DEUTSCHE BUNDESBANK
EUROSYSTEM

FINANCIAL STABILITY REVIEW 2025

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Our task

At the Bundesbank, we have a mandate under the Financial Stability Act (*Finanzstabilitätsgesetz*) to monitor the stability of the German financial system. [1)] It is our task to identify and assess risks to financial stability. We understand financial stability as a state in which the financial system is able to perform its economic functions at all times. The financial system is made up of financial intermediaries, securities markets and market infrastructures. Our annual Financial Stability Review documents relevant developments. We identify vulnerabilities within the German financial system and highlight risks that could endanger its stability.

A well-functioning financial system is of crucial importance to economic development. The financial system is where lending and saving takes place, and where it is possible to insure against risks and make payments. Unforeseen events can jeopardise the stability of the financial system. The financial system should neither cause a downturn in overall economic activity, nor should it excessively amplify one. That is why the financial system needs to be sufficiently resilient – in other words, able to absorb unexpected, abrupt changes rather than intensifying them.

Systemic risks that could jeopardise the stability of the financial system are particularly relevant here. If one or more market participants run into difficulties, for example, the financial system's ability to function might be reduced. That could happen if market participants are very large or closely interconnected with other players. If market participants are interconnected, those links could enable adverse developments to spread throughout the financial system, impairing its stability. Systemic risks can also emerge if there are many market participants exposed to similar or highly correlated risks.

We also share our analytical findings with the German Financial Stability Committee, which is the central body for macroprudential oversight in Germany. We provide this Committee with our assessment of the general risk situation. If we identify systemic risks, we can submit proposals to the Committee for warnings and recommendations to address them. Afterwards, we evaluate how far those recommendations have been implemented.

1 See the glossary for key financial stability terms and how we use them.

We also contribute our analyses and perspectives at the European and global levels. We use bodies like the European Systemic Risk Board (ESRB) and the global Financial Stability Board (FSB) to advance our primary topics in European and global forums.

This year's Financial Stability Review takes account of developments up to 3 November 2025.

Foreword to the 20th Financial Stability Review

Our world is undergoing far-reaching change. Geopolitical tensions, erratic trade policy, and structural challenges like demographic change and digitalisation – all these factors are a huge challenge for the global economy and financial stability. Uncertainties are shaping today's situation. New shocks are materialising more often, calling for a financial system that is resilient and adaptable. At the same time, it is becoming ever more important to cooperate internationally.

The challenging current environment and the 20th anniversary of our Financial Stability Review invite us to take stock of the state of play. What makes macroprudential oversight and policy so important, and why does it matter right now? To answer those questions, let's start by looking back at the early days of macroprudential oversight and policy. The term "macroprudential policy" has been an integral part of central banks' and supervisors' language since at least 2007, when the global financial crisis (GFC) erupted.[1)] The GFC may have originated in the United States, but it was hugely costly for taxpayers in Germany as well.[2)] That is why our Financial Stability Review assesses the situation in Germany within a global context.

The GFC fundamentally changed the way we think about a secure financial system. Before that crisis, supervisors used to monitor whether banks were healthy, in and of themselves. This "microprudential" approach, as it is called, is still valid and important. But in the post-GFC world, regulators added a systemic, macroprudential perspective. Because the GFC taught us a painful lesson – that interactions within the financial system can lead to crises even if each individual actor and/or sector within that system seems to be stable, when viewed in isolation.

By reforming regulation and supervision, we have achieved a great deal internationally. We have improved the quality and quantity of the capital requirements for banks. Additional capital buffers are now in place to make banks more resilient to system-wide risks. These buffers strengthen banks' ability to absorb losses without reducing the flow of credit to the real economy. They therefore help keep the financial system stable and the economy running. We have done the legislative groundwork for borrower-based instruments, like ceilings on the share of debt. We have introduced liquidity requirements for non-bank financial intermediaries (NBFIs) and a risk-oriented framework for insurers (Solvency II).

1 The Bank for International Settlements is often credited with using the term "macro-prudential policy" first in a report from 1986; see Bank for International Settlements (1986).

2 See Deutscher Bundestag (2018).

Global financial crisis, sovereign debt crisis – a few years have passed since then, I'm pleased to say. Why is macroprudential oversight and policy still such an important topic nowadays? Even if we haven't been through a worldwide financial crisis for over a decade now, some episodes have put financial stability to the test: Brexit, the COVID-19 pandemic, and Russia's war of aggression against Ukraine. The financial system managed to withstand those challenges, fortunately. More recently, there has been the banking turmoil in the United States and Switzerland in spring 2023 and the US tariff announcements on 2 April this year. What these episodes tell us is that the absence of a crisis doesn't necessarily mean that all is calm in the financial system.

The fact that these events didn't culminate in a crisis tells me that microprudential and macroprudential regulation put the right guardrails in place for the financial system. We've seen that microprudential minimum requirements and macroprudential add-ons work well side by side. Minimum requirements for capital alongside macroprudential buffers that are adjusted in response to systemic risks are a key example of this. At the same time, the absence of crises doesn't mean that we should settle back and relax. Forward-looking policymaking that has the financial system as a whole in its sights is more important than ever, in my view.

That's because new developments can leave the financial system more vulnerable. Just take the fallout from the climate crisis or geopolitical tensions and their impact on the financial system. Or consider, in particular, technological developments, like the interconnectedness of stablecoins with the traditional financial system, the influence of artificial intelligence and also quantum computing. The financial system needs to be robust to developments of this kind as well. That will call for intense international dialogue – today and also in the future.

Just as financial market participants adapt to new developments, so, too, does microprudential and macroprudential policy need to evolve. By introducing reforms, we have made the financial system significantly more resilient over the years, though regulation has also become more complex. The current situation invites us to reflect on which items of the regulatory regime we can adjust. We should strive for a resilient financial system that blends less complex regulation with the ability to act effectively. With this goal in mind, we can stake out a framework that is both fit for purpose and respects the interests of both market participants and regulators.

But let’s return to the present day for now. This report, the Bundesbank’s 20th Financial Stability Review, presents our view on the challenges currently facing Germany’s financial system and what we think needs to be done. Ladies and gentlemen, I wish you a pleasant read.

Michael Theurer
Deutsche Bundesbank Executive Board member,
responsible for the Directorates General Banking and Financial Supervision,
and Financial Stability

Key messages

Key messages on the risk situation

Trade policy conflicts and **persistent geopolitical tensions** increased the risks to financial stability in the past year. Structural challenges are weighing on the German economy and could affect financial stability going forward. Despite these developments, **valuation levels in equity and bond markets are significantly elevated.** This has increased the risk of abrupt market price corrections. Additional risks to financial stability in Germany arise from high and rising government debt ratios in some euro area countries.

Risks from German banks' lending business are on the rise against a backdrop of cyclical and structural challenges. Risks in the commercial real estate sector contrast with fairly moderate vulnerabilities in the housing sector. **Banks' capitalisation** is sound overall. But it would be a mistake to overestimate the resilience of large banks in particular because of low risk weights.

The growing importance of **non-bank financial intermediaries** (**NBFIs**) and their **interconnectedness** with both their peers and the banking system is a challenge to the macroprudential oversight of the financial system. In addition, novel risks resulting from **financial innovations** like stablecoins, and advances in digitalisation driven notably by artificial intelligence (AI), need to be monitored closely.

Policy implications

The **package of macroprudential measures** is appropriate in light of the challenging macro-financial environment, mounting risks, and lingering vulnerabilities in the banking sector.

To tackle the increasing complexity of banking regulation, the **regulatory regime will have to be simplified**, but the resilience of the financial system has to be preserved at the same time. To advance this initiative, the Bundesbank has introduced proposals on a small banking regime and on simplifying microprudential and macroprudential capital requirements into national and European discussions.

To be better equipped to assess risks from the NBFI sector and its growing interconnectedness, including with the banking system, it will be necessary to do more to **share previously collected data at the international level**.

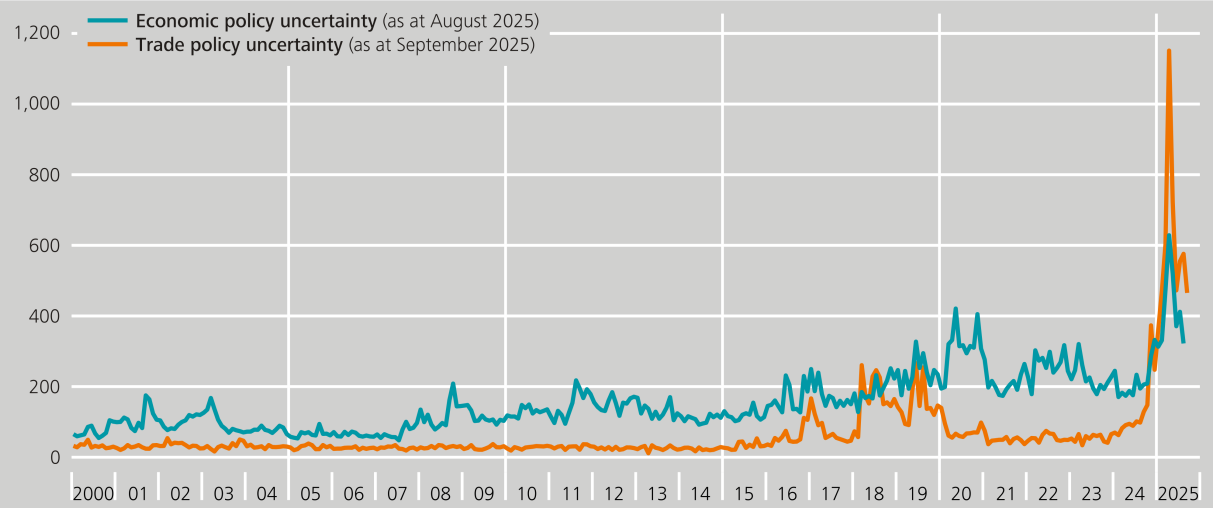
Overview

Trade policy conflicts and ongoing geopolitical tensions have increased the risks to financial stability in the past year, while structural challenges are weighing on the German economy. Although trade policy uncertainty decreased somewhat starting in mid-2025, the risk of new trade conflicts persists (see Chart A). Geopolitical tensions remain high. In this environment, market participants could be particularly sensitive to abrupt changes. This increases the risk of financial market turmoil. Protectionist US trade policy is hitting Germany's export-based economy especially hard. The persistent economic weakness in Germany, along with structural challenges at home and from abroad, are putting additional pressure on the German corporate sector. Structural challenges include growing competition from emerging market economies, demographic change and excessive red tape. This is dampening the outlook for the labour market, which has so far been fairly robust. However, Germany's fiscal package could bolster economic activity and financial stability as of next year. Beyond that, targeted structural reforms are needed to address the structural challenges at home and from abroad and thus reduce financial stability risks from the corporate sector over the medium term. Overall, against this backdrop, the downside risks to output growth have increased compared with last year.

Economic and trade policy uncertainty

Chart A

News-based indices, monthly data



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see Chart 1.1.1

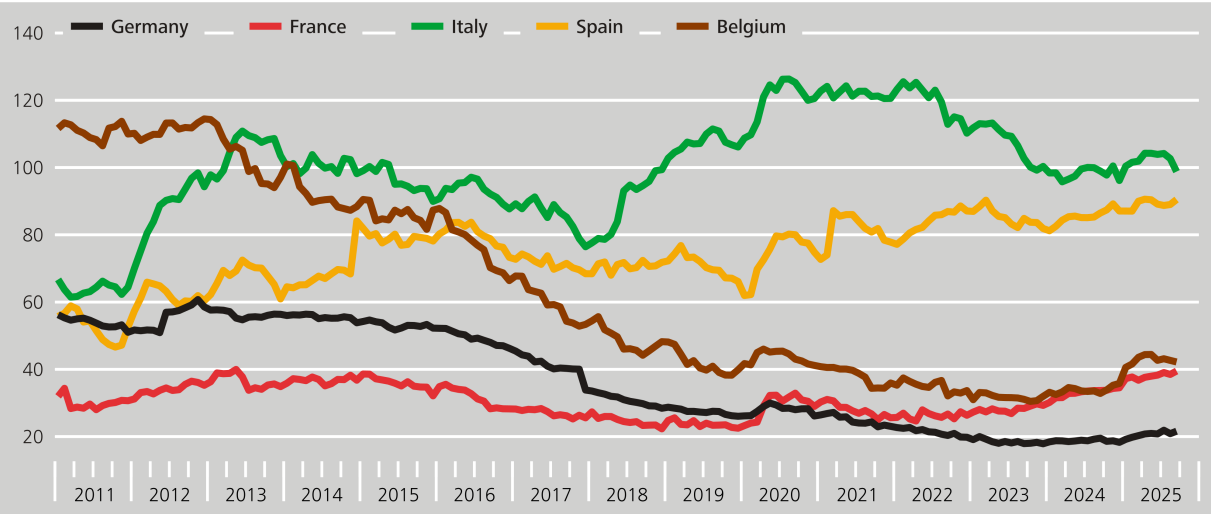
Given the persistent geopolitical tensions, cyberattacks pose a threat to the stability of the German financial system. Increasing digitalisation and the resulting growing dependence on digital infrastructures have increased the financial system's exposure to cyber threats. At the same time, the risk of hybrid threats, which combine cyberattacks with other destabilising measures such as disinformation campaigns, has been building in recent years. Investment in cyber resilience in the financial sector is therefore vitally important.

Alongside global and structural challenges, high government debt ratios in some euro area countries pose additional financial stability risks in Germany. Increasing government spending will likely lead to higher debt ratios and a growing interest burden. While Germany's debt sustainability is regarded as solid even over the medium term despite the fiscal package, debt sustainability risks are higher in other euro area countries. Even with these risks, the yield spreads of many euro area countries compared with Germany have narrowed in recent years, not least owing to comparatively more optimistic growth expectations in those countries. If these expectations are not met or new unknowns arise, the yield spreads could abruptly widen again. Given the pronounced sovereign-bank nexus in some countries and how deeply Germany's financial system is integrated into the European financial system, growing public debt poses a considerable risk to financial stability (see Chart B).

Domestic government bonds in the portfolios of monetary financial institutions

Chart B

As a percentage of own funds, monthly data, as at September 2025



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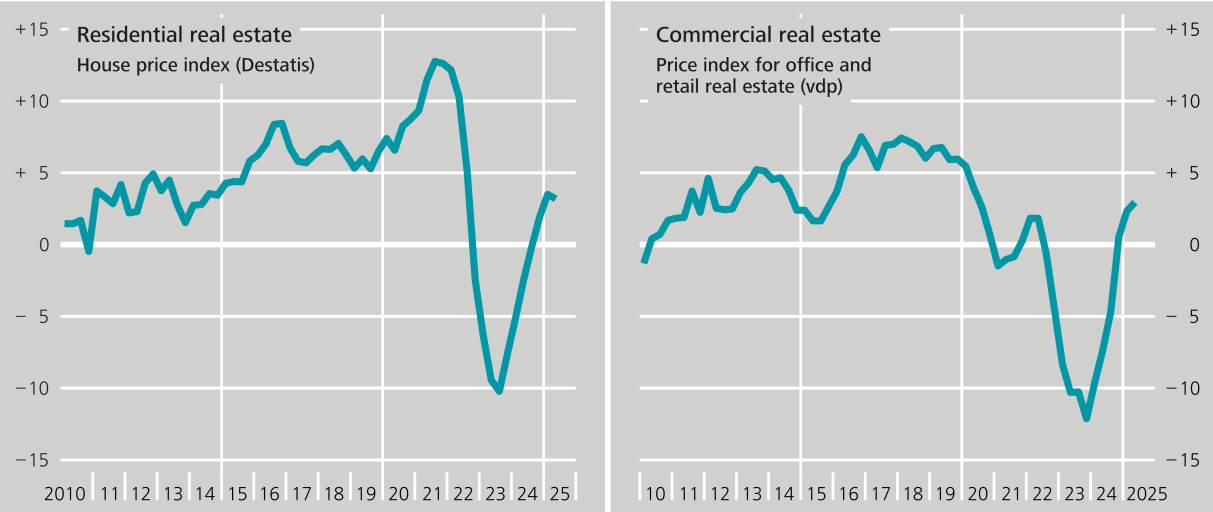
see Chart 1.2.3

Although the macro-financial environment has deteriorated markedly, there are early signs that the financial cycle in Germany has passed its trough. The financial cycle entered a phase of pronounced decline in 2023. During this period, the vulnerabilities in the German financial system that had previously built up were reduced in an orderly manner, albeit not in full. These vulnerabilities include interest rate risk and potentially overvalued real estate. Robust economic growth during the low interest rate period, the decline in credit defaults and fiscal policy interventions supporting the corporate sector during the COVID-19 pandemic have made it more difficult to assess medium-term credit default risks for some time. As a result of these developments, credit risk could continue to be underestimated. Indicators for the financial cycle are now pointing to the start of an expansion phase. While lending by the German banking sector remains subdued by historical standards, it is showing signs of a revival. Price developments in the German residential real estate market are also signalling a recovery. Prices in the commercial real estate markets are stabilising, but the situation remains fragile overall (see Chart C). Following the financial market turmoil caused by the US tariff announcements in April 2025, risky securities such as equities and corporate bonds recovered swiftly. However, the persistently high and elevated financial market valuations pose the risk of renewed and larger, sudden market price corrections (see Chart D).

Real estate prices in Germany

Chart C

Year-on-year percentage change, quarterly data, as at Q2 2025



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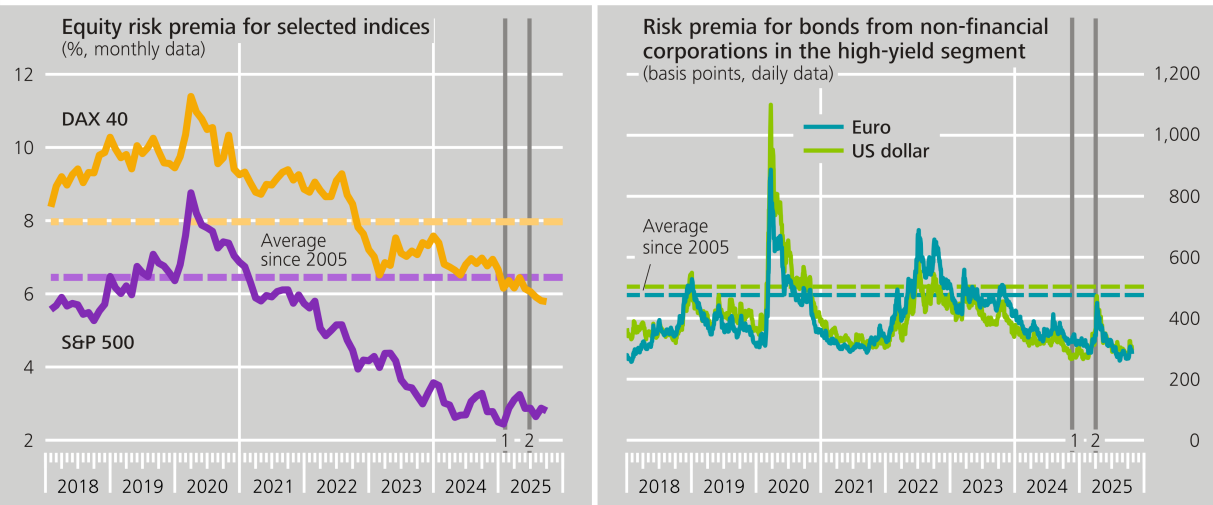
see Chart 1.3.3

Risk premia in equity and corporate bond markets

Chart D

As at 24 October 2025



1 Financial Stability Review 2024. **2** US tariff announcements, 2 April.

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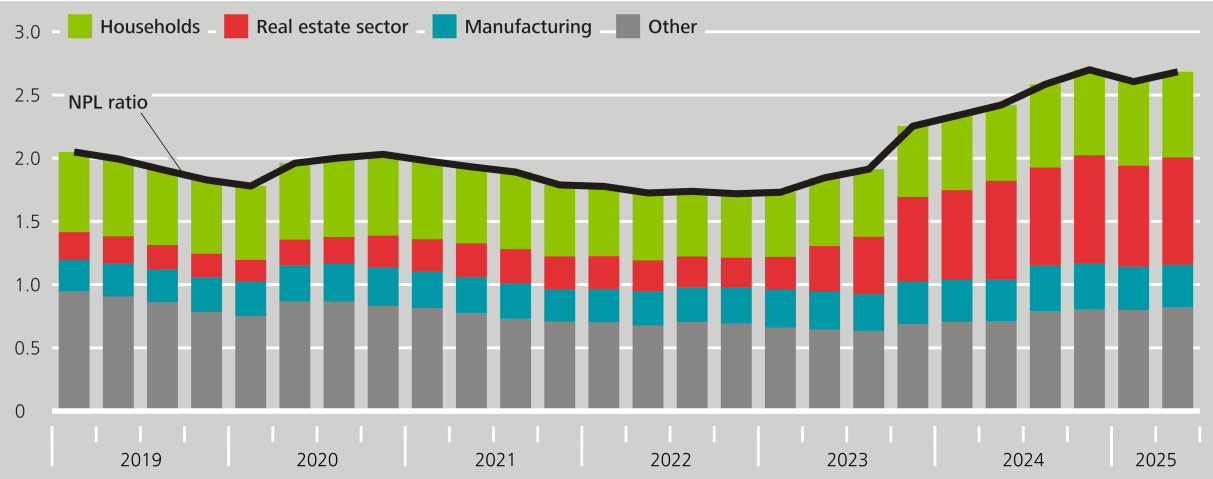
see Chart 1.3.5

At the same time, risks in German banks' lending business have been rising for some time now and could continue to mount in light of the cyclical and structural challenges. The non-performing loans ratio increased steadily from the end of 2022 to the end of 2024, with loans to the real estate sector playing the largest part in this (see Chart E). Weak economic activity and the rise in interest rates in 2022 contributed to an increase in credit defaults. US tariffs are also likely to lead to higher credit defaults amongst export-oriented firms in the future. However, they account for a limited share of German banks' total lending. Credit risk has also increased slightly among households. The non-performing loans ratio for residential real estate financing remains low. It is well below the ratio for consumer credit. A significant proportion of new residential real estate loans are being granted to borrowers with higher debt ratios, specifically debt-to-income ratios. For this reason, new lending remains exposed to moderate vulnerabilities.

Contributions of non-performing loans issued to individual economic sectors and households

Chart E

%, as at Q2 2025



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see Chart 2.1.1

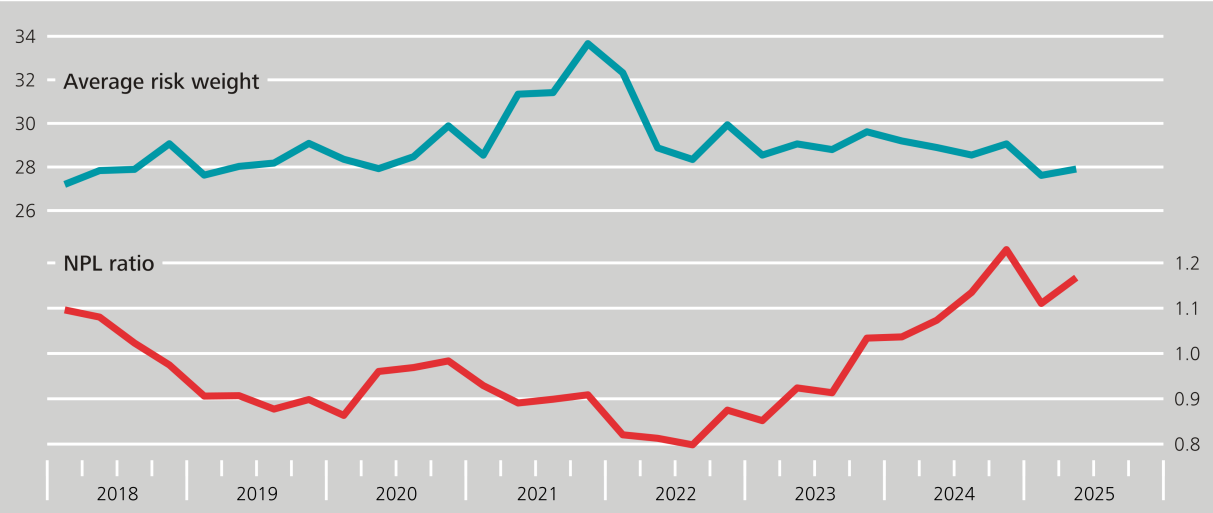
The risk of market value losses in banks' bond portfolios is increasing owing to high and still rising government debt ratios in some euro area countries. German banks are exposed to spread risk, not least because of their bond portfolios' international allocation. The share of German government bonds in German banks' portfolios has fallen significantly in recent years. At the same time, the share of bonds with a less favourable credit rating has gone up. All else being equal, the losses immediately incurred in a stress episode would probably be limited. However, potential contagion effects could considerably increase capital losses.

Banks' regulatory capital adequacy remains sound, but resilience should not be overestimated in the current macro-financial environment. The regulatory capital ratios are at a high level. Despite the deteriorating risk landscape and rising credit defaults, though, systemically important banks' average risk weights remain low (see Chart F). In the event of capital losses or stricter capital requirements, banks could reduce their balance sheets to keep their capital ratios stable. Capital buffers that the Federal Financial Supervisory Authority (BaFin) can release in response to system-wide losses, for example, mitigate this risk. Banks' liquidity positions are good overall, but credit institutions are vulnerable to disruptions in US dollar funding markets.

Average risk weight and ratio of non-performing loans

Chart F

%, as at Q2 2025



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see Chart 2.4.4

The package of macroprudential measures, consisting of the countercyclical capital buffer of 0.75 % and the sectoral systemic risk buffer, remains adequate in view of persistent vulnerabilities. Following the partial reduction of vulnerabilities in the residential real estate market, BaFin lowered the sectoral systemic risk buffer on loans secured by residential real estate from 2 % to 1 % in May 2025. Given the worsened environment, the remaining scope for macroprudential action should be maintained.

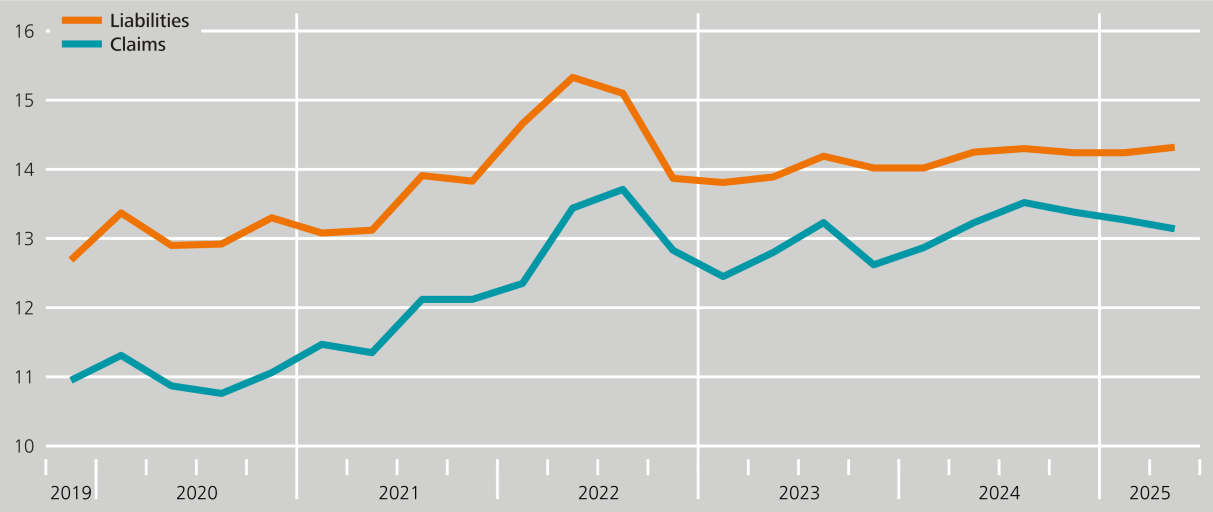
In view of banking regulation's growing complexity, the Bundesbank is committed to simplifying it, as well as to strengthening capital market funding by advancing the savings and investments union. The Basel III reforms have sustainably strengthened the resilience of the banking system. At the same time, supervisory requirements have become more complex. Small, non-complex institutions, in particular, would benefit from regulation that is geared more to banks' size and risk structure. However, regulation must not be simplified at the expense of the financial system's robustness. In addition to a resilient and effective banking system, resilient and effective capital markets are necessary to help finance the real economy. The Bundesbank therefore supports the advancement of the savings and investments union.

Alongside banks, non-bank financial intermediaries such as insurers and funds are becoming increasingly important for the stability of the system as a whole. Their close interconnections with each other and with the banking system can amplify, but also absorb, shocks (see Chart G). It is therefore important to closely monitor and improve their resilience and the quality of available data.

German banks' claims and liabilities vis-à-vis domestic and foreign NBFIs

Chart G

As a percentage of total banking system assets, as at Q2 2025



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see Chart 3.3.1

Insurers' solvency is robust overall, but it could be overestimated in the future owing to regulatory changes. The solvency ratio of German life insurers is currently well above requirements and has further increased since 2024. As part of its Solvency II review, the European Commission is planning to make it easier to classify investments as long-term equity investments. As a result, German life insurers' resilience could be overestimated in the future. This planned adjustment therefore appears problematic from a financial stability perspective. In addition, life insurers still have material unrealised losses on their books. These limit their ability to take action to stabilise the financial system and can thus render the financial system more vulnerable during periods of stress.

Although the German fund sector is resilient overall, the period of stress in April 2025 uncovered vulnerabilities. The US tariff announcements in April 2025 led to net outflows of funds from German retail securities funds. This caused the liquidity situation for parts of this sector to worsen, at times markedly. However, as tensions over trade policy eased and the preliminary trade deal was reached, net inflows of funds resumed. By contrast, open-end retail real estate funds have been recording net outflows of funds since 2023. However, for many of these funds, risks are limited by the redemption notice periods and minimum holding periods introduced in 2013. The liquidity buffers held by these funds, which, on aggregate, are well above statutory requirements, also limit risks.

The manner in which already collected data are shared needs to be improved to enable vulnerabilities in the non-bank financial intermediaries sector to be identified at an early stage. German funds are increasingly holding foreign investment fund shares. However, granular data on funds in other jurisdictions are available to only a limited extent, as the legal and operational framework for sharing already collected data between central banks and supervisory authorities is lacking. This makes it more difficult to identify vulnerabilities and assess systemic risks. Risk analyses at banks and insurers, which are also interconnected with the fund sector, could also benefit from increased data sharing.

The supplementary information in this year's Financial Stability Review focuses on specific, current challenges and risks to German financial stability. The supplementary information entitled "Artificial intelligence and its effects on financial stability" outlines the transmission channels through which AI systems can influence developments in the financial system. Meanwhile, the supplementary information entitled "How stablecoins affect financial stability" explains the increasing importance of stablecoins and how they are interconnected with the traditional financial system. This connection could give rise to risks to financial stability. Lastly, the supplementary information entitled "Direct interconnectedness heightens liquidity risk for European funds" looks at the interaction between structural liquidity risks and risks arising from interconnectedness in the open-end fund sector.

Stability situation in the German financial system

1 The macro-financial environment and the situation in the real sector

1.1 The macro-financial environment deteriorated markedly over the course of the last year

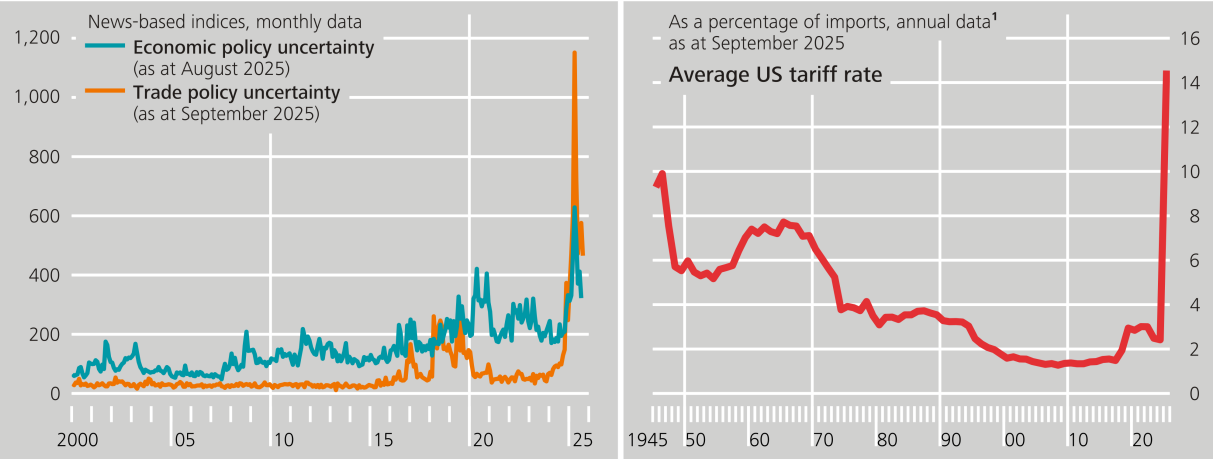
The unpredictable and protectionist US trade and economic policy is weighing on the global economy. Uncertainty about future US trade and economic policy already rose significantly following the US presidential elections in November 2024 (see Chart 1.1.1). As of April 2025, the United States imposed a 10 % minimum tariff on the imports of most goods from almost all trading partners. Later on, the average effective tariff rate for US imports reached a historical high (see Chart 1.1.1). As a result, the forecasts for global economic growth were initially revised down significantly. They were raised again somewhat in the middle of the year as tensions over trade eased, amongst other factors (see Chart 1.1.2). At the end of July 2025, the European Union (EU) and the United States concluded a trade agreement. As a result, the average US tariff on imports from the EU increased from 1.5 % before the new US administration took office to around 14 %. However, the trade agreement is not yet legally binding. The risk of a renewed flare-up in trade conflict therefore remains, although trade and economic policy uncertainty has eased, largely thanks to the trade agreements reached since mid-2025. In addition, it is still unclear whether many of the US tariffs are legal. [1)] For these reasons, uncertainty about the future course of US trade and economic policy remains significant and will continue to shape the macro-financial environment in the future. [2)]

1 In August 2025, a US appeals court declared many of the US tariffs to be illegal; see United States Court of Appeals for the Federal Circuit (2025).

2 See Deutsche Bundesbank (2025a).

Economic and trade policy uncertainty and US tariff rate

Chart 1.1.1



Sources: D. Caldara, M. Iacoviello, P. Molligo, A. Prestipino, A. Raffo (2020), The Economic Effects of Trade Policy Uncertainty, Journal of Monetary Economics, Vol. 109; S. Baker, N. Bloom, S. J. Davis (2016), Measuring Economic Policy Uncertainty, The Quarterly Journal of Economics, Vol. 131 No 4; The Budget Lab at Yale University and Bundesbank calculations. **1** Average US tariff rate for 2025 from January to September 2025.

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The German economy is likely to see only slight growth again this year. [3] Economic output is thus significantly below the average forecasts made last year (see Chart 1.1.2). Economic growth in Germany will probably remain below the euro area average. [4] This means another delay to the economic recovery. The forecasts for 2026 remain virtually unchanged compared with those for 2025 (see Chart 1.1.2).

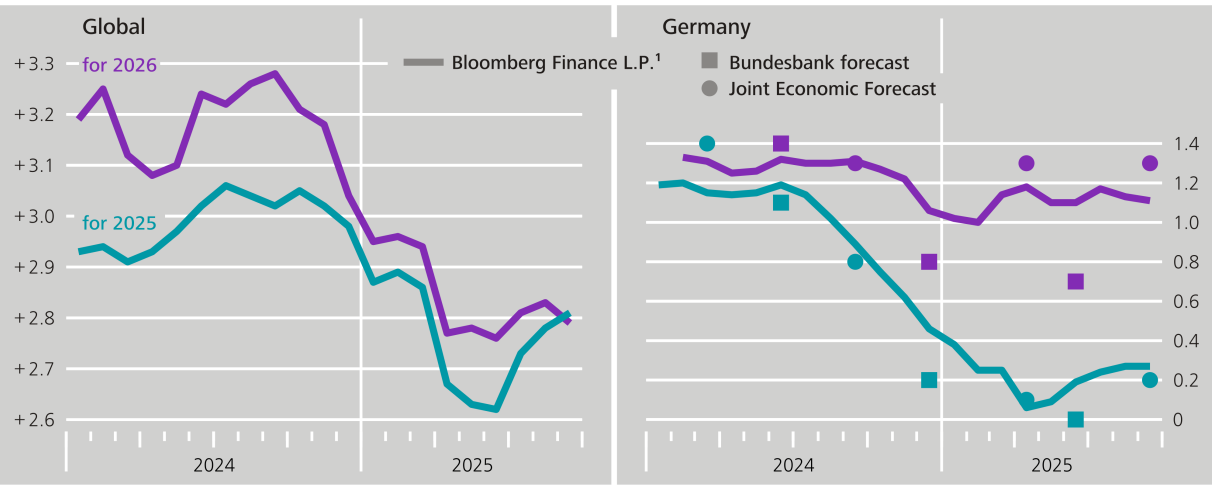
3 See Joint Economic Forecast Project Group (2025). Revisions that the Federal Statistical Office has made to real GDP now clearly show a decline in economic output from the fourth quarter of 2022 to the third quarter of 2024. At the same time, the revised data suggest that real GDP was on a more dynamic path towards the end of 2024, resulting in a higher carry-over effect for 2025.

4 See Deutsche Bundesbank (2024d, 2025c), European Commission (2025b), International Monetary Fund (2025). The Bundesbank's Forecast for Germany in June 2025 was based on the assumption that the additional tariffs of at least 10 % imposed on all US trading partners since April 2025 would remain in place. The tariffs on steel, aluminium, cars and car parts were also taken into account. Finally, the forecast factored in significantly heightened uncertainty, especially with regard to trade policy.

Forecasts of real gross domestic product

Chart 1.1.2

%, weighted average[1], as at September 2025



Sources: Bloomberg Finance L.P., Bundesbank forecast and Joint Economic Forecast Project Group. **1** Based on individual GDP forecasts for the current year. Aggregated using a Kalman filter, whereby the latest forecasts are weighted more heavily than older forecasts.

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Changes in the international macro-financial environment and structural factors are having a negative impact on the German economy. The considerably higher US tariffs are hitting Germany's export-based economy disproportionately hard within the European Union. For Germany, the resulting losses could amount to around 0.13 % of GDP in the first year.[5)] The direct short-term losses are therefore small. If the US tariffs were to remain in place permanently, this could also have a structural and thus longer-term impact on the outlook for the German economy. Reasons for this include a decline in exports to the United States, shifts in investment and altered supply chains. In addition, a number of domestic and foreign structural factors continue to put added pressure on the German economy to adjust (see Section 1.5).

5 Data source: Kiel Trade and Tariffs Monitor, as at July 2025.

The Federal Government's fiscal package is likely to support economic activity. However, the long-term effects on the German economy and on financial stability remain to be seen. The Bundesbank's forecasts suggest that higher defence and infrastructure spending will likely boost growth from 2026 onwards. Up to the end of 2027, the resulting demand effects could raise GDP growth by around 3/4 percentage point.[6)] However, it is still unclear at present how exactly funds will be withdrawn, which makes it difficult to estimate the effects. The more spending is channelled into investment that helps boost the German economy's resilience, productivity and competitiveness, the greater the long-term impact of the fiscal package would be on the economy and financial stability (see Section 1.5). However, a considerable amount of the new borrowing potential will be used to allow spending on things other than investment in defence capabilities and infrastructure.[7)] Overall, there are likely to be substantial growth effects in the medium term, but it is difficult to gain a clear picture of longer-term effects.

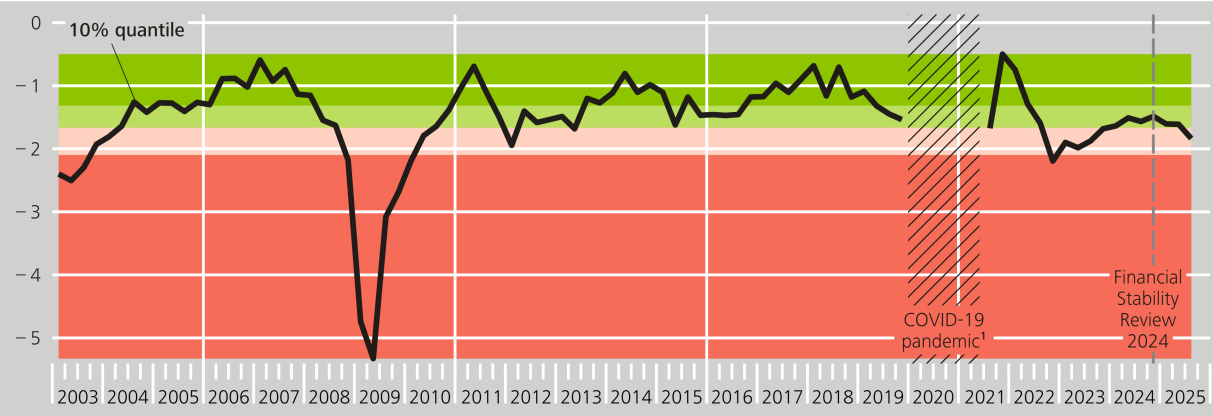
The downside risks to GDP growth have increased compared with the previous year (see Chart 1.1.3). According to the Bundesbank's growth-at-risk model, the likelihood of particularly low growth rates has increased since the end of last year.[8)] The conditional 10 % quantile of GDP growth is currently around − 1.84 % compared with − 1.56 % a year ago. That said, the estimated downside risks are significantly lower than during the monetary policy tightening cycle from mid-2022 to the end of 2023 or the global financial crisis. Should geopolitical tensions escalate or trade disputes flare up again, corporate sentiment and financing conditions could deteriorate abruptly. This would further increase the risk of particularly low GDP growth rates.

6 See Deutsche Bundesbank (2025c).
7 See Deutsche Bundesbank (2025a).
8 See Plaasch and Röthig (2025).

Growth-at-risk for Germany*

Chart 1.1.3

%, annual GDP growth rates at quarterly level, as at Q3 2025



Sources: Federal Reserve Bank of St. Louis, OECD, Federal Statistical Office and Bundesbank calculations.* 10% quantile of the distribution of annual growth rates of gross domestic product based on a quantile regression. Conditional on developments in financial stress in Germany, the US National Financial Conditions Index and a sentiment indicator for German enterprises. The coloured areas show the historical quantiles (0 to 0.25 red; 0.25 to 0.5 light red; 0.5 to 0.75 light green; 0.75 to 1 green) of the 10% quantile estimation in the period from 1971 to 2025.**1** Data from the COVID-19 pandemic are excluded as the pandemic does not constitute a crisis resulting from developments in the financial system.

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Financing conditions have remained virtually unchanged in broad terms compared with the previous year. The inflation rate has continued to fall since the end of 2024. The latest projections show that it is likely, by 2027, to settle close to the medium-term 2 % target set by the European Central Bank (ECB) in both Germany and the euro area. [9] Longer-term real interest rates in Germany rose compared with the end of 2024 and currently stand at around 0.6 %. Longer-term real interest rates are measured as the difference between nominal interest rates on ten-year federal bonds (Bunds) and expected inflation over the same period. [10] At the beginning of 2025, real interest rates spiked higher after the government announced a significant increase in spending. They moved towards the 1 % mark for a time (see Section 1.2). In the spring, financing conditions also tightened across the board. The Bundesbank's composite indicator of financial conditions condenses monthly price-based market data, quantity-based metrics and several macro-financial indicators. It thus captures information from various parts of the financial system. [11] In view of increased market risk in the wake of the trade conflict and the resulting disruptions in financial markets, the composite indicator rose (see Chart 1.1.4). Since then, however, it has fallen back below the historical average, roughly to the 2024 level (see Chart 1.1.4). The lower values show that financial conditions have eased again and that tensions in the financial system have abated.

9 See European Central Bank (2025a).

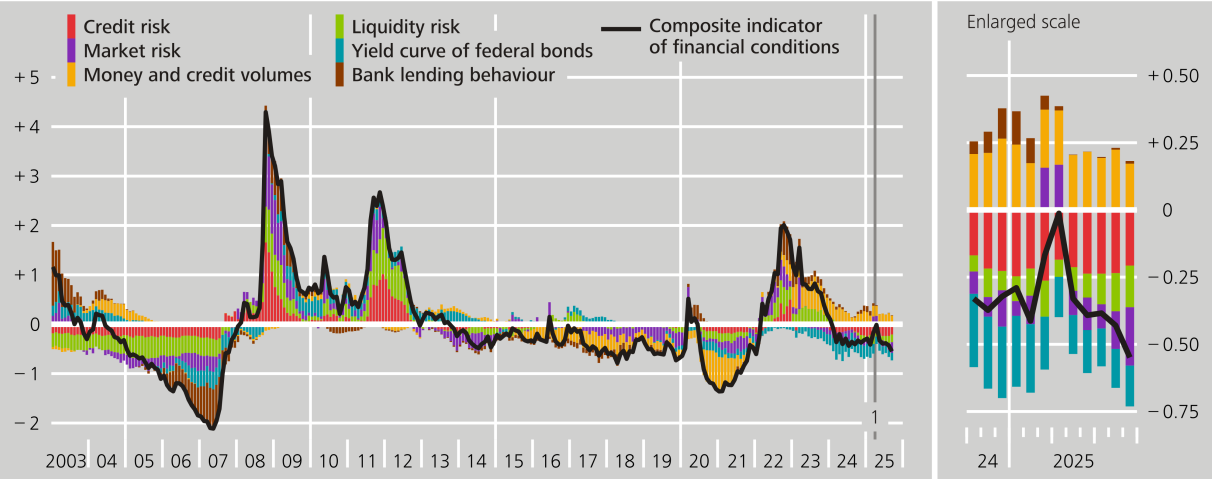
10 Data source: Deutsche Bundesbank. Calculated from the yields on outstanding ten-year federal securities and from weighted inflation expectations (Consensus Forecast).

11 The composite indicator for financial conditions is made up of several sub-indicators. Composite indicators are more comprehensive than simple financial stress indicators. In addition to market data, they usually contain quantity-based metrics and other macro-financial indicators as well. These capture information from various parts of the financial system, covering financial intermediaries and the non-financial private sector, for example. For more information, see Metiu (2022).

Composite indicator of financial conditions*

Chart 1.1.4

Monthly data, standardised from 2003, as at September 2025



Sources: BIS, Bloomberg Finance L.P., ECB, Bundesbank statistics and Bundesbank calculations. * See N. Metiu (2022), A Composite Indicator of Financial Conditions for Germany, Deutsche Bundesbank Technical Paper No 03/2022. **1** US tariffs are announced, 2 April 2025.

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All in all, the macro-financial environment deteriorated markedly over the course of last year, particularly against the backdrop of high uncertainty and the associated risks. Currently, the German economy is expected to start recovering from next year onwards. Nevertheless, all forecasts are subject to an exceptionally high level of uncertainty as conditions are changing frequently. [12)] Two factors in particular are weighing on the economic environment: the protectionist and unpredictable US trade and economic policy and the fact that geopolitical tensions remain heightened. The risk of renewed trade conflict persists, increasing the likelihood of adverse scenarios. At the same time, geopolitical tensions are increasing the danger of hybrid threats and thus also of cyberattacks. These could directly jeopardise financial stability. In addition, the financial system still faces structural challenges. In particular, these include ongoing digitalisation in the real economy and the financial system (see the supplementary information entitled “Artificial intelligence and its effects on financial stability”), action to achieve climate neutrality, and coping with the consequences of demographic change.

12 See Deutsche Bundesbank (2025c).

Supplementary information

Artificial intelligence and its effects on financial stability

Artificial intelligence (AI) has the potential to significantly influence developments in the financial system and the real economy. However, it is difficult to predict what the future holds. The technology is evolving rapidly and the effects on production processes in the economy depend heavily on where and how AI is deployed. AI systems have already made enormous strides in a short period of time.[1)] They analyse large volumes of data, generate texts and images and automate decision-making. In the financial system, AI can aid lending and investment decisions, lead to efficiency gains, and help tailor financial services more closely to customers' needs and wants.[2)] But the use of AI also entails risks, most of which cannot yet be completely foreseen. The opportunities and risks associated with AI are therefore central to the discussion around potential implications for financial stability.

1 For an overview of how rapidly AI is evolving, see Korinek (2024).
2 For a comprehensive analysis of the impact of AI on the efficiency and resilience of financial systems, see Aldasoro et al. (2024).

German financial institutions are already making greater use of AI, though its application in core areas of banking business, such as lending, has so far been minimal. According to surveys conducted by the Bundesbank, around 26 % of firms in the real economy and financial sector used AI in 2024. In 2025, this figure already stood at 44 %. Additional companies are planning to use AI starting in 2026.[3)] Use of AI in the financial and insurance sector is higher than average, at 54 % in 2025. The information and telecommunications sector is the only industry to have a higher uptake. However, small and medium-sized banks and savings banks in Germany (less significant institutions, or LSIs) mainly use AI in support processes and not in the core areas of their business.[4)] For example, AI is being deployed in automated internal processes (such as text generation and internal chatbots), fraud detection and prevention, and contact with customers. By contrast, AI has so far barely been used to assess creditworthiness and in trading. This pattern of use is similar to that in other European countries.[5)]

3 These statements are based on the Bundesbank Online Panel – Firms (BOP-F), the Bundesbank's survey of companies, covering the second quarter of 2025. The sample contains 7,290 firms.

4 This breakdown is based on a joint survey conducted by BaFin and the Bundesbank regarding the state of play at the end of 2024. A total of 152 nationally supervised institutions took part.

5 See Bank of England (2024).

From a financial stability perspective, oversight may need to be stepped up if financial intermediaries start using AI models for core business tasks. The use of AI outside core business areas, such as to power chatbots, poses comparatively few risks for banks. However, if AI systems were to be adopted on a larger scale to make decisions on lending or investments in financial markets, it could both mitigate and heighten risks. On the one hand, if AI models are able to process the information at hand more quickly and systematically, facilitating more appropriate risk pricing, credit and market risk could decrease. On the other hand, the use of AI models that have been trained on similar datasets could lead to increasingly herd-like behaviour. This could amplify excesses in financial markets and increase volatility, for example. The more autonomy AI models are granted to make decisions, the more likely this will become. Regulation is in place to provide a framework for this. In Europe, the EU Artificial Intelligence Act (AI Act) and the EU General Data Protection Regulation (GDPR) impose limits on the degree of autonomy permitted to AI models when it comes to decisions about individuals. In certain cases, they require a human being to monitor decisions and be able to intervene if necessary.[6)] Macroprudential supervisors, too, can use AI systems to help with oversight tasks. In this respect, AI itself requires oversight but can also assist with macroprudential oversight.

Besides the impact on how financial intermediaries behave, there will be changes in concentrations and dependencies within the financial system. It is not clear exactly what the effects on the system will be. They depend, amongst other things, on what AI costs to use and how dependent users are on providers of AI systems. The higher the cost of using AI systems or of investing in developing proprietary models, the greater the tendency for market power to become concentrated at individual intermediaries if using AI gives them a competitive edge. In addition, new concentration risks could arise if large sections of the financial system are dependent on the products of a few AI system providers. This is why broad-based and forward-looking monitoring is important, so as to pick up on developments at an early stage and gauge risks to financial stability.

6 Systems classed as high-risk within the meaning of the AI Act need to allow for human oversight. This must be set up in such a way that, depending on the use case, there is a human in the loop to intervene in decision-making. The GDPR rules out automation of relevant individual decisions except in specific authorised incidences; where necessary, it must be possible for a human being to intervene.

AI could also have an indirect impact on financial stability via the real economy. AI might place traditional business models under pressure and, as automation increases in certain areas, lead to a decline in labour demand. As this structural change in the real economy unfolds, there is a danger that financial intermediaries will misgauge default risks in contracting or burgeoning sectors. This could increase credit and market risk. Current estimates of the impact of AI on economic growth, unemployment and interest rate levels vary widely. [7)] This highlights the high degree of uncertainty surrounding whether – and how substantially – AI will affect the real economy. [8)]

The Bundesbank is working closely with national and international authorities to explore the impact of AI on financial stability. The global financial system is highly interconnected, and use of AI systems spans national borders. It is therefore important to work together at the international level to understand how AI affects financial stability. The Financial Stability Board (FSB) plays a key role in this regard. The FSB, with the involvement of the Bundesbank, has already drawn up some initial suggestions, including on monitoring the use and impact of AI in the financial system. [9)]

7 For an overview of the literature concerned with the possible effects of AI on the real economy and the indirect effects on financial stability, see Aldasoro et al. (2024). The authors distinguish between an optimistic and a disruptive AI scenario.

8 For estimations of AI's productivity effects in Europe in a range of scenarios, see Misch et al. (2025), who also replicate Acemoglu (2025). For scenarios that lead to AI exerting significantly stronger effects on the global economy, see Baily, Brynjolfsson und Korinek (2023).

9 For a full overview of the suggestions drawn up, see Financial Stability Board (2024a).

1.2 High debt ratios in some euro area countries pose risks to European and German financial stability

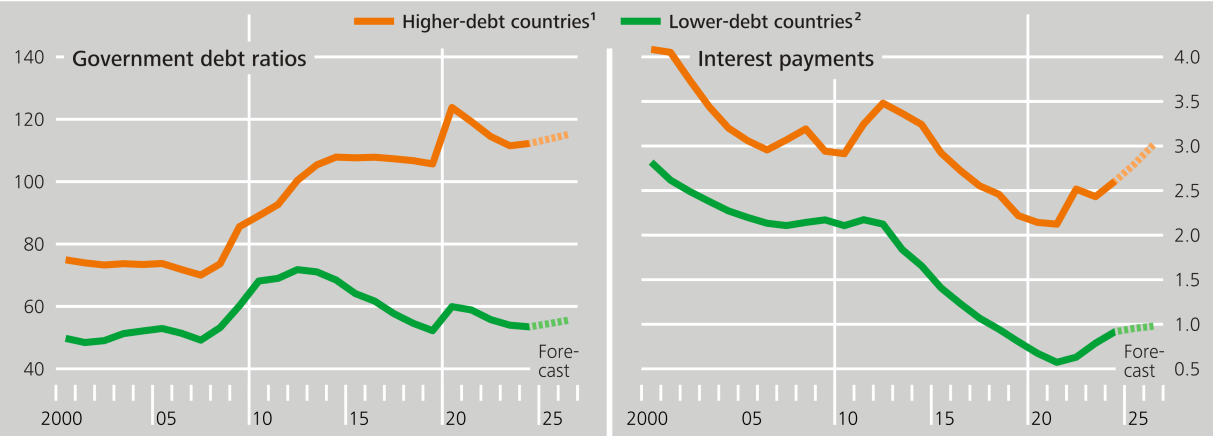
In some euro area countries, public debt ratios are high and likely to rise further initially in the coming years (see Chart 1.2.1). This is due, amongst other things, to higher defence spending as a result of heightened geopolitical tensions and weak structural growth. Long-term challenges such as climate change and demographic ageing will also have a marked fiscal impact. In some high-debt euro area countries, debt ratios are initially expected to rise further in the coming years before gradually receding.[13)] However, the prospective reduction in debt ratios also requires the optimistic growth assumptions often underlying the medium-term fiscal plans to be realised. Despite the assumed consolidation, some of these countries are reporting very large deficits, which are expected to decline only gradually.[14)] In some high-debt countries, sustainability risks persist. In Germany, too, the debt ratio is rising due to the financial burdens caused by the fiscal package, though this is likely to be manageable for a time. However, compliance with the recently amended national fiscal rules will not safeguard either long-term sustainability or compliance with EU fiscal rules in every case, possibly necessitating fiscal policy adjustments in the medium term. Overall, interest expenditure relative to GDP is expected to rise markedly for some euro area countries in the coming years. This increase is attributable to the higher interest rate level and rising debt levels (see Chart 1.2.1). If the optimistic growth assumptions do not materialise or the macroeconomic environment deteriorates, deficit and debt ratios could be even less favourable (see Section 1.1).

13 As indicated by the medium-term fiscal plans presented by all EU Member States in line with the European fiscal rules.

14 See also the ongoing excessive deficit procedures: consilium.europa.eu/en/policies/excessive-deficit-procedure/.

Government debt ratios and interest payments in selected euro area countries* Chart 1.2.1

As a percentage of GDP, as at Q2 2025



Source: European Commission and Bundesbank calculations. * Forecasts are derived from the model-based projections of the European Commission and are supplemented with additional estimates. **1** The (GDP-weighted) aggregate of the higher-debt euro area countries comprises countries with a debt-to-GDP ratio of over 90% in 2024 (Belgium, France, Greece, Italy, Portugal, Spain). **2** The (GDP-weighted) aggregate of the lower-debt countries comprises the other euro area countries.

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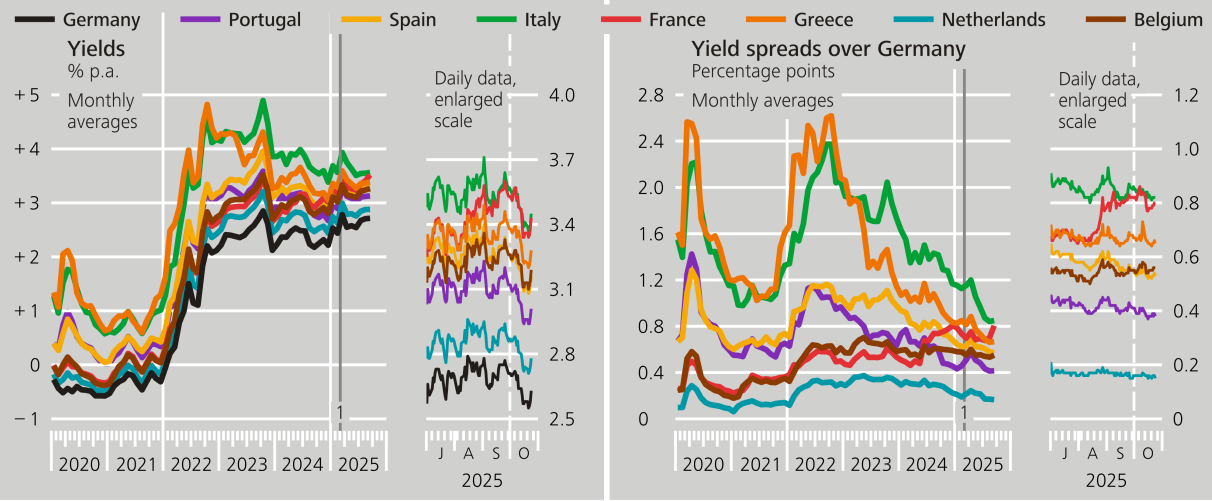
Many countries' yield spreads over Germany, which have narrowed significantly in some cases since the coronavirus pandemic, could widen again in the future. Relatively high growth rates and favourable growth expectations in some euro area countries, especially Spain, Greece and Portugal, have helped yields to narrow. Some favourable budgetary developments, stable political conditions and European crisis prevention mechanisms may also have played a role. However, if expectations of high future growth are not met, yield spreads could widen again. In addition, adverse developments could occur: the trade dispute might flare up once more, political uncertainty could increase, or fiscal targets might be missed. In such an event, default risk and risk premia would see a sudden increase.

Taken in isolation, Germany's expansionary fiscal policy will probably push up the general level of euro area interest rates, placing a strain on Member States with higher debt levels in particular by widening their yield spreads. For example, when significantly higher government spending in Germany was announced at the beginning of March 2025, yields on longer-dated German government bonds rose (see Chart 1.2.2). As a result, the government bond yields of other euro area countries also increased. The rise in yields on ten-year German government bonds has receded in part, but not fully.[15] However, if the general level of interest rates in the euro area were to rise permanently, interest costs would rise on a lasting basis in Germany and, above all, in high-debt euro area countries. This would add to the pressure on their yield spreads.

Yields and yield spreads on ten-year government bonds

Chart 1.2.2

As at 24 October 2025



Source: Bloomberg Finance L.P. **1** Announcement of German fiscal measures.
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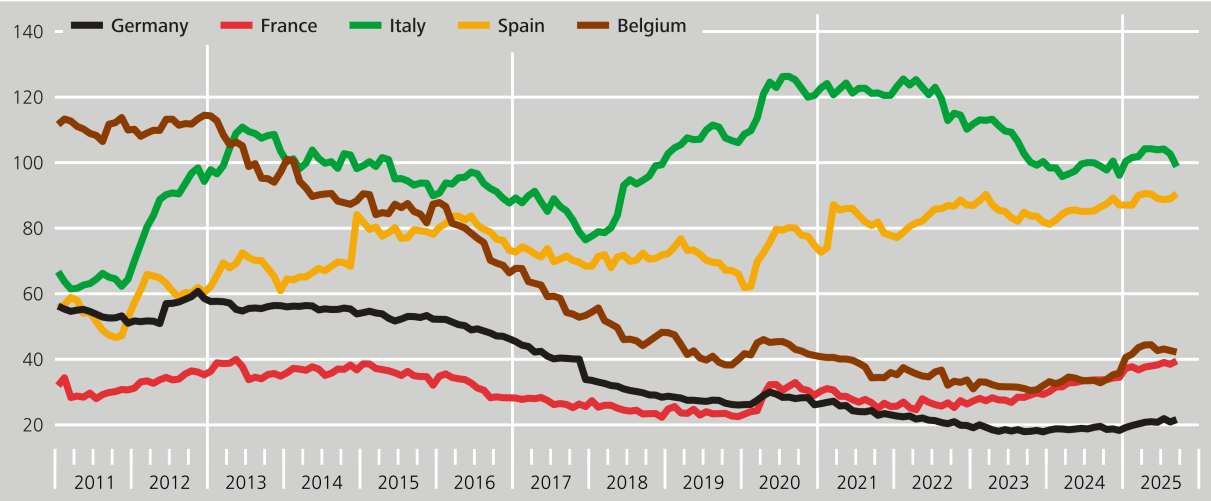
15 The rise in German government bond yields was only temporary, as the US administration's tariff announcements at the beginning of April 2025 led to capital inflows. Over time, other euro area countries' yields fell back to the levels they had reached prior to the announcement of the German fiscal package; seeEuropean Central Bank (2025c).

Because the German banking system is closely interconnected with other European financial systems, it is vulnerable to sudden interest rate increases on government bonds issued by other European countries. Developments in these countries' government bond markets impact the German financial system via two channels. First, higher interest rates on government bonds lead to market value losses for European financial intermediaries holding these government bonds. German financial intermediaries are affected as well, although their immediate losses seem to be limited (see Section 2.2). Second, the share of domestic government bonds on the balance sheets of European banks, insurers and funds remains high, especially in Spain and Italy (see Chart 1.2.3). Because the German banking system is closely linked to other European financial systems, contagion effects could lead to additional losses at German banks (see Section 2.2).

Domestic government bonds in the portfolios of monetary financial institutions* Chart 1.2.3

As a percentage of own funds, monthly data, as at September 2025



Source: European Central Bank. * Credit institutions and money market funds, excluding central banks.
Deutsche Bundesbank

There is mounting evidence of concerns about the funding risks of the United States, too. The new US administration signed off on substantial tax relief and additional government expenditure. Despite the positive effects of tariffs on US government revenue, a further increase in the US debt ratio and interest service is likely.[16] In addition to higher interest rates on US government bonds, this would also raise interest costs for firms, households and the financial sector.[17] Higher debt and deficits in the United States have already significantly increased long-term interest rates in the past, especially in periods when debt ratios are already high.[18] In May 2025, the US House of Representatives passed the "One Big Beautiful Bill Act" containing tax and spending policies. As a result, interest rates on longer-term US Treasury bonds temporarily increased, and the US dollar depreciated for a time.[19] The market responses were thus qualitatively similar to those of April 2025.[20] These events suggest that investors are currently sensitive to higher government spending in the United States. The increasing prevalence of stablecoins and their dependence on US government bonds as a reserve instrument could create additional risks for the US Treasury market in the event of sudden liquidity shortages caused by fire sales (see the supplementary information entitled "How stablecoins affect financial stability").

Developments in the US government bond market are influencing the German financial system. Although German banks' direct exposure to US government bonds is limited, higher interest rates on US Treasury bonds in the past have tightened global financing conditions markedly. Should tensions arise in US dollar funding markets, liquidity risks in the German banking sector could increase (see Section 2.2).

16 See Congress of the United States Congressional Budget Office (2025). The Congressional Budget Office (CBO) estimates that government debt will rise from 117.1 % in the baseline scenario from January 2025 to 127.7 % of GDP by 2034 on account of the "One Big Beautiful Bill Act". Against this backdrop, Moody's was the last of the three major rating agencies to downgrade the United States' creditworthiness from the top rating.

17 See Arellano, Bai and Bocola (2024). Interest costs for enterprises can rise further if domestic banks increase their interest rates on loans due to price and value losses in their government bond portfolio.

18 See Furceri, Goncalves and Li (2025). The study showed that when the US deficit-to-GDP ratio increased by 1 percentage point, or the debt-to-GDP ratio increased by 10 percentage points, long-term US interest rates rose by 20 to 30 basis points. While this effect was weaker during periods of low debt, such as around the turn of the century, it has become significantly stronger as the fiscal situation has deteriorated.

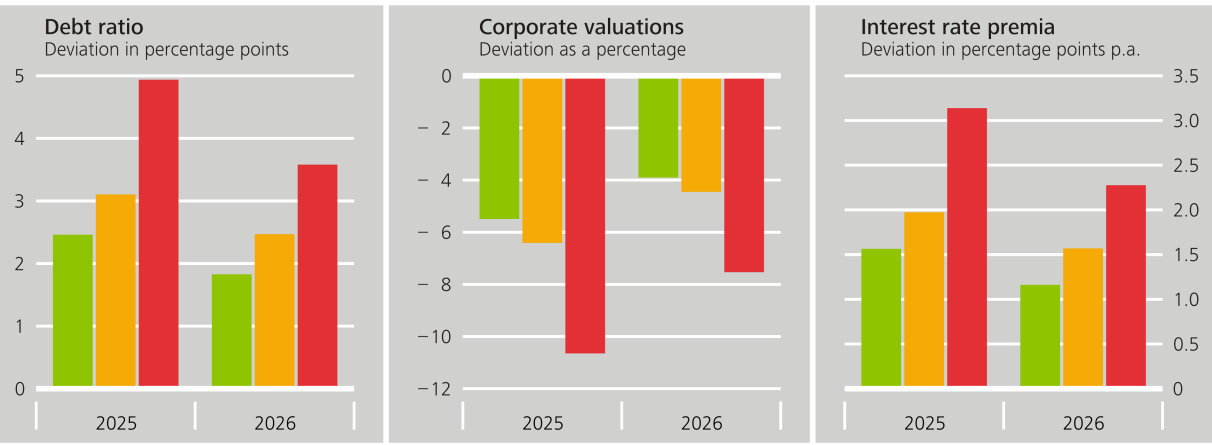
19 The legislation was brought into force on 4 July 2025 without further strong market movements.

20 See European Central Bank (2025c). Similar developments were also observed at the beginning of the coronavirus pandemic in 2020. In March 2020, foreign investors did not flee to US government bonds as a safe-haven asset as usual, but instead sold long-term US government bonds. Throughout the coronavirus period, yields on US government bonds went up primarily on days when there was negative news about fiscal policy; see Gomez-Cram, Kung and Lustig (2024).

Higher debt ratios can restrict fiscal space and thus increase financial stability risks emanating from the corporate sector in times of crisis. Simulations based on a quantitative structural model suggest that interest rate spreads and the debt ratio of the non-financial corporate sector rise after a negative shock (see Section 5). At the same time, valuation levels fall if the government does not respond countercyclically because its fiscal space is limited, for example (see Chart 1.2.4).[21)] The negative impact of the shock on credit risk in the corporate sector is smaller if a country takes countercyclical measures against it. Conversely, the corporate sector is more negatively affected if the shock is actually amplified further by government consolidation measures – for example, when fiscal space is exhausted. Turmoil in the corporate sectors of individual euro area countries can ultimately have an impact throughout the euro area, including the German financial system, via real economic and financial channels (see Section 2.2).

Effects of a negative shock on euro area non-financial corporations*

Chart 1.2.4



Sources: Bundesbank calculations using the Federal Reserve Bank's DSGE model "SIGMA" (see C.J. Erceg, L. Guerrieri and C. Gust (2006), SIGMA: A New Open Economy Model for Policy Analysis, International Journal of Central Banking, Vol. 2, No 1). * At the beginning of 2025, a persistent negative demand shock (time preference shock) is simulated for the higher-debt euro area countries under various fiscal policy assumptions. **1** As in the past, the fiscal policy response is to increase government spending. **2** No fiscal policy response. **3** Fiscal policy has to undertake further consolidation.

Deutsche Bundesbank

21 The simulations are based on Erceg and Lindé (2013). See also Erceg, Guerrieri and Gust (2006). Corporate valuations reflect the value of the enterprises' own funds. The debt ratio indicates the ratio of debt to enterprises' total assets. Interest rate spreads are the difference between the interest rate that enterprises pay for their financing and the risk-free interest rate.

Supplementary information

How stablecoins affect financial stability

The growing global market for stablecoins is being dominated by a small number of stablecoins denominated in US dollars and could gain further relevance in the context of regulatory developments in the United States. Stablecoins are a sub-category of crypto-assets.[1)] Unlike other crypto-assets, their value is supposed to remain stable relative to a central bank currency or other assets. Issuers of stablecoins usually guarantee redemption at par. To this end, they invest the funds they receive in a cover pool, referred to in this context as "reserves", in traditional assets such as money market instruments and bank deposits. Stablecoins have come to represent a key component of the cryptosystem.[2)] US dollar-denominated stablecoins account for around 99 % of the stablecoin market. The crypto-assets USDT (Tether) and USDC (Circle) dominate the market (see Chart 1.2.5). The market for euro-denominated stablecoins has been insignificant so far, though it has grown significantly since the European Markets in Crypto-Assets Regulation (MiCAR) came into force in 2024.[3)] Increasing legal clarity and political support – particularly in the United States – could further heighten demand for stablecoins.[4)]

1 Crypto-assets are a digital representation of value or of a right that can be transferred or stored electronically using distributed ledger technology (DLT) or a similar technology.

2 The cryptosystem is a complex network of technology, actors and applications that builds upon blockchain technology and includes crypto-assets, decentralised financial applications (DeFi), non-fungible tokens (NFTs) and other digital assets and services.

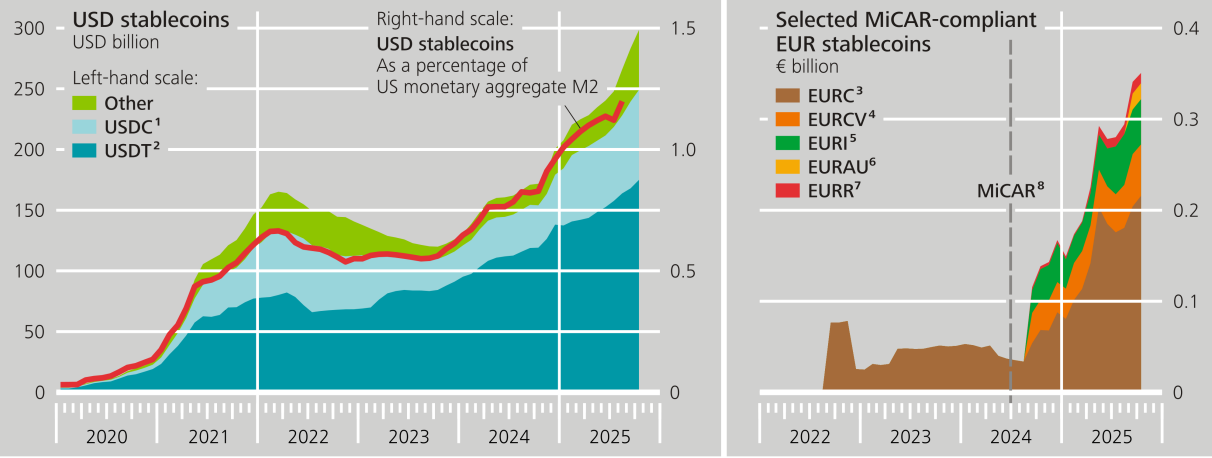
3 MiCAR divides stablecoins into two categories according to the type of reference asset to which they refer. The first, e-money tokens (EMTs), refer to crypto-assets that maintain a stable value by referencing the value of an official currency. The second, asset-referenced tokens (ARTs) are, according to MiCAR, crypto-assets that are not e money tokens. These maintain a stable value by referencing another value or right or a combination thereof, including one or more official currencies. See Deutsche Bundesbank (2023c).

4 In the United States, in particular, Donald Trump's inauguration marked a change in regulatory stance that supports crypto-assets and their market development. This included a ban on US federal authorities taking actior to set up, issue or promote digital central bank money as well as the targeted promotion of US dollar-denominated stablecoins for (private) payment purposes. The GENIUS Act, signed by President Trump on 18 July 2025, is intended to support these crypto-activities by providing legal certainty. See Congress of the United States Congressional Budget Office (2025).

Market capitalisation of stablecoins

Chart 1.2.5

As at October 2025



Sources: CoinGecko, CoinMarketCap, DefiLlama, Federal Reserve Bank of St. Louis and Bundesbank calculations. **1** USD Coin (issued by Circle). **2** USD Tether (issued by Tether). **3** EUR Coin (issued by Circle). **4** EUR CoinVertible (issued by Société Générale-FORGE). **5** Eurite (issued by Banking Circle S.A.). **6** AllUnity EUR (issued by AllUnity). **7** StablR Euro (issued by StablR). **8** Applicability to stablecoins (EMTs and ARTs) since 30 June 2024.

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Stablecoin reserve assets already link the cryptosystem to the traditional financial system, which can lead to contagion effects in the event of runs on banks or on stablecoins themselves. If there are doubts as to whether stablecoin issuers are able to fulfil their repayment promises, this can lead to a run. Such doubts may be due to fluctuations in value, uncertain quality and the level and availability of reserve assets.[5)] As a result, fire sales in securities markets as well as sudden withdrawals of stablecoin reserves from banks could lead to contagion risks for the traditional financial system. On the other hand, difficulties at banks can lead to contagion effects for stablecoins. One example of this is the collapse of Silicon Valley Bank (SVB), which caused the stablecoin issued by Circle to temporarily lose its peg to the value of the US dollar because part of its reserve assets were held with SVB. The bulk of global stablecoin reserve assets currently flows into short-term US government bonds. As a result, individual issuers are becoming increasingly significant players in this market.[6)] In Europe, direct linkages between stablecoin reserve assets and the traditional financial system have thus far been limited.

If stablecoins are used outside of the cryptosystem more frequently, risks to financial stability could increase. Currently, stablecoins are predominantly used within the cryptosystem, as they make it easier for investors to exchange crypto-assets or carry out transactions. In future, however, their use outside of the cryptosystem could increase – for example, in cross-border and cross-currency payments or in securities settlement.[7)] This would integrate stablecoins more strongly into the global financial system, thus exacerbating existing contagion channels. In addition, there could be structural impacts on banks through, for example, declining revenues, particularly in cross-border payments, as well as via more volatile or declining bank deposits. If non-euro-denominated stablecoins were to be used more frequently in the euro area, this could ultimately impair monetary sovereignty.

5 Other factors that could trigger a run include custody, operational and technological risks.

6 See Ahmed and Aldasoro (2025). According to reports on the reserve assets of Tether (USDT) and Circle (USDC), the two largest stablecoin issuers held 78.5 % (about US$176 billion) of their total reserve backing of US $224 billion in US government bonds at the end of June 2025, mainly in the form of short-term Treasury bills; see BDO Italia S.p.A. (2025) and Deloitte & Touche LLP (2025). Both direct holdings and repo transactions fully secured by short-term US government bonds are considered here.

7 See Deutsche Bundesbank (2023a).

MiCAR contains regulatory safeguards, but applying them effectively poses challenges. With MiCAR, the European Union has created a comprehensive framework for stablecoins. MiCAR is intended to promote innovation and, at the same time, limit risks to financial stability.[8)] Due to the cross-border nature of stablecoins and global regulatory differences, a continuous review of the MiCAR instruments is needed to ensure their effectiveness. In order to prevent widespread use of non-MiCAR compliant stablecoins, it may be necessary to take additional measures to strengthen supervision. Special attention should also be paid to multi-issuer stablecoins.[9)] This is important to prevent the circumvention of key safeguards under MiCAR and to avoid unfair competitive conditions at the sole expense of European issuers, as well as increased run risks to the EU financial system. In view of this, the ESRB has published a recommendation to classify these models as non-MiCAR-compliant as long as their specific risks are not addressed by means of appropriate safeguards.[10)]

8 In this vein, e-money tokens (EMTs) may only be issued by credit or e-money institutions that have already been authorised. In addition, requirements apply to the composition and safekeeping of the reserve assets, the right to redemption at par at any time, increased requirements for significant issuers, an interest ban and quantitative restrictions on the use of non-euro-denominated stablecoins as a means of exchange within the EU; see Deutsche Bundesbank (2023c). Beyond MiCAR, stablecoins – insofar as they are used for payment purposes – could also fall under the Eurosystem oversight framework for electronic payment instruments, schemes and arrangements (PISA), or the transfer mechanism of a stablecoin arrangement could be monitored as a payment system. Systemically important stablecoin arrangements with a transfer mechanism are therefore also subject to the Principles for Market Infrastructures (PFMI), including some clarifications.

9 Put simply, multi-issuer stablecoin schemes are constellations in which crypto-asset issuers issue the same stablecoin both within and outside of the EU via multiple business units.

10 See European Systemic Risk Board (2025).

Risks could arise if large-value payments between credit institutions are increasingly settled in stablecoins in future. If critical interbank payments are no longer settled in default-free central bank money but are instead settled more frequently in stablecoins, new direct concentration, default and liquidity risks may emerge. At the same time, dependencies on foreign payment infrastructures could increase. In addition, different standards and a lack of interoperability may result in a fragmentation of payment systems.[11)] Ultimately, the uniformity of money may be impaired if interbank payments are no longer settled using default-free central bank money. Providing a wholesale central bank digital currency (wCBDC) can strengthen resilience by enabling the settlement of DLT transactions in central bank money.[12)] The Eurosystem is currently expanding an initiative to settle DLT transactions in central bank money. Central bank money is thus intended to remain secure in its role as the foundation of the financial system.[13)]

11 See Aguirre, Brunnermeier and Saravia (2019), Bains et al. (2022), Bank for International Settlements, Committee on Payments and Market Infrastructures (2023), and Financial Stability Board (2024b).

12 Digital central bank money for the settlement of DLT-based transactions for a restricted group of users within the financial sector. For more information, see Deutsche Bundesbank (2023a).

13 See European Central Bank (2025b).

1.3 Signs of an upswing in the financial cycle, but further developments remain uncertain

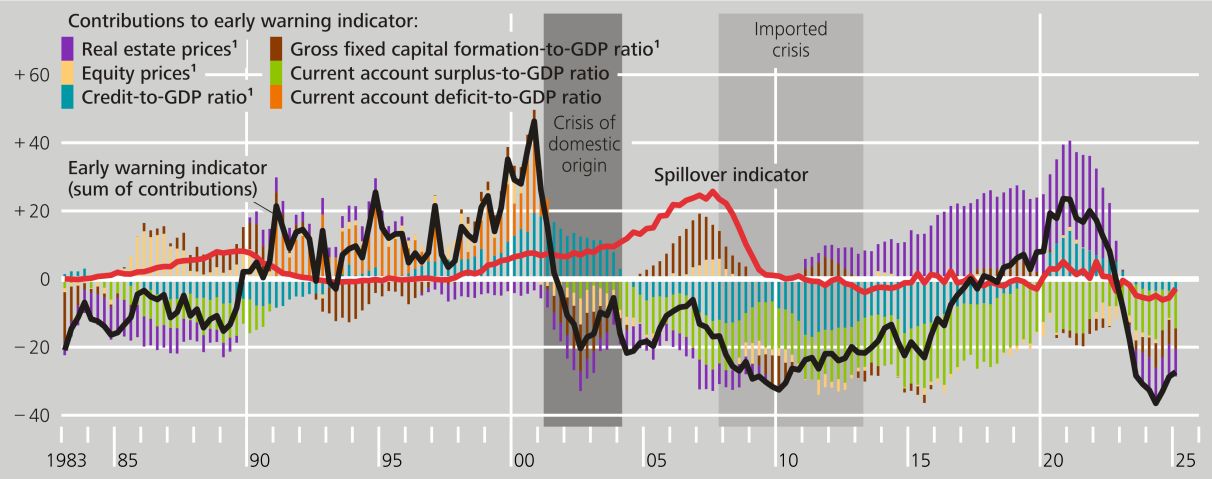
Lending and asset prices are showing initial signs of recovery, which is indicative of the start of an upswing in the financial cycle. Up until 2024, both loan growth and real estate prices were still in decline on an annual average. During this period, there was an orderly reduction in the vulnerabilities that had emerged over the course of the previous upswing in the financial cycle during the low interest rate period as well as during the coronavirus pandemic.[22)] By now, the low point might have been passed and the financial cycle could transition to an upswing. Both lending and asset prices indicate a stabilisation and a moderate recovery. In line with this, the Bundesbank's early warning indicator – an indicator that consolidates cyclical developments in the German financial system – began to increase in the second half of 2024. Its recent uptick was primarily attributable to rising asset prices (see Chart 1.3.1). However, at present, it is uncertain whether the upswing will persist. The effects of the worsened macro-financial environment will probably only become apparent in the coming months. These could hamper a sustainable recovery in lending and asset prices (see Section 1.1).

22 See Deutsche Bundesbank (2024f).

Early warning indicator for Germany

Chart 1.3.1

Normalisation: early warning indicator in the United States in Q1 2006 = 100, as at Q1 2025



Sources: BIS, Eurostat, Haver Analytics, IMF, OECD and Bundesbank calculations. **1** Cyclical deviation from the long-term trend, based on the Hodrick-Prescott (HP) filter.

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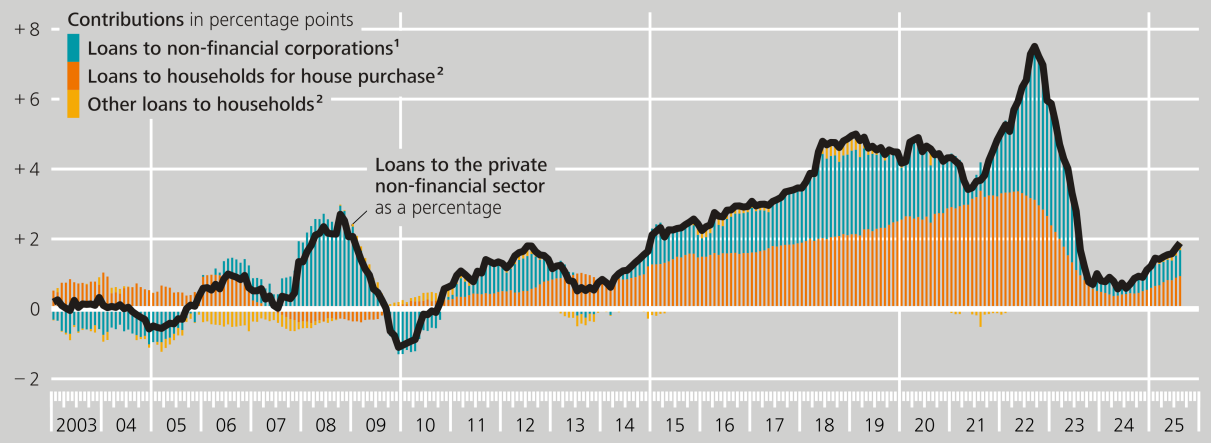
Lending by the German banking sector remains subdued, but there are signs of slight recovery. Annual growth rates in the volumes of bank loans to households and enterprises have risen markedly on the year, but remain low compared with previous years (see Chart 1.3.2). The outlook for lending dynamics tends to be positive, too. The banks surveyed by the Bank Lending Survey (BLS) expect, on balance, that demand for residential real estate loans will continue to increase in the fourth quarter of 2025 as well. In previous quarters, rising demand was supported by lower interest rates and improved housing market prospects and a level of lending rates that was lower than during the period from 2023 to mid-2024. In the second quarter of 2025, the surveyed banks also reported that loan demand from enterprises had increased in net terms. At the same time, the surveyed banks also reported that their lending standards were tighter on balance in 2025, especially for loans to enterprises. In this context, the banks pointed to increased credit risk as a result of the general macroeconomic environment as well as industry and firm-specific factors. This is also reflected in a higher rejection rate for corporate loan applications, with small and medium-sized enterprises, in particular, reporting that their access to credit had become more difficult. [23)] Given the economic and trade policy uncertainties and weak economic developments, it remains to be seen whether the recovery in lending will prove to be robust.

23 See Schoenwald (2025). This is also reflected in the fact that banks rejected a higher proportion of applications for loans to enterprises. In this context, enterprises engaged in loan negotiations – especially small and medium-sized ones – are reporting increased difficulties in accessing credit. Nevertheless, according to the firms surveyed in the Bundesbank Online Panel – Firms (BOP-F), the share of loan negotiations concluded with agreements at the desired conditions has remained roughly constant since the end of 2024. The share of firms that perceive access to financing as a pressing or extremely pressing problem has not changed significantly, either (BOP-F, third quarter of 2025).

Contributions to changes in German banks' lending to the domestic private non-financial sector*

Chart 1.3.2

Year-on-year change, monthly data, as at August 2025



* Nominal loans and bill-based loans from domestic monetary financial institutions (excluding the central bank). **1** Including debt securities. **2** Including non-profit institutions serving households.

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In the residential real estate market, rising prices and transaction numbers are signs of recovery. Overvaluations in the German residential real estate market unwound for the most part in 2024.[24] As a result, the potential for setbacks has fallen significantly. Since the end of 2024, both the number of transactions and prices have recorded positive year-on-year growth rates for the first time in more than two years (see Chart 1.3.3). According to a price-at-risk analysis for German residential real estate prices, larger declines in prices have become less likely. The conditional 10th percentile of nominal price growth for residential real estate stands at around 0.3 % for the period from the second quarter of 2025 to the second quarter of 2026. This is significantly higher than in the same period a year earlier, when it stood at – 1.4 % (see Chart 1.3.4).[25] In addition, households are more optimistic about housing market prospects, with surveys showing that they recently expected annual price increases of just over 5 %, compared with 3 % at the beginning of 2024.[26]

24 The results of a regional empirical panel model suggest that residential real estate prices in 2024 were not far above the values that can be explained by socio-demographic and economic fundamentals. See Deutsche Bundesbank (2025f).

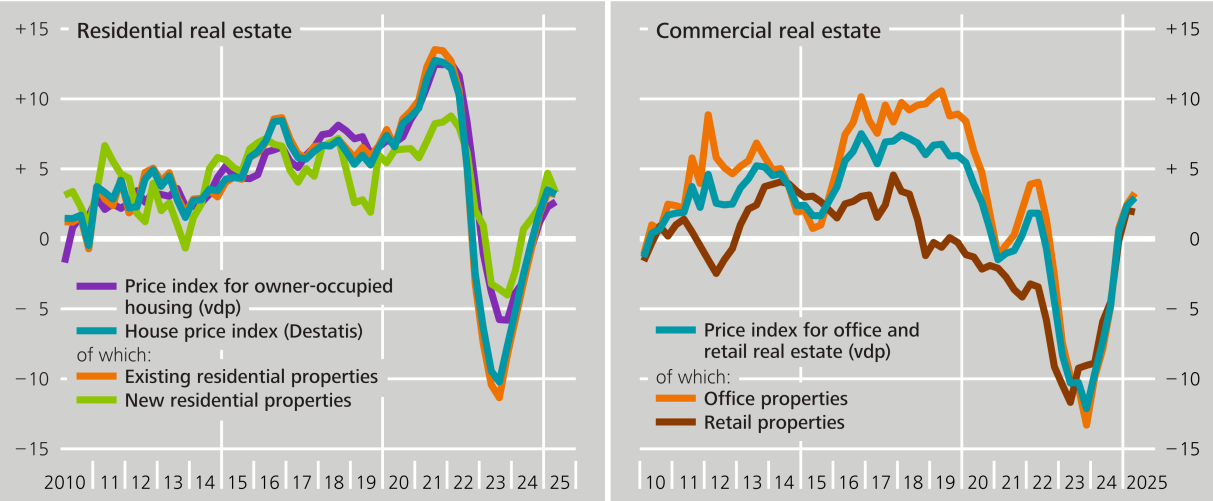
25 See Hafemann (2023). The downside scenario is the 10th percentile in the probability density of the forecast of nominal annual growth rates for residential real estate prices over a period of four quarters.

26 Data source: Bundesbank Online Panel – Households (BOP-HH). Data as at September 2025.

Real estate prices in Germany

Chart 1.3.3

Year-on-year percentage change, quarterly data, as at Q2 2025



Sources: Federal Statistical Office and Association of German Pfandbrief Banks.
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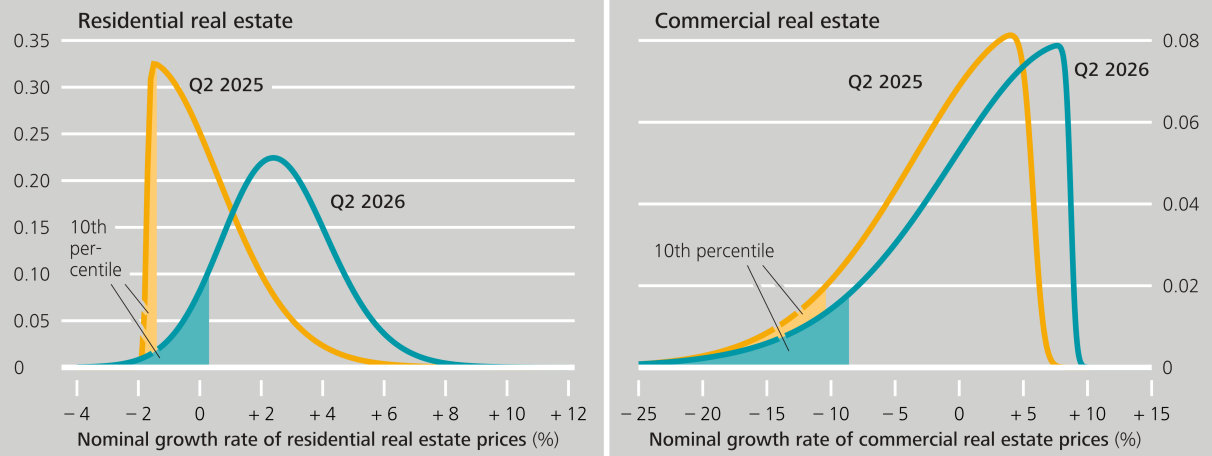
Prices in the German commercial real estate market have recently stabilised, but the situation remains fragile overall (see Chart 1.3.3). Current price developments continue to be based on a small number of transactions, which could distort the overall picture. The observed upward trend is therefore only of limited informative value, and risks of a further decline in prices still remain. A price-at-risk analysis for German commercial real estate prices shows that the conditional 10th percentile of price growth for commercial real estate is around −9 % for the period from the second quarter of 2025 to the second quarter of 2026. In the same period of the previous year, this percentile was only marginally lower, at slightly less than −10 % (see Chart 1.3.4). [27] The market could come under pressure if net outflows forced German real estate funds to sell more commercial real estate in order to safeguard their liquidity (see Section 3.2). In addition, the commercial real estate sector is particularly sensitive to interest rates. [28] Rising long-term yields worldwide may therefore weigh on commercial real estate prices in Germany as well.

Price-at-risk analysis for German real estate prices*

Chart 1.3.4

Probability density, as at September 2025



Sources: Federal Employment Agency, ECB, Jones Lang LaSalle, Federal Statistical Office, Association of German Pfandbrief Banks and Bundesbank calculations. * Distribution of the forecast with a one-year horizon. Curve labels denote the quarter for which the respective annual growth rates were estimated.

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27 See Herbst, Plaasch und Stammwitz (2024). The downside scenario is the 10th percentile in the probability density of the forecast of the nominal annual growth rates for commercial real estate prices over a period of four quarters.

28 Model calculations are based on a multi-country panel comprising the United States, Spain, Italy, France and Germany. The results show that an exogenous increase in five-year government bond yields of 50 basis points can, all else being equal, reduce the growth rate of commercial real estate prices by up to 13 percentage points over the following two years. See Herbst und Stieglitz (Mimeo).

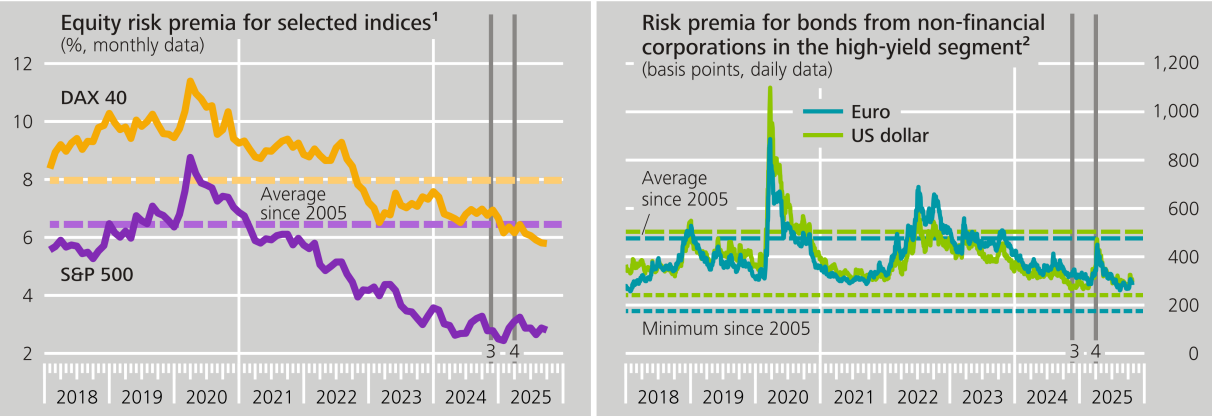
Persistently high and increased valuations in financial markets harbour the risk of sudden market price corrections. Following the short-lived turmoil at the beginning of April 2025, financial markets made a swift and full recovery (see Section 1.1). Although economic and trade policy uncertainty remained, volatility in financial markets continued to trend downwards over the following months, dropping to below-average levels by historical standards. Since then, marked increases have only been observed in isolated cases. These occurred, for instance, in the context of the Israel-Iran conflict in June 2025, against the backdrop of the transitional arrangements under US tariff policy expiring at the beginning of August 2025, and during the tariff dispute between the United States and China in October 2025. Risk premia in equity markets remain well below their long-term averages, especially in the United States (see Chart 1.3.5). Just a handful of particularly highly valued tech firms account for a large share of total US equity market capitalisation by historical standards. Much like in equity markets, risk premia in the markets for corporate bonds denominated in euro and US dollar have also fallen back again rapidly following the tensions in April and are now close to multi-year lows (see Chart 1.3.5).[29)] In view of the challenges in the macro-financial environment and the high government debt ratios in some countries (see Section 1.2), market participants could underestimate the default risk of firms active in capital markets. Optimistic valuations have made the financial system more vulnerable still, as sudden market price corrections could trigger considerable losses among financial intermediaries.

29 Our model-based calculations likewise indicate that risk premia on euro-denominated corporate bonds are below the values warranted by the fundamentals.

Risk premia in equity and corporate bond markets

Chart 1.3.5

As at 24 October 2025



Sources: Bloomberg Finance L.P., OECD (2025), Real GDP long-term forecast (indicator), doi: 10.1787/d927bc18-en (last accessed on 9 September 2025), ICE data used with permission from ICE Data, and Bundesbank calculations. **1** See J. Ohlsen (1995), Earnings, Book Values, and Dividends in Equity Valuation, Contemporary Accounting Research, Vol. 11, No 2. **2** Risk premia correspond to the additional yield that a bond investor demands in return for a risk-free government bond. The chart shows option-adjusted spreads (OAS) from ICE Data. **3** Financial Stability Review 2024. **4** US tariff announcements, 2 April.

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1.4 Households appear robust overall

The debt sustainability of households in Germany has improved overall. Over the course of 2025 thus far, the ratio between aggregate household debt and household disposable income decreased by approximately 0.5 percentage point to around 85 %.[30] The main reason for this was the continued low level of new lending (see Section 1.3). In previous years, the debt ratio had also been dampened by marked nominal wage growth, but this was significantly lower in 2025.[31] Nevertheless, the rise in nominal wages over recent years has resulted in a reduction of household debt in real terms. This development will strengthen their debt sustainability over the long term. Households that own residential real estate increased their ratio of liquid assets to debt, which is indicative of greater resilience.[32]

30 Bundesbank calculations based on data from the financial accounts.

31 See Deutsche Bundesbank (2024f).

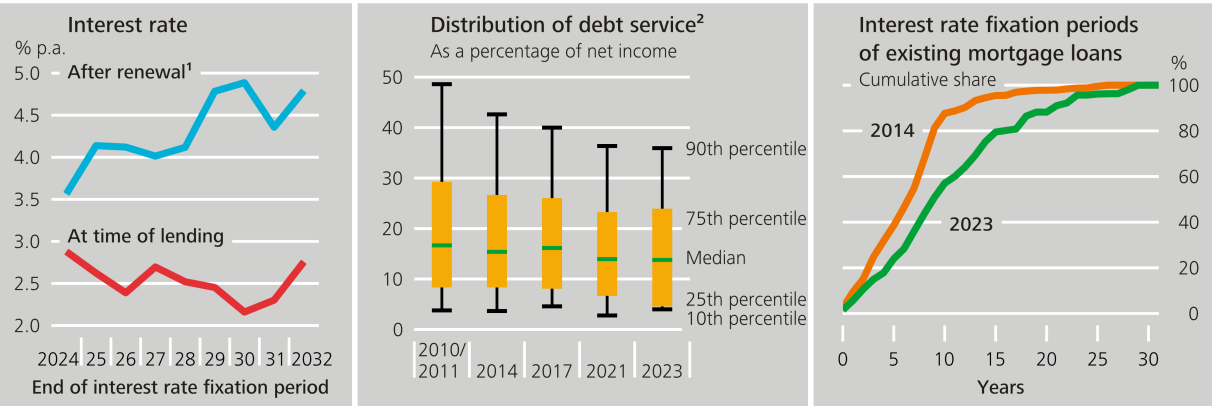
32 Bundesbank calculations based on the distributional wealth accounts. Liquid assets comprise the sum of currency and deposits, debt securities, listed shares and shares in investment funds; see Deutsche Bundesbank (2024e).

For most households, interest rate risk remains low for the time being. The risks associated with follow-up financing appear limited, as most interest rate fixation periods are long (see Chart 1.4.1).[33)] By 2027, around 20 % of the outstanding volume of residential real estate loans will have to be renewed. The interest rates on these types of loans could increase from around 2.5 % at present to more than 4 % through renewal (see Chart 1.4.1). However, the additional burden caused by this will be mitigated by repayments before that time as well as higher nominal incomes. Current survey results suggest that these factors will more or less offset the additional interest burden for most households with outstanding residential real estate loans. Accordingly, the median debt service ratio continued to decline slightly in 2023 (see Chart 1.4.1).[34)]

Interest rates, debt service and interest rate fixation periods of households with mortgage loans

Chart 1.4.1

As at wave 5, surveyed between 12 May 2023 and 12 February 2024, available since April 2025



Source: Bundesbank calculations based on the Panel on Household Finances. **1** Calculated based on the household-specific interest rate at the time of lending as well as the expected change in interest rates on ten-year German federal bonds between the time of lending and the time of renewal. This is based on the forward rate of the yield curve as at August 2025. **2** Sample of households that own residential real estate with a mortgage on the main residence.

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33 Data source: Panel on Household Finances, as at wave 5, surveyed between 12 May 2023 and 12 February 2024.

34 Overall, too, an aggregate decline in the debt service ratio can be observed for the household sector in Germany; see Deutsche Bundesbank (2025e). However, the debt service ratio among households with new loans is significantly higher than that among all households with outstanding residential real estate loans (see Section 2).

The predominantly robust labour market situation is continuing to contribute to the resilience of households. Despite the sluggishness of the economy, the unemployment rate has risen only moderately in recent years. While the risk of becoming unemployed due to job loss remains low compared with previous periods of economic weakness, it has nevertheless been trending upward. At the same time, the chances of ending a period of unemployment by starting a new job are historically low. [35)]

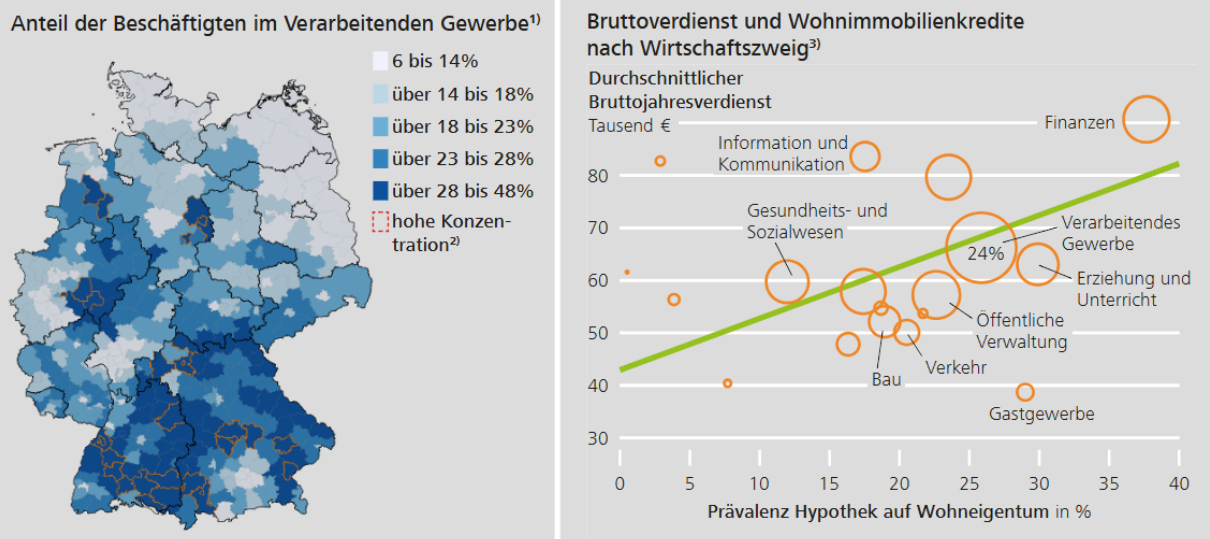
Protectionist US trade policy as well as structural challenges in the corporate sector harbour downside risks to the labour market, especially in regions with above average shares of industry. The higher US tariffs are primarily affecting firms in the manufacturing sector, as these tend to be heavily dependent on exports (see Section 1.5). The impact of tariffs on the labour market can vary considerably from region to region, as the share of employees in the manufacturing sector differs greatly across regions (see Chart 1.4.2). In addition, in some regions, employment is highly concentrated in individual or small numbers of segments within the manufacturing sector. This includes, for example, the manufacture of motor vehicles. Furthermore, compared with other employees, those in the manufacturing sector more frequently have outstanding residential real estate loans (see Chart 1.4.2). Analyses based on regional data for Germany show that, in the past, declines in employment in the manufacturing sector led to significant increases in foreclosure sales of residential real estate. Protectionist US trade policy as well as structural challenges – such as higher energy costs, difficulties associated with decarbonisation, and growing competition from emerging market economies – are likely to weigh heavily on the manufacturing sector in the future (see Section 1.5). This could increase pressure on regional labour markets and heighten the risk of rising unemployment, especially in regions with high shares of industry. As a result, this could also indirectly increase risks to financial stability arising from the household sector.

35 See Federal Employment Agency (2025).

Regionale und sektorale Aspekte der Wohnimmobilienfinanzierung

Schaubild 1.4.2

Stand: 31. Dezember 2024



Quellen: Bundesagentur für Arbeit, Panel on Household Finances und Statistisches Bundesamt. **1** Anteile auf Basis der sozialversicherungspflichtigen Beschäftigten. **2** Kreise mit Industriequote im 5. Quintil und hohe Beschäftigungskonzentration innerhalb des Verarbeitenden Gewerbes. Konzentration berechnet anhand des Herfindahl-Index auf Ebene der Wirtschaftsabteilungen (nach WZ 2008). Hohe Konzentration definiert als das 5. Quintil des Herfindahl-Index. **3** Größe der Kreise repräsentiert die Höhe der ausstehenden Wohnimmobilienkredite auf den Hauptwohnsitz nach Wirtschaftszweig. Beschäftigte im Verarbeitenden Gewerbe halten 24% dieser Kredite.

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1.5 Risks from the corporate sector are likely to increase in the future

Persistently weak economic activity is having a growing impact on the fundamentals of German enterprises. Although enterprises' capitalisation and liquidity levels remain sound across the board, the earnings situation of German enterprises appears increasingly strained. In 2024, firms' nominal profits declined year-on-year for the first time since 2020.[36)] Unlike the corporate sector as a whole, listed companies' profitability remains robust overall. Large, listed companies in Germany are strongly dependent on developments in the global economy, which proved robust up to the second quarter. Going forward, though, the United States' protectionist trade policy is expected to weigh more heavily on the global economy – and in turn on listed

36 Data source: National accounts. Inflation-adjusted profits continued to decline as in previous years; see Deutsche Bundesbank (2024f).

companies, too. At present, it is therefore mainly the profits of small and medium-sized enterprises (SMEs) that appear to be under pressure. Generally speaking, SMEs are more dependent on the economic situation in Germany. The aggregate debt service ratio of German enterprises has also risen owing to weaker profit developments. [37)] Corporate insolvencies have continued to rise, although the increase has tapered off considerably. [38)] Even though sentiment among German enterprises has improved slightly since the turn of the year, business expectations remain subdued given the weakness of the economy. [39)]

Higher interest rates compared to the period of low interest rates that came to an end in 2022 will continue to weigh on enterprises in the future. The average interest rate on new, fixed-rate loans granted to enterprises in 2025 is currently around 3.9 % (see Chart 1.5.1). [40)] Consequently, interest rates on new corporate loans remain at around last year's level and are slightly lower than in 2023. However, more than 40 % of the outstanding loans to German enterprises were taken out before the interest rate reversal in 2022 (see Chart 1.5.1). [41)] Some enterprises are therefore still benefiting from very favourable financing costs, as loans taken out before the interest rate reversal have an average interest rate of just 1.7 %. This is much lower than the rates on loans that will have to be taken out over the next few years (see Chart 1.5.1). Higher interest expenditure on follow-up financing could put further pressure on German enterprises' fundamentals.

37 Data source: Bank for International Settlements – Debt service ratios, data as at Q4 2024.

38 The average monthly year-on-year growth in corporate insolvencies stood at around 23 % in both 2023 and 2024. In the first half of 2025, this growth rate was around 12 % on average. See Federal Statistical Office (2025).

39 The ifo business climate index currently stands at around 87 index points on an annual average, which is well below its long-term average of over 95 points. Only in 2009 and 2024 did firms take a gloomier view of the business environment. The current situation in particular is considered challenging, with the annual average reaching its second-lowest level since 2009. At the same time, enterprises are tending to be more optimistic about the future; see Leibniz Centre for European Economic Research (2025).

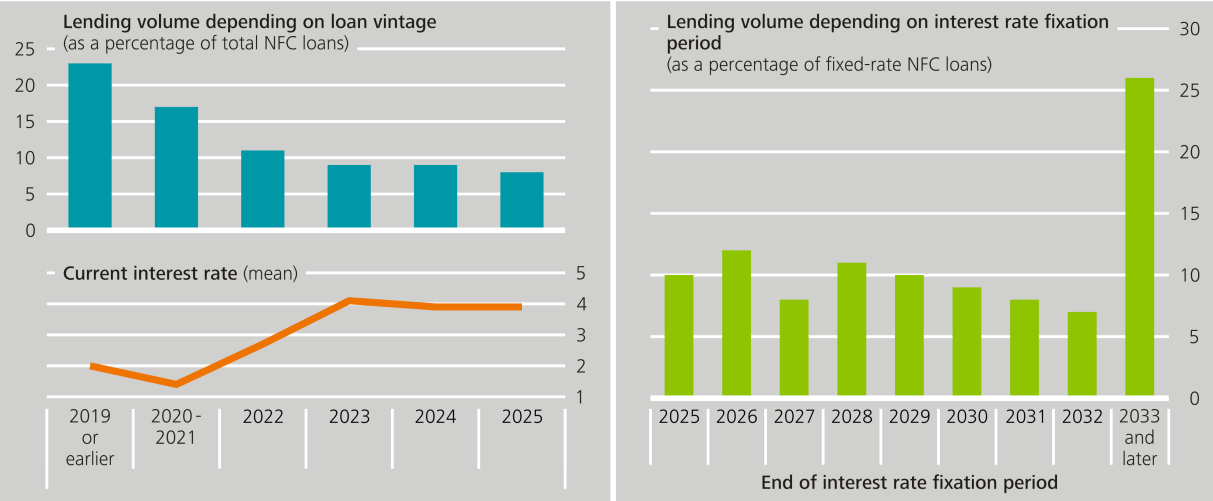
40 The average interest rate on newly granted loans currently stands at 3.2 % (data source: MFI interest rate statistics). At the moment, the interest rate level for follow-up financing next year is not expected to rise by much on average, either. This is when the interest rate fixation period for no less than around 22 % of all loans to enterprises ends (see Chart 1.5.1). The interest rate on new 3 to 5-year loans taken out in 2026 will probably be around 4 %, rough estimates based on current terms and conditions for new lending business would suggest.

41 Around 23 % of all loans have floating rates of interest averaging around 3.8 % at present.

NFC loan vintages, interest rates and interest rate fixation period

Chart 1.5.1

Fixed-rate loans only. Data as at August 2025



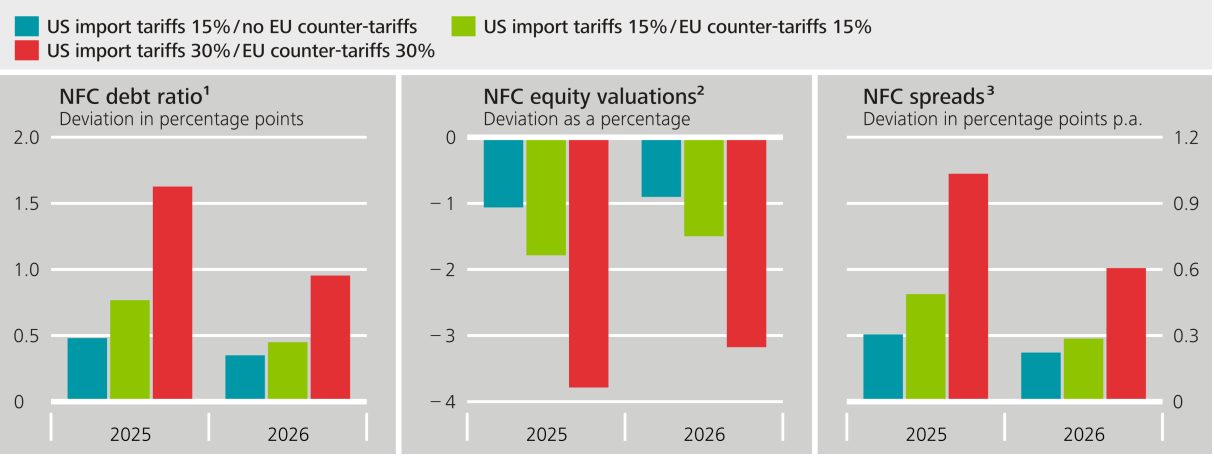
Source: AnaCredit.

Deutsche Bundesbank

Protectionist trade policy in the US could increase financial stability risks stemming from the European corporate sector. Simulation results from a structural quantitative model show that the higher tariffs could cause the debt ratio of enterprises in Europe and corporate bond and loan spreads to rise. In addition, corporate valuations could decline (see Chart 1.5.2 and Section 5).[42] In a more adverse scenario in which the European Union imposes reciprocal counter-tariffs on US imports, the impact on these variables would be greater (see Chart 1.5.2). Should the trade conflict flare up again, the effects could be similar to those of past crises (see Chart 1.5.2). Further analyses show that the impact of higher tariffs differs significantly across sectors and regions in Germany. US tariffs could increase German enterprises' default risk. This is especially true for firms in the automotive and mechanical engineering sectors as well as for manufacturers of electronic, IT and optical equipment as their exports to the United States are particularly substantial.[43] However, other economic sectors are also likely to be affected indirectly owing to economic ties.

Effects of different US tariff scenarios and reciprocal EU tariffs on financial indicators of EU non-financial corporations (NFCs)*

Chart 1.5.2



Source: Bundesbank calculations using the Federal Reserve Bank's DSGE model "SIGMA" (see C. J. Erceg, L. Guerrieri and C. Gust (2006), SIGMA: A New Open Economy Model for Policy Analysis, International Journal of Central Banking Vol. 2 No 1). * Tariffs modelled as unexpected and persistent shocks occurring in Q2 2025. **1** Indicates the ratio of debt to enterprises' total assets. **2** Reflect the value of the enterprises' own funds in the model. **3** Difference between the interest rate that enterprises pay on their financing and the risk-free interest rate.

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42 The simulations are based on Lindé and Pescatori (2019). See also Erceg, Guerrieri and Gust (2006). Euro area enterprises' own funds fell by around 4.6 % in the wake of the coronavirus pandemic. Data source: Eurostat, Financial balance sheets – annual data. The debt ratio of German enterprises rose by 2.2 percentage points; see Deutsche Bundesbank (2024b). During the financial crisis, the bond spread between euro area firms and domestic government bonds rose by around 2.3 percentage points above the mean value for the period from 1999 to 2022; see Gilchrist and Mojon (2018).

43 Between 10 % and 20 % of total output in the sectors listed.

Moreover, enterprises in Germany are facing pressure to adjust to structural challenges at home and abroad. The main structural challenges include demographic change, which is reducing the labour supply, intensifying competition for skilled workers and increasing pressure on wage costs; high bureaucratic burdens and difficulties associated with decarbonisation, particularly in the automotive industry; and the sharp rise in energy costs in Germany since Russia's war of aggression against Ukraine. Moreover, increasing protectionism and greater competition from emerging market economies, especially China, are putting German enterprises under mounting pressure in global markets. This is causing the export industry to lose market share.[44)] All of this is weakening the competitiveness of the German economy and significantly dampening potential growth, which is expected to average just 0.4 % per year over the next few years. These structural challenges may increase credit risk in the corporate sector, as weak growth and declining profitability could impair firms' financial resilience and thus financial stability.

Broad-based structural reforms could counteract the structural burdens, thus reducing financial stability risks from the corporate sector over the medium term. Although the fiscal package is expected to stimulate demand, its direct impact on potential growth is likely to remain small.[45)] To counteract the structural challenges at home and from abroad, it is crucial to strengthen the competitiveness of the German economy by making the necessary structural reforms. These include speeding up planning and approval procedures, cutting red tape and making public administration more efficient. At the same time, tax incentives for private investment should be increased and conditions for start-ups and research and development improved. With regard to energy costs, it is important to press ahead efficiently with the energy transition. In addition, measures are needed to sustainably strengthen the potential growth of the German economy, particularly in view of the demographic challenges.[46)]

44 See Deutsche Bundesbank (2025b).

45 See Deutsche Bundesbank (2025c), which describes the assumptions surrounding the underlying fiscal package. These are largely consistent with the decisions that have been taken in the meantime. For more recent developments, see Deutsche Bundesbank (2025a). One of the key factors that is difficult to gauge is the pace and magnitude of additional government investment. The effects of accompanying measures such as speeding up approval processes or cutting red tape are even less concrete and are therefore not considered.

46 See Deutsche Bundesbank (2025d).

Overall, risks in the corporate sector increased last year and could continue to do so in the future. The ongoing period of weakness in the German economy is increasingly putting enterprises under pressure. The changing conditions at home and abroad are weighing on Germany's potential growth. Comprehensive structural reforms are needed to return the German economy to a higher growth path. Otherwise, the current improvement in sentiment in the corporate landscape might not last. The number of non-performing loans is likely to go up again next year, too (see Section 2).

2 Banking system: vulnerabilities and resilience

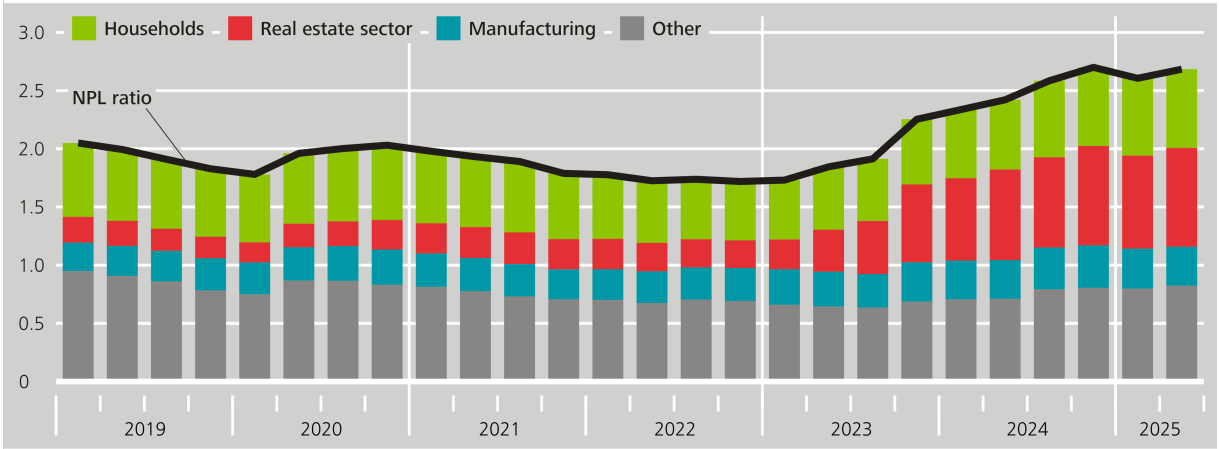
The overall risk situation for the German banking system has deteriorated in the past year on balance. In a weak economic environment, the risk of credit defaults has risen continuously. Banks have increased their loan loss allowances. In addition, surveys by the ifo Institute suggest that enterprises view banks' lending behaviour as increasingly restrictive (see Section 1.5). In the financing of commercial real estate, risks remain elevated and could lead to further loss allowances in the loan portfolio. By contrast, interest rate risk on banks' balance sheets, as presented in earlier financial stability reviews, has continued to decline. For example, the large, unrealised (hidden) losses on interest-bearing securities have unwound almost completely overall, not least because prices have recovered.

2.1 Risks in lending business are rising moderately

Contributions of non-performing loans issued to individual economic sectors and households*

Chart 2.1.1

%, as at Q2 2025



* Only includes data from the roughly 190 institutions for which reports differentiated by economic sector are available in FINREP since 2019 without interruption.

Deutsche Bundesbank

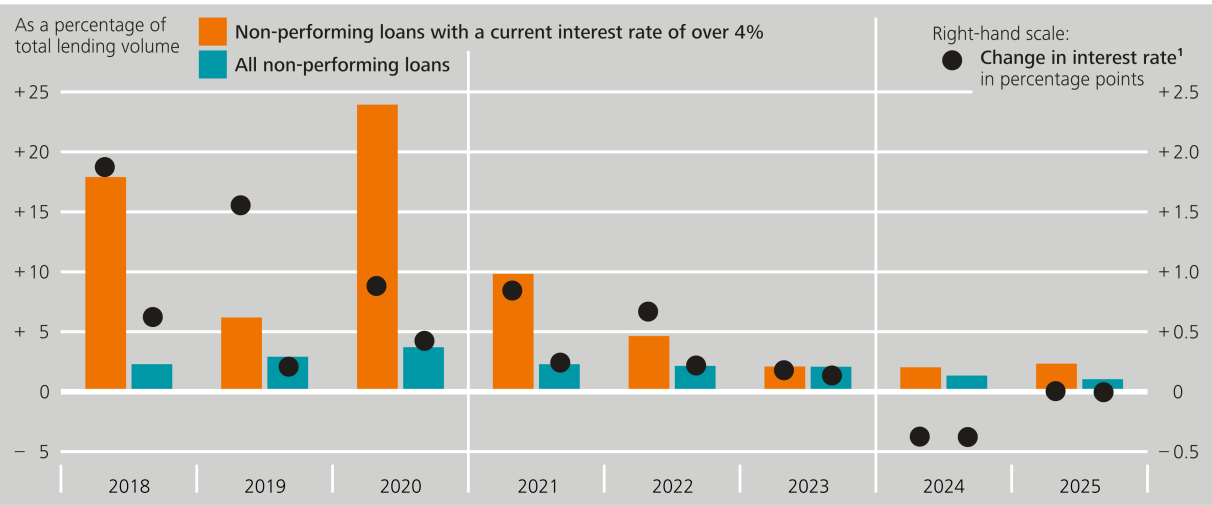
The non-performing loans ratio[47] **has risen significantly from its low at the end of 2022** (see Chart 2.1.1). Most of this increase was due to loans to the real estate sector at first. Now non-performing loans are increasing more broadly due to the weakness in economic activity. The non-performing loans ratio seemed to be in decline at the beginning of 2025, but this was due to a few large banks scaling back non-performing US real estate loans. Non-performing loans increased again in the second quarter.

Higher lending rates are also likely to have contributed to the rising credit defaults. Particularly older loans whose interest rates have been adjusted to current interest rate levels over their lifetime are defaulting more often (see Chart 2.1.2). Loans granted in 2021, the year before interest rates increased, have an aggregate default rate of around 2 %. By contrast, loans with a current interest rate of more than 4 % have a default rate of around 10 %. This subset of loans has also seen far greater changes on average to their interest rates, which have been adjusted by 0.8 percentage point compared to 0.2 percentage point for non-performing loans as a whole.

Share of non-performing loans in the current loan volume

Chart 2.1.2

As at end-June 2025



Source: AnaCredit. **1** Difference between the current interest rate and the interest rate at the time of lending.
Deutsche Bundesbank

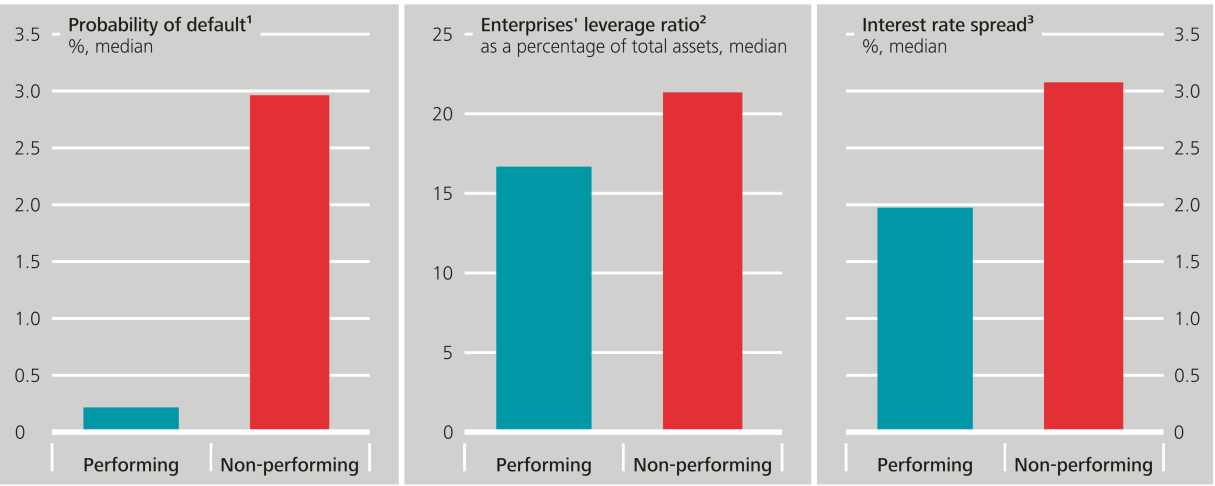
47 The terms “non-performing loan” and “defaulted loan” are treated synonymously in this report. For regulatory purposes, an obligor is deemed to be in default if it is unlikely that the obligor will pay its credit obligations to the institution without recourse by the institution to actions such as realising security or if the obligor is past due more than 90 days on any material credit obligation to the institution; see European Union (2013).

Many defaulted loans to enterprises were already comparatively risky at the time of lending and were also priced higher by banks accordingly. This is why loans that later defaulted were generally already far more likely to default at the time they were granted, compared with the average for performing loans (see Chart 2.1.3). These firms also had a slightly higher leverage ratio at the time of lending. However, this alone probably cannot explain the increased risk of default. Given the above average risks, credit terms and conditions for these enterprises are significantly more restrictive from the outset than for healthy firms.

Characteristics of non-performing loans to enterprises at the time of lending

Chart 2.1.3

Comprises outstanding loans issued since 2018 with data as at Q2 2025



Source: AnaCredit. **1** Probability of default for borrowers calculated by banks. **2** Debt incurred through loans from German banks. **3** Interest rate minus the average yield of maturity-matched euro area government bonds.

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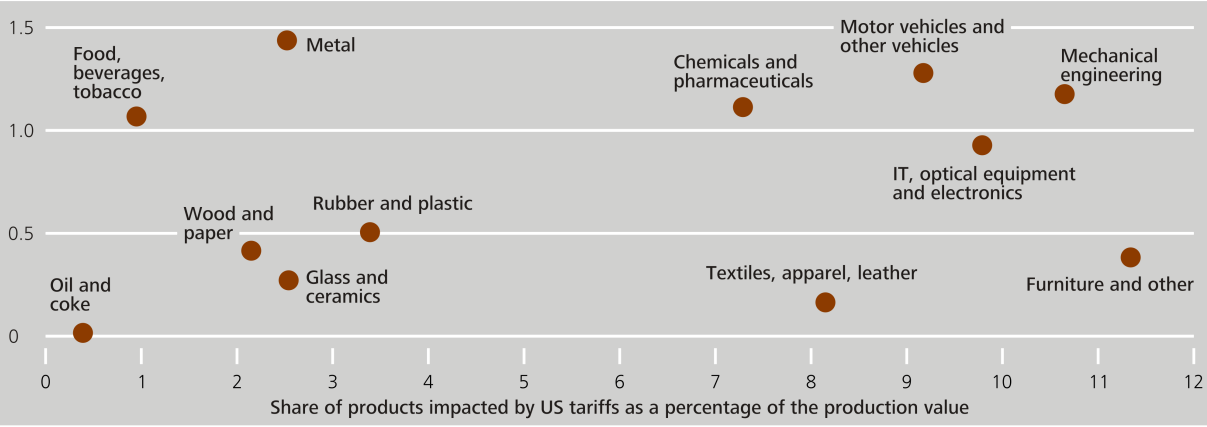
US tariffs are likely to have no more than a limited impact on banks' credit risk. Export-oriented enterprises, particularly those in the chemicals and pharmaceuticals sectors, the automotive and mechanical engineering sectors, and the IT, optical equipment and electronic sectors, are vulnerable to the consequences of the new tariffs regime. Nevertheless, these enterprises account for only a moderate share of the total loan volume granted by German banks to non-financial corporations (see Chart 2.1.4 and Section 5). This is partly because many large enterprises do not obtain financing primarily from banks, but instead directly from the capital markets. Overall, credit institutions' loans to the manufacturing sector constituted 9 % of total loans to enterprises in the second quarter of 2025.

Impact of US tariffs on German industrial sectors and German banks' credit exposure*

Chart 2.1.4

Share of credit exposure to non-financial corporations, as at July 2025



Sources: AnaCredit, Federal Statistical Office and US Department of Commerce. * To calculate the impact of tariffs on the individual sectors, the value of German exports to the USA was taken at the product level (as at 2024) and subsequently aggregated at the sector level. Exemptions for certain EU products were agreed in the tariff agreement between the EU and the USA. The chart takes these exemptions into account.

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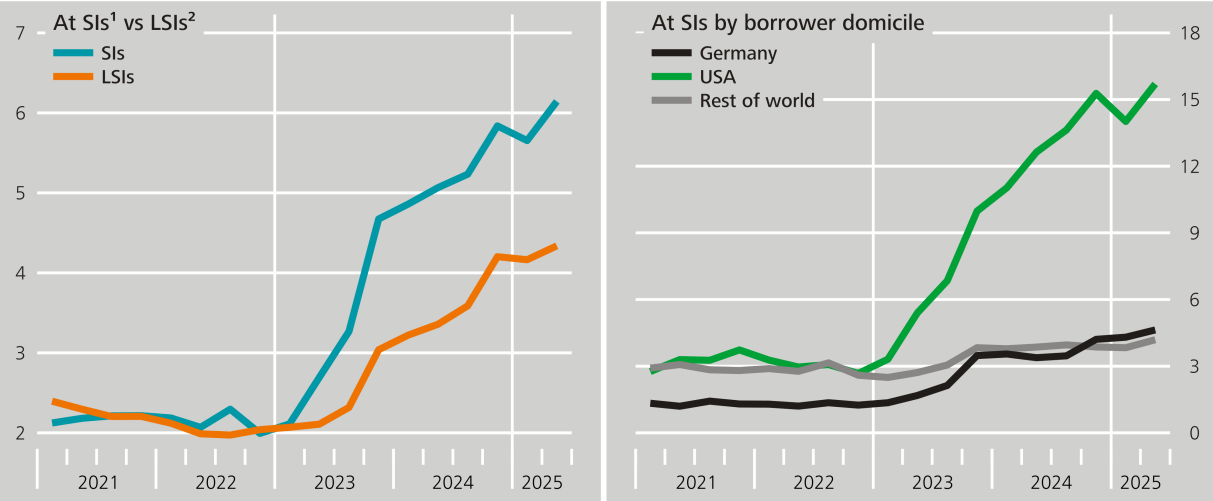
Default risks for commercial real estate loans remain significantly elevated. The ratio of non-performing loans in the commercial real estate sector rose significantly following the increase in interest rates in 2022. Systemically important banks, in particular, which are on balance more exposed to the particularly distressed US real estate sector, show higher default rates overall (see Chart 2.1.5). However, the increase in non-performing loans was also considerable for less significant institutions (LSIs). Default rates appeared to flatten at the beginning of 2025, after individual banks scaled back some of their non-performing US real estate loans (see Chart 2.1.5, right-hand panel). Nevertheless, the ratio of non-performing loans for commercial real estate rose again in the second quarter.

Ratio of non-performing commercial real estate loans

Chart 2.1.5

As a percentage of each group's loan portfolio, as at June 2025



1 Significant institutions (SIs). **2** Less significant institutions (LSIs).

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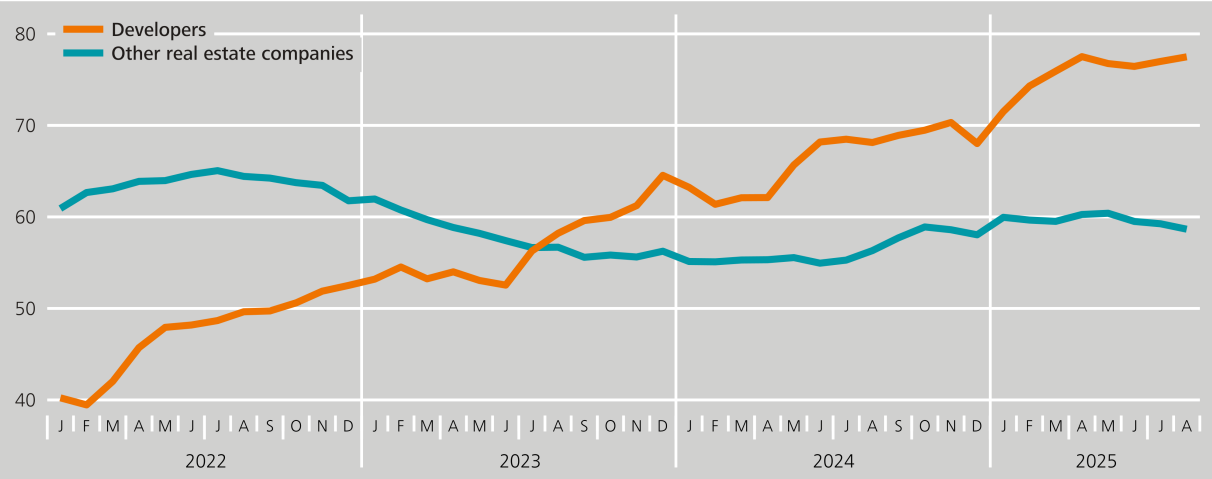
Project developers, in particular, are vulnerable to more expensive follow-up financing, which may have been a factor in the rising default rates. Loans to project developers represent a significant share of commercial real estate loans, at 16 %. The share of loans to project developers that are remortgaged at the end of the term has almost doubled over the past four years and now stands at 80 % (see Chart 2.1.6).[48)] The increase could indicate that firms are having difficulty selling their properties as planned.

48 This increase cannot be explained by shorter loan terms, as the loan volume remortgaged at the end of the term remained broadly stable over the period under review.

Remortgaged commercial real estate loans*

Chart 2.1.6

%, 12-month moving average, as at August 2025



Sources: AnaCredit, bulwiengesa AG, Listenchampion, German credit register of loans of €1 million or more and Bundesbank calculations. * Only fixed rate loans to German borrowers. Share of total commercial real estate credit volume remortgaged at the end of the term.

Deutsche Bundesbank

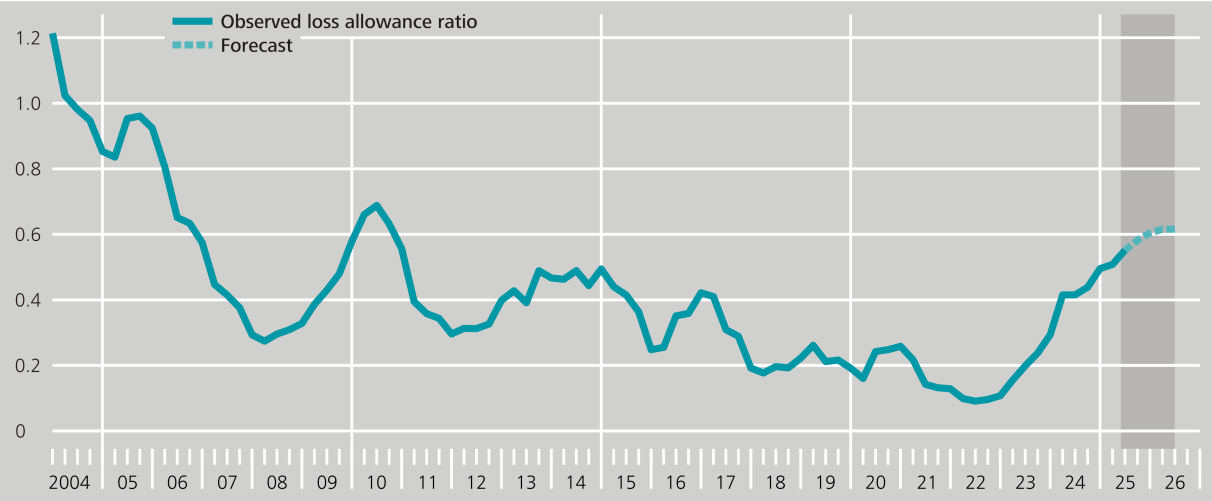
Corporate lending business more generally is also likely to see loss allowances continue to rise moderately. This is indicated by Bundesbank calculations based on a vector autoregressive model (see Chart 2.1.7).[49)] The manufacturing sector will presumably be the most affected by the current bout of economic weakness and US tariff policy. However, loss allowances are unlikely to be exceptionally high overall next year by historical standards. The expected losses are likely to be manageable for the majority of banks and to be covered by profits or capital reserves.

49 The model incorporates loss allowance ratios, real GDP and the ifo Business Climate Index. The chart shows the model-implied unconditional forecasts of loss allowance ratios over the projection horizon; see Deutsche Bundesbank (2024f).

Loss allowances* for loans to enterprises and self-employed persons

Chart 2.1.7

%, as at Q2 2025



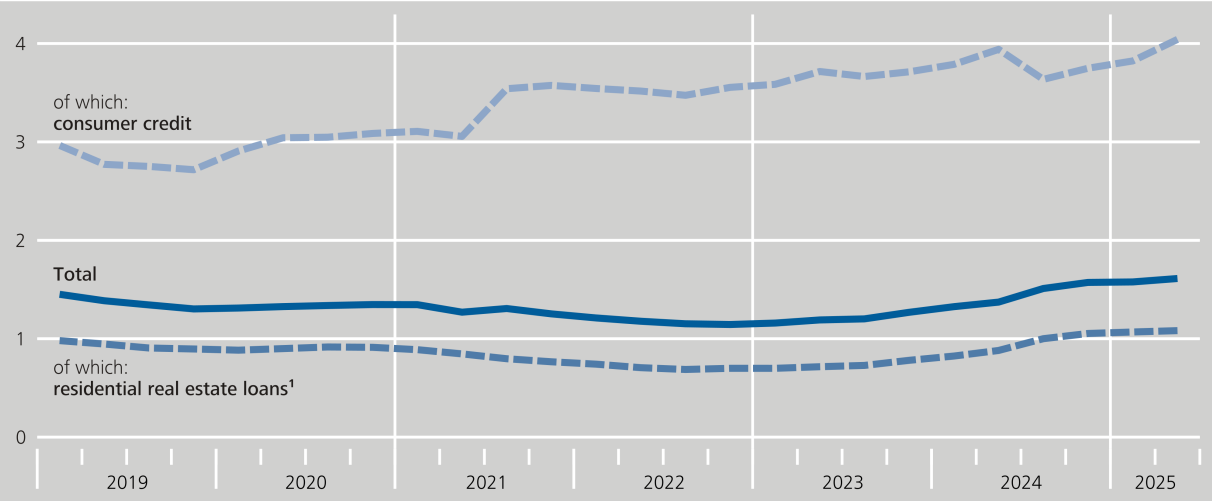
Sources: ifo Institute, Federal Statistical Office and Bundesbank calculations. * In relation to the respective credit volume, annualised.
Deutsche Bundesbank

Credit risk has also increased among households over the course of 2025. After bottoming out at the end of 2022, the non-performing loans ratio in this sector rose moderately by around 0.5 percentage point to 1.6 % at the end of the first half of 2025 (see Chart 2.1.8). Residential real estate loans, in particular, which account for around 85 % of the lending volume to households, have contributed to this increase. However, the ratio of non-performing residential real estate loans remains low and stood at just over 1 % at the end of June 2025. It was thus well below that of consumer credit, which stood at roughly 4 %.

Non-performing loans to households*

Chart 2.1.8

As a percentage of loans in each category, as at Q2 2025



* Data for the German banking system. 1 Loans secured by residential real estate.

Deutsche Bundesbank

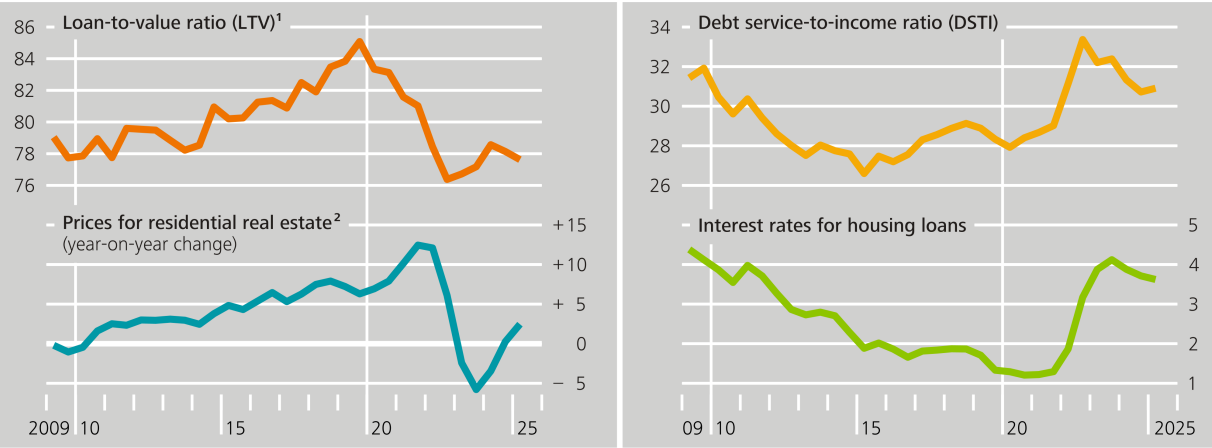
With lending standards remaining largely unchanged overall, vulnerabilities in new residential real estate financing are moderate. According to the Bundesbank's calculations, which are based on data from Interhyp Group and weighted with data from the Socio-Economic Panel (SOEP), households contributed an equity share of slightly more than one-fifth on average to new residential real estate financing in the first half of 2025. The debt service-to-income (DSTI) ratio stood at 31 % on average. A considerable share of new loans have a comparatively high loan volume of more than 90 % of the real estate value (this ratio is referred to as the loan-to-value ratio, or LTV). In the first half of 2025, the share of such loans stood at 25 %. The share of new loans with an elevated debt service is also comparatively high, with 16 % of loans exhibiting a DSTI ratio greater than 40 %.

DSTI and LTV have developed differently since 2020. While the average LTV has recently risen again somewhat following a significant decline, the DSTI has declined following a sharp increase (see Chart 2.1.9). Initially, higher house prices and interest rates led to higher debt service, and the average DSTI increased. However, the DSTI has been on the decline again since interest rates began to fall and incomes have risen. Lower prices in the wake of the turnaround in interest rates in 2022 were also accompanied by lower household borrowing and falling LTVs. Since the recovery in house prices, debt in new lending has risen again and thus so, too, has the LTV. This development needs to be monitored closely, as the residential real estate market is currently picking up momentum and there is still uncertainty surrounding lending standards. This could result in a reassessment of the risks arising from residential real estate financing.

Relationship between residential real estate prices, interest rates and lending standards

Chart 2.1.9

%, as at H1 2025



Sources: Bundesbank calculation based on data from Interhyp Group, Bundesbank interest rate statistics and the Association of German Pfandbrief Banks. **1** Adjusted calculation as of H1 2025. **2** Owner-occupied housing.

Deutsche Bundesbank

In future, the collection of data on housing loans will serve as a basis for macroprudential monitoring of residential real estate financing. Since 2023, banks and insurers have been reporting their lending standards for residential real estate financing to the Bundesbank under the WIFSta (Wohnimmobilienfinanzierungsstatistik) framework. However, implementation was not smooth at the beginning and the data had significant shortcomings. The Bundesbank subsequently agreed on measures with the reporting institutions to remedy these shortcomings. Since then, reporting institutions have improved their overall implementation of the prescribed definitions, but further adjustments are necessary. To this end, the Bundesbank and BaFin are in contact with the reporting entities.

2.2 Large stocks of government debt could result in market value losses in the bond portfolio

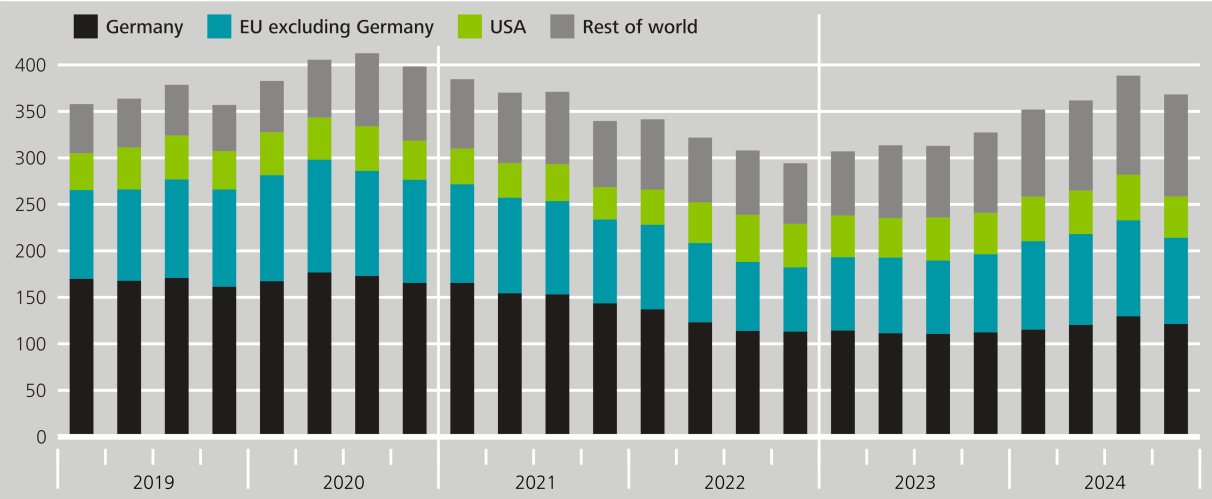
The current debate surrounding the debt sustainability of some European countries and the United States is bringing market risk at German banks into focus (see Section 1.2). Overall, German banks hold around €368 billion in government bonds, which corresponds to 3.6 % of their total assets (see Chart 2.2.1). This is below average compared with the mean of 4 % for EU banks. The total portfolio of securities, including corporate bonds, equities and fund shares, amounts to €1,410 billion (around 14 % of total assets). The share of government bonds in total assets appears moderate. However, market value losses often occur unexpectedly. The risk of contagion effects between financial intermediaries is thus also high.

Since the beginning of 2019, the share of German government bonds in German banks' government bond portfolio has fallen by 14 percentage points. At the end of 2024, it stood at only 33 %. While the share of EU government bonds (excluding Germany) and US government bonds has remained virtually constant (at 25 % and 12 %, respectively), the share of other government bonds has almost doubled. At the end of 2024, this share stood at 30 %. This means that banks have tended to increase the share of higher-yielding bonds. However, a higher yield on government bonds is often associated with a lower credit quality, resulting in an increased risk of changing spreads. Spread risks materialise when a bond's spread over low-risk benchmarks changes. Spreads can widen owing to a deterioration in an issuer's creditworthiness, lower market liquidity or macroeconomic uncertainties.

Government bond holdings of German banks

Chart 2.2.1

€ billion, as at end-2024



Sources: Centralised Securities Database and Bundesbank statistics.
Deutsche Bundesbank

Bundesbank analyses show that direct losses from an increase in bond yield spreads would probably be limited. Two stress scenarios were examined for the entire German banking system for this purpose. The first, narrower scenario is a situation in which market participants reassess the default risks of European government bonds, and yield spreads widen accordingly depending on their riskiness. For ten-year A-rated government bonds, the yield spread over relatively safe Bunds widens by 90 basis points in this scenario. An increase of this magnitude was observed, for example, during the euro crisis from 2010 onwards.

The second, broader scenario assumes that rising financing costs affect not only governments but also the European corporate sector. Accordingly, yield spreads also widen for corporate bonds depending on their rating, for example by 150 basis points for A-rated five-year bonds. All corporate equities lose 30 % in value across the board.

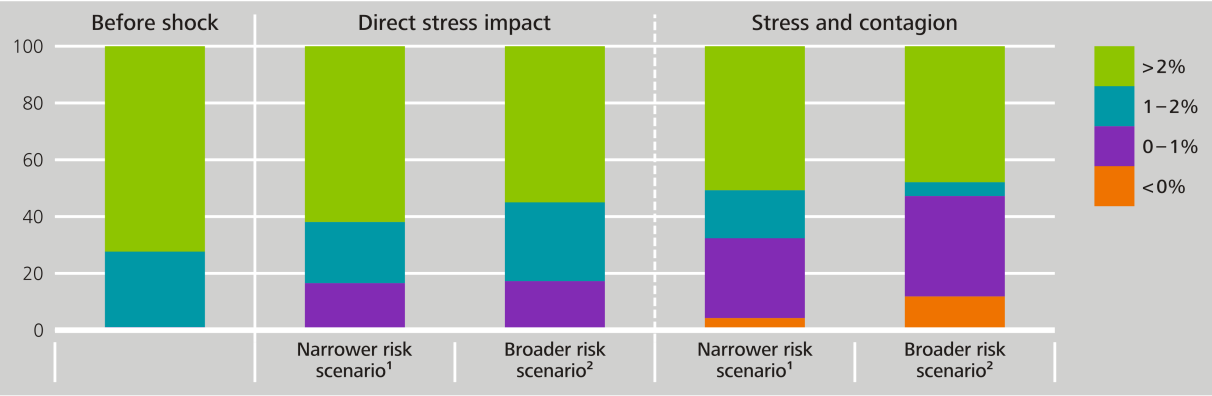
In the first, narrower risk scenario, the resulting accounting losses would significantly reduce excess capital (see Chart 2.2.2). Excess capital is defined as banks' common equity tier 1 (CET1) capital less the amounts arising from the binding capital requirements including capital buffers and Pillar 2 Guidance. In the scenario in question, around 16 % of banks, weighted by total assets, would be relatively weakly capitalised, as they would have less than 1 % of their risk-weighted assets as excess capital (see Chart 2.2.2). In the second, broader scenario, this share would increase to 17 %.

Potential contagion effects amongst euro area banks could significantly amplify first-round effects. A contagion scenario considered that market value losses at one bank also indirectly affect the capital ratios of other banks it is interconnected with. [50)] In this scenario, creditor banks' capital requirements increase if the creditworthiness of the debtor bank declines, for example due to losses in the securities portfolio. In the narrower scenario, around 32 % of banks would be weakly capitalised as a result of the inclusion of such contagion effects, leaving them with excess capital of less than 1 % of risk-weighted assets (see Chart 2.2.2). In the broader scenario, 47 % of banks would be weakly capitalised, while 12 % would actually be undercapitalised. The contagion effects stem mainly from large losses incurred by European banks with large holdings of government bonds issued by their home country.

50 For an explanation of the methodology, see Fink et al. (2016).

Excess capital* in the German banking sector before and after stress** Chart 2.2.2

Percentage share of banks (measured in terms of banking sector total assets) in each excess capital bucket, as at end-2024



Sources: K. Fink, U. Krüger, B. Meller. L.-H. Wong (2016), The Credit Quality Channel: Modeling Contagion in the Interbank Market, Journal of Financial Stability, Vol. 25 and A. Falter, M. Kleemann, L. Strobel, H. Wilke (2021), Stress Testing Market Risk of German Financial Intermediaries, Deutsche Bundesbank Technical Paper No 11/2021. * Excess capital = common equity tier 1 above binding capital requirement and Pillar 2 Guidance, as a percentage of RWAs. ** Accounting losses in the banking book as well as contagion effects within the German banking sector and via euro area big banks are taken into account. **1** Government bond spreads widen depending on the rating. **2** Government bond and corporate bond spreads widen depending on the rating. Equity prices decline by 30%.

Deutsche Bundesbank

2.3 Banks' liquidity positions are good overall but they have vulnerabilities

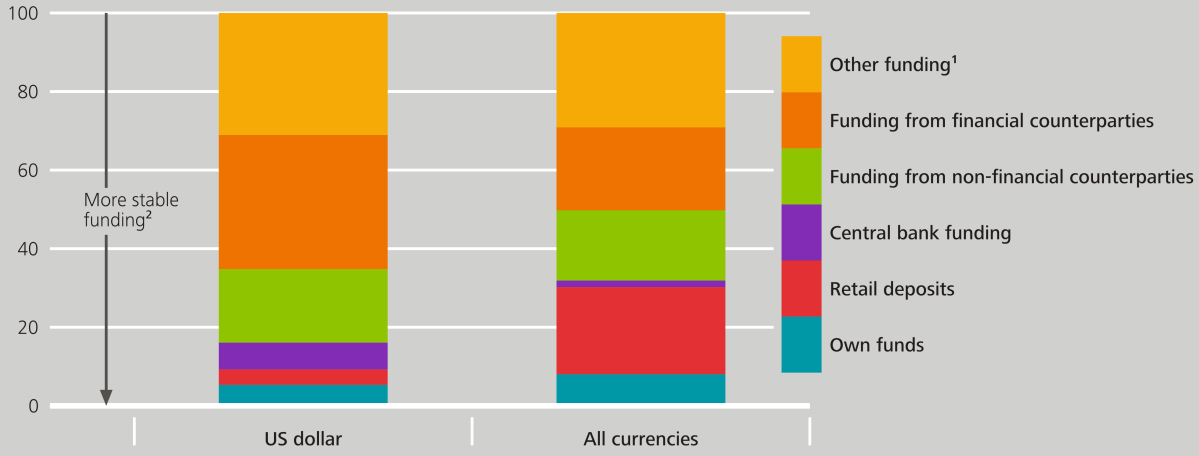
Banks' liquidity positions are good and vulnerabilities to liquidity shortages are low overall. Alongside stable financing, the availability of sufficient liquid funds is a prerequisite for a stable banking system. This ensures that banks remain solvent, even if a portion of investors withdraw their funds in times of crisis. Regulatory rules on maintaining an adequate liquidity coverage ratio (LCR) require institutions to hold a sufficient liquidity buffer in the form of high-quality liquid assets (HQLA) to remain solvent for 30 days in a prudential stress scenario. At 163 %, the German banking system's aggregate LCR is significantly higher than the required minimum ratio of 100 %.

The financing of US business differs significantly from that of other business. The US market is important to systemically important banks, which obtain relatively substantial funding there from financial counterparties such as banks, funds and similar institutions (see Chart 2.3.1). These tend to withdraw their deposits quickly in crisis situations. By contrast, the share of retail deposits (households, small enterprises), which are considered to be more stable, is small. However, this does not lead to higher vulnerabilities for banks, provided that funding markets function smoothly. This is because if funding is suddenly withdrawn, banks have additional liquid funds in US dollars in addition to their HQLA that they can use to cover their liquidity needs.

Funding structure of systemically important German banks

Chart 2.3.1

Percentage share of total funding, as at December 2024



1 Includes, for example, issued debt securities. **2** Simplified presentation. The stability of the funding depends on the term and the collateralisation of the funding instrument, amongst other factors.

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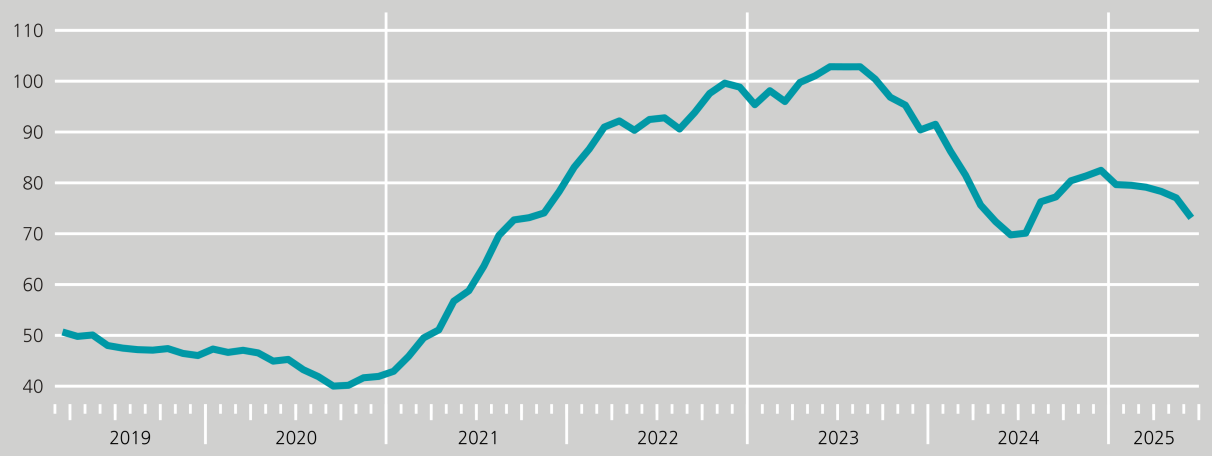
However, as the market turmoil at the end of February 2020 has shown, German and European banks are vulnerable to disruptions in US dollar funding markets. At that time, the swap lines between central banks played a key role in calming the markets.[51)] The existing liquid assets in US dollars would currently also potentially be insufficient to fully service outflows of funding in US dollars in a stress scenario. If, for example, the liquidity flows of the LCR calculated under regulatory stress scenarios are used, German banks are subject to a currency-specific liquidity gap for the US market of just over US$70 billion (see Chart 2.3.2). In the stress scenario considered here, the existing stock of HQLA in US dollars would therefore be insufficient to service outflows of funding in US dollars.[52)] The liquidity gap is in decline, though, having stood at just over US$100 billion in mid-2023. In addition to regulatory HQLA, banks have additional liquid assets that they can use to cover financial outflows. These can be used to narrow the liquidity gap in the event of stress, meaning that the results shown here tend to represent an upper limit for potential liquidity needs in US dollars in a stress scenario.

US dollar liquidity gap* of systemically important banks

Chart 2.3.2

12-month average in US$ billion, as at June 2025



* The bank-specific US dollar liquidity gap is the difference between net liquidity outflows in US dollars (according to LCR data) and high-quality liquid assets (HQLA) denominated in US dollars, provided this is positive. It is zero if the difference is negative. The chart shows the US dollar liquidity gap aggregated across all systemically important banks as a 12-month moving average.

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51 See: European Central Bank (2020).

52 For the LCR across all currencies, expected liquidity inflows are generally limited to 75 % of expected liquidity outflows. This ensures that HQLA across all currencies always account for at least 25 % of expected liquidity outflows. This limitation on expected inflows also exists in the separately reported US dollar positions. If the actual US dollar liquidity inflows turn out to be higher, the US dollar liquidity gap calculated here will be lower.

2.4 Banks' resilience and profitability have continued to develop positively, but risks could be underestimated

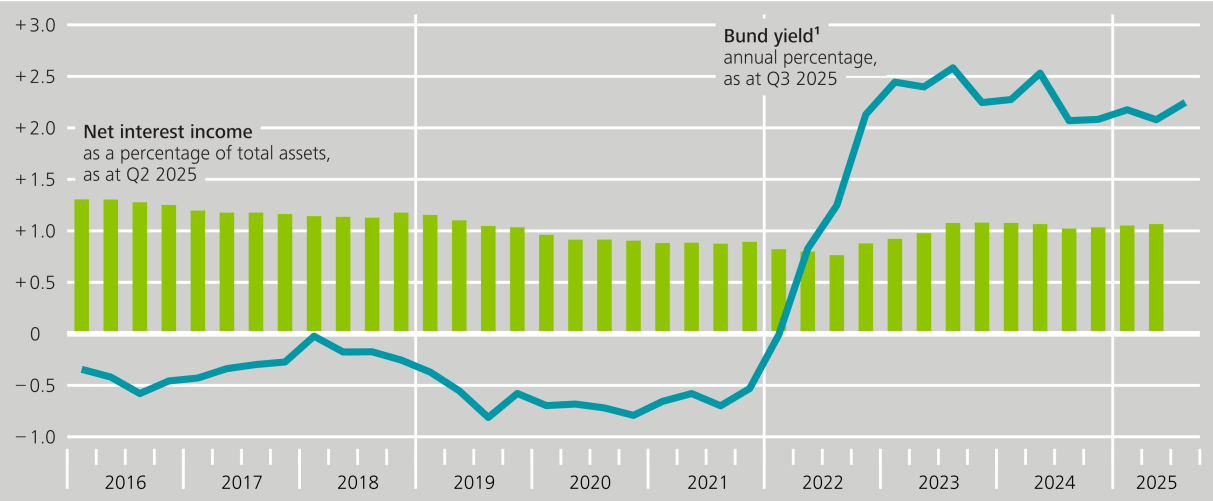
Rising lending rates have supported banks' earnings, but increasing loss allowances could weaken this positive trend. The rise in interest rates in 2022 had a positive impact on banks' net interest income (see Chart 2.4.1). While interest income from lending has increased significantly, interest expenditure has risen less sharply than expected.[53)] Banks' interest rate spread is still high but it might narrow in future due to the lower key interest rates. The increase in the second quarter of 2025 was the result of an improved performance by systemically important banks, which probably benefited more from lower short-term interest rates in their refinancing operations. At the same time, losses in lending business are growing continuously. For example, the ratio of specific loss allowances to the lending volume has surpassed its mid-2022 low by more than 0.1 percentage point but is still at a relatively low level of just over 0.6 %. Collective loss allowances started rising sooner than specific loss allowances (see Chart 2.4.2) and have been declining again slightly since the end of 2024. While specific loss allowances are usually only recognised when loans turn non-performing, collective loss allowances are set aside to cover latent credit risk.

53 See Deutsche Bundesbank (2024f).

Interest rate development and net interest income of German banks

Chart 2.4.1

Quarterly data



1 Average yield on Bunds with a residual maturity of five years.

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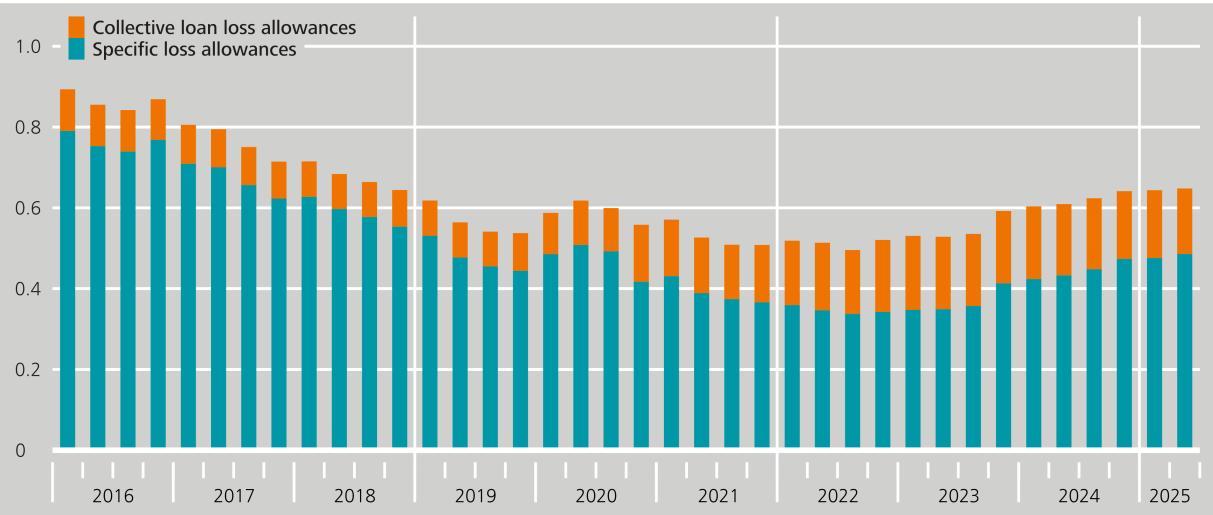
Risk provisioning in German banks' lending business

Chart 2.4.2

As a percentage of loans, as at June 2025



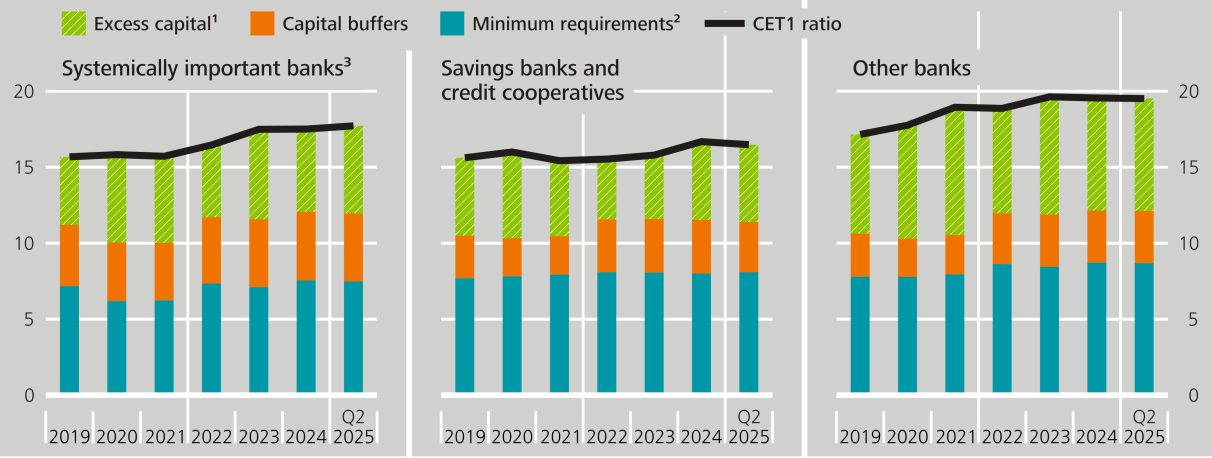
Deutsche Bundesbank

Regulatory capital adequacy in the banking system is good, with systemically important banks in particular having benefited from low risk weights. Thanks in part to the capital buffers, in particular the CCyB and the sSyRB, capital ratios are well above the minimum requirements, both for systemically important banks as well as for savings banks, cooperative banks and other banks (see Chart 2.4.3). The regulatory capital ratio is calculated as the ratio of regulatory capital to risk-weighted assets. Systemically important banks calculate risk weights for their assets using an advanced approach that allows them to use their own risk models. Calculations in these risk models are based on actual defaults that occurred in the past. However, as these were fairly low, the risk weights derived from them could be on the low side.

German banks' CET1 capital

Chart 2.4.3

As a percentage of risk-weighted assets at year-end, as at Q2 2025



1 Including Pillar 2 Guidance requirements. **2** Risk-weighted requirements under the solvency framework. **3** Comprises 13 O-SIIs (as at 2025, not including the Kreditanstalt für Wiederaufbau (KfW)); the three institutions that relocated a significant portion of their banking business to Germany following Brexit are included only as of 2022.

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The Bundesbank has already pointed out in previous financial stability reviews that risk weights at systemically important banks may be too low from a financial stability perspective. For example, average risk weights, measured as the ratio of risk-weighted assets to unweighted total exposure, are currently just under 30 % at systemically important banks.[54)] The median of all banks is 65 %. Given a minimum capital ratio of 8 %, systemically important banks therefore have to cover only 2.4 % of their exposures with own funds on average. Average risk weights have fallen slightly in recent years, although rising credit defaults actually indicate credit risk is on the increase (see Chart 2.4.4). It should be borne in mind that, with the introduction of the new Capital Requirements Regulation (CRR III), compensatory effects also came into effect, such as the removal of the scaling factor from the IRB approach risk weight function, which caused risk weights for some banks to fall by 6 %.[55)]

Low risk weights allow banks to take on more debt, which can contribute to procyclical lending. Given that banks aim for a certain regulatory capital ratio, lower risk weights mean they require less capital to back their positions. This results in the leverage ratio, which is the ratio of tier 1 capital to unweighted total exposure, being lower. German banks vary widely in terms of their leverage ratio and average risk weights (see Chart 2.4.5). For systemically important banks, for example, the leverage ratio stood at 5.5 % in the second quarter of 2025, while the median for all banks was just under 11 %.

A low leverage ratio makes banks more vulnerable to losses and rising capital requirements. If the leverage ratio is low, a small capital loss is enough to force banks that want to keep their capital ratios stable to significantly reduce their exposures. Deleveraging like this also occurs when credit risk and thus average risk weights increase. Assuming a capital ratio of 17 % and average risk weights of 30 %, a capital loss of only 0.5 % (in terms of exposures) would mean that the bank would have to reduce its exposure by 10 %. The same effect would be produced by a 3 percentage point increase in average risk weights. In an economic downturn, both effects could occur simultaneously – a loss in equity capital and an increase in risk density. This would amplify the deleveraging further.

54 Total exposure in accordance with the supervisory leverage ratio.

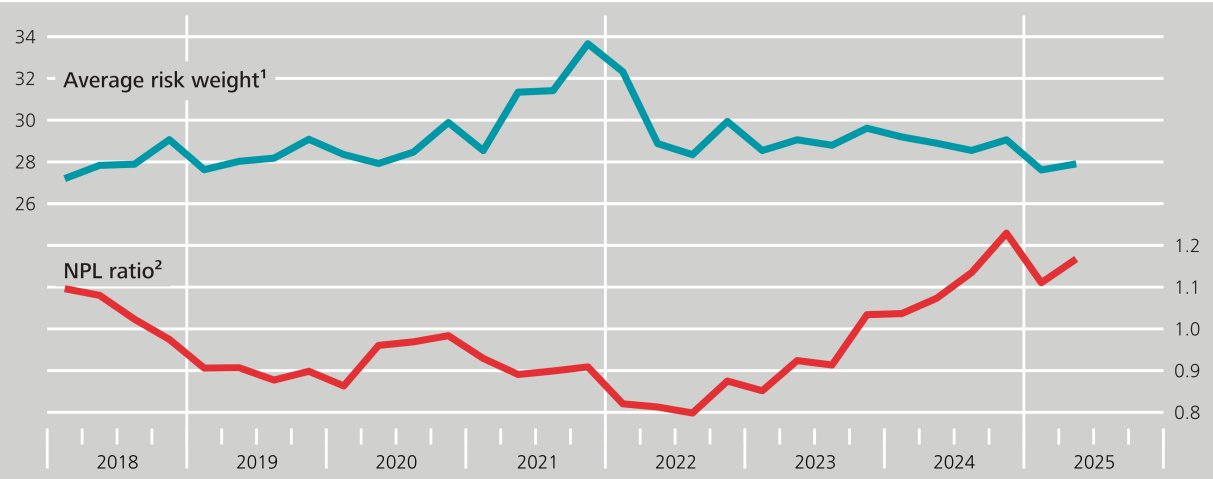
55 See Deutsche Bundesbank (2024c). The IRB approach allows eligible banks to use their own models to determine risk weights.

Capital buffers help to make lending less cyclical. This is because, unlike the strictly binding minimum capital requirements, the capital buffers can be lowered by BaFin if necessary. While banks are allowed to fall short of their buffer requirements even if buffers are not released, doing so means they cannot distribute profits without restriction. In practice, however, banks may decide to voluntarily avoid undershooting their buffers for reputational reasons. If, on the other hand, capital buffers are released, banks may be more willing to accept a lower capital ratio and maintain their lending.

Average risk weight and ratio of non-performing loans*

Chart 2.4.4

%, as at Q2 2025



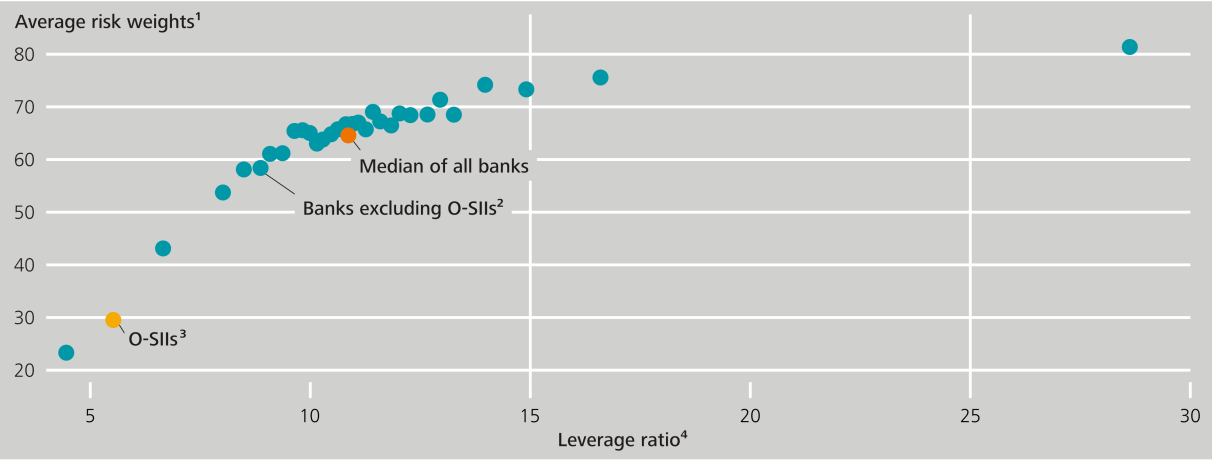
* Comprises all O-SIIs in Germany in 2024 with the exception of the Kreditanstalt für Wiederaufbau (KfW). **1** Risk-weighted assets in relation to total exposure. **2** Non-performing loans in relation to the loan volume.

Deutsche Bundesbank

Average risk weights and leverage ratio of German banks

Chart 2.4.5

%, as at Q2 2025



1 Risk-weighted assets in relation to total exposure on and off the balance sheet. **2** For greater clarity, median values are shown for clusters of 30 banks. The clusters comprise banks with similar leverage ratios and similar levels of risk-weighted assets. **3** Median value of 13 O-SIIs excluding the Kreditanstalt für Wiederaufbau (KfW). **4** CET1 capital in relation to total exposure on and off the balance sheet.

Deutsche Bundesbank

3 Non-bank financial intermediaries: vulnerabilities and resilience

3.1 The insurance sector is robust despite material unrealised losses

In terms of investment, the German insurance sector is the third largest in Europe after the United Kingdom and France. Insurance companies offer households and businesses protection against financial risk. This collective risk pooling is one of the core functions of the financial system. In addition, the expertise of primary insurers and reinsurers in risk management helps to ensure that risks are allocated and priced appropriately within the financial system. Life insurers also play an important role in households' saving. In the second quarter of 2025, they held just under half of German insurers' investments.

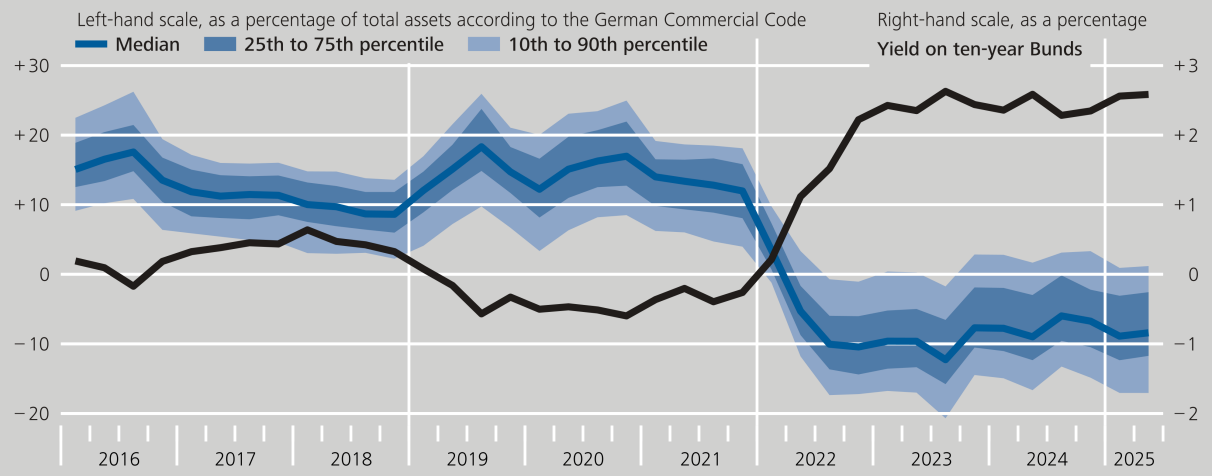
Life insurers can stabilise the financial system by investing countercyclically, but their guarantees on returns and on surrender values make them vulnerable to interest rate changes. Thanks to their long-term investment horizon, they can play a stabilising role within the financial system in the event of shocks. In the past, however, life insurers have offered guarantees on returns and surrender values. This makes them vulnerable to macro-financial developments, especially interest rate changes. These vulnerabilities can make it harder for them to invest countercyclically and increase the risk of liquidity constraints.

Unlike banks, German life insurers still have material unrealised losses on their books. Since the low interest rate period ended in 2022, the market values of fixed income securities, in particular, have often been below the book values on life insurers' financial statements. In the second quarter of 2025, German life insurers' unrealised losses amounted to an average of 9 % of their total assets as calculated according to the German Commercial Code. Overall, 87 % of life insurers have unrealised losses (see Chart 3.1.1). Unrealised losses are relevant to financial stability because they can weaken the stabilising function of insurers within the financial system. Insurers wish to avoid realising losses, causing them to restrict their trading activity. Bundesbank analyses showed that countercyclical investment by the German insurance sector decreased after interest rates rose in 2022. This fall was mainly due to life insurers. [56)]

Hidden reserves and unrealised losses of German life insurers' investments*

Chart 3.1.1

As at Q2 2025



Sources: Federal Financial Supervisory Authority and Bundesbank calculations. * Price-to-book ratio of German life insurers' investments. Positive values indicate hidden reserves, negative values indicate unrealised losses.

Deutsche Bundesbank

56 See Deutsche Bundesbank (2024f).

The risk of a wave of policy lapses among German life insurers is limited at the moment, but could become relevant if interest rates rise. A Bundesbank survey conducted in 2023 suggests that, should the interest rate level pass around 6 %, this risk would be substantial.[57)] In addition, fewer classic life insurance policies with guaranteed returns and fixed surrender values have been taken out in recent years, meaning that the risk of a wave of policy lapses now affects a smaller portion of all life insurance policies. Since the start of this year, however, some life insurers have begun to offer more classic life insurance policies again. One way to reduce the risk of a wave of policy lapses is to give life insurers the legal right to offer policies with surrender values that respond to interest rates. While a wave of policy lapses is an extreme scenario, in the interests of financial stability it is important to keep an eye on this possibility.

A wave of policy lapses among German life insurers would have a particularly strong impact if investments had low liquidity and there were additional liquidity outflows. As their investment horizon is long, insurers' investments seem predestined to include illiquid assets. However, insurers are also exposed to liquidity risk, for example through customers' termination options. This means that monitoring the liquidity of their investments is essential. The share of highly illiquid assets in German life insurers' investments has grown from 14 % in 2018 to around 25 % recently (see Chart 3.1.2). As the low interest rate period progressed, investment in less liquid assets increased because of a search for yield. The same applies to the private credit segment in the alternative assets space.[58)] However, there is no sign of this investment having fallen back again since interest rates increased. In addition, German life insurers are increasingly using derivatives to hedge against foreign exchange risk. This reduces the potential for them to experience losses due to currency fluctuations. However, increasing the use of derivatives can put more strain on liquidity via margin payments.[59)]

57 Here, the interest rate level refers to the yield on Bunds with a residual maturity of ten years. See Deutsche Bundesbank (2023b) for more information on the survey.

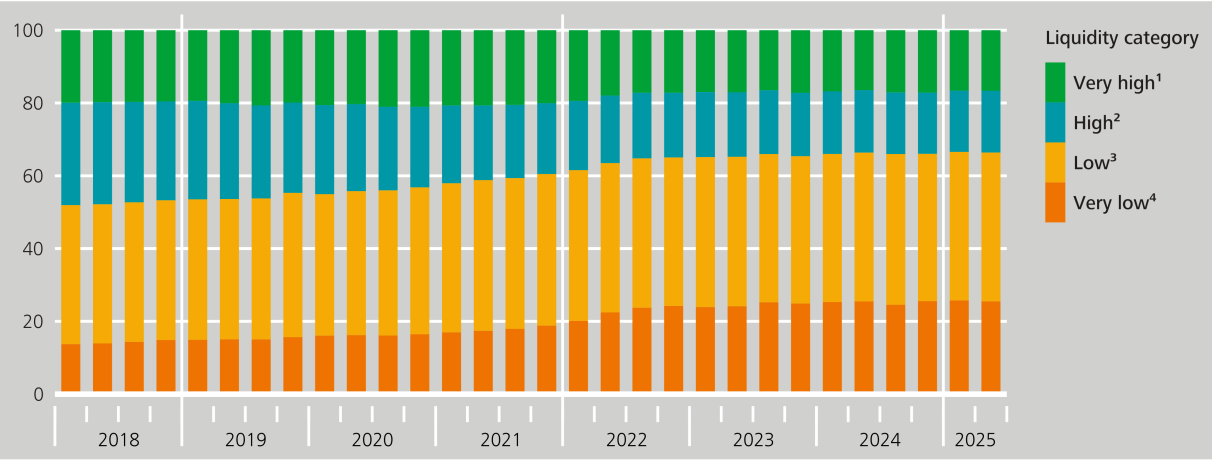
58 "Private credit" refers to loans outside the traditional banking system that are granted by specialised investment vehicles to small or medium-sized non-financial corporations; see Avalos, Doerr and Pinter (2025). According to the latest BaFin survey, the share of private credit in German life insurers' investments has increased from 5.4 % in 2023 to 6.3 %. For information on the global insurance market, see International Association of Insurance Supervisors (2024).

59 In the ECB's view, the insurance and pension fund sector is not as well prepared to deal with liquidity shocks from margin calls as it was in the past, partly because of the decline in highly liquid assets outlined above; see European Central Bank (2025c).

Liquidity of German life insurers' investments*

Chart 3.1.2

%, by liquidity category, as at Q2 2025



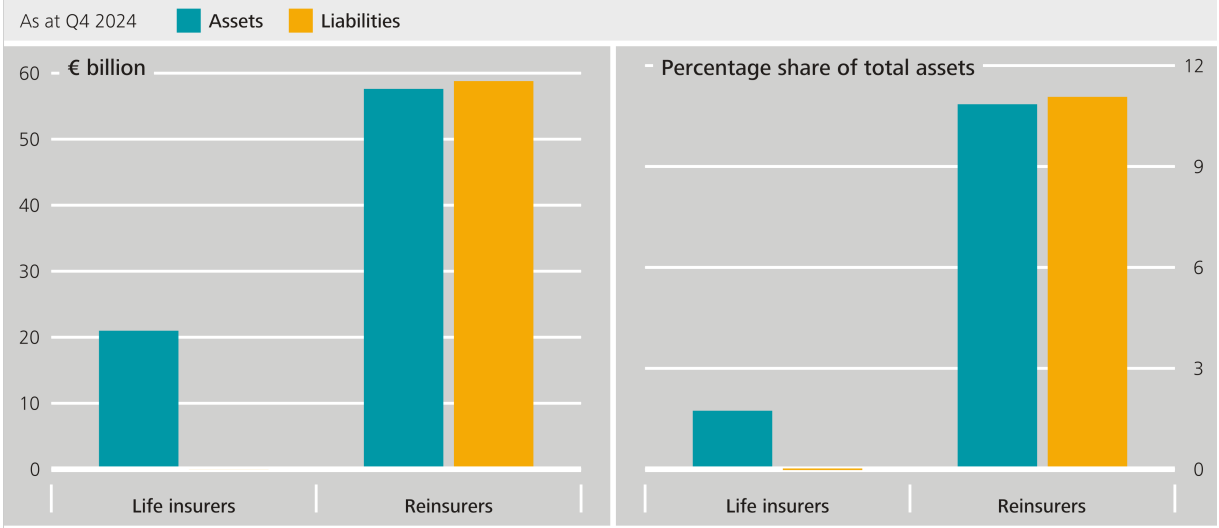
Sources: Solvency II and Bundesbank calculations. * Market values, without fund look-through, excluding unit-linked insurance policies. 1 Listed shares, government bonds, cash. 2 Corporate bonds, deposits. 3 Tenant-occupied real estate, unlisted shares, fund shares, derivatives. 4 Owner-occupied real estate, participating interests, loans and similar claims.

Deutsche Bundesbank

The exchange rate risk stemming from US dollar investments appears manageable overall for German life insurers and reinsurers, even though a loss of confidence in US assets could entail additional risks. German reinsurers, in particular, hold significant US dollar investments. At the end of 2024, these investments came to around €60 billion, making up an average of 11 % of their total investments (see Chart 3.1.3). In net terms, their US dollar claims and liabilities broadly balance each other out. By contrast, German life insurers do not have any significant US dollar liabilities to offset their investments of around US$20 billion. This is because their business is oriented mainly towards national or European markets. If the US dollar were to depreciate sharply, this would hit life insurers the hardest. However, this effect is mitigated by the increase in hedging against foreign currency risk. Given that US dollar investments made up only a small share of total assets, at an average of 2 %, such a scenario appears manageable. Beyond exchange rate risk, spread risk could become relevant given a broader loss in confidence in US assets, such as US government bonds. This would have a negative impact on reinsurers in particular, as their US dollar claims are higher.

Assets and liabilities of German insurers in US dollars*

Chart 3.1.3



Sources: Federal Financial Supervisory Authority and Bundesbank calculations. * Without fund look-through. Reporting of foreign currency liabilities is subject to a materiality threshold, meaning that the figures here represent a lower bound.

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The solvency ratios of German life insurers are currently high. The median regulatory solvency ratio of German life insurers has risen by 25 percentage points since the end of 2024. In the second quarter of 2025, it stood at 351 %. The median solvency ratio was thus significantly above the 100 % required by supervisors. The increase in solvency ratios since 2022 is mainly due to the higher interest rate level. This caused liabilities to fall more sharply in value than assets.

A regulatory initiative from the European Commission could weaken insurers' resilience. One aim of the Savings and Investments Union (SIU) is for insurers to invest more in equities (see Section 4). The European Commission is thus planning to make it easier to classify such investments as long-term equity investments (LTEI).[60] As they are assumed to have a long-term investment horizon, insurers are not required by Solvency II to hold as much capital for LTEI as for other equity investments. According to Bundesbank estimates, if German insurers reclassified their existing equity investments as LTEI, they would reduce their regulatory capital requirements by up to €6 billion.[61] This is an average reduction of around 7 %. As a result, insurers' resilience could be overestimated in future. It would also create incentives to invest in less liquid assets, such as private equity. From a financial stability perspective, the planned reform of LTEI appears problematic. So far, there is no evidence of lower risk from insurers investing in equity that would justify the planned changes to LTEI classification and the resulting reduction in insurers' capital requirements.[62]

3.2 Germany's fund sector remains stable despite temporary liquidity stress

The German fund sector is of importance in a European comparison and largely consists of open-end funds. In terms of size, it ranks third in Europe after Luxembourg and Ireland, with assets under management totalling €2,925 billion at the end of 2024. This equates to some 13 % of assets in the German financial system. Open-end funds account for 97 % (€2,831 billion) of assets under management, with the remainder attributable to closed-end funds. Unlike in closed-end funds, investors in open-end

60 The planned changes only affect insurers that use the standard formula for calculating capital requirements; see European Commission (2025c). For more information on the SIU, see European Commission (2025a).

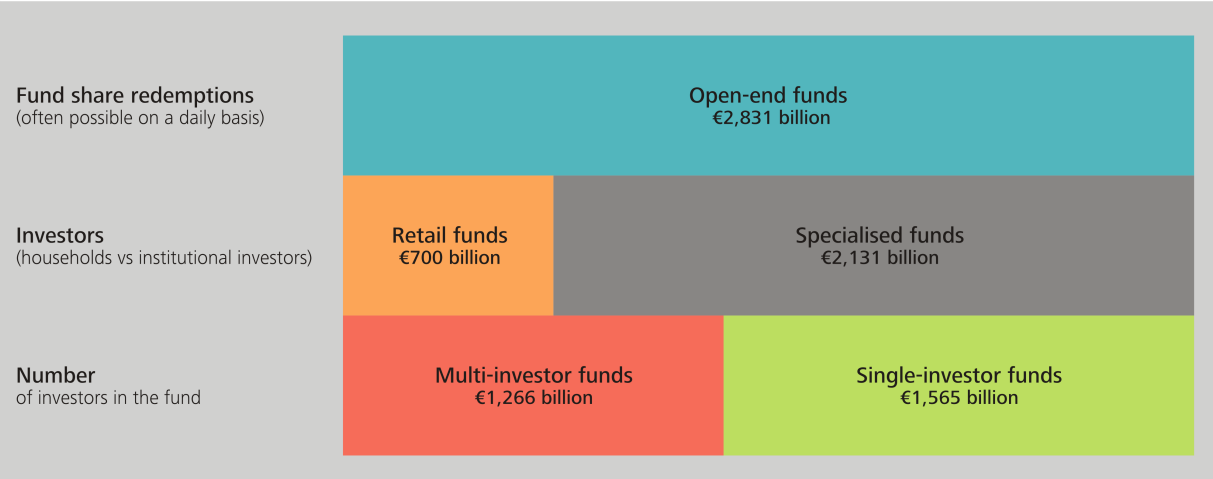
61 The immediate effect is an apparent improvement in the solvency ratio. For insurance companies, this would trigger a variety of adaptive responses. For example, to reach the same solvency ratio as before the change in regulation, insurers could make the composition of their investments riskier.

62 BaFin, too, takes a critical view of this development and requires that "no compromises be made when calibrating solvency requirements of [...] Solvency II [...]. See Federal Financial Supervisory Authority (2025). The European Insurance and Occupational Pensions Authority (EIOPA) warns that the lower capital requirements planned for some asset classes could threaten the sector's resilience. EIOPA describes this as concerning, particularly given today's volatile environment; see European Insurance and Occupational Pensions Authority (2025). A similar reform has already been implemented nationally for smaller insurers and pension funds that are not regulated under Solvency II: the amended Investment Regulation (*Anlageverordnung*) came into force in February 2025. This allows increased investment in infrastructure and risk capital without a change in the capital requirements.

funds often have the option of redeeming their shares on a daily basis.[63)] In Germany, open-end funds take the form of either retail or specialised funds. Retail funds are geared towards both households and institutional investors, while specialised funds are reserved for institutional investors. Funds are also categorised as either multi-investor or single-investor funds based on the number of investors (see Chart 3.2.1).

Overview of the German fund sector* Chart 3.2.1

Assets under management in individual fund segments, as at Q4 2024



Sources: Federal Financial Supervisory Authority and Bundesbank calculations. * Closed-end funds are not shown due to their relatively low assets under management of €94 billion.

Deutsche Bundesbank

63 This does not apply to certain open-end real estate funds, which have minimum holding and notice periods.

Within the open-end fund space, multi-investor funds are the focus of macroprudential risk monitoring due to their inherent liquidity risk. At €1,266 billion, these funds represent just under half of the total assets under management in open-end funds. Typically, investors in these funds can redeem their shares on a daily basis. Fund shares are usually redeemed at the current net asset value. However, the net asset value does not necessarily incorporate all costs arising from liquidations or shifts to service fund share redemptions.[64)] For example, it can be beneficial for investors to redeem their shares ahead of others (first-mover advantage), as potential liquidation costs are passed on to the remaining investors in the fund.[65)] The greater the outflows from a particular fund, the higher the liquidation costs may be, especially if less liquid assets have to be sold. It is therefore more advantageous to redeem shares early, which further increases funds' liquidity risks. This momentum can amplify shocks during periods of stress, lead to contagion amongst other market participants and put pressure on the financial system.[66)] The scale of fund share redemptions also varies depending on the type of investors. Compared to other fund investors, funds that hold shares in other funds tend to redeem them more quickly and on a larger scale in periods of market turmoil (see "Direct interconnectedness heightens liquidity risks for European funds").[67)]

64 These costs include price losses, bid-ask spreads and trading levies; see International Organization of Securities Commissions (2023).

65 See German Financial Stability Committee (2018).

66 See Fricke and Wilke (2023).

67 See Fricke, Jank and Wilke (2025).

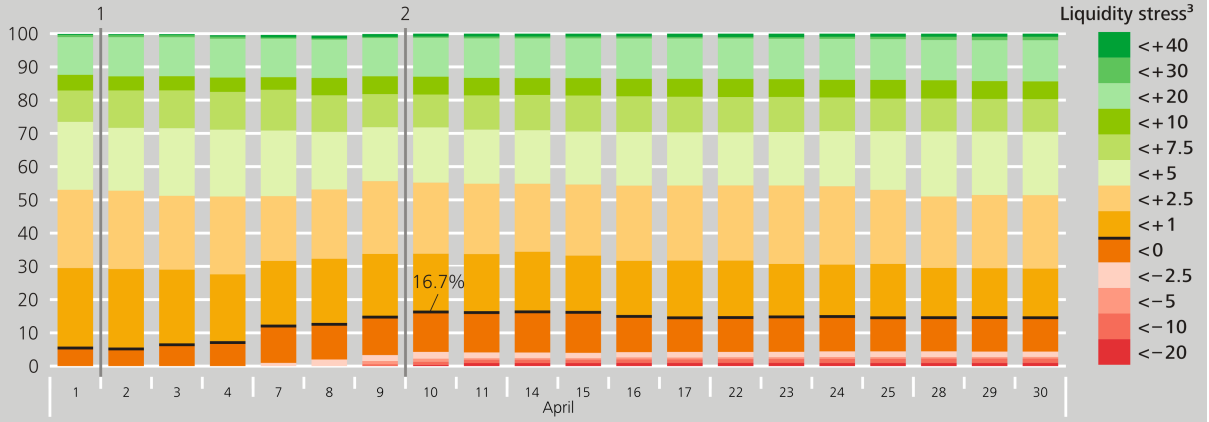
The announcement of extensive US tariffs on 2 April 2025 temporarily worsened the liquidity situation for Germany's open-end retail fund sector considerably. Retail securities funds saw returns collapse suddenly, accompanied by high net outflows. [68)] Some funds were forced to sell securities as their bank deposits were insufficient to cover the net outflows in full. The return shocks, as well as the scale and pace of net outflows affecting these funds in early April 2025, were similar to the levels seen at the outbreak of the COVID-19 pandemic in spring 2020. Before the US tariff announcement, some 6 % of retail securities funds recorded net outflows in excess of their bank deposits (see Chart 3.2.2). This share tripled to more than 16 % within a few days of the US tariff announcement. As a result, nearly one in six funds had to make portfolio adjustments and sell off securities. However, the announcement of a 90-day tariff suspension calmed the market. The agreements reached in the tariff dispute in late July 2025 reduced the immediate risk of net outflows, though uncertainty remained high. Net inflows to funds even resumed across the board and exceeded the net outflows during the April stress period. By the second quarter of 2025, aggregate net inflows amounted to some 0.5 % of fund assets as at 1 April 2025. While the liquidity stress caused by the tariff announcement has been overcome, vulnerabilities remain. Around one-third of securities funds in the German retail fund sector held less than 1 % of their net asset value in bank deposits in the second quarter of 2025. Liquidity risk in the fund sector could quickly escalate again in the event of fresh turmoil in the financial markets. From a financial stability perspective, low liquidity buffers are relevant given the risk of net outflows, as asset sales can trigger a downward spiral of falling asset prices and further outflows in an environment of shrinking liquidity. [69)]

68 All retail funds that are not real estate funds are referred to as retail securities funds hereinafter.
69 See International Monetary Fund (2022).

Liquidity stress for German retail securities funds in April 2025

Chart 3.2.2

Percentage share, weighted by fund assets



Sources: Morningstar Direct and Bundesbank statistics. **1** Announcement of extensive tariffs by the United States. **2** Announcement of a 90-day tariff suspension by the United States. **3** Defined as the sum of bank deposits on 1 April and cumulative net flows from 1 April until the respective date as a percentage of fund assets on 1 April. For values below zero, cumulative net outflows exceed bank deposits held on 1 April. Low but still positive values imply a risk of liquidity stress in the event of future net outflows.

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Despite persistent net outflows, Germany's open-end retail real estate funds face limited liquidity risk. This can be attributed to sufficient liquid funds so far, as well as long minimum holding and notice periods. In the German retail real estate fund sector, assets under management totalled some €123 billion (around 17.5 % of the overall German retail fund sector) at the end of 2024. Since early 2025, net outflows have amounted to some 4 % of assets under management. That said, retail real estate funds hold around 10 % of their assets in the form of bank deposits. [70] This means that the share of liquid funds remains above the statutory requirement of 5 % despite the outflows. [71] Moreover, the minimum holding and notice periods that were introduced in Germany in 2013 limit liquidity risk for retail real estate funds. [72] Fund investors have had to hold any fund shares acquired since then for at least 24 months and give one year's notice for redemptions. These requirements take due account of illiquidity on the assets side of real estate funds and reduce the first-mover advantage. This makes outflows easier to plan for fund managers, allowing real estate sales to be completed in good time.

70 As at the end of August 2025.

71 This requirement does not apply to specialised real estate funds. Liquid assets protect real estate funds from having to sell real estate at a loss in challenging market conditions when fund investors redeem large volumes of shares. Property sales of this nature are a potential trigger of contagion effects in the commercial real estate market.

72 See Deutsche Bundesbank (2024f).

In multi-investor funds, price-based liquidity management tools could alleviate the problem of the first-mover advantage. These instruments distribute the costs arising from share redemptions among the investors who initiate them. The price per share is subject to a discount known as the swing factor. This corresponds to the possible liquidation costs and is intended to internalise the effects of a fund share redemption.[73] Empirical studies show that swing pricing and similar price-based instruments can promote internalisation and curtail the first-mover advantage.[74] In 2023, the Financial Stability Board updated its recommendations on how to address structural liquidity mismatches in open-end funds.[75] A key element of the Board's recommendations is the classification of funds into various liquidity categories. Each category has specific requirements for liquidity management. Germany plans to introduce some of these recommendations in 2026 through the Fund Risk Limitation Act (*Fondsrisikobegrenzungsgesetz*), which implements recent changes to the European investment fund directives.[76] The legislation primarily relates to the increased use of liquidity management tools, including price-based liquidity measures. Corresponding amendments to the European investment fund directives are due to be fully transposed into German law.

73 See Deutsche Bundesbank (2021).
74 See Jin et al. (2022).
75 See Financial Stability Board (2023).
76 See Federal Ministry of Finance (2025).

Supplementary information

Direct interconnectedness heightens liquidity risk for European funds

The resilience of open-end funds depends largely on the stability of their financing side. Open-end funds offer their investors the option of redeeming the fund shares they have purchased at short notice. Yet at the same time, they invest the capital raised in assets that cannot always be sold at short notice or without significant markdowns. This makes them inherently fragile and structurally vulnerable to large, unexpected outflows (see Section 3.2).

Unexpected outflows that can destabilise the financing side of open-end funds are often triggered by return shocks. [1)] Past performance is a key trigger of fund inflows and outflows, as positive fund returns often prompt inflows on the part of fund investors. Conversely, negative fund returns (return shocks) can spark substantial withdrawals in some cases. In the empirical literature, this positive relationship between returns and flows is referred to as the flow-performance relationship. This describes how sensitive fund investors are to the performance of the funds they have invested in. Thus, performance sensitivity often determines the fragility of an individual fund.

The responses of investors in European equity funds to return shocks vary in strength. The magnitude of the flow-performance relationship is usually estimated at the fund level. This reflects the strength of the collective reaction by all investors in a fund to its past performance. However, this type of measurement masks the fact that various investor groups in a fund, such as households, insurance companies and other funds, can have completely different response patterns. It also makes it impossible to identify the holder groups that ultimately make open-end funds vulnerable as their behaviour is a principal driver of outflows. Fricke, Jank and Wilke (2025) assess the flow-performance relationship of open-end funds at the level of individual holder groups. They show that the sensitivity of investors in European equity funds to the performance of their fund investments differs, especially when it comes to return shocks. These are particularly frequent during periods of market stress.

1 See Chevalier and Ellison (1999), Goldstein, Jiang and Ng (2017), Sirri and Tufano (1998).

While households and insurers tend to have a stabilising effect, funds themselves amplify the structural fragility of the open-end fund sector. Reactions to poor fund performance vary significantly among different investor groups. For the stability of open-end funds, it is therefore extremely important who holds their fund shares. Structurally speaking, households react less strongly to fund performance than institutional investors. As a result, they tend to have a stabilising effect on the financing side of European equity funds. Like households, the large institutional investor group of insurance companies also shows limited reactions to weak performance. However, they react much more strongly to positive performance. This means that they can procyclically amplify boom periods, while providing stability in periods of market stress. Conversely, funds that invest in other open-end funds are much more reactive to poor performance than households and insurers. They are therefore a structural factor in the inherent fragility of the fund sector (see Section 3.2).

Structural liquidity and interconnectedness risks interact with one another in the open-end fund sector. As direct interconnections in the fund sector have grown significantly, the share of highly sensitive investors in the holder structure of European funds has increased (see Section 3.3). These funds in turn have a vulnerable financing side. Thus, the financing of European equity funds is becoming generally more fragile, while structural liquidity risks are rising. As we saw in April 2025, this is particularly significant in periods of market stress when many funds are simultaneously exposed to a market price shock and post highly negative returns.

3.3 Non-bank financial intermediaries (NBFIs) are closely interconnected with banks and with each other

The NBFI sector has grown both worldwide and in Germany over the past decade. The sector is heterogeneous and comprises investment funds, insurance corporations and pension funds as well as other financial intermediaries. At the global and euro area levels, NBFIs today hold around one-half of all financial assets.[77)] German NBFIs hold around 40 % of the financial assets in the German financial system. NBFIs contribute to the financing of the real economy by granting loans or purchasing securities. By international standards, the provision of financing to the real economy in Germany remains heavily bank-based despite the growth in NBFIs.[78)] Nonetheless, the global financial crisis and other periods of stress in the markets have made it clear that domestic and foreign NBFIs can trigger or amplify shocks.[79)] In this context, the financial stability analysis identifies risks to German banks and NBFIs that may arise from interconnectedness with domestic and foreign NBFIs as relevant from the perspective of a financial stability analysis.

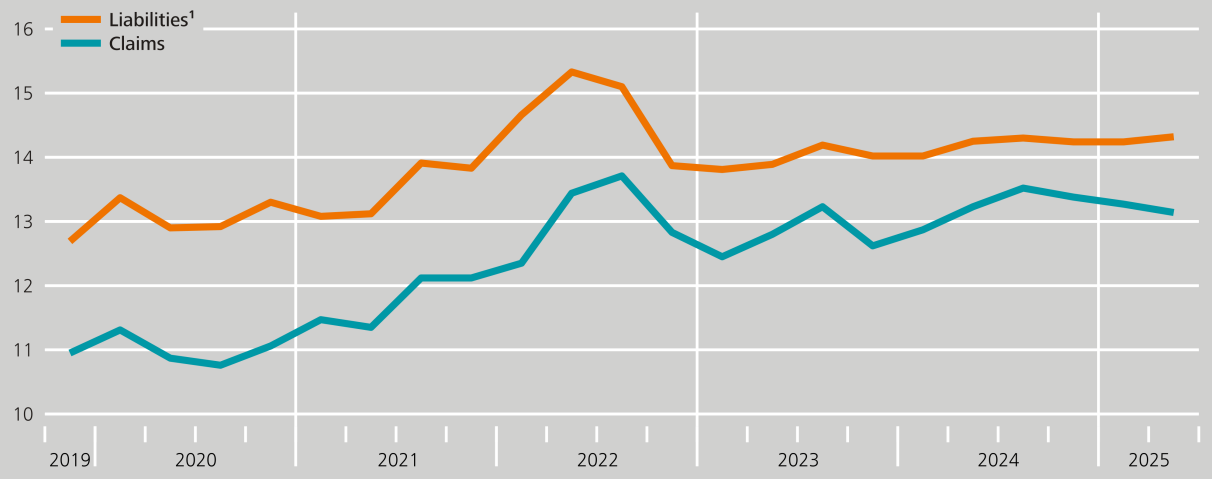
Interconnectedness in the financial system is shaped by direct and indirect relationships. Direct interconnectedness arises through contractual relationships, such as loans or derivatives. If debtors default, creditors suffer direct losses and contagion effects can spread to other actors. Indirect interconnectedness arises when market participants hold the same or similar securities. Any decline in prices triggered by one actor can thus indirectly affect the portfolios of others.[80)]

77 See ECB Committee on Financial Integration (2024), Financial Stability Board (2024c).
78 See Deutsche Bundesbank (2024f).
79 See Financial Stability Board (2022).
80 See Deutsche Bundesbank (2019).

The German banking system's level of direct interconnectedness with NBFIs is high by European standards and is concentrated in large, systemically important banks. German banks are directly interconnected with domestic and foreign NBFIs via claims and liabilities. The European banking system's claims on the global NBFI sector amount to about 10 % of aggregate total assets.[81)] The share of such claims is around 13 % in the German banking system and has risen by around 2 percentage points since 2020 (see Chart 3.3.1). German banks' liabilities to domestic and foreign NBFIs have risen by around 1.5 percentage points since 2020 to roughly 14 % of aggregate total assets.[82)] This increase in direct interconnectedness is also attributable to banks that have relocated business activities to Germany in the wake of Brexit. A large proportion (around 70 %) of both the claims on and liabilities to NBFIs are concentrated in systemically important German banks (other systemically important institutions, O-SIIs).

German banks' claims and liabilities vis-à-vis domestic and foreign NBFIs* Chart 3.3.1

As a percentage of total banking system assets, as at Q2 2025



Sources: Securities Holdings Statistics and Bundesbank calculations. * On-balance-sheet items only. 1 Liabilities may have been underestimated, as not all holders of debt securities can be identified.

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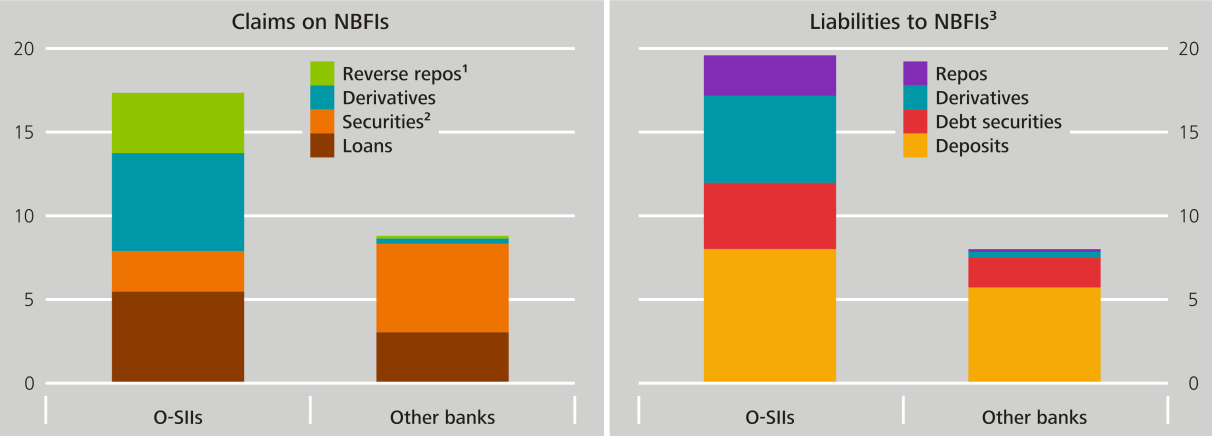
81 See European Banking Authority (2024).

82 These liabilities include, amongst others, German banks' debt securities. As not all holders of German banks' debt securities are subject to reporting requirements in the relevant holder statistics – for example, because they are domiciled outside the European Union – liabilities arising from debt securities held by NBFIs could be underestimated.

O-SIIs are particularly closely interconnected with the NBFI sector across borders and through derivatives. Around 86 % of German banks' claims on foreign NBFIs are held by German O-SIIs. Shocks in the foreign NBFI sector would therefore primarily be transmitted to the German financial system via O-SIIs. Among foreign NBFIs, other financial institutions (OFIs) are particularly relevant. OFIs include various financial corporations, such as hedge funds or securitisation special-purpose entities (SSPEs). The key role derivatives play in German O-SIIs is also striking (see Chart 3.3.2). This reflects their business models whilst at the same time pointing to the increased complexity of systemically important banks' direct interconnection with NBFIs. This interconnectedness can entail increased risks. The case of the Archegos Capital Management vehicle, which acted as a hedge fund, showed that interconnectedness via derivatives with NBFIs can lead to contagion of banks. [83)]

German banks' direct interconnectedness with domestic and foreign NBFIs* Chart 3.3.2

As a percentage of total assets, as at Q2 2025



Sources: Securities Holdings Statistics and Bundesbank calculations. * On-balance-sheet items only. 1 Excluding trading portfolio. Banks buy securities and provide the counterparty with liquidity. The counterparty is obligated to buy back the securities after a predefined period. From the bank's perspective, a reverse repo is, economically speaking, a loan backed by securities. 2 Including fund shares and other equity. 3 Liabilities may have been underestimated, as not all holders of debt securities can be identified.

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83 Following the Archegos case, the ECB reviewed the management of counterparty credit risk at banks with, amongst other characteristics, a high level of activity in derivatives transactions with NBFIs. These banks must correct any identified deficiencies by the end of 2025; see European Central Bank (2024b).

The other German banks mainly hold claims on domestic NBFIs, of which around two-thirds are against investment funds. Single-investor funds account for a large share (85 %) of the fund shares held. Banks, especially savings banks and cooperative banks, are the only investors in these funds, in which run risks are limited. Unlike multi-investor funds, there are no incentives to redeem fund shares ahead of other investors during a period of stress (see Section 3.2).

A relevant portion of liabilities to NBFIs are short-term, making them vulnerable to unexpected withdrawals. NBFIs are an important source of funding for German banks. Measured in terms of total assets, NBFIs primarily provide German banks with deposits (see Chart 3.2.2).[84] When deposits are withdrawn, this creates a need for liquidity at banks that must be met. In order to prepare for broad-based withdrawals of funds, banks hold part of their assets in liquid assets. The ratio of NBFIs' deposits to the banking system's high-quality liquid assets (HQLA) stands at around 40 %. Roughly one-half of these deposits are overnight deposits. The deposits that NBFIs hold with banks are often NBFIs' liquidity buffers.[85] They can be withdrawn at short notice if, for example, investment funds need resources to service redemptions of shares. Taken in isolation, the risk of NBFIs withdrawing funds from banks appears manageable, as measured by the share of HQLA. However, if other depositors also increasingly withdraw funds, this could put pressure on banks and thus exacerbate liquidity stress.

84 Comparable numbers can be observed in the euro area; see Basel Committee on Banking Supervision (2025), European Central Bank (2023).

85 See European Central Bank (2023).

NBFIs also provide German banks with capital via repurchase agreements (repos) and debt securities. On aggregate, repos are less significant than deposits but are concentrated in a small number of banks, particularly O-SIIs. A large part of the repos are also short-term, which could give rise to funding risk, especially during periods of stress.[86] In these repo transactions, banks sell high-quality securities to NBFIs on the condition that the banks buy them back when they mature. If NBFIs cease to act as funding providers in the repo market, banks retain the high-quality securities they had previously posted as collateral. These securities are largely eligible assets, meaning they can be used for refinancing at the central bank. The funding risks therefore appear limited. NBFIs also hold debt securities issued by banks. The funding risk associated with these appears limited at present, as around two-thirds of the volume held by NBFIs has a residual maturity of more than one year.[87] However, unfavourable market conditions may result in funding risks at the end of the residual maturity.

Direct interconnectedness within the NBFI sector is increasing. German insurers have steadily increased their investment in fund shares, reaching 35 % of their total assets. A large part of this is attributable to German funds, of which 74 % are single-investor funds. As these funds do not have run risks, risks arising from these exposures are limited. However, no granular data are available on investments in foreign funds, which now account for 11 % of total assets, meaning that any assessment of risk is limited (see Section 4).

86 See European Central Bank (2023).

87 As not all holders are identifiable, there may be discrepancies in the share of corresponding debt securities held by NBFIs.

The increase in direct interconnectedness within the fund sector heightens its vulnerability and makes risk monitoring more difficult. Around one-quarter of German investment funds' investments are now attributable to shares in other funds. Shares in foreign funds have grown disproportionately.[88] Funds sometimes hold shares in other funds as a form of liquidity, as these can often be redeemed at short notice and promise higher earnings than deposits. Direct fund-to-fund links can amplify liquidity risk in the fund sector. Funds, in particular, react strongly to declining returns and redeem shares earlier than other investor groups (see "Direct interconnectedness heightens liquidity risk for European funds").[89] Unlike for domestic funds, however, the Bundesbank has no access to granular portfolio composition data for foreign funds.[90] This significantly limits the risk assessment. The Bundesbank is therefore working on initiatives to improve cross-border data availability (see Section 4).[91]

One way that indirect contagion effects between actors can arise is through overlapping securities portfolios. German NBFIs are particularly vulnerable to fire sales by investment funds (including money market funds) based in Germany, Ireland and Luxembourg. Around 77 % of the securities portfolio of the German investment fund sector is also held by investment funds in Luxembourg (see Chart 3.3.3).[92] The German investment fund sector has an overlap of 59 % with investment funds in Ireland (see Chart 3.3.3). Joint holdings of shares of US non-financial firms are particularly high in this context. German insurers and pension funds are indirectly most closely linked to investment funds in Germany and Luxembourg. The joint securities portfolios predominantly comprise government bonds and financial sector bonds. Indirect interconnectedness between German NBFIs and credit institutions in the euro area results in only comparatively low vulnerability to fire sales. German credit institutions – in comparison to German NBFIs – are also less vulnerable to fire sales by other sectors in the euro area.

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88 Data source: Investment funds statistics.

89 See Fricke, Jank and Wilke (2025).

90 See Federal Ministry of Finance, Deutsche Bundesbank and Federal Financial Supervisory Authority (2024).

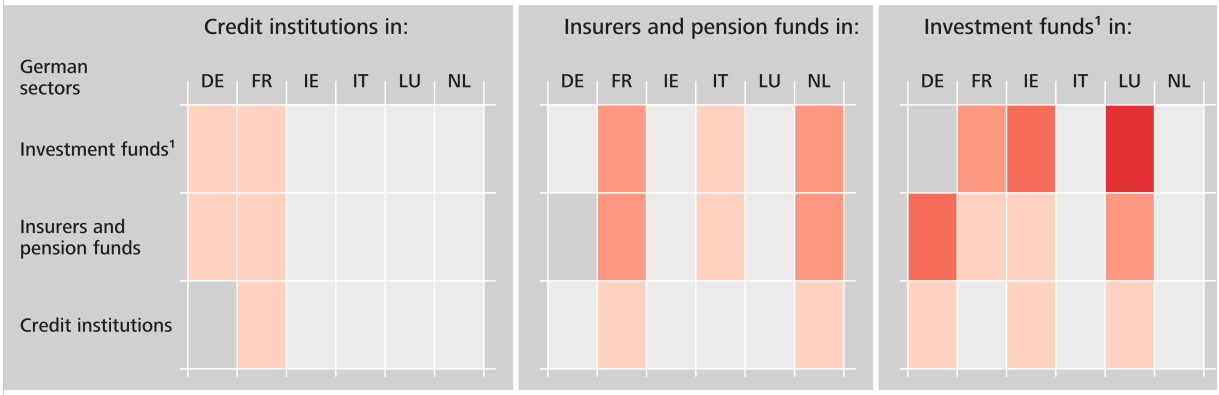
91 These include, for example, the FSC high level task force on NBFI and the Financial Stability Board (FSB); see Deutsche Bundesbank (2024a) and European Central Bank (2024a).

92 This analysis only takes into account overlaps between euro area financial sectors. This means it only includes bonds and listed shares; investment fund shares, certificates and asset-backed securities are also excluded. Pair-by-pair portfolio overlaps between two sectors X and Y are defined as follows: Let X_i and Y_i be the market values of security i held by sectors X and Y. Then the portfolio overlap between sector X and sector Y is defined as: $Overlap(X, Y) = \frac{1}{\sum_i X_i} \cdot \sum_i \min(X_i, Y_i)$.

Portfolio overlap between German sectors and selected euro area sectors

Chart 3.3.3

As a percentage of the securities portfolio, as at Q2 2025



Sources: Securities Holdings Statistics and Bundesbank calculations. **1** Including money market funds.

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The actors in a financial system are also interconnected in technical and organisational ways. Disruptions in these links, for example, due to cyber incidents, can disrupt financial flows and make the financial system vulnerable. Geopolitical tensions can amplify this vulnerability. A cyberattack on large, internationally interconnected credit institutions could have a substantial impact on the real economy. An attack on service providers used by financial actors could have similar effects. Investment in cyber resilience in the financial sector is therefore of vital importance. Microprudential and macroprudential supervision also focus on strengthening cyber resilience. [93)]

93 For example, the Digital Operational Resilience Act (DORA) entered into force on 17 January 2025. DORA helps banks, insurance corporations, investment firms and other financial corporations withstand, respond to and recover from information and communication technology disruptions such as cyberattacks or system failures.

4 Implications for macroprudential policy

The package of macroprudential measures remains appropriate in light of the overall risk situation. The package was originally adopted by BaFin at the beginning of 2022 and was welcomed by the German Financial Stability Committee.[94)] It contained an increase in the countercyclical capital buffer, the introduction of a sectoral systemic risk buffer and supplementary supervisory communication on lending standards. Although some vulnerabilities in the German financial system have recently diminished, the overall risk situation remains tense. Against this backdrop, the resilience of the banking system must not be overestimated. In addition, sufficient scope needs to be maintained for macroprudential action.

The Bundesbank considers the current level of capital buffers to be adequate. However, it advocates expanding the macroprudential toolkit to include income-based instruments so that it can address potential risks in residential real estate financing in a more targeted manner. The countercyclical capital buffer (CCyB) of 0.75 % on domestic exposures remains appropriate. The sectoral systemic risk buffer (sSyRB) on loans secured by residential real estate was lowered by BaFin from 2 % to 1 % in May 2025. Vulnerabilities in the German residential real estate market had previously receded in an orderly manner, but still have not disappeared altogether. Given that relatively little risk has been built up in new residential real estate financing business, the Bundesbank advocates expanding the macroprudential supervision toolkit to include income-based instruments. They would include, in particular, the possibility of being able to limit the debt-service-to-income (DSTI) ratio. That would give supervisors an effective toolkit to counter emerging risks to financial stability where necessary. They would not have to resort to less suitable instruments.

94 See Federal Financial Supervisory Authority (2022b, 2022a).

Comprehensive structural reforms are needed to reduce, over the medium term, the financial stability risks from the corporate sector. Speeding up planning and approval procedures, reducing unnecessary bureaucracy and making public administration more efficient overall are important building blocks for making the German economy more competitive. Tax incentives could be used to foster private investment. In addition, conditions for start-ups and research and development need to be improved. Looking at energy costs, it is important to continue to press ahead with the energy transition. Comprehensive structural reforms can counteract the structural burdens and thus the financial stability risks from the corporate sector.

Banking regulation has become complex over the years and should be simplified in a targeted manner. The Basel III reforms introduced in response to the global financial crisis have significantly strengthened the resilience of the banking system overall, to be sure. However, banking regulation has become more complex. Amongst other things, banks have to meet many capital requirements that pursue different agendas. The reporting requirements pose a major challenge, especially to small, non-complex institutions. The Bundesbank is therefore committed to simplifying the situation for these institutions at the national and European level. The institutions concerned should be given a possible waiver for risk-weighted capital requirements. In return, however, stricter unweighted capital requirements would be introduced to ensure a proper balance between simplification and stability. In addition, the Bundesbank is in favour of simplifying capital requirements. Reducing the current double counting of regulatory capital for different purposes would make the macroprudential buffers more effective and improve usability. Furthermore, the Bundesbank aims to merge the macroprudential capital buffers – the CCyB and the sSyRB – to form a single, releasable capital buffer.

There are plans to adjust the legal framework for capital markets and non-bank financial intermediaries to achieve the objectives of the savings and investments union. It is important to ensure that the resilience of the financial system is preserved in this context. From the Bundesbank's perspective, the savings and investments union (SIU) is a key element in strengthening capital market funding in the European Union and making European financial markets more integrated. The SIU is intended to provide reliable funding, for example for digital and sustainable transformation, even during periods of stress. In this context, the introduction of macroprudential instruments for the insurance sector as part of Solvency II, amongst other things, is a welcome development.[95)] However, we are sceptical about the European Commission's proposals to relax the criteria under which insurers' equity investments are treated as long-term equity investments (LTEI). This could lead to insurers' resilience being overestimated in future (see Section 3.1).

95 This includes, for instance, allowing supervisors to temporarily suspend repayments from life insurance policies in the event of considerable liquidity risks.

In the fund sector, data exchange and access to already collected data should be improved to identify systemic risks at an early stage. Due to increasing cross-border interconnectedness within the fund sector (see Section 3.3), it is essential that data can be accessed and exchanged across borders.[96] Without detailed portfolio information on funds domiciled abroad, it is not possible to make a comprehensive assessment of risks arising from interconnectedness in and with the fund sector. Both the current legal rules and regulations and the operational processes for accessing and exchanging data between countries as well as between central banks and supervisory authorities are currently making it more difficult to carry out a comprehensive risk analysis. The competent authorities should establish a centralised European mechanism for sharing and providing access to already collected fund data. They should also adapt the rules on data sharing and data access.[97] National central banks should be able to participate in this exchange of data. This would require members of the European System of Central Banks to be granted access to the data under the relevant EU law. The data could be used to better assess and monitor risks arising from cross-border NBFI activities and to gauge the effectiveness of macroprudential measures more accurately.[98] The Bundesbank also supports the FSB, which is committed to improving the sharing of hedge fund data.

96 In Europe, cross-border data access has been successfully introduced for derivatives (EMIR) and securities financing transactions (SFTR).

97 Data gaps could be partially closed by better leveraging existing data, such as data collected under the Alternative Investment Fund Managers Directive (AIFMD). The Integrated Reporting Task Force of the European Securities and Markets Authority (ESMA) is developing a centralised data platform. It will harmonise, standardise and simplify data. At the same time, the database is intended to be more accessible, interoperable and user-friendly.

98 Insurance undertakings, pension funds and banks are likewise holders of foreign funds. Cross-border information can also improve risk analyses here.

5 Annex

This technical annex provides detailed insights into analyses in the report that had not been published at time of writing. Analyses already published by the Bundesbank are referenced in footnotes in the main text.

Analyses of US tariffs and fiscal space [99)]

These analyses examine the impact of US tariffs and the influence of fiscal space on external shocks. They are based on various two-country variants of the Federal Reserve Bank's SIGMA model. [100)] This Dynamic Stochastic General Equilibrium (DSGE) model assumes that the dynamics of macroeconomic variables are connected to the optimal decisions of the individual agents. Households take a utility-maximising approach when making decisions about consumption, leisure and saving behaviour. Firms weigh up production factors and apply a forward-looking perspective when setting prices. Price rigidities as explained in Calvo (1983) lead to nominal frictions. They enable monetary policy to play an active role. The model also includes common features such as adjustment costs for investment, rigid wage setting and non-Ricardian households. The two countries in the model engage in exchange via trade. In both analyses, the blocks are assumed to be of the same size and isomorphically calibrated.

99 See Sections 1.2 and 1.5.
100 See Erceg, Guerrieri and Gust (2006).

The model includes financial frictions as discussed by Bernanke, Gertler and Gilchrist (1999). This enables financial metrics such as debt ratios, valuations and interest rate spreads for non-financial corporations to be mapped in the model. In this context, corporate valuations reflect the value of the firms' own funds n_t . The debt ratio describes the ratio of debt $\left(q_t k_t - n_t\right)$ to firms' total assets $q_t k_t$. Interest rate spreads are the difference between the expected interest rate $E_t\{r^k_{t+1}\}$ that enterprises pay for their financing and the risk-free interest rate r_{t+1}. The financial frictions described by Bernanke, Gertler and Gilchrist (1999) can be summed up in a dynamic, log-linearised accelerator equation. According to this equation, interest rate spreads respond to the development of the ratio of firms' own funds to their assets.

$$E_t\{r^k_{t+1}\} - r_{t+1} = \nu\left(n_{t+1} - q_t - k_{t+1}\right)$$

The elasticity of the interest rate spread relative to the ratio of own funds to assets is important for the effect of this financial accelerator. The elasticity ν depends largely on firms' monitoring costs μ. The value for μ is set at 0.53 as in Christiano, Trabandt and Walentin (2011). This results in an interest rate spread of around 9 % p.a., which is consistent with empirical estimates of the return on capital in the United States and the EU of 8 % to 10 %.[101] The remaining calibration of the model follows Lindé and Pescatori (2019).

101 See Caballero, Farhi and Gourinchas (2017), Marx, Mojon and Velde (2021).

For the analysis of US tariffs, the two model blocks are calibrated for the United States and the EU. In the model framework, we assume that in the second quarter of 2025 tariffs on goods imports to the United States will rise unexpectedly to 15 % in the long term.[102] The tariffs are modelled as a deviation from the law of one price.[103] To illustrate the financial stability implications in the event of the European Union reacting by imposing reciprocal tariffs and an escalating trade dispute, we consider two further scenarios: in the second simulation, the European Union imposes 15 % counter-tariffs on US imports. In the third simulation, tariffs of 30 % are imposed on both sides. Similar to above, this results in an effective change in tariffs of 21.2 %. For the sake of simplicity, EU tariff increases are modelled at the same level as those for US tariffs. The effects of the scenarios on GDP are quantitatively comparable to those of other Bundesbank models.[104]

Tariffs lead to higher prices. These price increases then trigger higher interest rates in the United States via the monetary policy reaction function. At the same time, the US dollar appreciates. In the European Union, tariffs reduce foreign demand and the appreciation of the dollar makes imports from the United States more expensive. At the same time, however, the price competitiveness of EU products improves. This dampens the negative effects of tariffs on EU firms' foreign demand. As tariff increases hit the highly export-oriented German economy particularly hard by European standards, the effects presented for the European Union can be interpreted as a lower bound for the possible impact on Germany's non-financial corporate sector.

102 This is very much in line with the new US administration's trade policy steps to date. According to Bundesbank calculations, the effective tariff rate will rise by 12.5 percentage points, going from 1.5 % to 14 %. We then take into account that around 20 % of exports come from services not affected by the tariffs; see Deutsche Bundesbank (2025a). The model, which includes exports of both goods and services, therefore produces a US tariff increase of 10 percentage points.

103 See Lindé and Pescatori (2019).

104 See Deutsche Bundesbank (2024b).

For the analysis of the impact of fiscal space, the two blocks of the model are calibrated to the more indebted (southern) part of the euro area and the less indebted (northern) part of the euro area. The blocks are thus in a monetary union. Under various assumptions regarding the fiscal space of the respective countries, our analysis compares the effects of an adverse demand shock in the more indebted part of the euro area on corporate financial metrics. The negative demand shock is simulated as a persistent time preference shock, which reduces GDP in the south of the euro area by a maximum of around 2.7 %. It is assumed that the southern countries respond with a countercyclical fiscal policy in the form of an increase of around 1.2 percentage points in the share of government expenditure in GDP. Both figures are based on the empirical estimates of Schmitt-Grohé and Uribe (2017). If the space for fiscal policy is limited, this countercyclical fiscal policy will no longer be applied in response to the shock. Once fiscal space has been fully exhausted, the more indebted countries will have to consolidate despite the negative demand shock. This would mean a procyclical escalation of the crisis. As in Erceg and Lindé (2013), fiscal consolidation is modelled as a reduction in the government debt ratio by 25 percentage points after ten years by means of government spending cuts.

Description of the methodology used to analyse the impact of US tariffs on German industrial sectors and German banks' credit exposure [105)]

Foreign trade statistics from the Federal Statistical Office are helpful in assessing the impact of US tariff policy on individual sectors.[106)] The export value in euro of each product exported to the United States in 2024 is made available with an eight-digit goods number, also known as the commodity number. The trade agreement between the European Union and the United States confirmed on 21 August 2025 imposes tariffs of 50 % on imports of steel and aluminium products and 15 % on imports of other categories of goods. Exceptions are envisaged for natural raw materials (including cork) that are not available in the United States, all aircraft and aircraft parts, generics and their constituents, and chemical precursors.[107)] The products exempted from tariffs and their commodity numbers were listed in Annex 1 of the US Department of Commerce publication.[108)] The exemptions for individual products were taken into account in the analysis when calculating the tariff burden for the individual sectors.

105 See Section 2.
106 Data as at 2024.
107 See U.S. Department of Commerce (2025a).
108 See U.S. Department of Commerce (2025b).

The Federal Statistical Office uses a correspondence table to assign the products exported by German firms to the United States to the respective sectors. This allows the individual products to be assigned to the economic sectors according to the Product Classification for Production Statistics, whose two-digit divisions correspond to the European sector classification NACE (*Nomenclature statistique des activités économiques dans la Communauté européenne*). Following completion of the sector-specific classification, the value of all exports to the United States, less the products exempted from tariffs, is aggregated at the sector level. Normalisation of the absolute values for all products affected by US tariffs is done by setting the ratio (in %) relative to the total sectoral output according to the Federal Statistical Office's input-output statistics. Only sectors that are substantially affected by the tariffs are then used for further evaluation. In this exercise, the threshold for being "substantially affected" by US tariffs is set at 2 % (or more) of the individual sector's output.

AnaCredit, the Eurosystem's credit register, is used to quantify the share of German banks' credit exposures to the affected sectors (y-axis of Chart 2.1.4). Sectors affected by US tariffs are linked to AnaCredit using the two-digit NACE codes. The analysis uses data on German banks' credit exposure to non-financial corporations at the current end (July 2025). The debtor's share of the outstanding loan amount is used for each instrument reported to AnaCredit. Only non-financial corporations domiciled in Germany are included as lenders.

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Glossary

Term	Description
Business cycle	A business cycle describes recurring short-term to medium-term fluctuations in macroeconomic activity. A cycle includes an upswing and a subsequent downturn (recession). Adjusted for the general longer-term growth path, the upswing phase is characterised by positive and the downturn phase by negative real economic growth.
Calibration	Calibrating a model means setting estimation parameters with the aim of obtaining realistic and reliable probabilities or results for forecasts. Methodologically, calibration can be based on historical (extreme) losses, stress test results, model approaches or expert evaluations, for example.
Contagion effect	The term contagion effect in the sense of financial stability is used where shocks or losses are transmitted from one intermediary to another, potentially even making them worse. This can happen through direct channels (for instance, mutual contractual relationships in the form of loans). Alternatively, contagion may occur through indirect channels (for instance, similar business models, correlated portfolios or market price developments). In this process, market players who were completely unaffected by the initial shock at first may experience negative developments. Direct contagion occurs via direct (reciprocal contractual) business relationships between financial intermediaries. Examples of triggers are a borrower defaulting or a business becoming insolvent. Contagion is not direct if it happens because intermediaries are interlinked. Indirect contagion describes adverse effects on a market participant without that market participant being involved through a direct transaction or interaction. Indirect contagion is usually triggered by adverse price or information effects and is not spread via direct interlinkages. Contagion via third parties (markets, intermediaries, sovereigns) and through a chain of intermediaries also represent indirect contagion. Indirect contagion through price effects occurs, for example, when a loss forces an intermediary to sell assets (see also fire sales) and this causes prices for these assets to drop. These lower prices then force other intermediaries holding similar assets to also write down the value of those assets or adjust their market value. Indirect contagion effects can also come about if an intermediary becomes distressed and market participants expect other intermediaries with a similar credit portfolio or business model to encounter similar problems (information channel). This could result in deposits being withdrawn, fund shares being redeemed or insurance policies being lapsed. As a consequence, these intermediaries, too, could run into difficulties.
Credit cycle	The credit cycle describes fluctuations in the issuance of loans by banks and non-banks over a period of more than one business cycle. The credit cycle comprises periods of expansion in which lenders issue more loans and ease lending conditions. It also includes periods of contraction in which lending declines and lending conditions are tightened. The credit cycle is the part of the financial cycle that relates only to lending. These cycles are often closely linked to the macroeconomic situation and can strengthen or weaken business cycles.
Default risk	Default risk (also known as counterparty risk or counterparty credit risk) is the risk that a borrower will be unable to make due principal or interest payments on time, in full or at all – in other words, that the borrower will "default". The worse the borrower's economic situation, the higher their default risk.
Deleveraging	Deleveraging describes the reduction of the debt used to finance on-balance-sheet and off-balance-sheet assets. In other words, leverage (the ratio of debt to equity) becomes smaller. The term deleveraging is also used when the volume of on-balance-sheet and off-balance-sheet assets is reduced to lower debt capital. Deleveraging may involve derisking but does not have to. Deleveraging is also derisking if debt capital is reduced by cutting back on riskier assets.
Derisking	Derisking describes the reduction of risk by lowering on-balance-sheet and/or off-balance-sheet assets in order to bring down the level of risk. Derisking may involve deleveraging but does not have to. Derisiking is also deleveraging if debt is reduced as well as risk.

Term	Description
Excess capital	Common equity tier 1 (CET1) capital over and above supervisory requirements and recommendations (guidance). Requirements and recommendations include capital requirements and recommendations (1) for the risk-based component (RWAs), (2) for the leverage ratio and (3) for the resolution framework (MREL,TLAC).
Financial cycle	The financial cycle describes medium-term co-movements in financial and real economic variables. Key variables include the aggregate loan supply and real estate prices. The financial cycle is distinct from the business cycle, which measures shorter fluctuations in economic activity. The credit cycle is the part of the financial cycle that relates only to lending. A sharp upswing in the financial cycle can increase financial system vulnerability and lead to a build-up of systemic risk. Developments in the financial cycle cannot be monitored directly, which is why various indicators are used as an aid. Regulators use the ratio of aggregate loans to gross domestic product as an indicator, amongst others. If this ratio rises sharply and exceeds the long-term trend of the past years, this indicates that the financial cycle is in an expansionary phase and vulnerabilities for the financial system could arise as a result.
Financial intermediary	Financial intermediaries are institutions or businesses that act as intermediaries between lenders and borrowers. They do so by collecting money from savers or investors and passing it on to borrowers or businesses. By doing this, financial intermediaries such as banks, funds or insurers help to provide the financial system with liquidity, diversify risk and improve the efficiency of capital allocation.
Financial stability	The stability of the financial system, financial stability for short, refers to a state in which financial intermediaries (such as banks, fonds or insurers), markets and market infrastructures perform their economic functions even during periods of stress. These economic functions include, first and foremost, lending and investing savings, distributing risk appropriately, and settling payment, securities and derivatives transactions. The financial system should be able to do this in normal times, but also in stress situations, for example when a speculative bubble bursts, and during times of structural upheaval – such as the phase-out of fossil fuels. Macroprudential policy is intended to ensure the stability of the financial system. In Germany, the German Financial Stability Committee (G-FSC) coordinates and strengthens cooperation among the authorities involved.
Financial system	The financial system comprises financial markets, financial intermediaries (including banks, insurers and funds), payments and market infrastructures (for instance, central counterparties). In a broader sense, the term also includes financial supervision and legal frameworks, including accounting standards. The financial system is where savings and investment are coordinated, risks are redistributed, and payment, securities and derivatives transactions are settled. These are the key economic functions of the financial system. Public institutions such as central banks, supervisory authorities and ministries are responsible for safeguarding financial system stability (financial stability) through macroprudential policy.
Fire sale	Fire sales are sales of assets under time pressure to satisfy an abrupt rise in liquidity needs. They can trigger price-liquidity spirals: falling prices can lead to lower market liquidity, further sales and falling prices. This momentum can be self-reinforcing and spill over to other markets, potentially leading to a general loss of confidence and market disruptions. Such fire sales may be triggered by a significant and abrupt withdrawal of liabilities, forcing an intermediary to sell liquid assets in order to service cash outflows. Alternatively, an intermediary may be obliged to make fire sales if there is a risk that its capital ratio would otherwise fall below a threshold required by supervisors or the market. In this case, fire sales could help reduce risk-weighted assets and consequently help improve the capital ratio. Other possible triggers are margin calls.

Term	Description
First-round effect	First-round effects from a financial stability perspective describe the immediate impact of a shock or negative scenario on directly affected financial intermediaries, markets and market infrastructures or the real economy. They arise, in particular, if credit, market, interest rate or liquidity risk materialises. Negative first-round effects typically manifest themselves in market value or balance sheet losses at intermediaries and may jeopardise their solvency or liquidity. Stress tests are an important analytical tool for estimating first-round effects.
Interest rate risk	Present value interest rate risk arises when the market value of all future cash flows changes directly as a result of movements in the interest rate level. Earnings-related interest rate risk is the risk of current interest income (net interest income) being adversely affected by changes in interest rates.
Liquidity risk	Liquidity risk refers to the risk that due payment obligations cannot be met in full, on time, or only at disproportionate cost. Put simply, an entity is liquid if its cash holdings plus inflows exceed its outflows during the same period.
Market risk	Market risk is the risk of an investor losing money on an investment if the relevant market value changes to the investor's detriment. A change in market prices could be caused, for example, by movements in market interest rates, stock market prices or exchange rates. These changes cannot be predicted reliably. Market prices are subject to constant fluctuations; for market participants, they can result in both profits (opportunity) and losses (risk).
Procyclicality	Procyclicality is behaviour that amplifies cyclical developments in the financial system and/or the real economy. It may refer to the behaviour of financial intermediaries, markets and market infrastructures or measures taken by supervisory authorities, central banks or the government. Procyclical behaviour can amplify both economic upturns (for instance the build-up of vulnerabilities) and downturns (impact of shocks, say). Financial market regulation seeks to minimise procyclical effects.
Resilience (of the financial system or financial intermediary)	Resilience is the ability of the financial system or a financial intermediary to absorb a shock or to prevent a shock from being amplified (by contagion or feedback effects, for instance). In other words, it is the ability to cushion a shock.
Second-round effect	From a financial stability perspective, first-round effects may impact other financial intermediaries, markets and market infrastructures or the real economy – that were originally not, or not so strongly, affected by stress effects – in a further round. This is then termed a second-round effect. Shocks may be amplified in this manner. Second-round effects materialise via contractual relationships such as loans, for instance (contagion effects). They may also be caused by activity in the same market or adjustment reactions such as deleveraging.
Shock	Unexpected, abrupt change that affects one or more endogenous variables relevant to financial stability. (Endogenous variables are those determined within the system.)
Systematic (ally)	Based on a system
Systemic	Affecting the entire system
Systemic risk	In connection with financial stability, systemic risk is the name given to the danger of difficulties experienced by one or more market participants, or their responses to a shock or changed conditions, potentially jeopardising the stability of the entire financial system.
System-wide	Across the whole system
Uncertainty	Unknown conditions for which no probabilities of occurrence are available (unknown unknowns).

Term	Description
Volatility	Volatility describes the magnitude of the fluctuations of a random variable (for instance, yields, prices and many more) around its expected value. It is measured by calculating the standard deviation (a statistical measure of the average deviation from the mean of the random variable).
Vulnerabilities (of the financial system or financial intermediary)	When used in connection with financial stability, the term vulnerability describes the exposure of the financial system to shocks. In other words, it describes how strongly the system would be affected in the event of a shock. The greater the vulnerability, the higher the potential losses are if a shock occurs. The degree of vulnerability, together with the severity of the shock and the level of resilience, determines whether systemic risk could arise.

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