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Security through stability

Contents

Financial stability means that the financial system – financial intermediaries, financial markets and financial infrastructures – is capable of ensuring the efficient allocation of financial resources and fulfilling its key macroeconomic functions even if financial imbalances and shocks occur. Under conditions of financial stability, economic agents have confidence in the banking system and have ready access to financial services, such as payments, lending, deposits and hedging.

Reports

Well-capitalized banking sector can support tepid economic recovery

While the domestic economy is only slowly recovering, the Austrian banking sector posted the third-highest half-year profits in history, and last year's high profits significantly increased CET1 capital. Household credit demand picked up further, driven by a resurgence in new mortgage lending, while credit demand from companies remained sluggish. Momentum in loan defaults has been slowing, but credit risk from commercial real estate loans continued to deteriorate. Stricter provisioning requirements for nonperforming loans (NPLs) will impact profits going forward. The OeNB therefore recommends, among other things, that banks ensure adequate credit risk management, including the active management of NPLs, to keep systemic risks at bay.

Macroeconomic indicators point to a tepid recovery

Austria's economy returned to modest growth in the first half of 2025, emerging tentatively from a nearly two-year recession.

Banking sector continues to demonstrate resilience

Austrian banks' profitability remained robust in the first half of 2025 despite a decline in operating income. Thanks to the retention of 2024 profits, banks significantly increased their capitalization.

Slowdown in dynamics of loan defaults

Credit quality remained broadly unchanged in the first half of 2025. However, provisioning requirements for existing NPLs are going to rise markedly.

Recent developments and macroprudential policy update

Austria emerges from recession, but growth remains tepid amid persistent inflation[1]

The Austrian economy is on a fragile path of recovery. After seven quarters of recession, the longest since 1945, during which real GDP contracted by 2.8%, signs of a mild rebound started to emerge in late 2024. The rebound has been driven by public sector activity, but key sectors, such as manufacturing, construction and consumer-facing services, have remained subdued. Industrial output, particularly in energy-intensive sectors like chemicals and metals, has fallen sharply due to elevated energy costs and global headwinds, including US tariff hikes and geopolitical tensions. Exports have declined by 6.2% since late 2022, signaling significant market share losses. Private consumption remains weak despite rising real incomes in 2024, as households have adopted a cautious stance amid fiscal uncertainty and elevated inflation. The saving rate has surged to 11.7%, reflecting consumer hesitancy. Residential construction investment has been declining since mid-2022, though a recent uptick in building permits suggests a potential turnaround. The recovery is fragile. According to the OeNB's September interim forecast, GDP growth is expected to reach a modest 0.3% in 2025, revised slightly upward from June's projection of 0.2%. In 2026 and 2027, growth is forecast to accelerate to 0.8% and 1.1%, respectively, though downside risks like trade policy uncertainty or resurgent inflation persist.

Inflation is elevated and sticky. Driven by the expiration of energy subsidies and a spike in household energy costs, inflation is projected to rise to 3.5% in Austria in 2025. The Harmonised Index of Consumer Prices (HICP) is expected to ease to 2.4% in 2026 and 2.3% in 2027, but core inflation will remain stubbornly high at 2.8% and 2.5%, respectively, due to persistent service sector price pressures. Energy inflation surged following the rollback of government support measures, including the electricity price cap, and CO_2 tax hikes. Despite falling wholesale prices, consumer energy costs have remained elevated, contributing significantly to headline inflation. Service inflation, forecast at 4.3% in 2025, remains the primary driver of overall price growth, accounting for more than half of the HICP increase. Wage growth, coupled with strong demand — particularly in tourism —, has kept prices high. Food inflation has also accelerated once more, with prices of processed goods like chocolate and coffee surging by up to 20%. A planned tobacco tax increase in 2026 will add further upward pressure. By contrast, fiscal consolidation has not contributed much to inflation: In 2026, the measures announced so far will only add approximately 0.2 percentage points to inflation. Austria's inflation rate is expected to exceed the euro area average by 1.4 percentage points in 2025, driven by higher service and energy inflation. Structural factors, including faster wage growth and delayed subsidy phaseouts, also contribute to Austria's higher inflation rate. The gap is expected to narrow in 2026 and 2027 as base effects will be fading and EU-wide carbon pricing will be introduced.

The labor market remains resilient. Despite economic headwinds, the unemployment rate is projected to hold steady at 7.4% in 2025 and 2026, before declining to 7.2% in the following year. Employment growth is expected to pick up gradually, though total hours worked will lag behind headcount gains.

Austria's fiscal deficit is forecast at –4.2% of GDP in 2025 and will be narrowing only slightly in the subsequent years. The positive impact of stronger economic growth and stable government revenues will partly be offset by rising social expenditure and slower subsidy reductions. Therefore, additional consolidation measures will be required to meet EU deficit targets.

[1] OeNB press release of September 12, 2025.

The most important external risk to the Austrian economy is trade policy uncertainty, but Central, Eastern and Southeastern European (CESEE) markets have a stabilizing effect. The July 2025 EU-US tariff agreement failed to deliver lasting stability, with the USA expanding tariffs on steel, aluminum and potentially pharmaceuticals and semiconductors. Meanwhile, CESEE economies continue to grow faster than the euro area. As these markets are important for the Austrian economy and the banking sector, this has a stabilizing effect.

Banking sector remains notably resilient against a volatile macroeconomic backdrop
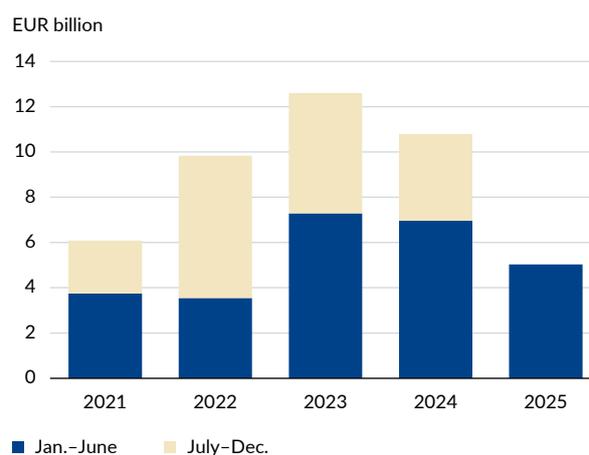
The Austrian banking sector continues to grow, with consolidated total assets having increased by EUR 25 billion to EUR 1,290 billion in H1 2025. On the liabilities side, this expansion was primarily financed through customer deposits, retained earnings and bond issuance. In particular, customer deposits were pushed to an all-time high, driven by increased real incomes and a high saving rate. Together with other sources of funding, this supported a rise in lending activity as well as increased purchases of equities and debt securities. Foreign exposures also continued to grow, accounting for approximately 44% of total assets by mid-2025, driven largely by operations in Germany, Czechia and France.

Operating income fell by approximately 6% year on year in H1 2025, mostly because of a one-off effect in the CESEE business. On the one hand, the decline was driven by a contraction in net interest income, the sector's most significant revenue stream, as margins narrowed slightly. Also, trading income was notably impacted by financial market turbulence in early 2025, resulting in a sharp downturn. However, this was partially offset by positive valuation effects. On the other hand, the write-off of claims by Raiffeisen Bank International (RBI) against Rasperia Trading Ltd., linked to the latter's stake in the construction group Strabag, created a substantial drag on operating income. The one-off charge reduced sector-wide earnings by EUR 1.2 billion. In contrast, Austrian banks' fee and commission income increased thanks to a stronger performance in foreign exchange trading and payment services.

Chart 1

Austrian banks' profits 2021–2025

EUR billion

■ Jan.–June ▢ July–Dec.

Source: OeNB.

Austrian banks' H1 2025 net profit was EUR 5 billion, down 25% on the previous year. Despite the sharp drop, this still represents the third-highest half-year result in the sector's history. Adjusted for RBI's one-off effect, the decline in profits would have been around 10%. Operating expenses rose only marginally in H1 2025, while administrative costs increased significantly due to higher personnel and IT costs and taxes. However, this was nearly offset by lower impairment charges on equity holdings. Loan loss provisions edged up to EUR 1.1 billion, slightly above the long-term average, amid concerns over under-provisioning for nonperforming loans (NPLs).

Box 1

EU-led simplification initiative aims at boosting competitiveness

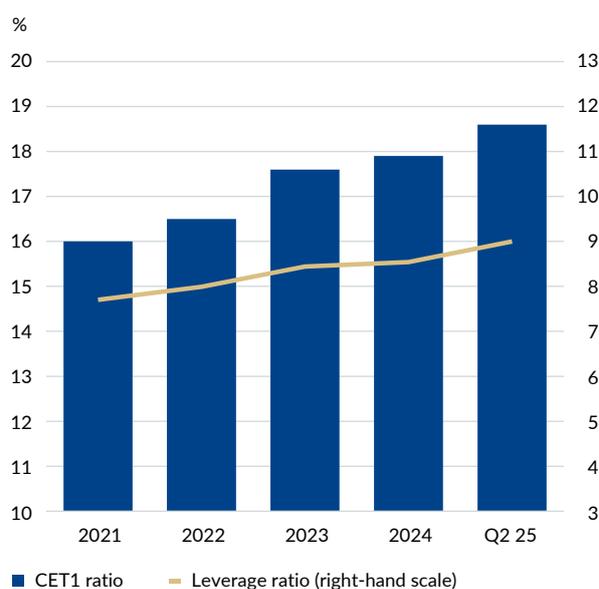**The European Commission has launched an initiative aimed at significantly reducing the regulatory burden and boosting competitiveness across the EU.** The planned streamlining of regulation is to reduce the administrative costs for all businesses by at least 25% and by at least 35% for small and medium-sized enterprises by 2029. As a result, businesses will save, in total, EUR 37.5 billion, the European Commission estimates. The initiative covers multiple sectors in all member states and is being implemented through a series of legislative packages known as "Omnibus" regulations.

In sync with this EU-wide project, financial regulation and supervision are also set to become less complicated and costly. The Governing Council of the European Central Bank (ECB), the Single Supervisory Mechanism (SSM) and the institutions of the European System of Financial Supervision (ESFS) have launched policy and supervisory initiatives to simplify prudential regulation and reporting and to make supervisory processes in practice more efficient, effective and risk-based. From a supervisory perspective, the overall goal should be to maintain the current level of resilience while making regulation and supervision less complex and less costly for the supervised banks. This should apply not only to the existing framework but also to new regulatory measures.

Banks have significantly strengthened their capital buffers by increasing their common equity tier 1 (CET1) capital by approximately EUR 8 billion in the past 12 months. This expansion was largely driven by the retention of the high profits earned in 2024, with around two-thirds having been reinvested, in line with projections published in the OeNB Financial Stability Report 49. Following the submission of audited financial statements, the CET1 ratio was revised upward by 40 basis points, reaching 17.9% at the end of 2024. By the end of June 2025, the ratio had risen further, to 18.6%, reflecting continued capital accumulation and prudent financial management. This – together with an ongoing strong capital generation capacity through profits – supports financial stability, which is all the more important as planned acquisitions are set to negatively affect capitalization levels going forward. The leverage ratio, which serves as a non-risk-weighted measure of indebtedness,

Chart 2

Austrian banks' capitalization 2021–Q2 2025

■ CET1 ratio   — Leverage ratio (right-hand scale)

Source: OeNB.

increased to 9.0% over the same period. This figure stands at three times the EU minimum requirement, underscoring the domestic sector's robust balance sheet and its capacity to withstand external shocks. Banks' stronger capitalization has come amid the finalization of Basel III, which concludes a critical chapter in the reform of banking oversight in Europe.[2]

The annual evaluation of the buffer for systemically important banks (O-SII buffer) **did not lead to changes in buffer levels in 2025.** This exercise identifies those banks whose failure would lead to large

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[2] For more details on the finalization of Basel III, see box 3.

social costs ("too big to fail"). Compared to 2024, UniCredit Bank Austria and Erste Bank der oesterreichischen Sparkassen crossed thresholds (both on the solo level) in 2025 that warrant a decrease in their buffer requirements should the observed decrease in their EBA scores persist in the 2026 evaluation. The practice to not adapt buffer requirements immediately is meant to prevent undue fluctuations in buffer requirements. Also in the 2025 exercise, the systemic importance of Erste Group and BAWAG increased. This might result in higher buffer levels in the next years if we see further material increases. Overall, this would increase O-SII buffer capital over time. The annual buffer evaluation follows guidelines by the European Banking Authority (EBA), quantifying systemic importance with the "EBA score," supplemented with national indicators. Banks deemed systemically important are required to hold additional capital, the O-SII buffer.
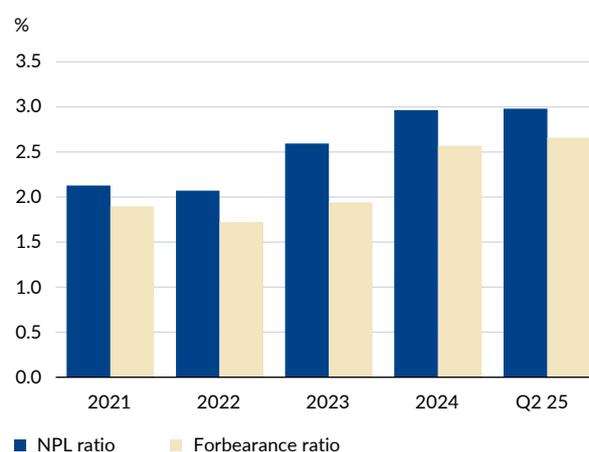
Households' credit demand picked up slightly again in H1 2025, underpinned chiefly by a resurgence in new mortgage lending. This uptick contrasts with continued corporate caution in this period, as firms remained reluctant to commit to new investments. In particular, the ongoing volatility of US trade policies, particularly tariffs, have been dampening the appetite for business loans. While the annual growth of loans to businesses hovered at around 2% in the first eight months of 2025, the growth of mortgage loans turned positive in July, the first time since mid-2023, as mortgage loans have become more affordable because interest rates have fallen und household incomes have risen. As regards buffer requirements, the Financial Market Stability Board (FMSB) recommended in October 2025 to leave the countercyclical capital buffer (CCyB) at 0% as only a few indicators showed signs of cyclical risks, and the credit-to-GDP gap remained negative. In its assessment, the FMSB for the first time applied a new method developed by the OeNB. A blog post published in April provides some insight into this method, along with a comprehensive perspective on the development of cyclical risks.[3]

Chart 3

Austrian banks' credit quality ratios 2021–Q2 2025

Source: OeNB (FINREP).

The amount of newly defaulted loans decreased in H1 2025, with the overall NPL ratio hovering around 3%. Before that, the Austrian banking sector had seen a few quarters of rising loan defaults, which had pushed up NPL ratios markedly, also compared to other European countries. However, the differences between individual banks' NPL ratios increased further, as 50 institutions reported an NPL ratio above 5%. These banks represent slightly more than 10% of the sector's total assets. Net additions to NPLs fell markedly in the first six months of 2025 to just under EUR 500 million, roughly one-third of the figure recorded in the same period one year earlier. Provisioning activity remained subdued by historical standards, leaving the coverage ratio at 38%, well below its peak of around 55%, but stable after a long downward trend. Whether these early signs of stabilization in NPLs will turn into a sustained trend will crucially depend on the extent and speed of the economic recovery.

Rising NPL provisioning requirements already caused EUR 600 million to be deducted from Austrian banks' CET1 capital as at end-June 2025. This was the direct result of the so-called NPL backstop, a European banking law that compels banks to increase coverage ratios over time, i.e. the longer a loan has been

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[3] Details can be found in recommendation (FMSG/3/2025). The dashboard of indicators of systemic cyclical risks is also published on the OeNB's website.

nonperforming, the higher the provision should be. More precisely, the backstop mandates full provisioning of NPLs within defined timeframes: three years for unsecured exposures, and seven to nine years for secured loans. This is applicable to loans classified as nonperforming since April 2019. Hence, the sharp rise in NPLs observed in Austria since 2023 is now going to translate into a significant increase in provisioning requirements over the coming years if banks are unable to implement workouts in time. Banks must then either meet these additional requirements through their profit and loss accounts, or the relevant amounts will automatically be deducted from their CET1 capital. Forward simulations suggest that, without corrective action like additional provisioning, write-offs or the realization of collateral, Austrian banks could face a profit impact in the high single-digit EUR billion range.

The dynamics in loan forbearance are fading. Loan forbearance has emerged as a key instrument in mitigating credit deterioration. Both lenders and borrowers have increasingly resorted to restructuring arrangements to stave off defaults. While the pace of new forbearance agreements has slowed since the end of 2024, with roughly 2.7% of outstanding loans subject to such measures as of mid-2025, the overall share remains close to the historical peak of 3.3%. One-third of loans with forbearance measures are considered nonperforming. This ratio is relatively constant, speaking for the effectiveness of the forbearance measures taken.

Box 2

Central, Eastern and Southeastern Europe (CESEE): resilient growth amid growing downside risks

The CESEE EU member states continued to grow faster, at 2%, than the euro area in H1 2025. However, they are also facing macroeconomic risks and vulnerabilities associated with external shocks, domestic imbalances and structural constraints. Geopolitical and geoeconomic fragmentation, particularly Russia's war against Ukraine, continues to threaten regional security, trade relationships and global supply chains. Slovakia and Hungary are among the CESEE economies most vulnerable to potential US tariffs on European car exports. Another important source of vulnerability is feeble economic growth and subdued external demand. Several economies, including Romania, Hungary and Slovakia, have seen disappointing GDP growth in 2024–25. Net exports have turned negative across much of the region as the German industry falters, with spillovers hitting Czechia, Slovakia and Poland especially hard. The automotive sector — a backbone of CESEE manufacturing — is under acute strain. The transition to electric vehicles has proven slower than anticipated, competition from China is rising, and European carmakers are facing falling margins. On top of that, competitiveness has been eroding, and cost pressures have been increasing. Rapid wage growth is driving up unit labor cost, particularly in Poland, Romania, Bulgaria and Hungary, thus weakening competitiveness.

Significant internal and – in some cases – external imbalances have reduced political room for maneuver. Romania, Poland, Hungary and Slovakia are subject to EU Excessive Deficit Procedures. Furthermore, Romania's current account deficit remains among the highest in the EU, making it especially dependent on external financing. As a result, elevated borrowing costs across the region add further strain, with Hungary carrying one of the heaviest debt-service burdens.

On a positive note, the financial sectors in CESEE are largely in good shape, as banks remain well-capitalized and liquid, and asset quality is generally good. This is also true for Austrian banking subsidiaries, which have maintained robust asset quality, with the proportion of defaulted loans lingering at a low 1.9%. Risks may potentially arise from the real economy rather than from the banking sector itself. There are also political risks as demonstrated by past interventions – e.g. in the form of bank taxes or interest caps – and their impact on banks' business and profitability.

Residential real estate prices in Austria have decreased by 5% in nominal terms from their peak in 2022. Adjusted for inflation, the drop has been even more pronounced. The OeNB's residential property price index provides detailed information about the evolution of prices and serves as a key indicator for developments in the residential real estate market. Another topic relevant for the Austrian residential real estate market in recent years has been the regulation for sustainable lending standards for residential real estate financing ("KIM-V"). The regulation – a set of borrower-based measures – expired in June 2025 in line with the legal framework, because banks' lending standards and capitalization levels had markedly improved. This notwithstanding, the FMSB expects banks to continue to comply with lending standards

Chart 4

Residential real estate price indices in Austria

2010 = 100
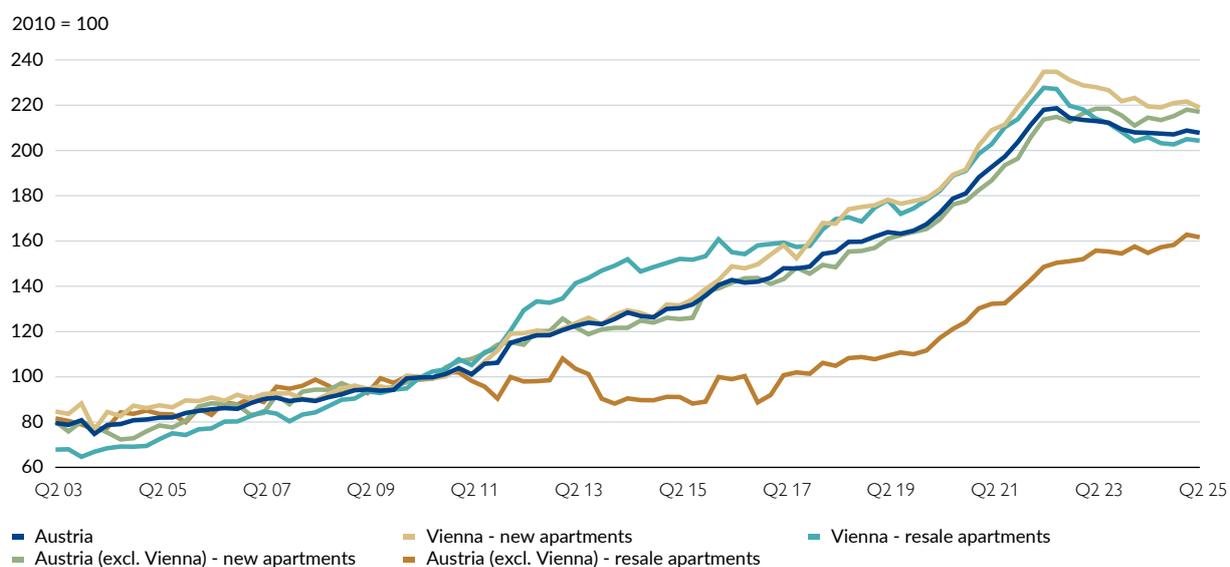
Source: OeNB, DSS GmbH, TU Wien, Prof. Feilmayr.

established by the KIM-V.[4, 5] Also, the FMA communicated its supervisory expectation regarding mortgage lending standards.[6] The OeNB will closely monitor the development of these lending standards and publish data regarding compliance with the FMSB guideline on its residential real estate dashboard from December 2025 on.

Commercial real estate (CRE) companies have become much less resilient, which has led to a further deterioration in credit quality in this segment. According to data from the Bureau van Dijk SABINA database, the equity and liquidity positions of CRE companies deteriorated significantly between 2021 and 2023. The number of companies with low or negative equity has increased, and the liquidity buffers (cash and bank reserves) of companies have therefore declined. Consequently, defaults of CRE loans have increased since then.[7] As of mid-2025, the NPL ratio in this segment stood at 7.9% (compared to 6.3% at the end of 2024).

[4] FMSG - 43rd meeting of Austria's Financial Market Stability Board
[5] FMSG - 44th meeting of the Financial Market Stability Board
[6] FMA Circulars - FMA Austria
[7] We define CRE loans taking a sectoral perspective, i.e. domestic CRE loans to companies in construction (excluding civil engineering) and the real estate sector (ÖNACE F41, F43 and M68). Loans to limited profit housing cooperatives are excluded.

The update of the relevant assessment of CRE loans has shown no decline in systemic risks. In 2025, the OeNB updated its systemic risk assessment for CRE loans, using a model that was described in detail in its Financial Stability Report 48.[8] We simulated bank losses based on an adverse macroeconomic scenario provided by the EBA[9] for GDP as well as residential and CRE prices. The results show that systemic risks in the CRE segment did not decrease compared to our assessment one year earlier.

Chart 5

NPL ratio for commercial real estate (CRE) loans H2 2021–H1 2025

%

CRE loans[1]   Non-CRE loans
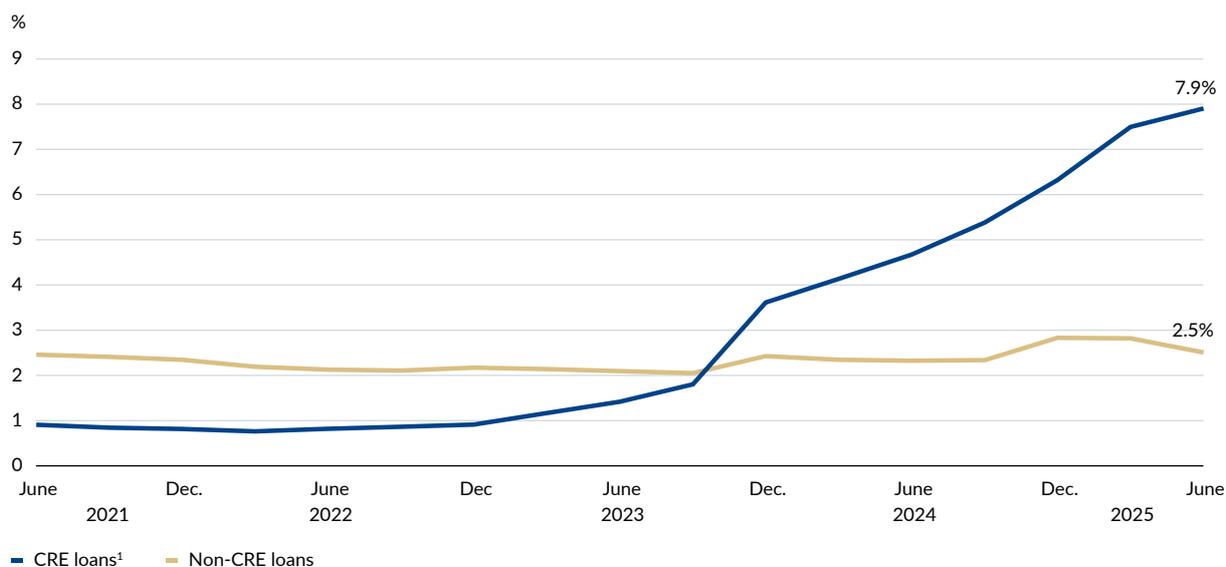
[1] CRE loans to companies in the construction and real estate activities sectors (excluding limited-profit housing cooperatives).
Source: OeNB (granular credit data).

The FMSB is evaluating the systemic risk buffer for CRE loans (1%) that came into effect in July 2025 in response to elevated systemic risks in the CRE segment. In particular, the FMSB will decide in December 2025 whether an increase of the buffer rate is warranted, based on an updated systemic risk assessment as well as the impact of the introduction of the EU Capital Requirements Regulation (CRR III) on capital requirements for CRE loans. In fact, the introduction of the CRR III did not lead to significant changes for banks in Austria: The risk-weighted assets for loans secured with CRE increased (+3.6%), but this increase was almost completely compensated for by a decrease in the risk-weighted assets for unsecured loans (-3.6%) and loans secured with residential real estate (-2%). Furthermore, under the CRR III, banks using the standardized approach to calculate their capital requirements saw an increase in risk-weighted assets of 2%, while the risk-weighted assets of banks relying on the internal ratings-based approach decreased by 3.8%.

With liquidity buffers standing at 20% of total assets at mid-2025, the banking sector remains resilient to liquidity risks. In response to the ongoing reduction of excess reserves in the Eurosystem, banks continued to substitute cash and reserve holdings with government and covered bonds in H1 2025. As a result, Austrian banks have consistently met regulatory liquidity requirements with comfortable margins. The liquidity coverage ratio (LCR), which compares high-quality liquid assets to expected short-term

[8] Barmeier, M., D. Liebeg, and S. Rötzer. 2024. Systemic risks from commercial real estate lending of Austrian banks. Financial Stability Report 48. OeNB. 31–39.

[9] The macroeconomic scenarios are developed by the EBA. The information on the methodology can be found on the EBA website.

outflows under stress, reached 176% on a consolidated basis at mid-2025, an increase of more than 2 percentage points compared to one year earlier and well above the 100% regulatory minimum. On the funding side, the relative importance of sight and term deposits, bonds and equity funding has remained broadly stable in 2025.

Box 3

Basel III implementation improves comparability and strengthens the resilience of Austrian banks[10]

Starting in 2025 and taking full effect by 2033, the finalization of Basel III harmonizes the way banks calculate capital requirements, ensuring that banks with similar risk profiles are subject to comparable rules. Specifically, the framework reduces the differences in how risk-weighted assets (RWAs) are computed; RWAs are an essential metric that determine the amount of capital banks must hold. Also, the new framework aims to enhance the sensitivity of capital rules to actual risk exposures, without triggering a substantial increase in overall capital requirements.

Basel III makes it possible to use more nuanced credit risk weights in the standardized approach and tightens the constraints for internal models. Especially smaller and less systemically important banks use the standardized approach for measuring credit risk. The new methodology introduces more granular risk weights particularly for exposures to unrated banks and corporates as well as for real estate-backed positions. Definitions and classifications have been thoroughly revised to improve clarity and consistency. As regards internal models, which are mostly used by larger institutions under the internal ratings-based (IRB) approach, some constraints on their use have been tightened. In particular, internal models may no longer be used to calculate the credit risk of equity exposures. The advanced IRB approach for exposures to banks and large corporates has been eliminated altogether. New minimum thresholds (known as input floors) have been introduced for key modeling parameters, effectively raising RWAs. To counterbalance this tightening, regulators have lowered certain risk parameters and removed a previously applied scaling factor. Banks are also granted the flexibility to apply the standardized approach (instead of the IRB approach) selectively across different asset classes.

Basel III furthermore introduces an output floor to ensure that RWAs based on internal models cannot be lower than 72.5% of RWAs based on the standardized approaches. Designed to curb excessive model-driven optimization, the output floor will be phased in gradually, starting at 50% in 2025 and reaching its final threshold of 72.5% by 2030.

In Austria, the impact of the final implementation of Basel III has so far been modest. Between the end of 2024 and the first quarter of 2025, the decline in the CET1 ratio of Austrian banks attributable to the new framework was some 10 basis points. RWAs rose by nearly 1%, with smaller institutions seeing a more pronounced increase. The shift in RWA composition reflects a reallocation rather than a genuine rise in risk, as exposures previously assessed under the IRB approach are now subject to the standardized approach. Credit risk RWAs rose marginally, driven by changes in classification and methodology. RWAs of residential real estate exposures dropped slightly, while RWAs of commercial real estate exposures increased. Austrian banks using IRB models were not much affected by the new input and output floors. Adjustments such as the reduction of the regulatory loss given default (LGD) values for corporate exposures and the removal of the scaling factor contributed to a net reduction in RWAs for these institutions. Operational risk RWAs increased by nearly 10% or 1% of total RWAs, largely due to the shift to the new standardized approach. Banks that previously relied on advanced IRB models saw the most significant increases, while others benefited from reductions. The output

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[10] This is a summary of an OeNB Blog published in September 2025 (Basel-III-Umsetzung bringt bessere Vergleich-barkeit und stärkt die Resilienz der österreichischen Banken - Oesterreichische Nationalbank (OeNB)).

floor has not yet led to a rise in RWAs for Austrian banks at the consolidated level, and neither do we expect a major impact once transitional arrangements expire.

The final implementation of Basel III through the Capital Requirements Regulation (CRR III) and the Capital Requirements Directive (CRD VI) will conclude a critical chapter in the reform of banking oversight in Europe. The reform will strengthen the resilience of the financial system and enhance the transparency of capital metrics, particularly in areas where data limitations used to undermine the reliability of internal models.

Starting in autumn 2025, the International Monetary Fund (IMF) is carrying out a Financial Sector Assessment Program (FSAP) in Austria. In this comprehensive analysis, the IMF aims to identify the strengths and weaknesses of the financial sector and assess vulnerabilities. Austria's banking sector is entering this exercise showing remarkable resilience, as discussed above, in a complex and increasingly volatile macroeconomic environment.

Recommendations by the OeNB

It is paramount that the Austrian banks preserve their resilience to continue to be able to serve the evolving needs of households and enterprises. This is all the more important given the recent increase in NPLs among domestic banks to levels above European averages. In view of ongoing geopolitical tensions and to keep systemic risks at bay, the OeNB maintains its advice that banks:

- prepare for potentially stricter regulatory requirements for commercial real estate (CRE) financing and stay committed to sustainable lending standards for real estate financing;
- ensure adequate credit risk management, including the active management of NPLs, higher provisioning (especially for the unsecured part of loans) and conservative collateral valuations;
- sustain adequate capital levels, if necessary by limiting profit distributions; and
- ensure sustainable profitability (as a risk buffer), especially by
  - maintaining cost discipline and
  - investing in digitalization and cybersecurity.

OeNB 2025 solvency stress test

Austrian banking sector remains resilient

The results of the OeNB's 2025 solvency stress test indicate that the Austrian banking sector can withstand a severe macroeconomic shock. Favorable interest rates have allowed banks to build up capital, which serves as a buffer against future losses. At the individual bank level, the situation is heterogenous, however: Not all banks have strengthened their capital positions, and credit risk, especially from commercial real estate exposures, remains high. Supervisors will continue to closely monitor the banks that are especially exposed to these risks.

Still, banks need to act prudently, especially in profit distribution, given sluggish economic growth in Austria, rising credit costs and persistent geopolitical tensions. This year's more positive stress test outcome rests heavily on supportive interest rates. However, the current margin levels will not be sustainable. We project that net interest margins will decline over – and, possibly, beyond – the three-year scenario horizon from 2025 to 2027. At the same time, banks will be required to meet stricter provision requirements for loans that have remained nonperforming for an extended period. Finally, risks that cannot be quantified, such as the risk of cyberattacks, are increasing, but not included in the stress test.

Results in detail and risk drivers

The Austrian banking sector's aggregate common equity tier 1 (CET1) ratio increases by 2.4 percentage points in the baseline scenario, but declines by 4.7 percentage points in the adverse scenario, landing at 13.0% at the end of 2027. The following waterfall charts show the most important risk drivers and their contribution to changes in the CET1 ratio in both the baseline and the adverse scenario.

In the baseline scenario, net interest income contributes 12.1 percentage points to the 2027 CET1 ratio. Even though credit risk losses are rising over the stress test horizon, they only reduce capital by 2.1 percentage points. Banks benefit from income generated by equity participations in other banks or non-financial corporations, which contribute 0.3 percentage points to the 2027 CET1 ratio.

Chart 1

Austrian stress test – results and risk drivers

CET1 ratio of the Austrian banking sector – baseline scenario

CET1 ratio of the Austrian banking sector – adverse scenario

% (CET1 ratios) and percentage points (changes)
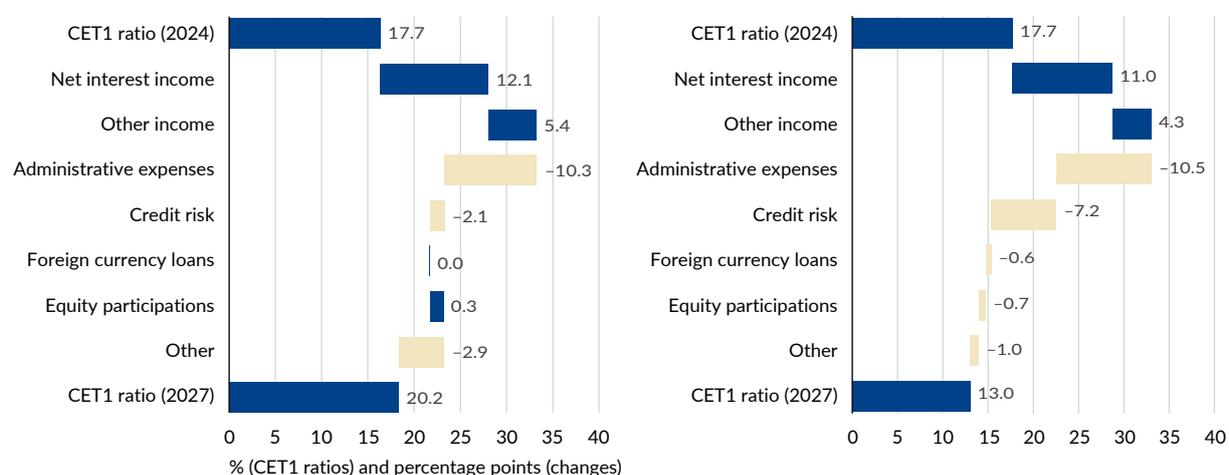
Source: OeNB.

In the adverse scenario, credit risk losses reduce capital by 7.2 percentage points, i.e. by 5.1 percentage points more than in the baseline. Like last year, commercial real estate exposures were specifically shocked. Also, the positive impact of equity participations banks hold in other entities turns negative. Moreover, writedowns of book values reduce capital by another 0.7 percentage points.

At the same time, the contribution of net interest income to capital declines by 1.1 percentage points as funding costs increase and defaulted loans reduce interest earned. That said, net interest margins are still relatively solid by historical comparison, now that they are slowly returning to levels observed in 2022. It must be noted that 2023 and 2024 were years when Austrian banks saw unusually high net interest margins of about 2%. Other income components, such as fees and trading income, also contribute less (-1.1 percentage points) in the adverse scenario than in the baseline scenario. In absolute terms, banks' income generation capacity (net interest income, fees, trading and participation income) shrinks from an initial EUR 38 billion in 2024 to roughly EUR 29 billion per year on average. At the same time, credit risk losses increase significantly, rising from an initial EUR 4 billion in 2024 to a yearly average of about EUR 15 billion. Over the complete three-year horizon, banks generate EUR 13 billion less in income than projected in the baseline scenario, while credit risk costs increase by EUR 28 billion. Altogether, banks fare worse by around EUR 40 billion in the adverse scenario compared to the baseline scenario. When we only look at the adverse scenario, banks lose roughly EUR 23 billion (or close to one-fourth) of their capital in those three years.

Compared to the 2024 exercise, the 2025 OeNB stress test projects a smaller CET1 ratio depletion (-4.7 vs. -5.4 percentage points). This results from a combination of several factors: Strong initial profitability combined with higher interest rates results in net interest income contributing more to 2027 capitalization (+11.0 percentage points vs. +9.8 percentage points in 2024). At the same time, initial asset quality was worse in 2025 than in 2024, and the 2025 scenario assumes a harsher downturn. Taken together, this leads to credit risk losses reducing capital more than in 2024 (-7.2 percentage points vs. -6.4 percentage points). Overall, improved income generation still overcompensates higher losses over the three-year scenario horizon. Finally, the Austrian banking sector's initial CET1 ratio was slightly better (+0.1 percentage points) in 2025 than in 2024. Taken together, Austrian banks complete the 2025 stress test with a higher CET1 ratio than the 2024 exercise (13.0% vs. 12.2%).

The 2025 adverse scenario assumes a severe macroeconomic downturn combined with a temporary surge in inflation and heightened short- and long-term interest rates. To be consistent with the 2025 EBA/ECB stress test exercise, the OeNB employed the same adverse scenario for its 2025 stress test. However, due to a deterioration in the economic outlook for Austria in the first half of 2025, we updated the baseline scenario with the OeNB's June 2025 forecast. The adverse scenario is characterized by increasingly inward-looking trade policies coupled with heightened geopolitical tensions and further escalations of ongoing conflicts, which trigger supply-side inflationary pressures, especially for energy prices. The adverse scenario also assumes that Austrian short-term interest rates rise at first but then fall slowly since monetary policy is expected to react to elevated inflation rates. Long-term interest rates are assumed to rise in the first year and remain constant afterward. The following table summarizes selected variables for the adverse scenario for the years 2024–2027:

Table 1

Selected variables in adverse scenario 2024–2027

		2024	2025	2026	2027
	%				
GDP growth	Euro area	0.8	−2.3	−4.0	0.0
	Austria	−1.1	−3.1	−3.8	1.2
Inflation	Euro area	2.4	4.5	3.3	2.0
	Austria	2.9	5.2	2.6	0.9
Short-term interest rates	Euro area	3.6	3.4	3.1	3.0
Long-term interest rates	Austria	2.8	4.0	3.9	3.9

Source: OeNB, EBA.

Compared to the 2024 adverse scenario, the cumulative GDP reduction in the 2025 adverse scenario is more severe (-5.7% vs -5.0%). At the same time, (short-term) interest rates are assumed to be much more favorable from banks' perspective (3.2% on average vs. 2.6% on average in the 2024 scenario).

The OeNB conducts annual stress tests for all Austrian banks under its mandate for banking supervision and financial stability. The solvency stress test is designed to assess banks' resilience to adverse macroeconomic shocks and provides insights on both bank-specific and system-wide vulnerabilities. Conducted in a top-down fashion, it relies on the OeNB's ARNIE stress testing framework, which is well-established and continuously improved. The stress test covers both significant and less significant institutions (SIs and LSIs) at the highest consolidated level. It focuses on risks faced by the Austrian banking sector, including spillover effects among banks, which are particularly relevant to the decentralized sector. The 2025 stress test is based on data as of year-end 2024 and covers the period from 2025 to 2027. The results support the OeNB's financial stability assessment and contribute to the assessment of supervised banks.

The OeNB's is continuously improving its stress testing framework ARNIE. A new regression model has been introduced to better project individual banks' dividend distributions – a feature most notable in the baseline scenario. Also, we adjusted our net interest income model so that now credit spreads better reflect changes in the macro scenario. To gauge the impact of higher provisioning requirements for nonperforming loans that are gradually being phased in, we performed an explorative scenario analysis. Its results inform supervisory follow-up actions with affected banks but are not included in the main stress test results. Finally, the impact of the phasing-in of the new capital requirements regulation (CRR3) was included in the projections. In contrast to the EU-wide stress test, these transitional effects are included in capital depletion numbers, as they occur during the scenario horizon. Their aggregate impact is negligible, however.

Special topics

Good AI – bad for banks?

Artificial intelligence is the new buzzword – and with good reason: It is reshaping the world around us. With the financial sector being particularly suited for the use of AI, we are called upon to examine the implications of AI use for financial stability. In this paper, we take a closer look at the financial stability risks that arise as banks, nonbank financial institutions, borrowers and society as a whole embrace the new technology. To do so, we compare the findings of five renowned financial institutions and discuss four different AI scenarios.

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AI will reshape finance

Finance is regularly cited as one of the sectors most impacted by AI. This is why several reputable institutions tasked with maintaining financial stability have explored the topic.
We find that they identify model opacity, herding and cyber risks as the most common AI-related risks.

AI effects vary across scenarios

We explore four scenarios that assume varying speeds and capabilities of AI development. We discuss market manipulation via deepfakes, credit risks stemming from layoffs and firm failures, and the implications of artificial general intelligence and superintelligence.

Being too cautious might be risky too

US big techs' bloated valuations will raise concerns if AI fails to meet investors' expectations.
While banks' general resilience is the key risk mitigant, a too cautious regulatory approach to AI bears its own risk, namely that of being unable to manage the structural changes AI might bring about.

Abstract[1]

The rapid advancement of artificial intelligence (AI) is set to reshape the financial system. For an overview of potential AI-related risks to financial stability, we synthesize the assessments of five reputable institutions – the International Monetary Fund, the Bank for International Settlements, the Financial Stability Board, the Bank of England and the European Central Bank. The risks most frequently highlighted in the five studies reviewed are (1) model opacity, (2) herding behavior, (3) cyber risks and (4) supplier concentration. The studies show limited consideration of the indirect effects of AI, however. Indirect effects could materialize if AI worsens the credit quality of traditional borrowers (households, firms and sovereigns) and if AI investments fail to yield sufficient returns. Moreover, no common categorization of risks has emerged so far, which hinders comparability and professional exchange.

We suggest exploring AI risks to the financial system on the basis of four scenarios that assume varying speeds and capabilities of AI development. In the moderate scenario, market manipulation via deepfakes emerges as a key concern, while in the fast-paced scenario, credit risks stemming from layoffs and firm failures take precedence. In the third scenario, we address the implications of artificial general intelligence (AGI) and superintelligence (SI) and in the fourth scenario, we highlight the negative wealth effects in case the use of AI does not generate enough profit to cover costs and meet market expectations. The general resilience of banks and other financial actors is of course the most important mitigant in any scenario. We conclude, however, that a too cautious regulatory approach to AI might bear its own risk, namely that of one sector – or of society as a whole – being unable to manage the structural changes AI might bring about.

1 Motivation and backdrop

Artificial intelligence (AI) is poised to transform the financial industry. The financial sector frequently ranks among the most AI-exposed industries, which is not surprising given its highly AI-compatible production process involving specialized labor and nonphysical output (Aldasoro et al., 2024a; Felten et al., 2021). AI adoption by the financial sector (internal adoption) only accounts for a small part of the effect AI has on finance, however. Other factors play a major role as well: First, the financial sector is key in funding AI development, as it requires high capital and research and development (R&D) expenditures. Second, the productivity shock AI might cause would disrupt the debt-servicing capacity of banks' traditional debtors, including firms, households and governments.

For these reasons – and others we will explore – reputable institutions concerned with financial stability are working to assess the implications the rapid development of AI has for the financial sector. In this paper, we summarize their views (section 2) and present an analysis of key risks based on four scenarios (section 3). Section 4 concludes.

AI promises many benefits for society. In finance, cost saving or improved risk management are just two examples out of many, see e.g. Financial Stability Board (2024). The nature of our discipline compels us to focus on the risks AI poses to financial stability. It is important to note in this context, however, that a risk aversion that is too strong can in itself become a major risk, for instance if other countries' financial or real sectors reap the benefits of AI and outcompete domestic sectors. Given Europe's lagging AI uptake, this concern warrants deeper discussion in section 3.

2 How institutions concerned with financial stability view AI

In this section, we summarize recent perspectives on AI published in studies by major financial stability institutions, namely the Bank of England (BoE) (Bank of England and Financial Conduct Authority, 2022), the European Central Bank (ECB) (Leitner et al., 2024), the Bank for International Settlements (BIS) (Aldasoro et al., 2024b), the International Monetary Fund (IMF) (2024b) and the Financial Stability Board (FSB) (2024).[2] A detailed comparison of these studies yields the following key observations:

1) **Consensus on AI potential:** The authors broadly agree on the potential of AI to reshape finance and on the need for financial stability institutions to address the topic.

2) **No consensus on terminology:** No standard has emerged on how to categorize financial stability risks emerging from AI. While below, we attempt to identify the main risk per contribution, this task is complicated by a lack of common terminology. As a case in point, the terms "model risk" and "bias" are each used with different meanings.[3] The IMF explicitly categorizes the risk of relying on third-party AI providers as an operational risk but not as a cyber risk, while the ECB includes cyber risk in operational risk but not supplier concentration risk.

   As a lesson, we advocate for a clear description of risks and a careful use of terminology in this broad emerging field of financial stability concerns. In section 3, we propose two ways of sorting the pile of risks that emerge when comparing the studies under review.

3) **Consensus on identified risks:** Despite differences in focus and terminology, we can determine the main risks identified per contribution and compare them with one another (figure 1). Model opacity, herding and cyber risk emerge as core concerns across all contributions. We discuss these risks in more detail below.

4) **Little consideration of indirect effects:** The primary focus of the studies under review is the adoption of AI in the financial sector. Discussions on indirect AI-driven effects – such as transformations in nonfinancial industries – are largely confined to the topics of cyber risks and misinformation. The BIS study (Aldasoro et al., 2024b) is an exception in this respect as it examines how AI-driven shifts in legal, nonfinancial economic activity might affect finance.[4] Notably, none of the five studies explores the financial implications that might occur if the use of AI does not generate enough profit to cover costs and meet market expectations. We argue that these indirect effects deserve more attention, given the financial sector's deep integration into the broader economy – a point we develop further in section 3.

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[2] This is not to say that these are the only contributions on this issue, see e.g. Finance Watch (2025). They are not even the only contributions on the issue made by these institutions, see the early contribution by the FSB (2017) or several other contributions by the BIS with varying focuses (Aldasoro et al., 2024a; Aldasoro et al., 2024c; Gambacorta et al., 2024; Araujo et al., 2024). The studies we synthesize here are all fairly recent, of comparable length and have been published by renowned institutions that have a history of being at the forefront of the international debate on many financial stability issues.

[3] "Bias," for instance, is used to refer to (1) the purely statistical term, defined as an estimator that fails to converge on its true value, (2) data samples misrepresenting the true population and (3) unfair discrimination among individuals (see the BIS, BoE and IMF studies under review). Also, it is unclear, for example, what the BIS means by "inherent unsuitability of AI agents for aspects of macroprudential policies" or by "network interconnectedness, which may create new failure modes."

[4] This does not mean that these are blind spots at these institutions, see e.g. other publications by the IMF (2023) and the BIS (Aldasoro et al., 2024a).

Figure 1

Main AI-related risks identified by reputable financial stability institutions

Risk	Institutions
Model opacity	BIS, BoE, ECB, FSB, IMF
Herding/market correlation	BIS, BoE, ECB, FSB, IMF
Cyber risk	BIS, BoE, ECB, FSB, IMF
Supplier concentration	BIS, ECB, FSB, IMF
Data quality	BIS, BoE, FSB
Algorithmic discrimination/bias	BIS, ECB
Too-big-to-fail externalities	ECB
Market speed	IMF
Disruptions of the real economy	BIS
Deepfakes, misinformation	IMF
Data privacy concerns	BIS
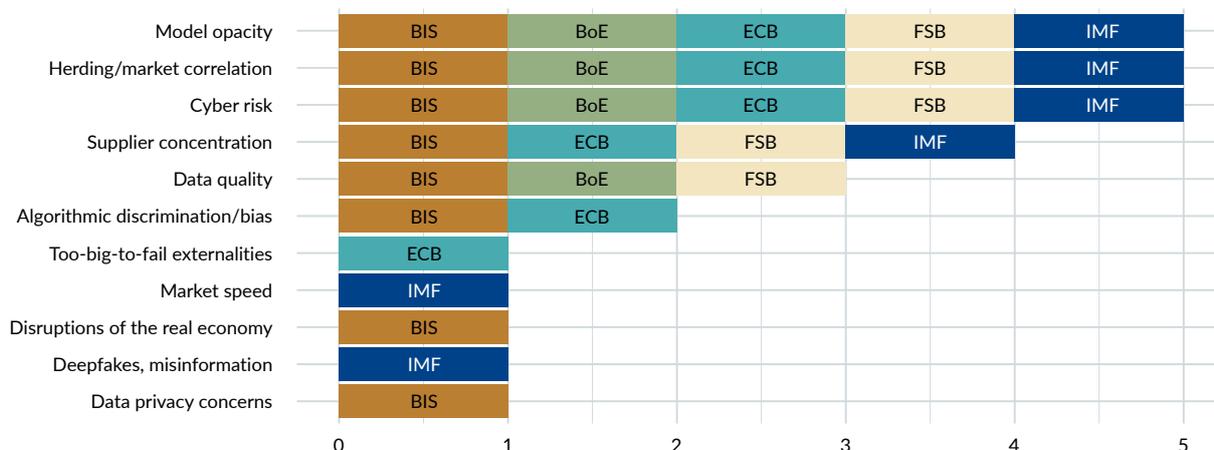
Source: Author's compilation.

Below, we summarize the four primary risks identified across the five studies under review. The counterarguments per risk provided under *Discussion* are not meant to dismiss the risks but to critically examine their prominence among the most relevant concerns.

1) **Model opacity** encompasses issues such as reduced predictability in banks' internal models (e.g. risk modeling, pricing or asset allocation) and the lack of explainability in AI-generated outputs.
   Discussion: While mechanical operations have become difficult to trace even in mid-sized neural networks, recent advances in Large Language Models (LLMs), especially their reasoning capabilities and chain-of-thought technology, address the lack of explainability (Wei et al., 2022). Yet, even advanced LLMs show pockets of surprising behavior and unexpectedly weak performance.[5] Would it be in the self-interest of financial institutions to avoid opaque models when more interpretable alternatives exist? Certainly, supervisors have a role in emphasizing explainability over short-term prediction performance.

2) **Herding and market correlation** might arise if financial institutions rely on the same AI model for asset allocation and investment decisions. These systemic common exposures could amplify market bubbles and trigger correlated responses to market corrections by many market participants, exacerbating financial instability. There is consensus that, with AI advancement, purely mechanistic trading strategies will become more prevalent, i.e. trading strategies "without a human in the loop." The BIS (Aldasoro et al., 2024b) highlights the 1987 US stock market crash, where pre-AI mechanistic portfolio insurance strategies contributed to the largest single-day drop of equity prices in US stock history. Shin (2010) similarly discusses pre-AI mechanic hedging strategies with positive feedback loops creating destabilizing spirals. As a counterposition, Shiller (2010) and Scharfstein and Stein (1990) emphasize the psychological and social dimensions of herding. Kahnemann et al. (1998) and Salganik and Watts (2008) experimentally show how group dynamics can lead the herd astray, while statistical approaches are less vulnerable to social cascades.
   Discussion: Algorithmic trading and technical analysis have been widespread for decades (Gehrig and Menkhoff, 2006). So have common data sources for risk models and asset allocation. BlackRock's

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[5] E.g. the failure of GPT-4 to accurately answer "which number is larger: 9.9 or 9.11" or to count the "r's" in "strawberry." For more serious behavior, see emergent misalignment in Betley et al. (2025).

Aladdin, a system combining pools of financial data and software, analyzed and priced USD 21.6 trillion in assets already in 2020.[6] Financial institutions have long used portfolio insurance strategies and stop-loss mechanisms that sometimes have unintended externalities on market stability. Whether AI will exacerbate these risks remains uncertain. Investors' initial portfolio positions and risk appetites differ, which leads to diverse decision-making even when similar AI tools are used.

Importantly, more advanced AI models can be expected to pay greater attention to these differences, which may result in a variation in recommendations even when only a single model is in use. Additionally, a model-driven trade, like any trade, influences market prices, thus making identical subsequent trades less attractive. Given these factors – and the inherently social and psychological nature of herding – it is not evident that AI will significantly worsen the problem.

3) **Cyber risk**, in the context of AI, encompasses three types of risk. First, attacks by an attacker that is supported by AI. Second, attacks targeting AI-driven financial systems. Third, "social hacking." Examples of the first type comprise using AI-generated code to create malware capable of infiltrating a bank's infrastructure or commanding AI agents to explore cybersecurity vulnerabilities. An example of the second type is jailbreaking an AI-powered customer service assistant to extract confidential client data (Wei et al., 2024). The third type of attacks, which is sometimes also classified as cyber risk, is social hacking, where AI exploits human psychology and perpetrators use AI to personalize their phishing attacks (spear phishing) to gain unauthorized access to information or systems. We will address this last type in section 3.1.

Discussion: The overlap between AI risk and cyber risk is sometimes overrated. Many cyber risks exist independently of AI, just as AI-related risks do not always involve cybersecurity threats. That said, AI-driven cyber risks will continue to evolve (Zou et al., 2023) and increase in importance with the wider deployment of AI in financial institutions. At least, AI will not only empower attackers but also enhance defensive cybersecurity capabilities.

4) **Supplier concentration** captures the risk that AI software, or the hardware required to train or host AI models, might be in the hands of an oligopoly.[7] Such dependence creates risks due to limited substitutability if suppliers fail to deliver, as well as potential cost pressures that arise from market power. Sitaraman and Narechania (2024) conclude that oligopolistic structures are particularly prevalent in semiconductor manufacturing and, to a lesser extent, in cloud infrastructure provision. For data center graphics processing units (GPUs), the market is monopolistic rather than oligopolistic, with US big tech Nvidia currently accounting for a market share of 97%[8].

Discussion: The risks of IT system dependency are a central focus of the EU's Digital Operational Resilience Act (DORA), and reliance on AI providers is likely to grow. When it comes to data center GPUs, the current market concentration is indeed worrying. The number of AI model developers, however, remains large and is expanding. As the IMF (2024b) notes, the share of open-source AI models went up from approximately 30% in 2021 to 80% in 2024. While an oligopoly in AI development is undesirable from an economic competition standpoint (Sitaraman and Narechania, 2024), its implications for financial stability are less clear. If all banks face higher AI-related costs due to supplier concentration, consumers would be worse off, but financial stability would not. Higher fixed costs may favor large banks with economies of scale, leading to greater financial sector concentration – this is what the ECB refers to as the "too-big-to-fail" externalities of AI.

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[6] Business Insider (2020). A reliable, more recent figure could not be obtained.

[7] Note that higher supplier concentration would also fuel cyber risk and herding, but we classified both risks separately.

[8] Source: 360iResearch (2025).

3 Risk grouping and AI scenarios relevant for the financial sector

From reviewing the five studies, two approaches to grouping the identified risks emerge: first, a cross-section differentiation, and second, a scenario-based approach. In the first approach, cross-section differentiation distinguishes, first, between internal AI use (i.e. the use of AI by financial sector entities) and external AI use (i.e. the use of AI by individuals outside the financial sector entities affected). In a second step, the risks emerging from internal AI use could be further differentiated according to whether they exist in isolation (idiosyncratic) or only in conjunction with other financial entities (systemic) (figure 2). Also, the risks emerging from external AI use could be further divided into direct risks of external AI use and indirect risks, e.g. effects via credit events of debtors.

Figure 2

Cross-section grouping of AI-related financial stability risks
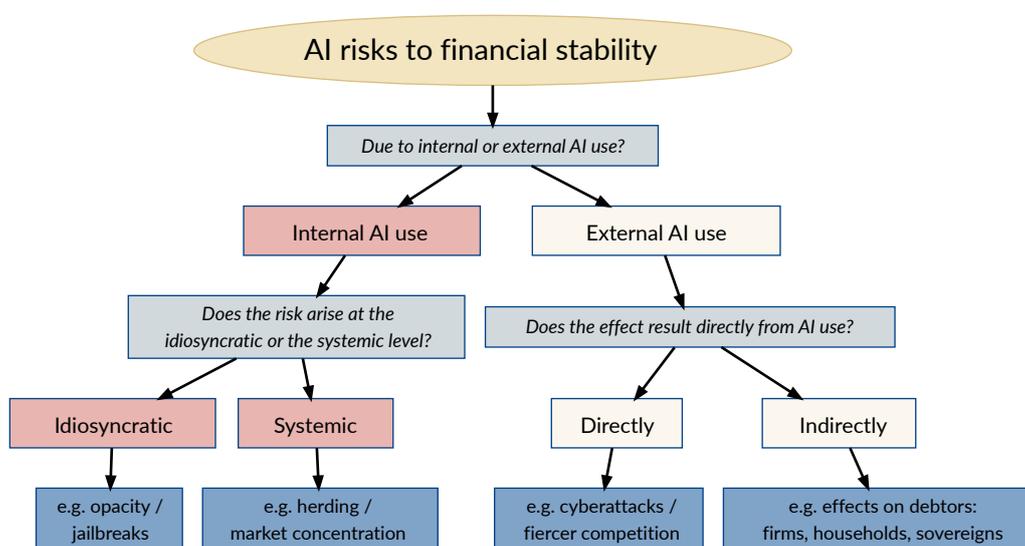
Source: Author's compilation.

The second approach to grouping risks is a scenario-based approach, as recommended by Korinek and Suh (2025). AI scenarios typically differ in terms of assumed AI capabilities without paying heed to the timeframe within which AI reaches these capabilities. However, the speed of AI improvement is crucially important as it determines whether society can adapt to increased AI capabilities or whether sudden AI-related shocks would uproot parts of the financial system.

In the following section, we follow the scenario-based approach and structure AI-related risks to the financial sector on the basis of four AI scenarios. These scenarios (1) to (4) differ in terms of AI capabilities assumed within a timeframe of about five years: (1) moderate AI capabilities, (2) fast and powerful AI, (3) artificial general intelligence (AGI) and superintelligence (SI), and (4) AI winter. We describe the scenarios in more detail below. Under *Mitigation strategies*, we shortly describe how financial institutions and policymakers can address the negative implications the respective scenarios bring about.

3.1 Scenario 1: moderate AI capabilities

History provides numerous examples of how public statements by influential market participants have triggered strong market reactions.[9] In our context, one of the most severe risks to financial markets is market manipulation via deepfakes. Producing high-quality fake videos is already possible by using current AI technology, and it only requires limited hardware and labor. With greater computational power and the dedicated efforts of larger, skilled teams of experts, fake contents could turn into "information bombs" for financial markets. Consider, for example, a fake video showing a private meeting in which a visibly distressed chief risk officer informs top regulators of an unexpected portfolio loss at a major bank. Such an AI-fabricated video could either be released publicly to go viral or, more insidiously, be shared privately with selected large shareholders. The latter approach would make it harder for both regulators and the targeted institution to trace the source of the market reaction. Apart from market manipulation, social hacking is a serious concern. Fraudsters have already been known to use AI to gain access to bank accounts or to attract funds. With stronger AI, its manipulative potential increases, and we might even see a move from social hacking to social engineering, with AI being used to exploit our psychological vulnerabilities in an ever more targeted way.

Mitigation strategies: The best defense against market manipulation is having strong capital and liquidity buffers in place at banks and nonbank financial institutions (NBFIs), thus ensuring that they can withstand sudden market shocks. The expectation of a swift and credible response by a trusted regulatory body could discourage attempts at manipulation. Greater awareness of deepfake technologies, along with AI-driven tools to detect and debunk fraudulent content, would be essential (Aldasoro et al., 2024c).

## 3.2 Scenario 2: fast and powerful AI

Scenario 2 envisions a sudden and significant productivity shock – one in which AI capabilities advance rapidly, thus e.g. enabling autonomous agents to perform a broad range of cognitive tasks. The scale of such a transformation has been compared to the Industrial Revolution (Abis and Veldkamp, 2024). If this transformation occurs within the short time frame of five years assumed here, firms and labor markets will struggle to adapt, disrupting entire industries (Korinek, 2023). In a rapidly changing world, it is important to establish common ground on this major effect. In general, all productivity advances will be distributed across three possible channels (figure 3):

1) **more output with the same input** (e.g. likely in healthcare but unlikely in potato chip production, where saturation is more prevalent)
2) **less input for the same output** (either (a) voluntary, i.e. increased leisure, or (b) involuntary, i.e. unemployment and firm closures)
3) **structural transformation** (i.e. a shift of labor and capital to new sectors)

In the supply-side model of David Ricardo's comparative advantage, adjustments to productivity gains work via the third channel (structural transformation) and the first channel (more output). In the long term, this is also what we see when

Figure 3

Potential consequences of a productivity shock
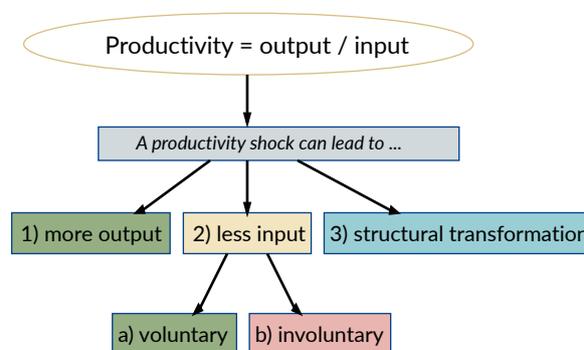
Source: Author's compilation.

[9] E.g. the comments by Saudi National Bank, the top Credit Suisse shareholder, not to raise its stake in March 2023 (Bloomberg, 2023).

studying the Industrial Revolution or any other technological advancement. However, the faster AI technology progresses, the more disruptive the transformation will be, creating layoffs and firm failures where adaptation is not possible. For the financial sector, this could result in surges in credit defaults in both the corporate and household sectors. On top, as the BIS (Aldasoro et al., 2024b) points out, governments would face declining tax revenues while simultaneously incurring higher social security costs due to rising unemployment.

The impact of AI will not be uniform. It will vary across industries, skill levels, labor and capital, and national economies (Gambacorta et al., 2024; Makridis and Hickman, 2023; Korinek and Suh, 2024; Toner-Rodgers, 2024). Some societies will successfully channel the productivity shock into higher output and structural change, while others may struggle to maintain their economic stability. The resilience of a country's financial sector will largely depend on its capacity to adapt to this transformation.

While the IMF's AI Preparedness Index suggests that national rankings closely correlate with GDP per capita,[10] Autonomous (2024) finds that EU banks currently do not have a high degree of AI readiness. A key reason for this may be strict and ambiguous regulations, such as the EU Artificial Intelligence Act and the General Data Protection Regulation (GDPR). These laws impose significant constraints on AI deployment across industries, thereby slowing AI adoption. As a result, major tech firms – including Apple, Microsoft, OpenAI, Meta and xAI – have delayed or indefinitely postponed rolling out certain AI features in the EU due to legal uncertainty. In a globalized economy, this regulatory burden could place European firms at a comparative disadvantage – a gap that will only widen if AI advances rapidly (Misch et al., 2024).

Mitigation strategies: Maintaining adequate capital buffers at banks and NBFIs will help absorb credit losses arising from AI-driven productivity shocks. But policymakers must also strike a balance: While AI safety regulations serve a legitimate purpose, overly restrictive frameworks can limit access to and usage of AI, thus hindering adaptation and productivity, and undermine financial stability.

3.3 Scenario 3: artificial general intelligence or superintelligence

There is no fundamental physical or theoretical limit preventing AI from surpassing human intelligence. Artificial general intelligence (AGI) commonly refers to AI systems that would match or exceed human expert-level performance across all economically relevant cognitive tasks. Superintelligence (SI) refers to even more advanced AI systems that would surpass human intelligence by orders of magnitude – similar to the way humans surpass monkeys and monkeys surpass chickens.

Both subscenarios (AGI and SI) must be considered tail risks. Chow et al. (2024) convincingly argue that if markets expected SI to emerge, interest rates would already be significantly higher today. Their reasoning is straightforward: If such an immensely transformative event were anticipated, consumption smoothing would lead to higher present-day consumption, driving up interest rates – regardless of whether AGI or SI are expected to be benevolent or malevolent.

Nevertheless, recent breakthroughs in AI have led experts to shorten their timelines for potential AGI emergence (Dilmegani, 2025). While the average of experts surveyed predict AGI to be achieved in 2040, which is beyond the five-year horizon of this paper, the average entrepreneur predicts AGI to be achieved in 2030. If AGI were achieved, the appropriate historical analogy would not be the Industrial Revolution but rather the Manhattan Project, implying the increasing dominance of geopolitical over economic considerations (Aschenbrenner, 2024).

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[10] See IMF AI Preparedness Index at https://www.imf.org/external/datamapper/AI_PI@AIPI/ADVEC/EME/LIC. Spearman's rank correlation ρ with GDP per capita is 0.89.

A central issue would be the alignment problem – the challenge of ensuring that both AGI and SI act in ways aligned with human values and goals.

Mitigation strategies: In this scenario, financial stability considerations would be overshadowed by alignment and geopolitical risks. We argue that AGI/SI governance would pose extreme challenges to financial stability institutions as – per assumption – many fields of society would see profound changes. Regulators would need to quickly adapt to these multiple changes, potentially recasting the entire financial stability framework. In a world without banks, for instance, banking laws will be obsolete. But the basic principles of financial stability – societies' faculty to save, to invest and to obtain funding – will continue to need safeguarding. Flexibility and the ability to overcome governmental inertia will therefore be key in this scenario.

3.4 Scenario 4: AI winter

An AI winter traditionally refers to a period in which AI technology fails to translate into substantial productivity gains. Acemoglu (2025) reviews the fraction of tasks which are impacted by AI-induced productivity gains. According to his estimates, total factor productivity across the whole US economy would increase by no more than 0.66% over ten years. This is strongly at odds with predictions made by e.g. leaders in the AI industry (see e.g. Aschenbrenner, 2024). One reason for the difference is that Acemoglu's approach does not account for AI-enabled scientific progress that feeds back to all professions, i.e. he treats scientific output as if it were consumed rather than invested. On the other hand, AI industry leaders might be overly optimistic due to (1) a self-selection bias (conviction leads to work in those fields, not the other way around), (2) an availability bias (their work consists of research and coding where AI is evidently stronger than in other fields) and (3) a confirmation and self-interest bias arising from their job, which includes convincing investors of the speed of AI advancement.

In any case, even a more moderate variant of the AI winter scenario poses potential risks to financial stability: AI might continue to advance but fail to meet investors' return expectations for at least some of the firms invested. Technological breakthroughs do not automatically guarantee economic returns. At the time of writing, the development cost of current AI models is not covered by the subscription revenue *that the models generate*. This means that AI laboratories are betting on current development cost sufficiently reducing future development cost and generating profits in the long term. It is unclear whether the time of harvest will ever come: AI innovations may exhibit characteristics of a public good, e.g. when they are difficult to patent or easily replicable. In such cases, AI could generate broad societal value without offering sufficient private returns to investors.

Geopolitical dynamics may further intensify the vulnerabilities outlined above. As Aschenbrenner (2024) highlights, trained model parameters can potentially be copied, sold illicitly or disseminated widely. Importantly, this outcome is not mutually exclusive with more transformative scenarios, including those described in scenarios (2) fast and powerful AI and (3) AGI/SI.

For the financial sector, such a development is highly relevant as it brings about a sharp correction in the valuation of AI companies and their suppliers, ranging from hardware to energy suppliers. Knock-on effects on the financial sector would be via direct holdings of equity or debt instruments and indirect effects such as the wealth channel. Importantly, the extent to which the financial sector is involved in the AI capital expenditure boom is not clear. The Economist (2025) writes that while the main source of AI funding is internal funding, "capex is growing faster than cashflows [...] indicating a $1.5trn financing gap over the next three years." At present, the funding structure of AI firms suggests that contagion effects via the wealth channel are more important than those via debt financing instruments.

Chart 1 shows the capital expenditure of selected US big techs. In 2025, Google, Meta and Microsoft are expected to spend more than USD 200 billion. These figures and their growth rates are staggering,

but they are indicative only. They overestimate true spending by including all capital expenditure (including non-AI-related capital expenditure), but they underestimate investment in AI as they exclude key players, such as Amazon, xAI and Oracle, as well as R&D expenditures.

Chart 2 highlights the importance of the wealth channel for financial stability, should AI not return big techs' investment. It shows the growing importance of corporate equities in US households' financial wealth (red line) and the combined market capitalization of Oracle, Meta, Google, Nvidia, Amazon and Microsoft as a percentage of US households' total financial assets (blue line). Again, these numbers are indicative only. A substantial part of the market capitalization of these companies is unrelated to AI, and US households do not hold all of it, yet they do hold equities of other AI-related firms. Despite the caveats, economic data point to the importance of the wealth channel: If the price-to-earnings (P/E) ratio) of the three big techs considered in chart 1 plus Nvidia readjusted to the S&P 500 long-term average (holding earnings constant), USD 8.2 trillion would be wiped from the US capital market, which would severely affect US consumers. Put differently, if AI investments fail to yield returns, a severe recession is likely to follow (Smith, 2025).

Mitigation strategy: As with previous scenarios, sufficient capital and liquidity buffers remain the most effective safeguard against systemic risks. Regulators should carefully monitor signs of speculative excess in AI investments to prevent financial instability.[11] Understanding the sources of AI financing is essential as the implications of an AI downturn will depend on whether risk-aware and resilient actors or weaker links within the financial system ultimately fund the AI boom. Financial stability institutions should aim for more clarity on this matter.

Chart 1

Capital expenditure of selected big techs
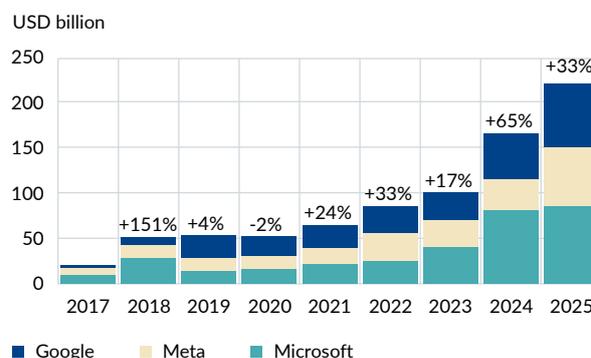
Note: Expected figures for 2025.
Source: Financial Times and Base Hit Investing.

Chart 2

Importance of the wealth channel
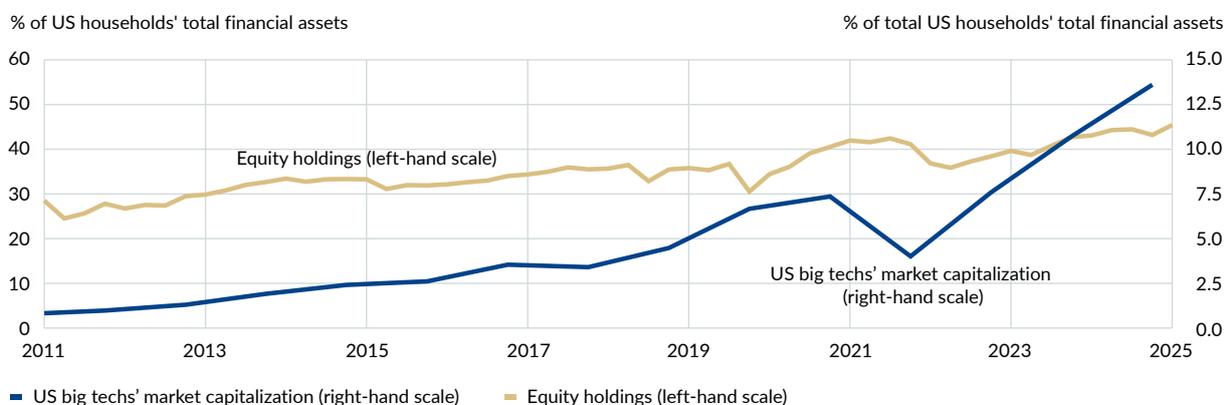
Note: US big techs include Oracle, Meta, Google, Nvidia, Amazon and Microsoft.
Source: Federal Reserve Economic Data and Bloomberg.

[11] See e.g. the USD 30 billion valuation of a company that does not plan to release any products until it develops superintelligence (Wall Street Journal, 2025).

4 Conclusion

As Aldasoro et al. (2024b) note, the financial sector has historically been among the earliest adopters of many new technologies like the telegraph, the computer and the internet. AI is no exception. Given its reliance on data-heavy information processing, financial intermediation is particularly well suited to implementing AI-driven enhancements. However, the risks associated with AI extend far beyond AI applications within the financial sector. AI-related risks to the financial sector can also emerge from AI applications outside the sector. Reputable institutions tasked with maintaining financial stability emphasize model opacity, herding, cyber risk and supplier concentration.

After discussing these risks, we find that taking a too cautious approach to adopting AI might come with its own risk as well. Our scenario approach highlights that a strong pickup in AI capabilities can be disruptive for borrowers and thus for the financial sector as a whole. An overly cautious approach to AI, e.g. via regulation, prevents both the real and financial sectors in an economy from adopting and using AI, thus making AI transformation more painful. A society that adapts to the new technology is in a better position when it comes to channeling productivity growth into higher output or into a shift of output toward other sectors. Ultimately, such a stance will benefit financial stability.

In the scenario in which AI fails to yield the expected returns, we must expect direct losses in the financial sector (although the lack of data makes quantitative estimates difficult) as well as indirect effects, e.g. via the wealth channel.

By way of conclusion, we can say that there is no such thing as the *one* AI risk to financial stability. As we have seen, AI impacts finance through many channels, which are best described as new sources of well-known risks to banks and nonbank financial intermediaries. Among these risks are market risk, credit risk, operational risk and liquidity risk. The fundamental safeguards of financial resilience – adequate capital buffers, ample liquidity and a robust resolution framework – will remain critical. However, as AI adoption expands, the systemic nature of these risks may intensify, with a growing share of the financial system being exposed to simultaneous AI-driven disruptions. Recognizing and addressing these evolving dynamics will be essential to ensuring financial stability in an AI-powered future.

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Biases in Threat-Led Penetration Testing – maintaining the TIBER spirit under DORA

The EU's Digital Operational Resilience Act (DORA) came into force in January 2025. It requires financial entities to perform Threat-Led Penetration Testing (TLPT) to find weaknesses in their cybersecurity. TLPT was previously optional, but now that it is mandatory, there is a risk that it could become a formality that does not provide any real benefits. This article looks at key biases that could make TLPT less effective and outlines strategies to address them.

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Compliance bias and supervisory risk aversion

Financial entities might try to just "pass the test" instead of looking for real cybersecurity weaknesses. Fostering a culture of continuous learning can counter this. TCTs might also feel obliged to overshare information with supervisors, eroding the trust of financial entities. This can be addressed by ringfencing TCTs from supervisors.

Confirmation bias

For conducting TLPT, financial entities might hire vendors that designed their cybersecurity. This could result in confirmation bias as they might not bring a fresh approach and lack an incentive to expose their own shortcomings. Choosing alternative providers and rotating them could help to solve this problem.

Groupthink

Due to their years-long experience with TIBER, stakeholders might believe that established practices are sufficient. This might hinder critical reassessment, stifle innovation and narrow the scope of testing. The issue could be addressed by creating panels that challenge existing methodologies.

Abstract

As cyber threats grow alongside the complexity of digital financial infrastructures, Threat-Led Penetration Testing (TLPT) has become essential for cybersecurity resilience. With TLPT now mandatory under the EU's Digital Operational Resilience Act (DORA), this learning-oriented tool risks becoming a tickbox exercise. Key biases — such as compliance bias, supervisory risk aversion, confirmation bias and group-think — could undermine its effectiveness.

This article highlights these challenges and offers strategies to address them, including fostering trust-based collaboration, diversifying testing vendors and instituting governance safeguards to maintain independence and candor. By preserving the original learning-driven "spirit of TIBER," stakeholders can ensure that TLPT remains a meaningful tool for identifying and addressing vulnerabilities, ultimately strengthening the financial sector's operational resilience to evolving cyber threats.

1 Introduction: TLPT at the crossroads of regulation and resilience

In an era marked by escalating geopolitical tensions and progressive digitization of financial markets that create vulnerabilities to increasingly sophisticated cyber threats, the resilience of financial systems has become a cornerstone of global stability. As digital infrastructures grow more complex and interdependent, the need for robust cybersecurity measures has never been more urgent. Against this backdrop, **Threat-Led Penetration Testing (TLPT)** has emerged as a critical part of the supervisory toolbox, designed to rigorously test the cyber defense capabilities of financial entities through realistic, intelligence-driven cyber-attack simulations.

With the EU Digital Operational Resilience Act (DORA) applying as of January 17, 2025, TLPT has transitioned from a best-practice initiative to a **mandatory requirement** for financial entities providing core financial services and playing a systemic role in their respective markets. This shift marks a significant evolution in the regulatory landscape: The question is no longer whether TLPT should be conducted, but how it should be implemented to deliver meaningful outcomes.

At the heart of TLPT lies the TIBER-EU framework. TIBER stands for Threat Intelligence-Based Ethical Red Teaming and is the methodology that underpins TLPT. In principle, TIBER offers two distinct implementation philosophies: the **catalyst approach,** which emphasizes learning and capacity-building within the tested financial entity, and the **supervisory approach,** which focuses on regulatory assessment and oversight. To date, almost all jurisdictions have favored the catalyst approach, aligning with what is often referred to as the "spirit of TIBER" – a commitment to fostering genuine cyber maturity rather than mere compliance.

However, new challenges arise as TLPT becomes institutionalized under DORA. The transition from a learning-oriented model to one that is mandated by regulation introduces the risk of **biases** – systematic cognitive distortions – that could undermine the effectiveness of TLPT. Such biases – ranging from **compliance bias** to **groupthink** – can subtly shape the design, execution and interpretation of tests, potentially diluting their value.

This article explores these emerging dynamics by
- identifying the key biases that can impact the specifics of TIBER testing under both catalyst and supervisory approaches;
- analyzing how these biases may affect the transition of TIBER to mandatory TLPT under DORA; and
- recommending strategies to mitigate the risks posed by these biases to ensure meaningful TLPT implementation under DORA.

The article focuses on practical design recommendations to ensure that TLPT continues to serve its ultimate purpose: **enhancing the operational resilience of the financial sector in a way that is both rigorous and effective.**

2 Biases and challenges

For the purposes of this article, the **term behavioral bias is employed in a broad sense** to encompass not only formally recognized cognitive biases, as identified in the behavioral sciences (notably in the seminal works of Tversky and Kahneman (1974) and Kahneman (2011)), but also heuristic tendencies and organizational effects frequently observed and discussed in risk management, compliance and governance literature. This includes well-documented psychological constructs such as groupthink, alongside practitioner-recognized phenomena such as compliance bias. These biases, while less formally codified in cognitive psychology, are widely acknowledged in the context of regulatory supervision and operational risk.

In short, we are **focusing on those testing elements that might lead to suboptimal or ineffective outcomes** if they are not given the necessary attention. By adopting this inclusive approach, the analysis aims to capture the full spectrum of human and institutional predispositions that may distort decision-making in the design and implementation of TLPT. As such, one of the most crucial points to consider is the transition from the TIBER-EU framework to mandatory TLPT under DORA. In addition, other biases might hamper the effectiveness of TLPT, which is why associated risks should be mitigated.

- **Compliance bias:** The new supervisory framing under DORA may incentivize financial entities to approach TLPT primarily as a regulatory exercise, fulfilling requirements in a minimal, checklist-driven manner **and prioritizing "passing the test" over genuinely uncovering uncomfortable cyber vulnerabilities.** This has also the "benefit" of reducing the cost for the financial entity. A mere tick-box exercise, potentially ending up in a beauty contest with other financial entities, would severely undermine the original learning-oriented spirit of TIBER. This tendency can be particularly pronounced where financial entities fear that any weaknesses identified might become focal points in future supervisory reviews – especially on site.
- **Supervisory risk aversion:** A complementary dynamic may arise between the TIBER Cyber Teams (TCTs) and the competent supervisory authorities. TCTs are usually located at a central bank and comprise several test managers. These test managers are responsible for overseeing the tests to ensure compliance with regulatory requirements for TLPT. TCTs could be driven by concerns over reputational risk and the possibility of post-incident scrutiny, e.g. facing questions such as: "Why did the authority not act?" They may feel compelled to **share extensive operational findings with supervisory teams,** going beyond what was originally intended under TIBER's catalyst approach. Such defensive regulatory behavior risks eroding the trust and candor of financial entities, essential for meaningful exploratory testing. Ultimately, this would steer TLPTs toward more conservative exercises with onerous documentation requirements. Financial entities – while potentially taking the findings on board to strengthen their cybersecurity – would put a lot of energy into designing documents such as the test summary report in a way to conceal their weaknesses instead of crisply highlighting them. Even worse, facing supervisory risk aversion, financial entities might intensify efforts to comply with the exercise without disclosing any real weaknesses, as described in the above paragraph about compliance bias. Thus, supervisory risk aversion and compliance bias might reinforce each other, creating a vicious circle.
- **Confirmation bias:** Financial entities often rely on **longstanding relationships with trusted vendors,** frequently engaging them for TLPT through existing framework agreements originally set up for

broader cyber resilience projects. While operationally efficient and also easier to conceal in order to preserve confidentiality, this can introduce two critical risks: First, these vendors may naturally concentrate on areas aligned with their previous work, inadvertently overlooking new or uncomfortable weaknesses. Second, having helped build the entities' cybersecurity, they may have limited incentives to uncover deficiencies that could reflect poorly on their own earlier contributions. Thus, established vendor relationships – coupled with a tendency to interpret findings in ways that validate prior efforts – can ultimately undermine the fresh adversarial perspective that TLPT under DORA is intended to achieve.

- **Groupthink:** A key risk in the transition from TIBER to TLPT lies in the emergence of **groupthink among TCTs, financial entities and vendors.** First, the illusion of consensus may arise, as supervisory authorities assume that the relative success of TIBER can be transposed wholesale into a mandatory framework, without critically reassessing its suitability for a legally binding supervisory environment. This tendency is reinforced by overconfidence in established practices: The accumulation of "best practices" under TIBER may create the impression that methodologies are inherently sufficient, discouraging innovation and adaptation to novel threat vectors. In addition, on the side of vendors, the homogenization of perspectives in the threat intelligence and red-team community risks narrowing the scope of testing. If all stakeholders converge on a standardized methodology, blind spots emerge, and TLPT, which is intended to be a genuinely probing test of operational resilience, may devolve into a ritualized compliance exercise.

3 How to address the biases

This section aims at identifying ways to overcome the abovementioned biases to facilitate the effective transition to the new regime of TLPT while keeping all the benefits of the TIBER era.

3.1 Compliance bias

A mindset of superficial compliance, where financial entities tick the boxes without actually addressing the underlying security issues, could result in test designs that aim to avoid failure. Ultimately, such a mindset yields no benefits and is a waste of time and money for both financial entities and the authorities involved.

To mitigate compliance bias, it is crucial for TCTs' test managers and financial entities to foster a **culture of continuous learning and improvement.** On the one hand, test managers should emphasize the importance of TLPT as a tool for enhancing cybersecurity resilience, rather than treating it as just a regulatory requirement. They should also proactively engage with financial entities to understand their expectations regarding TLPT so that they can better address any concerns. Financial entities, on the other hand, should be encouraged to view TLPT as an opportunity to uncover and address vulnerabilities, rather than a hurdle to overcome. A discussion of the cost of actual cyber incidents might also help to highlight the importance of the tests and the risks of not conducting them in the best possible way.

By fostering a **culture of collaboration** in which supervisory authorities emphasize constructive engagement over punitive enforcement and financial entities view TLPT as an opportunity to strengthen – not just demonstrate – their cyber resilience, TLPT can better fulfill its purpose of enhancing cybersecurity across the financial sector.

However, such a culture of collaboration requires **strong mutual trust.** Building trust takes time, but it can be lost quickly, e.g. when identified weaknesses become focal points of future supervisory on-site inspections.

3.2 Supervisory risk aversion

Addressing supervisory risk aversion that can compromise the exploratory spirit of TLPT requires carefully designed structural and procedural measures. One foundational approach lies in the **organizational placement of the TCT** itself. The pressure to pass on entity-specific operational findings is inherently reduced where the TCT is situated entirely outside the competent supervision department – such as within a payments or IT division of the national central bank. This organizational separation creates a natural buffer, mitigating concerns that any weaknesses uncovered will automatically become focal points in future supervisory missions.

However, in many jurisdictions, the TCT is deliberately embedded within (banking) supervision to strengthen integrated oversight. In such cases, **it is essential to ringfence the TCT from ongoing supervision with rigorous internal and external governance safeguards.** This means establishing transparent, formalized protocols that clearly specify **which types of information are shared, with whom and under what circumstances** – for example, delineating what is shared with senior management. Clear operational guidance could also help to avoid reputational damage to TLPT authorities in the event that a financial entity suffers a severe cyber incident during or shortly after TLPT. Making these guidelines explicit for the financial entities that are subject to TLPT would help them to build trust in the confidentiality of the findings. Due to the abovementioned vicious circle, ringfencing is also essential to reduce risks stemming from compliance bias.

Periodic independent insights – such as reviews by internal audit or external assessors – can be instrumental in reinforcing these safeguards and maintaining institutional trust. By scrutinizing whether these "Chinese wall" standards are effectively upheld, they provide both the TCT and supervised financial entities with confidence that exploratory testing will not inadvertently morph into premature supervisory action. Collectively, such measures help preserve the candor and adaptive value that make TLPT a uniquely powerful tool for enhancing financial sector cyber resilience, even within a more formalized supervisory regime under DORA.

3.3 Confirmation bias

While relying on trusted vendors for TLPT can bring operational convenience and continuity, financial entities must recognize and actively counteract the cognitive and structural biases that may arise from longstanding relationships. A robust mitigation strategy should combine several complementary measures.

Diversification of vendors: Rotating or alternating between different providers reduces the risk of entrenched blind spots and introduces new methodological perspectives. Where feasible, selecting vendors with no prior involvement in building the entity's defenses ensures a more independent mindset.

Structured incentive mechanisms: Contracts and evaluation frameworks should explicitly incentivize transparency and thoroughness and reward – rather than punish – vendors for uncovering critical issues. Aligning incentives in this way makes it more attractive for vendors to act as true adversaries. This should also be complemented by devil's advocate reviews – where a member of the control team, which manages TLPT within the tested entity, or the TCT is explicitly tasked with taking a contrarian stance, e.g. for scenarios, to ensure scrutiny in the test. In that context, it is necessary to rigorously enforce the Chinese walls that vendors erect between the teams that provide ongoing support to the financial entity and those responsible for TLPT.

3.4 Groupthink

Mitigating groupthink in the move from TIBER to TLPT requires deliberate safeguards against premature consensus and methodological stagnation. **Independent challenge panels for the TIBER-EU framework** that are composed of academic experts, cyber practitioners from outside the financial sector and inter-

national observers (in particular, from other jurisdictions that have comparable standards such as CBEST – the UK's equivalent of TIBER/TLPT) could periodically review TLPT methodologies to help enhance the framework. Such panels help to ensure that assumptions underlying "best practices" are scrutinized and adapted to evolving threat landscapes. Similarly, **cross-jurisdictional peer reviews** – for example, under the lead of the European Supervisory Authorities – can guard against national or institutional echo chambers.

At the market level, financial entities can counteract homogenization by **rotating threat intelligence and red-team providers** and **explicitly commissioning alternative attacker scenarios.** One year, a TLPT exercise might focus on supply-chain compromise; the next, on insider threats or AI-driven attacks. Vendors could also be required to submit methodological innovation proposals as part of their tender process, ensuring incentives for creativity rather than mere replication. By embedding such mechanisms, TLPT under DORA avoids becoming a ritualized compliance exercise and instead preserves its adversarial and adaptive character.

4 Keeping the TIBER spirit alive

In transitioning from the voluntary, value-driven TIBER tests to more formalized, mandatory TLPT under DORA, the regime stands at a **pivotal juncture.** While the move underscores the growing importance of cybersecurity, there is a risk that TLPT could devolve into a regulatory tickbox exercise or beauty contest unless its foundational purpose is preserved – **empowering financial entities to become more secure, resilient and adaptive** in the face of evolving cyber threats.

Addressing biases such as compliance bias, supervisory risk aversion, confirmation bias and groupthink is critical to ensuring that TLPT delivers value beyond mere compliance. **Supervisors and financial entities must collaborate** to ensure that the focus does not shift to "passing the test." Rather, they need to continue to embrace TLPT as a **strategic tool** for exposing latent vulnerabilities. This article highlights a toolset of possibilities to overcome these biases. But – as for many other topics – it is pivotal that **culture and mindset** among all involved parties during TLPT focus on the ultimate goal of finding weaknesses that a potential attacker could exploit before a real malicious threat actor exploits them. So – hack yourself before others do!

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TIBER-EU Framework

DORA

RTS on TLPT

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Key financial indicators and macroprudential stance

Macroeconomic indicators for Austria

Economic indicators

https://www.oenb.at/en/Statistics/Standardized-Tables/Economic-and-Industry-Indicators/economic-indicators.html

Selected economic measures

https://www.oenb.at/isaweb/report.do?lang=EN&report=7.1

Interest rates and exchange rates

https://www.oenb.at/en/Statistics/Standardized-Tables/interest-rates-and-exchange-rates.html

Consumer prices

https://www.oenb.at/en/Statistics/Standardized-Tables/Prices--Competitiveness/Consumer-Prices.html

Economic sector breakdown of households

https://www.oenb.at/isaweb/report.do?lang=EN&report=801.1.2

Economic sector breakdown of nonfinancial corporations

https://www.oenb.at/isaweb/report.do?lang=EN&report=801.1.1

Property market

https://oenb.shinyapps.io/Immobiliendashboard_en/
https://www.oenb.at/en/Publications/Economics/reports.html?category=63df104a-6070-41fe-ab54-90c4ee84344a&year=

Table A1

Bank lending

	2020	2021	2022	2023	2024	H1 24	H1 25
%							
Loan growth (year on year): households	3.6	5.3	3.5	–1.9	–0.6	–1.4	0.3
Loan growth (year on year): residential real estate	5.5	6.9	5	–2.4	–1.5	–2.5	–0.2
Loan growth (year on year): corporations	5	8.7	9.2	2.7	1.9	1.5	2.3
% of total loans							
Share of variable rate loans (outstanding): households	69	64	59	51	47	49	46
Share of variable rate loans (outstanding): corporations	75	75	75	74	70	72	69
Share of variable rate loans (new lending): households	46	47	59	51	39	40	39
Share of variable rate loans (new lending): corporations	77	86	85	78	69	75	77

Source: OeNB.

Table A2

Debt ratios

		2020	2021	2022	2023	2024	H1 24	H1 25
	%							
Household debt (relative to net disposable income)		95	94	89	81	75	77	74
Corporate debt[1] (relative to gross operating surplus[2])		466	476	457	473	526	507	530

Source: OeNB.

[1] Short- and long-term loans, money and capital market instruments.
[2] Including mixed income of the self-employed.

Indicators for the Austrian banking sector

Structural indicators

https://www.oenb.at/en/Statistics/Standardized-Tables/Financial-Institutions/banks/Number-of-Banks.html

https://www.oenb.at/en/Statistics/Standardized-Tables/Financial-Institutions/banks/banks-business-structure.html

Table A3

Consolidated banking data

	2020	2021	2022	2023	2024	H1 24	H1 25
	EUR billion						
Total assets	1,136	1,197	1,200	1,216	1,265	1,243	1,290
Loans	752	787	814	819	858	844	868
Shares and debt instruments	143	147	155	173	196	181	210
Cash balance and deposits at central banks	164	186	161	152	136	148	136
Deposits by nonbanks	656	686	709	717	751	734	764
Deposits by credit institutions	102	106	106	113	122	129	121
Debt instruments issued	153	152	163	195	216	204	220
Profit	3.7	6.1	9.8	12.6	10.8	7.0	5.0
Operating income	24.8	25.8	31.7	37.0	37.4	18.8	17.8
Operating costs	16.5	16.8	18.9	18.1	18.7	9.6	9.9
Operating profit[1]	8.2	9.0	12.8	18.9	18.7	9.1	7.9
Risk costs	3.7	1.4	2.9	3.9	4.2	0.9	1.1
	%						
Key ratios							
Common equity tier 1 (CET1) ratio	16.1	16.0	16.5	17.6	17.9	17.7	18.6
Leverage ratio	7.4	7.7	8.0	8.4	8.5	8.4	9.0
Return on assets (annualized)	0.4	0.6	0.9	1.1	1.0	1.2	0.9
Cost-to-income ratio	67	65	60	49	49	51	55
Nonperforming loan (NPL) ratio[2]	2.4	2.1	2.1	2.6	3.0	2.7	3.0
Coverage ratio	49	48	46	40	37	40	38
Liquidity coverage ratio (LCR)[3]	181	176	163	172	176	173	176
Net stable funding ratio (NSFR)[3]	n.a.	135	131	134	137	136	136

Source: OeNB.

[1] Difference between operating income and operating costs may not equal operating profit due to rounding errors.
[2] As of 2020, the NPL ratio excludes cash balances at central banks and other demand deposits.
[3] Historical data calculated using the March 2024 banking sample at the highest consolidation level.

Unconsolidated banking data[1]

	2020	2021	2022	2023	2024	H1 24	H1 25
	EUR billion						
Total assets	974	1,024	1,014	1,010	1,034	1,026	1,043
Loans	669	700	730	702	718	717	727
Shares and debt instruments	95	93	104	130	144	133	153
Cash balance and deposits at central banks	123	141	102	98	89	98	83
Deposits by nonbanks	474	496	505	516	529	523	529
Deposits by credit institutions	217	240	213	173	163	173	163
Debt instruments issued	140	140	160	190	206	197	208
Profit	2.7	6.5	5.0	11.0	9.7	10.9	13.0
Operating income	19.3	21.2	23.7	26.5	27.9	14.1	14.8
Operating costs	13.6	14.2	14.0	11.7	14.1	7.3	6.6
Operating profit[2]	5.7	6.9	9.7	14.8	13.8	6.8	8.2
Risk costs	2.5	-0.4	3.6	2.3	2.8	0.7	0.9
	%						
Key ratios							
Return on assets (annualized)	0.3	0.7	0.5	1.2	1.0	1.1	1.3
Cost-to-income ratio	71	67	59	44	51	52	45
Nonperforming loan (NPL) ratio (Austria)	2.0	1.8	1.7	2.4	3.1	2.6	3.0
Coverage ratio (Austria)[3]	68	70	74	62	53	60	54
Liquidity coverage ratio (LCR)	174	171	155	168	174	165	177
Net stable funding ratio (NSFR)	n.a.	129	124	127	129	129	130

Source: OeNB.

[1] As of 2023 and due to reporting changes, comparability to previous years' data is limited.
[2] Difference between operating income and operating costs may not equal operating profit due to rounding errors.
[3] Total loan loss provisions as a percentage of NPLs in domestic business.

CESEE subsidiaries

	2020	2021	2022	2023	2024	H1 24	H1 25
	EUR billion						
Total assets	234	271	279	288	300	303	308
Loans	165	186	184	188	201	202	199
Shares and debt instruments	42	48	49	55	62	59	67
Cash balance and deposits at central banks	22	30	39	39	30	35	36
Deposits by nonbanks	178	205	211	214	221	223	232
Deposits by credit institutions	16	18	18	17	19	21	18
Debt instruments issued	11	15	12	19	19	18	19
Profit	1.9	3.0	5.2	5.5	5.4	3.1	2.0
Operating income	8.2	8.9	12.8	12.7	13.1	6.6	5.7
Operating costs	4.4	4.6	5.1	5.5	5.4	2.8	2.9
Operating profit[1]	3.8	4.3	7.7	7.2	7.6	3.8	2.8
Risk costs	1.3	0.5	1.0	0.3	-0.0	-0.0	0.1
	%						
Key ratios							
Return on assets (annualized)	0.8	1.2	1.9	1.9	1.8	2.1	1.3
Cost-to-income ratio	54	52	40	43	42	42	51
Nonperforming loan (NPL) ratio[2]	2.6	2.2	2.1	2	1.9	1.9	1.9
Coverage ratio	67	64	64	64	64	65	64

Source: OeNB.

[1] Difference between operating income and operating costs may not equal operating profit due to rounding errors.
[2] As of 2020, the NPL ratio excludes cash balances at central banks and other demand deposits.

Financial stress indicators

	2020	2021	2022	2023	2024	H1 24	H1 25
Indicator value							
Austrian financial stress indicator (AFSI)	−0.57	−0.66	0.67	−0.29	−0.59	−0.43	−0.44
Composite indicator of systemic stress (New CISS)	0.03	0.05	0.30	0.12	0.03	0.08	0.02

Source: OeNB, ECB.

Indicators for other financial intermediaries in Austria

Mutual funds

https://www.oenb.at/en/Statistics/Standardized-Tables/Financial-Institutions/Mutual-Funds.html

Pension funds

https://www.oenb.at/en/Statistics/Standardized-Tables/Financial-Institutions/pension-funds.html

Insurance corporations

https://www.oenb.at/en/Statistics/Standardized-Tables/Financial-Institutions/insurance_corporations.html

Overview of the macroprudential stance in Austria

The primary goal of macroprudential supervision is to maintain financial stability and mitigate systemic risks. In Austria, the OeNB pursues this goal in a proportional manner by using the most appropriate tool available. The toolkit consists of warnings and recommendations – a framework based on moral suasion – as well as borrower-based measures. In addition, capital buffers or changes to risk weights can be implemented to strengthen banks' resilience. In its expert opinions to the Financial Market Stability Board (FMSB), the OeNB recommends measures in line with a steady-hand policy, allowing banks sufficient time to adapt. The consistent implementation of macroprudential policy helped Austrian banks keep top ratings throughout the COVID-19 pandemic and has even shielded them from a potential negative impact resulting from Russia's war of aggression against Ukraine. In July 2025, Standard & Poor's confirmed the Austrian banking sector's rating as one of the highest worldwide. Strong capitalization and top ratings reduce banks' refinancing costs and provides households and firms with more stable financing conditions. For an overview of the currently applicable risk warnings and recommendations by the FMSB, see table A7 below and the FMSB's website.

Table A7

Buffer rates and borrower-based ratios currently in force in Austria

As of Oct. 10, 2025	CCoB	CCyB	O-SII buffer	SyRB	sSyRB	BBM (residential real estate)
	%					
Calibration	2.5	0	0.45-1.75	0.5-1.0		Guideline[1]: 90 LTC, 40 DSTI,
					1.0% for CRE exposures	max. maturity of 35 years
Number of banks	All banks	n.a.	7 (consolidated)	12 (consolidated)		All banks
			8 (unconsolidated)	11 (unconsolidated)	All banks	

[1] FMSB Guideline and FMA Circular.

Note: CCoB = capital conservation buffer; CCyB = countercyclical capital buffer; O-SII buffer = capital buffer for other systemically important institutions; SyRB = systemic risk buffer; sSyRB = sectoral systemic risk buffer; BBM = borrower-based measures; LTC = loan-to-collateral ratio; DSTI = debt service-to-income ratio.

Source: OeNB.

The OeNB's semiannual Financial Stability Report provides regular analyses of Austrian and international developments with an impact on financial stability. In addition, it includes studies offering in-depth insights into specific topics related to financial stability.

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