Financial Stability Report

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Contents

List of boxes

List of tables

List of charts

List of figures

Foreword

The challenges to financial stability are not diminishing, quite the contrary. Among the most fundamental are the aftermath of the pandemic, Russian aggression in Ukraine, and central banks' necessarily radical tightening of monetary policy in response to unacceptably high inflation. But it does not end there. In early 2022, confidence in the stability and resilience of the global financial system was tested after a series of bank failures, including the collapse of one systemically important institution. Slovakia's banking and financial system has weathered all these challenges without difficulty. As in the 2008 crisis, so today, domestic banks' traditional business model and strong financial position proved have proved an advantage.

We are still, however, swimming in uncertain waters. The battle against inflation is far from won and interest rates will continue to rise. Firms and households are facing not only rising loan payments, but also increases in, respectively, production costs and living costs. Not all businesses and households can cope, and some may struggle to service their debts. We are seeing more pronounced sensitivity in the commercial real estate sector in particular.

In the mortgage market there are mixed signals. On the one hand, it is certainly good news for financial stability that the uptrend in household indebtedness has slowed and that residential property prices are no longer surging. We have in previous years frequently expressed concerns about developments in these areas. On the other hand, we see that a proportion of new mortgages are in the higher-risk category.

Every journey entails some degree of uncertainty. This is doubly true for financial stability. The challenge for all of us, financial institutions and their customers alike, is to correctly identify these risks and prepare to manage them accordingly. I believe that, together, we will continue to be up to this task in the months ahead.

Peter Kažimír
Governor

Overview

Financial stability is, from a global perspective, facing new risks that have dented financial markets' confidence in banks

The main risks to global financial stability remain inflation and the related necessary tightening of financing conditions, which are occurring against a backdrop of heightened geopolitical risks. While, on the one hand, interest rate normalisation has several positive effects on financial stability, it also reveals a number of vulnerabilities in the global financial system.

Question marks over certain foreign banks' ability to handle this situation have led to a wave of individual banking failures, the most significant since the 2008-2010 global financial crisis. These failures, however, did not involve euro area banks under the single supervisory mechanism. The banking sector in the United States has been hardest hit, especially banks that differ significantly from Slovak banks in terms of their business model. Investors are today more sensitive to any further negative news about the soundness of banks. It should be noted in this regard that Slovak banks are not exposed to problems like those facing foreign banks. Domestic banks rely on a traditional business model, are less dependent on financial markets, and operate in a stricter regulatory environment. They meet all capital and regulatory requirements independently of their parent groups.

The tightening of financial conditions has brought a number of new risks. Some of them, such as the fall in value of bond portfolios, have already materialised to a large extent. Others may have an impact later. Particular attention has been drawn to the commercial real estate sector, which is highly sensitive to rising interest rates and to the turn of the business cycle. As debt servicing costs climb, over-indebted entities, whether firms, households or sovereigns, will be at particular risk of financial stress.

In Slovakia, the impact of the tightening of financial conditions has been seen mainly in falling demand for mortgage loans and a slowdown in the real estate market

The interest rate uptrend has been most notably reflected in a marked slowdown in the mortgage market. Within one year, interest rates have increased to a level not seen in Slovakia for the past ten years. Amid climbing interest rates and rising living costs, households' demand for new mortgages has fallen significantly. The amount of mortgages granted in the first quarter of 2023 was 31% lower than the average for the same period of the previous three years. On the other hand, interest rates on consumer credit started to rise later than mortgage rates, and their increase has been more moderate. The consumer credit portfolio has even returned to moderate growth after three years in negative territory, but this is also due to lower uptake of debt consolidation mortgages.

The slowdown in the mortgage and residential property markets can also be viewed positively from a financial stability perspective. Národná banka Slovenska (NBS) has long been warning of the build-up of risks associated with rapid household debt growth in a very low interest rate environment. The accumulation of these risks has now eased considerably, with household indebtedness decreasing for the first time in Slovakia's history. Property market imbalances are also moderating.

On the other hand, although fewer in volume than before, new mortgages are slightly riskier compared to the past. There are two factors behind this. The first is an increase in debt service-to-income ratios and a lengthening of new loan maturities in response to a sharp rise in interest rates. The second factor is a change in the profile of mortgage applicants, with a significant decline in the share of applicants with higher education. On the positive side, however, the income-profile of mortgage borrowers has not deteriorated.

There has also been a slowdown in demand for loans to firms, with corporate lending rates having also risen sharply. The corporate loan portfolio was still maintaining relatively strong growth in the summer of last year, but since September 2022 it has been virtually stagnant. Despite the continuing increase in their need for working capital financing, firms' demand for loans is declining, especially in regard to loans for fixed investment. Although banks have not tightened lending conditions, they have increased risk premia for firms they consider riskier.

The ability to service existing debt may deteriorate; higher sensitivity is particularly present in the commercial real estate sector

The sector most sensitive to rising interest rates is commercial real estate (CRE). This sector is financed not only by banks, but also by real estate investment funds. Interest expenses as a ratio of revenues are far higher in this sector than in others. In particular in the office and retail segments, however, it may be difficult in the current situation to pass on rising interest expenses to rents. This may put pressure on the financial situation of firms operating in the CRE sector and may also reduce the market value of commercial real estate itself. Under our stress scenario of rising interest rates, around one-tenth of commercial real estate loan portfolio could become at risk of default. If, at the same time, rental income declines amid adverse economic conditions, the increase in loans at risk would almost double.

Firms in other sectors have seen their financial situation impaired mainly by sharply rising costs. For some firms, costs have more than doubled. Although firms have on average been able to pass on rising costs to customers, it is those experiencing the highest cost increases that have had greater difficulty in passing them on and their profit margins have fallen as a result. A further increase in costs may increase the share of loans at risk of default, especially if combined with a worsening economic situation.

For households, the main risks will be a decline in real income and the impact of rising interest rates on the level of their monthly loan payments. More than two-thirds of people in employment experienced a drop in their real income during 2022; in other words, their income increased more slowly than inflation. At the same time, many mortgage-paying households are facing interest rate resetting (especially in 2024 and 2025), when monthly loan payments could rise by as much as half.

On the other hand, analysis of households' financial situation confirms their relatively high resilience. The risk of debt servicing difficulties will be mitigated by a number of factors. The first is continuing nominal wage growth and a stable labour market. The second factor is the significant increase in real household incomes before 2021. At the same time, loan applicants have been subject to NBS's regulatory limit on the debt service-to-income (DSTI) ratio, which already includes a stress test for an increase in loan payments. Although the fall in real wages in 2022 resulted in the expenses-to-income ratio of around half of indebted households increasing since loan origination, the increase was relatively modest for most households. If, as expected, real wages start to rise again, these ratios should return to their original level relatively quickly. Nevertheless, some households could face repayment difficulties in the future, but they make up only a small part of the loan portfolio (around 6% of mortgages and 9% of consumer credit over a three-year horizon). The main factor is ongoing inflation, with the negative impact of loan payment increases at the resetting of interest rates being less than the impact of inflation.

Rising interest rates have also increased banks' interest margins

The rising interest rate environment is having an upward impact on banks' profitability, thereby strengthening their ability to absorb potential losses. This has been particularly evident in the evolution of the net interest margin, which, after a decade of steady decline, has started to rise again. The relatively rapid rise in lending rates for firms and households is significantly increasing banks' interest income. And although rising interest rates have reduced the value of bond portfolios, this negative impact on the banking sector has not been significant.

On the other hand, banks face considerable uncertainty in regard to interest expenses. The main source of this uncertainty is the pace of deposit rate growth and the rate at which funds are being shifted to time deposits. Even under stricter assumptions, banks' ability to generate net interest income is not expected to be compromised to any significant extent in coming years.

Banks are resilient and are well placed to absorb a potential increase in credit losses

The high resilience of banks is confirmed by the favourable evolution of their capital adequacy and profitability. The banking sector's total capital ratio rose to 19.6% in the second half of 2022, which surpassed its pre-pandemic level and was around the EU median. Banks' aggregate capital buffer of 3.9% of risk-weighted assets is sufficiently large to allow them to continue lending.

To further strengthen banks' resilience, the countercyclical capital buffer rate was raised last year by 50 basis points, to 1.5% of risk-weighted assets, with effect from 1 August 2023. Banks' profits showed a favourable trend in 2022, with their aggregate level increasing by 12% year-on-year. The pace of profit growth accelerated further in the first quarter of 2023. Banks' profitability as measured by return on equity has returned to pre-pandemic levels, although it remains below the EU median.

Capital adequacy in the insurance sector remains high, though it has fallen slightly. Moreover, insurers have recorded a large rise in profits, albeit due mainly to one-off events.

Domestic banks' high capacity to absorb losses related to potential adverse developments has also been further confirmed by stress testing. Even under a downside scenario in which profits decline amid an adverse economic situation, banks maintain positive profitability.

As regards the liquidity of domestic banks, there is positive news. The adverse trends we highlighted in the November 2022 Financial Stability Report have eased and liquidity risk has declined. This has been largely due to slowdowns in credit growth and to new bond issuance. On the other hand, given the ongoing stagnation in retail deposits, this risk merits continued attention.

The impact of inflation on the Slovak insurance sector has been passed on to reinsurers. That is why increased claims costs in property insurance have not reduced the sector's profitability. In both life and non-life insurance, the uptrend in premiums has continued.

In the investment fund and pension fund sectors, 2022 saw declines in investment returns and in the volume of assets under management. Net issues of shares/units by investment funds slowed significantly. Customers tended to choose riskier funds, i.e. equity funds and real estate funds. Managers, on the other hand, somewhat moderated certain risk characteristics in their portfolios.

1 Macroeconomic environment and financial markets

1.1 The external environment remains a source of uncertainty

Fears of recession in the euro area have not materialised, but persistently high inflation remains a threat to economic activity

Last year was marked by geopolitical shocks, high inflation and deteriorating economic prospects. The global effort to restore price stability became the main priority of economic policies, to be served primarily by central banks' tightening of monetary policy. It was, however, this abrupt change in the monetary cycle that started to reveal weaknesses in the financial system that had accumulated over more than a decade of loose financial conditions. The most recent manifestation of this development is the recent wave of heightened stress triggered by the sudden difficulties of certain US banks. Question marks over the health of the financial sector are compounding uncertainty about the future economic direction and are narrowing the room for manoeuvre to curb inflation while maintaining financial stability.

Although Europe has been hardest hit by the war in Ukraine and the related energy crisis, sentiment in the continent was moderately optimistic at the outset of 2023. This was because last autumn's adverse scenarios of gas shortages and recession had not materialised. The euro area's economic growth for the whole of 2023 could, according to the latest projections, be in the region of one per cent. It should, however, be noted that the considerable risks to that outlook are largely tilted to the downside.

The key risk factors certainly include future inflation developments. The headline inflation trajectory in the euro area, as well as elsewhere in the world, peaked in the second half of 2022 and is on a downward path, albeit still largely as a mechanical reflection of declining energy prices. Core inflation, which excludes volatile components such as energy and food prices and better captures underlying trends, is pointing to persistent upward price pressures in the euro area, with its rate remaining on a rising path and reaching an all-time high of 5.7% in March 2023. In the United States, core inflation was already peaking in the early autumn of last year, but its subsequent decrease has stalled in recent months. The core inflation figures in both the euro area and United States reflect a labour market that is unusually strong for this stage of the business cycle, and they justify the tightening of monetary policy at an intensity unseen in recent decades. A sustainable return of inflation rates to central bank targets of around two per cent is therefore by no means assured, and even assuming relatively favourable circumstances, it is not expected to happen by 2025. An escalation of the war in Ukraine or renewed Chinese demand for energy commodities could push commodity prices higher again and complicate the disinflationary process even further.

Financial market sentiment improved during the winter, amid the gradually growing belief that a collapse of activity in advanced economies was not on the cards. The return of investors' risk appetite was particularly evident in equity markets, which posted double-digit gains during the period and so recouped much of their previous losses. At the same time, credit premia on speculative-grade bonds were falling slowly, and volatility across financial markets settled at consistently lower levels. In early March, however, a new wave of nervousness swept through the financial system, triggered by events in the US banking sector. The impact of falling confidence was most evident in the valuation of bank shares, which in both the United States and Europe slumped by more than 20% on average. Other risky assets also experienced temporary sell-offs, but by mid-April the situation had calmed to some extent, owing partly to the interventions of public authorities. Although, following the shifts since early 2021, asset valuations have become more aligned with fundamentals, the threat of further episodes of negative repricing in financial markets remains elevated. Investors may be sensitive to, among other things, any revision of relatively optimistic projections for corporate profitability, to a possible further round of contagion spreading from the banking sector, or to a tighter monetary policy stance, especially since the expected interest rate trajectory recently shifted significantly downwards.

The problems of smaller US banks have caused a general decline in confidence in the banking system

After being held up as a stable pillar of the financial system during the pandemic crisis, banks have found themselves in headline-making turbulence. It all started with the bolt-from-the-blue collapse of three mid-sized regional US banks in early March 2023. The emerging crisis soon spilled over into Europe as Credit Suisse, a global systemically important Swiss bank, finally lost the confidence – already shaken by scandals – of its creditors. It was saved from disorderly bankruptcy only by a merger with national rival UBS, mediated by the Swiss authorities. Confidence in banks deteriorated rapidly during this time, and other entities were coming under pressure. It is clear that without decisive action, particularly by the US Federal Reserve and other government institutions, the problems could have assumed systemic proportions.

Despite the current stabilisation of conditions, banks are facing mounting risks, and there has been rising sensitivity to any negative news from the banking sector. Although the uptrend in interest rates has been widely perceived as beneficial for banks' profitability – and has so far been reflected in their performance – the risks associated with this situation are increasingly coming to the fore.

The previously little-discussed phenomenon of unrealised losses on debt securities in held-to-maturity portfolios came under scrutiny during the March turmoil. Although exposure to this risk and shortcomings in its management and supervision are more a feature of the regional US banking sector, the European banking sector is not immune to it. Even at the euro area level, the difference between the accounting and market values of the bonds in question is estimated to be in the tens of billions of euro. For most individual banks, the gap does not exceed 0.5 percentage points of their total capital ratio. The above-mentioned materialisation of losses occurred in conjunction with a surge in customer outflows, and in this regard, too, European banks are considered less vulnerable, given that they are subject to stricter liquidity regulation than are smaller US banks, that a high proportion of their retail deposits are guaranteed, and that they have less competition from money-market funds. Small banks' greater exposure to this risk – with a larger share of their balance sheet consisting of bonds held to maturity – is generally mitigated by their above-average capitalisation and stable deposit base.

The rising interest rate environment is also putting pressure on the liability side of banks' balance sheets. This is happening through a slowdown of deposit inflows, since, in current conditions, money market funds offer customers an attractive alternative to deposits. Euro area banks have been experiencing deposit outflows since last autumn, and the pace of customer withdrawals reached record levels in February 2023, even before the stress events mentioned above. As for market funding, banks' external borrowing costs are notably higher than in the past, while the change in the terms and conditions of the Eurosystem's TLTRO III operations and the early repayment of these operations are an additional complication for some banks.

The credit quality of banks' loan portfolios is still very high but can be expected to gradually deteriorate. European banks are reporting historically low non-performing loan ratios. At the same time, however, firms' and households' liquidity buffers are thinning in the post-pandemic environment. Firms are exposed to rising input costs, which pose a risk to the solid profitability they have recently been maintaining. Households are seeing their financial situation undermined by declines in their real disposable income. On the other hand, however, there is the positive impact of consistently low unemployment. Meanwhile, in both the corporate and households sectors, debt servicing costs are being pushed up by rising interest rates. Less creditworthy firms may even find it difficult to refinance their debts as banks adopt a more cautious approach and tighten credit standards appreciably. Credit risk may also be accelerated by the turning of the residential property price cycle.

The commercial real estate (CRE) sector is a significant source of risk, not least for banks, for which it represents on average almost one-tenth of credit exposure. Severely tested during the pandemic crisis, the CRE market picked up moderately for a short time, before cooling again in the context of rising interest rates. Prime commercial property prices in the euro area were down year-on-year at the end of 2022, with the office segment recording a 14% drop.[1] Furthermore, the number of CRE transactions was lower by almost half. Vacancy rates are rising moderately, and sentiment among CRE market participants regarding the outlook for the sector is strongly negative. Given the stretching of property valuations in recent years, it cannot be ruled out that there will be further significant corrections with negative spillovers to the broader economy.

Although non-bank financial institutions have recently seen a slight reduction in their risk profile, their vulnerability remains elevated

The non-bank financial sector has remained stable during past weeks, despite increased nervousness and volatility in financial markets; nevertheless, some of its characteristics mean it is still a potential catalyst for shocks. The high duration of non-banks' bond portfolios creates vulnerability to interest rate movements and to bond repricing losses. Many investment funds are characterised by liquidity and maturity mismatches between assets and liabilities. Funds faced with a wave of customer redemptions can be forced into a spiral of fire-selling of assets, resulting in further redemptions. Such a scenario is not only more likely, but also has worse consequences if leverage is also present. Where synthetic derivative leverage is used, the triggering of procyclical price effects may result not only from the outflow of investors' money, but also the margin mechanism present in the daily settlement of derivatives transactions through central

1 https://www.ecb.europa.eu/pub/financial-stability/macroprudential-bulletin/html/ecb.mpbu202304_1~4a07638376.en.html

counterparties. Given the significant involvement of non-banks in the financing of commercial real estate, the stability or potential instability of these components of the financial system is closely interconnected.

A series of shocks in recent years has increased the vulnerability of public finances in Europe, which, given these finances' close interlinkage with the financial sector, has implications for financial stability. While 2022 brought a modest consolidation of euro area countries' public deficits and debts, the euro area aggregate government debt-to-GDP ratio is, at 91%,[2] still notably higher than its pre-pandemic level. In coming years, euro area deficits are expected to decline only gradually and be at levels higher than in the second half of the previous decade, with the gross debt-to-GDP ratio dropping at a correspondingly modest pace, only around 1 pp per year. This projection is, however, also accompanied by a number of risks in the form of low economic growth or additional spending to compensate households for high living costs. If inflation remains high, central bank interest rate hikes will increase debt servicing costs for countries, in particular those with high debt. The situation could be further exacerbated by a negative response from financial markets, through the widening of credit spreads. The end of the quantitative easing era may also contribute to overpricing of new issues and a decline in aggregate demand. The only factor mitigating investors' higher required yields on government bonds is that their impact on sovereign portfolios is gradual, given the relatively high average maturity of most portfolios. Another no less important risk is that public finances come under pressure because governments assume part of the burden of any contagion spreading within the banking or broader financial sector.

Box 1
Slovak banks not adversely affected by financial market uncertainty

Recent developments in international financial markets, in particular the difficulties of some US regional banks and the forced sale of the Swiss bank Credit Suisse to its larger rival UBS, have not had a significant negative impact on Slovak banks. This is mainly due to domestic banks' lower degree of dependence on financial markets. In this regard, it is an advantage for Slovak banks that their shares are not listed on major European stock exchanges. At the same time, their links with financial markets, whether on the asset or liability side, are less intense from a sectoral perspective compared with banks in other EU countries.[3]

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[2] IMF Fiscal Monitor, April 2023.

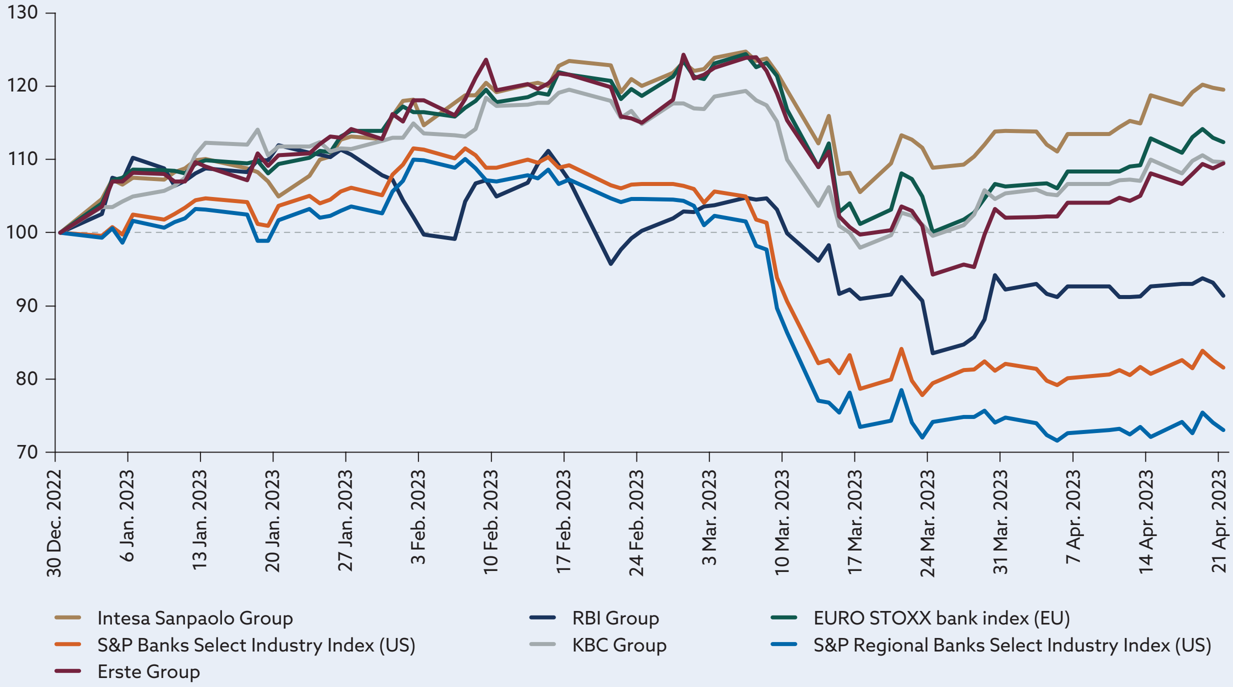
[3] The share of securities holdings in the domestic banking sector's balance sheet total was 11% at the end of the third quarter of 2022 (the EU median was 13%). The share of bond issues in the sector's balance sheet total was 7% at the end of the third quarter of 2022 (the EU median was 6%). The absolute value of the repricing of trading derivatives as a share of

Compared with US or western European banks, the banking sector in Slovakia follows a more traditional business model. The focus on long-term lending based on stable funds received from households and firms provides some degree of protection against financial market fluctuations. Hence a short-term increase in spreads, or a decline in demand for bank-issued securities, does not pose any immediate risk to domestic banks.[4]

Chart 1

US banks proved more sensitive to banking sector developments

Index of the appreciation of selected bank equity indices and bank shares since the beginning of 2023 (percentages)



Source: Bloomberg.
Notes: The S&P Banks Select Industry Index and S&P Regional Banks Select Industry Index are equity indices of the US banking market. The EURO STOXX bank index is an equity index of selected banks based in the euro area.

the domestic banking sector's balance sheet total was 0.4% at the end of the third quarter of 2022 (the EU median was 4%).

4 During March 2023, owing to increasing distrust in traditional banks, the asset swap spreads of various bank debt financing instruments rose sharply. Asset swap spreads on covered bonds showed the lowest volatility during that period (rising by 7% between 9 March and 20 March), and their increase was completely eliminated by the end of March. Asset swap spreads on both senior and Tier 2 bonds rose by around 50% between 9 March and 20 March, and by the month end remained around 10% above their pre-increase levels. Because of the legal aspect of the Credit Suisse resolution, Additional Tier 1 (AT1) instruments were the most affected, with their asset swap spreads rising by up to 85% and remaining more than 40% above their pre-increase levels at the month end.

All Slovak banks independently fulfil all regulatory obligations in risk management, including capital and liquidity ratios.[5] This means that domestic banks need not necessarily be at any immediate risk if their parent group encounters difficulties. Domestic banks have the profit-generating capacity to meet additional capital needs for lending or loss coverage, without recourse to shareholders. At the same time, from a liquidity perspective, the Slovak banking sector is predominantly oriented towards retail deposits. Although the share of funding through deposits taken from banks, firms and public sector entities, or through bond issuance, has accelerated since early in the second half of 2021, it does not represent a significant systemic risk in terms of refinancing risk. Also important from a financial stability perspective is the high share of eligible and covered deposits in deposits held with domestic banks. Of the total deposits in the banking sector, around 68% (€60 billion) are eligible, with 68% (€41 billion) of those deposits covered by the domestic Deposit Protection Fund.

The idiosyncratic procyclical aspects of the US regional bank failures have been compounded by the regulation of these banks, which is weaker compared with the regulation of EU banks. EU banks, irrespective of size or importance, are required to comply with liquidity ratios, to monitor and effectively manage business model sensitivity to interest rate movements, to allocate additional capital to systemic or idiosyncratic risks, and to undergo stress testing. Small regional banks in the United States[6] have not been subject to such obligations for a long time. The accounting standards applied to these banks are also different from those in the EU. Small US banks are required not to mark-to-market securities held for sale, but to book them at amortised cost (in the same way as securities held to maturity). At a time of rising interest rates, we have seen an increase in unrealised losses on these bonds, which has reduced the size of banks' real liquidity buffer. This decline, however, has not shown up on the balance sheet of small regional US banks. Hence, in the absence of regulatory liquidity ratios, it has been difficult to determine the extent of the deterioration in the liquidity position of these banks.

1.2 Domestic economic growth has eased, while the labour market is doing well

Elevated inflation has eroded households' purchasing power, but the economy should continue to grow

Last year the Slovak economy was significantly affected by the war in Ukraine and the resulting surge in energy prices. After rebounding prom-

[5] For further details, see Sections 6.1 and 6.2. The separate fulfilment of capital and liquidity ratios does not concern branches of foreign banks.

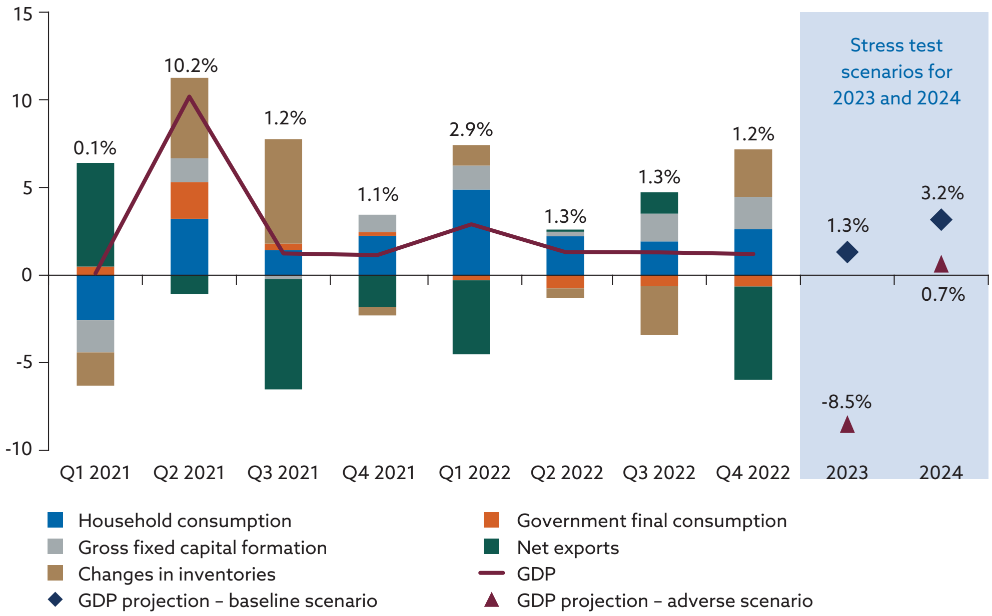
[6] Most regional US banks are ranked in the lowest category of significance (Category 4). The primary threshold for classifying banks as Category 4 is the size of their consolidated balance sheet, which must not exceed USD 250 billion.

isingly from the pandemic crisis, economic growth slowed to only around half of its 2021 pace.[7] Economic sentiment deteriorated significantly amid escalating geopolitical risks and rising prices. Even so, the heightened uncertainty did not dampen household consumption, which made a hefty contribution to GDP growth in 2022. After initially drawing on savings built up during the pandemic, households have seen their saving ratio drop to a historically low level.[8] Hence, given the ongoing uncertainty, their consumption can be expected to moderate. Last year's economic growth was partially supported by business investment activity; by contrast, household investment in housing started easing gradually on the back of rising borrowing costs and cooling sentiment. Going forward, investment activity is expected to be driven by the public sector, through the effort to draw down the outstanding funds allocated to Slovakia under the EU's 2014-2020 budget. In 2022 net exports started gradually to recover from post-pandemic supply change disruptions, though their contribution to economic growth remained negative. Initial fears that 2023 would see a recession caused by high inflation, necessary tightening of monetary policy and a cooling of global demand have dissipated; nevertheless, Slovakia's economic growth is expected to be far lower compared with the pre-pandemic period.

Chart 2

Slovak economy expected to avoid recession

(annual percentages changes)



Sources: SO SR, and NBS.
Note: The Slovak GDP projection in NBS's spring 2023 medium-term forecast (MTF-2023Q1).

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7 The Slovak economy grew by 3% in 2021, but by only 1.7% in 2022.

8 NBS's Spring 2023 Economic and Monetary Developments report. The outlook for future developments is based on NBS's spring 2023 medium-term forecast (MTF-2023Q1).

Despite the risks that the economy has recently been facing, the labour market remains stable. In 2022 the number of people in employment increased by 36,000,[9] resulting in an unemployment rate approaching 6%,[10] already close to pre-pandemic levels. Recruitment was particularly brisk in the first half of the year, before slowing economic growth dampened job growth in the second half. Average wage growth in 2022 reached one of the highest levels in fifteen years.[11] But not even such strong growth could prevent a decline in real wages, which, because of soaring inflation, recorded their largest drop since the start of the century.[12] Households' purchasing power for goods and services was therefore lower than it had been a year earlier. Despite subdued economic growth and existing risks, the labour market is expected to remain stable, which is good news from a financial stability perspective.

The Slovak economy is experiencing double-digit inflation for the first time in more than twenty-two years. In early 2023 prices of goods and services were 15% higher year-on-year,[13] representing a pace of price growth not seen since the summer of 2000. In the first half of 2022 energy prices and food commodity prices were the main drivers of inflation, but in early 2023 food prices were the largest contributor and there was also a notable increase in so-called net inflation (excluding the impact of energy and food prices). On the one hand, the impact of regulatory and compensatory measures has largely curbed energy price growth, especially for households, while on the other hand consumer inflation, driven by strong demand, will persist for some time yet. Headline inflation is therefore expected to remain in double digits this year and to subside gradually.

An environment of low economic growth and rising interest rates is putting public finances under increasing pressure. Although Slovakia's public debt-to-GDP ratio fell in 2022, it remains close to historically high levels. By the end of 2022 it stood at 57.8% of GDP,[14] just below the debt limit set by the Stability and Growth Pact.[15] However, public finance developments this year will be a major challenge, as rising costs and price compensation measures for households and firms are expected to take a significant toll on fiscal

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9 The number of people employed in Slovakia as at the end of 2022 was 2,437 thousand, according to seasonally adjusted data based on the ESA 2010 methodology.

10 The unemployment rate according to the Labour Force Survey, seasonally adjusted.

11 Average annual nominal wage growth stood at 7.7% in 2022, the second highest level since 2008.

12 Real wages fell in 2022 by 5% year-on-year.

13 Annual HICP inflation was 15.4% in February 2023 and 14.8% in March 2023.

14 Compared with 2021, gross government debt decreased by 3.2 pp of GDP.

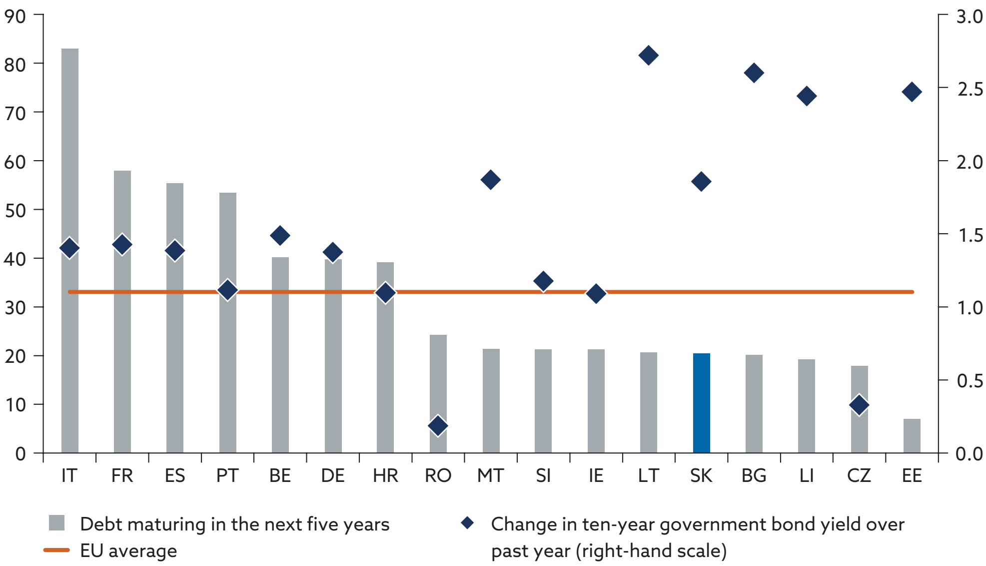
15 For public debt, the Stability and Growth Pact sets a limit of 60% of GDP.

performance and consequently increase general government debt.[16] Rising debt together with increasing interest rates will heighten pressure on public debt financing. Yields on ten-year Slovak government bonds have been above 3% for about half a year after their quite pronounced increase last year,[17] while the spread of ten-year Slovak debt over German Bunds is almost twice as high as its level a year ago. Around one-fifth of Slovak government bonds will mature before the end of 2025. Most Slovak government bonds[18] are being remunerated at below the current market rate.[19] The rising average cost of government borrowing together with the projected increase in government debt will increase government debt servicing expenditure. Should concerns arise about the fiscal sustainability of certain euro area countries, as happened in 2011, the required risk premium would increase even further, thus compounding the pressure on government debt servicing.

Chart 3

Among EU countries, Slovakia has one of the lowest shares of sovereign debt maturing over the next five years; however, yields on domestic government debt has risen more sharply over the past year

Share of debt maturing in the next five years; change in the ten-year government bond yield between April 2022 and April 2023 (percentages of GDP; percentage points)



Sources: Bloomberg, ECB, Eurostat, and NBS.
Notes: For all countries except Slovakia, the data on the volume of debt maturing over the next five years are as at the end of 2021; for Slovakia, they are as at the end 2022. The year-on-year change in required yields on ten-year government bonds is stated as at the end of April 2023. For CZ, LI, LT, EE and MT, the interest rate shown is the long-term interest rate available from the ECB for convergence purposes, as at end-March 2023. The orange line on the graph shows the average of the debt maturing over the next five years for the EU countries marked on the chart.

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16 For 2022, the general government deficit stood at 2.04% of GDP, while for 2023 it is expected to exceed 6% of GDP, thereby bringing the general government debt close to 60% of GDP again (NBS spring 2023 medium-term forecast (MTF-2023Q1)).
17 The bonds are currently remunerated at close to 3.8%.
18 Around 80%, or €57.6 billion, of the outstanding amount of government bonds.
19 Ten-year government bond rate.

Box 2
Macroeconomic scenarios for modelling adverse effects

To quantify the potential impact of existing risks on the financial sector, we modelled two scenarios of potential macroeconomic developments. From their different trajectories, it is possible to estimate the degree of the banking sector's sensitivity to potential adverse economic developments. The baseline scenario models the expected economic outlook in line with NBS's most recent forecast.[20] By contrast, the adverse scenario assumes a further escalation of risks and deterioration of the situation, translating into an economic recession and negative effects on the financial sector.

Table 1 Macroeconomic scenarios

	Actual data	Baseline scenario			Adverse scenario		
	2022	2023	2024	2025	2023	2024	2025
Real GDP	1.7	1.3	3.2	3.0	-8.5	0.7	3.1
Unemployment rate (percentage)	6.1	6.1	5.5	5.1	7.6	9.3	10.0
Nominal wages	7.7	9.8	9.1	9.6	7.2	8.0	4.4
Real wages	-5.0	-0.4	2.4	1.5	-2.4	1.5	0.4
Real disposable income	-0.3	0.9	1.5	1.2	-2.8	-1.2	-1.1
Inflation	12.1	10.5	6.7	4.8	10.0	5.8	3.7

Source: NBS.
Note: The table shows year-on-year rates of change for each variable except the unemployment rate, which is shown as a percentage of the workforce in the economy.

The baseline scenario of economic developments[21] assumes a further slowdown in economic growth this year, with persistent double-digit inflation pushing up firms' costs and constraining households' purchasing power. Despite strong wage growth, households see a slight drop in the average real wage and trim their consumption accordingly. But in this scenario, despite decelerating economic growth, the labour market remains stable. The gradual moderation of inflation in coming years has an upward impact on economic growth. With the pace of wage growth remaining unchanged in an environment of moderating inflation, households' living standards improve as their disposable income rebounds. The labour market continues to improve but, owing to skilled labour shortages, not as strongly as it did before the pandemic crisis. The economic slowdown is therefore only temporary and the economy avoids falling into recession.

20 NBS's spring 2023 medium-term forecast (MTF-2023Q1).
21 The baseline scenario is based on the assumptions of NBS's spring 2023 forecast (MTF-2023Q1).

Under the adverse scenario, the war in Ukraine's detrimental effect on world demand becomes more pronounced. At the same time, supply chain disruptions remain an issue. Diminished global demand and supply chain constraints weigh on the Slovak economy. Despite their restricted supply, energy commodities are cheaper in this scenario than in the baseline scenario, as the global economy's slowdown dents demand for them. This also affects inflation in Slovakia, which over the whole simulation horizon is slightly lower than in the baseline scenario. In the adverse scenario, real GDP falls by 8.5% in the first year of the simulation owing to elevated uncertainty and softening global demand; in the next year, it remains flat, and only at the end of the horizon does it gradually pick up. The modelled production contraction has an upward impact on the unemployment rate, which rises gradually up to 10%. Although wage growth remains strong, it is weaker than in the baseline scenario owing to the constraints that firms are under. This results in a decline in household disposable income over the whole horizon of the adverse scenario, with households consequently having to rein in their consumption. This scenario makes no assumptions about monetary or fiscal policy responses, which are therefore the same as under the baseline scenario.

Stress testing traditionally includes assessing resilience to market risks, especially that of non-bank financial institutions. The scenario assumptions include a 35% decline in the main world equity indices, as in the past. In the modelling of the zero coupon yield curve for euro area government bonds there is an initial upward shift resulting from ongoing inflationary pressures. At the short end, this shift compared with the situation as at 31 December 2022 amounts to between around 2% and 2.5%, while a smaller increase is assumed for longer maturities. By around the end of 2023, the yield curve flattens to a range of between 4.2% and 4.7%. Just before the end of the three-year stress test horizon, a gradual reversal of the interest rate cycle begins. The simulation also envisages an increase in credit premia, which for bonds, depending on the country of issuer, are derived proportionally from the movement observed during the euro area sovereign debt crisis. The market scenario also includes the euro exchange rate appreciating by an average of 10% against currencies of central and eastern European countries and selected emerging economies. For major world currencies such as the US dollar and Japanese yen, the scenario assumes a constant exchange rate. The parameters for exchange rate movements were taken from the European Banking Authority's latest stress testing exercise.

2 Financing of the economy

2.1 Growth in loans to households is slowing

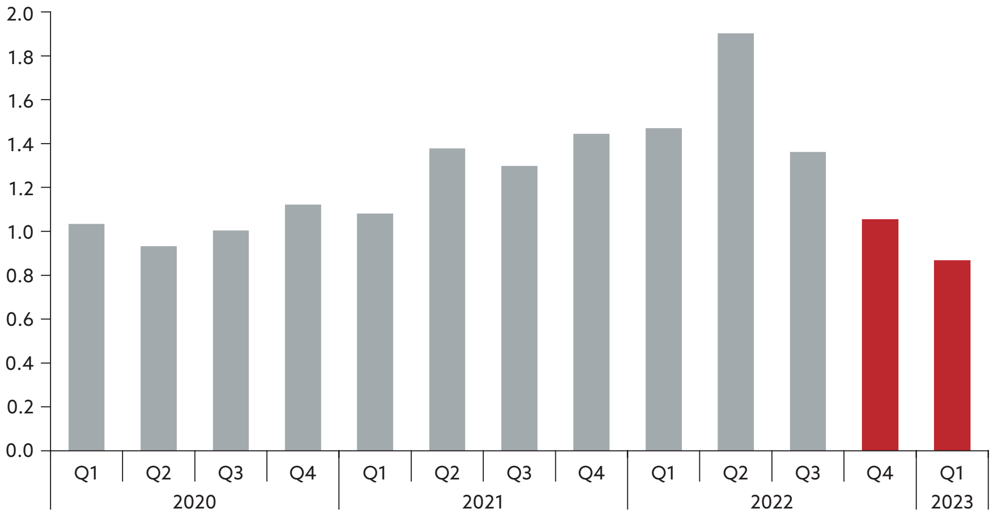
2.1.1 Credit growth is moderating with each passing month

Rising interest rates and higher living costs have dampened mortgage growth

The quarterly flow of mortgages has slowed to its lowest level in ten years. The flow was particularly weak in the first quarter of 2023, when the increase in the volume of the loan portfolio was around the average monthly level for the previous year. Annual growth in mortgage loans maintained a solid pace in the first quarter of 2023, at 9.1%, but that included the fading of the strong lending wave from the second quarter of 2022. The pace of credit growth has been decelerating with each passing month, and so far there is no sign of the trend reversing anytime soon. Annual growth in mortgage loans is estimated to slow to between 2% and 3% by the end of 2023.[22]

Interest rates have climbed to their highest level since 2014. For new mortgages (excluding refinancings and rate resets), the average interest rate was 4.1% at the end March 2023. This is also why mortgage originations were 31% lower in the first quarter of 2023 compared with the 2020–2022 average. [23]

Chart 4
New mortgage origination is slowing markedly
Quarterly amount of pure new mortgages (EUR billions)



Source: NBS.

[22] This estimate assumes that new mortgage debt growth remains at its level of the first quarter of 2023.

[23] The total amount of new mortgages originated in the first quarter of 2023 was €743 million, while the quarterly average for the period 2020–2022 was €1,257 million.

The slowdown in mortgage loan growth is mainly due to a fall in demand – a drop in the number of new mortgages. The softening of loan demand has a number of causes. Households are experiencing sharp rises in interest rates and living costs. In addition, the ongoing downtrend in housing prices is incentivising the postponement of home purchases. And even where the decision is taken to go ahead and purchase a home, lower prices mean that a smaller loan is required. Banks[24] are saying they expect demand to remain weak in the near future.

Because of the sharp increase in monthly mortgage payments, the regulatory limit on DSTI ratios for mortgage applicants may be a factor behind the weaker demand, though not the determining factor. The number of new mortgages has fallen even among those where the DSTI ratio is below the regulatory limit.

This partly also reflects a change in the distribution of demand over time. The first half of 2022 saw many households decide to buy housing sooner than they had previously intended, in order to take advantage of lower interest rates. Since more loans were provided in spring 2022, there was, naturally, less need for loans in the following period.

Mortgages in Slovakia remain accessible, but more expensive, compared with the EU average

In 2022 mortgage growth in Slovakia remained slightly above the EU average.[25] By the end of 2022, Slovakia had for a long time ranked in the top five or six of euro area countries for quarterly mortgage portfolio growth and had often reported the fastest rate. In the first quarter of 2023, it was placed eighth among the 20 countries surveyed, therefore remaining above the currency union's median and average levels.

Unlike banks in other EU countries, Slovak banks have not been tightening credit standards. The EU has seen relatively significant tightening of credit standards in each of the last four quarters, with between 20% and 35% of banks tightening standards in each quarter.[26] The primary driver has been banks' higher risk perceptions. In Slovakia there has been no broad-based tightening of standards.

At the same time, banks' caution has been reflected in sharply rising interest rates. At the time of low interest rates, Slovakia was among the euro

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[24] According to bank lending survey data for the first quarter of 2022.

[25] In Slovakia, the quarterly growth in mortgage loans in the first quarter of 2023 was 0.1%, while the euro area average was 0.0%.

[26] If a bank has tightened standards repeatedly, this will be reflected in each quarter separately.

area countries with the lowest rates. Since the spring of 2022, Slovakia's ranking has gradually worsened; in February 2023 new mortgage[27] applicants in Slovakia were being offered the fifth highest mortgage rate in the euro area.

Consumer credit resumed moderate growth

After three years in negative territory, annual growth in consumer credit turned positive in the autumn of 2022. The upturn has gradually gathered pace, with the year-on-year growth rate reaching 3.0% in March 2023. Indeed, the month-on-month increase in March 2023 was the highest since 2017. Non-bank consumer lending, making up 13% of the consumer credit market, has also ended its own three-year downtrend, remaining unchanged in the first quarter of 2023.

Interest rates on consumer credit started to rise later than mortgage rates and their increase has been more moderate. They did not start rising noticeably until the third quarter of 2022, and by March 2023 they had increased to an average of 9.2%, 150 bp above their level of late 2021/early 2022. Compared with mortgage rates, consumer credit interest rates are rising at around half the pace.

The acceleration of consumer credit growth has been due more to lower outflows from the portfolio than to an upsurge in new lending. Increases in consumption and prices in the economy have created more scope for consumer lending. Moreover, consumer credit interest rates started rising later than did mortgage rates. Demand for consumer credit remained steady in the first quarter of 2023, and the uptake of new consumer credit was comparable to the pre-pandemic years of 2018 and 2019.

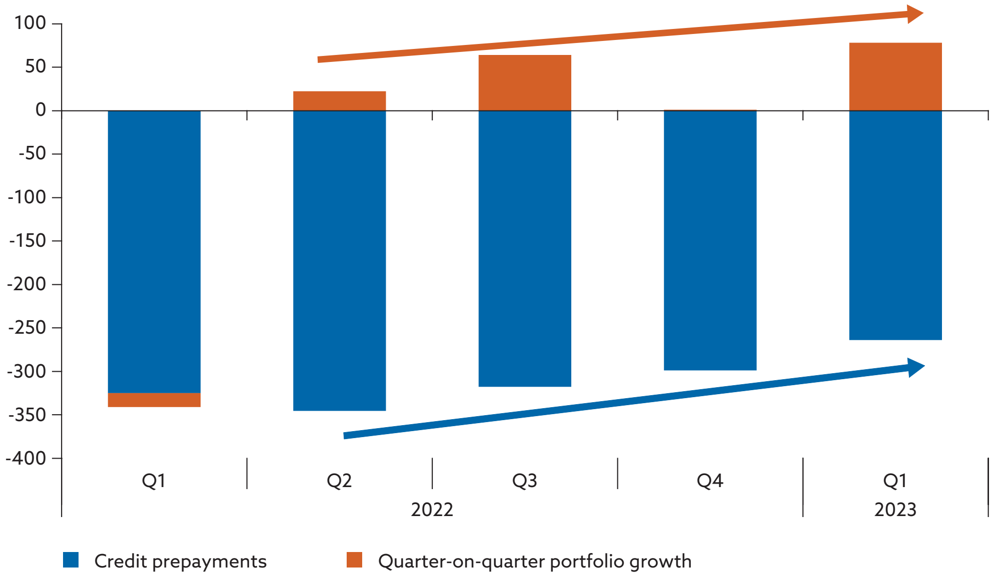
One change, however, has been a slowdown in prepayments, an activity typically associated with debt consolidation mortgages. Given, however, that mortgage rates have risen sharply, such consolidation is now less attractive.

[27] Only new mortgages, i.e. excluding refinancings and rate resets, are compared.

Chart 5

Consumer credit portfolio growth reflecting decline in prepayments

Consumer credit prepayments and quarter-on-quarter growth in the consumer credit portfolio (EUR millions)



Source: NBS.

2.1.2 New mortgages are somewhat riskier today than they were in the past, but so far there is no increase in defaults

The second half of 2022 saw notable changes in mortgage lending in terms of both the profile of borrowers and mortgage risk characteristics

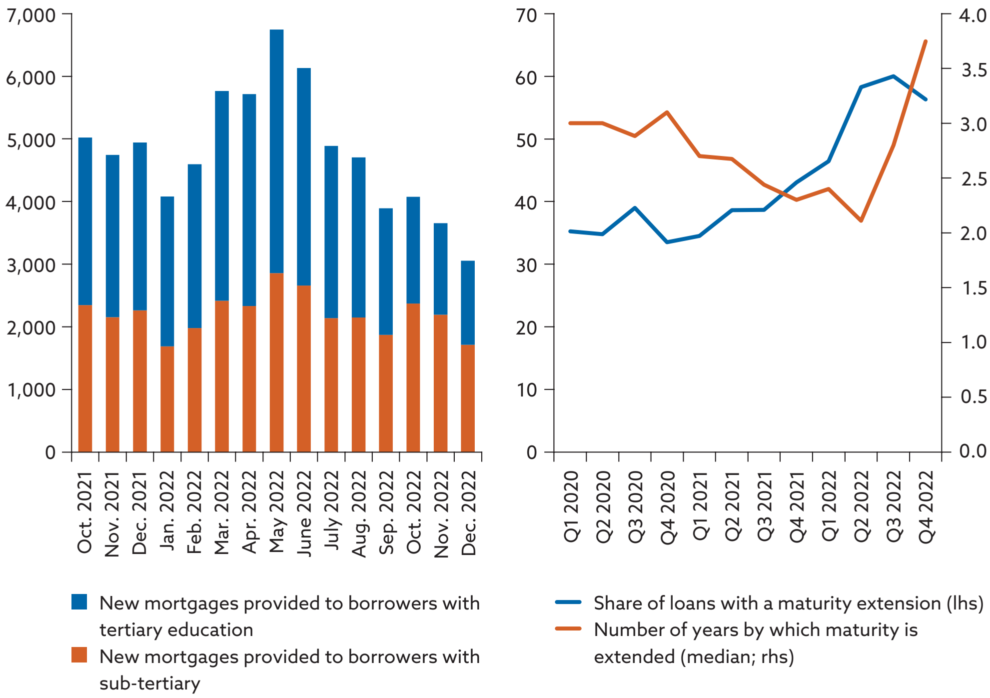
Looking at the breakdown of new mortgages by the educational level of borrowers, the largest decline has been in mortgages to consumers with tertiary education. This trend is most pronounced in younger borrowers aged up to 35. At the same time, tertiary-educated consumers accounted for the largest share of the surge in mortgage demand in the spring of 2022. This may be because these consumers responded faster to the shift in bank interest rate policies, with some of them opting to buy housing – and apply for a loan – sooner than they previously intended. On the other hand, mortgage lending to consumers with secondary education has slowed more moderately, with the result that an increasing share of borrowers have sub-tertiary education, which is associated with higher loan risk. These changes have not, however, been accompanied by a deterioration in the income-profile of borrowers.

Chart 6

The number of new mortgages has fallen mainly among borrowers with tertiary education, while an increasing number of mortgage refinancings involve a maturity extension

Left-hand panel: Number of new mortgages originated in each month by borrower's educational level (number)

Right-hand panel: Share of mortgage refinancings where the principal is not increased and the maturity is extended by at least six months and, for mortgage refinancings involving a maturity extension, the median number of years of the extension (percentages; number of years)



Source: NBS.

Not only has the profile of mortgage borrowers changed, but the risk characteristics of mortgages themselves have become more pronounced, especially in regard to repayment burdens. Amid rising interest rates, the share of mortgages with a DSTI ratio close to the regulatory limit has risen sharply. Moreover, rising repayment burdens are being combined with longer loan maturities. An increasing share of new mortgages have a maturity of more than 30 years. At the same time, when refinancing their mortgage without increasing the principal, more and more borrowers are reducing their loan payments through maturity extensions. Moreover, the maturity extensions are notably longer compared with the previous period. Meanwhile, interest rate fixation periods of only year are more common among borrowers with a DSTI ratio at the regulatory limit. The shorter the fixation period, the lower the interest rate (and therefore the lower the payments), but the greater the sensitivity to future rate rises.

The financial cycle peak in 2022 was associated with a higher share of riskier loans

To assess the impact of these changes on the riskiness of the loan portfolio, we analysed the capacity to service new loans in an adverse economic scenario. The test scenario assumes a combination of an increase in unemployment, an increase in interest rates, and stagnating real wages. We consider loans that may become at risk of distress to be those where the borrower's simulated expenditure exceeds their simulated income. Some of these loans may subsequently be at risk of default, depending mainly on the level of the borrower's DSTI ratio. Our method for estimating the riskiness of new mortgage loans is detailed in Figure 1.

Figure 1
Method for estimating new mortgage riskiness

Test of debt servicing capacity
in an adverse economic scenario during the three years after loan origination

Income growth of 5.9% per year
Income may, however, increase at various rates across borrowers, and in some cases may drop

Expenditure growth the same as income growth
Average real wage remains constant

Interest rates hiked by 200 bp
Increase affects only loans with an initial rate fixation period of less than three years

Unemployment rate increase of 3 pp
Risk depends on individual socio demographic characteristics

Loans that may become at risk of distress

Loan will become at risk of distress where the borrower's expenditure (loan payments + living costs) **exceeds their income** (including recourse to savings)

Some of the loans that may become at risk of distress may default, depending on the borrower's expenditure-to-income ratio

Expenditure-to-income ratio	Default ratio
From 100% to 110%	10%
From 110% to 120%	50%
More than 120%	90%

Source: NBS.

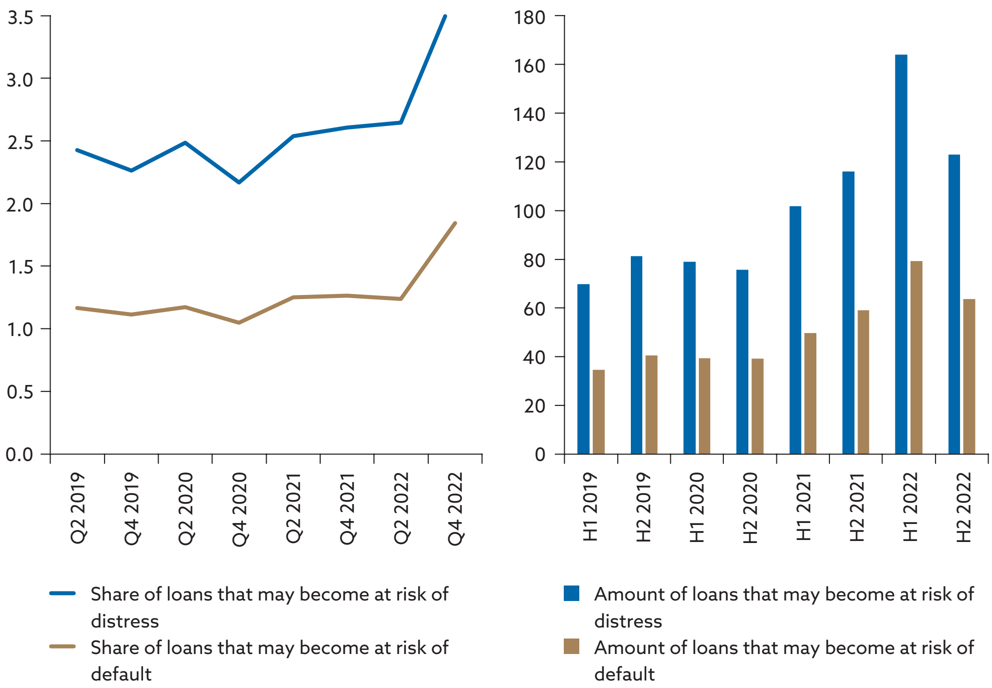
This test shows that the riskiness of new mortgages increased by almost half in the second half of 2022, compared with the previous period. At the same time, the lengthening of maturities has reduced the share of loans at risk for which maturity extension is a modification option.[28]

Despite the slowdown in mortgage growth in the second half of 2022, the flow of risky mortgages remained higher than in the past. This is related to the increase in the riskiness of mortgages originated in the second half of 2022. Although the amount of riskier loans began to decline in the second half of 2022, it continued in the fourth quarter to exceed the average for 2019 to 2021.

Chart 7

New mortgage riskiness increased in 2022

Left-hand panel: Number of new mortgages originated in each quarter by share that, in an adverse scenario, may become at risk of distress or default within one year of origination (percentages)
Right-hand panel: Amount of new mortgages originated in each half-year that, in an adverse scenario, may become at risk of distress or default within one year of origination (EUR million)



Source: NBS.

Despite a number of negative effects, loan defaults are at historical lows

Non-performing loan (NPL) ratios for both mortgages and consumer credit are at all-time lows. For mortgage loans, the NPL ratio as at March 2023 was 1.1%; for consumer credit, 6.9%.[29]

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[28] For loans at risk with a maturity of less than 30 years, we test whether the borrower would be able to service the loan if it had a 30-year maturity. For older borrowers, however, we tested their ability to service the loan up to a maximum age of 70.

[29] In the case of consumer credit, even lower values were reached in the onset phase of 2006 and 2007.

Similarly, the flow of newly non-performing loans is at a historical low in both the mortgage and consumer credit portfolios. For mortgages, the net default rate has been practically zero for three years now, while for consumer credit it stood at 1.2% in March 2023, its second lowest ever level.[30]

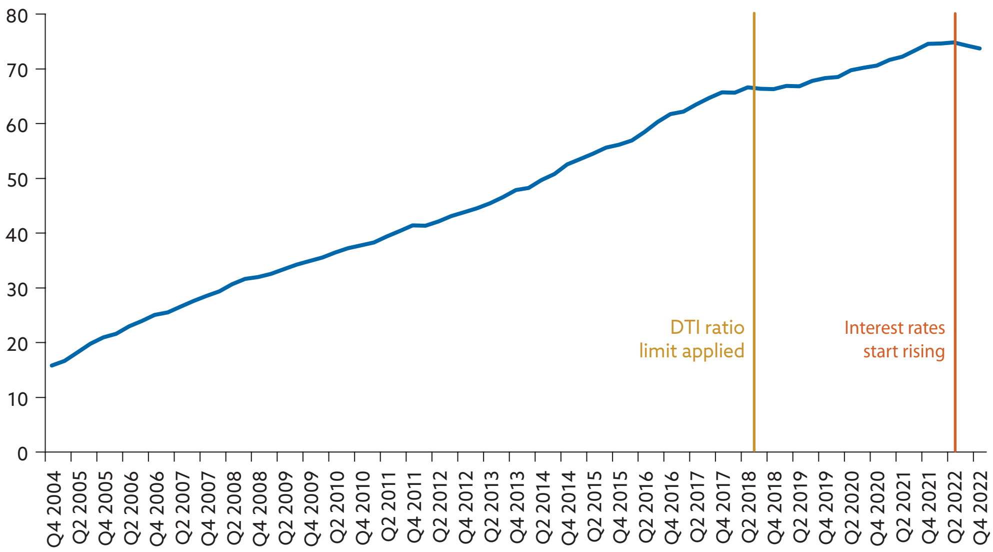
Despite increasing the riskiness of new mortgages, rising mortgage rates also have a positive impact in terms of financial stability

The slowdown in retail loan growth due to rising interest rates can be viewed positively from a financial stability perspective. The risk associated with the long period of rapid growth in household indebtedness has been one of the most significant risks to financial stability in Slovakia. But the dampening of loan demand in the face of rising interest rates will significantly mitigate the further build-up of this risk. This trend was already apparent in late 2022, when the loans-to-disposable income ratio of households in Slovakia fell for the first time ever. Furthermore, the debt-to-income ratio of new borrowers also decreased for the first time in a long time.

Chart 8

Slovak households' indebtedness as a ratio of their income fell for the first time ever

Bank lending to households as a ratio of annual household gross disposable income (percentage points)



Sources: NBS, and SO SR.

In addition, rising interest rates have also helped contain risks in the housing market. Compared with a year ago, people are now taking a more rational approach to borrowing. The housing market has calmed down and is more in line with overall sentiment and economic outlooks. The pe-

30 Net default rate data have been tracked since January 2013.

riod of sharply rising housing prices is over. In some segments where they were stretched, prices have even declined.

2.2 Slowdown in lending to the corporate sector

Growth in loans to firms has moderated against the backdrop of a weakening global economy and rising interest rates

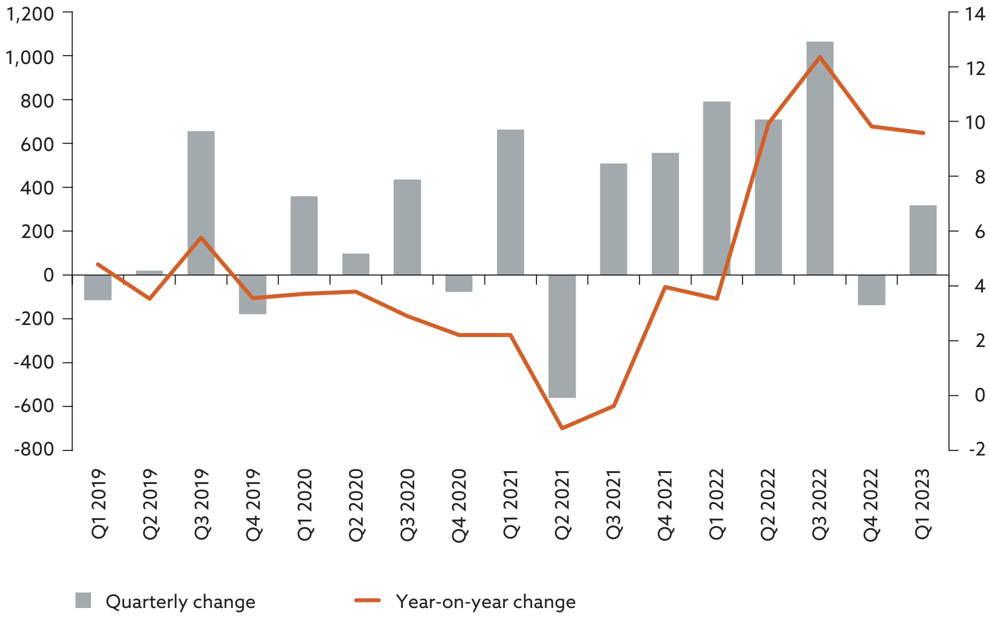
Quarterly growth in loans to non-financial corporations (NFCs) has slowed significantly, indicating an easing of lending to the corporate sector. Annual growth in NFC loans stood at 9.6% at the end of the first quarter of 2023, after being around the 10% level in the previous two quarters, within its standard volatility range. The total amount of NFC loans increased by only 0.6% between September 2022 and March 2023. However, year-on-year credit growth continues to be affected by the strong flow of loans in 2022.

The slowdown in lending has a broad-based character. In the first two months of 2023, corporate credit growth was driven mainly by short-term lending to the energy supply sector. In March, however, that portfolio's growth also eased, and the situation became one of widespread softening growth across loan categories. Across all firm size categories and different loan maturities, lending activity has been slowing.[31]

Chart 9

Lending activity slowdown in the last two quarters

Quarterly change in NFC loans and year-on-year change in the portfolio (EUR millions; percentages)



Source: NBS.

31 Among loans with a medium-term maturity of between one and five years, the slowdown in lending growth was only slight.

In a scenario where quarterly growth in NFC loans stays at the level of the first quarter of 2023, the annual growth in these loans is estimated to slow markedly, down to between 3.5% and 5% in the last quarter of 2023. The trend of slowing annual loan growth can also be seen in most countries of the EU and of the central and eastern European region. Slovakia, for its part, is reporting the fifth highest NFC loan growth in the EU.

According to what banks are reporting,[32] the easing of corporate credit growth is due to more to demand than supply factors. The main supply factor is the interest margin level.[33] Firms are confronted with rising lending rates as a result of base rate hikes. Meanwhile, banks are becoming more discriminating about the quality of borrowers, so the interest rate spread on corporate loans is widening. At the same time, demand for loans has fallen, largely in response to the level of interest rates. Demand has also been dampened by firms' declining financing needs related to fixed investment, to mergers and acquisitions, and to debt refinancing and restructuring. On the other hand, firms have maintained their demand for working capital financing.

Lending rates for firms continue to rise strongly. Only 28% of NFC loans have a contracted fixed interest rate. The rest of the portfolio is exposed to a relatively rapid pass-through[34] of base rate increases. Moreover, the loans with the largest share of fixed interest rates are those with a maturity of up to one year. As a result, the average interest rate on the stock of NFC loans has been rising sharply, from 2.35% in August 2022 to 4.25% as of March 2023. Hence an increasing number of firms are having to deal with rising debt servicing costs.

The flow of credit has moderated amid a deterioration in firms' economic conditions. This deterioration is evident in corporate revenues, whose nominal growth has been gradually slowing, down to 11% as of February 2023.[35] Part of that slowdown is due to a base effect from last year, when revenues responded to surging prices in the economy. In real terms, revenues fell, year-on-year, in each of the three months from December 2022 to February 2023.

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32 According to the bank lending survey for the first quarter of 2023.

33 Neither overall credit standards, nor lending conditions, changed in first quarter of 2023. The only tightening factor was the widening of interest rate spreads.

34 The interest rate review period is most often between one and three months.

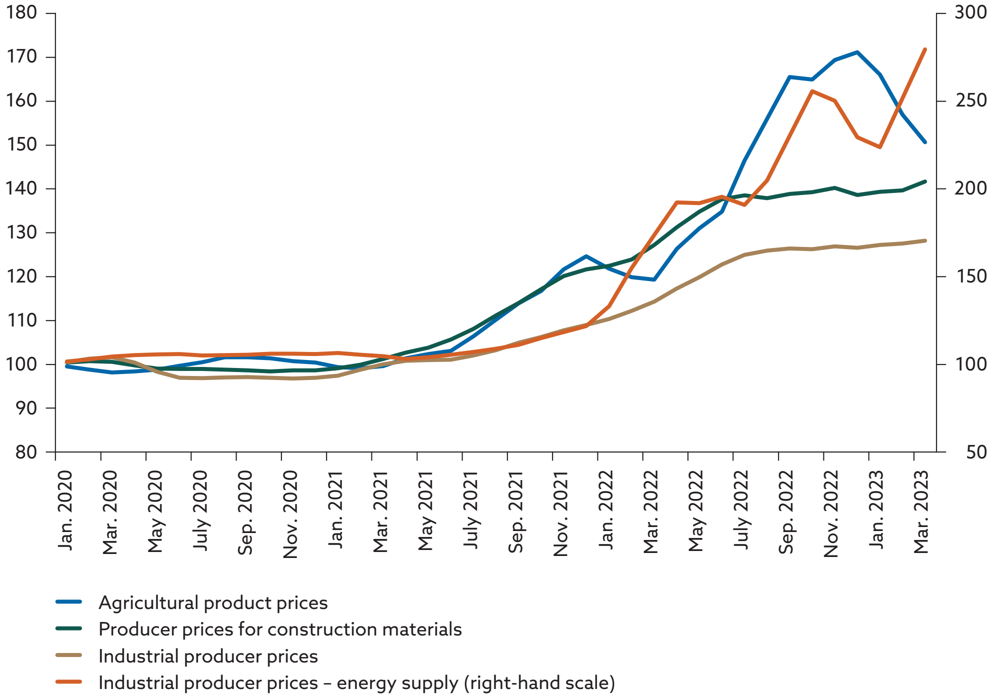
35 Annual growth in nominal corporate revenues was 16% in December 2022, while their average growth for the year was 22%.

Input prices remain at elevated levels. Although there has been a slowdown in producer price growth, most prices remain, in absolute terms, at all-time highs. The only significant decline has been in agricultural product prices. High input prices will therefore continue putting pressure on the financial situation of firms in the period ahead. How the economy develops will be important in this context. In 2022 corporates were, on average, managing to pass on input price increases to output prices, although there was great heterogeneity across firms in this area.[36]

Chart 10

High input prices will continue to put pressure on firms' financial situation in the period ahead

Indices of selected producer price categories (index: 100 = 2019; index: 100 = 2019)



Sources: NBS, and SO SR.
Note: The chart shows the three-month moving averages of the selected indices.

The challenging business environment has not yet had an impact on credit quality indicators. The non-performing loan ratio for the corporate credit portfolio has continued falling, down to 2.45% in March 2023. Nor has there been a deterioration in the proportion of loans past due by up to 90 days. An important factor in this regard has been the ability of most firms to maintain a favourable financial situation. In the case of real estate project financing, the NPL ratio is just 0.4%.

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36 For further details, see Section 4.1.

2.3 Commercial real estate financing is a potential source of risk

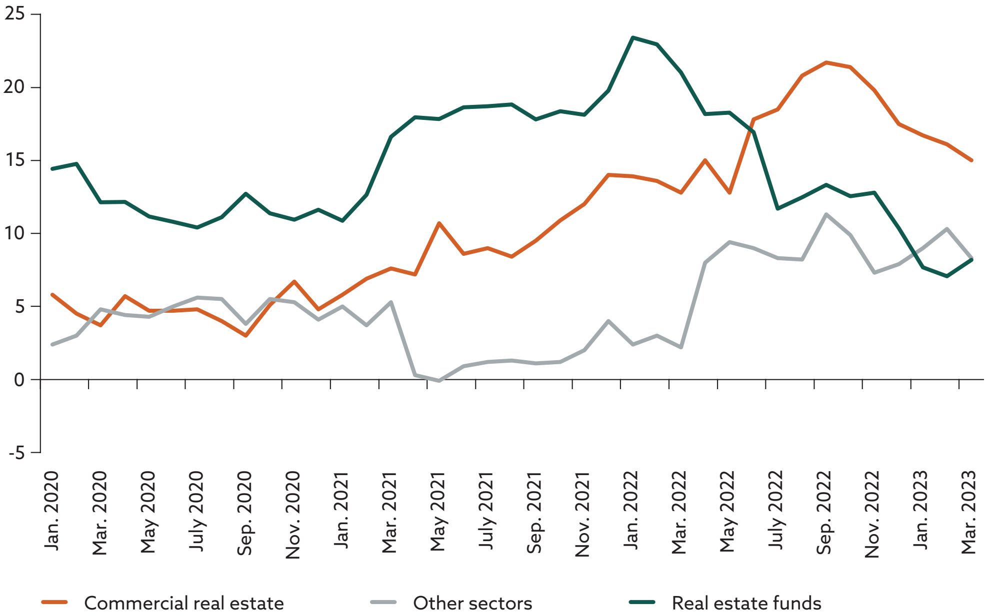
CRE financing[37] is one of the most significant sources of systemic risk in the banking sector

CRE market developments have a significant impact on the domestic financial sector. This is firstly because the banking sector has significant exposure to the CRE market. Loans to this sector make up almost a quarter of the banking sector's corporate loan portfolio. Secondly, the CRE market is highly concentrated market in other key aspects, including property developers, financing banks, and investors. Thirdly, the CRE sector is highly cyclical and sensitive to adverse economic developments. This was seen, for example, during the global financial crisis, when the CRE market was a source of significant credit losses.

Chart 11

Bank lending to the CRE sector has surged in the recent period

Loans to the CRE sector, loans to other economic sectors, and the net asset value of real estate investment funds (annual percentage changes)



Source: NBS.

37 The commercial real estate market is here understood to mean real estate project financing and not loans falling under the NACE category L (Real estate activities). The identification was made on the basis of data from the Register of Bank Loans and Guarantees.

The flow of credit to the CRE market has been rising sharply in recent years. Annual growth in CRE loans peaked in September 2022, at 21.7%, before dropping to 15% in March 2023. Their growth rate has far outpaced loan growth in other segments of the corporate sector. The pace of CRE loan growth is now easing, in line with the general situation in the corporate sector. CRE lending was already basically stagnating in the first quarter of 2023.[38] The previous rapid growth in CRE loans highlights the importance of this sector, which in recent years has accounted for more than one-third of the year-on-year growth in NFC loans.

The systemic nature of this sector is also evident from the fact that more than one-fifth of its financing is provided by real estate investment funds. These have in recent years been a rapidly growing segment of the investment fund sector. Their share in total CRE financing stands at 22%, approximately half of the euro area average. Around two-thirds of the CRE financing provided through real estate funds is in the form of equity participations; the rest is through loans.

Recent developments have brought new challenges to the CRE market. Some are cyclical in nature, while others are more structural. The cyclical challenges include mainly rising interest rates and increased economic uncertainty, as well as declining activity in the primary residential real estate market, coupled with cooling of the property market in general. The main structural challenges are the shifts to remote working and online shopping, which were catalysed by the pandemic crisis.

Increasing attention is also being paid to this sector by international institutions. In January 2023 the ESRB issued a Recommendation[39] in which it called for improved monitoring of the CRE sector (including lending standards for new loans) and, where appropriate, the implementation of targeted macroprudential measures. The ECB, for its part, has since 2021 identified CRE financing as one of its main supervisory priorities.

The most significant challenge for the CRE sector is rising interest rates. Compared with the other sectors of the economy, commercial real estate is more sensitive to interest rate increases, owing to its higher ratio of interest expenses to revenues. For CRE project finance loans, annual interest expenses equate to 11% percent of the sector's annual revenues,[40] while for other NFC loans, the ratio is only 1.7%. This also reflects the higher indebt-

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38 In the first quarter of 2023, total CRE loans increased by 0.6% over the previous quarter.

39 ESRB Recommendation on vulnerabilities in the commercial real estate sector in the European Economic Area (ESRB/2022/9).

40 Median market value.

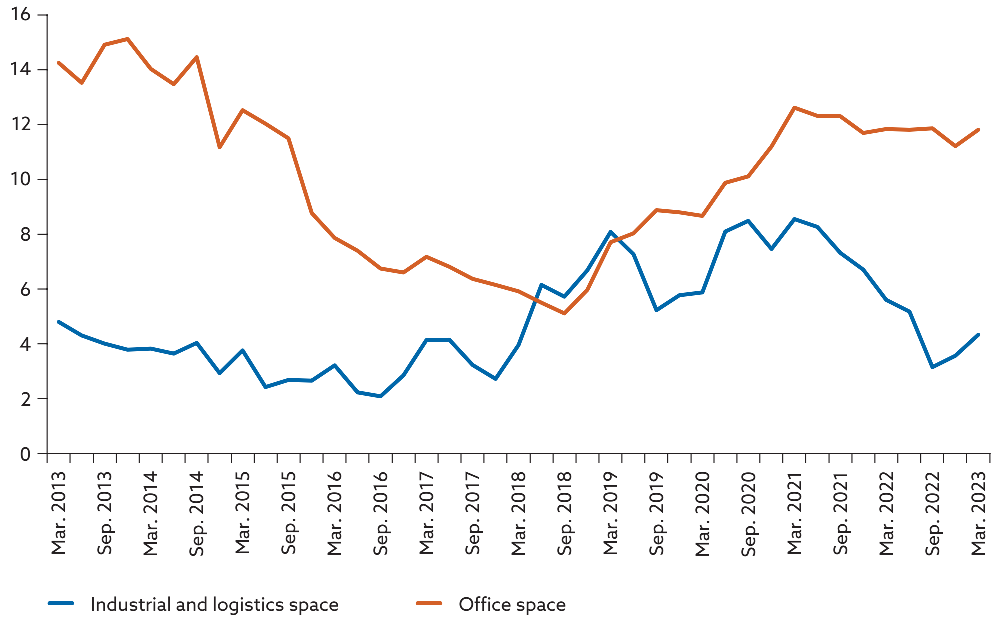
edness of CRE firms compared with firms in other sectors. When interest rates rise, the impact on the financial situation of CRE firms can be relatively rapid. The bulk (85%) of project finance loans have at least a partially variable interest rate.

Another source of risk is the increase in vacancy rates, which have remained elevated in the post-pandemic period. This trend is most pronounced in the office segment, which back in 2018 was reporting the lowest vacancy rate. Vacancy rate growth stems mainly from the number of new project completions and from structural changes (an increase in remote working and firms' tendency to downsize their leased space). In addition, supply and labour shortages have resulted in a number of project completions being postponed from 2022 until 2023, which will put further pressure on office vacancy rates. On the other hand, industrial vacancy rates declined in 2021 and 2022. This was due mainly to higher demand for warehouse space at a time of rising online sales, as well as to increasing inventory needs amid supply-chain disruptions.

Chart 12

Office vacancy rate remains elevated in post-pandemic period

Vacancy rates (percentages)



Sources: Cushman & Wakefield, and Bratislava Research Forum.

The deteriorating financial situation resulting from uptrends in interest rates and vacancy rates may also make it more difficult to refinance existing loans. Almost half of the loans in the CRE portfolio have a maturity of less than three years, and a large number of them will then need to be refinanced. In adverse financial conditions, however, the availability of loans may decrease and credit premia may increase.

Moreover, in the rising interest rate environment, firms are also under pressure from investors requiring higher returns. But in a climate of strong competition driven by elevated vacancy rates (especially in the office and retail segments), it is difficult to raise rents. If, however, returns cannot be increased, the value of commercial real estate will fall in the eyes of investors, and this is why commercial property prices in many foreign markets are now declining. In Slovakia, this risk is mitigated by the specific profile of investors, most of whom are local players.

In our adverse scenario, it is estimated that around one-fifth of the CRE loan portfolio will become at risk of default

We estimated the level of risk using a test of projects' financial situation. Taking a sample of property development firms financed by banks or real estate investment funds, we analysed how rising interest rates coupled with an economic downturn would affect the financial situation of their projects.[41] The main condition for the financial sustainability of commercial property is that the rental income[42] from the property is at least sufficient to cover the interest expenses of the loan used to finance the property. This scenario assumes not only that interest expenses increase, but also that rental income decreases.

In our scenario, rising interest rates and an economic downturn reduce the market value of commercial property. If the ability to generate rental income is reduced (because of lower occupancy, for example), the market value of the property decreases in the eyes of investors. The property value also decreases where rising interest rates cause investors to demand a higher return, but rental income does not increase.[43]

Our sensitivity test takes into account both of the above-mentioned effects of an adverse scenario – pressure on financial sustainability and a decline in the market value of collateral. We consider loans at risk of financial distress to be loans to borrowers whose rental income is insufficient to cover their interest expenses. If, at the same time, the market value of the property falls below the value of the debt, the incentive to repay the loan diminishes, and we therefore consider the loan to be at

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41 The analysis is based on financial situation data as at the end of 2021.

42 The calculation included rental income less the costs of operating and maintaining the property.

43 Simply put, if the CRE market is in equilibrium, the following relationship should hold between rental income, the required return and the market value of the property:

rental income = required return × market value of the property.

This means that the market value of the property can be estimated as follows:

market value of the property = rental income / required return.

risk of default. A more detailed overview of the testing method is shown in Figure 2.

Our analysis showed that around a quarter of bank loans to CRE firms could become at risk of financial distress under an adverse scenario. Assuming that rental income falls by 10% and interest rates rise by 300 bp, the share of loans at risk of financial distress is estimated to rise from 11% to 37%.[44]

Some of these loans could become at risk of default. These are loans where not only does the borrower's income not cover their interest expenses, but also the market value of the property falls below the value of the loan. The share of loans at risk of default is estimated to rise from 9% to 27%.[45]

It should be noted, however, that this analysis does not take account of any actions that may be taken by firms whose loans could become at risk. They could, for example, pledge additional collateral or sell-off some projects. The available data do not allow for the estimation of riskiness by type of commercial property. Given vacancy rate developments, it may be assumed that the risk is likely to be higher for office space and retail space (especially for properties in less attractive locations or properties of lower quality), while being generally lower for industrial parks.

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[44] This is a one-off shock, while the accumulation of losses can last for several years.

[45] A further 14% of the portfolio consists of loans to firms that were loss-making before the sensitivity analysis, so these loans can be considered at risk of default. Some of them are to young firms established in the last two years, several of which may under development and therefore still not generating income. But just because a loan is at risk of default does not mean it is non-performing. In December 2021, for example, the share of loans at risk of default was 9%, while the share of loans actually non-performing was only 0.5%. However, loans at risk of default may eventually default or may necessitate some action by the borrower or the bank to avoid default.

Figure 2
Method for estimating CRE loan riskiness[46]

Test of the financial situation of CRE projects
in an adverse economic scenario

Rental income falls by 10%

GDP contraction results in rental income falling by 10%, while costs drop by only 5%

Owing to strong competition, firms are unable to increase rental income even with inflation rising

Interest rates rise by 300 bp

Financing costs rise by 300 bp

Required returns rise from 5.5% to 7%

Impact on key indicators

Ability to cover interest expenses declines

- Rental income declines (↓ GDP)
- Interest expenses rise (↑ interest rates)

Ratio of rental income to interest expenses falls from 5.3 to 2.0 (median)

Loan-to-value (LTV) ratio deteriorates

Value of real estate collateral falls
- rental income declines (↓ GDP)
- required returns increase (↑ interest rates)

LTV ratio increases from 38% to 59% (median)

Loans at risk of distress

Rental income does not cover interest expenses

Loans at risk of default

Rental income does not cover interest expenses and at the same time

the market value of real estate collateral falls below the loan amount (LTV > 100%)

Source: NBS.

The conclusions show the CRE sector's high sensitivity to both factors, with rising interest rates having a more pronounced impact, especially if they remain elevated for a prolonged period. This is confirmed by recent developments, as the share of loans at risk of default increased over the course of 2022, from 9% to 15%.

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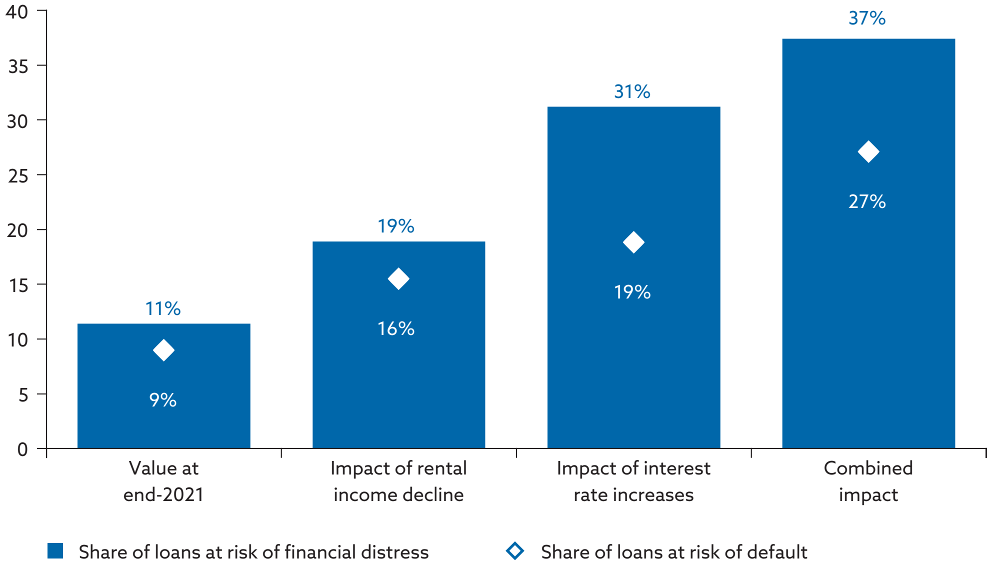
46 The testing method is based on an approach used by the Swedish supervisory authority (Finansinspektionen) and described in detail in: Aranki T., Lönnbark C. and Thell, V., 'Stress test of the banks' lending to commercial real estate firms', *FI Analysis*, No 24, Finansinspektionen, 11 November 2020.

Chart 13

CRE loans show high sensitivity to interest rate increases

Loans at risk of financial distress and loans at risk of default by their shares in total CRE loans (percentages)

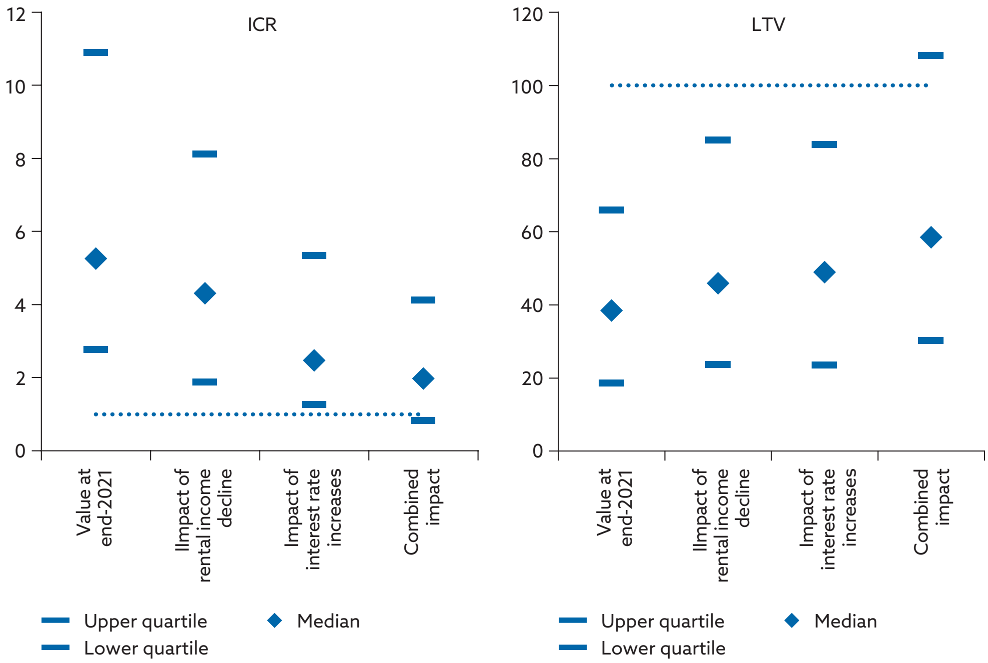


Source: NBS.
Note: The calculation excludes loss-making projects and projects for which information on their financial situation could not be found (3.6% of all projects).

Chart 14

Risk mitigated by favourable level of financial ratios at end-2021

Left-hand panel: Distribution of the interest coverage ratio (value)
Right-hand panel: Distribution of the LTV ratio (percentages)



Source: NBS.
Notes: The interest coverage ratio (ICR) indicates a project's financial situation and is calculated as the ratio of rental income to interest expenses. The loan-to-value (LTV) ratio is calculated as the ratio of the outstanding amount of the loan to the market vaue of the property collateral for the loan. The median and quartiles are calculated on the basis of the number of loans. The chart shows values for firms that were not loss-making prior to the simulation.

The data also confirm that the risk is mitigated by the relatively favourable level of many firms' financial ratios at the end of 2021. The median ratio of rental income to interest expenses was above five, considerably reducing the risk of rental income falling below interest expenses.

Firms established relatively recently are exposed to a greater degree of risk. On the other hand, older projects where the commercial property does not meet the latest standards may be exposed to a more pronounced decline in price in an adverse scenario. This risk is, however, mitigated by the fact that firms established before 2014 have more favourable financial ratios.

3 Housing market and housing affordability

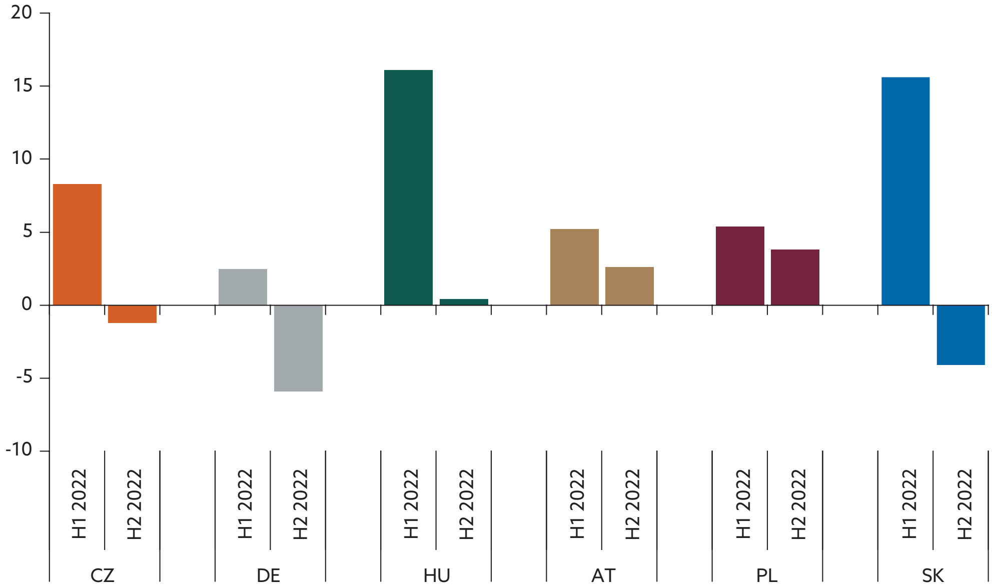
3.1 Significant changes in the housing market

2022 was a turbulent year in the housing market. After reaching record highs in the first half of the year, housing prices started turning downwards from the summer. In 2021 and the first half of 2022 annual growth in the average residential property price was around 25%, but from the summer of 2022 to March 2023, it declined by more than 7%. The average asking price for a flat dropped by more than €14,000 during this period. The turnaround in housing prices is gradually appearing in all regions of Slovakia and in all segments of the residential property market. Slovakia is not, however, alone in experiencing housing market changes; most EU countries have seen housing prices slow or even decline slightly after rising sharply in recent years.

Chart 15

Housing prices in EU countries

Evolution of housing prices over the periods Q4 2021 – Q2 2022 and Q2 2022 – Q4 2022 (percentages)



Sources: Eurostat, NBS, and United Classifieds.
Note: CZ – Czech Republic; DE – Germany; HU – Hungary; AT – Austria; PL – Poland; SK – Slovakia.

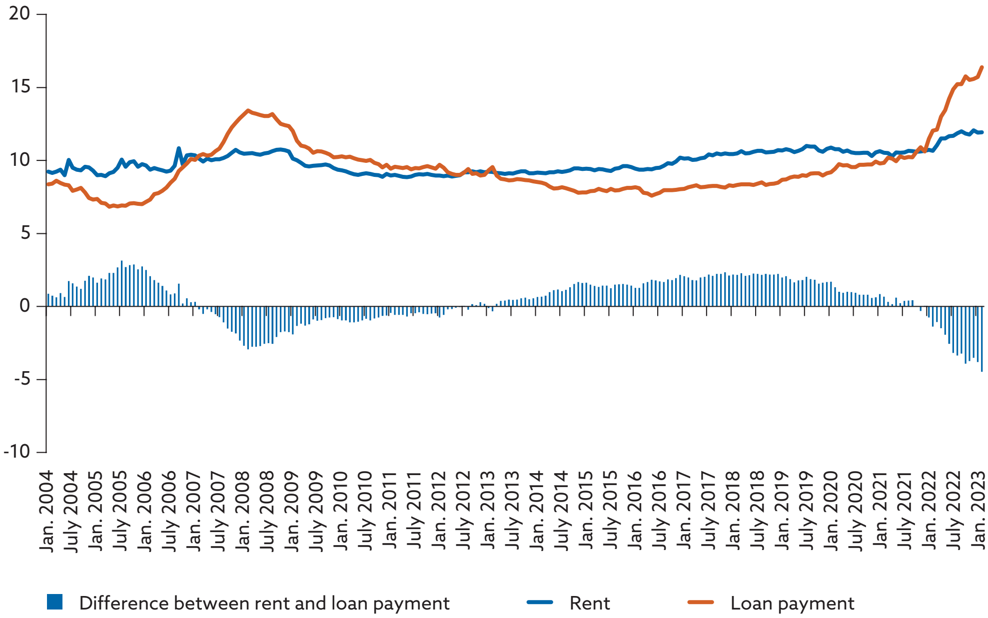
The shift in housing prices stemmed largely from interest rate increases

As a result of high prices and rising interest rates, the housing market situation began to change rapidly in the second half of 2022. Interest rate hikes quelled household demand and, given the overall economic uncertainty, more and more prospective buyers started to reconsider their decision to purchase residential property Another reason why potential buyers have postponed their decision to buy housing is the growing gap between the cost of servicing a mortgage and the cost of renting.

Chart 16

Housing loan payments grew much faster than the rental price

Costs of mortgage payments and rental payments for a flat in Bratislava (EUR/m²)



Sources: NBS, and United Classifieds.
Note: The mortgage payment and rental payment amounts are calculated as the unit price per square metre of a flat in Bratislava.

Housing prices continued declining in the first quarter of 2023. Moreover, the number of transactions related to purchasing a flat has also declined, and the length of time flats are on the market is increasing as the number of prospective buyers decreases.[47] After a long period of time, buyers who are under less pressure and therefore have more room to influence the final sale price are gaining a better position on the market.

Significant changes in the market in flats have also been taking place in the Slovak capital Bratislava. In the summer of 2022 the prices of flats in Bratislava, in particular older flats, were already starting to fall, and since then they have dropped by more than 10%. The negative market sentiment has also weighed on Bratislava's new-build flat market. A sharp drop in new-build sales was evident from the summer of 2022 and continued during the first three months of 2023, accompanied by stagnation in prices of new-build properties.

[47] In the spring of 2022, between 78% and 86% of the flats listed for sale were sold each month, while in the first quarter of 2023 the corresponding figures were only 64% and 70 %.

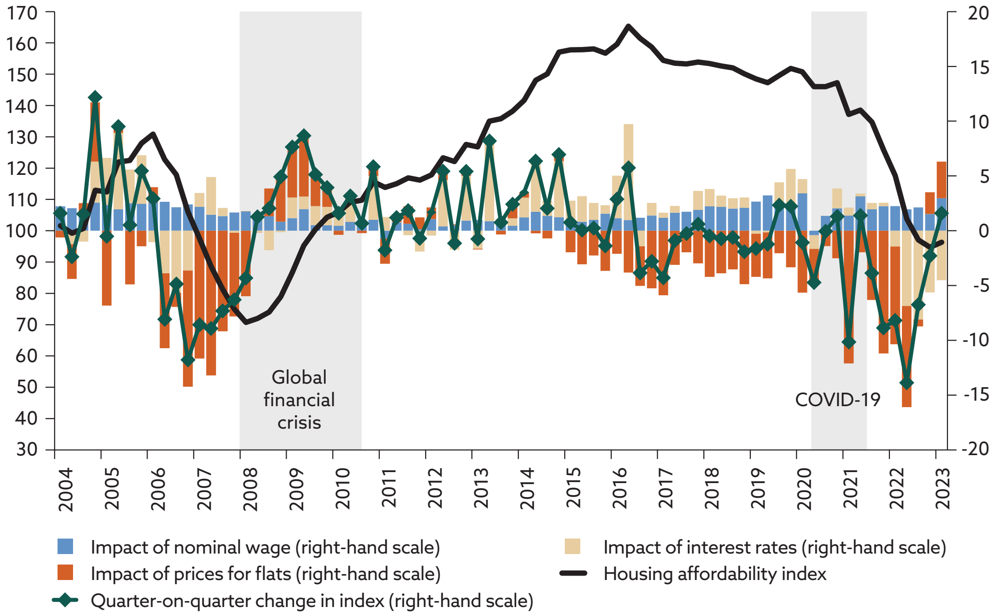
3.2 Housing affordability[48] has worsened despite falling housing prices

Housing affordability has fallen to levels last seen fifteen years ago. In 2022 housing prices reached record levels and at the same time, owing partly to rising interest rates, housing affordability deteriorated sharply, especially for lower- and middle-income groups. Although mortgage servicing costs have risen steeply, they are still below 2006–2008 levels relative to incomes. At present, however, not even an appreciable decline in housing prices is sufficient to compensate for increasing mortgage interest expenses, so housing affordability continues to deteriorate.

Chart 17

Housing affordability and factors affecting it

Evolution of the housing affordability index and quarter-on-quarter changes in the index (index value; index change)



Sources: NBS, SO SR, and United Classifieds.
Notes: Housing affordability is here defined as the inverse of the share of the median net wage that is required to repay a notional loan for the purchase of a flat. Disposable income is expressed as the average net income in Slovakia after deduction of the minimum subsistence amount.

The rise in interest rates has also affected the fundamental price of housing

The estimation of the fundamental price[49] is affected mainly by the size of potential demand for flats for sale. Demand for flats has recently been

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[48] Housing affordability is here defined as the inverse of the share of the median net wage that is required to repay a notional loan for the purchase of a flat.

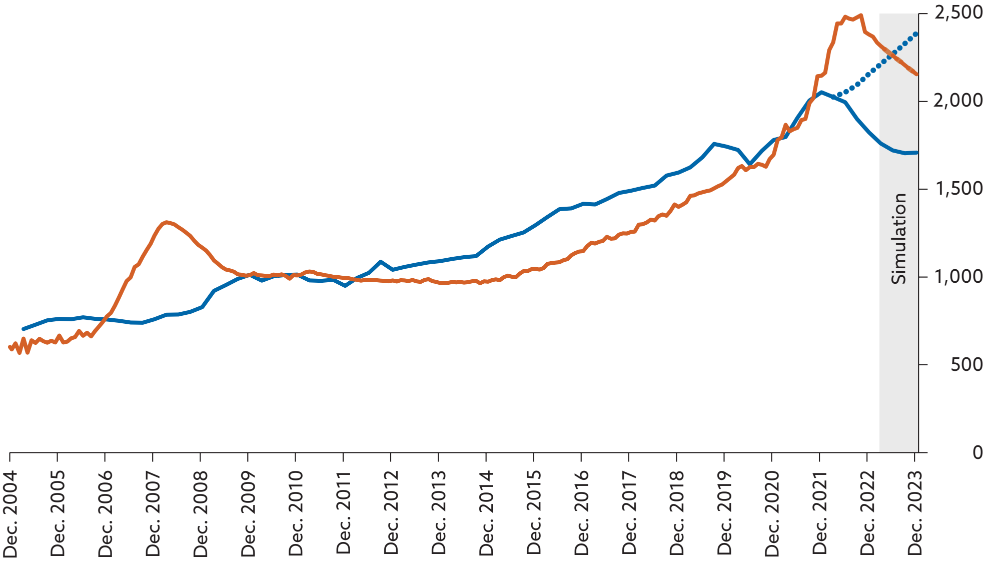
[49] The fundamental price is estimated from the long-run linear relationship between prices of flats and potential demand. Potential demand is calculated as the product of the number

buoyed by favourable labour market developments and solid nominal wage growth; nevertheless, the estimation of the fundamental price has been in decline since the spring of 2022, owing mainly to rising interest rates. Not only have higher rates made new mortgages more expensive, they have also increased households' existing debt servicing costs. Households' potential demand for flats for sale has therefore been significantly subdued by rising interest expenses. As a result, the estimation of the fundamental price has fallen to pre-pandemic levels. Although asking prices for flats have also declined significantly since the summer of 2022, they remain higher than the model estimation of prices for flats based on selected fundamentals.

Chart 18

The estimation of the fundamental price has declined owing mainly to the impact of rising interest rates

Average price per m^2 (EUR)



Estimation of the fundamental price
Estimation of the fundamental price with interest rates remaining at their February 2022 level
Price of flats for sale

Sources: NBS, United Classifieds, CMN, and SO SR.
Notes: The fundamental price is estimated from the long-run linear relationship between prices of flats and potential demand. Potential demand is calculated as the product of the number of workers and the average wage in the given age cohort, less living costs and current debt servicing expenditure.

of workers and the average wage in the given age cohort, less living costs and current debt servicing expenditure.

4 Financial situation of households and firms

4.1 Firms' financial situation affected mainly by rising costs

Sharply rising costs in the corporate sector[50]

The rapid increase in prices of a number of inputs in 2022 had a significant upward impact on many firms' overall costs. These climbed despite firms' cost-saving efforts and some support from the government. In 2022 costs increased for almost two-thirds of all firms and more than doubled for one in ten of them.

The average figures indicate that firms were relatively successful in their efforts to offset rising costs by growing revenues. Annual growth in corporate revenues was only marginally lower than the increase in costs (10.8% versus 11.4%, at median values).

A closer look reveals, however, considerable cross-firm heterogeneity in this regard. Around half of firms experienced revenue change at least as high as the change in their costs (in both relative and absolute terms). For the rest, the change in revenues was lower. The situation was more difficult for firms that could not avoid substantial cost increases.

Most of the firms whose costs surged were unable to increase their revenues to the same extent. Among the firms whose costs rose in 2022, 56% reported a lower annual increase in revenues than in costs. Hence these firms' profit margins fared less well than those of firms whose costs did not increase. Nevertheless, most of these firms remained in profit (experiencing only a decline in their profit margin).

The ability to pass on rising input prices to output prices depended on a number of factors (competitive position in the market, the period and price of input purchases, type of contracts). It was confirmed, however, that elevated inflation widened the differences between firms. While many did well, others saw a marked deterioration in their financial situation.

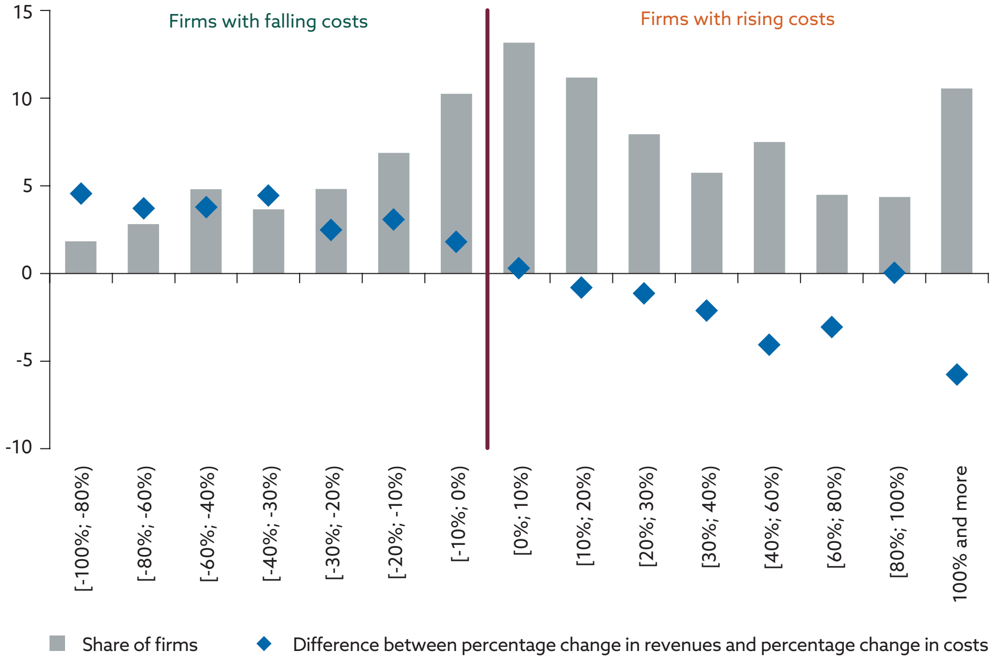
[50] The group of firms analysed comprised firms that had filed their accounts by the March 2023 deadline. The group included 123 thousand firms, almost half of all the active firms in Slovakia.

The higher the rise in their costs, the lower firms' ability to pass on higher costs to customers. Around half of the firms whose costs rose by a smaller margin (up to 10% year-on-year) managed to offset them by increasing revenues, while most of the firms that experienced a higher increase in costs saw a quite significantly lower rise in revenues than in costs. Profit margins therefore contracted more sharply for firms with higher cost increases.

Chart 19

Most firms that reported cost increases in 2022 did not manage to fully pass them on to customers

Distribution of the share of firms, and of the difference between the annual percentage change in revenues and the annual percentage change in costs, by change in costs in 2022 (percentages)



Sources: NBS, SO SR, and FinStat.

Rising costs have, however, weighed on firms' overall financial situation, not just on their profitability. Most of the firms with sharply rising costs have experienced not only a profit margin decline, but also deteriorating liquidity, rising indebtedness, and a general increase in their risk exposure and financial vulnerability. The greater the increase in costs, the more pronounced the deterioration. By contrast, most of the firms with falling costs have seen an improvement in these indicators.

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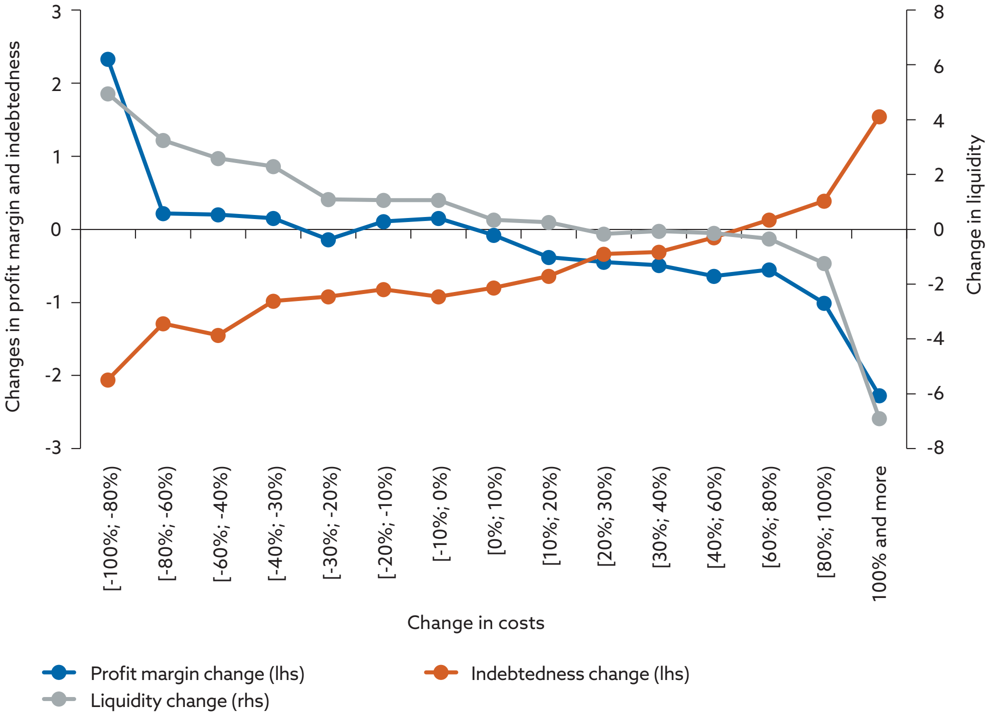
Chart 20

The financial situation of firms facing cost increases has worsened

Median change in the value of the relevant indicator by relative change in costs (percentages; percentages)



Sources: NBS, SO SR, and FinStat.
Notes: Profit margin is defined as the ratio of net profit to total revenues. Indebtedness is the ratio of external financing to assets. Liquidity is expressed as financial account holdings to short-term liabilities.

A further rise in costs may increase the share of loans at risk of default, especially if combined with a deteriorating macroeconomic situation

Our estimation of firms or loans at risk was carried out under two scenarios.[51] In the baseline scenario, we assume that the uptrend in costs (especially energy costs) continues, albeit slightly more slowly compared with 2022. This scenario also assumes sustained real GDP growth and therefore that most firms are able to pass on the bulk of their rising costs to customers. The adverse scenario, by contrast, assumes a decline in real GDP, making it more difficult for many firms to offset rising costs and causing many to cut production in response to falling demand.[52] Both scenarios

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[51] The analysis is based on firm-level financial statement data as at the end of 2022. The simulation has a horizon of three years and its methodology is described in detail in NBS's May 2022 Financial Stability Report.

[52] Where revenues decline, we also reduce variable costs by an amount equivalent to 70% of the decline in revenues.

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also assume a rise in interest rates. The scenarios are described in more detail in Box 2.

Table 2 Assumptions for the simulation of firms at risk (percentages)

	Baseline scenario				Adverse scenario			
	2023	2024	2025	Total	2023	2024	2025	Total
Revenue growth	20.2	13.0	10.1	49.5	-6.4	2.2	3.3	-1.2
Unit costs	5.9	5.2	3.7	15.0	4.9	2.6	4.7	13.0
...energy	9.1	32.6	20.2	73.7	7.9	28.3	17.6	62.8
... inputs and goods	5.0	3.2	1.9	10.5	4.3	2.8	1.7	9.0
...services	5.5	4.2	2.4	12.6	4.8	3.7	2.1	10.9
...employees	9.8	9.1	9.6	31.3	7.2	8.0	4.4	20.9

Source: NBS.
Notes: The change in costs denotes the change in unit costs in each category. Energy costs include, in addition to electricity costs, also gas, fuel and other energy costs. The assumed evolution of revenues and wages is based on NBS's spring 2023 medium-term forecast (MTF-2023Q1). The evolution of prices of services, inputs and goods follows an expert estimate based on developments in wholesale prices and in prices of individual categories of imported goods.

In the baseline scenario, approximately 12% of NFC loans[53] are estimated to become at risk,[54] while in the adverse scenario, that share approximately doubles. Depending on the scenario, newly defaulted loans are estimated to make up between 3.7% and 7% of the corporate loan portfolio. The results also confirm the key role of rising costs and reduction in demand, while the impact of rising interest rates is relatively small. The relatively large share of loans at risk (especially in the adverse scenario) points to a relatively high degree of uncertainty about the future evolution of firms' financial situation. How their situations develop will depend to a large extent on the ability of individual firms to respond to continued cost increases, especially if economic growth weakens. As the above analysis indicates, some firms may have already seen a weakening of their financial situation by the end of 2022.

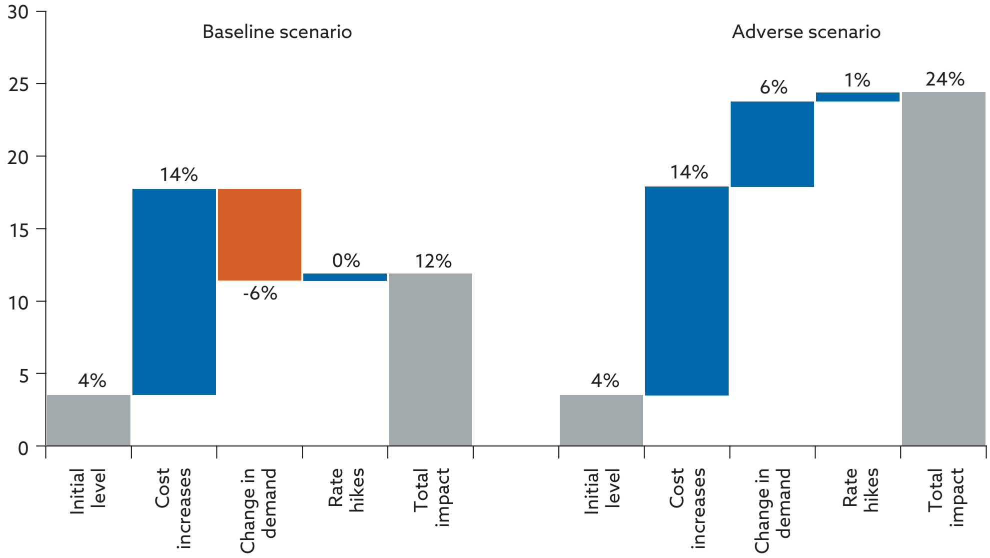
[53] These estimations do not include data for the commercial real estate sector. A separate test was applied to this sector to better take account of its specificities, in particular its higher sensitivity to current developments – notably rising interest rates and, in the adverse scenario, a possible decline in rental income. Estimations for this sector are described in more detail in Section 2.3.

[54] We consider loans at risk to be loans to firms that are at risk of severe financial distress (i.e. negative equity) at the end of the three-year simulation.

Chart 21

Loans estimated to be at risk are twice as high in the adverse scenario as in the baseline scenario

Share of loans at risk in the total corporate loan portfolio and factors affecting this share (percentages)

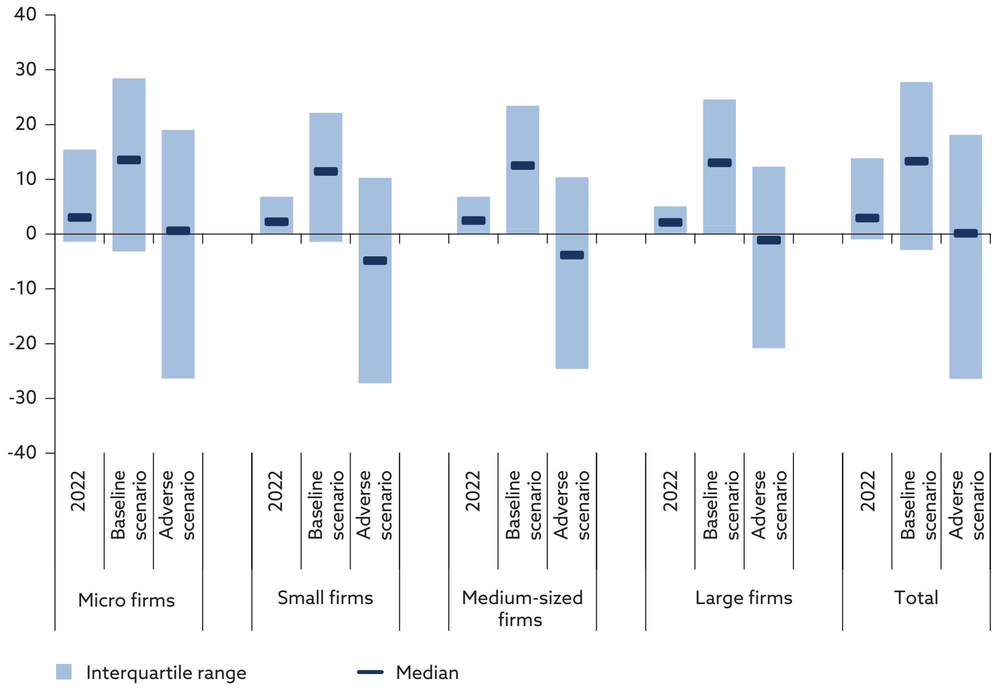


Sources: NBS, SO SR, and FinStat.
Notes: The chart shows the share of loans at risk at the end of the three-year horizon. The chart does not include data for the CRE sector, which is analysed separately.

Chart 22

Profit margin heterogeneity may increase sharply, and many firms may significantly improve their profit margin

Firms' profit margins in the baseline and adverse scenario by firm size category (percentages)



Sources: NBS, SO SR, and FinStat.
Notes: Profit margin is defined as the ratio of profit to revenues. For the baseline and adverse scenarios, the chart shows the average profit margin between 2023 and 2025.

The simulation also shows heterogeneity across profit margins. In the baseline scenario, firms largely improve their performance, and the median profit margin increases significantly. At the same time, however, around a quarter of firms are at risk of a deterioration in their financial situation. In the adverse scenario, significantly more firms come under pressure of financial distress. But even while that is the case, some firms see their financial situation improve strongly in this scenario.

4.2 Inflation and rising interest rates will be the main factors influencing the financial situation of households

Inflation will have the main impact on households' financial situation

Rising inflation had a detrimental effect on many households' financial situation in 2022, as several indicators show. With inflation outpacing wage growth, households' real purchasing power decreased. The average real wage recorded its largest decline since at least 1998. The saving rate fell significantly. According to survey results, the share of households whose income covered their expenditure was falling.

Moreover, an increasing share of people saw a real decline in wages in 2022. For some households, the financial situation improved, while for others it deteriorated. But although it is always the case that some people's income declines even when the average wage rises, rising inflation increased the share of workers experiencing a real decline in income, from 42% in 2021 to 70% in 2022.

Higher income groups were more exposed to wage decline. It has long been the case that lower-earning employees experience faster income growth than do higher-earning employees. Therefore, among the people whose real income declined in 2022, a larger share were higher earners. Higher earners make up the majority of mortgage borrowers.

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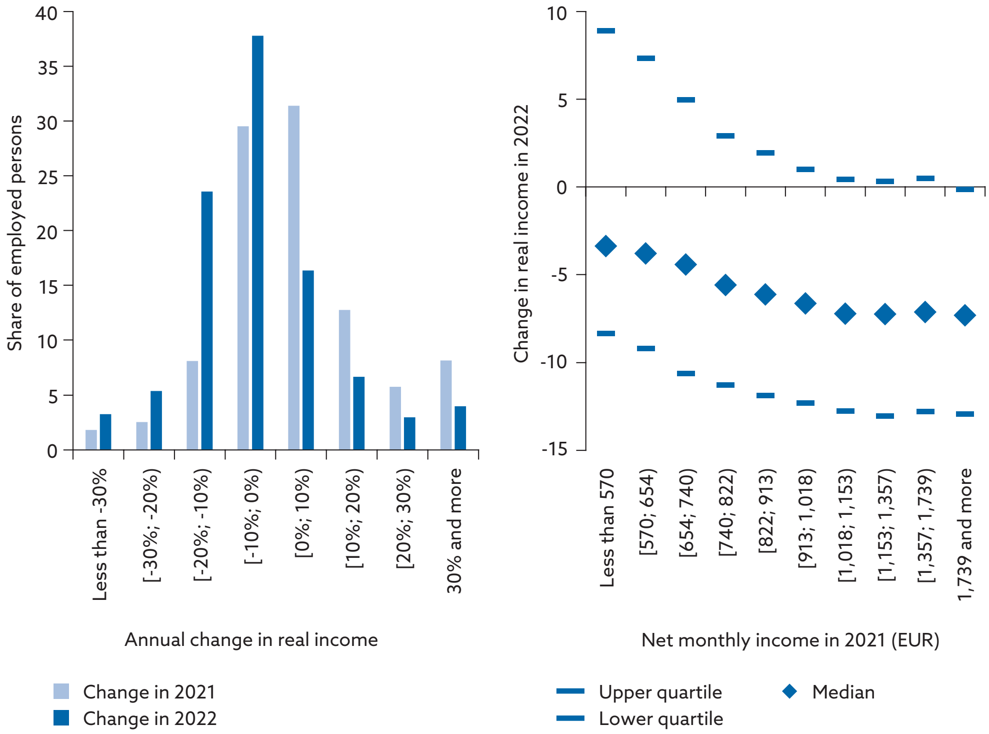
Chart 23

Elevated inflation has reduced many people's real income

Left-hand panel: Distribution of the share of employed persons by year-on-year change in real net income (percentages)
Right-hand panel: Distribution of change in real income by income group (percentages)



Source: NBS.
Notes: The panels show data only for employed persons (including those with no debt) aged 25 to 60 who are earning at least the minimum wage. The change in a person's real net income was calculated as the year-on-year change in their average monthly net income less the average inflation rate in the year in question.

A number of households will also be adversely affected by rising interest rates, the overall impact of which will, however, be lower compared with the impact of inflation

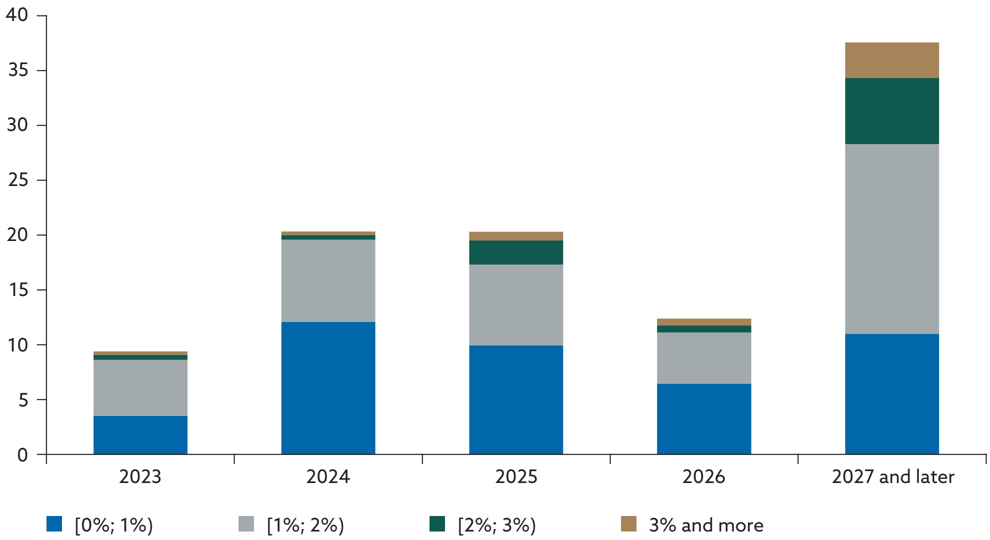
The financial situation will also be adversely affected by the upward impact of interest-rate resets on loan payments. This applies mainly in 2024 and 2025, since in each of these years some 20% of the total amount of the mortgage portfolio will be subject to a rate reset. Moreover, more than half the mortgages that undergo a rate reset in 2024 currently have an interest rate of less than 1%. A rate increase from 1% to 4.5% is estimated to increase the mortgage payment by almost half. Such hikes can be particularly difficult for people whose mortgage payments were already a large share of income during the period of low interest rates.

Compared with inflation, however, rising interest rates are having less of an impact on households. While the fall in real wages in 2022 was relatively broad-based, interest rate increases will affect only some indebted households and will occur at a later date.

Chart 24

A large share of low-rate mortgages will have their rates reset in 2024 and 2025

Distribution of the outstanding amount of mortgage loans by year of next interest rate reset (horizontal axis) and current interest rate (coloured bands) (percentages)



Source: NBS.

The negative evolution of households' financial situation is being mitigated by several factors

The most important of these factors are income growth and labour market stability. The average real wage is expected to rebound from 2023, making it easier for households to cover their higher expenditure as well as loan payment increases resulting from interest rate resets. And because income growth was outpacing price level growth between 2016 and 2021, households have some buffer against the current decline in real wages. These developments are described in more detail in Box 3.

Moreover, when applying for their mortgages, all current mortgage borrowers were stress tested for their ability to repay the loan if interest rates rose by 200 bp. Although the current rise in interest rates is higher than that, this test ensures that households have at least some capacity to cope with rate hikes. A further buffer is the 60% regulatory limit on the debt service-to-income ratio of mortgage applicants.

Most borrowers have only experienced a slight deterioration in their overall financial situation

Although 2022 brought new shocks to households, it is also important to observe the financial situation of borrowers since the origination of their loans. Looking at the evolution of borrowers' expenditure and income, we see that expenditure has risen faster than income for 53% of indebted households. Most of them took out their mortgages in the three to four years before the uptrend in inflation.

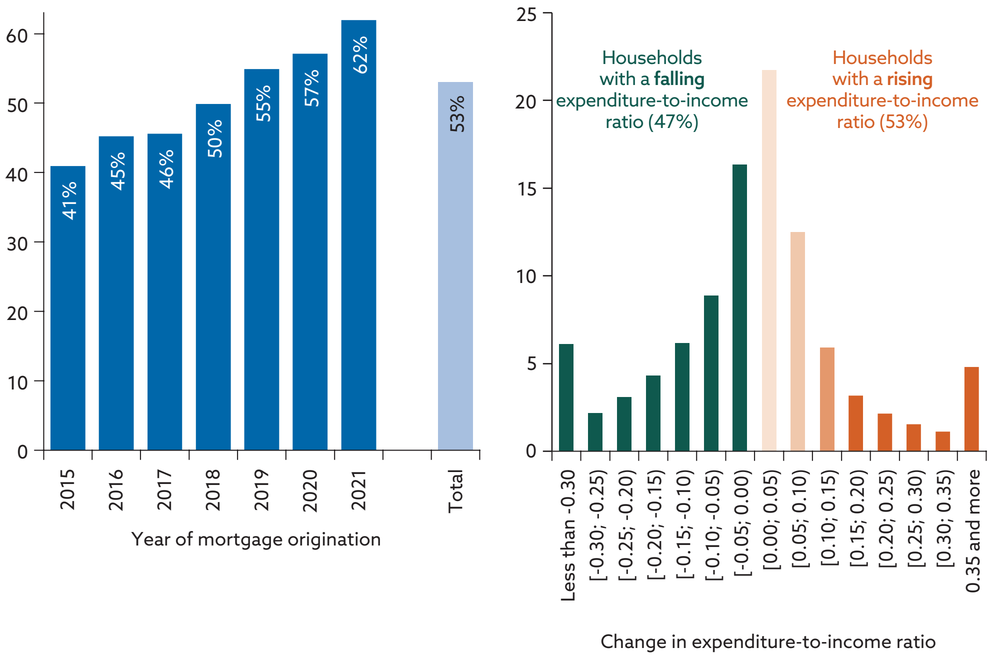
On the other hand, the expenditure-to-income ratio of most of these households has risen only slightly. For households whose expenditure increased more than income in 2022, the median value of the expenditure-to-income ratio rose by 0.07 pp, but for one-tenth of indebted households, the ratio increased more significantly (by more than 0.20 pp).

Chart 25

Median value of the expenditure-to-income ratio has deteriorated slightly for borrowers with recently originated mortgages

Left-hand panel: Share of mortgagor households whose expenditure-to-income ratio increased between the origination date of their mortgage and the end of 2022, by year of origination (percentages)

Right-hand panel: Distribution of the change in the expenditure-to-income ratio between mortgage origination and the end of 2022 (percentages)



Source: NBS.
Note: Expenditure includes expenditure on necessities and expenditure on loan payments.

While some households may face loan repayment difficulties, they account for only a small part of the household loan portfolio

The financial situation of households will show considerable heterogeneity in the near future. Using granular data, the impact of current developments on individual households' financial situation can be estimated and therefore so can the share of households at risk of financial distress.[55] The scenarios are based on NBS's spring 2023 medium-term forecast (MTF-2023Q1) and are described in more detail in Box 2. They include ongoing elevated inflation, rising interest rates and, in the adverse scenario, a rise in unemployment and a more pronounced correction in housing prices.[56]

Table 3 Assumptions for the simulation of loans at risk

	December 2022 (year-on-year growth or level)	**Baseline scenario** (cumulative growth over 2023–25, or level as at Dec. 2025)	**Adverse scenario** (cumulative growth over 2023–25, or level as at Dec. 2025)
Inflation	12.1%	23.7%	20.6%
Housing prices (change)		-10%	-30%
Average nominal wage (change)	7.1%	25.5%	20.8%
Average real wage (change)	-5.0%	2.5%	-0.6%
Unemployment rate (level)	6.1%	5.0%	10.0%
Mortgage rate (level)	3.7%	5.7%	5.7%

Source: NBS.
Notes: The baseline scenario assumptions are based on NBS's spring 2023 medium-term forecast (MTF-2023Q1). Inflation is measured by the Harmonised Index of Consumer Prices. For inflation and wages, a linear change is assumed over the stress test horizon (2023–2025); for unemployment and interest rates, growth is slightly faster. Housing prices are assumed to decline during 2023 and then remain stable during 2024 and 2025. The average real wage is calculated as the average nominal wage deflated by the household consumption deflator.

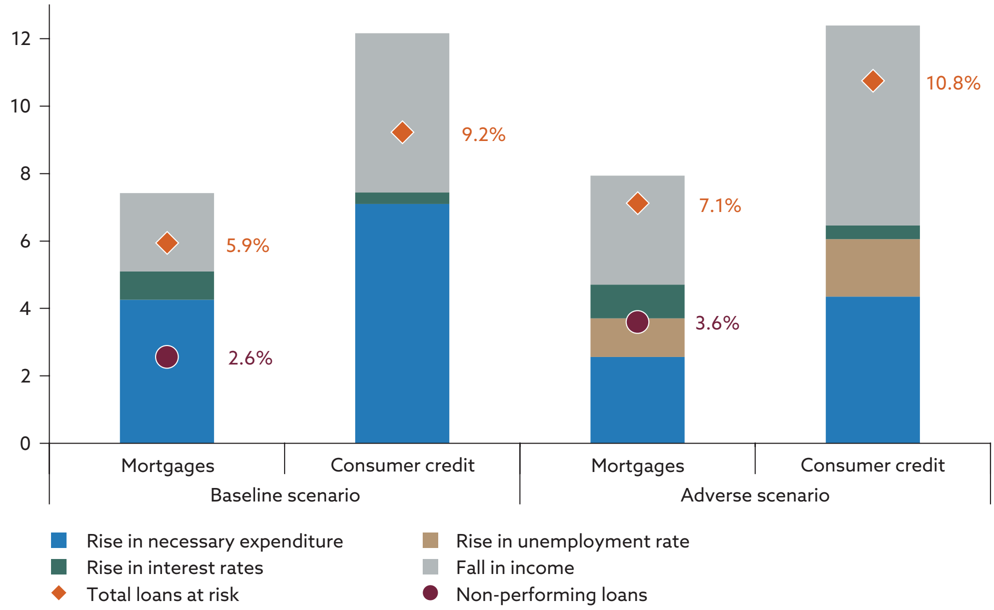
In the baseline scenario, it is estimated that around 5.9% of mortgages and 9.2% of consumer credit will become at risk of financial distress over the three-year horizon. In the adverse scenario, the corresponding shares are 7.1% for mortgages and 10.8% for consumer credit. The analysis also confirms that expenditure increases related to rising inflation have a greater upward impact on loans at risk than do interest rate hikes. In the adverse scenario, the impact of inflation is less pronounced, while the impact of rising unemployment is more pronounced. In both scenarios, one source of risk is the fact that some borrowers are exposed to a decline in their income even in an environment of rising average wages.

[55] Households at risk of financial distress are here defined as households whose loan payments and necessary living expenses exceed their income and recourse to savings.
[56] The simulation methodology is described in detail in NBS's May 2022 Financial Stability Report. The analysis includes only indebted households.

Chart 26

Impacts of different shocks on loans at risk

Share of household loans that will become at risk, by type of shock (percentages)



Source: NBS.

Notes: The increase in at-risk loans in the period 2023–2025 is simulated using the scenarios described in Table 3. Households at risk are here defined as households whose loan payment expenditure and necessary living expenses exceed their income and accumulated savings. For consumer loans, the NPL ratio is assumed to be the same as the share of loans at risk.

Box 3

Households' resilience seems relatively strong from a long-term view of their financial situation

Compared with the previous decade, 2022 brought new trends that had a significant impact on the financial position of (not only) Slovak households. Notable among them were the upsurges in consumer prices and lending rates, which impaired households' financial situation. Household income continued to rise, but not as quickly as inflation. Today's financial situation of households reflects, however, not only what happened in 2022, but also developments in previous years. It is therefore important to analyse the recent period, when price growth outpaced income growth, in the broader context of the past decade.

Data for the model household[57] over the past ten years indicate that income growth was higher than expenditure growth for almost all of last year. From that perspective, the decline in real income in 2022 was not remarkable in the context of past years. Households therefore, on average, have some leeway to increase their spending without significantly jeopardising their financial position. In other words, if average real household income rose by a cumula-

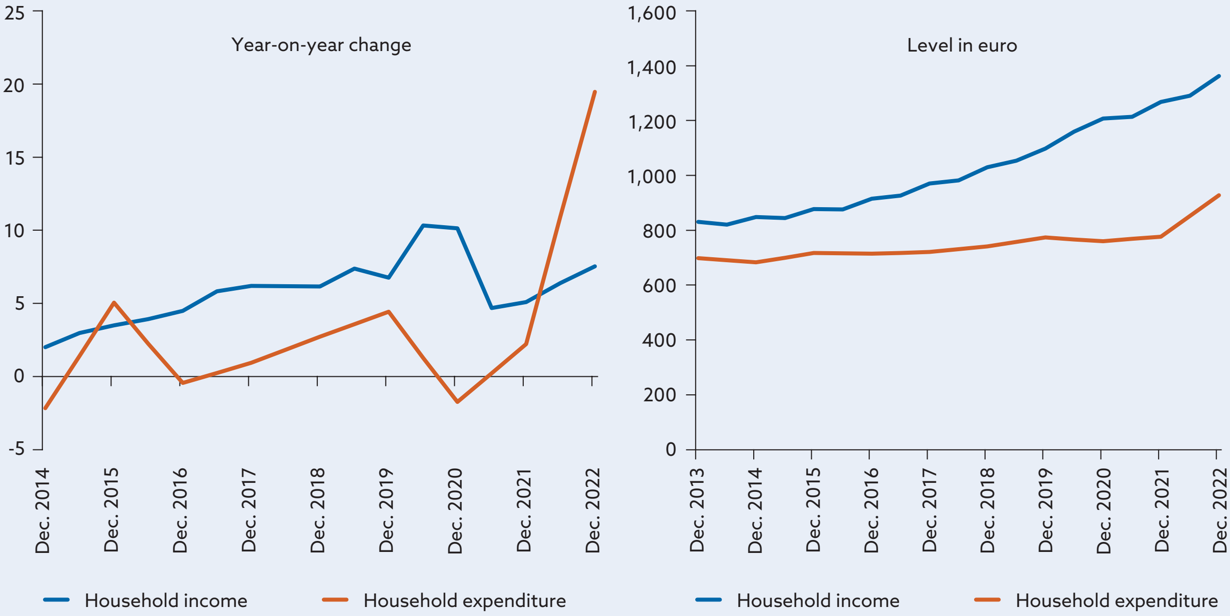
[57] The selected model household comprised two adults and two children, with one median income and with one parental allowance.

tive 33.6% between 2012 and 2021, its 4.4% decline in 2022 does not pose an imminent threat to households' financial situation.

Chart 27

Income and expenditure of the model household

Left-hand panel: (percentages)
Right-hand panel: (EUR)



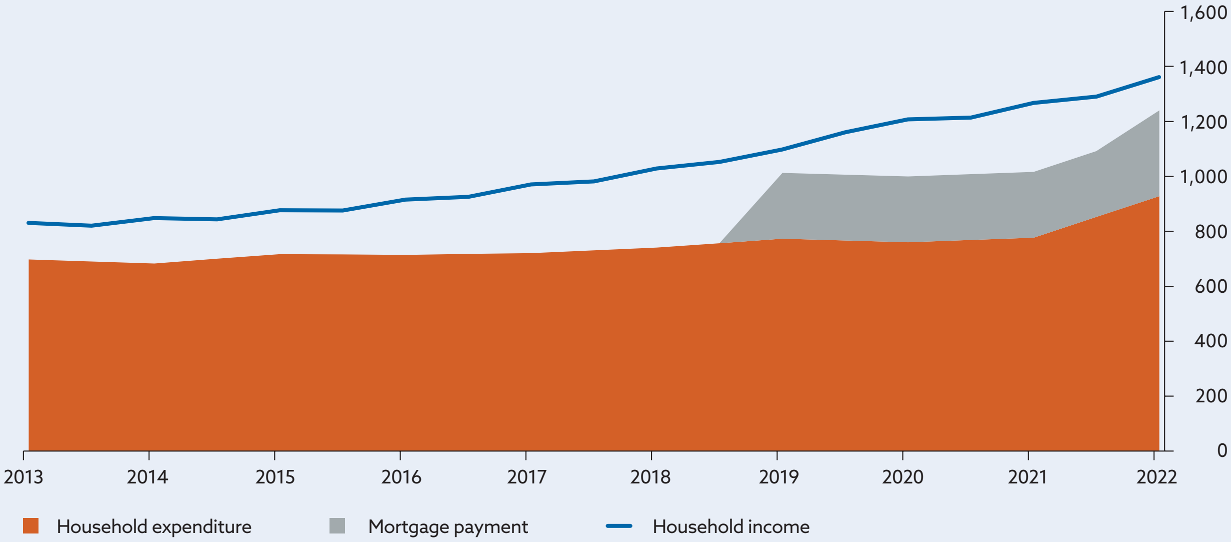
Sources: SO SR, Social Insurance Agency, and NBS.
Notes: The household has two adults and two children, with one median income and one parental allowance. Expenditure does not include loan payments.

Indebted households may face a more difficult financial situation. They are exposed not only to rising expenses but also to rising interest rates and consequently higher loan payments. If the model household took out the maximum loan[58] at the end of 2019 – when interest rates were low – with an initial rate fixation of three years, it would have been exposed to a significant increase in its monthly loan payment at the end of 2022. The household's monthly budget would have deteriorated appreciably, to resemble its financial situation in 2019, when it took out the largest possible loan. Nevertheless, the households overall expenses, including increased loan payments, would be less than its net monthly income.

[58] The maximum loan takes into account the regulatory limits on the DSTI ratio, including a stress test for an interest rate hike of 200 bp.

Chart 28

Income and expenditure development of a model household with maximum possible credit
(EUR)



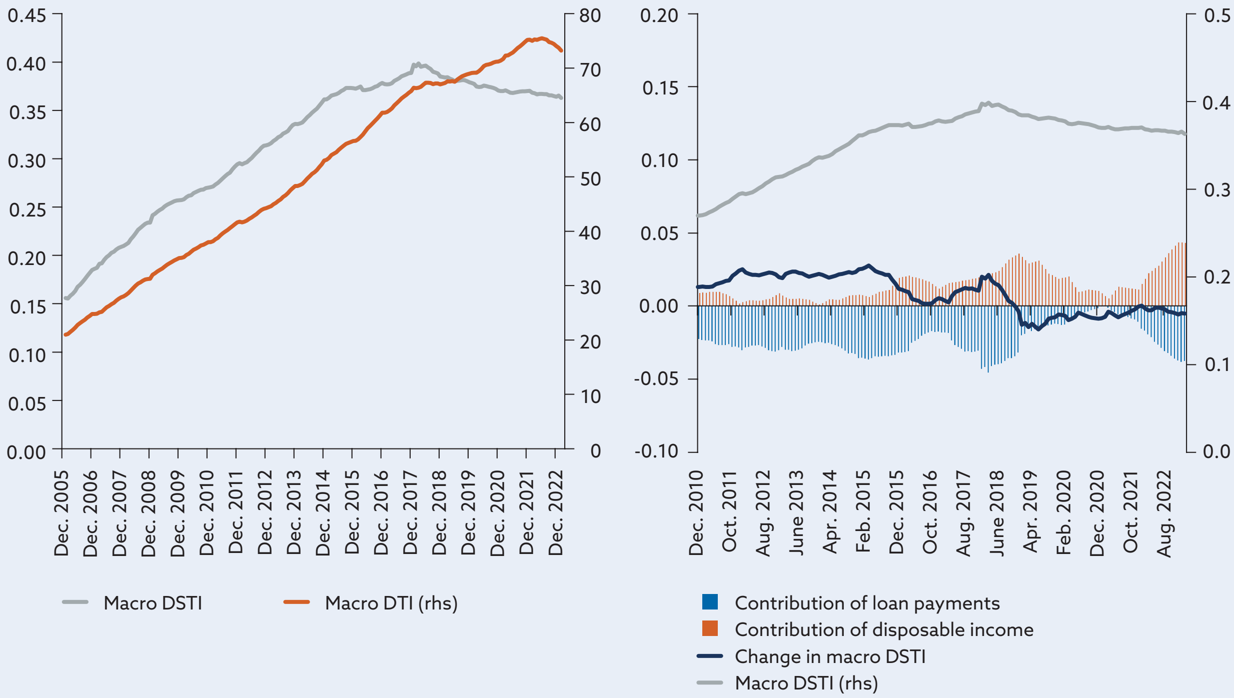
Sources: SO SR, Social Insurance Agency, and NBS.

The total indebtedness of Slovak households declined for the first time in history in 2022, while their aggregate ratio of debt servicing to gross disposable income remained stable. From the perspective of their overall indebtedness, it is positive to note that households' gross disposable income growth in 2022, resulting from average growth in wages and employment, was higher than the increase in total household debt. Therefore, Slovakia's ratio of total household debt to total household disposable income fell in 2022 for the first time ever. It is a different story for the ratio of total household debt servicing to total household income, which has been slowly declining since 2018. Until 2021 this trend was caused largely by falling interest rates, which curbed the increase in loan payments even while credit growth was rising. In 2022, however, the situation changed, as rising interest rates started to push up loan payments, whose growth, nevertheless, was still less than the sharp rise in households' gross disposable income.

Chart 29

Ratio of debt and loan payments to total household disposable income

Left-hand panel: (percentages; percentages)
Right-hand panel: (percentages; percentages)



Sources: SO SR, and NBS.
Notes: Macro DSTI is the ratio of households' total loan payments to households' gross disposable income. Macro DTI is the ratio of households' total outstanding loan amounts to households' gross disposable income.

NÁRODNÁ BANKA SLOVENSKA EUROSYSTÉM

5 Impact of rising interest rates on financial stability

5.3 Rising interest rates will have a relatively significant impact on the financial sector

The relatively rapid increase in interest rates after a long period at very low levels represents a significant change for the financial sector. From a financial stability perspective, some of its effects are favourable while others are detrimental. To some extent, it can be said that the rise in interest rates from their previous extremely low levels is bringing some return to normality to the financial sector. On the other hand, rate movements are quite pronounced and are revealing a number of weaknesses in the financial sector.

This section aims to provide a brief overview of the different impacts described in more detail elsewhere in this report.

Impact on household indebtedness and the housing market

The most significant positive impact has been a marked reduction in the build-up of cyclical risks. The downturn in housing prices has ended the previously excessive upward pressure on housing valuations. At the same time, housing affordability is not declining nearly as much as it was during 2021 and the first half of 2022, when housing prices were soaring. Prospective buyers now have more room to rationally consider whether to purchase a particular property.

On the other hand, sharply rising interest rates are increasing the cost of new mortgages, potentially increasing their future repayment risk. Even so, the accumulation of risk has slowed, as far fewer new loans are being provided now than in the previous period. The upturn in interest rates also means that existing loans will be repaid more slowly, as interest costs account for an increasing proportion of loan payments.

Impact on borrowers' debt servicing capacity

Rising interest rates can increase loan payments by as much as half. For mortgagor households, loan payments will increase at the next interest rate resetting. Firms will feel the impact even faster, as many corporate loans are variable rate. In most firms, however, interest expenses as a ratio of revenues are relatively low. This, though, is not the case in the commercial real estate sector, which has relatively high sensitivity to interest rate rises. As a result, the credit quality of CRE loans may deteriorate in the longer term.

Leaving aside the CRE sector, however, rising interest rates have had less of an impact on the financial situation of households and firms than has the increase in their expenses. Rising expenses are having a broad detrimental impact on households, and given the size of expenses, their increase represents a relatively large share of household income. Rising interest expenses are having less of an impact on firms than on households, since their ratio to corporate revenues is lower than their ratio to household income.

Impact on the financial situation of banks and other financial institutions

Another important development from the perspective of financial sector stability is that bank's interest margins have stopped contracting. They had been declining continuously for the previous ten years, down to levels which, in the event of adverse economic developments, might not have covered a potential increase in credit costs for certain products. The gradual upturn in banks' interest margins will thus strengthen the banking sector's resilience to potential losses. In 2022 the net interest margin even started to increase. The growth in banks' interest income was driven mainly by sharply rising returns on corporate loans. There is also gradual growth in interest income on the mortgage portfolio, but this will be spread over a longer period.

The biggest question marks concern the evolution of interest expenses. Slovakia does not have any previous experience of how quickly interest rate increases in financial markets pass through to deposit rates. There is also much uncertainty about the rate and pace at which current account funds are switched to time deposits. Depending on which scenario is applied, net interest income may rise further or stabilise at around the 2022 level.

Rising interest rates have also caused significant repricing of banks' bond holdings, but since this largely played out during 2022, it is not a risk for the future. When interest rates rise, the value of bonds falls. Where, however, banks' intend to hold the majority of their bond assets until maturity, bond repricing does not affect their profitability, solvency or liquidity position.

5.2 Interest rate risk is not having a material impact on banks' capital position

Bond repricing is not significantly impacting capital

The sharp rise in interest rates has demonstrated the importance of effective interest rate risk management in a prolonged low interest rate environment. The recent period has provided concrete examples of what can result from an inadequately managed mix of creditworthy, but long-term, fixed assets whose purchase was financed from interest rate-sensitive sources.

Interest rate increases have also weighed on the market value of bonds held by Slovak banks. In general, the bonds most affected by rising rates are those with longer maturities, bought at a time of extremely low interest rates. However, the intensity of the repricing impact on banks' actual operation depends also on the portfolio in which the bonds are held. A bank's decision on which portfolio to allocate a bond is based primarily on how it plans to collect the contractual cash flows on that bond.

From a liquidity risk perspective, it is important that bonds' current market values are used in the liquidity buffer calculation without regard to which portfolio(s) the bonds are allocated to. The repricing of bonds measured at fair value through other comprehensive income (FVOCI) will, depending on their outstanding amount, increase or reduce the amount of capital for capital adequacy purposes. Their repricing in 2022, however, had only a marginal impact on the aggregate capital position of the Slovak banking sector. In the case of bonds that banks bought without intending to sell before maturity, the market repricing is not recorded in either the balance sheet or the profit and loss account. Bonds are valued at amortised cost,[59] with the total yield being amortised on a straight-line basis from the time of purchase to maturity. When adhering to the investment strategy, the remeasurement of this portfolio at fair value is not per se indicative of profitability. This portfolio has been the one in longest and broadest use among Slovak banks.[60]

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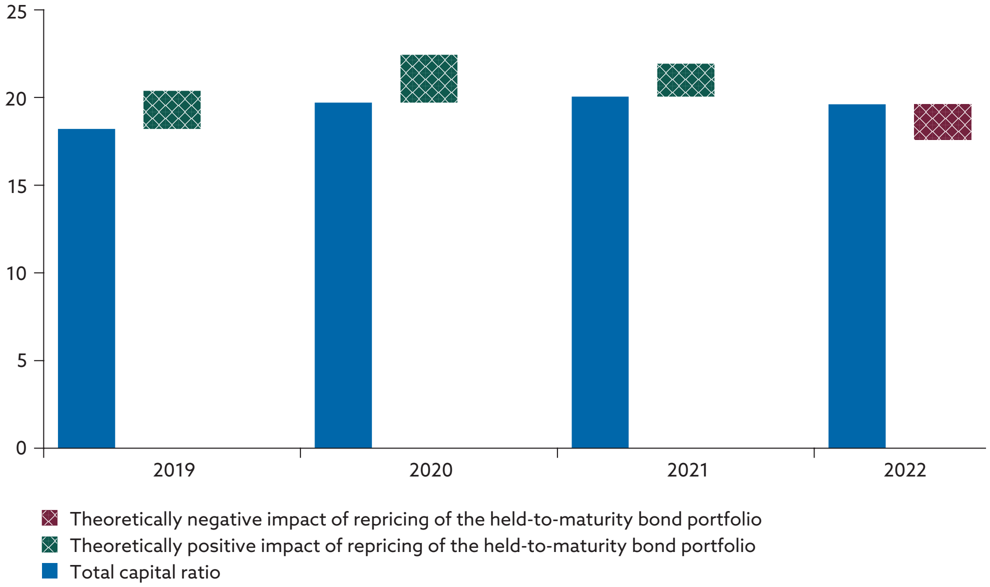
59 In general, the former held-to-maturity (HTM) portfolio.

60 As of December 2022, bonds in this portfolio made up 83% of the banking sector's total bond holdings. Between 2019 and 2021, this share ranged between 74% and 77%. As regards investment strategies, however, there is heterogeneity across banks.

Chart 30
Potential impact of the repricing of bonds measured at amortised cost on the banking sector's total capital ratio
(percentages)



Source: NBS.
Notes: The repricing of the held-to-maturity bond portfolio is the difference between its market value and its carrying amount. The impact on the total capital ratio is determined on the assumption that the portfolio's revaluation is fully reflected in banks' capital.

Even with interest rates rising, the economic value of equity has not been significantly impaired

Interest rate risk management needs to be seen in the broader context of the entire balance sheet and off-balance sheet and the specificities of the bank in question. As well as natural balance sheet hedging (the matching of interest-sensitive assets and liabilities), Slovak banks also actively use interest rate derivative hedging.[61] Complex metrics for calculating interest rate risk exposure (change in economic value, change in net interest income) also take into account various behavioural features of selected items of the given bank's balance sheet items.[62] Slovak banks are generally in a favourable position, given their traditional business model and that they are subject to the more prudent European regulatory and accounting standards. In the scenario of a 200 bp parallel increase in the interest rate curve, the aggregate economic value of equity in the Slovak banking sector is expected to fall by 4.6%.

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[61] With the balance sheet size of the Slovak banking sector standing at €97.5 billion, €10 billion in assets and €6 billion in liabilities are subject to a fair value hedge using interest rate derivatives.

[62] For example, the lower interest rate sensitivity of current accounts, early redemptions of time deposits, and loan prepayments.

5.3 Higher interest rates can significantly boost banks' interest income

Net interest income has started to grow significantly, but its further path will depend heavily on deposit developments

In the first phase, the rise in interest rates had a quite large upward impact on interest income. Interest rates rose mainly on the lending side, especially on mortgages and loans to firms. The increase in deposit rates occurred with a lag. As a result, banks' net interest income grew strongly in 2022 and the first quarter of 2023.

Going forward, developments on the deposit side will be a key factor. Important will be how quickly and how far interest rates go up. But equally important will be the reaction of customers, who are likely to respond by shifting funds from current accounts to time deposits. The extent to which the share of time deposits in total deposits increases will therefore also be significant for the evolution of interest expenses. That share was at historical lows in 2022, far below the levels seen when deposit rates were significantly higher. How quickly this shift happens will also have a major impact. Developments in these areas are, however, subject to considerable uncertainty, since Slovakia has hardly any experience of significant increases in deposit rates.

To better assess the degree of uncertainty to which banks are exposed, we have estimated the possible interest income developments in three scenarios. On the interest income side, all scenarios are the same and are based on the baseline scenario. We assume a more pronounced slowdown in lending, in both mortgages and loans to firms. On the other hand, rising interest rates will be gradually reflected in loan portfolio returns. While interest income from the corporate portfolio is assumed to grow more strongly in 2023, growth in interest income from the mortgage portfolio will occur gradually over the three years from 2023 to 2025.

Table 4 Assumptions for loan growth and average return on loans

	Assumed annual loan growth			Assumed average return on loan portfolio		
	2023	2024	2025	2023	2024	2025
Mortgages	5.6%	4.6%	4.8%	2.1%	2.7%	3.3%
Consumer credit	2.6%	0.4%	-1.0%	8.9%	10.0%	10.9%
Loans to firms	5.0%	7.2%	3.7%	5.0%	5.1%	5.0%

Source: NBS.
Notes: The table shows assumptions for annual loan growth and for the average return on loans for the purposes of simulating interest income over the period 2023-2025. The estimates are the result of econometric models and are based on the baseline scenario. These are only technical assumptions, not projections.

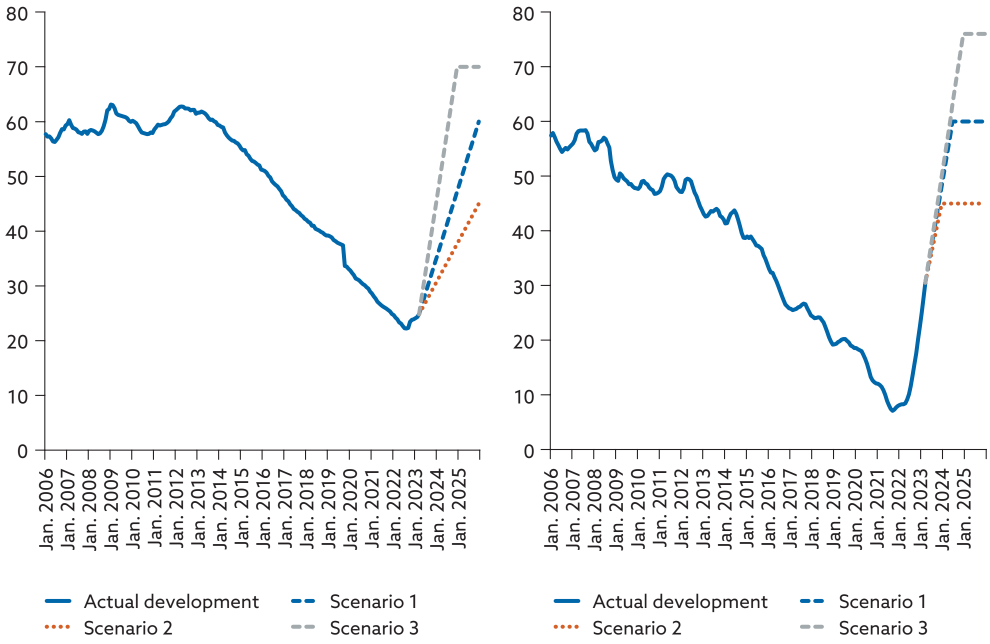
The scenarios differ on the interest expense side. The first scenario assumes that the share of households' and firms' time deposits in their total deposits gradually increases to around the 2006–2009 level (Chart 31). In the second scenario, the share of time deposits is assumed to remain slightly below that level, while in the third scenario, it is assumed to exceeds that level.[63]

Chart 31

Scenarios for the share of time deposits

Left-hand panel: Actual and simulated share of time deposits in total household deposits (percentages)

Right-hand panel: Actual and simulated share of time deposits in total deposits of non-financial and financial corporations (percentages)



Source: NBS.

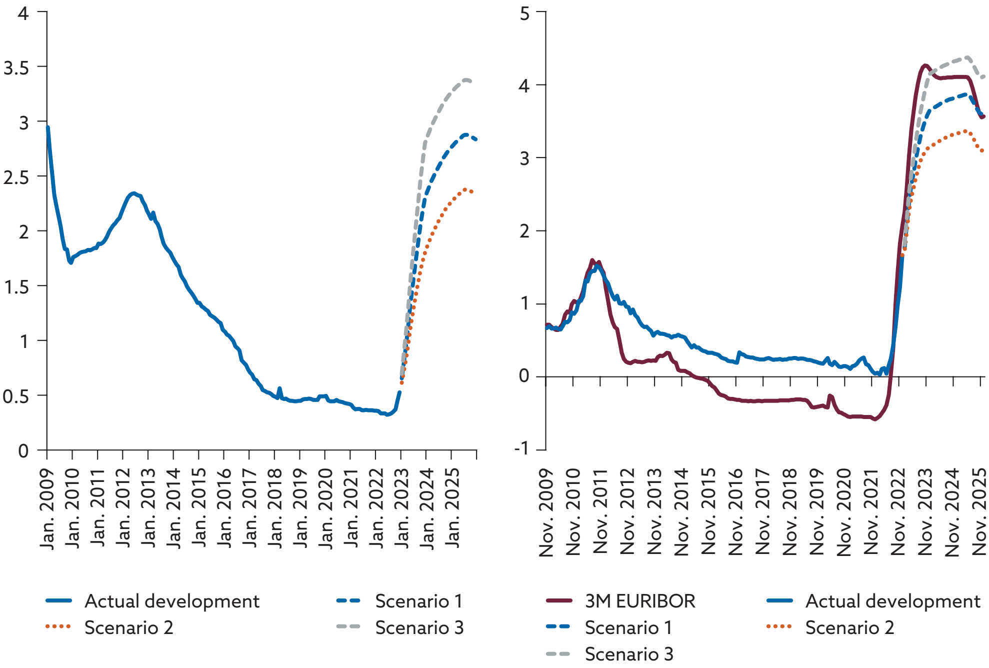
Also important will be the movement of the time deposit rate itself. In the first scenario, we assume that the average interest rate on time deposits increases in line with financial market interest rates. In the second scenario, its level is assumed to be 50 bp lower; in the third scenario, 50 bp higher. At the same time, current account interest rates are assumed, in line with historical experience, not to undergo any significant change.

63 Total deposits are assumed to increase at an annual rate of 4% in the retail sector and 3.1% in the corporate sector.

Chart 32

Scenarios for interest rates on time deposits

Left-hand panel: Actual and simulated interest rates on households' time deposits (percentages)
Right-hand panel: Actual and simulated interest rates on time deposits of non-financial and financial corporations (percentages)



Source: NBS.

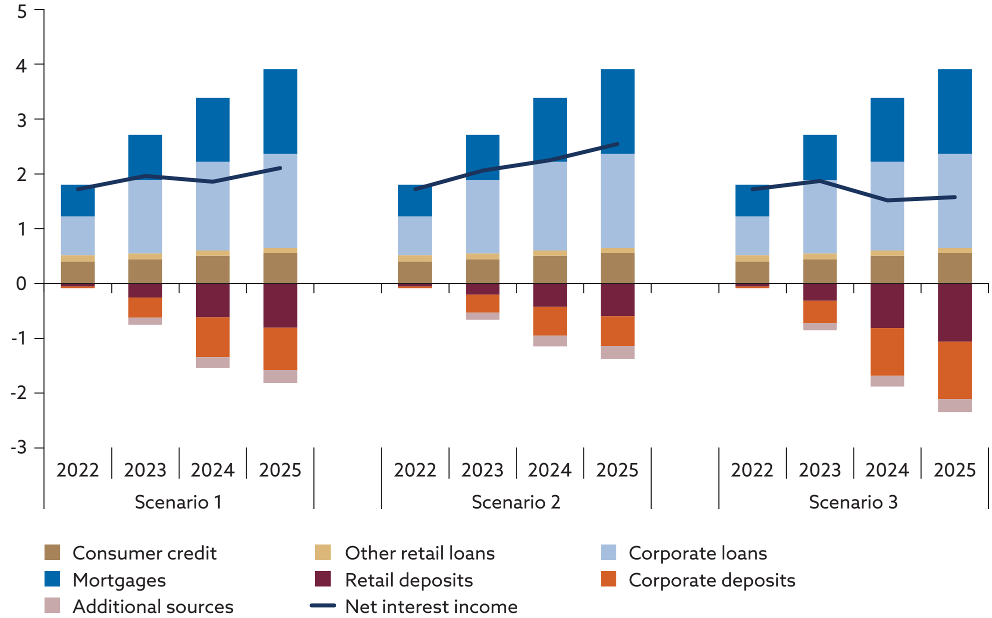
The analysis conclusions confirm that net interest income is likely to increase in 2023. The main driver of that growth will be a marked rise in interest income from loans to firms, as rising lending rates translate relatively quickly into higher returns on the whole, strongly growing portfolio. In the case of mortgages, on the other hand, the returns on the portfolio will increase gradually but steadily.

From a financial stability perspective, it is important that banks should be able to maintain at least the current level of net interest income even in the worst-case scenario. In 2024 and 2025, depending on the scenario, net interest income may continue growing or may fall back to its 2022 level. But even if deposit rates and the share of time deposits rise significantly, net interest income is not expected to fall far below the 2022 level. This conclusion should hold even if lending growth, as in the adverse scenario, slows by more than is assumed in the baseline scenario.

Chart 33

Net interest income estimation is subject to considerable uncertainty

Estimation of net interest income under different scenarios on the deposit side (EUR billions)



Source: NBS.

Note: Asset-side developments are based on the baseline scenario described in Box 2.

6 Banking sector profitability and resilience

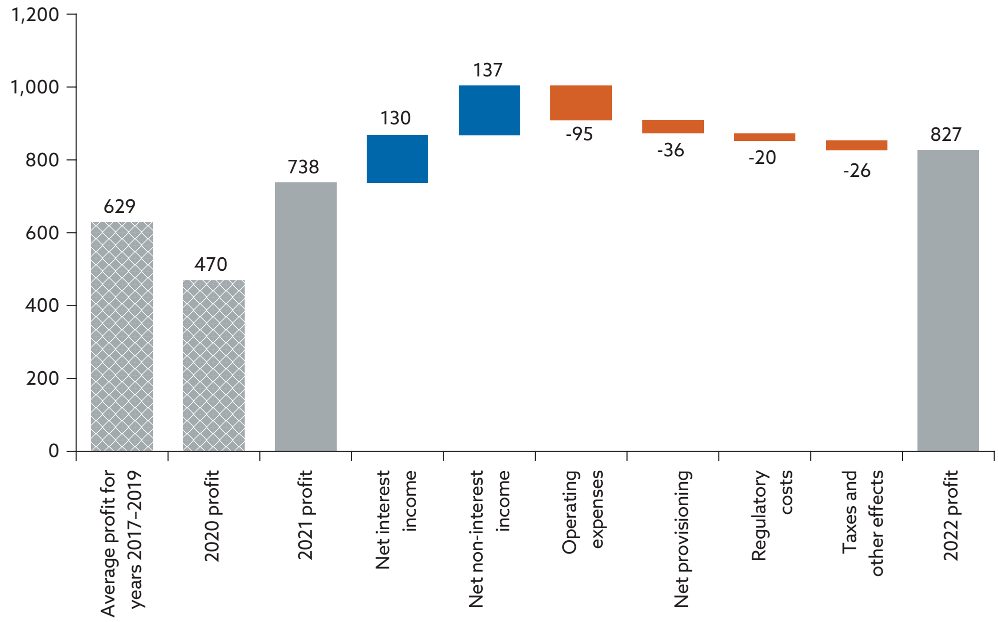
6.1 Banks remain profitable and well capitalised

Profitability acceleration driven by net interest income

Chart 34

Sector result supported by both pillars of profitability

Net profit and the most significant contributors to its year-on-year change (EUR millions)



Source: NBS.
Note: Net non-interest income includes net fee and commission income, dividends received, repricing of financial instruments, and other operating income.

The banking sector's profit for 2022 increased by more than one-tenth, year-on-year, to €827 million. Its growth was driven mainly by net interest income, which increased by 8% and recorded its highest absolute rise since 2008. The sector's net interest margin had been falling since 2014 (with its decline slowed by broad loan growth and falling deposit costs) when its trend started to reverse in the second half of 2022; this occurred after the ECB began tightening monetary policy from July. The notable increase in the average rate of return on funds translated into a modest rise in the overall net interest margin.[64] Its increase was curbed by a rising average cost of funds rate, which in a short period of time rebounded to

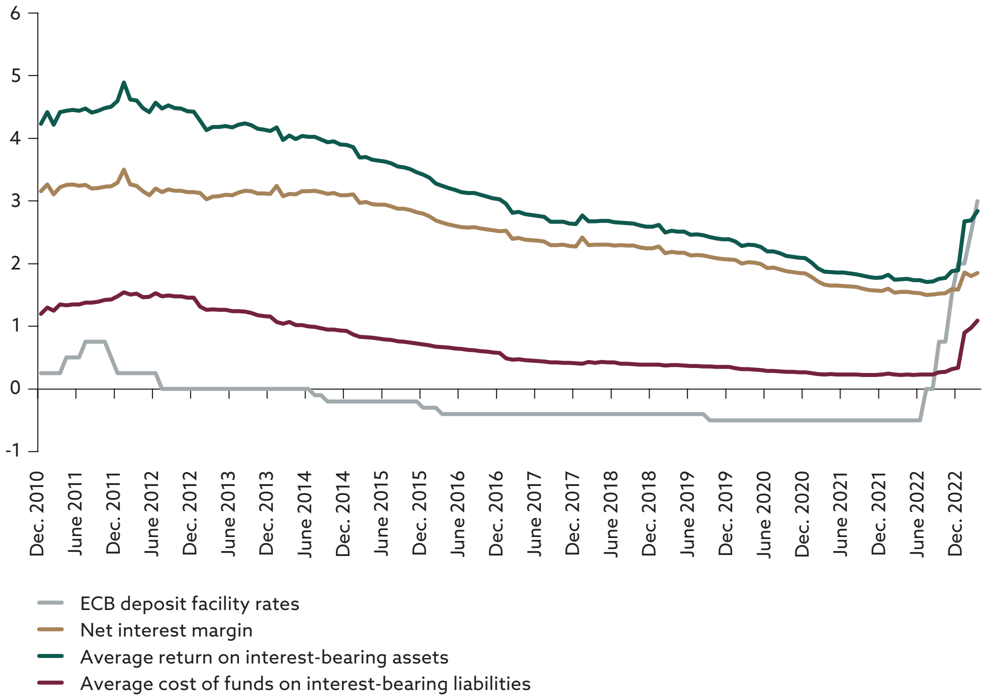
[64] From July 2022 to March 2023 the average deposit rate increased by 113 bp, to 2.84% (its level in December 2022 was 1.89%). In this period, the net interest margin increased by only 35 bp, to 1.85% (its level in December 2022 was 1.58%).

its level of ten years' earlier.[65] This rate has risen sharply for banks with a larger share of non-retail[66] deposits, which are more rapidly repriced. For certain banks, interbank market operations had a greater impact on the cost of funds.

Chart 35

Net interest margin growth curbed by cost of funds growth

(percentages)



Source: NBS.

As regards other items, fee and commission income had a notable impact on the revenue side.[67] This income grew largely on the back increasing volumes and numbers of financial transactions, including customers' increasing recourse to loan refinancing and banks' greater activity in intermediating other financial products. On the cost side, the largest increase was in operating expenses, though banks managed to keep their rise below the rate of inflation. Credit costs increased by almost a quarter year-on-year, owing mainly to a 50% rise in provisioning. The higher absolute and relative increases in provisioning were, however, due to the lower allocation of provisions in 2021, when banks were reversing the surge in provisioning that took place during the pandemic. The amount of new provisioning for customer exposures in 2022 was at the average level for the years from

65 The average lending rate as at March 2023 was 1.09%, the highest it had been since the end of 2013 (1.15%). As at July 2022 it stood at 0.23%, and as at December 2022, 0.34%.

66 For the purpose of this report, the retail sector comprises households, sole traders and non-profit institutions serving mostly households.

67 Net fee and commission income increased by almost €90 million in 2022.

2017 to 2019,[68] with the greater share still allocated to retail exposures.[69] In terms of credit quality, the share of provisions allocated to Stage 2 loans increased slightly, resulting in a higher Stage 2 coverage ratio.[70] The share of non-performing loans in Stage 3 fell below 2% in 2022. The Stage 3 coverage ratio fluctuated between 65% and 69% last year.

The trends seen in 2022 continued in the first quarter of this year. The Slovak banking sector's net profit for 2022 was €229 million, two-thirds higher compared with the previous year. Net interest income growth accelerated sharply (to 28%),[71] with the corporate segment accounting for almost 80% of this increase. In terms of its contribution to total net interest income, the corporate segment thus moved significantly closer to the retail segment.[72] Credit costs rose only slightly year-on-year, but did so against a backdrop of accelerating provisioning, particularly in certain banks' retail portfolios.

Capital allocation efficiency in the Slovak banking sector remains in line with trends in other EU countries. After falling in 2021 and 2022 annualised return on equity (ROE) is returning to pre-pandemic levels. However, the gap between Slovakia and the EU median for this metric widened in 2022.

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68 Net provisioning for customer exposures after taking into account the effects of ceded claims amounted to €201 million in 2022. Annual average net provisioning for the pre-pandemic years of 2017 to 2019) was €215 million.

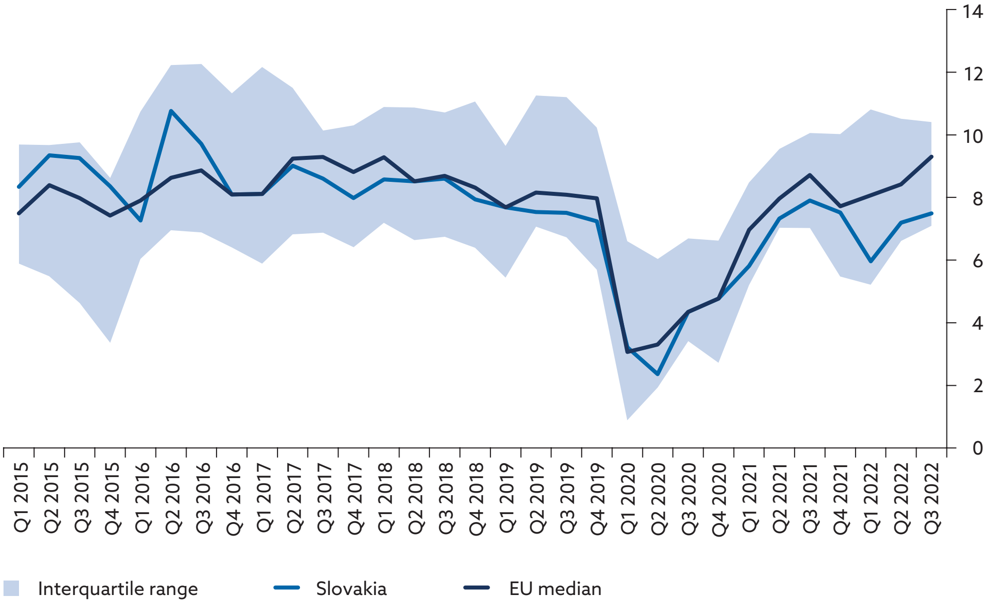
69 The share of provisions allocated to the retail segment was 80% in 2022, 70% in 2021, around 60% in 2020 (the first year of the pandemic), and on average of 76% in the pre-pandemic years of 2017 to 2019.

70 The share of provisions allocated to Stage 2 loans increased from 12.1% at the end of 2021 to 12.7% at the end of 2022, while the Stage 2 coverage ratio rose from 4.3% to 4.8%.

71 Interest income from lending and securities holdings increased by €337 million (73%) year-on-year, while interest expenses on deposits and securities issued surged by €224 million (+419%).

72 Over the long term, the retail segment has accounted for more than half of total net interest income and the non-financial corporation segment for about one-third. Between 2019 and 2022 the NFC share increased by 2.5 pp at the expense of the retail share, while in the first quarter of 2023 the retail share dropped to 44% and the NFC share rose to 42%. The share of other segments has remained steady at between 14% and 17%.

Chart 36
Annualised ROE ratio in the EU
(percentages)



Source: NBS.

Slovak banks remain capital well capitalised

The banking sector's total capital ratio was 19.6% at the end of 2022, remaining above its pre-pandemic level.[73] A downward trend in capital adequacy turned around in the second half of last year as a result of banks increasing their capital, largely through the retention of part of their 2022 earnings.[74] As regards capital utilisation, a significant slowdown in lending activity in the second half of the year[75] did not prevent the sector's risk-weighted assets from increasing by up to 7.2% year-on-year,[76] split evenly between retail and corporate exposures. The increase was primarily the result of new production. Average risk weights for selected customer portfolios remained stable, although notable differences were observed across individual banks. The divergence in capital adequacy between significant and less significant banks became more pronounced during 2022, mainly due to some less significant banks making strategy changes that resulted in a reduction in their risk-weighted assets The sector's leverage

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73 Representing a year-on-year decline of 0.4 pp.

74 Overall, banks increased their capital by €380 million (4.9%) year-on-year, of which €223 million comprised 2022 earnings. By the end of 2022, 30% of banks' overall earnings were recognised as capital. At the end of 2021 and 2020, the corresponding figures were 14% and 5%.

75 Almost 90% of the increase in risk-weighted assets occurred in the first half of 2022.

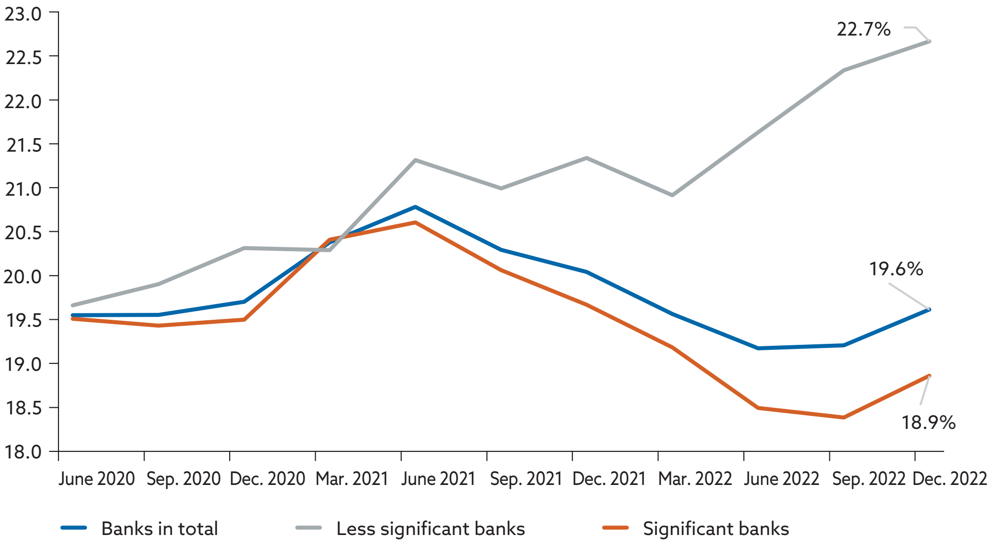
76 Representing a year-on-year increase of €2.8 billion. In 2022, less significant banks reduced their risk-weighted assets in 2022 by a total of €410m (5%), while significant banks increased their risk-weighted assets by €3.2bn (11%).

ratio fell by 0.4 pp year-on-year to end 2022 at 7.3%; nevertheless, the leverage ratio requirement was not a constraint on the sector's capital utilisation.

Chart 37

Total capital ratios of significant and less significant banks

(percentages)



Source: NBS.
Note: The impact of a bank merger on the total capital ratio as at 31 December 2021 was -0.1 pp for significant banks' ratio and 0.3 pp for less significant banks' ratio.

Banks' voluntary capital buffer amounted to around €1.6 billion[77] at the end of 2022, or 3.9% of banks' risk-weighted assets. Owing mainly to the provision of new lending, banks' capital headroom saw a year-on-year decline of 0.6 pp, albeit largely mitigated by capital increases. Risk-coverage-related capital buffer increases also made a significant contribution to the utilisation of available capital in 2022, as well as in the first quarter of 2023.

Since the beginning of 2022, selected banks have been required to meet the minimum requirement for own funds and eligible liabilities (MREL).[78] Banks' previous obligations in regard to the amount and quality of their capital (the total capital and leverage ratios) have therefore been supplemented by another parallel obligation, which affects the amount of capital eligible for financing the economy or absorbing losses. As MREL is phased in, its impact on the banking sector's capital headroom is gradually increasing. The fully calibrated MREL is to be met by 1 January 2024.

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77 The voluntary capital buffer calculation does not take into account any capital constraint due to the minimum requirement for own funds and eligible liabilities.

78 For five selected banks in Slovakia, the MREL calibration is higher than the total SREP capital requirement (TSCR) ratio, while whether it is set for the bank itself or for the whole banking group depends on the group's resolution approach.

None of the banks subject to MREL has had any difficulty in fully complying with the requirement during its phasing-in period. During this period, all the banks concerned have already been issuing securities or assuming other liabilities that explicitly meet MREL-eligibility conditions (by the end of 2022 MREL-eligible liabilities amounted to €2.7 billion, representing 28% of the banks' overall MREL-eligible liabilities). So in order to meet the requirement, banks have been using residual capital after meeting their total capital and leverage ratio requirements. Taking into account the capital used in this way, the capital headroom of the banks at the end of 2022 amounted to 3.45% of their consolidated risk-weighted assets. [79]

The total capital ratio of the domestic banking sector as at September 2022 was close to the EU median. Compared with other countries' banks, however, Slovakia's have less capital headroom[80] due to their higher combined capital buffer requirement.[81] Nevertheless, their capital buffers remain sufficient to maintain lending to the economy or to absorb potential losses.

6.2 Slower loan growth has eased pressure on banks' liquidity

The banking sector's liquidity position has stabilised

The overall liquidity coverage ratio (LCR) of the Slovak banking sector remained in a narrow range of 180% to 185% during the first quarter of 2023. Following its recent substantial use of available liquidity[82] in relation to strong loan growth, the banking sector saw an easing of its liquidity situation in late 2022. This stabilisation stemmed from a decline in lending activity across the sector, as well as from new issues of covered bonds and MREL bonds in late 2022/early 2023. The above also had a positive impact on the net stable funding ratio (NSFR).[83] The liquidity position of domestic banks was not at all negatively affected by the surge in distrust towards traditional banking houses which shook global financial markets in March of this year.

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79 In order to maintain capital headroom after MREL has been fully phased in, the banks in question will need to increase their eligible liabilities by a total of at least €0.8 billion during 2023.

80 Not taking into account the leverage ratio requirement, MREL, and Pillar 2 requirements and guidance.

81 The combined capital buffer rate was 4.8% as at September 2022, the 4th highest after Sweden (5.8%), Croatia (5.6%) and Denmark (5.4%).

82 The sector's LCR fell from 211% to 152% between May 2021 and September 2022.

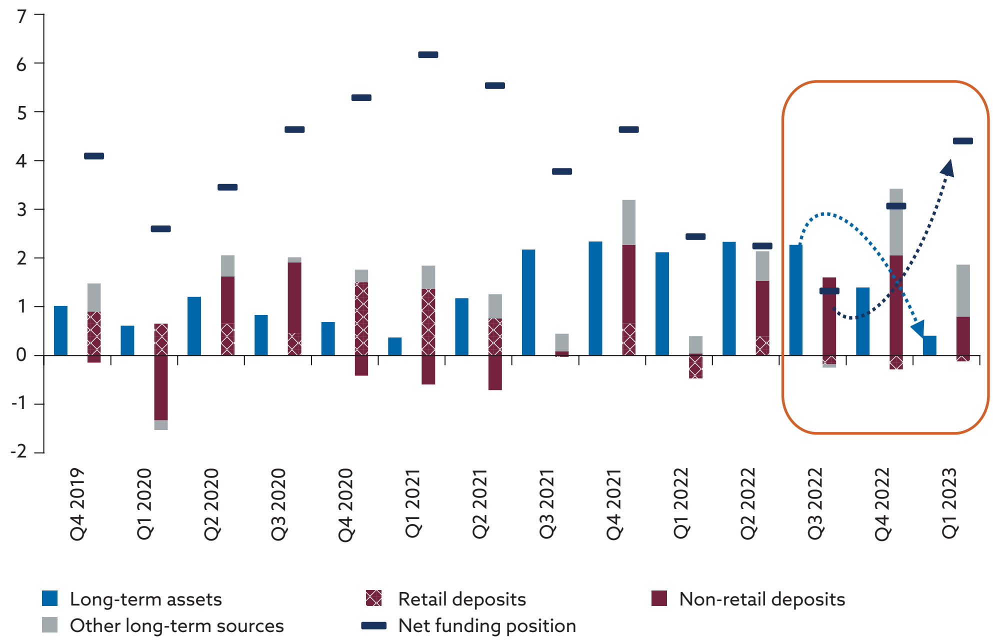
83 The sector's NSFR was 130% as at December 2022 (representing a year-on-year decrease of 2 pp).

Although the liquidity position has stabilised, ongoing trend changes in the structure of deposit flows are a reason for caution. Retail deposit growth has been slowing since the second half of 2021. The impact of this slowdown has, however, been offset by growth in deposits from other economic sectors, or in certain cases by the issuance of securities. Non-retail deposits are, though, inherently more volatile than retail deposits.[84] Particularly at times of economic uncertainty, the higher volatility of these funding sources can translate into a deterioration in banks' liquidity position. On the other hand, lower lending activity is now easing the pressure on banks to raise new stable funds. At the same time, the experience of neighbouring countries indicates that even a large rise in interest rates does not significantly accelerate the inflow of new deposits into banks.

Chart 38

Quarter-on-quarter flows of selected balance sheet aggregates and the net funding position

(EUR billions)



Source: NBS.

Notes: Long-term assets include loans, securities holdings and other fixed assets. Non-retail deposits include deposits of non-financial corporations, non-bank financial corporations, general government and non-residents. Other long-term sources include securities holdings, banks' capital, and other fixed funding sources (including MREL-eligible interbank deposits); MREL – minimum requirement for own funds and eligible liabilities. The net funding position is the stock information on the amount of banks' funding sources (deposits and other long-term funding sources) less long-term assets.

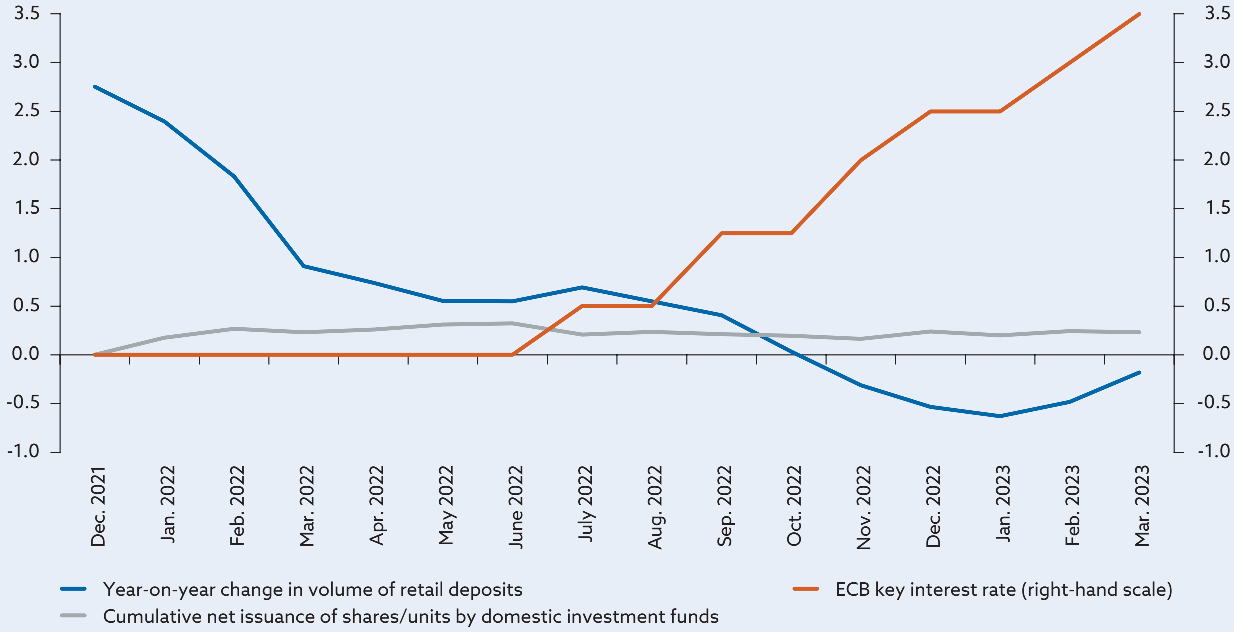
[84] The higher volatility of non-retail deposits is also reflected at the regulatory level by a higher potential outflow factor for the stress LCR as well as by a lower factor for the provision of stable and long-term funding for the structural NSFR.

Box 4
The Slovak financial sector is not expected to face risk of flight from deposits to investment funds

In the context of rising interest rates and the recent failure of Silicon Valley Bank, the United States has seen a massive outflow of funds from bank deposits to money market funds. The problems recently engulfing the US regional banking sector raised concerns among their customers about the safety of their deposits. This distrust resulted in a wave of deposit withdrawals, with most of these funds being shifted into money market investment funds as the nearest safe alternative – one, moreover, that offered higher returns. In March 2023, when uncertainty peaked, the inflows into these investment funds were among the highest ever, totalling more than USD 360 billion. But although this was a jump, it should be added that US money market funds had been seeing a continuous inflow of new money from unit holders since the autumn of 2022. The reason for this more general trend seems to be that rising interest rates have had a far faster and more pronounced impact on money market fund returns than on bank deposits. To a lesser extent, something similar has happened in the euro area. The recent, virtually unprecedented halt in growth of deposits from firms and households has correlated with the net issuance of shares/units by euro investment funds, especially bond funds.[85]

Chart 39

Concurrent easing of growth in retail deposits and in net issues of shares/units by investment funds
(EUR billions; percentages)



Source: NBS.

[85] March data on the issuance of shares/units by investment funds were not yet available at the time of writing.

NÁRODNÁ BANKA SLOVENSKA EUROSYSTÉM

In the light of the above, it is relevant to ask whether Slovakia, too, has seen outflows from bank deposits to investment funds. The slow growth of the banking sector's deposit base in 2022 might at first glance point in this direction. As happened in the euro area as a whole, the annual growth rate of retail deposits turned negative at the end of last year for the first time since the global financial crisis, and the average deposit rate responded only slowly to the reversal of the monetary policy cycle. However, domestic investment fund statistics fairly clearly refute the hypothesis of a substitution effect between bank deposits and investment funds, or more specifically, money market funds. The total net issuance of shares/units by investment funds in 2022 amounted to €241 million, far less than in 2021 and even slightly below the level of pandemic-blighted 2020. Moreover, most of those net sales were recorded in the first half of the year, while issuance activity tended to be quite flat for the rest of the year and in the first quarter of 2023.

Looking at the net issuance structure, it is even more apparent that Slovakia's financial sector avoided the US scenario mentioned above. Domestic investment funds' customers, mainly households, have shown little appetite for money market funds in recent years, as is reflected in the fact that no such funds are currently being offered by domestic fund management companies. Bond investment funds, some of which have a portfolio composition similar to that of money market funds, are available in the Slovak market. However, the long-term trend of net redemptions by bond funds continued last year and in the first quarter of 2023. Nor has the performance of bond funds provided any incentive to switch from bank deposits to bond fund shares/units; the average return on these funds by the end of March 2023 was slightly negative year-on-year (-2.2%), although over a shorter horizon, their performance has already entered positive territory. The drivers of investment fund net sales in Slovakia have been equity funds and real estate funds. Given, however, their investment focus and risk profile, these fund categories cannot really be considered a direct alternative to deposit products, It is rather to be supposed that their customers comprise mainly higher-income households that allocate part of their excess savings to equities and real estate in an effort out-earn inflation over the longer term.

6.3 Stress testing confirms the banking sector's resilience

The banking sector is stable and strong enough to cope with unexpected losses

The banking sector is able to absorb losses from potential future risks. This is confirmed by the results of our stress testing[86] exercise, whose

[86] Results of the stress testing of the Slovak banking sector carried out on data as at 31 December 2022. We modelled the evolution of the Slovak banking sector's balance over a three-year period, until the end of 2025. The stress test simulated two scenarios: a base-

adverse scenario simulated a significant downturn in the economy, a strong rise in unemployment, and a slump in global demand.[87]. Even in that scenario, most Slovak banks manage to remain in profit, with only three reporting a loss. In the first two years of the adverse scenario, the banking sector's net profit is around 15% lower compared with 2022, and only then does it start to recover. The banking sector's profitability, as measured by return on equity, declines and temporarily falls below its long-run level.[88]

Gradually increasing interest margins are a major pillar of banks' current stability. After a relatively long period of historically low interest rates and compressed interest margins, the situation has turned around and gradually increasing margins are giving banks room to cope with potential credit losses. Even under the adverse scenario's assumption of a total cessation of loan growth, it is estimated that, thanks to higher interest rates, net interest income is around a quarter higher in each year of the scenario than it was in 2022. As a result, banks can also cover the significant increase in credit losses assumed in the adverse scenario. Because of the simulated economic downturn, credit losses in the adverse scenario increase fourfold compared with 2022 and remain at this level almost until the end of the simulation period. Approximately two-thirds of the estimated credit losses are on loans to firms. At the same time, a large share[89] of the credit losses on corporate lending are losses on commercial real estate loans. As for credit losses on loans to households, losses on non-performing mortgages account for a slightly higher share[90] than do losses on consumer credit.

In a rising interest rate environment, however, banks will also face higher funding costs. Interest rate hikes will translate into an increase in the banking sector's interest expenses, as banks will be constrained to pay more on customer deposits and to issue debt securities at higher rates of interest compared with the past. In both stress test scenarios, interest expenses are expected to rise sharply[91] and therefore to weigh on the sector's performance even more than the modelled increase in credit losses does. Hence the flexibility to react to new conditions and the choice of an appro-

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line scenario based on the NBS's spring 2023 medium-term forecast (MTF-2023Q1) and an adverse scenario modelling the entrenchment of the Ukraine war's negative effects on the global and Slovak economy. Both scenarios are described in more detail in Box 2.

87 Further details of the adverse scenario are provided in Box 2.

88 The average ROE of Slovak banks is 7.1% in the adverse scenario, while for the period 2015-2022 it was 7.1%.

89 More than 60%.

90 More than 55%.

91 In the baseline scenario, the increase in the volume of interest expenses over the stress test period is 8.5 times; in the adverse scenario, it is almost 12 times.

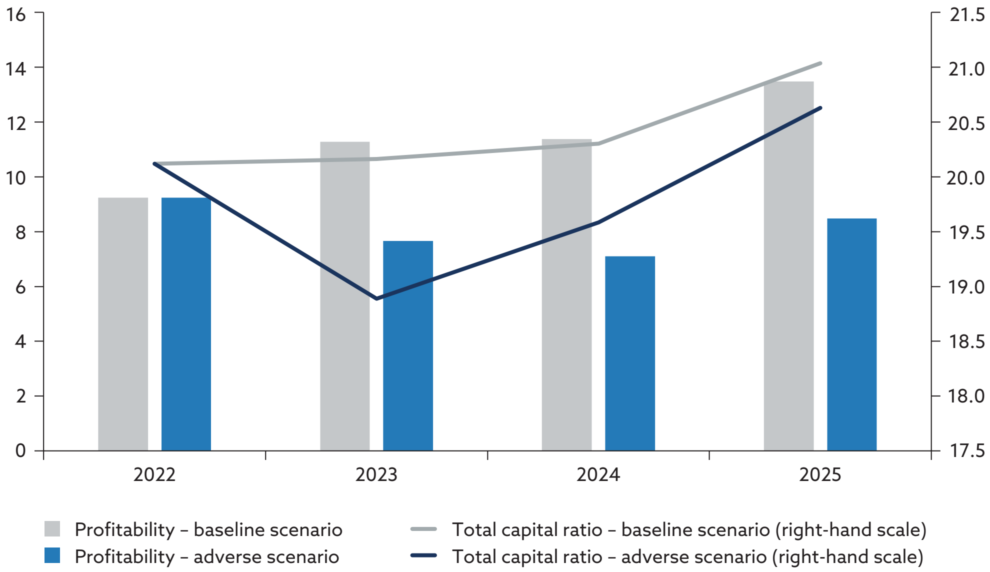
priate funding management strategy will be an important determinant of individual banks' profitability in coming years.

The banking sector as a whole remains resilient and able to cope even with increased losses from existing risks. Besides having a level of capital that has stayed sufficiently high even after the pandemic crisis, another crucial aspect of the banking sector from a financial stability perspective is its profit-generating ability. In the baseline scenario, the sector's total capital ratio at current levels of capital distribution manages to rise modestly, by 0.9 pp to 21% of risk-weighted assets at the end of the simulated period; in the adverse scenario, it decreases by 1.2 pp to 18.9%, due to the sector's weakened profit-generating capacity. In subsequent years, however, banks' solvency should gradually improve as loan growth moderates and profits improve. In the adverse scenario, only one bank in the sector is expected to have any difficulty in meeting capital requirements. Even in this scenario, banks are expected to able to perform their core functions and lend to the economy.

Chart 40

The solvency of banks is strongly supported by their ability to generate profit even in adverse times

(percentage of own funds; percentage of risk-weighted assets)



Source: NBS.
Notes: Profitability is expressed through return on equity (ROE). The total capital ratio also takes into account profits made in the year in question.

6.4 Macroprudential policy: NBS reviewed capital buffer rates

Countercyclical capital buffer rate to be raised as of August 2023

The countercyclical capital buffer (CCyB) rate will increase by 50 basis points as of 1 August 2023, to 1.5% of risk-weighted assets. The buffer rate increase is intended to strengthen the banking sector's resilience in the context of existing risks. The hike was justified on grounds of strong and persistent loan growth in the credit market since the end of 2021. In an environment of readily available credit and, until recently, low interest rates, households in particular were motivated to take on debt, as they were concerned about the ongoing uptrend in housing prices and anticipated increases in interest rates. Rising inflation gave them added incentive to increase their borrowing at the expense of savings. NBS refers to its composite indicator of the domestic financial cycle – the Cyclogram – when taking decisions on the CCyB rate, and last year this indicator was pointing to the need for a significant rate increase. In view of the ongoing heightened uncertainty stemming from the war in Ukraine and further developments in energy prices and the global economy, the central bank opted for a more moderate rise in the buffer rate, and it currently sees no immediate need for a further increase.

The easing of the expansionary nature of the financial cycle is not a reason to reduce the countercyclical capital buffer. Loan growth has been moderating and the property market has been undergoing changes. Rising interest rates and continuing uncertainty about future developments are disincentivising people from taking on further debt. The slowdown in loan growth implies an easing of the build-up of cyclical risks associated with household indebtedness. Nevertheless, risks previously accumulated remain present in banks' portfolios. It also appears that some new loans have riskier attributes (a higher share of new mortgages with a DSTI ratio close to the regulatory limit have the maximum maturity and a short initial rate fixation periods, especially among mortgages to lower-income and less educated borrowers). The easing of expansionary tendencies in the financial sector is therefore implying no need to reduce the CCyB rate. Such a move would be appropriate if existing risks were translating into higher credit losses. A CCyB rate cut would then free up addition capital that banks could use to absorb potential extraordinary losses.

NBS assessed the need for a systemic risk buffer

In March 2023, the NBS assessed the possible reasons for introducing a systemic risk buffer for retail exposures. Our detailed analysis of banks' individual portfolios shows that the current calibration of capital requirements through the combined capital buffer sufficiently covers the risks associated with retail exposures. This analysis will, however, be updated regularly and the potential reasons for introducing a systemic risk buffer for retail exposures will be reassessed.

7 Other sectors

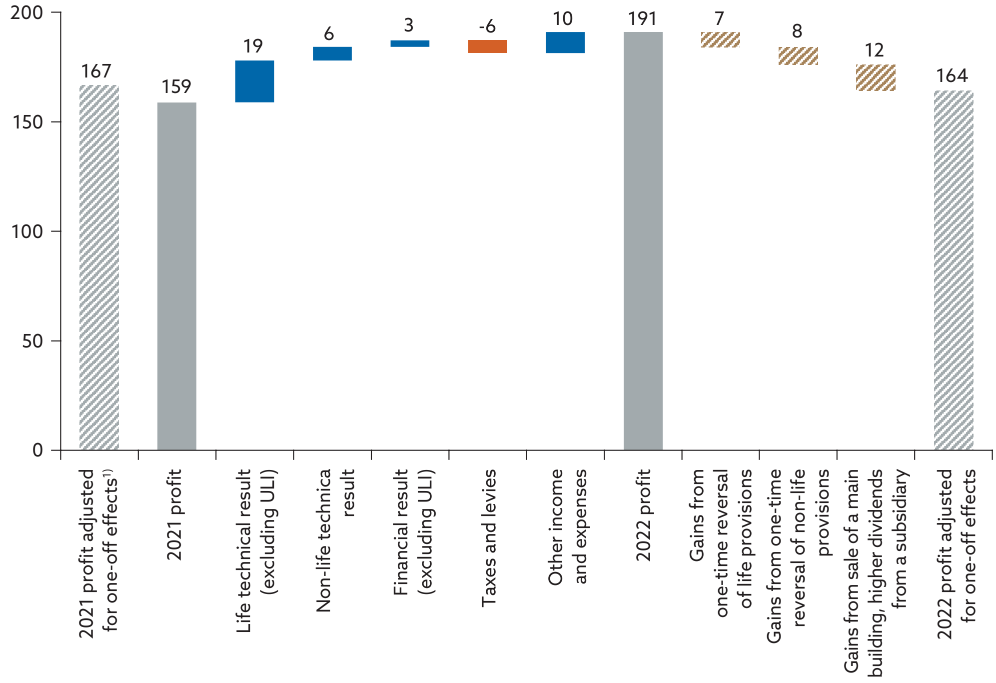
7.1 Slovak insurers successfully facing inflation[92]

The insurance sector has increased its profit

Chart 41

Another year of annual profit growth in 2022

Insurers' net profit and its components (year-on-year change in EUR millions)



Source: NBS.
Notes: 1) 2021 saw the reversal of pandemic-related travel agency insurance provisions and provisioning for the liabilities to the Slovak Insurers' Bureau.
ULI – unit-linked insurance.

Insurers in Slovakia had a good year in 2022. Their aggregate profit for 2022 grew by 20.4% year-on-year, to €191 million, with a large majority of insurers reporting profit growth. As in previous years, however, the profit growth was due to one-off events. Excluding the most significant of these

92 The profitability analysis covers nine domestic insurance undertakings accounting for around two-thirds of the premiums written in Slovakia by domestic insurers and branches of insurers from other Member States. The analysis excludes branches of insurers from Member States for which the necessary data are not available.
For the sake of consistency, the historical data are adjusted to exclude domestic insurers that later transformed into a branch of an insurer from another Member State. Also excluded are insurers which merged with another insurer that subsequently transformed into a branch of an insurer from another Member State.
The sector's profitability data is sourced from accounting statements, i.e. balance sheets and profit and loss accounts. Other data are from statements submitted under Solvency 2 reporting.

events would have an impact on the sector's profits for both 2021[93] and 2022.[94] Instead of increasing, the profit for 2022 would decline by 1.5% year-on-year.

All the main components of profit supported its growth, and the largest contribution was from the technical result in non-unit linked life insurance. The positive technical result in life business means that life insurance is profitable even without considering investment income from technical provisions. This contributes positively to the long-term stability of the insurance sector.

The technical result in non-life insurance increased in 2022 by 6.3% year-on-year. Its level in 2020 and 2021 was closely linked to pandemic-related lockdowns, as less traffic activity meant fewer traffic accidents and fewer car insurance claims. In post-pandemic 2022, however, the situation was different. The combined ratio for motor insurance[95] climbed to its highest value since the pandemic's outbreak (95.6%), close to the break-even point for this insurance class.[96]

In property insurance business,[97] 2022 saw a sharp rise in claims paid, but all of the increase was ceded to reinsurers. Claims costs increased by 120.4%. Some two-thirds of all property insurance claims paid in 2022 were ceded to reinsurers, which, however, are entitled to less than one-third of the premiums. As a result, Slovak insurers did not experience any change in claims costs. From a financial stability perspective, however, it is positive that reinsurers are helping to mitigate sharp changes in the market. Had domestic insurers borne the full brunt of the increase in claims, the sector's net profit would have been a quarter lower.

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93 When the sector replenished its provisions for liabilities to the Slovak Insurers' Bureau and reversed 'pandemic' provisions created in 2020.

94 The sale of one insurer's main building, higher dividends from a subsidiary second-pillar pension management company, and the reversal of provisions following a reassessment of COVID-19 pandemic risks.

95 After factoring in mandatory payments to the Slovak Insurers' Bureau and Slovak Interior Ministry, and adjusting for an extraordinary payment to the Bureau in 2021.

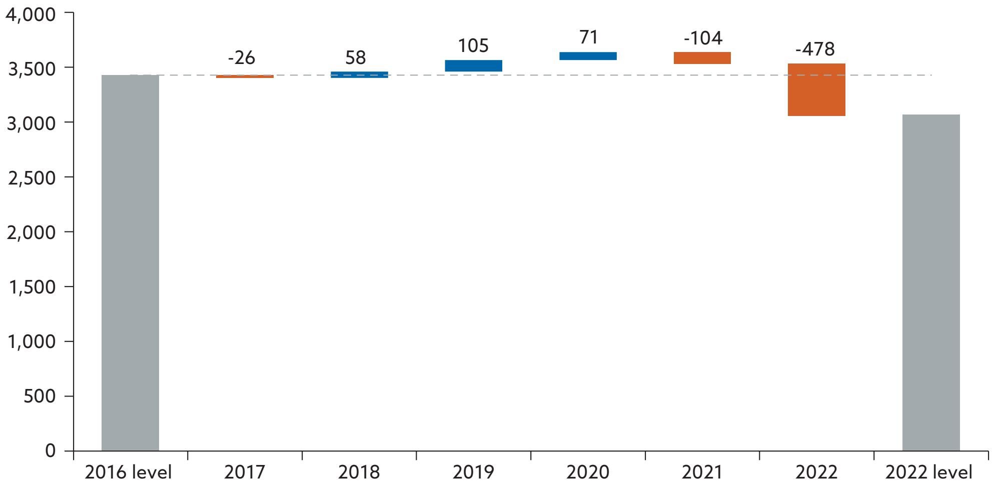
96 A combined ratio value of up to 100% implies that the expenses of the given insurance class are lower than its premiums, while a ratio of more than 100% implies the opposite.

97 Property insurance comprises activities concerning the provision of insurance against fire and other property damage.

Chart 42

The negative revaluation from 2022 was larger than the positive revaluation from previous years

Investment portfolio value and comprehensive income expressed as the sum of the financial result (excluding ULI) and the change in valuation differences (EUR millions)



Source: NBS.
Notes: The grey bar for 2016 shows the value of the investment portfolio as at the end of that year. It represents the sum of the value of financial instruments measured at fair value through profit and loss, financial instruments held for sale and financial instruments held to maturity. ULI – unit-linked insurance.

The financial result for 2022 (excluding unit-linked insurance) increased by 2.9% year-on-year. This result, however, reflects only part of the story of investment value developments, since the revaluation of some investments[98] is not recognised in profit or loss, but directly affects equity. This effect was particularly significant in 2022, when the investment revaluations reduced the value of insurers' equity by €475 million, or 43%. The impact of that drop was partially mitigated by positive revaluations accrued between 2018 and 2020.

Return on assets (ROA) increased over the course of 2022, from 2.54% to 3.16%; return on equity (ROE) climbed from 13.7% to 21.4%. Note should be taken of the significant movements that occurred both in net profit (up by 20.4%) and in the volume of assets (down by 8.4%) and equity (down by 39.4%). The insurance sector's solid profitability is a first line of defence against existing risks. The ROA and ROE of domestic insurers' are relatively high both in international comparison and compared with the banking sector.

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[98] Portfolio of financial instruments for sale.

NÁRODNÁ BANKA SLOVENSKA
EUROSYSTÉM

With their capital now including an increased volatile component, insurers have less capital resilience

The sector's Solvency Capital Requirement (SCR) coverage ratio decreased in 2022, from 208% to 195%. While the capital requirement fell by 5.1%, the sector's eligible own funds fell more sharply, by 11,3%. The decline in regulatory capital is mainly due to the uneven impact of interest rate increases on insurers' liabilities and assets. While liabilities have been revalued using only risk-free rates, assets have been repriced down further, since they also take into account increases in risk premia.[99] In this respect, most insurers reported a deterioration in 2022. If the situation in financial markets calms, the insurance sector's capital position could also stabilise.

The decline in capital was concentrated in the revaluation reserve and did not affect the volatile component – EPIFP.[100] The EPIFP share in insurers' capital thus increased further, ending 2022 at a historical high of 63%.

Book capital (equity) and regulatory capital (eligible own funds) showed quite different developments in 2022. Both declined in value, but the decrease in book capital was almost four times greater. This is because equity does not take into account the revaluation of liabilities – technical provisions. For this reason, regulatory capital is a more suitable indicator of the insurance sector's resilience. With the new accounting standard IFRS 17 having entered into force on 1 January 2023, any change in the value of liabilities will now also be reflected in book capital.

Life insurance saw renewed growth in 2022, driven by demand for unit-linked products

After several years of decline, premiums written in life insurance increased in 2022, by 1.1% year-on-year. Each quarter of the year saw premium growth. In traditional life insurance, the rate of decline in premiums written was the lowest since 2019 (after adjusting for reclassification, they fell by 3.7% year-on-year).[101] Meanwhile, unit-linked business achieved one of its best historical results,[102] with annual growth of 6.2%.[103]

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99 The mechanism for repricing assets and liabilities in response to risk-free interest rate and risk premia movements is addressed in Section 7.1 and Figure 6 of NBS's November 2022 Financial Stability Report.

100 Expected profits included in future premiums.

101 Although insurers reported a 10.3% decline, that was largely attributable to a reclassification of health insurance. Adjusted accordingly, the decline would have moderated to 3.7%.

102 The only year with higher growth was 2017. Data from that year suggest, however, that some traditional life insurance business may have been reclassified as unit-linked business. In that case, the unit-linked insurance result for 2022 would represent an all-time high.

103 The share of unit-linked business in total life insurance was 26% as at the end of 2022.

Non-life insurance results reflected the impact of inflation

Non-life insurance also showed favourable trends in 2022. Premiums written increased by 7.3% year-on-year, almost double the rates of recent years. This increase is probably related to the inflationary environment, with higher individual claims costs being reflected in rising average premiums.

In motor insurance, premium growth accelerated last year. In motor third party liability (MTPL) insurance, premiums written increased by 3.8% year-on-year, while in comprehensive motor insurance, they rose by 7.5%. Both growth rates were slightly higher compared with last year's figures.

In property insurance,[101] annual growth in premiums stood at 2.7%. In the first half of 2022 it appeared that premium growth for the year would slow, but in the end it was the highest rate since 2018. Of particular note was the above-mentioned disproportion between reinsurers' share in premiums and their share in claims costs.

7.2 Despite poor fund returns, asset managers were gaining new customers and investment

Savers in the second and third pillars of the Slovak pension system and investors in investment funds continued to show preference for equity-oriented and real estate-oriented funds in 2022, despite negative fund returns and a climate of uncertainty

In the sectors focused on managing customer assets, the arrival of 2022 saw a significant turnaround after more than one and a half years of uninterrupted dynamic asset growth. In particular, the period up to early October was marked by a substantial drop, amounting to around a billion euro, in the net asset value (NAV) of managed funds. Although recouping of previous losses was the trend for the rest of the year, all the sectors under review posted a negative year-on-year result for 2022 as a whole. It was not until early 2023 that cumulative changes turned positive, except in the investment fund sector. The large fluctuations in NAV were driven by changes in the valuation of financial assets held in non-bank institutions' portfolios. The average performance of domestic investment funds and second and third pillar pension funds, measured from the start of 2022, was negative throughout the year and remained negative through the first quarter of 2023.[104] Although funds with a larger equity component record-

[104] The average change in pension-point value or investment fund share/unit value over the period from 1 January 2022 to 31 March 2023, weighted by NAV size, was around -7% for second pillar pension funds and investment funds and -10% for third pillar pension funds.

ed higher (unrealised) losses on investment revaluations, bond funds also experienced a negative nominal return, owing to the rising interest rate environment. Adjusted to take account of double-digit inflation, the real value of customers', especially households', assets under management fell significantly.

A crucial point to note about the fifteen months under review is that despite deteriorating macroeconomic conditions, financial market volatility and poor performance across asset classes, domestic non-bank institutions did not have to face a decline in demand for their services. Funds in both pension pillars continued to attract new savers. And there was further confirmation of the strong stability of the investor base in the investment fund sector. Net issues of shares/funds by domestic investment funds were less than a quarter of their record level of 2021, but cumulatively remained in positive territory. Even at the time of highest uncertainty, when markets were plummeting following the outbreak of the Ukraine war, the temporary aggregate redemptions never amounted to more than a few tenths of the sector's NAV. Overall net issues of shares/units for the first quarter of 2023 were close to zero.

Nor has the largely poor performance of stock markets caused any shift in the trend of customers preferring growth-oriented funds. This was seen not only among new pension savers, mostly younger in age, but also in the cases of existing savers switching from more conservative bond funds or mixed funds, to equity funds and, in particular, to the increasingly popular index funds. Issues of shares/units by domestic investment funds were also concentrated in equity funds and real estate portfolios. Bond investment funds have long been reporting net redemptions, and mixed investment funds followed suit during the period under review.

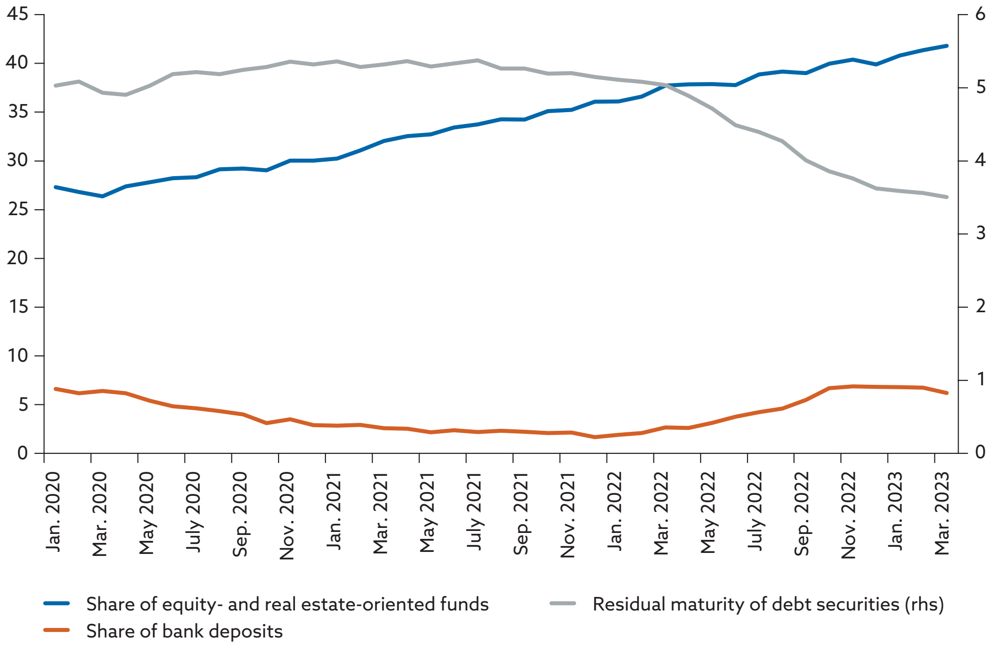
The onset of a rising interest rate cycle and the volatility of market conditions had a relatively broad downward impact on the duration of bond portfolios and an upward impact on the share of bank deposits in funds' asset portfolios

It was, however, apparent during the period under review that fund managers were to some extent rebalancing investment portfolios to make them less sensitive to fluctuations in market factors. A first largely broad-based indication was a reduction in the average maturity and duration of debt securities in response to rising market interest rates. A second notable change, which occurred in almost all fund categories, was an increase in the share of bank deposits in funds' asset portfolios, at the expense of the equity component or bond component, or both. It should be noted that this was not a purely mechanical effect of the fall in the market valuation of equity and debt securities, but a deliberate reversal of the strategy of previous years, when the intention was to minimise the share of low-return deposits in the asset portfolio.

Chart 43

While customers continued to favour riskier funds, asset managers were tweaking investment strategies

Selected characteristics of second pillar pension funds, third pillar pension funds and investment funds (percentages; years)



Source: NBS.
Note: The left-hand scale shows the share in the aggregate net asset value (NAV) of funds in the three sectors; the right-hand scale shows a weighted average for all debt securities in the three sectors.

Real estate investment funds were a notable exception to the upward trend of bank deposits in asset portfolios. After rising briefly in the spring of 2022, the aggregate deposit component of real estate fund portfolios subsequently fell to 10% of NAV. The fact that the rest of the real estate funds' portfolio is made up of highly illiquid claims and equity participations in real estate companies implies greater risk in the event of an increase in customers redeeming their shares/units in these funds. This threat is all the more relevant given the gloomy outlook for the commercial real estate market. Domestic real estate funds invest predominantly in domestic development projects and properties, hence they have relatively low geographic diversification and a high dependence on the state of the Slovak real estate market. On the flip side, they are thus relatively insulated from the direct impact of potential problems in foreign commercial real estate markets. There is also high concentration in the distribution of real estate funds' assets across property development projects. The five largest direct real estate investments in these funds' portfolio account, on average, for up to around 60% of the respective fund's NAV.

The volume of assets managed by investment firms has not changed significantly

The customer financial assets under the management of authorised investment firms in Slovakia amounted to around €70 billion at the end of March 2023, representing a decline of more than €6 billion compared with the beginning of 2022. Government- and bank-issued debt instruments held for the account of foreign banks constituted much of that total as well as accounting for most of its decline. Positions in equity securities partly contributed to the downtrend over the course of 2022, but they were already at a new historical high by the end of the first quarter of 2023.

As for the volume of assets managed by investment firms for real economy agents such as firms and households, a different dynamic can be seen. The amount remained fairly stable throughout last year, at below €14 billion, before rising slightly above that level in early 2023. The only blip occurred in April and May of last year, due mainly to bonds owned by households. The structure of these owners' bond portfolio comprises largely issues of domestic non-financial corporations and, to a lesser extent, banks. The real estate sector in particular is well represented in the NFC bond holdings. The investment firm–managed equity securities owned by firms and households were mostly shares in Slovak and Czech firms and shares/units issued by domestic investment funds, supplemented with investment in exchange-traded funds focused on the global market.

7.3 Stress testing of non-bank entities

In the most challenging point of our adverse scenario, the insurance sector has an average SCR coverage ratio of 179%.[105] Although some insurers could find themselves below the minimum regulatory threshold, their combined share of the sector's premiums written is less than 8%. All other insurers' have an SCR coverage ratio above 120% even in the adverse scenario. Almost two-thirds of the estimated losses under the adverse scenario would be covered by current profits.

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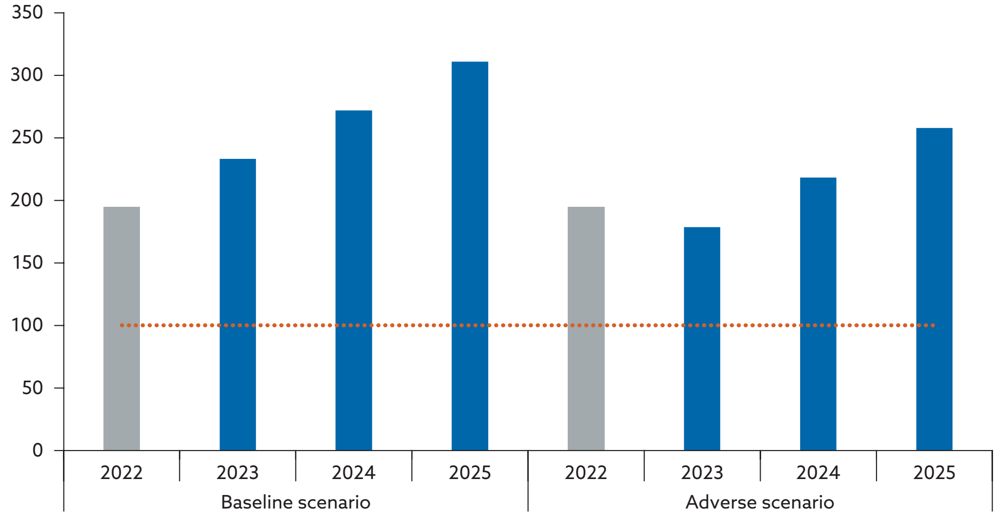
[105] The regulatory minimum SCR coverage ratio is 100%.

Chart 44

Even in an adverse scenario, insurers' average SCR coverage ratio falls only slightly

The SCR coverage ratio in different stress test scenarios (percentages)



Source: NBS.
Note: SCR – Solvency Capital Requirement.

The most significant impact of the adverse scenario is on non-life insurance claims, which climb by €135 million. This is based on the assumption that claims costs record a one-off 10% increase over the long-term average. In reality, however, some of these losses would be assumed by reinsurers,[106] which fact is not taken into account in this stress test.

A wave of life insurance surrenders[107] are estimated to cause a further cost of €108 million, and market risks (in addition to a change in the risk-free interest rate),[108] a further cost of €59 million.

Stress testing of entities managing customer assets confirmed that, in the short term, entities with relatively equity-heavy asset portfolios face the largest declines in asset value

The sensitivity of non-bank entities to an adverse market scenario was again stress tested. The scenario's main assumptions were a 35% decline in equity indices, an upward shift of the risk-free yield curve (by 1-2 pp

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[106] The key importance of insurance as a mitigating factor became apparent in 2022, when it covered virtually all extraordinary losses in fire and other property damage insurance.

[107] A one-off heightened surrender rate of 20% in life insurance business.

[108] The adverse scenario for financial markets is almost identical to that for the banking sector. For insurers, however, the stress test assumes a fixed risk-free interest rate, because it does not revalue liabilities. Any change in the risk-free rate therefore only affects assets and overestimates its impact on capital.
The events of 2022 showed that movement of the risk-free per se has a relatively symmetrical impact on both sides of the balance sheet and the ultimate impact on capital is minimal.

depending on the maturity band) together with a widening of credit spreads, and appreciation of the euro exchange rate against selected regional currencies.[109] In the simulation, index pension funds face the highest risk of NAV decline, a drop of almost 30%. After them, some way behind, are unit-linked insurance products, third pillar pension funds and mixed investment funds, all of which record average asset depreciation of 10%. For second pillar mixed and equity pension funds and for equity investment funds, the loss is typically between 7% and 8%. The value of assets of insurers (excluding unit-linked business), real estate investment funds and bond investment funds, all of which have a relatively low equity component, decline by around 4% in the simulation. As for bond pension funds, losses from the repricing of debt instruments are offset by the interest income derived from them as soon as after one year, and short-term investment funds consequently report a moderately positive result.

[109] For further details about the stress test assumptions, see Box 2.

Abbreviations

AT1	Additional Tier 1 capital
bp	basis point(s)
CCyB	countercyclical capital buffer
CMN	Property Price Map / Cenová mapa nehnuteľností
CRE	commercial real estate
DSTI	debt service-to-income (ratio)
DTI	debt-to-income (ratio)
ECB	European Central Bank
EPIFP	expected profits included in future premiums
ESA 2010	European System of Accounts 2010
ESRB	European Systemic Risk Board
ETF	exchange-traded fund
EU	European Union
EURIBOR	euro interbank offered rate
FVOCI	fair value through other comprehensive income
GDP	gross domestic product
HICP	Harmonised Index of Consumer Prices
HTM	held-to-maturity
ICR	interest coverage ratio
IFRS	International Financial Reporting Standard
IMF	International Monetary Fund
LCR	liquidity coverage ratio
lhs	left-hand scale
LTV	loan-to-value (ratio)
MREL	minimum requirement for own funds and eligible liabilities
MTPL	motor third party liability (insurance)
MTF	medium-term forecast
NACE	Statistical Classification of Economic Activities in the European Community (Rev. 2)
NAV	net asset value
NBS	Národná banka Slovenska
NFC	non-financial corporation
NPL	non-performing loan
NSFR	net stable funding ratio
pp	percentage point(s)
rhs	right-hand scale
ROA	return on assets
ROE	return on equity
SCR	Solvency Capital Requirement
SO SR	Statistical Office of the Slovak Republic

SREP	Supervisory Review and Evaluation Process
TLTRO	targeted longer-term refinancing operation
TSCR	total SREP capital requirement
ULI	unit-linked life insurance
US	United States