercial banks – domestically incorporated banks operating in the legal form of a joint-stock company or a state bank.

Domestic banking sector – domestic commercial banks and cooperative banks.

Expected profits included in future premiums – the difference between the technical provisions without a risk margin and the technical provisions without a risk margin under the assumption that the premiums relating to existing insurance and reinsurance contracts that are expected to be received in the future are not received for any reasons other than the insured event occurred, regardless of the legal or contractual rights of the policyholder to discontinue the policy.

Forborne exposures – receivables in respect of which forbearance measures have been applied. The measures consist of preferential treatment of the debtor who is experiencing or is about to experience difficulties in meeting its financial commitments (financial difficulties). Preferential treatment may result in a loss to the lender.

Housing loans – loans on residential real estate for households.

Institutional protection scheme (IPS) – an agreement of associating and cooperative banks associated with them (IPS-CB) established under the Act of 7 December 2000 on the Functioning of Cooperative Banks, their Associations and Associating Banks (i.e. Journal of Laws of 2022, item 456, as amended) or banks in the form of a joint stock company bank (IPS-C) established under the Act of 29 August 1997 – Banking Law (i.e. Journal of Laws 2021, item 2439, as amended). The functioning of IPSs is aimed at providing liquidity and solvency to all participants in an IPS at terms laid down in the said acts and in IPS agreements, in particular by granting loans, bank guarantees and sureties.

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

Loan-Service-to-Income – the ratio of the monthly amount of loan instalments of housing loans to the net monthly income of households.

Loan-to-Value (LtV) – the ratio of the value of the housing loan granted to the value of property.

Motor third party liability insurance – 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.

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 over a given period to the average balance sheet total in that period.

Non-interest income – the sum of fee and commission income, 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 a bank's general expenses and amortization.

Own funds of insurance undertaking – the sum of basic own funds which include the excess of assets over liabilities and subordinated liabilities, as well as 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).

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

Rate of return on investment rental housing – the ratio of housing rental income (net rent plus depreciation) to housing purchase price.

Return on Equity (ROE) – the ratio of net income to equity.

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

Solvency Capital Requirement (SCR) corresponds to the Value-at-Risk of the basic own funds of an insurance or reinsurance undertaking subject to a confidence level of 99.5% over a one-year period.

Systemic risk – the risk of 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 of 5 August 2015 on Macroprudential Supervision of the Financial System and Crisis Management).

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

VECM (Vector Error Correction Model) – the model which belongs to multi-dimensional time series models, used to identify relationships that occur in variable or indicators observed over time.

Abbreviations

AIF	Alternative investment fund
BFG	Bank Guarantee Fund
BGK	Bank Gospodarstwa Krajowego
BIK	Credit Information Bureau
BIS	Bank for International Settlements
BK	Commercial banks
BS	Cooperative banks
CBR	Combined Buffer Requirement
CET1	Common Equity Tier 1
CJEU	Court of Justice of the European Union
COVID-19	Coronavirus Disease 2019
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
EBA	European Banking Authority
ECB	European Central Bank
EIOPA	European Insurance and Occupational Pensions Authority
EPIFP	Expected profits included in future premiums
ESRB	European Systemic Risk Board
ETF	Exchange-traded fund
EU	European Union
FWK	Borrower Support Fund

GDP	Gross Domestic Product
GUS	Statistics Poland
IFRS	International Financial Reporting Standards
IMF	International Monetary Fund
IPS-CB	Institutional protection scheme of cooperative banks
IPS-C	Institutional protection scheme of banks in the form of a joint stock company bank
KNF	Polish Financial Supervision Authority
LCR	Liquidity Coverage Ratio
LSTI	Loan service to income
LtV	Loan to Value
MCR	Minimum Capital Requirement
MPC	Monetary Policy Council
MREL	Minimum Requirement for Own Funds and Eligible Liabilities
NIM	Net Interest Margin
NBP	Narodowy Bank Polski
NSFR	Net Stable Funding Ratio
OCI	Other comprehensive income
OECD	Organisation for Economic Co-operation and Development
O-SII	Other Systemically Important Institutions
P2G	Pillar 2 Guidance
P2R	Pillar 2 Requirements
PFR	Polish Development Fund

P&L Account	Profit and Loss Account
PPK	Employee Capital Plans
PSR	Polish Accounting Standards
ROA	Return on Assets
ROE	Return on Equity
RORC	Return on regulatory capital
SCR	Solvency Capital Requirement
SN	Supreme Court of the Republic of Poland
SOBK	Polish Commercial Banks' Protection System
SP	State Treasury
SPE	Single Point of Entry
SREP	Supervisory Review and Evaluation Process
T1	Tier I capital
TCR	Total Capital Ratio
TREA	Total Risk Exposure Amount
UCITS	Undertaking for Collective Investment in Transferable Securities
UFK	Unit-linked
UKNF	Office of the Polish Financial Supervision Authority
VECM	Vector Error Correction Model
WIBOR	Warsaw Interbank Offered Rate
WIG-Banki	Warsaw Stock Exchange index of banks

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