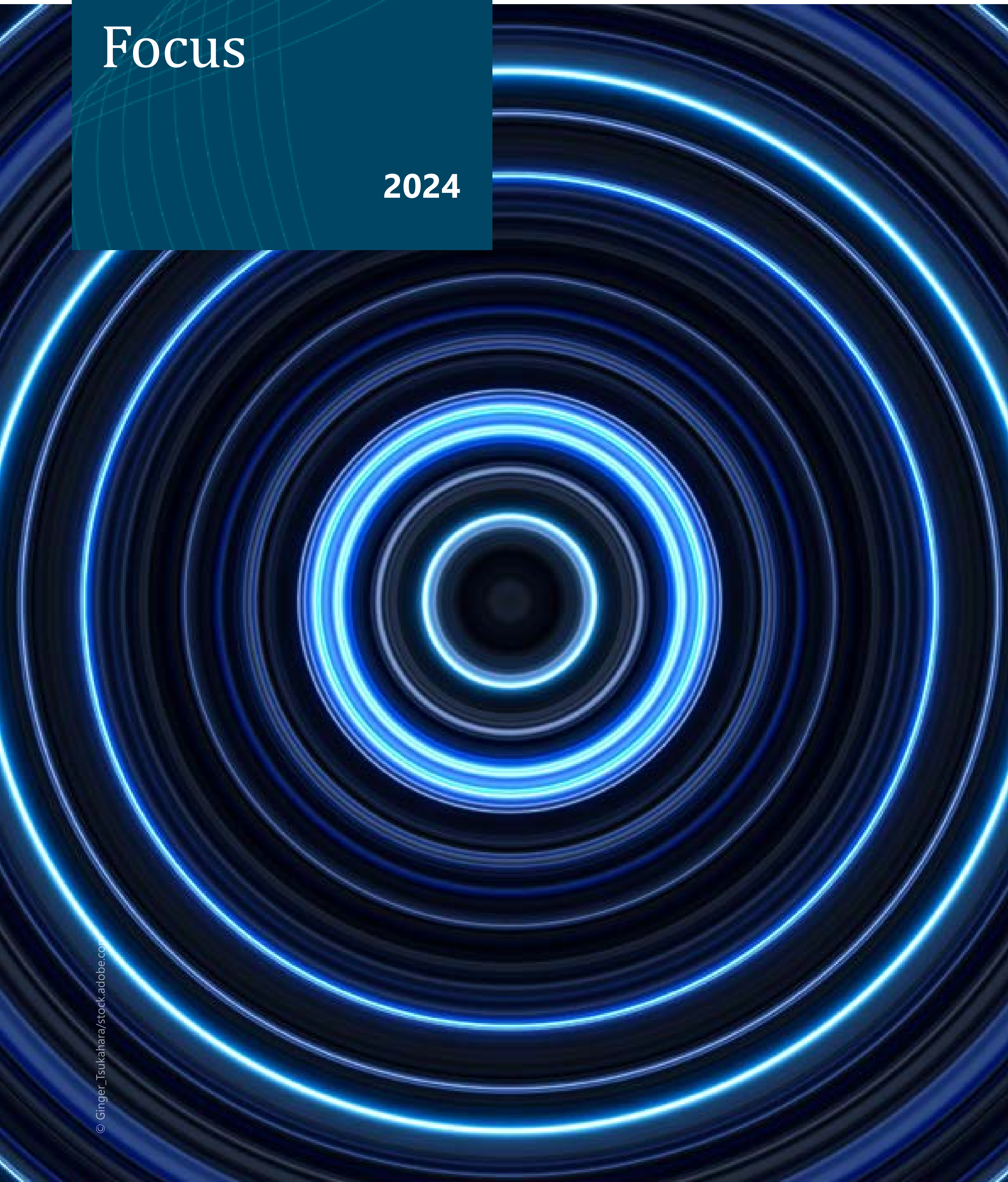
Risks in BaFin´s Focus

2024

BaFin

Bundesanstalt für Finanzdienstleistungsaufsicht



Themen

Foreword by the President

Advances in digitalisation are making the German financial sector faster, more efficient and more competitive – but also more vulnerable: the risk of cyberattacks is increasing, and dependency on a few major IT service providers is growing.

The direct and indirect impacts of geopolitical tensions can affect companies' balance sheets, operational processes and supply chains. This too makes the financial system more vulnerable.

Companies in the financial sector need to mitigate these risks and take action to increase their resilience.

German banks and insurers were able to weather the abrupt increase in interest rates and have, on the whole, proven stable. They are currently benefitting from increasing rates. At the same time, the full effects of the recent rate increases are not yet clear. Financial institutions must prepare themselves for this.

BaFin analyses the risks facing all market participants and consumers on an ongoing basis and takes action in response to these risks.

This year's "Risks in BaFin's Focus 2024" report is BaFin's third annual compilation of the risks that are most capable of jeopardising the financial stability or the integrity of the financial markets in Germany. These risks will be our primary focus in 2024. This year, we have added to the list concentration risks from outsourcing.

In 2024, we will focus on a total of seven risks:

- Risks arising from significant increases in interest rates ↓
- Risks arising from corrections on the real estate markets ↑
- Risks arising from significant corrections on the international financial markets →
- Risks arising from defaults on loans to German companies ↑
- Risks arising from cyberattacks with serious consequences ↑
- Risks arising from inadequate money laundering prevention ↑
- Risks arising from market concentration in the outsourcing of IT services ↑

The risks are not listed in order of priority. The trend arrows reflect the development of each risk (increasing, constant, decreasing).

The specific steps BaFin will take to mitigate the seven major risks are detailed following the individual risk descriptions. With these planned measures, BaFin pursues its medium-term objectives for the years 2022 to 2025.

In addition to the seven major risks, the way in which the companies under BaFin's supervision deal with longer-term trends will play a significant role. These trends include sustainability, the digitalisation of the financial industry and the aforementioned geopolitical turmoil.

As in previous years, it should be noted that not all of the scenarios described in this report will materialise, and new risks may emerge. BaFin must identify such risks at an early stage and react quickly.

1 Seven major risks in BaFin's focus

1.1 Risks arising from significant increases in interest rates ↓

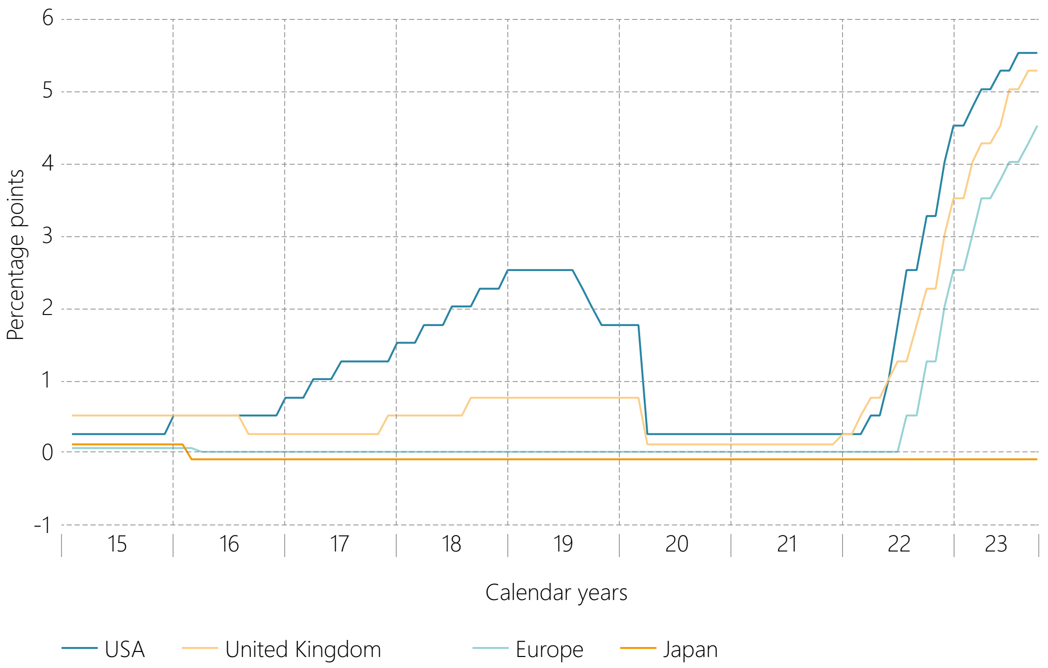
A historical turnaround in interest rates lies behind us: since July 2022, the European Central Bank (ECB) has raised key interest rates ten times – from 0 to 4.5 percent (see Figure 1, page 6). The banking sector and the insurance sector have coped well with the interest rate turnaround so far and proven stable, with the institution-specific add-ons ordered by BaFin also playing a role in this regard. Up until now, BaFin has ordered a SREP[1] add-on for interest rate risks for more than 800 banks. Such capital add-ons for interest rate risks account for around 66 percent of the volume of all capital add-ons.

However, many companies have unlocked hidden reserves in order to compensate losses arising in particular from valuations of fixed-interest investments and thereby strengthen their equity.

Last year's abrupt interest rate turnaround entailed high risks for companies of the financial sector – especially those that were particularly exposed on account of their business and investment policies and had failed to take adequate countermeasures. These risks have been manageable so far. However, if there were to be a further interest rate increase or a stronger inversion of the yield curve, the interest rate risks of the companies supervised by BaFin would worsen again. But the likelihood of additional significant interest rate increases in the course of 2023 has declined – and with it the interest rate risk overall.

1 SREP is the abbreviation for the Supervisory Review and Evaluation Process.

Figure 1: Key interest rates of selected central banks



Source: LSEG Datastream, as at October 2023

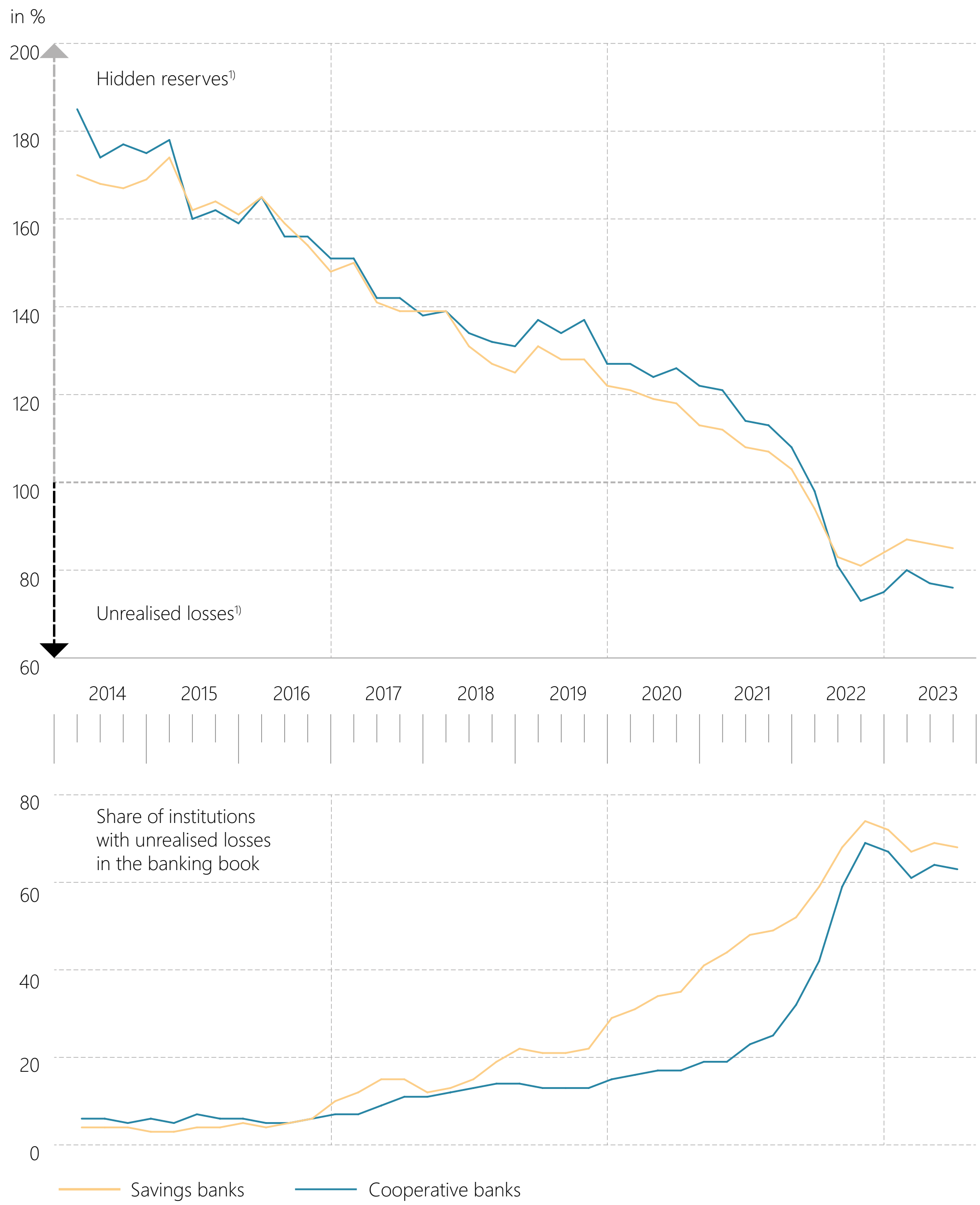
Banks and *Sparkassen*

The number of institutions with an increased interest rate risk[2] has steadily fallen and remained on a downward trajectory in the third quarter 2023, even though the interest rate risk, particularly among credit cooperatives (*Genossenschaftsbanken*) and savings banks (*Sparkassen*), remains high. This is due to the business models of these institutions that are based strongly on maturity transformation. The reasons for the decreased interest rate risk lie, among other things, in changes in the institutions' balance sheet structures, the losses already realised by a large number of companies and, to a lesser degree, the use of derivatives for the purpose of hedging such interest rate risks.

As a result of the previous interest rate increases and associated valuations losses, the valuation reserves and additional hidden reserves on the balance sheets of the less significant institutions (LSIs) have been used up for the most part (see Figure 2, page 7). At the same time, LSIs have in some cases accumulated substantial unrealised losses. Normally, these losses offset each other over time due to the price of bonds converging to par value towards maturity (pull to par effect). For this reason, if fixed-income investments are held until maturity, no need for write-downs arises.

2 In accordance with the supervisory standard test, the interest rate risk is deemed to have increased if the present value losses as a consequence of a change in interest rates by 200 basis points exceed 20 percent of a bank's regulatory capital.

Figure 2: Hidden reserves and unrealised losses in the banking book of German savings banks and credit cooperatives*



* Includes only primary institutions with no trading book positions. 1) Ratio of the banking book's present value to book value. Values greater than 100% indicate hidden reserves; values lower than 100% indicate unrealised losses. Book value of the banking book approximated by the sum of recognised equity and fund for general banking risks.

Source: Bundesbank calculations, as at September 2023

The credit institutions’ interest earned has had a positive impact on profitability. The interest rate margin has risen significantly as institutions have not yet passed on the higher interest rates to investors in full. Moreover, interest rates on loans are currently rising more quickly than those on deposits. In recent years, however, institutions have granted a large number of loans with lower interest rates and long interest rate fixation periods, which is limiting their options to increase interest income. At the same time, weaker demand for loans is curbing new lending.

The Tier 1 capital ratio among the significant institutions (SIs) and the LSIs has risen slightly. The institutions’ return on equity increased from 3.7 percent in the fourth quarter of 2022 to 6.94 percent in the third quarter of 2023. The cost-income ratio of all banks in the third quarter of 2023 stood clearly below that of the prior year period (see Table 1 below).

Table 1: Balance sheet structure and interest rate risks at credit institutions

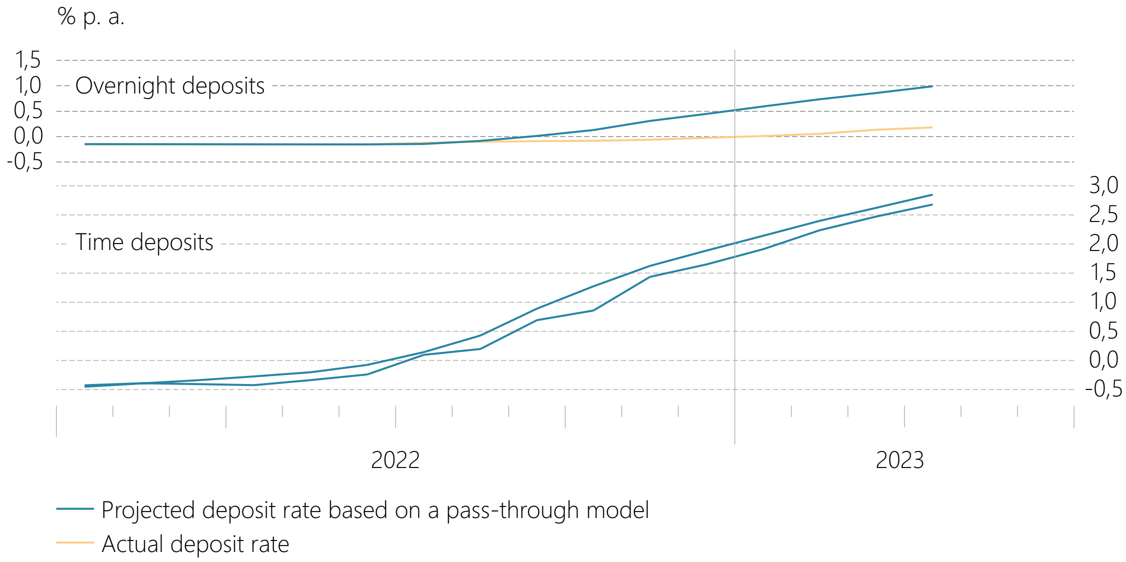
	Q2 2022	**Q3 2022**	**Q4 2022**	**Q1 2023**	**Q2 2023**	**Q3 2023**
Cost-income ratio of all banks	76%	76%	70%	57%	57%	58%
Return on equity of all banks	1,97%	2,06%	3,72%	7,76%	7,21%	6,94%
Institutions with higher IRR*	590	458	307	326	304	278
Interest rate coefficient	10,90%	9,66%	9,07%	8,75%	8,77%	8,69%
Tier 1 capital ratio LSI	15,71%	15,55%	16,00%	16,04%	16,26%	16,30%
Tier 1 capital ratio SI	15,32%	14,98%	15,89%	16,14%	16,50%	16,51%

* Interest rate risk

Source: Joint calculations of BaFin and the Bundesbank based on the supervisory reporting system, as at 30 September 2023

Going forward, the interest margin of the credit institutions is likely to narrow significantly at persistently high interest rates due to retail clients and companies increasingly regrouping their portfolios in favour of term deposits carrying higher interest rates and other interest-earning investments. Competition for deposits could additionally intensify. Institutions would then be compelled to further raise their interest rates on deposits (see Figure 3, page 9).

Figure 3: Comparison of actual deposit rate and projected deposit rate based on a pass-through model*



* Estimation period: January 2003 to December 2021. Projection period: January 2022 to April 2023.

Source: Deutsche Bundesbank calculations, Monthly Report, June 2023

Vulnerable financing structures
The interest on deposits and their maturity patterns have an influence on the stability of credit institutions' refinancing structures – especially if these are heavily deposit-based. Higher interest on deposits narrows the interest margin, but, in functioning competitive and market conditions, leads to more stable refinancing structures, and vice versa.

Developments in the US banking sector in the spring of 2023[3] highlighted this: vulnerable financing structures in conjunction with increased interest rate risks and fragile business models lead to solvency and liquidity problems that can jeopardise an institution's existence. The very fast and strong outflow of liquidity was spurred by the institutions' high share of short-term deposits. These outflows were also accelerated by the digital channels used by the customers.

Insurance undertakings
The higher interest rates have improved the economic situation of life insurers and *Pensionskassen* in the short and long term. They were able to compensate their short-term need for write-downs by means of extraordinary investment income[4] and releasing the *Zinszusatzreserve* (the additional provision to the premium reserve introduced in response to the lower interest rate environment). Over the medium and long term, new investments and reinvestments have become more profitable again.

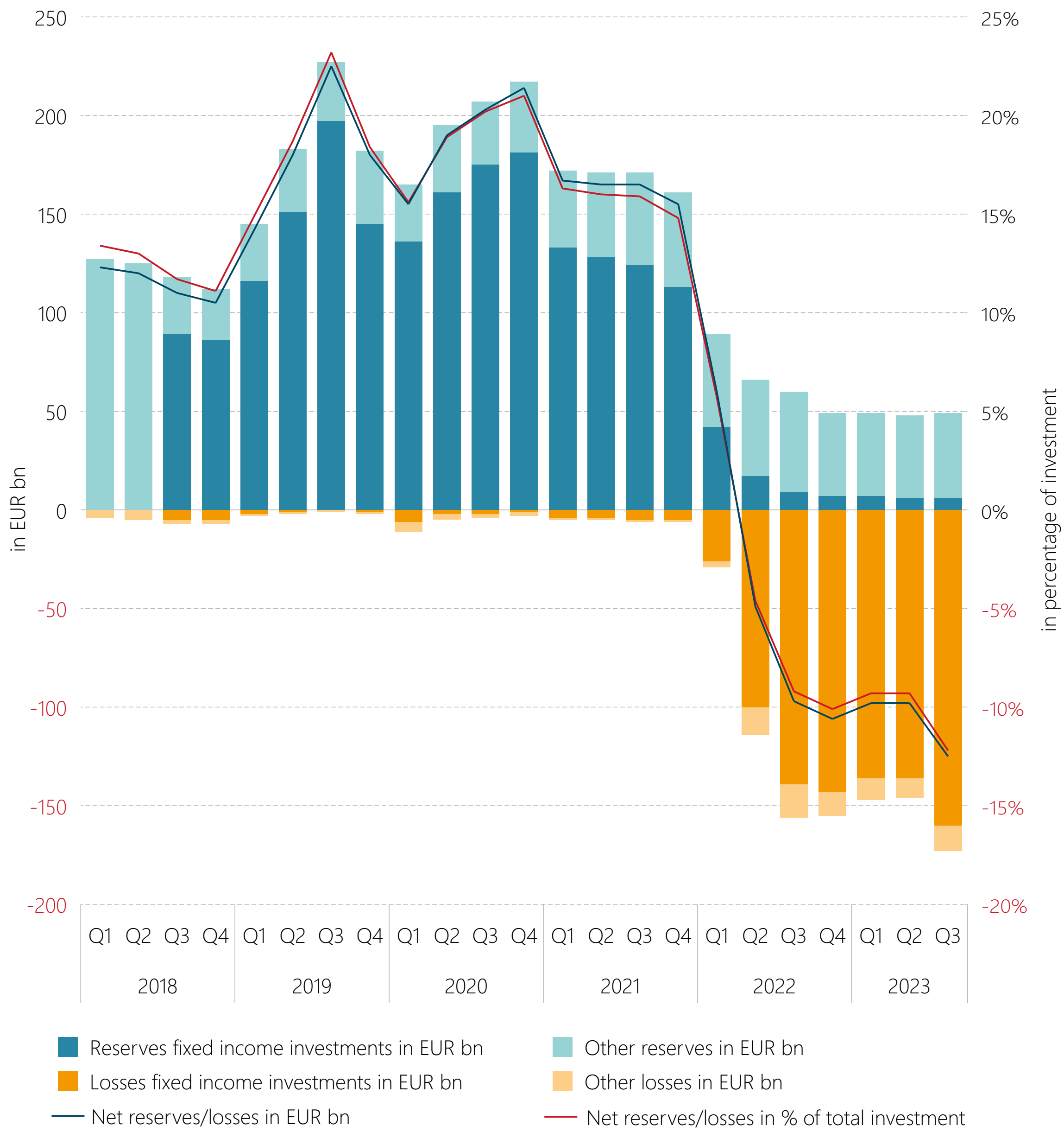
3 See comments particularly concerning the failure of the United States' Silicon Valley Bank in the Financial Stability Review 2023 of the Deutsche Bundesbank, page 27ff.

4 Consisting of (balance sheet) write-ups and/or realisations/releases of valuation reserves in accordance with the German Commercial Code (*Handelsgesetzbuch*).

Life insurers were thus able to strengthen their risk-bearing capacity under Solvency II.

However, as in the case of credit institutions, changes in the market value of fixed income investments resulted in a decline in valuation reserves and an accumulation of hidden losses among insurers too. This is particularly the case with life insurers (see Figure 4 below). Insurers' room for manoeuvre is thus limited when it comes to investments, but this is not reflected in profit and loss provided the price losses on securities are attributable to interest rates and the companies hold the investments to maturity. Insurers' liquidity management assumes special importance in these conditions.

Figure 4: Non-netted valuation reserves and losses of life insurers



Source: Supervisory reporting system

The higher rate of inflation could result in an inability or unwillingness on the part of customers to raise the money required to pay their premiums. This would result in more contract cancellations or more suspensions of premium payments. Higher cancellation rates can trigger liquidity outflows among insurers with long-term insurance contracts. In order to offset these outflows, the companies might find themselves compelled to sell securities. They might have to realise hidden losses, which in turn might be negatively reflected in their results. However, the quarterly surveys on liquidity carried out in 2023 among selected insurers showed no signs of liquidity problems. Data available to BaFin also have not revealed any excessive or forced realisations of hidden losses so far.

Among life insurers, the cancellation rate could rise in response to the higher interest rates as other investments become more attractive compared to existing contracts with lower interest returns. A significant decline could indeed be noted in 2023 among life insurers in the area of new business with single premiums, while new business with regular premiums remained relatively stable. The cancellation rate among high-volume insurance contracts increased temporarily in early 2023, but overall only slightly higher cancellation rates could be noted across all life insurers compared with the prior year period.

As regards *Pensionskassen*, there is no risk of cancellation due to the ban on lump sum compensation payments enshrined in the German Occupational Pensions Act (*Betriebsrentengesetz*). However, there could be a considerable increase in exemptions from premium payments. Nevertheless, BaFin assesses the probability that *Pensionskassen* will have to sell investments below book value as minor on the whole. Even so, the current difficult economic conditions are likely to prejudice the general ability of employers to financially shore up institutions for occupational retirement provision if required.

BaFin's line of approach

- BaFin continues to closely supervise credit institutions with an increased interest rate risk and low capital cover.
- BaFin continues to deal with the consequences of the interest rate development for the institutions it supervises. To this end it conducts stress tests at LSIs and *Bausparkassen* which include various interest rate scenarios (reductions, increases, turnarounds).
- BaFin also analyses the repercussions of the interest rate turnaround for consumers. If any irregularities are noted in the course of this, BaFin conducts consumer surveys on investment behaviour and loan demand, for example.
- Moreover, BaFin deals with especially vulnerable refinancing structures and the consequences of harsher competition for deposits. All aspects of a potential change in investor behaviour and increased interest rates are examined in the course of this – for example, the consequences for earnings, the reserves for impending losses and any vulnerable balance sheet structures.
- BaFin continues to monitor the liquidity risk for insurers. In 2024 it will include selected companies in the quarterly liquidity monitoring of the European Insurance and Occupational Pensions Authority (EIOPA). Furthermore, BaFin deals in depth with the assessment of liquidity risks among life insurers.

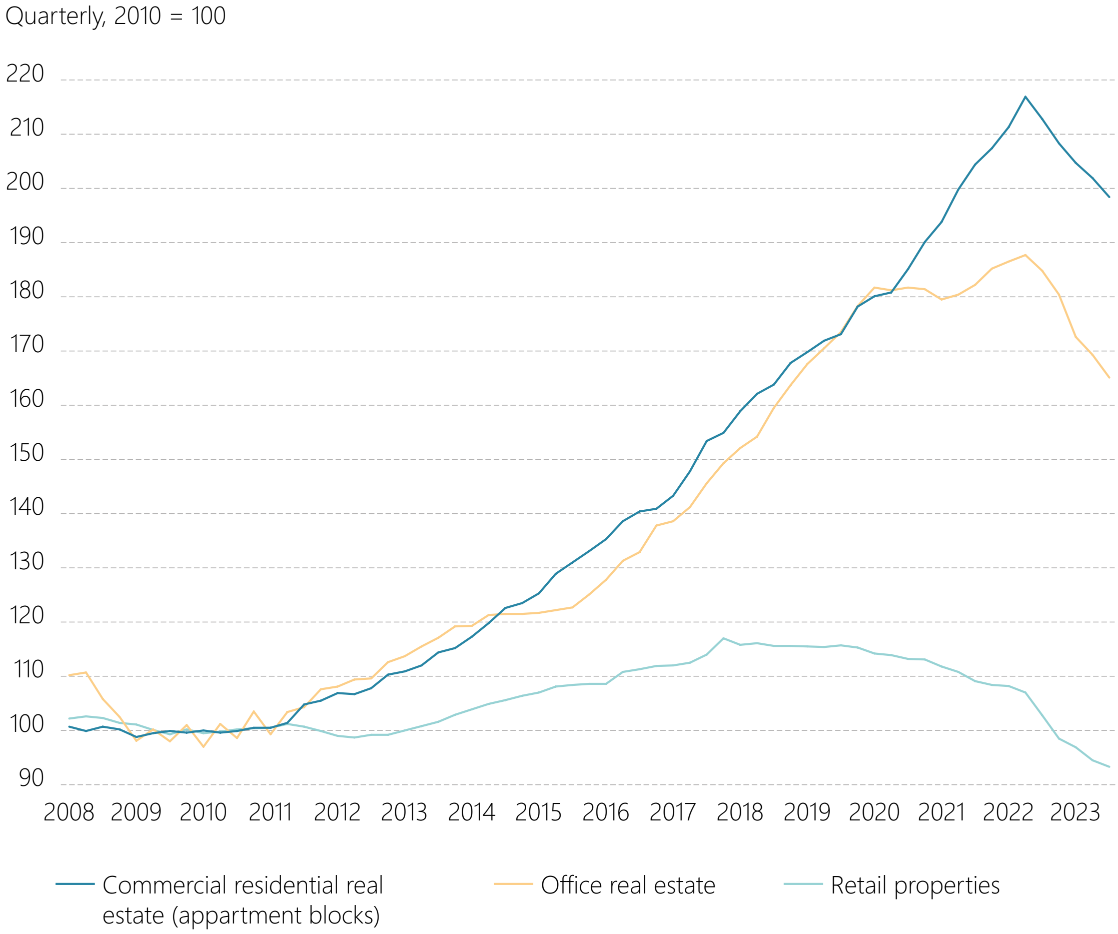
1.2 Risks arising from corrections on the real estate markets ↑

Since the end of 2022, the situation on real estate markets has fundamentally changed. For many years, prices and valuations were on an upward trajectory. The real estate portfolios at many credit institutions have grown. Now prices are falling, loan granting has come to a standstill and the value of loan collateral has come under pressure. Generally speaking, reductions in overvaluations have a positive impact on financial stability. But to begin with, this development can greatly burden the earnings situation of credit institutions. In some cases, credit defaults can even jeopardise the existence of institutions if these institutions are not sufficiently diversified and are invested in especially critical segments.

Commercial real estate

Marked decline in prices, collapse in new business
Since mid-2022, prices for commercial real estate have been falling on a broad scale (see Figure 5, page 13). According to data from the Association of German Pfandbrief Banks (*Verband deutscher Pfandbriefbanken e.V.* – vdp), prices for office real estate declined in the third quarter of 2023 by 10.6 percent compared with the same quarter of the prior year, those for commercial residential real estate by 6.8 percent. Prices for retail real estate, which have been in decline for some time now, are continuing to fall due to the ongoing trend towards online trading. Since the end of 2019, value corrections in the retail real estate segment already amount to a total of 20 percent on average.

Figure 5: Prices for commercial real estate in Germany by segment



Source: BaFin, based on vdp data

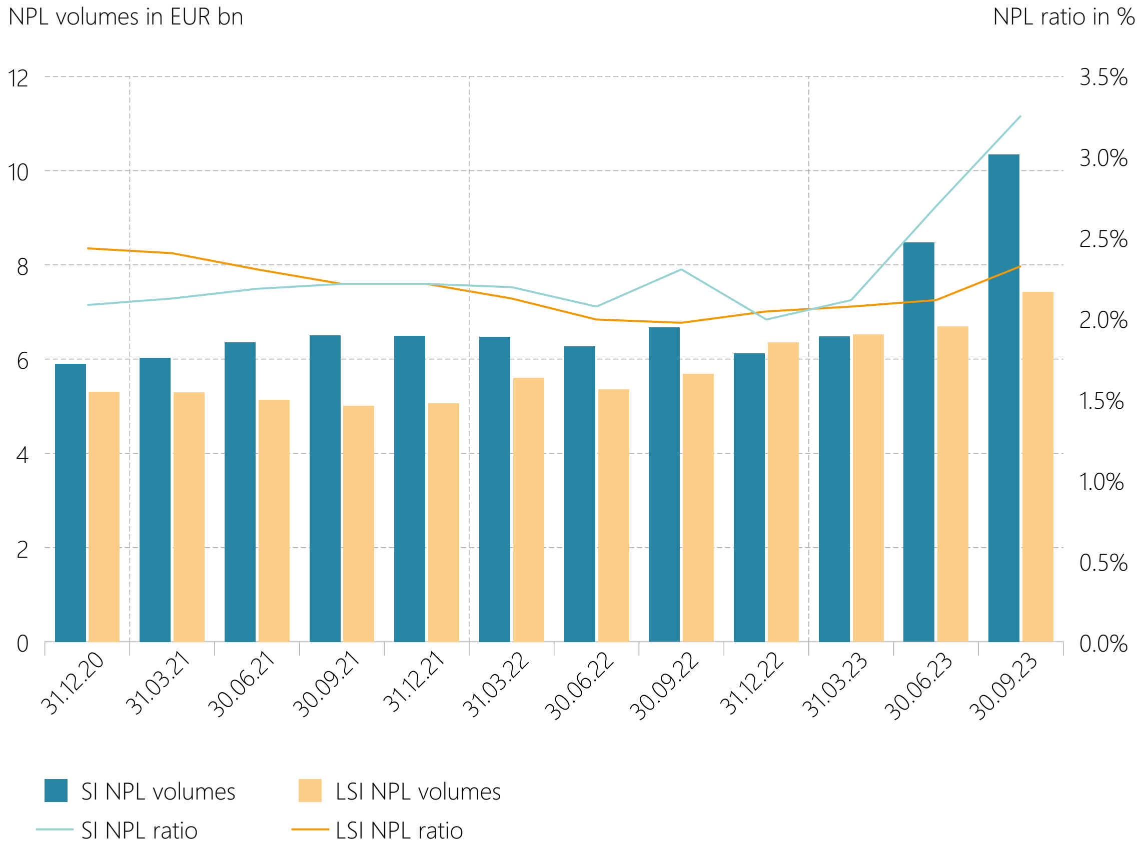
Supply and demand have come under tangible pressure due in particular to unfavourable financing conditions, the economic downturn and high inflation that has especially affected construction costs, alongside changes in consumer behaviour and the trend towards online shopping or greater use of the possibility to work from home. The transaction volume in the commercial real estate area has fallen sharply: in the third quarter of 2023, it stood approximately 60 percent below the long-term average according to data from Jones Lang LaSalle.

After years of dynamic lending growth, new lending (excluding loans for commercial residential real estate) also fell sharply in the winter half-year of 2022/23 according to vdp data. Since then it has bounced back somewhat, albeit to a lower level, but remains clearly behind the volumes of previous years. In the near future, the development of loan commitments is likely to remain subdued given the marked downturn on the commercial real estate market.

Deterioration in credit quality

The risks in the commercial real estate market are likely to become apparent in the years ahead in the form of a deterioration in credit quality and, ultimately, by way of credit defaults. Until the end of 2022, the NPL[5] ratio as lagging indicator remained unexceptional and comparatively stable over a long period of time, at approximately 2 percent. However, by the third quarter of 2023 it had risen visibly, especially among the SIs (see Figure 6 below). At the same time, a gradual downward adjustment of the value of collateral in credit portfolios is likely. This is because the present value of future rental income will be lower in response to the sharp rise in interest rates, which in turn will necessitate a downward adjustment of real estate values in many cases. Survey results indicate that German institutions are tightening their standards according to which new loans are granted.

Figure 6: NPL volumes and NPL ratio of commercial real estate loan portfolios of German SIs/LSIs



Here: Commercial real estate loans = Loans to non-financial corporations collateralised with commercial real estate

Source: Joint calculations of BaFin and the Bundesbank based on the supervisory reporting system, as at 30 September 2023

Banks with a focus on commercial real estate financing and project developers are subject to heightened risk due to their specific business models. Some banks concentrate their activities very strongly on domestic and international commercial real estate financing and are thus also exposed to upheavals in other countries. Due to their specialisation on commercial real estate financing, they show – like a number

5 NPL stands for non-performing loans.

of other institutions – a cluster risk because they are unable to compensate losses in this segment through other business areas. Project developers, on the other hand, have no regular rental income in the planning phase and are therefore more vulnerable than holders of existing properties with solvent tenant structures. The marked increase in financing and construction costs is currently impacting project developers to a particularly strong degree. In 2023, several project developers had to file for insolvency.

The difficult conditions underlying the commercial real estate market can be expected to lower the earnings of the banks concerned for a longer period and necessitate higher risk provisioning. Strongly specialised business models or a bad choice of properties by banks could even cause problems for some banks.

Insurance undertakings
Insurers are also affected by the aforementioned developments because, as institutional investors, they are traditionally invested in residential and commercial real estate and grant mortgage loans. Commercial real estate accounted for approximately 8 percent[6] of insurers' investments as at 30 September 2023. Insurers currently still have very high valuation reserves in their real estate portfolios. BaFin therefore assesses the risk from valuation changes as manageable on the whole.

Real estate funds
German asset management companies (*Kapitalverwaltungsgesellschaften*) account for a large share of the European market for open-ended real estate funds. The most important risk to which these funds are exposed from a supervisory perspective is liquidity risk. This risk arises if companies do not have sufficient liquidity in a scenario in which a very large number of investors wish to redeem their fund units. Were this to happen, the companies might have to suspend redemption. However, this has only happened in a small number of cases so far. As regards open-ended retail funds domiciled in Germany, this risk is reduced because of the two-year minimum holding periods usually applicable here alongside the one-year termination periods and fixed redemption dates.

There are no signs at the moment of a termination wave. As regards retail funds, slight net outflows have been noted since September 2023, while no such outflows have been recorded for special funds to date.

6 Direct investments and estimates of fund investments, taking into account loans and mortgage loans with commercial real estate risk and equity investments in commercial real estate based on Solvency II data as per 30 September 2023 (market values).

Residential real estate

Falling prices and weaker new business
On the German residential real estate market, prices for owner occupied properties declined in the third quarter of 2023 compared with the same quarter of the prior year period by 5.8 percent on a nationwide average according to vdp data. The drop in prices for existing properties is more pronounced than for new properties. Demand is falling as supply heads upwards slightly. This is the reason for the decline in prices.

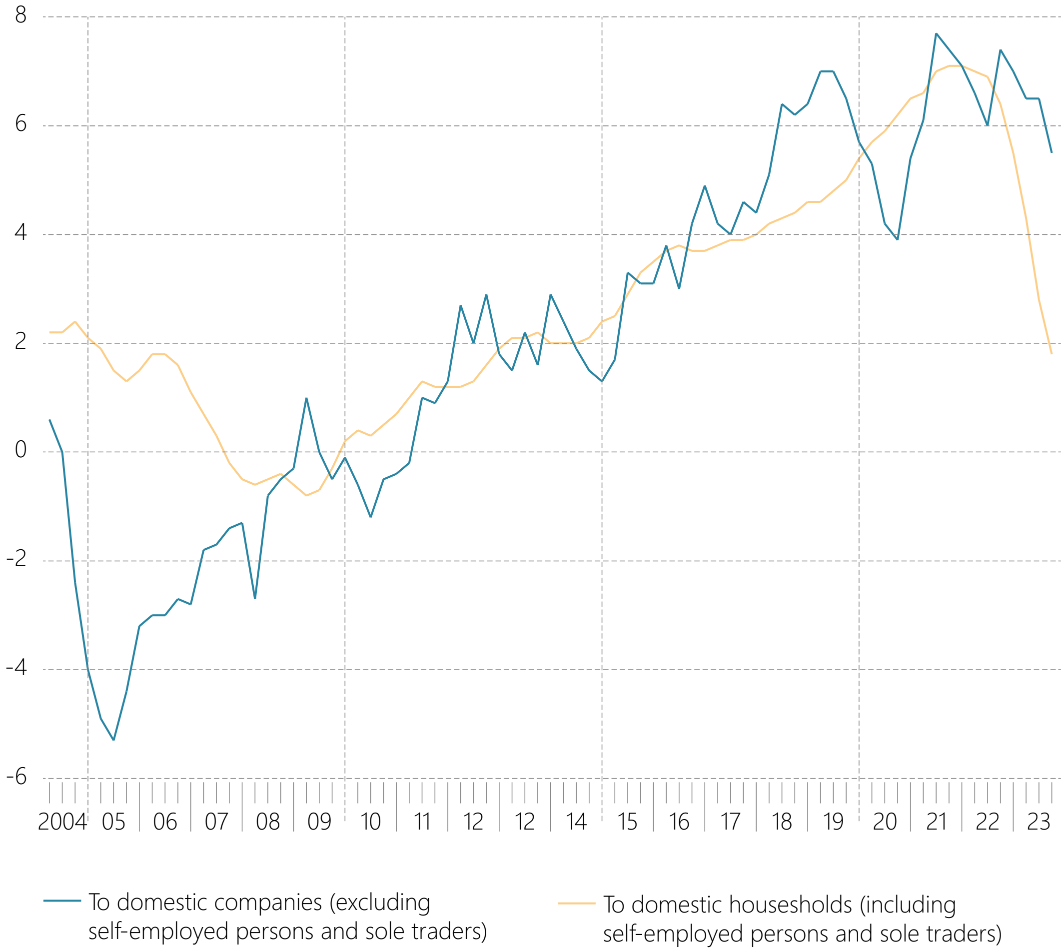
The volume of residential financing of private households is growing, but at a far slower pace now. According to data from the Deutsche Bundesbank, the volume in the third quarter of 2023 was only 1.8 percent higher than in the previous year. Including commercial real estate construction, the total volume of residential mortgage loans amounts to approximately 1.8 trillion euros.

Far fewer new loans are being granted. From January to September 2023, new lending was 43 percent lower than in the prior year period (see Figure 7, page 17). The main reasons for this besides the drop in real incomes due to inflation are the significantly higher mortgage rates and construction costs. Residential real estate is becoming less affordable, demand is declining noticeably and potential buyers are increasingly turning to the rental market.

Economically, the turnaround on the residential real estate market can cause problems for credit institutions in the longer term. The increase in interest revenues from new business and from follow-up financing agreements is being additionally limited by lower new lending.

Figure 7: Dynamics in domestic banks' loans for house purchase*

Year-on-year rate of change as a percentage, end-of-quarter data, seasonally and calendar adjusted

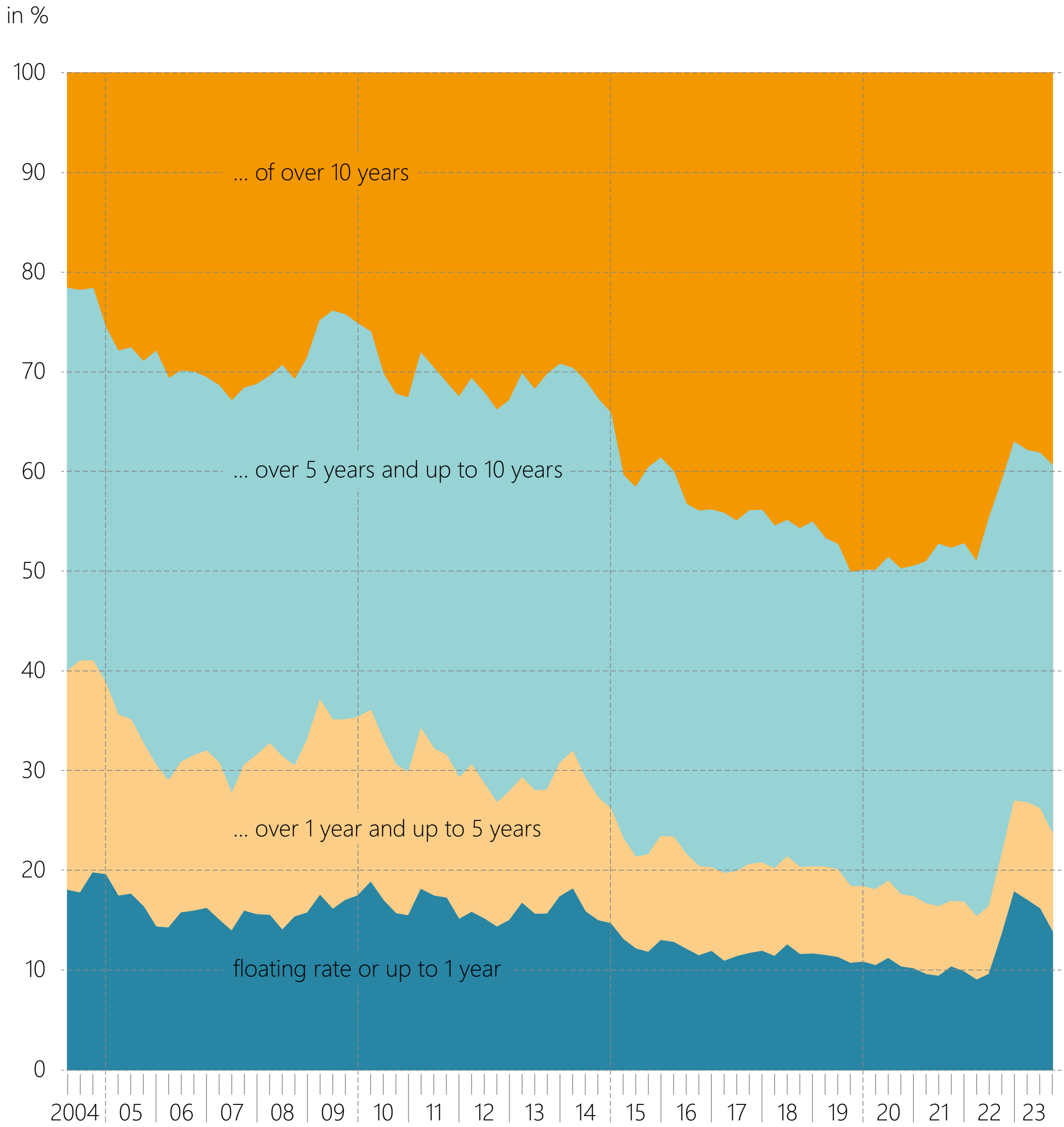


* Data adjusted for statistical changes.

Source: Bundesbank calculations, as at September 2023

There is another factor to bear in mind: institutions, the earnings of which stem for the most part from real estate loans with long-term interest rate fixations, have been profiting to a lesser degree so far from the increased interest rates than their competitors. As a rule, private housing loans in Germany have long interest rate fixation periods. However, as a result of the interest rate increases of past quarters, the share of very long-term loans of more than ten years has fallen somewhat and the share of loans with shorter terms has risen slightly (see Figure 8, page 18).

Figure 8: Fixed interest periods for loans to households in Germany for house purchase*



* Calculated as domestic banks' volume of new business with respective rate fixation periods as a share of total new business (also including extensions).

Source: Bundesbank calculations based on the MFI interest rate statistics, as at September 2023

No excessive credit defaults so far, collateral under pressure

In these conditions, credit institutions tightened their new loan granting standards in 2023, as shown by the Deutsche Bundesbank in its Bank Lending Survey for Germany (most recently in October 2023). The years ahead will see a growing number of expiring mortgage loans that had been concluded when interest rates were very low. This can cause problems in the case of follow-up financing agreements – particularly if borrowers are no longer able to afford the higher burden of lending costs.

All in all, lenders' losses in the area of residential real estate are still moderate. Institutions' provisioning ratio stood at 1.25 percent in the third quarter of 2023 – and thus on average compared with previous quarters. Due to inflation, loan defaults could rise slightly, especially if borrowers taking out follow-up financing agreements are unable to afford the higher interest and redemption payments. Considerable burdens are likely to occur if unemployment were to rise sharply amid a slump in economic activity.

A drop in real estate prices could mean that banks are only able to realise collateral at values below that of the outstanding loan amount. But as credit institutions mostly base their collateral valuations on the mortgage lending value rather than on the more volatile market value, they should have reserves to draw on in this area. Furthermore, the value of collateral furnished for older residential property is being lowered as demands on energy efficiency increase. The fall in prices in this market segment is especially pronounced.

BaFin's line of approach

- Since February 2023, the increase in the countercyclical capital buffer and a systemic risk buffer for private and commercial residential property loans introduced by BaFin in 2022 have been taking effect. The buffers are intended to make the banking system more resilient by protecting institutions' capital base in stress situations.
- BaFin will also continue to closely supervise credit institutions with high commercial real estate exposures by way of impairment tests, among other things. BaFin regularly analyses institutions' loan granting and their real estate fund units, the objective being to recognise risks resulting from this at an early stage.
- In 2024, BaFin will again conduct a survey on insurers' investment behaviour, taking into particular account insurers' investments in commercial real estate.
- Based on the data collection on housing loans (WIFSta), which was started in 2023, BaFin will carry out in-depth analyses on lending standards on the residential real estate market as soon as the underlying data are sufficiently reliable and robust.
- In 2023, BaFin examined the risk and liquidity management of commercial real estate funds and will delve deeper into this area in 2024.

1.3 Risks arising from significant corrections on the international financial markets →

The potential for significant corrections on the international financial markets remains great. For a long time, investments had come to a standstill as a result of the extremely low interest rates. A great deal of liquidity was in circulation, and the (re-) financing conditions were correspondingly favourable. These framework conditions have radically changed in a short space of time. In 2023, there were no significant or sustained corrections on financial markets, with expectations regarding the further development of interest rates playing an important role in this context. Markets expect that the interest rate increases have reached their peak and that first interest rate reductions will be made in the foreseeable future. With geopolitical risks also at a high level, the risk premiums on markets appear to be still low. A sudden change in market expectations in response to adverse shocks could bring about abrupt corrections on markets.

Interest rate increases, quantitative tightening and geopolitical uncertainty
International financial markets remain in a fragile state. The increasingly tense geopolitical situation[7] and the subdued forecasts for economic development in certain key countries and regions engendered great uncertainty in 2023. To tackle the high inflation, the European Central Bank (ECB), the US Federal Reserve and the Bank of England, among others, initiated a round of interest rate increases in 2022.[8] Furthermore, they started to sell the bond holdings that they had accumulated in recent years in the process known as quantitative tightening. The central banks have thus withdrawn liquidity from the markets. The restrictive monetary measures are resulting in higher financing costs for companies of the real economy. This could lead to rating downgrades and increased default rates on international bond and securitisation markets, especially among highly indebted companies of the real economy.[9]

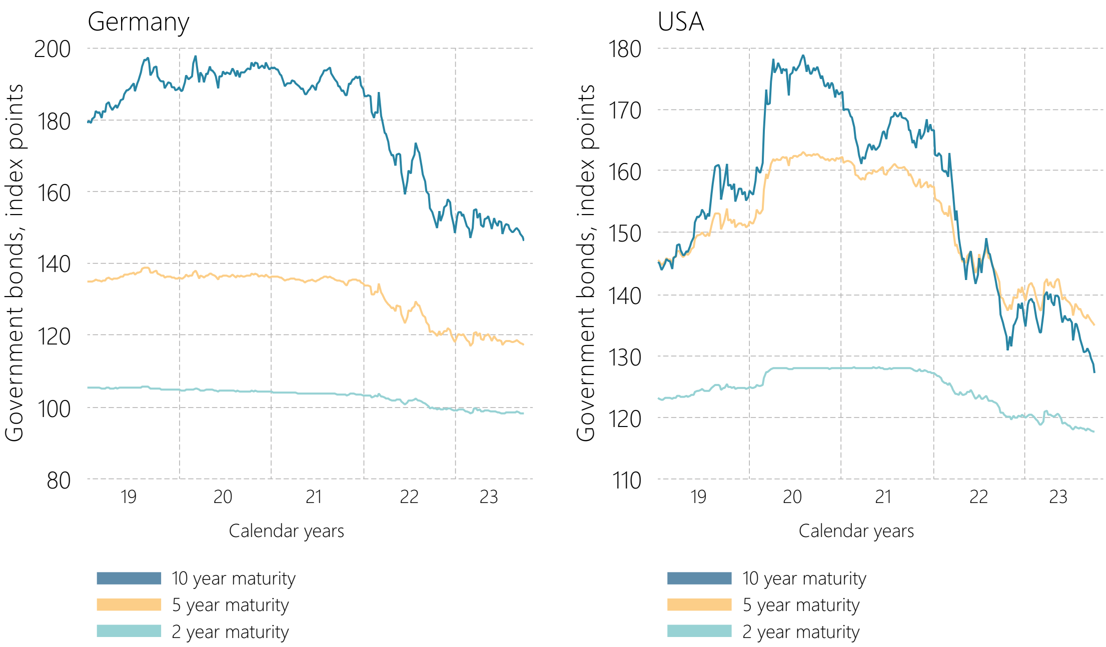
The supervised insurers have considerable exposures to corporate, bank and government bonds. Bonds with a BBB rating, the poorest investment grade rating, account for around ten percent of total investments by market value of primary insurers supervised under Solvency II (as at 30 September 2023).

The Russian war of aggression against Ukraine, the terror attack on Israel and the escalation of the conflict in the Middle East alongside uncertain developments in other regions harbour further risks for financial markets. In the past, the central banks and sovereign states shored up markets in stress situations especially with additional liquidity. In the present environment, such measures would not be in keeping with the current monetary policies of central banks.

Different repercussions for certain asset classes
Rising interest rates, a weakening economy and an increasing level of risk aversion have not given rise to growing default rates on international bond markets so far. However, the market values of bonds fell strongly from mid-2021 until the third quarter of 2023 (see Figure 9, page 21).

7 See Geopolitical turmoil, page 44.
8 See Risks arising from significant increases in interest rates, page 5.
9 See Risks arising from defaults on loans to German companies, page 22.

Figure 9: Development of market values of fixed-interest securities



Source: LSEG Datastream, as at October 2023

The higher risk premiums seen in 2023 in the form of higher yield expectations indicate that markets' trust in the debt sustainability of a number of countries is falling. This particularly concerns countries with budgets that will come under pressure in the years ahead as it becomes more expensive to refinance maturing bonds.

The situation underlying equity markets in 2023 was mixed: after falling strongly as a result of the war in Ukraine and the great uncertainty accompanying this in 2022, markets recovered over the course of 2023. Given the macroeconomic situation, significant corrections cannot be ruled out.

Such corrections would have a direct but not significant impact on insurers' solvency and earnings because the share of listed stocks in the overall portfolios of insurers amounted to approximately five percent in sector average terms as at 30 September 2023. German banks would also be affected if prices on equity markets were to fall sharply. However, the institutions' share of stocks in their own securities accounts (Depot A) is very low at an average 0.3 percent in terms of their total assets (as at 30 September 2023).

What is more, corrections on financial markets could trigger higher margin requirements in the derivatives business – i.e. the amount of funds that have to be furnished as collateral. Collateral that has already been furnished might no longer suffice if sizeable corrections were to occur. Market players would then have to provide additional liquidity at short notice.

Risks arising for financial stability from non-bank financial intermediation
In recent years, the significance of non-bank financial intermediation (NBFI) in relation to financial intermediation has risen noticeably throughout the banking sector. According to data of the Financial Stability Board (FSB), the global volume of NBFI assets more than doubled between the years 2008 and 2022. Stability risks can arise due to inadequate transparency and regulatory gaps, with the risks arising from the excessive use of leverage and liquidity outflows particularly significant in this context.

If alternative investment funds (AIFs), in particular, or other vehicles with a low deployment of equity capital and possibly complex financial instruments take high risks and turn out to be less liquid in situations of stress or crisis, contagion effects can be triggered elsewhere in the financial sector in the form of panic selling. System-wide stress could be engendered as a result of this. This is especially the case if banks of systemic importance are involved in such transactions. A scenario of this kind creates additional concentration risks and poses risks for financial stability.

BaFin's line of approach
- BaFin identifies institutions with high and risky exposures that depend heavily on financial markets. BaFin assesses the risk content of such exposures and closely supervises the invested institutions, if necessary.
- BaFin will further develop the forecast calculations of life insurers with regard to Solvency II, examining how capital market changes impact the companies' equity and solvency capital requirements. Building on these standardised sensitivity calculations, BaFin plans to develop a top-down method that it can use to assess how capital market changes impact the solvency of life insurers.
- BaFin participates in various working groups of the European and international supervisory organisations in the area of NBFI. It monitors the market development and liquidity management especially of alternative investment funds.

1.4 Risks arising from defaults on loans to German companies ↑

The risk of insolvency among German companies has risen. In view of the difficult economic situation, there is a danger that the share of problematic loans, bonds and securitisations will increase. In the case of follow-up financing agreements, the likelihood of borrowers defaulting has risen. This is due to higher market interest rates that borrowers might not be able to afford.

Were credit defaults to increase, German credit institutions would come under pressure as a result. Institutions particularly at risk would be those with low equity ratios, those that have furnished too few loan loss provisions up until now or failed to sufficiently diversify their risks.

Sentiment in the economy deteriorating

The risk environment has transformed in some areas over the course of 2023. Energy was not as scarce as feared, and supply chains proved robust for the most part. Nonetheless, the conditions in which German companies are operating have become more difficult. The interest rate turnaround and tighter loan granting standards have caused financing costs to rise strongly. This was fuelled by the persistently high inflation, marked wage increases and the cost-intensive transformation towards a climate-neutral economy in conjunction with dwindling demand. The latter is the case particularly in the automobile industry, most notably their suppliers.

There is another factor to bear in mind: the extraordinary support measures offered by the government due to the COVID-19 pandemic and the energy crisis that emerged in 2022 are coming to an end. This could engender a rise in credit default rates among companies affected by this, for example in the restaurant business. Energy-intensive sectors such as the chemical industry and the paper and glass production sectors are also affected by the persistently high energy prices.

Above all, the numerous companies strongly focussed on exports have also come under pressure as a result of increasing trade restrictions and a global subsidy race.[10] What is more, there is less room for fiscal and monetary manoeuvre if the economy needs shoring up in the face of a renewed crisis. This can be attributed, among other things, to the higher interest rates and the anti-inflationary monetary policies of the central banks.[11]

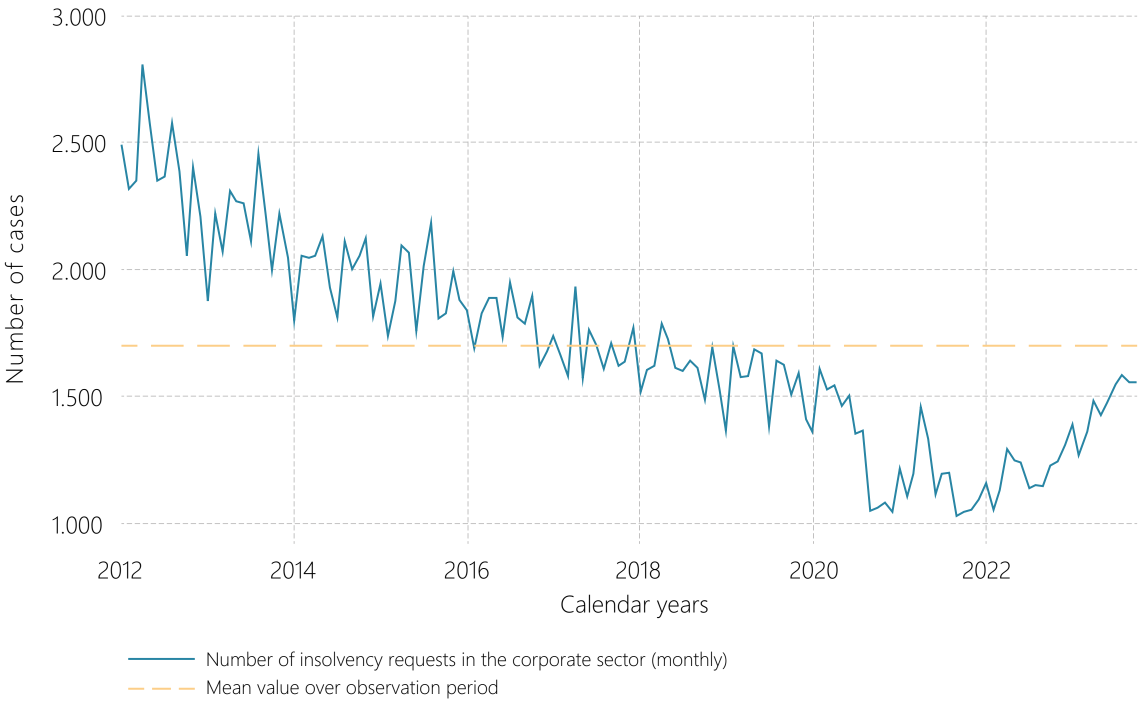
All in all, German economic output did not show any growth in 2023 according to the forecasts of economic research institutions and banks, but actually contracted slightly. Institutions expect weak economic activity in 2024 as well.

Default risks for banks on the increase

Since the beginning of 2022, company insolvencies have been rising – albeit from an unusually low level during the COVID-19 pandemic (see Figure 10, page 24). This is especially the case in the social services and healthcare sectors as well as the property and housing sectors, most notably among real estate project developers. The number of insolvencies in these sectors has risen by 57 and 44 percent respectively compared with the end of 2019 – i.e. the year before the onset of the COVID-19 pandemic.

10 See Geopolitical turmoil, page 44.
11 See Risks arising from corrections on international financial markets, page 19.

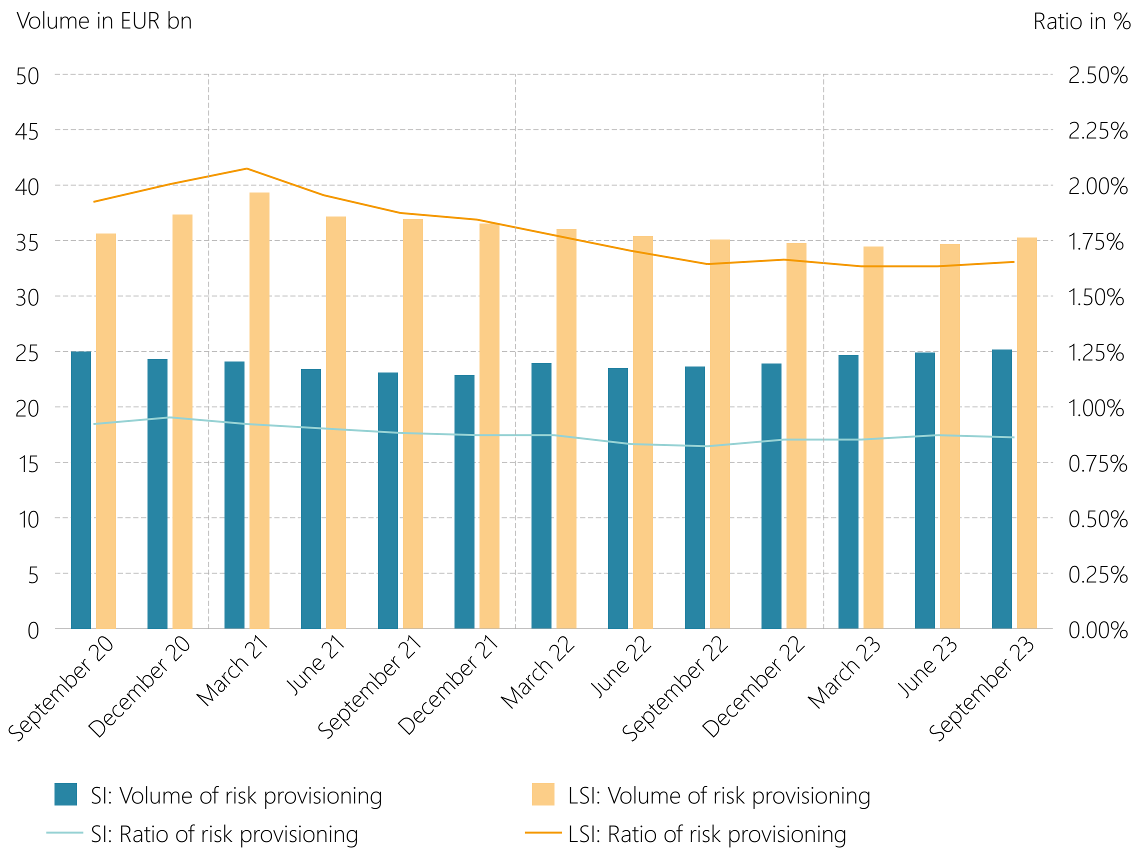
Figure 10: Development of company insolvencies in Germany



Source: LSEG Datastream, Federal Statistical Office of Germany, as at October 2023

Writedowns in the credit portfolios of banks rose only slightly until the third quarter of 2023 compared with the first quarter of 2023. However, particularly LSIs are increasingly strengthening their risk provisioning (see Figure 11, page 25).

Figure 11: Development of risk provisioning of German banks



For institutions that draw up their balance sheets in accordance with the German Commercial Code (*Handelsgesetzbuch*), risk provisions include specific loan loss provisions, lump-sum specific loan loss provisions, general loan loss provisions and reserves under section 340f of the German Commercial Code.

Source: Joint calculations of BaFin and the Bundesbank based on the supervisory reporting system, as at 30 September 2023

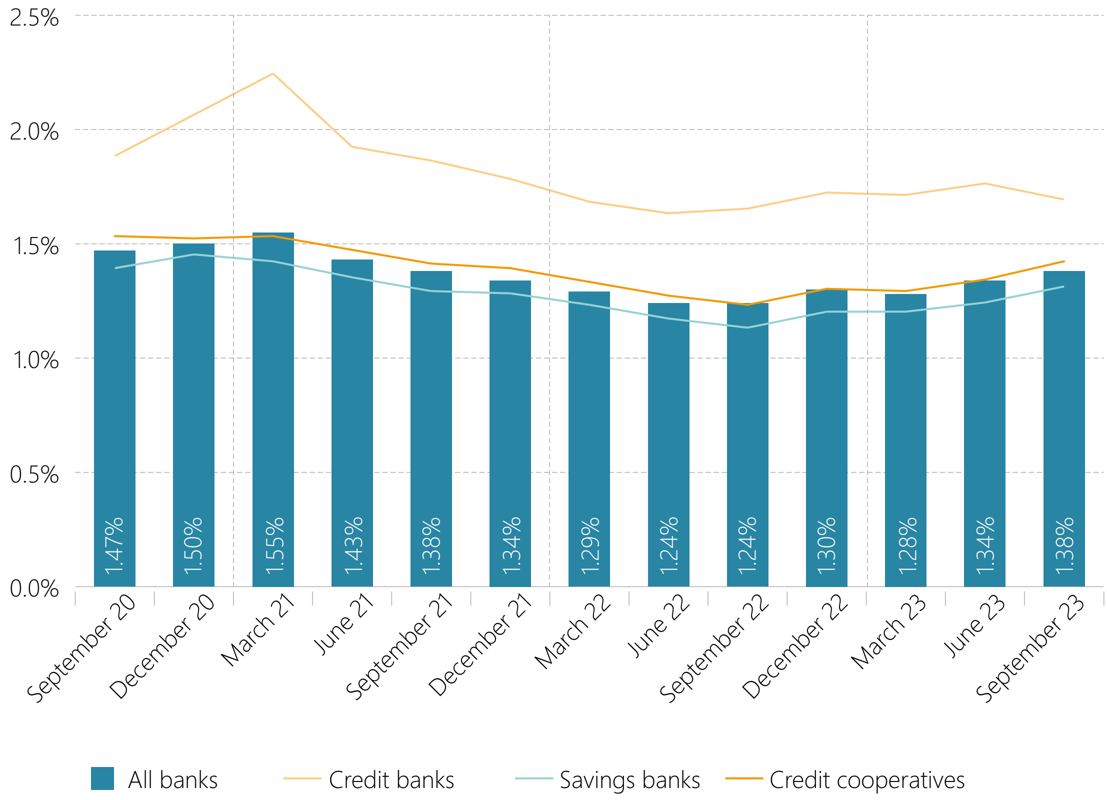
In the case of SIs, the NPL ratio amounted to an average 1.46 percent in September 2023; the LSIs recorded a somewhat lower ratio of 1.42 percent (see Figure 12, page 26). The highest NPL ratio was recorded by the regional banks and other credit banks (1.69 percent); among the institutions affiliated to a banking network (*Verbundinstitute*) the ratio was lower (savings banks: 1.31 percent, credit cooperatives: 1.42 percent). As regards the sectors, the highest NPL ratios were recorded by “other real estate”, which also includes commercial real estate.[12]

All in all, the NPL ratios in Germany – compared with the European banks in the Single Supervisory Mechanism (SSM) – remained at a low level.

Since September 2022, however, the NPL ratios have been gradually rising on the whole, by 13 basis points or 10 percent. BaFin expects this trend to continue.

12 See Risks arising from corrections on the real estate markets, page 12.

Figure 12: Development of NPL ratios of German banks



Source: Joint calculations of BaFin and the Bundesbank based on the supervisory reporting system, as at 30 September 2023

According to the Eurosystem's Bank Lending Survey (BLS), banks in Germany have been tightening their loan granting standards since the beginning of 2022 and implementing higher risk premiums for certain loans. However, the capital markets are demanding higher risk premiums than banks. What is more, demand for loans among companies has weakened since the beginning of 2023. The institutions expect this trend to continue. According to the BLS, banks plan to further tighten their lending conditions for corporate loans.

Insurers also affected

Insurers are equally affected by loan default risks because they grant corporate loans themselves and invest in private debt funds. These private debt[13] funds provide companies with debt capital. The loans that they grant are as a rule collateralised.

Insurers have continuously expanded their share of private debt investments in their portfolios in recent years, particularly in response to the phase of low interest rates. At the end of 2023, these investments accounted for nearly five percent of investments on average; with some insurers, the share was significantly higher.

13 Private debt is a form of debt capital made available to companies by institutional investors.

Private debt investments contribute towards diversifying the overall portfolio. However, they place very high demands on an insurer's risk management. It is of particular importance that insurers have a clear understanding of the business models of the companies to which the private debt funds are granting debt capital.

The credit and surety insurers under BaFin's supervision are also affected due to the economic slowdown and rising number of company insolvencies. An increase in the claims ratio can be noted overall – also among surety insurers that assume guarantees and sureties for the stressed construction industry. But the ratio remains in an acceptable range.

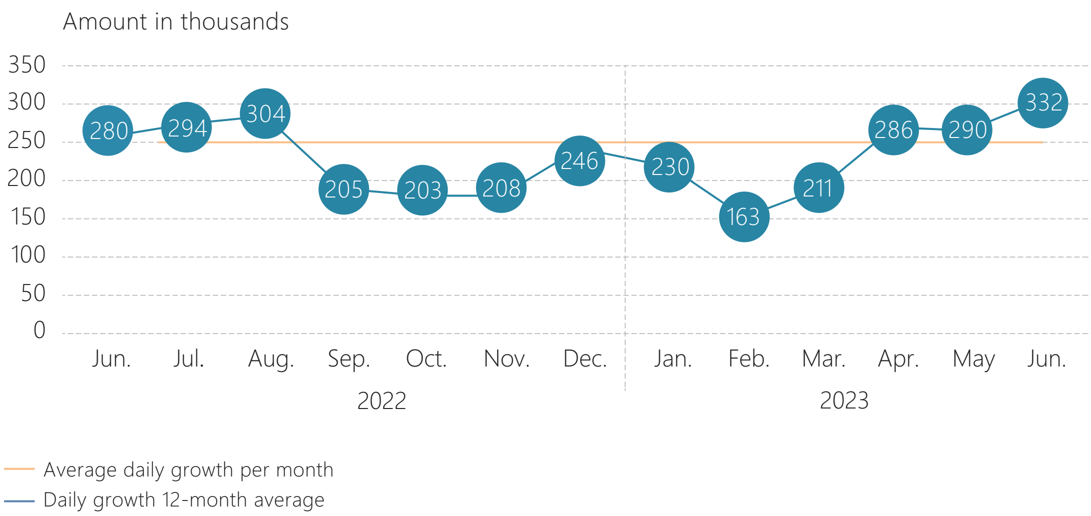
BaFin's line of approach

- BaFin will closely supervise credit institutions with a strong exposure to sectors that could be particularly affected by an economic downturn.
- BaFin regularly conducts special inspections of lending business and impairment tests with the focus on company loans. It is stepping up these inspections and tests.
- Moreover, BaFin is seeking to expand its data analysis capacities to include the lending business of banks. BaFin will tap further data sources and use statistical data and data from commercial providers, for example, and monitor special risks (e.g. those arising from NPLs) even more intensively by setting up an early warning system.
- BaFin carries out a horizontal analysis of models used by LSIs for an internal ratings-based approach (IRBA). The objective is to obtain a meaningful overview of the models used, including their performance.
- BaFin continues to very closely monitor the development of the private debt market and the investment behaviour of insurers. It is promoting awareness among the sector for the demands on risk management and is particularly focussing on insurers that have noticeable exposures or are taking above-average risks. BaFin also focuses on banks in this context – even if credit institutions have not generally made any significant investments in private debt funds up until now.
- BaFin continues to closely monitor the market for credit and surety insurers in view of the increase in company insolvencies.

1.5 Risks arising from cyberattacks with serious consequences ↑

Attacks on corporate IT systems or financial market infrastructures involving the use of malware, for example, are on the increase worldwide (see Figure 13 below). According to estimates of the Federal Office for Information Security (*Bundesamt für Sicherheit in der Informationstechnik* – BSI), the threat has never been so great. This also applies to the financial sector as the companies operating in this sector are working with two especially attractive goods – money and sensitive data. Cyberattacks have the potential to inflict enormous damage on the companies affected, but they can also substantially restrict the ability of the financial system to operate and endanger financial stability. This is also the case if the targets of such attacks are not the companies themselves but their service providers and, in particular, major multi-client service providers.[14] Ransomware attacks pose the most serious threat. This is a computer malware that encrypts the victim's data and only releases it after payment of a ransom. Another variant of such an attack is when criminals extract data via ransomware and threaten to publish the data unless a ransom is paid. Collateral damage can be caused if systems have to be shut down.

Figure 13: Average daily growth of new malware variants



Source: Federal Office for Information Security (BSI), The State of IT Security in Germany

Examples from 2023 have shown how quickly such attacks can impact the ability of sections of the financial market to operate. In the USA, an institution in the clearing chain for trades in US Treasuries was a victim of such an attack. This institution's sole purpose was to act as one of several points in the clearing chain for the US market. But due to the strong infrastructural links between the institution and other market participants, the entire trading and clearing activities of the customers affected were greatly restricted as a result of the cyber attack. It was only possible to avoid major upheavals in the trading segments affected by the attacks by performing complex

14 See Risks arising from market concentration due to the outsourcing of IT services, page 35.

alternative processes manually. Examples from Germany also highlight the damage potential and risks: in one case, data of bank customers at a service provider responsible for managing account changes were siphoned off. In another case, a supervised company that works together with numerous credit institutions had to shut down its server for a longer period of time due to a cyber attack. During this period, the company was unable to carry out any new business and had to complete each procedure on paper, involving a great deal of manual work. What is more, the attackers extorted personal data held by the company, which it later published on the darknet. Such dealings are known as double extortion.

Another frequent form of attack is the distributed denial of service (DDoS). This involves engulfing the communications networks of a company with data requests. The use of malware or spyware in the form of Trojans, viruses or worms is also on the increase.

The increasing spread of digitalisation has broadened the range for attacks. At the same time, the threat is exacerbated by the activities of effectively organised economic criminals and by cyberattacks that are politically motivated or even government influenced. The latest geopolitical tensions and crises are further heightening the risk of government-influenced cyberattacks, including attacks on the public administration and operators of critical infrastructure in the finance area.

BaFin’s line of approach

- BaFin will implement the new cross-sectoral EU regulation DORA[15] by mid-January 2025 as scheduled. This includes, for example, monitoring critical third-party service providers from the field of information and communication technology (ICT) and the reporting system for ICT contractual relationships.
- In accordance with DORA, BaFin will be established as the reporting hub for ICT-related incidents for the German financial sector. The objective is to use the information thus derived to obtain a more detailed picture of the IT security situation on the German financial market and be in a position to respond effectively to IT incidents.
- Going forward, BaFin will also create an overview of cyber risks for the financial sector. The objective is to highlight the cyber threats facing the financial industry, expose the vulnerability of the supervised companies and their IT service providers and record the cyberattacks that have taken place (and achieved their goals).
- BaFin actively supports the National Cyber Defence Centre and is cooperating closely with national and international authorities in order to ensure that it is promptly informed about disruptions and dangers and able to pass this information on to other authorities and supervised companies.
- Furthermore, BaFin organises national crisis and contingency planning exercises in which the financial industry is also involved. It also participates in international cyber crisis exercises. The objective of these exercises is to ensure that, in a situation of crisis, all participants are able to respond fast and in concert.
- As stipulated in DORA, threat-led penetration tests (TLPT) are to be mandatory in future at certain companies and institutions.
- Together with the G7 partners, BaFin is preparing policy papers for the financial sector aimed at further strengthening the sector’s resilience to potential attacks – an example of such a policy paper is “G7 Fundamental Elements of Ransomware Resilience for the Financial Sector”.

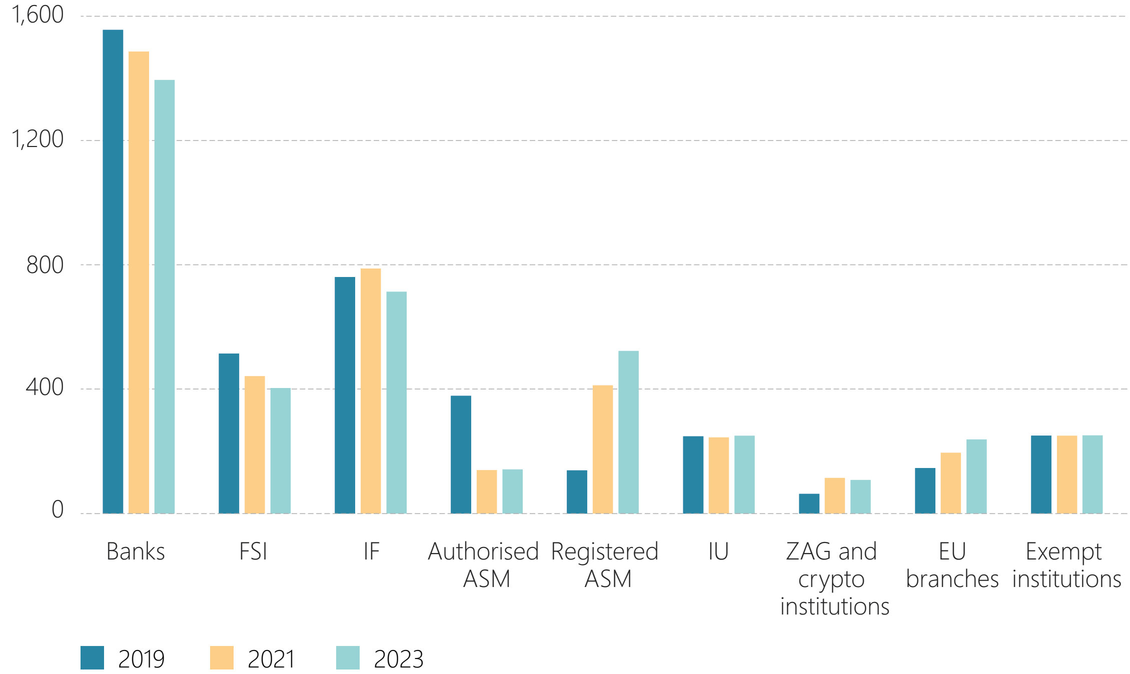
15 DORA stands for Digital Operational Resilience Act.

1.6 Risks arising from inadequate money laundering prevention

The risk of financial market players being misused for money laundering and terrorist financing purposes is still generally high (see Table 2, page 32). Credit institutions and other companies of the financial sector must therefore take appropriate and effective precautionary measures – by ensuring that they know their customers, for example, and by notifying the Financial Intelligence Unit (FIU) if they have information about suspicious transactions.

In the German financial sector there are more than 8,700 companies and persons obliged to take measures to prevent money laundering (for an overview of the obliged entities, see Figure 14 below). They might be involved in money laundering – even unknowingly. This makes effective precautionary measures all the more important. However, there is still a need for improvement in matters of prevention, particularly among some companies of the non-banking sector. In a number of cases in this sector, the corresponding measures and structures have yet to be established.

Figure 14: Overview of obliged entities supervised by BaFin (excluding agents)



FSI = Financial services institutions
IF = Investment firms
ASM = Asset management companies
IU = Insurance undertakings
ZAG = German Payment Services Supervision Act

Source: BaFin, as at September 2023

Table 2: Suspicious transaction reports – a comparison

Sector	Reporting entities*	2020	2021	2022	Change 2021/2022
Financial sector	Credit institutions	129,108	180,394	242,930	↑
	Financial service institutions	9,983	12,289	12,121	↓
	Payment institutions and electronic money institutions	238	95,386	69,961	↓
	Agents	730	911	790	↓
	Independent business persons	0	0	0	→
	Insurance undertakings	233	222	252	↑
	Asset management companies	33	33	69	↑
	Total STRs from the financial sector	**140,325**	**289,235**	**326,123**	↑
Non-financial sector	Financial companies	338	378	620	↑
	Insurance intermediaries	6	11	15	↑
	Lawyers	23	83	92	↑
	Legal advisors who are members of a bar association	0	0	0	→
	Patent attorneys	0	0	0	→
	Notaries	1,629	6,471	7,223	↑
	Legal advisors	0	0	0	→
	Auditors and chartered accountants	7	23	13	↓
	Tax advisors and authorised tax agents	15	36	50	↑
	Trustees, service providers for trust companies	13	6	12	↑
	Income tax assistance associations	0	0	1	↑
	Estate agents	135	177	222	↑
	Organisers and brokers of games of chance	252	220	462	↑
	Traders in goods	436	782	1,386	↑
	Total STRs from the non-financial sector	**2,854**	**8,187**	**10,096**	↑
Other reporting entities	Supervisory authority	144	173	108	↓
	Fiscal authorities	608	754	653	↓
	Other STRs	74	158	206	↑
	Total	**144,005**	**298,507**	**337,186**	↑

* Reporting entity groups in accordance with the classification under the German Money Laundering Act.

Source: Annual Report 2022 of the Financial Intelligence Unit (FIU)

Risks in international payments
The international financial systems are closely interlinked but most of them are differently regulated. This also applies to the prevention of money laundering and terrorist financing. Such differences create opportunities for circumvention that criminals use to their advantage. In Germany as an export nation, a very large number of high-volume transactions are carried out in the payments area, for example. This harbours the risk of funds from illegal sources being channelled into the legal economic system without attracting attention.

The current geopolitical environment is giving rise to further risks related to the prevention of money laundering and terrorist financing. Supervised companies, in particular account-servicing institutions, must keep an eye on such developments.

In order to meet the requirements under anti-money laundering law, many obliged entities work together with service providers.[16] This can create cost advantages thanks to a greater labour division and scale effects. What is more, specialised providers are able to offer certain services more professionally than companies of the financial sector. But working together with such service providers also harbours risks. If they provide inadequate services or even systematically violate the German Money Laundering Act (*Geldwäschegesetz*), this will have negative consequences for all outsourcing entities. The risk increases if the service providers in question work for several companies of the financial sector.

Special money laundering risks of certain business models
Companies that are growing fast give rise to special money laundering risks. This is because their money laundering prevention systems often fail to grow at the same speed and are therefore insufficiently effective – a potential breeding ground for money laundering risks.

The use of cryptoassets also increases the risk of money laundering. For example, crypto custodians are obliged to fulfil a number of tighter due diligence requirements under the Crypto Asset Transfer Regulation. However, transaction monitoring systems based on traditional (i.e. fiat) money flows are unable to adequately ensure that these requirements are met. For this reason, new technologies specifically tailored to cryptoassets must be deployed in order to identify and monitor money laundering risks – e.g. blockchain analysis software.

Special weak spots for money laundering and terrorist financing can be found among some business models, such as payment agents[17], third-party acquiring[18],

16 See Risks arising from market concentration due to the outsourcing of IT services, page 35.
17 Transactions settled via (unlicensed) third companies; using this roundabout method makes it possible to circumvent certain sanctions or restrictions.
18 Involvement of a third party in the contractual relationship between buyer and trader that is concluded for the purpose of settling card-based transactions (in particular credit card transactions).

white labelling[19], loan fronting[20] and trade in cryptoassets[21]. This is attributable, for example, to the intermediaries involved in these business models and the complex product and settlement structures, which make it difficult to retrace money flows and the origin of funds and identify the parties involved.

BaFin's line of approach

- BaFin is making preparations for the future European supervisory regime in which the Anti Money Laundering Authority (AMLA) will assume direct and indirect supervisory responsibilities in cooperation with national authorities such as the Federal Financial Crime Agency (*Bundesamt zur Bekämpfung von Finanzkriminalität*).
- BaFin examines whether supervised companies have implemented prevention systems such as risk analysis, customer identification measures and transaction monitoring. Only appropriate prevention systems ensure that obliged entities know their customers, identify suspicious transactions and submit the relevant suspicious transaction reports, if necessary. This also applies to multi-client service providers where deficiencies in prevention systems have repercussions for many obliged entities.
- BaFin is strengthening its supervisory and inspection activities in the banking and, in particular, in the non-banking sector. It works to ensure that the obliged companies implement effective and appropriate prevention systems to combat money laundering and terrorist financing. To achieve this, BaFin will conduct more special inspections (section 44 (1) of the German Banking Act (*Kreditwesengesetz*)) and risk-based surveys.
- In the non-banking area, the inspections will focus on, among others, investment firms, German asset managers, payment and e-money institutions, financial services institutions such as leasing and factoring companies, insurance companies, central counterparties and crypto custodians.
- Anti-money laundering supervision and prudential supervision are working closely together particularly in the area of fast-growing business models in order to identify risks early on.
- BaFin is making additions to its guidance on the Money Laundering Act for the obliged entities of the financial sector in order to promote awareness among these entities in the fight against money laundering.

19 See Digitalisation, page 37.

20 Loans issued by a credit institution on behalf of credit intermediaries in which the financing is carried out by third-party investors. A special purpose company acts as intermediary between the credit institution and the investors.

21 See Digitalisation, page 37.

1.7 Risks arising from market concentration due to the outsourcing of IT services ↑

Many companies of the financial sector outsource their IT services to external service providers. The outsourcing companies often benefit from lower costs and also have more capacities to focus on their core business. A further advantage lies in the fact that IT service providers, as specialists in this field, perform many services more efficiently and in some cases more securely than the outsourcing companies would be able to do themselves.

But the increasing interconnectedness and, above all, the concentrations among IT service providers can make this financial sector more vulnerable. In Germany, in some areas a small number of specialised IT service providers serve the majority of banks. The picture is similar in the insurance industry. Concentration risks arise from such IT multi-client service providers.

Disruptions at IT multi-client service providers can jeopardise the financial sector
If disruptions were to occur at IT multi-client service providers, multiple supervised institutions could suddenly lose access to their services at the same time. This would be especially problematic if it were to affect critical processes on which the companies of the financial sector depend as it would restrict their ability to operate. In an extreme scenario, problems at IT multi-client service providers could cause great harm to the financial sector.

Further risks can arise when outsourced IT services are sub-contracted. Disruptions at a sub-contractor can impact the entire value chain. The outsourcing companies of the financial sector often have difficulties estimating and managing the dependencies and risks that could result from such sub-contractings.

Multi-client service providers cannot be replaced at short notice
In a highly concentrated market, any disruptions at one multi-client service provider are further exacerbated due to the difficulties many companies of the financial sector would have transferring the outsourced IT services to the few other available service providers if they were unable to resume these IT activities themselves. As revealed in market assessments, this is often the case with cloud computing, for example, or with outsourced sub-processes in the payments area. In the case of some of the reported IT outsourcing relationships, the companies are in effect heavily dependent on the service provider. Particularly in cloud computing, which is dominated by only a few international providers, but also in other IT service areas, the following problem arises: competitors mostly lack the capacities to take over customers from other cloud suppliers at short notice. And even if there were other providers on the market willing and, above all, able to take on new customers, changing service providers would often be a very protracted process.

Companies of the financial sector are fully aware of the risks associated with outsourcing, not only in the area of cloud computing. Some are – where possible – bringing certain outsourced activities and processes back to their own companies while others are considering a multi-vendor strategy. All in all, however, the trend towards outsourcing processes particularly to IT multi-client service providers continues to gather pace. The risks resulting from these concentrations are on the increase. This underscores the importance of a targeted risk management system, both at the outsourcing companies and the service providers as well as at the systemic level.

BaFin's line of approach

- BaFin is already analysing which activities and processes companies of the financial sector have outsourced and to which service providers these outsourcings have been made. These analyses are based on the sector-wide notifications of (material) outsourcings received on BaFin's electronic reporting platform since the end of November 2022. However, this notification requirement only applies to new outsourcings and changes to existing outsourcings but not to already existing outsourcings. BaFin reduces the information gaps resulting from this by carrying out random checks at supervised companies. At the same time it is encouraging the industry to notify all existing (material) outsourcings on a voluntary basis. Furthermore, BaFin is working towards achieving high data quality.
- BaFin is analysing the outsourcing database in order to gain an overview of outsourcing relationships and identify ties and concentration risks on the financial market. As a result, BaFin is able to understand the concentration risks and mitigate them by monitoring service providers, for instance.
- For many years, BaFin has been monitoring major multi-client IT service providers working for credit institutions and arranges for the Bundesbank to conduct inspections at these institutions. BaFin is also making preparations for even more inspections to be carried out at service providers in future.
- BaFin uses the outsourcing database as an early warning system: if serious incidents occur at (multi-client) service providers, BaFin warns companies of the financial sector that, according to the outsourcing database, are using this particular service provider.
- At the European level, BaFin is playing a key role in developing an oversight framework for ICT third-party service providers under DORA, and is greatly involved in its realisation. At the same time, it is ensuring that the framework for monitoring multi-client IT service providers already established at national level is being sufficiently and consistently implemented. This framework has been in force since January 2022 by way of the German Act to Strengthen Financial Market Integrity (*Gesetz zur Stärkung der Finanzmarktintegrität*).
- BaFin is closely supporting various working groups, also at the global level, in order to establish an effective regime to monitor service providers for the financial market.

2 Significant trends

2.1 Digitalisation

Innovative business models and the use of new technologies bring both opportunities and risks for the companies supervised by BaFin, and for consumers.

Artificial intelligence: rigorous governance is key
The use of artificial intelligence (AI) is already established in many processes in the financial industry – and it is on the increase. For example, banks use AI in their lending processes, and insurers use it to automatically generate claims settlement offers. However, the decision-making processes of many AI models are somewhat opaque. That is why, from a supervisory perspective, AI models should only be used when such a lack of clarity can be avoided. Rigorous governance is key here in order to avoid covert discrimination, misuse, a lack of clarity and copyright infringements.

Currently, the field of generative AI is developing with remarkable speed. Because such applications work on the basis of probabilities, there is a risk that they make false statements that are hard to identify as such, or that they present incorrect information as fact. This gives rise to liability and reputational risks, particularly when generative AI is used without additional filters or human controls. While the use of generative AI is not yet widespread in banks' standard operations, institutions are closely examining the potentially very broad applications. The upcoming cross-sectoral European AI Act sets out a framework for the responsible use of AI.

Open finance: secure third-party access within the financial industry
A broad definition of open finance includes, firstly, access to the customer data of regulated companies within the financial sector by customers and third parties.[22] This refers to the exchange of data in the financial industry outside the area of payments. Examples include securities account data or insurance data. Secondly, open finance also includes the possibility of initiating transactions at the customer's request through the involvement of third parties by means of technical access interfaces. In contrast, embedded finance models enable the integration of financial services into products and services provided by third parties. Because the open finance approach is intended to facilitate broad access to data in the financial industry, it also opens up additional possibilities for the use of big data and AI applications.

Open finance aims to promote innovation and competition by providing access to data in the financial sector. A key component of open finance is reciprocity in access to data. Not only the supervised companies that offer products have data at their

22 Definition according to the proposal for a regulation on a framework for Financial Data Access (FIDA).

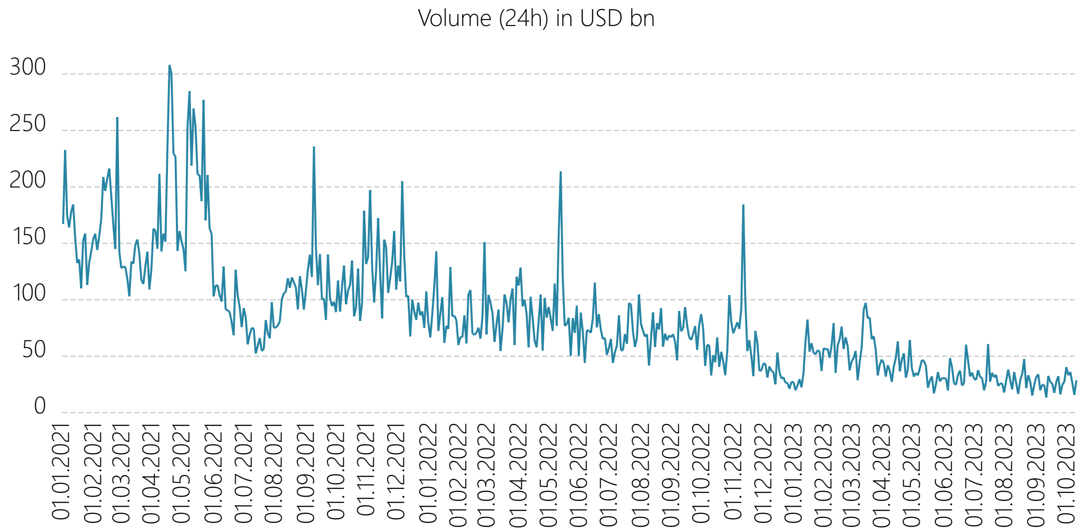
disposal: open finance service providers in particular also hold data, and they too must be obliged to make this data available. Depending on the rules to be set out, a level playing field should be created for all providers.

For supervised companies, open finance will also bring risks, particularly with regard to IT security. Open finance is likely to impact established business models and fragment existing value chains. Open finance also carries the risk of fraud for consumers due to the use of IT interfaces, for example when third parties access online customer portals or misuse data.

Quantum computing
Quantum computing involves a substantial increase in computing power. This disruptive technology promises solutions to mathematical problems previously regarded as unsolvable. It now seems quite likely that quantum computing could be used throughout the financial sector in a few years. But there is a risk that quantum computers may be able to decipher encryption methods that are currently deemed secure, thus allowing them to exploit security gaps. In addition to this, malicious third parties could intercept large amounts of critical data with the intention of later decrypting it using a quantum computer ("harvest now, decrypt later").

Cryptoassets: risks remain – in spite of MiCAR
Assets can be traded via cryptographic tokens. The daily trading volume has fallen from an all-time high in April 2021 to less than a tenth of this volume at the end of September 2023 (see Figure 15, page 39). The development of market prices has only been a minor factor influencing this decline. This indicates a drop in liquidity and a loss of momentum on the crypto market. Trading volumes were affected by a fall in demand due to the increase in interest rates in addition to scandals and the failure of large crypto providers, which damaged trust in the market.

Figure 15: Development of trading volumes in cryptoassets



Source: BaFin; data from coinmarketcap.com (as at 12 October 2023).

The tokenisation of assets and, in general, the innovative use of distributed ledger technology could make the financial sector more efficient. At the same time, the markets for cryptoassets and transactions with cryptoasset service providers engender risks: there is a risk of contagion for the traditional financial system – particularly when cryptoassets are used as collateral or, in the case of banks' proprietary investments, when they have to be backed by own funds. Cryptoassets are risky for consumers because they are highly volatile and carry a risk of high losses.[23]

The European Markets in Crypto-Assets Regulation (MiCAR), which entered into force on 29 June 2023, is creating new structures both for the supervision of issuers and service providers and for their market access. MiCAR regulates a new market segment with a new type of offeror. It is currently unclear how many offerors will operate in this segment and fall under BaFin's supervision in the future.

23 See Risks arising from inadequate money laundering prevention, page 31.

BaFin's line of approach

- BaFin is deepening its knowledge about the specific use of AI in the financial sector through close dialogue with the industry. The aim is to better understand the risks involved with the use of AI, particularly generative AI, to allow for more precise assessment of these risks.
- BaFin is analysing the potential impact of open finance on the German financial sector and its strategic relevance for the financial sector and for supervision.
- BaFin is establishing the organisational framework to commence risk-oriented market surveillance of instruments that fall under MiCAR. In accordance with MiCAR, BaFin will supervise issuers of asset-referenced tokens and e-money tokens from 30 June 2024 and cryptoasset service providers from 30 December 2024.
- MiCAR is an important first step towards the regulation of cryptoasset services and their providers. It also provides for the further development of regulatory requirements, for example with regard to pooling, lending and staking, i.e. loaning cryptoassets for a fee. BaFin will play an active role in this process. BaFin is committed to the further development of the supervisory regime and the establishment of adequate standards. It also advocates for these goals vis-à-vis international standard-setters, in particular the Financial Stability Board (FSB) and the International Organization of Securities Commissions (IOSCO).

2.2 Sustainability

Climate change and the environment, social issues and good corporate governance – these issues can also result in risks for companies in the financial sector and for consumers.[24]

As it becomes increasingly uncertain that the objectives of the Paris Agreement will be met, climate-related financial risks are growing, particularly risks associated with the physical impacts of climate change such as extreme weather events. These risks can impact the loans granted by supervised companies, as well as insured losses and whether or not certain risks can be insured at all.

Transition risks arise when markets underestimate sudden price corrections. These risks depend, for example, on technological developments or on changes in consumer behaviour. The level of political ambition and the implementation of appropriate climate policy measures are key factors here. In a disorderly scenario where effective measures are taken at a later stage but under even greater pressure, transition risks would be particularly high.

BaFin does not treat climate and environmental risks as a new type of risk, but rather as risk drivers in line with established risk categories: credit risk, market risk, liquidity

24 The discussion of this trend is focussed on environmental issues because, in BaFin's view, this currently poses the greatest risk to companies in the financial sector and because regulation is currently also focussed on this topic.

risk, operational risk, including liability and reputational risks, underwriting risk and strategic risk.

Sustainability and dynamic supervisory law
The EU’s goal is to make Europe the first climate-neutral continent by 2050. By 2030, Europe’s net greenhouse gas emissions are to be reduced by 55 percent compared with levels in 1990. The European Commission has introduced extensive legislative packages in order to implement this “green deal”. Many standards also impact the financial industry. One example is the Sustainable Finance Disclosure Regulation (SFDR). Since its entry into force in March 2021, the SFDR has set out the sustainability-related disclosure requirements for financial market participants and financial advisors. It is intended to ensure that, with regard to financial products that reference sustainability, investors can base their investment decisions on well-founded information. Currently, the extensive disclosure requirements under the SFDR leave room for various interpretations. The Commission launched a consultation in November 2023 to evaluate experience with the SFDR so far and to adapt the regulation as appropriate.

The Capital Adequacy Regulation and Directive, the Taxonomy Directive, the Corporate Sustainability Reporting Directive (CSRD) and the Benchmarks Regulation contain additional new requirements for the financial sector. Further regulatory projects have been planned or will enter into force in the near future. The EU Green Bond Regulation, for example, has introduced a new format that will apply from December 2024: EU Green Bonds.

The complexity of regulation in the area of sustainability, which is in part fragmented and lacking consistency, increasingly carries the risk that financial market players will not comply with regulatory standards, or will not comply in full. As a result, supervised companies may breach requirements and suffer reputational damage as a consequence.

Improvement needed in banks’ and insurers’ risk management
BaFin has found that German banks still need to make improvements in their management of sustainability risks. A structured survey conducted by the Deutsche Bundesbank from February 2022 to March 2023 showed that 80 percent of LSIs take account of climate-related and environmental risks and monitor their physical and transition risks; 70 percent take sustainability into account in their business and risk strategy. Furthermore, a quarter of these institutions consider sustainability risks to be a major factor in at least one of the established risks categories. However, only a minority have methods to assess, measure and control sustainability risks. The majority did not include findings from stress tests and scenario analyses in their strategic planning or risk management systems. The use of sustainability ratings is also not yet widespread.

In BaFin’s estimation, insurance companies have made advances in the way they deal with sustainability risks. However, there is room for improvement in almost all areas, particularly risk management, stress testing and the consistent application of sustainability strategies within company groups.

Greenwashing: risks for investors

Greenwashing also entails risks. Greenwashing describes the practice of presenting information on sustainability that does not clearly and fairly reflect the sustainability profile of a company, a financial product or a financial service. Greenwashing can mislead institutional investors as well as retail clients (private customers and small and medium-sized enterprises). The risk of greenwashing is high because there is no clear definition of sustainability characteristics. Furthermore, the information published regarding the environmental impact of products and services is often not easy enough to understand. Greenwashing damages trust in a functioning market.

BaFin’s line of approach

- In the 7th amendment to the MaRisk published on 29 June 2023, BaFin turned the expectations it had previously set out in the non-binding Guidance Notice on Dealing with Sustainability Risks into binding requirements. This provides the groundwork for BaFin to take sustainability considerations into account in the Supervisory Review and Evaluation Process (SREP) in future.
- BaFin will publish its expectations for insurers’ approach to sustainability risks. It is planning to amend the Minimum Requirements under Supervisory Law on the System of Governance of Insurance Undertakings (MaGO) for Solvency II companies and to publish a guidance notice on the principle of corporate prudence that will explicitly detail the issue of sustainability.
- BaFin will address the issue of ESG risks in its supervisory interviews with selected institutions. In 2024, it will also carry out special inspections with a focus on ESG/sustainability.
- BaFin is testing at random how supervised companies implement the disclosure requirements under the SFDR and whether their marketing communications contradict the disclosed information. With its administrative practice, BaFin continues to contribute towards ensuring that German retail funds are not termed sustainable if their fund rules do not fulfil certain minimum requirements.
- BaFin assesses, using a heatmap, how supervised companies with a high level of exposure in various sectors are dealing with the financial consequences of climate risks. These findings are to be integrated into BaFin’s supervisory activities.
- BaFin is establishing additional competencies and resources in order to assess whether the companies subject to financial reporting are adhering to the new rules on sustainability reporting under the Corporate Sustainability Reporting Directive (CSRD).
- BaFin participates in consultations on the SFDR review by the European Commission. It contributes its standpoint to the review process via the relevant European working groups and discussion platforms.
- BaFin is developing a supervisory concept to implement the Green Bonds Regulation in order to review whether issuers correctly publish the required information when using the voluntary EU Green Bond Standard.

2.3

Geopolitical turmoil

The real economy and the financial economy in Germany are highly international – making them particularly vulnerable to the effects of geopolitical tensions since international trading links can create dependencies and cluster risks. Because Germany's financial system is highly interconnected internationally, geopolitical conflicts can damage financial stability in Germany – both directly and through second-round effects. Since geopolitical developments do not follow a set pattern, it is difficult to categorise these risks. They must therefore be considered individually. Risk models based on historical events are of limited use.

In recent years, there has been a rise in tensions and wars in many regions of the world: the situation is acute in Ukraine and the Middle East, and there is potential for escalations in the South China Sea and the Taiwan Strait. Furthermore, western states, Russia and China are increasingly organising themselves into blocks.

Trade relationships and trade flows are influenced by geopolitical interests. This could be particularly problematic if there is an abrupt change in the political perception of a trading partner and critical dependencies are affected.

Trade disputes can also emerge as a result of protectionist economic policies – particularly trade policy that is intended to damage other economies.

Consequences for the financial sector
Geopolitical turmoil may lead to an increase in the fragmentation of value and supply chains and in deglobalisation. Globally, there has been a rise in sanctions due to geopolitical conflicts.

International financial groups in particular may be forced to change their business models. The German financial industry may be affected by geopolitical turmoil in a number of ways – via subsidiaries in the particular regions or because (IT) processes or data have been outsourced to third parties and are suddenly no longer available. Some supervised companies have already revised their outsourcing strategies.[25]

Additional concentration risks may also arise in the area of lending, for example as a result of increased geopolitical dependency on the part of a few large borrowers. Credit risks as a result of such dependencies may also materialise for entire industries, for example if supply chain dependencies are concentrated in a country that is no longer able to meet the demands of the supply chain due geopolitical turmoil.

Geopolitical conflicts may also facilitate financial fragmentation because they lead international investors to withdraw from certain countries. This results in fewer opportunities for risk diversification and optimal capital allocation. The sudden reallocation of capital by investors may also increase uncertainty on the financial

25 See Risks arising from market concentration due to the outsourcing of IT services, page 35.

markets. Overall, geopolitical uncertainties may place an additional burden on the financial markets.[26]

BaFin's line of approach

- BaFin is continuing to closely monitor the geopolitical situation and is investigating the potential impacts on the German economy alongside the knock-on effects on German financial institutions.
- For example, BaFin is assessing whether the loans issued by certain financial institutions are concentrated in particular regions, industries or companies that are affected by difficult geopolitical circumstances.
- The same applies to insurers and reinsurers. BaFin aims to learn which insurers are affected and how they are affected, for example by developments in regions affected by war and crises, terror events, political decisions such as sanctions or measures to limit market access, major disturbances in value chains or loss events in the area of cyber security and communications security. This enables BaFin to identify supervised companies that are highly exposed.
- Furthermore, BaFin is increasing its contact with market participants and other relevant bodies, such as audit bodies, so that it can better assess risks in the financial sector. BaFin takes these findings into account in its supervisory practice, for example through increased monitoring or inspection campaigns at certain institutions.

26 See Risks arising from significant corrections on the international financial markets, page 19.

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Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin)
Graurheindorfer Straße 108 | 53117 Bonn
Marie-Curie-Straße 24–28 | 60439 Frankfurt am Main

Phone: +49(0)228 41 08-0
Website: www.bafin.de
E-Mail: poststelle@bafin.de

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Editing:
Division K 3 – Speeches, Publications and Online Communications
Division SRI 1 – Risk Analysis and Financial Stability