



Financial stability report

DECEMBER 2024

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The return of inflation to its target and the gradual reduction in key interest rates, against a backdrop of moderate growth in France, are favourable factors for the stability of the French financial system. The French financial system has weathered a series of major shocks since 2020 and has adapted to a higher interest rate environment since 2022. The soundness of the banking and insurance sectors, the strong cash positions of non-financial corporations and the high household savings rate, which is still above its pre-Covid average, are still important shock absorbers. However, pockets of vulnerability remain for the most heavily indebted non-financial participants in an uncertain macroeconomic environment.

Renewed uncertainties, associated with the domestic political climate, the international economy and heightened geopolitical tensions, could affect economic activity and markets. Although volatility remains moderate, it increased in the second half of 2024 with brief episodes of market stress. The spike in volatility observed on global markets on 5 August 2024 reflects market participants' heightened sensitivity to uncertainty. The political transition in the United States also raises questions about the economic and trade policies that will be pursued by the new administration, which could exacerbate existing vulnerabilities for the European economy and markets. In France, domestic political uncertainty has led to an increase in the spread between French and German sovereign bond yields, while the spread between French and Italian yields has narrowed. While the French case remains largely idiosyncratic, the convergence of spreads within the euro area reflects investor confidence in the soundness of European institutions.

Based on this assessment of the overall resilience of the French financial system, this report highlights the main cyclical and structural risks to financial stability.

Non-financial participants have adapted to higher interest rates, but some remain vulnerable to a downturn in the macroeconomic environment

Non-financial corporations have generally remained resilient, but vulnerabilities are increasing for the most heavily indebted among them. While interest rates on new business loans have begun to fall, financing costs continue to rise gradually, as borrowers roll over the loans they took out during the period of low interest rates. Despite rising interest expenses, companies generally have cash reserves that are still above their pre-Covid levels. The number of business failures in October 2024 increased, albeit at a slower rate than in June 2024, reflecting in particular a “catching-up” process after the sharp slowdown recorded during the 2020-21 period. The sector therefore retains a good capacity to absorb shocks, but vulnerabilities are still on the rise for the most heavily indebted companies, especially given that the economic climate is no longer conducive to increasing selling prices. The fact that credit spreads on corporate bonds have remained at historically low levels reflects investors' confidence in the financial strength of major French companies. On average, spreads on high-yield bonds fell in 2024, as the specific difficulties of some companies did not affect the market as a whole.

While the correction in the residential real estate market appears to be coming to an end, the commercial real estate sector is continuing to weaken. The decline in interest rates that began in June 2024 led to a rebound in new housing loans and a gradual stabilisation of residential real estate prices in the second quarter of 2024, as households' purchasing power increased. Macro-prudential standards in place and the structural characteristics of household credit also contribute to limit the risks to financial stability posed by this sector. At the same time, the commercial real estate market is continuing to contract due to a combination of structural and cyclical factors, but the French financial system's exposure to these assets remains moderate.

Despite the more volatile environment, the French sovereign debt market benefits from a diversified investor base

Greater political uncertainty and the worsening fiscal outlook have led to a widening of the yield spread between French and German sovereign bonds. Nevertheless, the state's borrowing costs declined between May and December 2024, as the widening of the spread was offset by the fall in inflation and expectations of a more accommodative monetary policy. As sovereign bond yields serve as a benchmark for the rest of the economy, it is

essential to clarify the path of public finances in order to ensure that businesses and households' financing conditions remain favourable.

The French sovereign debt market has a diversified investor base and is fully operational. Demand for French sovereign debt still appears strong on the primary market and liquidity conditions remain very good on the secondary market. The investor base on the French sovereign debt market is diversified, with an increase in the share of non-resident investors since 2022, in the context of the reduction in the size of the Eurosystem's balance sheet. However, increasing political uncertainty is also prompting some investors to adopt a wait-and-see attitude. While there are still large volumes of sovereign debt to be absorbed by the market, in France as in other developed economies, it is essential to maintain the conditions that make it attractive.

Uncertainty could lead to more frequent spikes in market volatility, with the risk of a disorderly correction.

French and European equity markets underperformed their U.S. counterparts in 2024. European equities gained almost 10% between January and mid-December 2024, while their U.S. counterparts returned 28% over the same period. Subdued growth prospects, heightened political uncertainties and fears of an increase in protectionist measures around the world all help to explain the weaker performance of European equities, and French equities in particular. At the same time, U.S. markets remain underpinned by stronger short-term growth expectations.

Market volatility remains limited, but the frequency of stress episodes could increase as traders become more sensitive to macroeconomic and political surprises. The heightened sensitivity of market participants to economic surprises, particularly relating to the US economy, and to political and geopolitical uncertainty could result in further spikes in volatility on equity and bond markets. This risk is compounded by the high concentration of market capitalisation among a small number of stocks, particularly in the United States. Furthermore, the cryptoasset market, which surged in the wake of the U.S. election, is structurally volatile, and its lack of regulation is a risk factor.

The spike in volatility on global markets on 5 August 2024 is a reminder that the vulnerabilities specific to non-bank financial intermediaries (NBFIs) are likely to exacerbate downturns in the financial markets. On 5 August 2024, markets briefly overreacted to U.S. economic data and Japanese policy announcements, leading to an unprecedented spike in the U.S. equity volatility index. These swings were amplified by low liquidity and massive unwinding of highly leveraged positions (carry trades), particularly by hedge funds. These tensions were quickly resolved, but they once again highlighted the vulnerabilities of certain non-bank players. In particular, high leverage and liquidity constraints may force these players to unwind their positions, with the risk of procyclical effects amplifying market stress. These vulnerabilities underscore the need for an appropriate regulatory framework for non-bank intermediaries.

The soundness of the banking and insurance sectors is contributing to resilience

French banks have diversified business models and their solvency and liquidity levels are still well above regulatory requirements. The Liquidity Coverage Ratio (LCR) of French banks is close to 147% at the end of September 2024, well above the 100% required by the prudential authorities, while the share of high-quality liquid assets has remained stable since 2022. The banking sector also benefits from high and generally stable capital ratios, which contribute to its resilience. French banks have diversified business models, which contribute to their stability, even if their profitability remains lower than that of their euro area peers, due in particular to slower growth in interest income due to the predominance of fixed-rate loans.

Despite a slight increase, French banks' credit risk remains under control. The non-performing loan ratio in their balance sheets stood at 2.61% in the third quarter of 2024, up slightly on 2023 but still close to historic lows. The six major French banking groups have limited exposure to French government debt, which accounts for 3.3% of

their total assets and 71% of their Common equity Tier 1 (CET1) capital. Their financing conditions on the markets are stable, with contained credit risk premia.

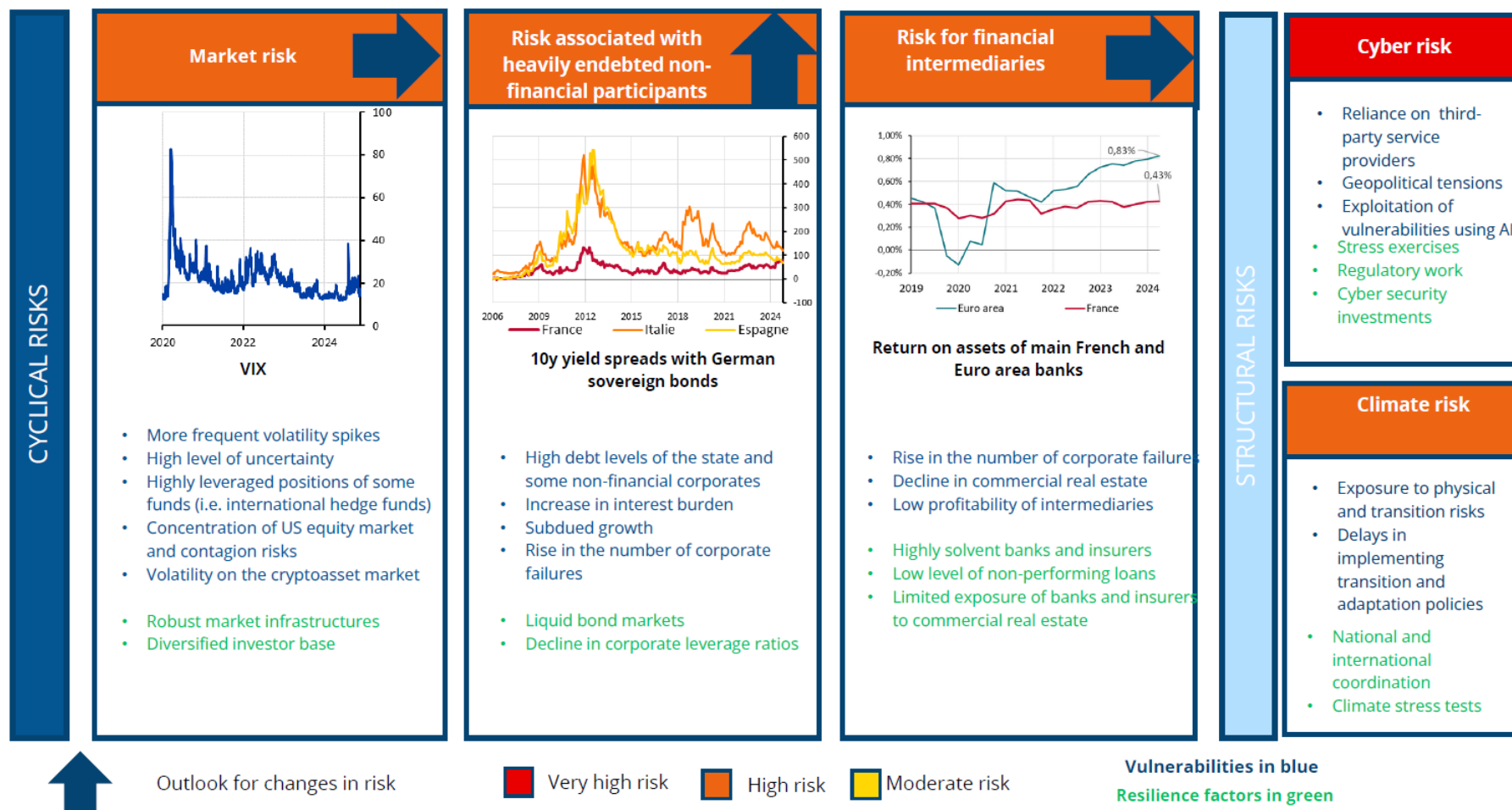
Insurers have also maintained a robust balance sheet structure. Insurers' holdings are concentrated in high-quality, liquid assets, while their exposure to commercial real estate remains limited. However, insurance companies may find it difficult to reinsure certain extreme risks against a backdrop of increased geopolitical risk and more frequent and severe natural disasters.

Cyber and climate risks are better identified but financial institutions must continue to take actions to address these risks

The number of cyber attacks has stabilised, including in the financial sector, but risk remains high in a difficult geopolitical environment, resulting in a variety of hybrid threats. Phishing attacks remain the main threat for all sectors, while the development of artificial intelligence tools is likely to create new vulnerabilities. The Digital Operational Resilience Act (DORA), which will come into force in January 2025, will enhance the resilience of financial institutions to cyber threats by requiring, among other things, formalised risk management and better coordination of responses to incidents. As regards supervision, the European Central Bank (ECB) also organised its first cyber stress test from January to July 2024 to gauge how banks would respond to and recover from severe but plausible cybersecurity incidents.

The climate and environmental crisis requires continued international coordination. The Central Banks and Supervisors Network for Greening the Financial System (NGFS) is actively pursuing its work, which is contributing to a better understanding of the effects of climate change and the biodiversity crisis on financial stability. The Banque de France and the *Autorité de contrôle prudentiel et de résolution* (ACPR) are also fully committed to the various international initiatives on climate risk. However, the change of administration in the United States raises questions as to whether multilateral work in this area can continue, without calling into question the efforts of the NGFS coalition of the willing.

Assessment of Risks to the French Financial System - Dec. 2024



Against a backdrop of gradual disinflation, the ECB Governing Council cut its key rates three times in the second half of 2024, following a pause in July and August. On 12 December 2024, the Governing Council lowered its three key interest rates by a further 25 basis points, bringing the cumulative reduction to 75 basis points between September and December 2024. Accordingly, the interest rates on the deposit facility, the main refinancing operations and the marginal lending facility have been 3.00%, 3.15% and 3.40% respectively, since 18 December 2024. As announced on 13 March, the spread between the deposit facility and the main refinancing operations facility was reduced from 50 to 15 basis points with effect from 18 September 2024. The Governing Council stressed that these decisions were based on its updated assessment of the inflation outlook, the underlying inflation dynamics and the strength of the monetary policy transmission. It reiterated its determination to bring inflation back to its target of 2% over the medium term, while maintaining a data-dependent approach to assessing the appropriate level and duration of this stance.

Furthermore, the Governing Council confirmed that the asset purchase programme (APP) portfolio is continuing to decline at a measured and predictable pace, with the Eurosystem no longer reinvesting principal repayments on maturing securities as of July 2023. The Eurosystem also confirmed the reduction of the pandemic emergency purchase programme (PEPP) portfolio by an average of EUR 7.5 billion per month in the second half of 2024, while continuing to show flexibility in reinvestments, discontinuing reinvestments under the PEPP completely as of 18 December 2024. The Governing Council will continue to regularly assess the contribution of the Targeted Longer-term Refinancing Operations (TLTRO III) to its monetary policy stance as they are repaid by the banks.

On 27 September 2024, the Governing Council adopted a revised version of the emergency liquidity assistance (ELA) agreement containing more detailed information on the key elements taken into account when providing emergency liquidity. In particular, this new version introduces compliance with the leverage ratio as a solvency criterion for the provision of emergency liquidity to credit institutions. It also introduces the key principle that ELA collateral should sufficiently protect the national central bank against risks emerging from ELA operations.

As regards macroprudential policy in France, the measures in place have been maintained in the second half of 2024 as recommended by the ECB Governing Council.¹ The rate of the countercyclical capital buffer (CCyB)² was maintained at 1%, as was the sectoral systemic risk buffer (sSyRB), set at 3% of the risk-weighted exposure of French systemic banks to heavily indebted French companies,³ should this exposure exceed 5% of their Tier 1 capital.⁴ The legally binding standard⁵ for granting residential housing loans remains in force, including the three technical adjustments introduced in December 2023.⁶ This standard imposes a maximum debt-service-to-income ratio of 35% (including borrower's insurance) and a maximum repayment period of twenty-five years (or twenty-seven years in certain specific cases⁷), with a flexibility margin of 20% of the banks' quarterly new lending.⁸ It has helped to limit excessive debt repayment periods and debt service-income ratios since its introduction, without significantly affecting new housing loans or residential real-estate prices since interest rates began to rise.

The banking package transposing the finalisation of the Basel III framework into European Union law was published in the Official Journal on 19 June 2024, in the form of a regulation (Regulation 2024/1623), known as CRR3, and a directive (Directive (EU) 2024/1619), known as CRD6. They came into force on 9 July 2024, twenty days after their publication. Most of the provisions of CRR3 will apply from 1 January 2025. As regards the rules

¹ [Governing Council statement on macroprudential policies](#)

² [Notice relative au coussin contracyclique – HCSF décembre 2023](#)

³ In other words, those whose total debt-to-EBITDA ratio at the highest level of consolidation is strictly higher than 6 or negative.

⁴ See explanatory note: [Modalités d'adoption du coussin pour le risque systémique sectoriel – HCSF août 2023](#)

Decision D-HCSF-2021-7

⁶ [231204HCSF_CP_en.pdf](#)

⁷ This flexibility applies to loans where there is a lag between the disbursement of the loan and the date when the borrower(s) can move into the property. This applies in particular to the purchase or construction of a new dwelling and those related to purchases of existing dwellings giving rise to a work programme for which the amount represents at least 10% of the total cost of the transaction.

⁸ 70% of this flexibility margin must be reserved for buyers of primary residences, of which 30% must be reserved for first-time buyers. Flexibility is applied in the event that one of the two allocation limits or the total flexibility margin is exceeded in a single quarter, with compliance with these limits on overall new lending for that quarter and the following two quarters constituting appropriate and sufficient corrective action.

for calculating capital requirements for market risk (also known as the 'Fundamental Review of the Trading Book' or 'FRTB'), on 24 July 2024 the European Commission adopted a delegated regulation to postpone the date of application of the law in the European Union by one year, to 1 January 2026. This postponement takes into account the competitive nature of these activities and the delay in implementing these requirements in the main countries with a large number of banks operating internationally.

Following the adoption of a position by the European Parliament at first reading in April 2024, on 19 June 2024 **the Council agreed on a negotiating mandate on the review of the crisis management and deposit insurance (CMDI) framework for banks**. It also represents a new step towards the completion of the Banking Union.

With the current momentum towards strengthening the Capital Markets Union, several high-level expert reports have been submitted to the authorities. These documents set out recommendations for deepening financial integration within the European Union, with a view to creating a Savings and Investments Union. These reports provide policymakers with helpful avenues for thought as they develop future regulatory and structural initiatives for the European Union's capital markets. In particular, the three reports call for a reform of the European securitisation framework in order to develop its use, free up bank capital and improve financing.

On 9 October 2024, the European Commission launched a public consultation on the current EU securitisation framework. This approach is in line with the Eurogroup statement of March 2024⁹ and the European Council conclusions in April 2024 on the Capital Markets Union,¹⁰ which highlighted the need to relaunch the European securitisation market.

The Digital Operational Resilience Act (Regulation (EU) 2022/2554) will come into force on 17 January 2025. Following the publication of the delegated regulations setting out the conditions for their implementation in February and March 2024, the ACPR organised two conferences (banking and insurance) in which it presented the new regulations and the authorities' expectations, particularly in terms of reporting.

⁹ [Statement of the Eurogroup in inclusive format on the future of Capital Markets Union - Consilium \(europa.eu\)](#)

¹⁰ [euco-conclusions-27062024-en.pdf \(europa.eu\)](#)

Box 1.1: Eurosystem response to the European Commission's public consultation on macroprudential policies for non-bank financial intermediation

By Inès Rispal

In May 2024, the European Commission launched a [public consultation](#) on macroprudential policies for non-bank financial intermediation (NBFi), to which the Eurosystem submitted a joint response.¹¹ In its feedback, the Eurosystem stressed the importance of NBFIs to the development of a savings and investment union and highlighted the vulnerabilities¹² connected with the NBFi sector, which could create or exacerbate systemic risk.

The joint response called for a macroprudential approach to the oversight of the NBFi sector and made six recommendations. To begin with, (i) all measures and recommendations adopted by European and international bodies should be implemented in a harmonised manner across jurisdictions. These reforms should be (ii) supplemented by new macroprudential tools to ensure a more effective response to the risks connected with non-banks. In addition, (iii) the introduction of system-wide stress tests would offer a way to improve supervision and enable a deeper understanding of the NBFi sector. The Banque de France and the *Autorité de contrôle prudentiel et de résolution* (ACPR – Prudential Supervision and Resolution Authority) are working with the *Autorité des marchés financiers* (AMF – Financial Markets Authority) to prepare a system-wide stress test for France. This innovative exercise will also provide institutions with access to new data that are critical to assessing the NBFi sector. Currently significant gaps persist, highlighting the need (iv) to introduce measures to facilitate access to data and enable them to be shared by institutions and jurisdictions. All these initiatives need to be accompanied by (v) regulatory changes where needed and (vi) should be set within a revised governance framework that promotes coordinated implementation of measures and reciprocity.

¹¹ The response is available on the European Central Bank's website ([Eurosystem response to EU Commission's consultation on macroprudential policies for non-bank financial intermediation \(NBFi\)](#)). Also posted on the site is a blog article co-written by senior directors of the Banque de France, the Central Bank of Ireland and the European Central Bank ([Financial intermediation beyond banks: taking a macroprudential approach](#)).

¹² These include risks related to liquidity, excessive leverage and interconnectedness across the financial system.

1. Cross-cutting analysis of vulnerabilities

1.1 Despite the presence of renewed uncertainties, monetary easing is contributing to the stability of the French financial system

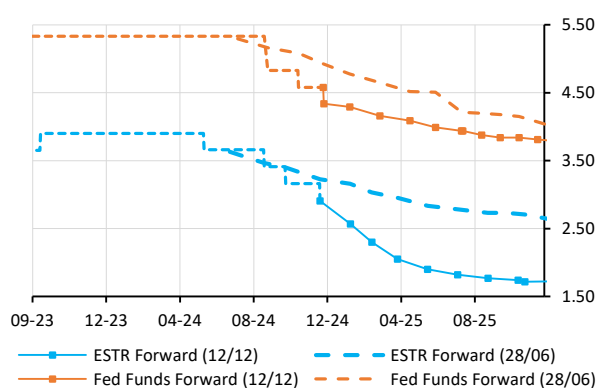
While inflation has reached its target, the main central banks continue to ease monetary policy, which translates into a gradual improvement in financing conditions

The economy's ongoing resilience is contributing to the stability of the French financial system, despite the modest short-term growth outlook. Inflation continues to come down and is expected to ease to 2.4% in 2024 and 1.6% in 2025 for France (Banque de France forecasts, December 2024), from 4.3% in September 2023. The return of inflation to its target is set to occur without a recession, with growth forecast to stay moderate but positive, at 1.1% in 2024 and 0.9% in 2025. Compared with the June forecasts, growth is now expected to be stronger in 2024 (0.8% in the June forecast) and weaker in 2025 (1.2% in the June forecast). From 2025 onwards, it will be lifted by a gradual pick-up in household consumption, supported by improved real wage purchasing power and, starting in 2026, a recovery in private investment. However, the risks to these growth forecasts are tilted to the downside. Responding to the decline in inflation, the ECB lowered its policy rates by 100 basis points (bps) between June and December 2024, helping to foster a macroeconomic environment broadly supportive of financial stability. Market participants expect more cuts in 2025 (Chart 1.1).

Recent rate cuts allow for an easing of financing conditions but previous hikes continue to weigh on corporate and household balance sheets. The average lending rate on new loans in France continues to come down steadily. In October 2024, the average lending rate on new housing loans (excluding renegotiations) stood at 3.51%, compared with 4.04% at the end of 2023 and 1.07% going into 2022. The average lending rate on new bank loans to non-financial corporations (NFCs) was 4.32% in October 2024, after falling over the course of 2024 from 4.86% in December 2023. Despite this decrease, financing costs for the real economy remain elevated compared to previous years, as the pass-through of lower interest rate to participants' balance sheets is gradual. Financing costs continue to display significant inertia because financing is largely at fixed rates, and older low-rate loans are being replaced by new more expensive debt (Chart 1.2).

Chart 1.1: Overnight interest rate expectations for the euro area and United States

x: time/y: % rate

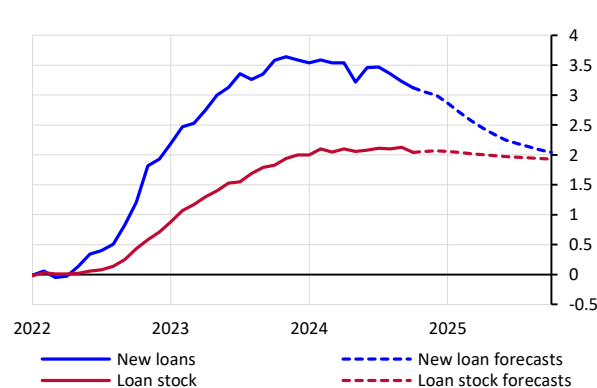


Source: Bloomberg.

Note: The ESTR is the euro area's main overnight benchmark rate. The Effective Fed Funds Rate is the interest rate target followed by the US Federal Reserve.

Chart 1.2: French NFC lending rates and projection (December 2021 = 0)

x: time/y: % rate



Sources: MIR data covering approximately 70% of outstanding bank loans, Banque de France calculations.

Notes: Normalised interest rate series, December 2021 = 0. Lending rates on new loans are projected based on market forward rates and an econometric estimate of the relationship between market rates and bank lending rates. Repaid loans are assumed to be fully renewed at these new rates. Observed rates through to October 2024, projections thereafter.

A more uncertain environment could interact with and amplify existing vulnerabilities

Factors of uncertainty are multiplying, particularly in terms of economic policies. With the financial system being hit by a string of unprecedented crises in recent years, from the Covid pandemic to geopolitical upheavals, an analysis of uncertainty offers a way to better capture the multifaceted nature of these events by encompassing different components of financial stability, including macroeconomic, policy and geopolitical aspects. Uncertainty can be measured using different indicators and a variety of approaches (Box 1.2). Economic policy uncertainty in Europe, as measured by the Economic Policy Uncertainty (EPU) index, is now above its long-run average, with elevated readings for France and Germany (Chart 1.3). France's deviation from the European average may be partly attributed to increased policy uncertainty that arose in the wake of the June 2024 elections and that has persisted in the context of the budget process, and to structural issues linked to productivity and subdued growth, which are clouding short-term visibility. The Banque de France's monthly business surveys likewise point to heightened uncertainty. Increased uncertainty correlates with higher market volatility, although volatility has risen only slightly compared to developments observed during recent crises, such as the Covid-19 pandemic (Chart 1.4).

Uncertainty can affect the real economy and financial stability. By undermining demand and discouraging investment and new loan production, uncertainty could pose a downside risk to growth and could generate volatility on markets. For example, tax uncertainty might prompt corporates and households to postpone investment decisions in favour of saving, even though the French household savings rate remains above its pre-Covid level (above 18% in 2024). Uncertainty also poses a risk to financial stability through various channels, starting with the credit channel, as increased vulnerabilities within the real economy could exacerbate the risk of failures; the market channel must also be considered, as heightened uncertainty could trigger higher volatility and disorderly corrections in equity and bond markets. Furthermore, the effects of uncertainty could spread across borders through financial interconnections, with losses in some markets triggering forced asset sales in others.

The change of administration in the United States raises concerns about the future direction of economic and trade policies. The possibility of a unilateral increase in tariffs by the United States poses a risk of a trade war and further fragmentation, which could hamper global growth. Such a scenario would particularly affect economies most dependent on the US market for their exports. The risk of trade tensions thus implies a downside risk to economic activity in Europe and France, the extent of which is difficult to gauge, owing to the triple uncertainty about whether these tensions will be triggered, their scale and their potential impacts.¹³ Meanwhile, the extent to which future fiscal policies will be expansionary will affect the level of US growth and government deficits. Against this background, markets expect growth momentum to strengthen in favour of the United States over Europe, along with upside inflationary risks in the United States, as reflected in stronger performances by US equities, dollar appreciation relative to the euro, and divergence in US and euro area interest rates at the close of 2024. These expectations could shift rapidly depending on the measures actually implemented, especially since some announced migration or trade policies could also slow US growth, which would lead to increased volatility on the markets. An expansionary US fiscal policy would also exert upward pressure on long-term interest rates, with potential spillovers to European rates (see Section 1.3).

Other external sources of economic uncertainty surround the outlook for France. Slower Chinese growth and heightened competition from domestic players in connection with the country's self-reliance policy could particularly affect entities most exposed to China. At the same time, uncertainty persists about the effectiveness of the monetary easing measures announced in the second half of 2024 and about the possibility of additional fiscal stimulus measures in China, which would have a positive impact on growth. Within Europe, policy uncertainty in Germany is complicating the execution of economic and fiscal reforms, at a time when the country is grappling with recession and structural challenges. Implementation of a more expansionary

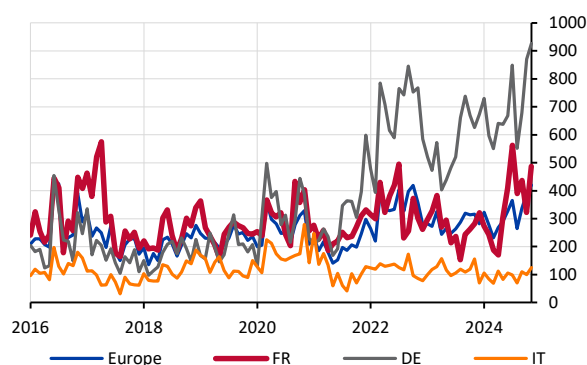
¹³ Banque de France, Macroeconomic projections – December 2024 (Box 2).

policy in Germany, constrained by constitutional rules, would likely buoy demand and stimulate domestic and European growth.

Rising geopolitical tensions, exacerbated by Russia's ongoing war in Ukraine and the deteriorating situation in the Middle East, continue to threaten the economy and financial markets. Commodity prices surged in the wake of the Covid crisis before peaking in 2022 after Russia invaded Ukraine. Following a partial correction, as demand concerns (particularly in China) outweighed supply-side pressures, commodity prices stabilised well above pre-Covid levels, in a context of persistent geopolitical tensions.¹⁴ The Bloomberg Commodity Index (BCOM), which measures price trends in a panel of commodities, stabilised below 100, after peaking at more than 130 in May 2022, versus an average of 88 between 2016 and 2019. Volatility was relatively low on equity markets in 2023 and 2024 and did not reflect the rising geopolitical uncertainties, but tended to spike in response to specific events, such as the war in Ukraine¹⁵ (see Section 1.3). Some strategic sectors, such as semi-conductors, which are heavily concentrated in South-East Asia, could be especially hard hit by geopolitical tensions and rising protectionism. A further deterioration of the international environment, for example due to escalating conflict in the Middle East, new developments in Ukraine, or a trade war, could therefore trigger abrupt and potentially longer lasting market movements, which could revive inflationary pressures and affect both the real economy and financial intermediaries.

Chart 1.3: Economic policy uncertainty in Europe, Germany, France and Italy

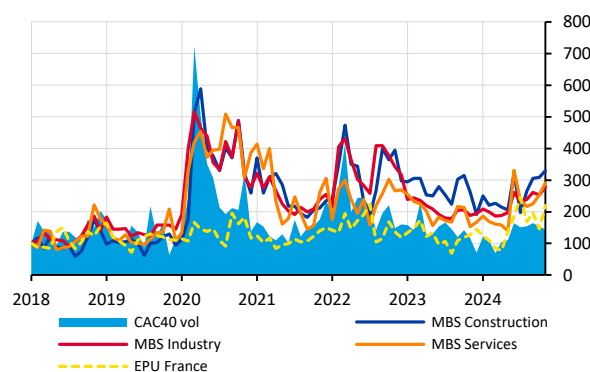
x: time/y: Economic Policy Uncertainty index



Source: Baker, Bloom and Davis (2016).
Most recent value: November 2024.

Chart 1.4: CAC 40 volatility compared against uncertainty in the monthly business surveys

x: time/y: index, January 2018 = 100



Sources: Banque de France; Bloomberg, Baker, Bloom and Davis (2016).
Most recent value: November 2024.
Note: The three SBC curves show uncertainty indicators taken from the comments in the Banque de France's monthly business surveys.

¹⁴ World Bank, *Commodity Markets Outlook*, April 2024.

¹⁵ See *Financial Stability Report*, June 2024.

Box 1.2: Role of uncertainty indicators in the assessment of financial stability

By Gabriel Chemain and Dalia Ibrahim

A series of crises, some overlapping (Covid, energy, inflation, environment), has propelled the concept of uncertainty to the forefront of research on financial stability. These various events have highlighted the limitations of conventional analytical tools and the difficulties they face in forecasting outcomes.

The indices used to measure global uncertainty have generally been responsive to significant economic or geopolitical events, such as the 2008 financial crisis, the euro area debt crisis and the recent international tensions (Chart 1.5). There is a strong correlation between periods of heightened financial market volatility, measured by indicators such as the VIX, and peaks in uncertainty, as reflected in the Geopolitical Risk (GPR) index, the Economic Policy Uncertainty (EPU) index, and the Real Economy Uncertainty (REU) index.¹⁶ The various indices therefore appear to respond to each other, highlighting the multidimensional nature of uncertainty and the close interconnectedness of its components. However, these indicators may experience periods of significant disconnection, when market volatility remains low despite increasing economic or geopolitical uncertainty (Chart 1.6).

While these indices are useful when attempting to gauge uncertainty and capture participants' expectations, they suffer from biases linked to how they are constructed and the data on which they are based. To begin with, these indices are often one-dimensional and centred on specific markets, such as the VIX for US equity markets or the VSTOXX for European markets, and may overlook some participants or less advanced economies, where uncertainty and risk dynamics may vary considerably. These financial indicators may also be distorted by technical factors, as illustrated by the record high on the VIX on 5 August 2024 due to the weak liquidity of underlying options. Meanwhile, sentiment indices such as the EPU and GPR rely on limited and predominantly English-language media coverage, which may lead them to exaggerate or understate the perception of real risks and overlook regions or risks that receive the least coverage or that are furthest from North America. Although regional versions of the GPR and EPU track keywords related to monitored countries, they remain subject to geographical biases, as they rely on the same newspapers used to construct the global indices. Via these indicators, uncertainty is thus approached primarily from the perspective of the English-speaking world.

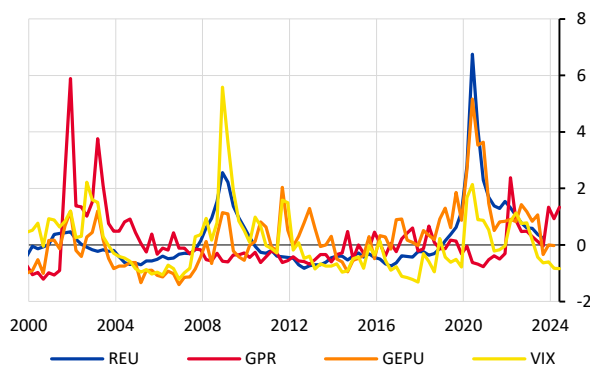
Given these limitations, an approach better tailored to specific geographical and sectoral characteristics would provide a more accurate and comprehensive perspective on uncertainty. Some indicators are already available. For example, the monthly business surveys carried out by the Banque de France with business leaders offer an indicator with national reach. Other innovative approaches are being taken to rethink these indicators to alleviate some of their biases. For example, approaches are being explored for the GPR using non-English newspapers (Bondarenko et al., 2023) or that seek to identify the source of risks by geographical region (Alonso et al., 2024).

The rise of artificial intelligence (AI) also presents new opportunities by enabling the analysis of massive data volumes in real time. In the future, AI could play a pivotal role in identifying emerging trends and non-linear patterns of uncertainty, equipping analysts with new forward-looking tools.

¹⁶ The GPR index developed by Dario Caldara and Matteo Iacoviello reflects the tally of references to geopolitical risk in ten English-language newspapers since 1985. The EPU index developed by Scott R. Baker, Nicholas Bloom and Steven J. Davis measures economic uncertainty by tracking the use of keywords in ten leading English-language newspapers. Despite the limits and biases resulting from the way it is constructed, it offers a synthetic and broadly responsive indicator that may provide useful insights for economic analysis. The REU index is one of the macroeconomic and financial uncertainty indices proposed by Sydney Ludvigson (2015, 2021) and uses advanced statistical methods applied to macroeconomic and financial data. The indices are updated twice annually and cover changes in uncertainty in economic and financial sectors.

Chart 1.5: Selection of global risk indices

x: time/y: standardised indices



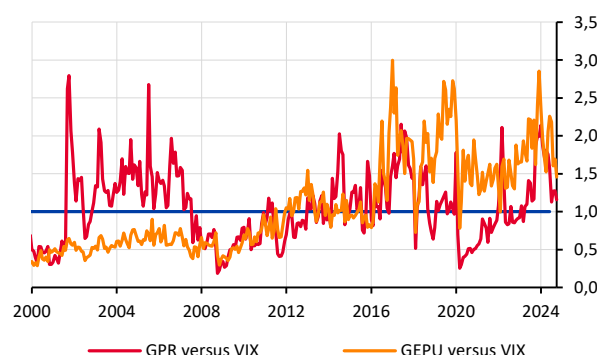
Sources: IMF, Baker, Bloom and Davis (2016), Caldara and Iacoviello (2022), CBOE.

Note: The indices have been standardised.

Most recent value: November 2024 (VIX and GPR); October 2024 (GEPU); June 2024 (REU).

Chart 1.6: Global economic and geopolitical uncertainty as a ratio of implied stock market volatility, 2000-24

x: time/y: normalised ratios



Source: Authors' calculations.

Note: Monthly ratios of the global EPU index and GPR index as a ratio of actual volatility recorded by the VIX. Ratios are normalised to have an average of 1 over the period.

Guide: If the curve is above 1 (shown by the blue line), this shows that the uncertainty indices (GPR and GEPU) are high relative to market volatility (VIX). Conversely, if the curves are below 1, uncertainty is weak relative to market volatility.

Most recent value: October 2024.

1.2 Non-financial participants have adapted to a higher interest rate environment, but vulnerabilities persist against a backdrop of uncertainty

French companies have shown resilience to higher rates, but some are now more vulnerable to a new shock

Past interest rate increases continue to be passed through to the balance sheets of French non-financial corporations (NFCs). The interest coverage ratios of French and European NFCs continue to deteriorate (Chart 1.7). However, the decline has slowed since the fourth quarter of 2023, indicating that monetary policy transmission through the corporate balance sheet channel has plateaued. As interest rates on new loans to NFCs start to ease, financing costs are expected to stabilise in 2025 under the effects of two countervailing forces: on the one hand, the cost of floating rate debt is set to decline owing to the forecast decrease in short-term interest rates; on the other hand, maturing debt at low fixed interest rates will be rolled over at higher interest rates. French NFCs have a structurally lower interest coverage ratio than European NFCs due to the share of interests linked to intragroup lending by multinationals,¹⁷ which is relatively large as a proportion of income. France's coverage ratio was 4.9 in December 2018, compared with 25.2 for Spain, 27.9 for Germany and 31.1 for Italy. In June 2024, the interest coverage ratio of French NFCs was just 2.2, compared with 7.5 for Spain, 17.9 for Germany and 16.3 for Italy.

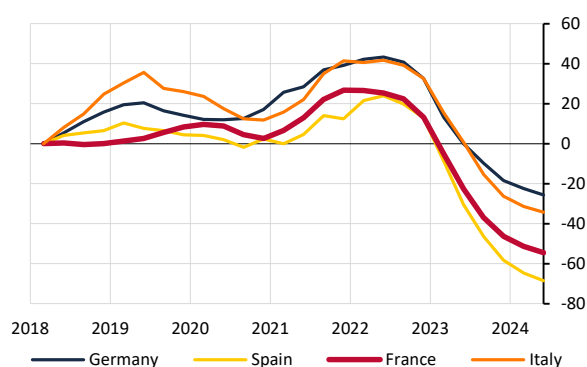
French NFCs still have substantial cash buffers. NFC cash holdings (bank deposits + money market fund shares), measured as a percentage of GDP, are higher than they were before Covid (30% in the second quarter

¹⁷ M. Gueuder and S. Ray (2023), "Rise in interest rates: European companies will not be affected at the same pace", *Bulletin de la Banque de France*, No. 243, Banque de France, June.

of 2024 compared with 28% at the end of 2019). However, NFC cash has fallen back to the level it would have reached had the trend observed over 2006-19 continued (Chart 1.8).¹⁸ Amid rising uncertainty, firms may feel that they require structurally higher precautionary cash holdings than during the 2006-19 period and interpret this return to the trend as a deterioration of their cash position (see Buthiot et al., 2024).¹⁹ The shift from overnight deposits to fixed-term deposits or interest-bearing financial instruments also partly offsets the effects of higher interest rates on the deterioration in firms' repayment capacity. However, pockets of vulnerability remain, and there has been a small uptick in the proportion of large firms with degraded repayment capacity and liquidity (see Chapter 2, June 2024 FSR).

Chart 1.7: Interest coverage ratio, cumulative change, of European NFCs

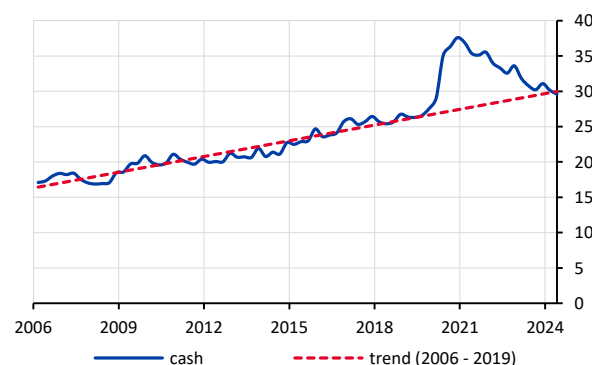
x: time/y: cumulative growth rate (reference: March 2018)



Note: The interest coverage ratio is calculated by dividing NFC operating earnings (annualised) by the interest payable by NFCs (annualised). The change in the ratio is measured from Q1 2018.
Source: Quarterly Sectoral Accounts.
Most recent value: June 2024.

Chart 1.8: Cash holdings

x: time/y: (bank deposits + money market funds)/as a % of GDP



Scope: Non-financial corporations.
Source: Monetary statistics (DSMF) and securities statistics (DBdP); national accounts (INSEE).
Most recent value: June 2024.

However, large French companies with the greatest exposure to higher interest rates are protected by their balance sheet structure. While French companies as a whole appear to be structurally more indebted than their European peers,²⁰ large French companies are relatively protected from disorderly deleveraging. The ratio of debt to total assets for listed French companies was relatively low in the mid-2010s (Chart 1.9). It then rose significantly in 2019 and 2020 owing to the Covid crisis. By the end of 2023, the ratio was back at approximately 30%, on a par with the United Kingdom and slightly lower than Spain, Italy and Germany (around 33%). The most heavily indebted companies could face difficulties due to significant refinancing needs, which might force them to liquidate assets. However, this risk appears to be limited: companies with a large proportion of financial debt maturing in less than one year are also less highly leveraged on average (Chart 1.10), including within the same sector of activity. Within a given sector, a company whose short-term debt is 1 pp higher than its peers also has, on average, a 0.3 pp lower leverage, although this relationship is not linear: among companies with a share of short-term debt below 30% (the median), a share of short-term debt higher by 1 pp is associated, on average, with a 0.81 pp lower leverage.

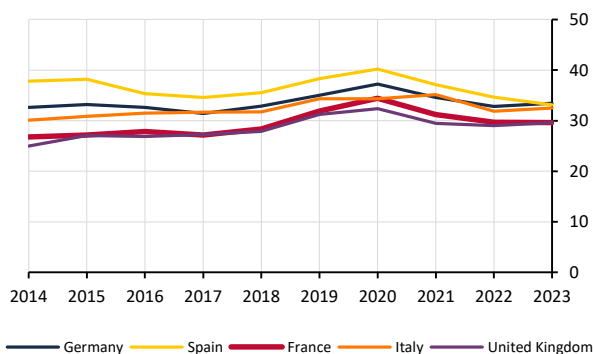
¹⁸ *Situation financière des sociétés non financières*, Banque de France, October 2024.

¹⁹ Buthiot E., Charlot L., Duquerroy A. and Lé M. (2024), "Companies' cash position: understanding the gap between aggregated data and perceptions", *Eco Notepad*, Banque de France, November.

²⁰ [Debt ratios by institutional sectors - international comparisons \(banque-france.fr\)](https://banque-france.fr/debt-ratios-by-institutional-sectors-international-comparisons)

Chart 1.9: Average leverage of listed NFCs

x: time/y: debt to total assets as a %



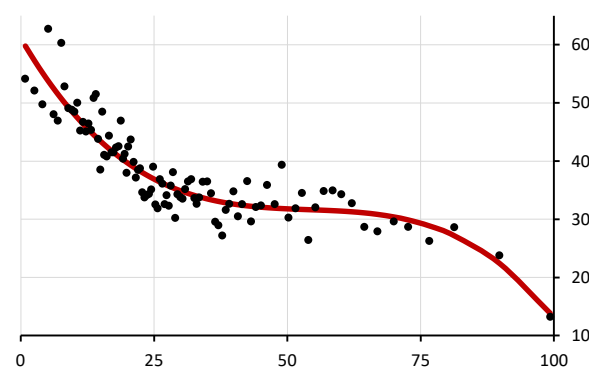
Most recent value: 2023.

Scope: Listed NFCs.

Source: Eikon.

Chart 1.10: Short-term debt and leverage in 2022

x: % share of debt maturing in less than one year/y: debt to total assets as a %



Note: Each point represents the average debt-to-assets ratio and the average share of debts maturing in less than one year, as a percentage of the ratio of short-term debt to total debt.

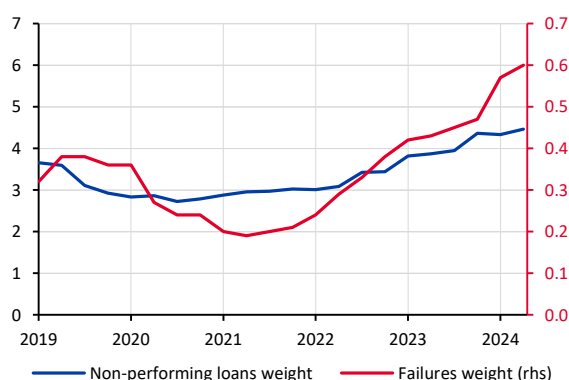
Scope: Consolidated financial statements of French companies in 2022.

Source: FIBEN.

NFC credit risk is rising overall, but remains contained. The ratio of non-performing loans (NPLs) to total bank loans granted to French NFCs continued to increase in September 2024 and featured a more pronounced deterioration in the portfolio of loans to small and medium-sized enterprises (SMEs) (Chart 1.11; see also Section 1.4). Likewise, the share of outstanding loans held by defaulting companies in drawn loans was increasing, reaching 0.6% in September 2024. This increase reflects growth in failures among French companies, which has been greater than in the rest of the euro area since 2023 (Chart 1.12). Challenges for commercial real estate partly account for this trend, since the sector accounts for 26% of legal-unit failures and most at-risk debt (Box 1.3). Furthermore, rising credit risk among SMEs, whose debt levels are lower and whose effective cost of debt has increased more slowly than that of large firms, appears to reflect their sensitivity to macroeconomic conditions and the presence of residual heterogeneity following the pandemic and the associated steep drop in failures. The pick-up in failures needs to be considered in the context of the very low level recorded in 2020 relative to other European companies. It should also be noted that France saw more business creations in 2018-20, and that a company's probability of failure is highest three years after the business was established.

Chart 1.11: Share of failures and non-performing loans in outstanding bank loans to French companies

x: time/y: share of outstanding bank loans as a %



Most recent value: September 2024.

Scope: French NFCs. The non-performing loan ratio is calculated based on outstanding loans to French non-financial corporations from French and European credit institutions.

Sources: Banque de France, Anacredit.

Chart 1.12: Business failures in the euro area

x: year/y: number of failures, one-quarter moving average (December 2019 = 100)



Most recent value: July 2024.

Source: Eurostat.

The high debt burden of French companies, combined with the fact that cash levels have reverted to normal, leaves NFCs more vulnerable to an additional shock. Mounting geopolitical tensions together with moderate growth prospects could have a greater impact on companies that have already been weakened by the transmission of previous interest rate increases and undermine the situation of French NFCs as a whole (Box 1.3).

Box 1.3: Vulnerability of French companies to an unexpected increase in the cost of commodities

By Lucille Collet, Aurélien Espic and Lisa Kerdelhué

Using microsimulations, this box examines the vulnerability of French firms to an unexpected increase in commodity prices, at a time when geopolitical tensions make such a supply-side shock more likely in the short and medium term. A shock of this kind not only fuels inflation but also weighs on borrowers' cash flows.²¹ During the supply-side shock of 2022 caused by Russia's invasion of Ukraine, the dynamic post-Covid recovery and abundant levels of cash limited companies' difficulties. Two years on, however, firms find themselves in a more delicate position, as their debt and cash levels are back to pre-Covid levels (see June 2024 FSR, Chapter 2). Between 2021 and 2023, debt held by heavily indebted companies rose from 8% to 13% of all debt held by French groups. In this environment, a supply-side shock of similar magnitude could have far more serious consequences.

We therefore calibrate a supply-side shock by replicating the shock experienced by each French firm in our sample in 2022. This shock may be broadly divided into:

- A shock to profit margins (EBITDA divided by turnover and gross operating income divided by turnover): the increase in the cost of commodities pushed up input costs, causing business margins to narrow. However, some firms managed to gradually increase their selling prices throughout 2022 or to moderate wage increases, which helped to limit margin contraction.

²¹ Boissay F., Collard F., Manea C., Shapiro. A (2024), "Monetary Tightening and Financial Stress during Supply – versus Demand-Driven Inflation", *Federal Reserve Bank of San Francisco Working Paper*, 2023-38, August.

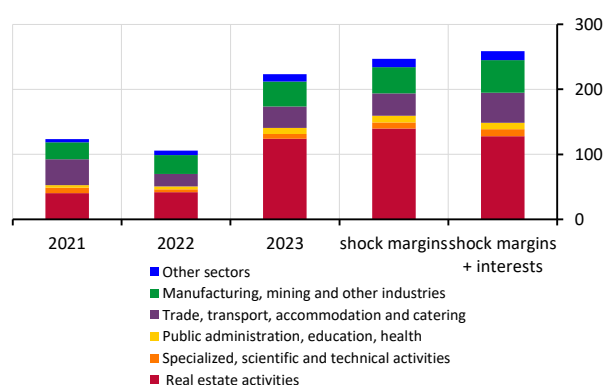
- An increase in ECB policy rates to counter the rise in inflation, which led to an increase in interest expenses.

These two components differed sharply across sectors and across companies, depending on firms' cost structure, market power and debt structure. The real estate sector²² accounts for the majority of at-risk debt, followed by industry, wholesale and retail trade, transport, and accommodation and food services (Chart 1.13).

Taking a stress test-inspired approach, we apply these extreme shocks to 2023 balance sheets, using the individual firm-level margin shocks in 2022 and individual firm-level interest expense shocks in 2022 to identify companies that are most vulnerable to this scenario. A profit margin shock would have a moderate impact on at-risk debt, which would increase to 18% of total debt, compared with 16% in 2023. A further interest rate shock would lead to an increase in the share of at-risk debt to 19%. In addition, around 70% of at-risk debt in the event of a shock is held by NFCs with weak liquidity, making them vulnerable (Chart 1.14). An unexpected increase in the cost of commodities, and the rise in interest expense that could result from an additional policy rate hike, would lead to a contained increase in the debt held by vulnerable firms.

Chart 1.13: Sector distribution of at-risk debt

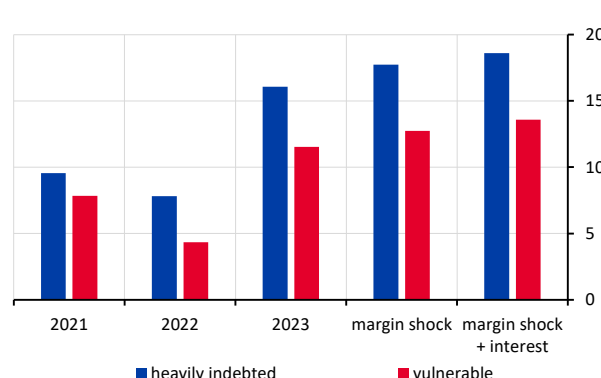
x: time/y: EUR billions



Sources: FIBEN groups, Banque de France calculations.
 Note: At-risk debt comprises the debt of companies that are deemed to be heavily indebted (ICR below 3 and debt/EBITDA ratio negative or higher than 4). The real estate sector includes the activities of landlords, as well as the rental and operation of owned or rented real estate assets.

Chart 1.14: Share of debt held by heavily indebted or vulnerable French companies

x: time/y: at-risk debt, as a % of total



Sources: FIBEN groups, Banque de France calculations.
 Note: A company is considered to be heavily indebted if its ICR is below 3 and its debt/EBITDA ratio is negative or higher than 4. A company is considered to be vulnerable if it is considered to be heavily indebted and if its liquidity ratio expressed in days is below 30.

The commercial real estate sector continues to deteriorate, with contrasting dynamics across market segments and participants

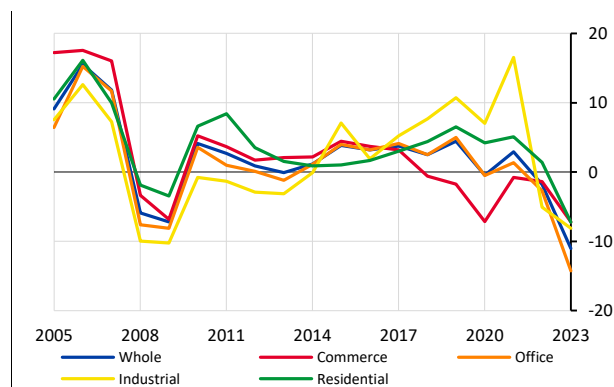
While the overall commercial real estate (CRE) market has contracted significantly since 2023, the trend has not been uniform across segments. A decrease in prices seems necessary to restoring balance on the market following a period of very low interest rates. Macrofinancial factors appear to be the main drivers for this sharp decline (Box 1.4). Prices on some segments have also declined due to structural changes to business practices that are either already underway or expected by investors. The rise of remote working could explain the substantial disparity in vacancy and price dynamics across different kinds of assets, or within the same asset class but across geographical regions. For example, year-on-year prices fell by more for offices

²² The real estate sector includes the activities of landlords, agents and/or brokers in one or more of the following areas: purchase and sale of real estate assets, rental of real estate assets, provision of other real estate-related services, such as asset valuation or escrow agent services (see [nafr2-L-Activités immobilières | Insee](#)).

(down 14.2%) than for retail space (down 7.1%) in 2023 (Chart 1.15). Likewise, the decline in Paris was smaller than in La Défense district and the rest of the Paris Inner Ring, where vacancy rates are still much higher than pre-Covid (Chart 1.16). On a cumulative basis, transaction volumes totalled EUR 10.1 billion over the first three quarters of 2024, down 9% on the same period in 2023. However, the 41% increase observed between the third quarter of 2023 and the third quarter of 2024 might signal the start of a recovery.²³

Chart 1.15: Price growth by segment

x: time/y: % growth

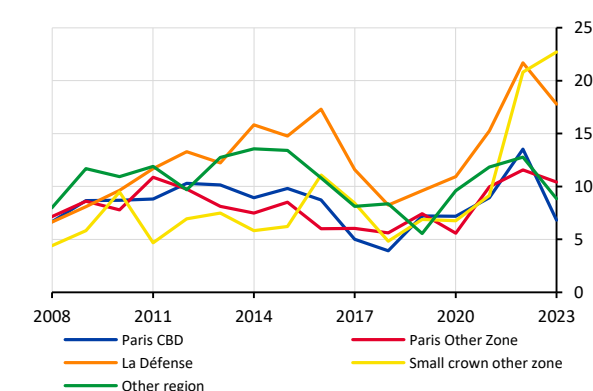


Most recent value: end-2023.

Source: MSCI.

Chart 1.16: Office vacancy rates by geographical area

x: time/y: vacancy rate in %



Most recent value: end-2023.

Source: MSCI.

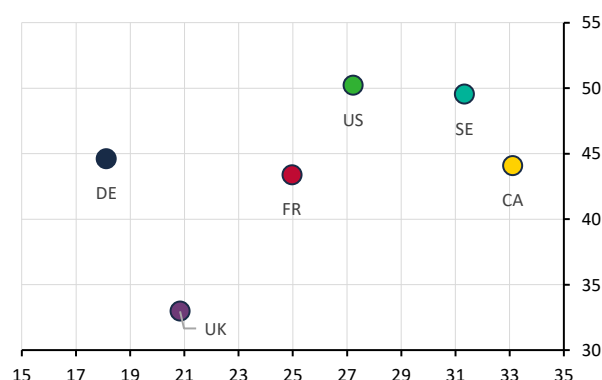
The sharp decline in prices, coupled with elevated interest rates, could pose challenges for CRE professionals, but the financial system's exposure to these participants remains contained. The June 2024 FSR stressed that market risk was considered to be greater than credit risk. This is because the decrease in value that has already occurred could be compounded by the threat of unrealised losses if firms are slow to update portfolio valuations. The price-to-book ratio of real estate companies has been below one since the Covid crisis, suggesting that this adjustment is still underway. Meanwhile, in mid-2023 the AMF called on real estate funds to adjust the valuation of their shares. The pressure on the assets of real estate participants is exacerbated by funding-related risks. Due to their relatively high leverage and the fact that their debt is directly secured by real estate assets, real estate companies are exposed to refinancing risk. This risk could be amplified if debt comes due at a time of high interest rates, leading to forced sales. However, French firms in the real estate sector are characterised by a relatively contained level of short-term debt (25% of total debt in 2023, Chart 1.17). While outflows from certain real estate funds are a source of liquidity risk (Chart 1.18), at the end of 2023, approximately 70% of the total assets of real estate funds were managed by funds that are effectively closed-ended funds (AMF, 2024). For example, the exit of one investor from a French real estate company (SCPI) must be compensated for by the entry of another investor. Pending redemption requests totalled 2.9% of SCPI capitalisation at the end of September 2024, according to the *Association française des Sociétés de Placement Immobilier* (ASPIM), reflecting the market's difficulties but also the effectiveness of these liquidity management tools. France's five main banks have a low exposure to CRE firms, amounting to 2.9% of their total assets and 67.0% of their CET1 capital in 2023.²⁴

²³ Source: BNP Paribas Real Estate.

²⁴ *Le financement de l'immobilier commercial par les banques françaises en 2023*, ACPR, *Analyses et Synthèses* No.164, 2024.

Chart 1.17: Leverage and share of short-term debt of real estate companies and sponsors, by country in 2023

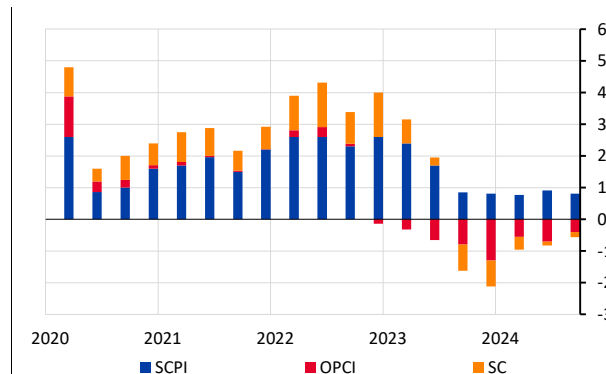
x: share of short-term debt (as a %)/y: leverage (as a %)



Source: Refinitiv/Eikon.

Chart 1.18: Net flows into/out of French retail real estate funds

x: year/y: net inflows/outflows (EUR billions)



Most recent value: Q3 2024.

Source: ASPIM.

Box 1.4: Office prices in France since 2020: a macroeconomic or sector-specific shock?

By Aurélien Espic

Office prices in France have experienced an unprecedented collapse since the Covid crisis, falling by 18% between December 2022 and December 2023, in line with the trend observed in most advanced economies. This situation adds to the challenges facing real estate and construction firms: in September 2024, the total number of failures over one year in these sectors was 30.7% higher than in December 2019 (compared with 24.6% for all companies).²⁵ While these changes are part of the standard transmission channels for macroeconomic and macro-financial shocks, they may be further fuelled by more sector-specific shocks, such as the rise of remote working, recognition of risks linked to the climate transition, or the withdrawal of investors from the real estate market.

This box looks at different factors driving the price collapse and quantifies their respective impacts using a macro-econometric model. This vector auto-regression (VAR) model with a quarterly frequency is estimated using Bayesian procedures²⁶ over a period going from the first quarter of 2002 to the second quarter of 2024 for France. To capture the interaction between macro-financial dynamics and those specific to office real estate, the model comprises seven variables:

- three macroeconomic variables (the output gap, the growth of the GDP deflator, and the short-term interest rate);²⁷
- one financial variable (the – option-adjusted – spread on high-yield bonds issued in the euro area);
- three variables specific to office real estate (the absorption rate,²⁸ the authorised construction volume and the transaction price divided by the GDP deflator).

²⁵ The decrease in office prices has a more direct impact on real estate companies, whose portfolios are office-heavy, than on construction firms, whose turnover is more closely tied to residential real estate market dynamics.

²⁶ The prior is that proposed by Litterman. See Litterman, R. B. (1980). Bayesian procedure for forecasting with vector autoregressions. Massachusetts Institute of Technology. Prior distribution parameters are selected according to a hierarchical approach. See Giannone, D., Lenza, M., and Primiceri, G. E. (2015). Prior selection for vector autoregressions. *Review of Economics and Statistics*, 97(2), 436-451.

²⁷ The rate used is an implied short-term rate for the euro area, in order to capture unconventional monetary policies. See Krippner, L. (2013). Measuring the stance of monetary policy in zero lower bound environments. *Economics Letters*, 118(1), 135-138.

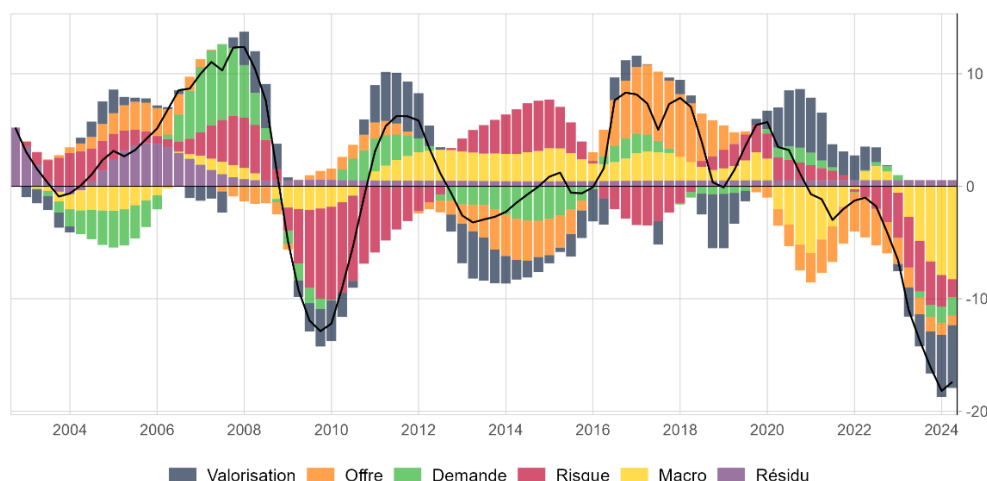
²⁸ The absorption rate is calculated as the share of available supply at the end of period $t-1$ rented or sold to the occupant over the course of period t . Data from Immostat, a real estate data provider, used to calculate the rate cover the Île-de-France region exclusively. This restriction is not deemed to be problematic insofar as the bulk of the French office market is centred on this region.

Various shocks are identified based on assumptions about their short-term effects. The three macroeconomic shocks may affect all the other variables instantaneously, and this analysis does not seek to identify them separately. The risk shock is assumed to cause a change in spreads that is independent from the macroeconomic situation. The three shocks specific to office real estate are assumed not to have an instantaneous impact on the macro-financial variables. This seems to be justified given the relatively small share of office real estate in construction volumes in France.²⁹ The office demand shock affects all real estate variables instantaneously, while the office supply shock does not have an immediate effect on the absorption rate, given building delivery times. The valuation shock reflects a change in prices that is disconnected from market fundamentals.

The model indicates that macroeconomic factors have played a major role in the collapse of office prices in France since 2020. Macroeconomic shocks were central to the cyclical reversal, contributing positively during the period of low interest rates, before the Covid crisis and higher interest rates reversed the trend. Risk shocks are also significant determinants: while their role was not as important as it was during the 2008 financial crisis, elevated uncertainty in 2022-23 cooled investor risk appetite and pushed valuations downwards.

The importance of sector dynamics has been growing since mid-2023. At this stage, these dynamics are driven to a greater extent by the actions of real estate investors than by those of companies on the rental market. After contributing to slowing the fall in prices in 2020-21, investment strategies have amplified it since mid-2023. As things currently stand, it is difficult to say whether these valuation shocks are the result of (i) anticipation of demand-side shocks, (ii) excessive pessimism, or (iii) forced sales. These broad sector shocks call for prudence: although short-term interest rates have decreased as inflation has come down, office valuations could remain low.

Chart 1.19: Decomposition of real prices for office transactions in France (% year-on-year)



Source: Banque de France.

Guide: In Q2 2024, real prices for office transactions in France fell by 17.4% year-on-year, of which 5.6 percentage points were due to valuation shocks.

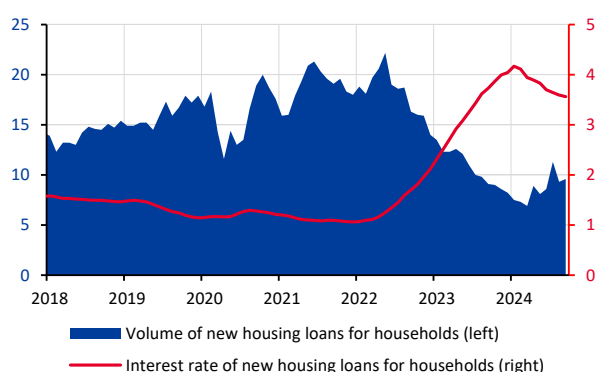
²⁹ On average, offices have accounted for 5.5% of building starts in France since 2000 (source: INSEE).

The residential real estate market is showing signs of stabilising and is expected to recover

The correction in the residential real estate market appears to be ending, against the backdrop of a continued decline in borrowing rates and a pronounced upturn in home lending. The narrowly defined effective rate, which corresponds to the interest component of the loan excluding ancillary costs and fees on new housing loans to retail customers excluding renegotiations stood at 3.51% in October 2024, 66 basis points lower than the peak reached in January 2024. The decrease in rates spurred a sharp recovery in the production of housing loans excluding renegotiations, which reached EUR 10.4 billion in October 2024, up from EUR 9.6 billion in September. This result should be viewed against the floor of EUR 6.9 billion in March 2024, since when production has risen by 51% (Chart 1.20). The recovery in loan production has not yet been accompanied by a recovery in residential real estate prices as measured by INSEE, which nevertheless indicate that existing house prices stabilised in Q3 2024. Thus, quarter on quarter, seasonally adjusted existing home prices in metropolitan France fell by 0.1% in Q3 2024, after declining by 0.6% and 1.5% in the previous two quarters. Since their peak at the end of 2022, existing house prices have fallen by a cumulative 6.0% in metropolitan France and by 10.3% in the Île-de-France region alone. A more marked correction on the Île-de-France market was not observed during the last cycle of rate increases (start of 2008 to mid-2009), during which prices slid by 9.3% in Île-de-France and in metropolitan France as a whole. Higher-frequency leading indicators show that apartment prices decreased by 0.3% between September and November 2024, while house prices remained stable, which, in the context of the usual seasonal slowdown in autumn, might suggest a recovery in the coming months. In September 2024, the number of transactions in the existing homes segment on a 12-month cumulative basis was slightly above that of the previous month for the first time, at 780,000, compared with 779,000 in August (Chart 1.21). The market for new homes, which has been particularly hard hit, is also showing small signs of improvement. Cumulative retail customer reservations over 12 months began to rise for the first time in the third quarter of 2024, climbing by 1% relative to the second quarter of the year, although the number of homes put up for sale on the market dropped by 8% over the same period.

Chart 1.20: Lending rate and volume of new housing loans to consumers

x: time/y: [left]: volume in EUR billions; [right]: % rate



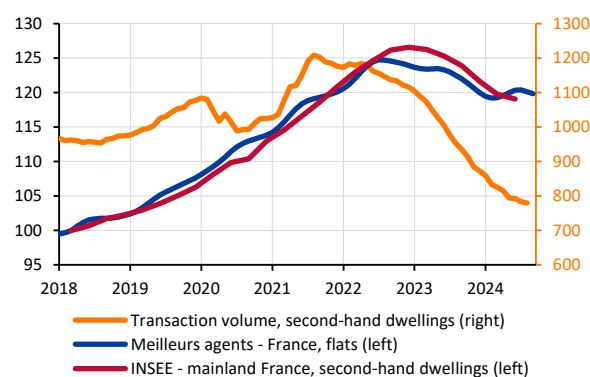
Source: Banque de France.

Note: The interest rate is the narrowly defined effective rate. Data cover loans excluding renegotiations.

Most recent value: October 2024.

Chart 1.21: House prices and cumulative 12-month transaction volume

x: time/y: [left]: price index, March 2018 = 100; [right]: volume in thousands



Sources: IGEDD, Meilleurs Agents, INSEE.

Note: INSEE data are seasonally adjusted. Transaction volumes are cumulative over 12 months.

Most recent value: October 2024 for transactions, November 2024 for Meilleurs Agents and third quarter of 2024 for INSEE.

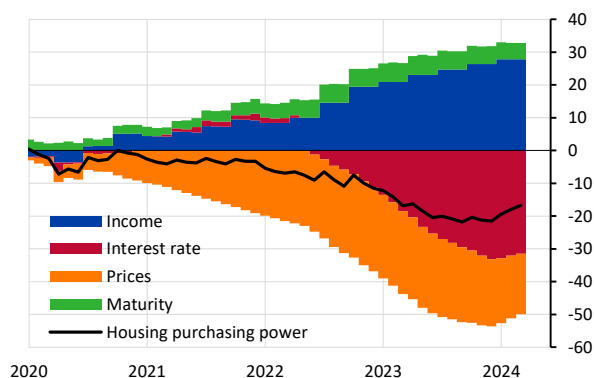
Softer real estate prices, combined with easing financing conditions, have led to a significant increase in household home purchasing power (Chart 1.22). Between December 2023 and September 2024, purchasing power increased by approximately 10m², after falling sharply since the end of 2009 (a decline of 21m² between

December 2019 and December 2023).³⁰ The increase is due in equal parts to lower interest rates, falling house prices and rising incomes.

The risks to financial stability linked to residential real estate remain limited. As a percentage of gross disposable income, household debt has fallen steadily since the third quarter of 2022 and stood at 92.2% in the second quarter of 2024, on a par with the level recorded in early 2017 and 11 percentage points below the peak reached in the second quarter of 2022. As most European economies show similar trends, French households continue to have a higher debt ratio than those in other major European countries (78.1% in Germany and 84.5% on average for the euro area in the second quarter of 2024). Deleveraging has also led to a decline in the share of income devoted to debt repayment (interest and principal), which fell from 7.0% to 6.3% of household gross disposable income between July 2022 and June 2024. However, this trend could be mitigated by a continued decline in real estate lending rates, as a reduction in borrowing costs could encourage households to make smaller down payments and increase the amount of their debt relative to income. Indeed, in March 2024, the debt ratio³¹ and the loan-to-value ratio³² (averaged over a rolling three-month window) for new loans began rising again for the first time since July 2022.³³ Debt and loan-to-value ratios averaged over the previous three months remain well below where they were before interest rates went up (4.4 and 78% respectively in September 2024, compared with 5.2 and 83% in July 2022). Furthermore, the rule³⁴ capping the debt-service-to-income ratio at 35% and the credit period for new loans at 25 years³⁵ will ensure that credit standards do not get out of control and that household debt remains sound and sustainable. In addition, the structural features of the French home financing system (dominance of fixed-rate loans, a third-party guarantee mechanism, bank lending policies based on assessments of borrower solvency) reinforce the resilience of the housing market.

Chart 1.22: Change in home buying power of households since December 2019

x: time/y: m², December 2019 = 0



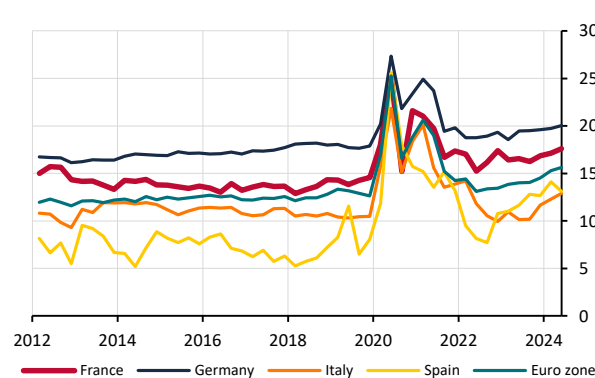
Sources: INSEE, Banque de France.

Note: Average income is estimated by dividing household gross disposable income at current prices by the number of households.

Most recent value: September 2024.

Chart 1.23: Household saving ratio

x: ratings/y: % rate



Source: Banque de France.

Most recent value: Q2 2024.

In an uncertain economic climate, households continue to accumulate substantial savings, thereby strengthening their resilience. Surveys of business conditions point to elevated levels of uncertainty among

³⁰ [Panorama des prêts à l'habitat des ménages](#)

³¹ The debt ratio expresses total debt in terms of years of income for the borrower.

³² Here, the loan-to-value ratio refers to the ratio of the loan amount to the value of the asset purchased. It therefore captures the share of the asset's value that is financed by the loan.

³³ [Monthly monitoring](#) of housing loan production by the ACPR.

³⁴ [Decision D-HCSF-2021-7](#) on housing loan credit standards of 29 September 2021.

³⁵ The restrictions on the debt-service-to-income ratio and the credit period allow for flexibility covering 20% of total loan production, within which loans are permitted to be in non-compliance with these criteria.

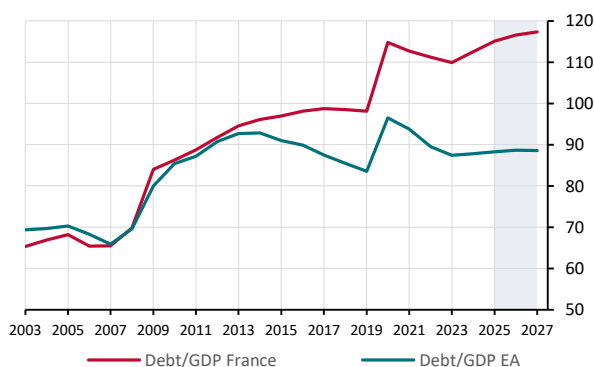
households. The confidence index remains below its historical average and has been declining at a moderate pace since September.³⁶ Against this backdrop, the observed increase in the purchasing power of gross disposable income due to disinflation (up 0.9% in 2023 and up 1.7% in the first three quarters of 2024)³⁷ has contributed to a significant level of savings, exceeding those observed prior to the Covid crisis (17.7% of gross disposable income in Q2 2024 compared with 14.7% in the fourth quarter of 2019) as well as the euro area average (15.6% in the second quarter of 2024, Chart 1.23). This financial cushion, combined with an unemployment rate that is expected to remain relatively low despite a small short-term increase (7.8% at the end of 2025 according to the Banque de France's December projections, compared with 7.3% in 2023), suggests that vulnerabilities are contained. At this stage, the medium-term outlook for households is positive, despite the high degree of uncertainty surrounding the economic and political outlook, with a resilient labour market and renewed purchasing power gains expected for 2025-26.

The ongoing increase in the sovereign debt burden adds to the need to adjust the general government primary balance

The fiscal position has deteriorated more than expected, mainly due to lower-than-expected revenues. The government deficit, which was expected to be 4.9% of GDP in 2023, turned out to be 5.5%. It has widened further in 2024 and is expected to reach 6.1% according to the latest estimates. In addition, there is a lot of uncertainty about whether the medium-term structural plan will actually be implemented. In the absence of a budget, following the no-confidence vote in December 2024, the Banque de France's working hypothesis for the December 2024 macroeconomic projections is that the deficit will be between 5% and 5½% of GDP for 2025, assuming that consolidation efforts are made. The trajectory of the balance beyond 2025 will depend on the actual deficit run in 2025. In the Banque de France's baseline scenario, the debt-to-GDP ratio rises over the forecasting horizon, reaching 117 points in 2027. For France to achieve a primary balance that would stabilise the debt-to-GDP ratio, the total deficit would have to be brought down to 3% of GDP in 2029. In addition, any increase in sovereign rates would have consequences for debt service. According to the General Government Debt Report attached to the first draft of the 2025 Budget Law, a 100 basis point interest rate shock across the entire curve relative to the baseline scenario would increase the debt burden by an additional EUR 3.2 billion in the first year, EUR 7.6 billion in the second year and around EUR 19 billion in the third year.

Chart 1.24: Debt trajectories in France and the euro area

x: time/y: debt/GDP ratio

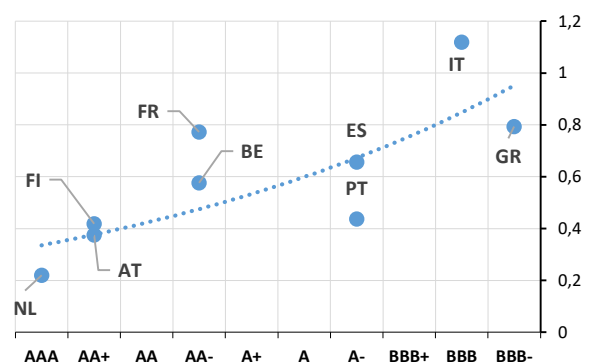


Sources: Banque de France.

Note: The greyed portion corresponds to debt projections through to 2027.

Chart 1.25: 10Y sovereign bond spreads over Germany as a function of credit ratings

x: ratings/y: spreads (as a %)



Source: Eikon Refinitiv, Fitch, S&P, Moody's.

Note: Ratings are the averages of ratings issued by Fitch, S&P and Moody's.

Observed on 12 December 2024.

³⁶ In November 2024, household confidence has deteriorated again - Informations rapides - 293 | INSEE

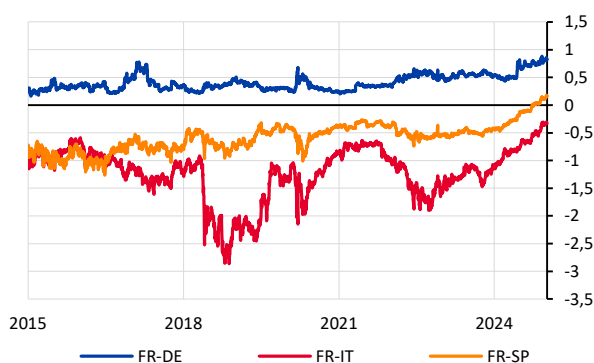
³⁷ GDP accelerated slightly in Q3 2024 (+0.4% after +0.2%) - Informations rapides - 269 | INSEE

European sovereign markets remain closely integrated, although yield spreads between French and German sovereign debt have widened. The idiosyncratic shock triggered by the announcement of the dissolution of the National Assembly caused yields on French government bonds to increase relative to other euro area countries as investors reassessed France’s fiscal fundamentals through the prism of political uncertainty. The 10-year spread over Germany reached 81 basis points on 18 December 2024, approximately 40 basis points higher than at the end of May (Chart 1.25). At the same time, Italian and Spanish yields continued to converge with German yields in an overall market environment that was supportive of lower risk premiums, owing to moderate volatility. Both of these countries also benefited from relatively more stable domestic conditions and, in the case of Spain, from a faster growing economy. Economic and political uncertainty in Germany and the reduced scarcity of German government bonds against a backdrop of Eurosystem quantitative easing may also have fuelled this trend. The downward adjustment of risk premiums on Italian government bonds led to a narrowing of spreads over French sovereign bonds (Chart 1.26). While the spread between French and Italian government bonds was still at around 100 basis points in March 2024, it had narrowed to around 35 basis points by mid-December. However, the interest rate on 10-year French government bonds stood at 3.05% on 18 December 2024, broadly similar to its level at the end of May, after fluctuating in a range between 2.8% and 3.35%, as expectations of more accommodative monetary policy in the euro area put downward pressure on French and other European government bond yields, offsetting the widening risk premium.

The trajectory of public finances needs to be corrected to safeguard financing conditions and reduce uncertainty. In the first place, uncertainty about the fiscal trajectory affects agents’ visibility and has a negative impact on investment and consumption. Moreover, in the absence of consolidation, investors may require a higher risk premium to finance French debt in the medium term. So far, the widening of the spread between the financing rates of the French and German governments from June 2024 has had only a mild impact on the financing costs of other economic agents (Chart 1.27). However, a more pronounced deterioration in the fiscal trajectory could more significantly affect financing conditions for households and firms and pose a downside risk to growth.³⁸

Chart 1.26: Spreads between French, German, Italian and Spanish 10Y sovereign bonds

x: time/y: spreads (as a %)



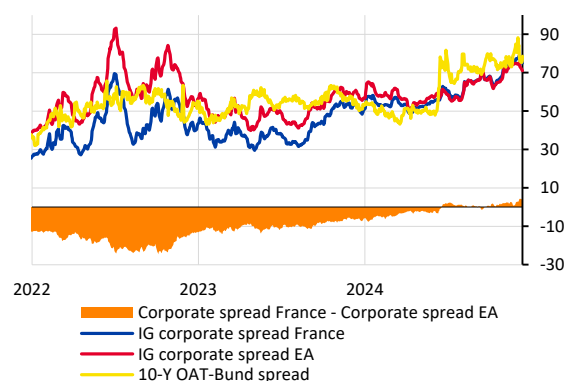
Source: Eikon Refinitiv.

Guide: Yield spreads between 10Y sovereign bonds issued by France and sovereign bonds of the same maturity issued by Germany, Italy and Spain. A negative spread means that yields on French bonds are lower than those of the other jurisdiction.

Most recent value: 12 December 2024.

Chart 1.27: Comparison of the change in credit spreads on bonds issued by French and EA NFCs

x: time/y: spreads (basis points)



Sources: Eikon Refinitiv, CSDB.

Note: The NFC spread corresponds to the option-adjusted credit spread over the interest rate swap curve. Scope: Investment grade NFCs.

Guide: The orange area shows the differential between the average credit spread for French investment grade NFCs and the spread for IG NFCs across the whole euro area.

Most recent value: 12 December 2024.

³⁸Barthélémy J., Marx M. (2012), “L’impact de l’évolution des taux souverains sur les conditions de financement des économies française, espagnole et italienne”, *Bulletin de la Banque de France*.

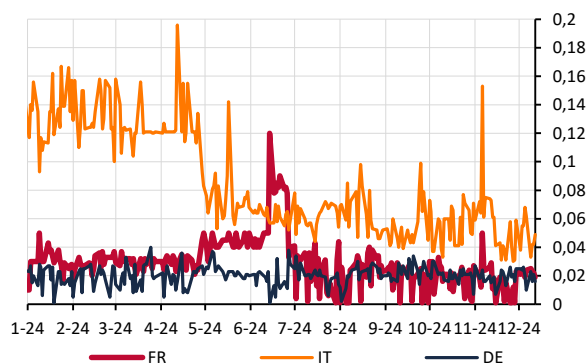
French sovereign debt is still attractive to investors

Thanks to its diversified investor base, the French government bond market was able to absorb the increase in net issuance linked to the government's financing needs and the reduction in the Eurosystem's securities portfolio. The share of non-resident investors in total holdings, which declined during the period when the Eurosystem's purchase programmes were being executed, climbed relative to 2022 as the Eurosystem's balance sheet was reduced (48.5% in the first quarter of 2022, compared with 54.5% in the second quarter of 2024). These investors are geographically and functionally diverse: on a cumulative year-to-date basis, net inflows into French sovereign debt have been recorded by official investors, but also by bank and non-bank intermediaries domiciled both inside and outside the euro area. The ECB has highlighted the increase in hedge fund activity in the European sovereign bond market since 2022, noting that while the presence of hedge funds may help to improve market liquidity in normal times, it could amplify volatility during periods of stress if positions are unwound quickly.³⁹

The primary and secondary markets remain fully operational. Recent primary market auctions have shown that demand remains strong, with the average cover ratio well above 2. On the secondary market, liquidity remains ample and transaction costs are still very low (Chart 1.30). Maturities of French government bonds are spread across the curve until 2072, with an average term to maturity of nine years and 55 days at the end of August, slightly higher than at the beginning of the year. This broad distribution serves a diverse investor base with different investment horizons, and acts as a factor of resilience by smoothing refinancing needs over time. However, some investors may adopt a wait-and-see approach in an environment of heightened uncertainty. Maintaining the attractiveness of government bonds is therefore a key challenge at a time when issuance remains elevated.

Chart 1.28: Bid-ask spreads for 10Y bonds

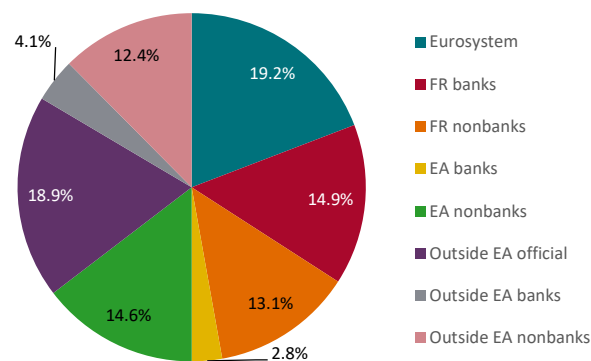
x: time/y: bid-ask spread (basis points)



Source: Refinitiv Eikon.

Most recent value: 12 December 2024.

Chart 1.29: Share of total holdings of French sovereign debt (negotiable debt and loans), by investor



Sources: IMF, SHS-S, SDW.

Geographical scope: EA and non-EA investors.

Note: When the scope is restricted to negotiable government debt (excluding loans), non-residents held 54.6% of French sovereign bonds in Q2 2024, while domestic credit institutions held 8.7% (Banque de France data).

Most recent value: Q2 2024.

³⁹ [Hedge funds: good or bad for market functioning? \(europa.eu\)](https://europa.eu)

1.3 Multiple uncertainties increase the likelihood of volatility spikes on the markets

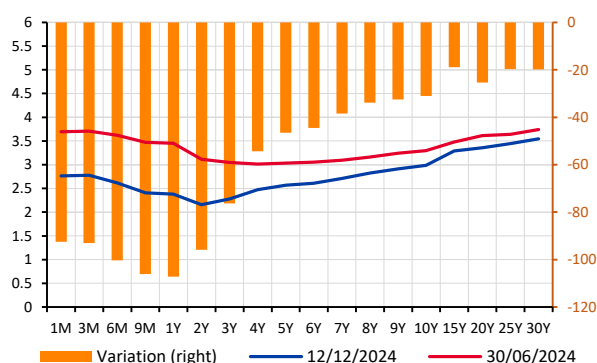
Short-term interest rates fell in the second half of 2024 and the yield curve steepened

The euro area yield curve steepened in the second half of 2024. Interest rates declined in 2024, with the largest decreases observed in short and medium-term rates, driven by the ECB's successive rate cuts and expectations of additional easing (Chart 1.30). Long-term interest rates are also influenced by changes in the term premium, which is the compensation investors demand for holding long-term securities rather than short-term ones. The increased net supply of European sovereign bonds, in the context of the reduction of the Eurosystem balance sheet together with government financing requirements, was well absorbed by the market but is putting upside pressure on the term premium, which is contributing to make the curve steeper. This movement was more pronounced in France compared to other euro area countries, amid rising fiscal uncertainties. The same upward trend in the term premium is observed in other jurisdictions, notably in the United States and the United Kingdom, for similar reasons (high bond issuances, uncertainties about fiscal trajectories, and the reduction of central bank balance sheets).

Uncertainty over US economic and trade policy could reinforce the European yield curve's steepening trend and increase volatility. European and US markets showed contrasting reactions to the outcome of the November 2024 US elections, anticipating a possible widening of economic trajectory divergences between the two regions. European markets priced in new downside risks to growth as expectations of policy rate cuts in the euro area increased after 5 November (Chart 1.31). Conversely, in the United States, expectations of higher growth and inflation supported an increase in interest rates. Uncertainties about the implementation of announced measures, particularly in trade policy, and about their macroeconomic impacts are likely to maintain interest rate volatility. Volatility could also be fuelled by a more expansionary US fiscal policy, which would strengthen the existing upward trend in long-term interest rates. Since European and US interest rates are highly correlated, such a move should also result, all other things being equal, in a rise in European rates.⁴⁰

Chart 1.30: French sovereign yield curve

x: Maturities/y: [left]: %; [right]: change in bps

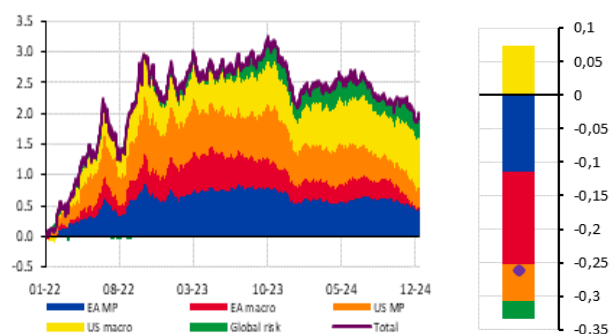


Source: Bloomberg.

Most recent value: 12 December 2024.

Chart 1.31: Decomposition of euro 10Y interest rates and cumulative change since 5 November 2024

x: time/y: % rate



Sources: Bloomberg, Banque de France calculations.

Note: Decomposition of the 10Y OIS overnight rate into its respective determinants, whether linked to a reassessment of the economic outlook or a monetary policy shock. The right side shows how these components have changed since the US elections.

Most recent value: 12 December 2024.

⁴⁰ Siena D. (2018), "Spillovers to the euro area from a sudden rise in the US term premium", *Eco Notepad*, Banque de France, March.

Quantitative tightening of monetary policies in the euro area and United States is continuing in an orderly manner, and the repo market continues to function normally

The French repurchase agreement (repo) market was unaffected by the strain on government bonds and demonstrated its resilience. Repo rate on transactions by French sovereign debt moved broadly in line with German and Italian rates, without any obvious impact from political tensions and fiscal concerns. In general, euro area repo rates do not react greatly to sovereign ratings and idiosyncratic events: French, German and Italian rates trade in a virtually identical rate channel overall. Volumes also continue to exhibit similar trends.

The main central banks are paying close attention to the proper functioning of repo markets in the context of quantitative tightening. So far, tightening has proceeded in an orderly manner. However, a significant reduction in liquidity levels could lead to tensions in the repo market and other money markets. For this reason, central banks are closely monitoring market conditions to avoid a repeat of the turmoil observed in September 2019 on US short-term funding markets, in a similar context of quantitative tightening led by the US Federal Reserve.⁴¹

The euro area repo market is adapting to the reduction in liquidity and the increase in available collateral volumes resulting from monetary policy normalisation. Until 2021, the Eurosystem's monetary policy favoured large-scale refinancing operations (TLTROs) and asset purchase programmes, which contributed to an increase in liquidity surplus and a scarcity of collateral. In this context, investors were ready to accept a high opportunity cost for their cash to obtain collateral, while a discouraging remuneration allowed banks to avoid unnecessarily increasing their deposit base. This resulted in a decrease in repo rates, which fell to levels significantly below the ECB's deposit facility rate (DFR).⁴² The repo rate (vs. DFR) has gradually increased since 2022 with the normalisation of monetary policy (policy rate hikes between July 2022 and September 2023, reduction of purchase programmes and repayment of TLTROs). Several channels may be identified:

- **An increase in the supply of available securities, reflecting a reduced scarcity of collateral,** particularly owing to (i) the Eurosystem's smaller footprint and (ii) an increase in sovereign issuances.
- **A decrease in surplus liquidity,** which fell from EUR 4,532 billion in September 2022 (its highest level) to EUR 2,960 billion at the beginning of November 2024.

At this stage, the narrowing spread between repo rates and ECB policy rates reflects a reduced scarcity of collateral, rather than fears about the availability of liquidity. However, weak signals call for vigilance. Indeed, liquidity tensions would be highlighted for some players through repo rate distributions in which higher-than-average rates emerge. Although volumes remain low, the number of repos negotiated at relatively high rates tended to increase during the second half of 2024.

The relative upward movement in repo rates is likely to continue over the coming months amid the ongoing reduction in euro area surplus liquidity and with sovereign issuance programmes set to remain strong in 2025. The decline in liquidity surplus could push repo rates (median) above the DFR, particularly around regulatory closing dates (quarter-end, year-end), when financial intermediaries tend to reduce their position volumes. However, while the Eurosystem tolerates some volatility on money markets, it keeps a close watch on the transmission of policy rate decisions to repo rates in the different Member States.⁴³

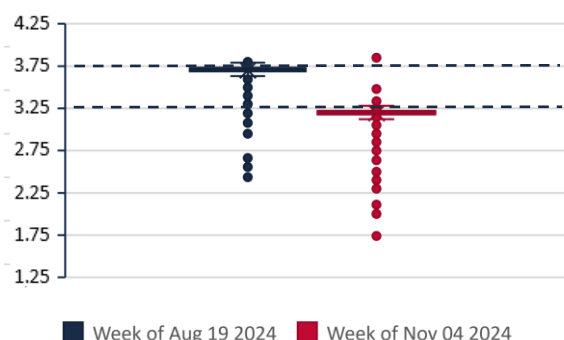
⁴¹ See Box 3 of the Assessment of Risks to the French Financial System, December 2019, Banque de France.

⁴² The Deposit Facility Rate (DFR) is the interest rate earned on surplus cash that commercial banks deposit with the European Central Bank on a short-term basis. It is a key monetary policy indicator, influencing financing and liquidity conditions in the euro area.

⁴³ To mitigate the risk of volatility on this market and the possibility of one-off spikes, on 18 September the Eurosystem decided to reduce the difference between the main refinancing operation (MRO) rate and the DFR to 15 basis points. This makes it possible to have (i) a theoretical ceiling for repo rates while (ii) maintaining a sufficiently large gap to encourage banks to finance themselves on the money market as well.

Chart 1.32: Dispersion of French O/N repo rates

x: DFR/y: dispersion (basis points)

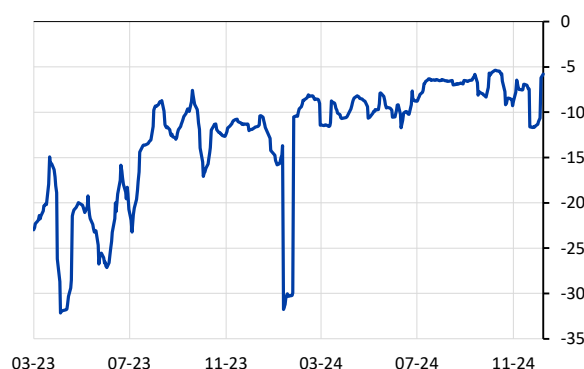


Sources: SFTDS, Banque de France.

Notes: The successive levels of the DFR (3.75 and 3.25) are shown by the dotted lines. Points outside the boxes (1.5 times the interquartile spread) are outliers.

Chart 1.33: Differential between French O/N repo rates and the DFR

x: time/y: rate (basis points)



Sources: SFTDS, Banque de France.

Note: 10-day moving average.

Most recent value: 9 December 2024.

On US repo markets, upward pressures on rates have also been observed since the start of the year, in the context of the Federal Reserve's (Fed) balance sheet reduction. In 2024, rates observed on the US repo market increased relative to the Fed's official rates. These pressures were temporarily exacerbated at the end of the third quarter of 2024, as the benchmark rate for overnight repo transactions (secured overnight financing rate or SOFR) reached 5.05% on October 1, above the upper bound of the Fed's rate corridor (then at 5%) for the first time since March 2020. According to the New York Fed,⁴⁴ the pressures observed on the US repo market are partly due to structural factors, such as the increased demand for sovereign debt financing from certain market participants in an environment of reduced global liquidity. In particular, hedge funds bolstered their repo positions in order to finance purchases of US government bonds, as part of arbitrage operations involving the purchase of bonds and the sale of corresponding futures contracts⁴⁵ (basis trades). Intermediation frictions (due to regulatory requirements, notably), which do not allow for optimal allocation between these actors and financial institutions with excess liquidity, could also contribute to these upward pressures on repo rates. Therefore, these developments can be considered predictable in the context of monetary market normalisation,⁴⁶ they nevertheless warrant continued active monitoring of repo market conditions.

European and US equity markets diverge amid policy uncertainty

The divergence in US and European equity market dynamics became more pronounced at the end of 2024, as French equities underperformed. European equities gained approximately 10% between January and 12 December 2024, while US stocks increased by 28% over the same period. Major tech firms continued to advance strongly, with the "Magnificent 7" stocks soaring by 55% between 1 January and 12 December 2024. The wider US market headed upwards too, as the S&P 500 minus the Magnificent 7 climbed by 20%. The S&P 500 gained approximately 6% following the presidential elections in November 2024, as investors looked ahead to tax breaks and regulatory easing (Chart 1.34). Conversely, the prospect of hikes in US customs tariffs weighed on European stocks, and the Eurostoxx 50 put on just 2% following 5 November. French equities underperformed after policy uncertainty in France increased at the start of June. After hitting a record high in May 2024, the CAC 40 was trending downwards towards the end of 2024 and returned a negative 1.5% between January and 12 December 2024. Investor expectations remain focused on a scenario of moderate

⁴⁴ Facing Quarter-End Pressures: Understanding the Repo Market and Federal Reserve Tools - Federal Reserve Bank of New York

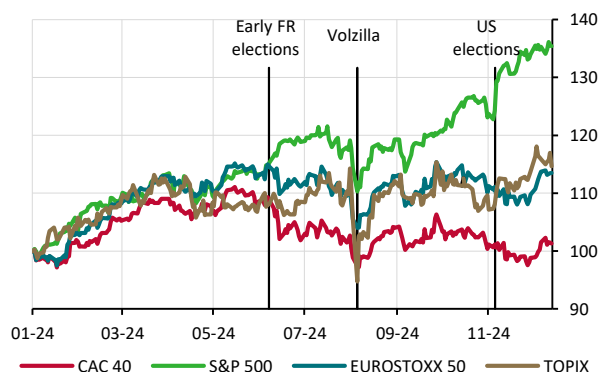
⁴⁵ See Box 1.4 of the Assessment of Risks to the French Financial System, December 2023 and the *Financial Stability Report* of the US Federal Reserve, November 2024.

⁴⁶ In the fourth quarter of 2024, with reference to a series of six internal indicators, the New York Fed offered reassurances, repeatedly stressing that reserves continued to be abundant, giving justification for the ongoing normalisation of the Fed's balance sheet.

economic growth and continued monetary easing. The latest FY 2023 results published by large French corporations and financial analysts' 2024 growth forecasts, which indicate growth in median annual earnings per share of 7%, support these market expectations (Chart 1.35).

Chart 1.34: Equity index performances

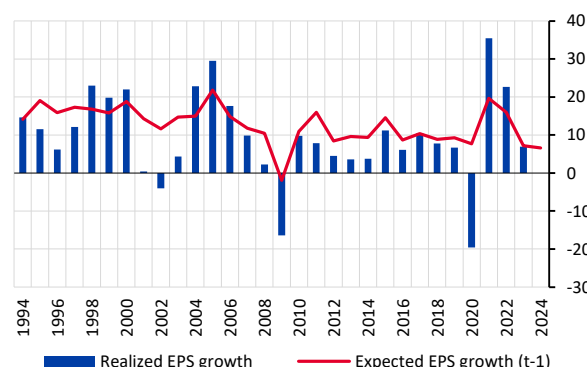
x: time/y: index, 1 January 2024 = 100



Sources: Refinitiv Datastream, Banque de France calculations.
Notes: Index, 1 January 2024 = 100. Returns are calculated in euros, from the perspective of a European investor.
Most recent value: 12 December 2024.

Chart 1.35: Earnings per share (EPS) growth of French companies

x: time/y: EPS growth as a %

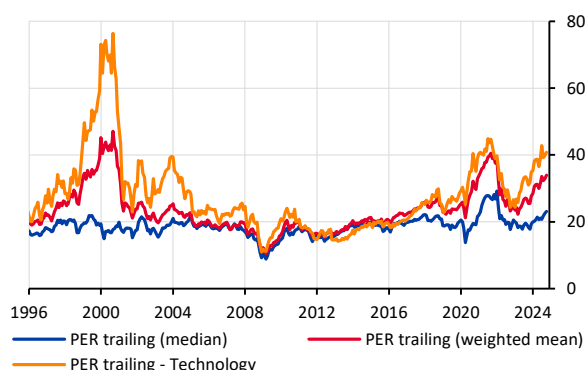


Sources: Refinitiv Eikon, IBES, Banque de France calculations.
Notes: The chart compares median EPS growth in each year t (published at the start of the following year $t+1$) actually recorded by CAC 40 companies against analyst forecasts made at the start of the same year t .
Most recent value: May 2024.

US stock valuations have been marching upwards since 2023 amid excitement about artificial intelligence (AI) and heavy market concentration. After a decline in 2022 due to rising interest rates, the average price-earnings ratio of US equities climbed from 24 in January 2023 to 33 in October 2024. In particular, valuations were driven upwards by large caps in the S&P 500 index and by AI sector companies (Chart 1.36), which increased the index's concentration. Five sectors are especially highly valued in the S&P 500 index, including technology, (NVIDIA, Micron Technology, Palantir, etc.), health (Eli Lilly), consumer discretionary (Amazon, Tesla) and communication services (Netflix). A massive correction for AI companies could have a major impact on investor portfolios, with repercussions for the wider market in the event of fire sales, bearing in mind that the tech sector makes up around 30% of the S&P 500 index, as compared with 23% during the dot.com bubble.

Chart 1.36: Valuation of US stocks as a function of capitalisation

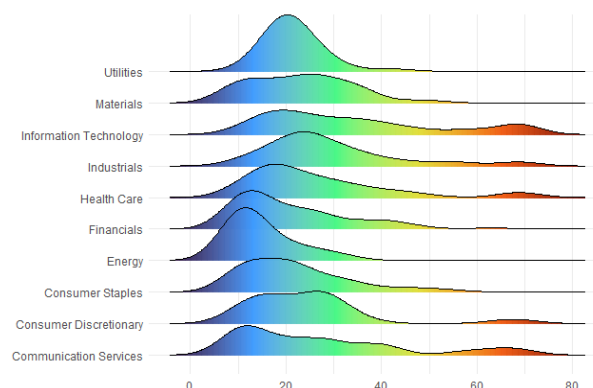
x: time/y: price-earnings ratio



Sources: Refinitiv Eikon, IBES, Banque de France calculations.
Notes: The trailing PER is the ratio of the stock's price to the most recent earnings per share published by the company. For a given date, the blue curve corresponds to the median PER for all stocks comprising the S&P 500. The red curve shows the average PER weighted by the capitalisation of each company in the S&P 500.
Most recent value: 1 December 2024.

Chart 1.37: Concentration of US valuations by sector

x: price-earnings ratio/y: sectors

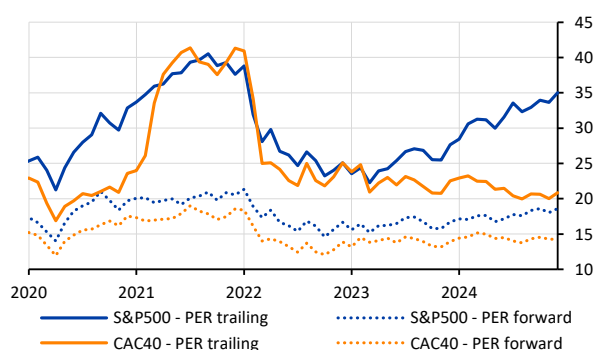


Sources: Refinitiv Eikon, IBES, Banque de France calculations.
Notes: Distribution of companies as a function of their trailing PER within each S&P 500 sector, on the basis of a density function.
Guide: The larger the area below the black curve is, the more companies in that sector are highly valued.
Most recent value: 1 October 2024.

The divergence in US and European equity market dynamics became more pronounced at the end of 2024, as French equities underperformed. Since the start of 2023, the valuation trajectories of French and US equities have diverged significantly, with price-earnings ratios staying relatively unchanged in France while surging higher in the United States (Chart 1.38). The divergence is primarily due to brighter long-term growth prospects for US companies, according to financial analysts, driven notably by AI interest in the United States. Furthermore, valuations of luxury stocks in France, which make up more than 40% of the CAC 40 index's capitalisation, have tumbled from their end-2021 peak. The idiosyncratic risk of a correction linked to overvaluation of French stocks is therefore fading. However, an analysis of intraday contagion effects between US and European markets reveals that French and European markets remain heavily exposed to adverse shocks affecting US stocks (Chart 1.39).

Chart 1.38: Divergence of French and US valuations

x: time/y: price-earnings ratio

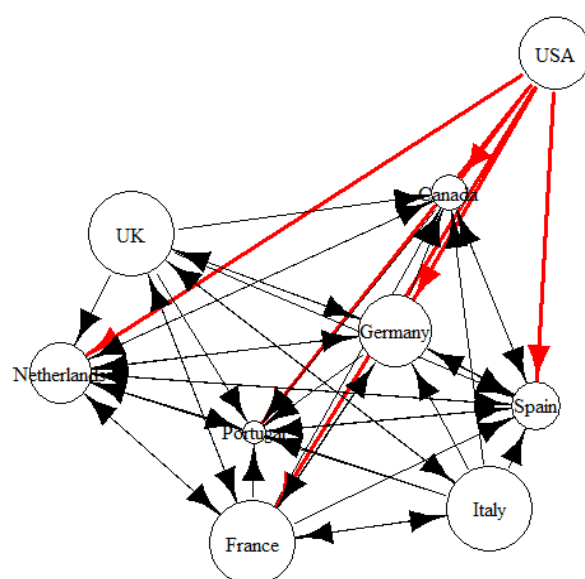


Sources: Refinitiv Eikon, IBES, Banque de France calculations.

Notes: The trailing PER is the ratio of the stock's price to the most recent earnings per share published by the company. The forward PER is the ratio of the asset's price to average EPS expected by analysts on a 3-5 year horizon.

Most recent value: 1 December 2024.

Chart 1.39: Channels of contagion between US and European equity markets



Sources: Bloomberg, Banque de France calculations.

Notes: Contagion effects between two equity indices are estimated using an econometric model (Granger causality) following the approach of Billio et al. (2012).⁴⁷ The analysis relies on intraday (minute by minute) data on equity index performances between April and October 2024 (after normalising the series). Only the shared trading period for each index pair is considered. Jumps between days, which generally lead to significant price variations, are eliminated. Guide: Results are shown as a network. Each equity index is represented by a bubble. An arrow appears if causality (Granger) is significant at a 5% level. The arrow's direction depends on the direction of causality. Causality may go both ways if the two indices influence each other mutually. The size of the bubble is proportionate to the number of outgoing arrows. Arrows connected with the US index are shown in red for the sake of clarity.

The risk of volatility spikes has increased in an uncertain environment and could be amplified by the vulnerabilities of some non-bank financial intermediaries

Equity markets continue to operate in a moderate volatility regime, but with an elevated risk of volatility spikes. Despite the second-half rebound, equity market volatility remains well below its long-run average.

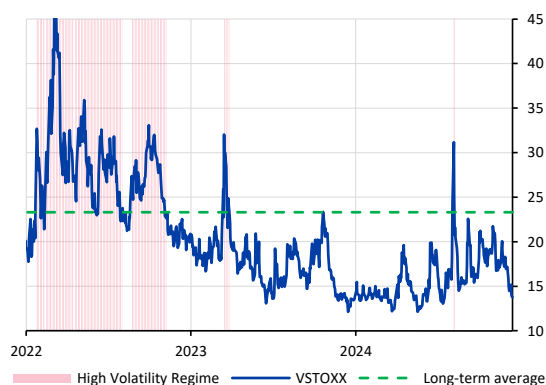
⁴⁷ Billio, M., Getmansky, M., Lo, A. W., and Pelizzon, L. (2012), "Econometric measures of connectedness and systemic risk in the finance and insurance sectors", *Journal of Financial Economics*, Vol. 104, No. 3, September, pages 535-559.

Volatility hit a peak at the start of August, in response to downbeat economic numbers from the United States and monetary policy decisions by the Fed and the Bank of Japan that were less accommodative than expected. On Monday 5 August, the VIX jumped 42 points in a matter of hours, its largest ever intraday increase, and recorded a reading of 65.7 during the day. Dubbed Volzilla, the episode was fuelled by a massive unwinding of USD-JPY carry positions (Box 1.5) and highlighted the risk of sudden and brutal market reactions, which is exacerbated by volatility-based strategies (*short vol* and *dispersion trades*) that could unwind positions swiftly in times of stress. While market conditions normalised quickly, the episode reiterated the vulnerability of non-bank financial intermediaries with heavy exposure to liquidity risk and leverage. A volatility spike could trigger massive and sudden position adjustments by these intermediaries, fuelling market reactions and exacerbating the risk of procyclical movements by other participants.

The risk of volatility spikes has also been increased by the growing concentration of the S&P 500. NVIDIA's share of the index's capitalisation increased from 0.5% in 2020 to 7% in 2024, while that of the "Magnificent 7" tech stocks almost doubled over the same period, rising to 31% in 2024. In September, excess volatility in the S&P 500 attributable to NVIDIA was equivalent to 2 percentage points, or 14% higher than the S&P 500's volatility excluding NVIDIA (Chart 1.41).

Chart 1.40: Volatility of European equity markets

x: time/y: annualised volatility as a %



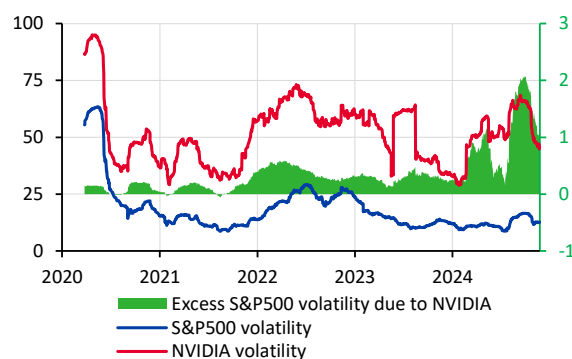
Sources: Bloomberg, Banque de France calculations.

Notes: The chart shows volatility (VSTOXX) regimes estimated using a Markov regime-switching model. The historical probability of moving from a low- to a high-volatility regime is less than 1%.

Most recent value: 12 December 2024.

Chart 1.41: S&P 500 excess volatility attributable to NVIDIA

x: time/y: annualised volatility



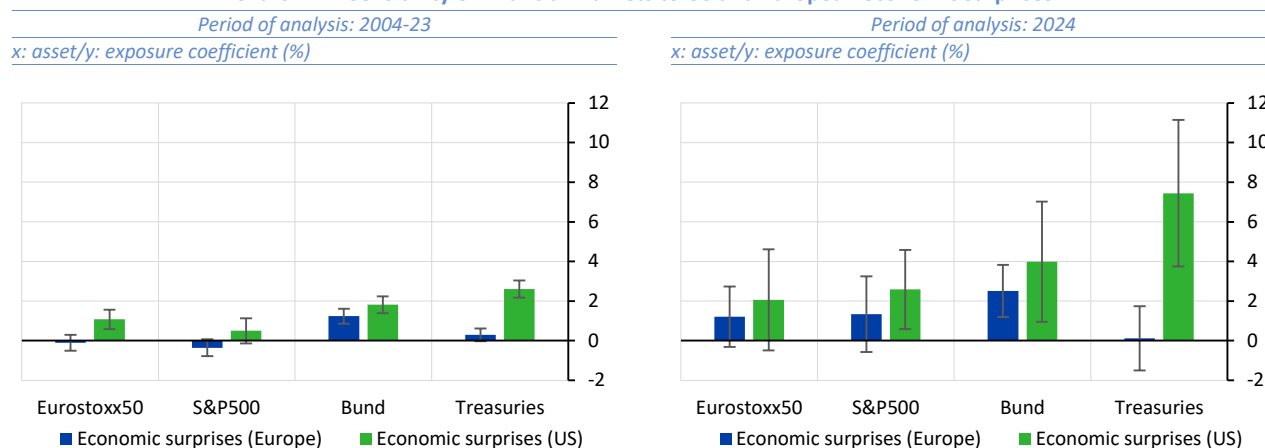
Sources: Refinitiv Datastream, Banque de France calculations.

Notes: Annualised volatility is calculated for a 60-day rolling window based on the daily returns of S&P 500 components. Excess volatility in the S&P 500 attributable to NVIDIA is calculated as the difference between S&P 500 volatility (including all components) and S&P 500 volatility excluding NVIDIA.

Most recent value: 25 November 2024.

Increased market sensitivity to macroeconomic indicators raises the risk of volatility spikes on the markets. Since the start of the year, market sensitivity to downside surprises in European and US economic reports has more than doubled relative to the 2004-23 period, as investors keep close tabs on cooling economic trajectories (Chart 1.42). On average, surprises linked to the US economy have a greater impact on financial markets than European economic surprises. This illustrates the high risk of spillover from adverse shocks affecting the US economy to European markets, which could trigger volatility spikes on equity and bond markets alike.

Chart 1.42: Sensitivity of financial markets to US and European economic surprises



Sources: Refinitiv Datastream, Citigroup, Banque de France calculations.

Notes: Citigroup economic surprise indices are weighted historical standard deviations of data surprises. A positive reading of the economic surprise index suggests that economic reports beat the consensus overall. Indices are calculated daily over a rolling three-month period. The chart shows the sensitivity of daily changes on financial markets (return for equities, interest rate changes for bonds) to daily changes in European and US economic surprise indices. Market variations are normalised to allow the level of sensitivity to be compared across indices and over time. The grey bars show 90% confidence intervals.

Guide: An exposure coefficient of 2% to US economic surprises for the Eurostoxx 50 means that a ten-point decline in the economic surprise indicator leads to a 0.2 of a standard deviation reduction in the Eurostoxx 50 index, or approximately 0.25% over the day.

European equity markets are relatively unaffected by the dynamics of the Chinese economy

China's equity markets have enjoyed significant growth over the last 20 years but were extremely volatile in the second half of 2024 as they responded to the announcement of government measures to support the economy. Since 2023, China's economy has experienced a sharp downturn, characterised by debt problems for local governments and consolidation of the real estate sector, leading to several major corporate bankruptcies, including Evergrande and Country Garden.⁴⁸ The loss of part of household savings invested in real estate assets, which accounted for 60% of total household savings, triggered a widespread collapse in confidence. In response, in September 2024 China's central bank announced a series of monetary easing measures, while the authorities indicated, without going into specifics, that they were ready to take fiscal action to revive domestic demand and reach the goal of 5% annual growth. The government did pledge to support major state-owned commercial banks by providing an estimated CNY 1 trillion to recapitalise the six main banks and by issuing special bonds worth an estimated CNY 2.3 trillion, or around EUR 300 billion. At the end of September 2024, the Chinese equity market saw large movements in the wake of these announcements and targeted measures by the central bank to support share buybacks, with prices jumping by around 17% in one week, although this did not materially impact European and US equities (Chart 1.43). Although European and Chinese financial systems have limited interconnectedness, European countries are exposed to the Chinese economic slowdown through trade links to China, which account for about 15% of the European Union's external trade (Germany's main trading partner; France's second-ranked partner).

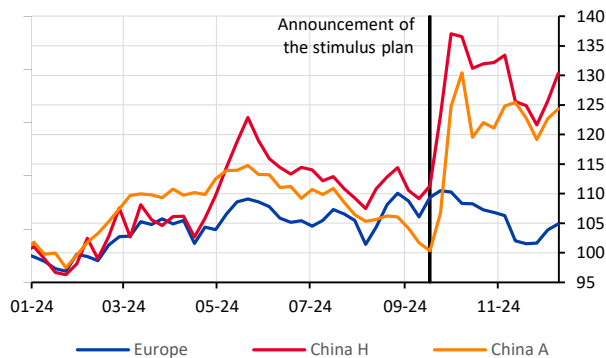
Some European sectors are particularly exposed to more muted Chinese growth and underperforming Chinese equity markets. For example, Textiles and Leathers, Aerospace, and Perfumes and Cosmetics rank among France's top-five exports to China, and firms in these sectors are exposed to the Chinese economic slowdown. In particular, Kering, Hermès, L'Oréal and LVMH, the four main French luxury groups, which make up 44% of the CAC 40's capitalisation, are all heavily exposed to Chinese demand. While on the whole European equity indices are moderately sensitive to adverse shocks on Chinese equity markets, especially when compared with their sensitivity to US or Japanese markets, some sectors are more sensitive than

⁴⁸ See Box 1.1 – Assessment of Risks to the French Financial System – December 2023.

others, including materials and finance, industry in Germany, and consumer discretionary (including luxury products) in France (Chart 1.44). For example, a 10% weekly correction for the Chinese equity market would lead, all other things being equal, to a 0.7% average fall in prices for French consumer discretionary stocks. Consequently, as the level of integration of Chinese financial markets increases, adverse shocks from China are increasingly likely to have a negative impact on French and European financial systems.

Chart 1.43: Year-to-date performance, Chinese equities

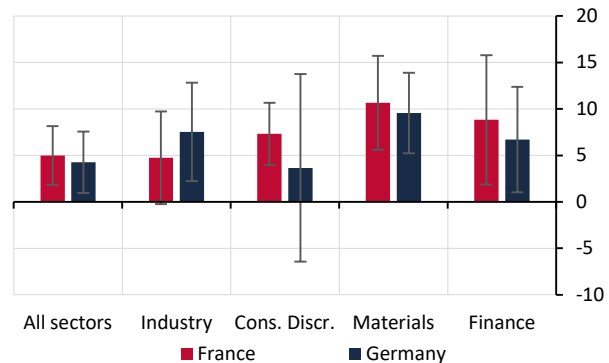
x: time/y: index, 1 January 2024 = 100



Sources: Refinitiv Datastream, Banque de France calculations.
Notes: Index based on Datastream country equity indices, 1 January 2024 = 100. A-shares are renminbi-denominated and reserved for Chinese residents. H-shares are also issued by Chinese companies, but listed in Hong Kong.
Most recent value: 12 December 2024.

Chart 1.44: Sensitivity of equities from French and German sectors to shocks affecting the Chinese equity market

x: sector/y: %



Sources: Refinitiv Datastream, Banque de France calculations.
Notes: Sensitivity is calculated using a factor model whose control variables are the returns of US and Japanese equity markets. The coefficient of exposure to shocks on the Chinese equity market is shown in the chart, and the grey bars show 90% confidence intervals.
Guide: Sensitivity of 7% for the consumer discretionary sector means that a 1% correction on the Chinese market would lead to a 0.07% fall in the prices of French stocks from this sector, all other things being equal.
Most recent value: 22 October 2024.

Box 1.5: Carry trade unwind: lessons from 5 August

By Xavier Denis

Carry trades are strategies that aim to exploit interest rate differentials between funding and investment currencies. Investors are therefore exposed to currency risk. Carry trades can be broadly defined to include all investment strategies where the funding currency is different from the currency in which the investment asset, which could be equities or bonds for example, is denominated. Such strategies typically involve financing in a low-yield, low-volatility currency, often the Japanese yen or Swiss franc, which is paired with investment in higher-yielding currencies, allowing the investor to benefit from the interest rate differential and sometimes a foreign exchange gain. Japanese financial institutions, including life insurers and pension funds, have a long history of accumulating euro and dollar-denominated foreign bonds on their balance sheets and primarily using yen to finance these purchases. Conversely, non-resident investors can convert their dollars into yen on the forex swaps market and capture the additional remuneration from providing dollars, while investing in the short term in yen-denominated risk-free assets, such as Japanese Treasuries. These positions do not entail currency risk since a forward exchange rate, not an expected exchange rate, is used in the trade.

These strategies are extremely vulnerable to increased market volatility when unhedged forex positions are used to bet on movements in the future spot exchange rate. Such positions can incur losses when market expectations reverse and sudden unfavourable currency adjustments occur. Use of leverage (debt) makes these positions especially sensitive to market sentiment, changes in exchange rate and interest rate expectations, or increases in volatility. For this reason, investors tend to temper their expected gains based on the associated risk, measured by the implied volatility of the funding currency.

Market turmoil on 5 August 2024, featuring a volatility spike on the US equity market and a collapse on the Japanese equity market, which gave up 12% over the day, was accompanied by a rapid unwinding of carry positions. The unwind itself amplified the downside reaction by global financial markets, insofar as investment assets included not only safe, low-volatility assets, but also equities, for example. Thus, the Nasdaq fell in early August, following the Japanese market's lead, owing to the withdrawal of leveraged investors that had financed themselves in yen to invest on US markets and boost the returns on their strategy, exposing them to currency risk as well as equity risk. However, causality can be bidirectional, as heightened forex volatility drove a carry unwind that, in turn, penalised debt-based investment strategies.

While a wide variety of investors use carry trade strategies, hedge funds are among the main users – this was especially true during the August 2024 episode – alongside traditional asset managers such as Japanese pension funds and, to a lesser extent, non-financial participants, which are typically large companies with cross-border investment activities. Retail investors have a very minor role, except in Japan, where the negative interest rate policy for many years encouraged households to take on exposure to these strategies. There are many possible carry strategies based on different baskets of funding and investment currencies. One successful strategy until summer 2024 consisted in borrowing in yen to convert them into Mexican pesos, before currency movements rendered this strategy unprofitable.

Carry trades could be rebuilt quickly, but the size of positions is hard to measure. The increase in the yen's implied volatility, owing to the rate-hiking cycle in Japan, caused the carry trade market to at least partly dry up in the second quarter of 2024, as shown by the change in forex derivative positions. It remains very hard to measure the size of carry trade positions because of the diversity of strategies and instruments. The Bank for International Settlements (BIS) estimates that positions involving more illiquid assets were maintained.⁴⁹ The summer 2024 episode was by no means a one-off, and carry trade strategies are destined to be rebuilt as soon as the market identifies an opportunity, as happened in the years leading up to the 2007-08 financial crisis.

Yield spreads linked to corporate credit risk remain narrow despite the uncertain macroeconomic environment

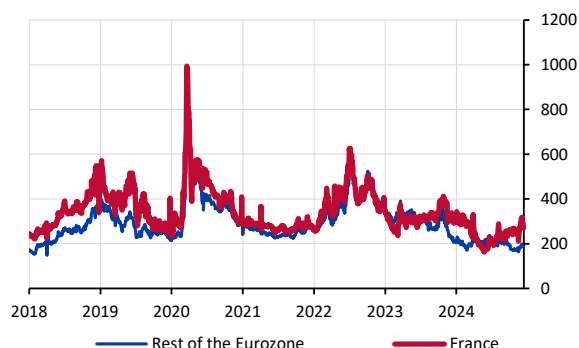
Credit spreads on corporate bonds remain at low levels. Outstanding high-yield bonds issued by French companies have been steady since January 2022 at EUR 80 billion, or 12% of total outstandings, but the market's average credit rating deteriorated in 2024, reflecting one major issuer's downgrade to CCC (Chart 1.46). These idiosyncratic movements affected the average credit spread of French high-yield bonds, which widened slightly relative to the European market in 2024. However, credit spreads on European and French high-yield bonds eased overall in 2024 and are at low levels relative to historical trends (Chart 1.45). The corporate bond market is benefiting from the prospects of reduced inflation without a recession and lower

⁴⁹ Aquilina M., Lombardi M., Schrimpf A. and Sushko V. (2024), "The market turbulence and carry trade unwind of August 2024", *BIS Bulletin*, No. 90, NIS, August.

interest rates. However, it remains exposed to the risk of a correction in the event of an economic or geopolitical shock, or more generally in the event of increased market volatility.

Chart 1.45: Spreads on HY bonds issued by French and European NFCs

x: time/y: spreads (basis points)

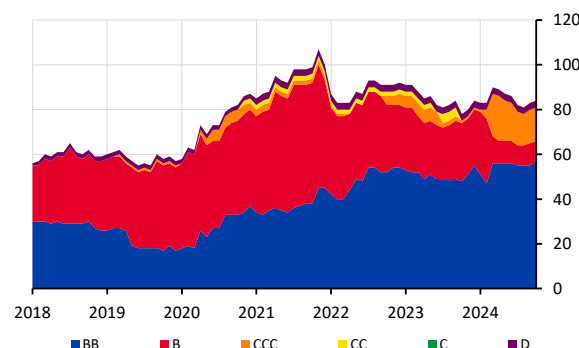


Source: Refinitiv Eikon.

Notes: HY spreads are determined using the ICE BofAML Global Bond Index methodology. Underlying securities are corporate bonds issued publicly on the eurobond market or on the domestic markets of euro area member countries, rated by a credit rating agency, and meeting the following criteria: at least 18 months to final maturity at the time of issuance, residual duration of at least one year, a fixed coupon schedule, and a minimum outstanding amount of EUR 250 million. Most recent value: 12 December 2024.

Chart 1.46: Outstanding HY bonds issued by French companies, by rating

x: time/y: outstanding amounts (EUR billions)



Source: CSDB.

Notes: Outstanding amounts are calculated by rating class. For example, BB+, BB and BB- ratings are aggregated as BB ratings. Date: 30 November 2024.

Box 1.6: Estimated liquidity risk of bond funds

By Tristan Jourde and Martin Saillard

Some fixed-income investment funds allocate a significant proportion of their portfolios to illiquid assets, while offering daily liquidity to investors so that they can redeem their units, which exposes these funds to liquidity risk. In the event of financial market shocks, funds may be faced with capital flight and may have to sell assets, which can adversely affect market liquidity and generate contagion effects that impact other parts of the financial system. For instance, asset sales by bond funds during the Covid-19 pandemic had an amplifying effect on the global bond market correction, especially for funds holding illiquid portfolios (IMF, 2022).⁵⁰ Liquidity mismatches in open-ended funds are therefore a subject of regulatory discussions, including within the FSB and the ESRB, aimed at providing funds with liquidity management tools (LMTs) that, when activated, limit the disruptive effects of liquidity shocks on the market. This box proposes a new indicator to estimate the proportion of bond fund portfolios that may be quickly liquidated to respond to potential redemption requests by investors in a market stress scenario.

This indicator shows a gradual decline in the liquid share of the French bond funds portfolio since 2014.⁵¹ The liquid share corresponds to the share of the portfolio that may be sold without putting significant pressure on bond prices. In this analysis, that share is estimated using the bid-ask spread⁵² of assets held

⁵⁰ IMF (2022), "Asset Price Fragility in Times of Stress: The Role of Open-End Investment Funds", Chapter 3, GFSR (October 2022).

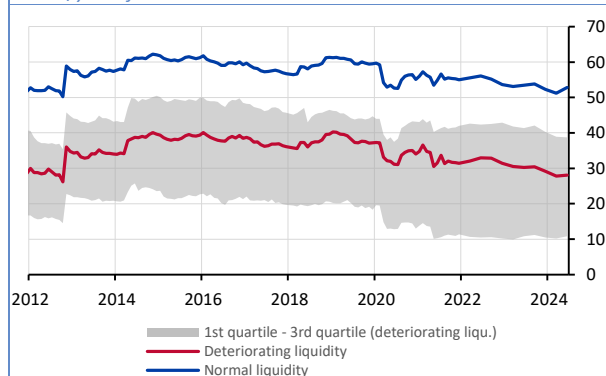
⁵¹ French bond funds outstandings amounted to EUR 307 billion at end-June 2024, representing 20% of the total outstanding amount of French non-money market funds (banque-france.fr)

⁵² A security's liquidity cannot be observed directly and there is no single indicator capable of capturing all the different dimensions (transaction cost, depth, breadth, speed of execution, resilience). The bid-ask spread reflects only the transactional cost of liquidity and suffers from limitations on the bond market, where thin volumes and many bilateral trades make it harder to interpret. Even so, this indicator is still one of the most widely used and has the advantage of being available for a large proportion of securities and across a significant time horizon.

by the funds. A liquidity level of between 0 and 1 is calculated for each asset, with 0 denoting an illiquid security and 1 a perfectly liquid security (or cash).⁵³ This level is inversely proportionate to the pressure exerted on bond prices in the event of sale by the funds. The average liquid share of the portfolio of French bond funds fell from a plateau of around 60% between 2014 and 2020 to 52% at the end of June 2024 (Chart 1.47). The decrease seems to be chiefly the result of increased holdings of high-yield corporate bonds, which rose from 13%-15% between 2015 and 2020 to 21.5% in 2024 (Chart 1.48), with a particularly pronounced trend since the Covid-19 pandemic. However, there are factors of resilience: holdings of corporate bonds with small issue size (below EUR 250 million) halved over the same period. In an adverse scenario of deteriorated bond market liquidity (i.e. a more aggressive haircut applied to securities),⁵⁴ the liquid share of funds falls by approximately half relative to a normal market liquidity scenario, reaching 28% on average at the end of June 2024. Dispersion within the fund population has increased since 2012, with one-quarter of French bond funds holding a liquid share of below 10% to respond to potential investor redemptions.

Chart 1.47: Average liquid share of French bond fund portfolios

x: time/y: % of net assets

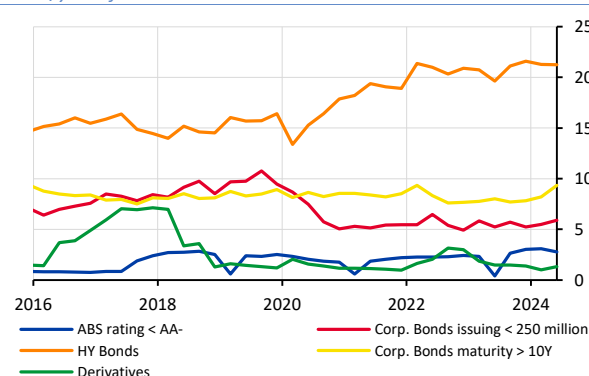


Sources: OPC data collection, CSDB, Refinitiv, Banque de France calculations.

Note: The average liquid share in the portfolios is calculated using a granular estimate of the liquidity level of each portfolio asset. This level is derived from assets' bid-ask spreads, using a non-linear function whose parameters can be adjusted according to assumptions about the overall level of market liquidity. Averages are weighted by outstanding amounts. Most recent value: 30 June 2024.

Chart 1.48: Percentage of fund portfolios invested in specific risky bond categories

x: time/y: % of net assets



Sources: OPC data collection, CSDB, Banque de France calculations. The categories are not mutually exclusive. Most recent value: 30 June 2024.

In the event of financial market shocks, investment funds that offer investors daily liquidity to redeem their shares could be faced with sudden capital outflows. Investment flows are sensitive to financial conditions. Under normal financial conditions, French bond funds may be exposed to outflows of between 0% and 10% of their assets under management over one month (Chart 1.49). But when conditions deteriorate, investors tend to withdraw abruptly from some investment funds or switch their assets to other funds, creating a risk of outflows that, for some funds, can rise to as much as 50% of their assets under management (over one month). According to our estimates, at the end of September 2024, 7 funds out of the 372 analysed were exposed to a risk of monthly outflows exceeding 20% of their assets under

⁵³ For each asset, a percentage of liquidity is calculated based on its bid-ask spread using a non-linear conversion function. This approach is a more granular alternative to the approach proposed by Bouveret (2017), which identifies asset liquidity by category (asset class, credit rating, maturity and size of issue), taking inspiration from the approach used to measure bank high-quality liquid assets (HQLA).

Bouveret, A. (2017), "Liquidity stress tests for investment funds: A practical guide", International Monetary Fund, July.

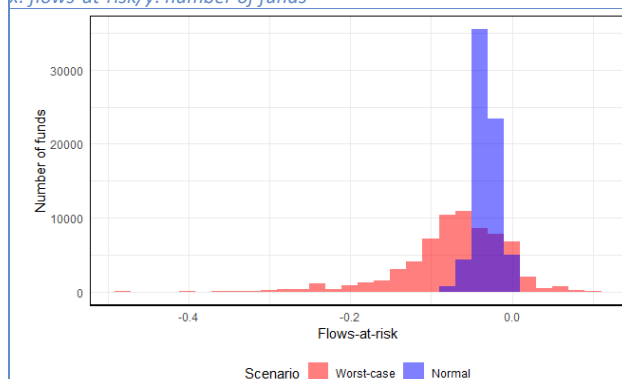
⁵⁴ In a scenario featuring normal market liquidity, the bid-ask spread approach identifies average liquidity of 62% for IG sovereign bonds, 49% for IG corporate bonds, 22% for HY sovereign bonds and 19% for HY corporate bonds, as compared with 86%, 53%, 0% and 0% respectively under the Bouveret (2017) HQLA approach. The function's parameters can be modified to obtain estimates for a market scenario in which liquidity is degraded. In this adverse scenario, the average liquidity of IG sovereign bonds is estimated at 37%, compared with 21% for IG corporate bonds, 7% for HY sovereign bonds and 4% for HY corporate bonds.

management in an adverse scenario, representing total assets of EUR 4.8 billion out of total assets under management of EUR 107 billion across all the funds studied.

The risk that some funds might lack sufficient liquidity to cope with sudden redemptions by investors under adverse financial conditions has increased since 2020. Owing to the trend of credit rating downgrades and the resulting contraction in the liquid shares of their portfolios, a growing number of French bond funds could find themselves in difficulty in the event of sudden outflows (around 15% of funds in 2024, compared with 7% in 2018). According to our estimates, of the 20 bond funds whose assets under management exceed EUR 1 billion, 4 are at risk in the event of a major financial shock such as the 2008 financial crisis, the euro area crisis, Brexit or Covid-19. In such a scenario, some funds might be forced to sell illiquid assets at reduced prices, which would put pressure on financial asset prices and could lead to spillovers to other parts of the financial system. These forced sales of illiquid bonds could amount to at least EUR 1 billion, based on a low estimate⁵⁵ that assumes a clear liquidation order in which fund managers sell their most liquid assets first, e.g. cash and securities with the narrowest bid-ask spread, including highly-rated sovereign bonds, to meet redemption requests. However, this analysis does not take into account the potential use by funds of liquidity management tools, such as gates and swing pricing, which could limit forced sales. Incentives introduced by the AMF in 2022 and 2023 helped to significantly increase LMT adoption by open-ended funds.⁵⁶

Chart 1.49: Risk of fund outflows as a function of two scenarios for financial conditions

x: flows-at-risk/y: number of funds



Sources: OPC data collection, CSDB, Refinitiv, Lipper, Banque de France calculations.

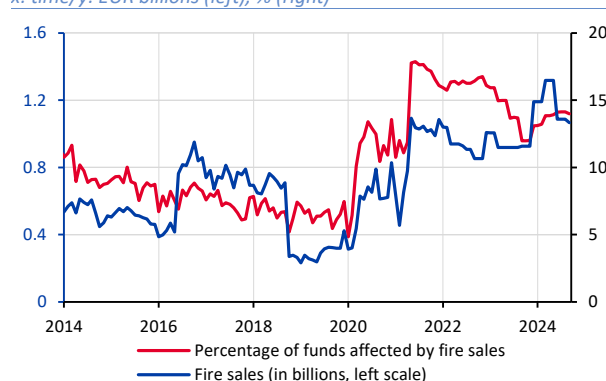
Note: Flows-at-risk are estimated using quartile regressions on monthly data for each fund (between 2000 and 2024 where data are available), as a function of the level of financial conditions (ECB CISS), based on work by Adrian et al. (2019). The adverse scenario consists in stressing the level of financial conditions (95th percentile of the CISS), whereas the normal scenario consists in calculating the level of flows-at-risk based on median financial conditions in the euro area.

Guide: Whereas in the normal scenario, no fund suffers outflows exceeding 10% of total assets (blue bars), in a scenario featuring adverse financial conditions, some funds experience outflows of between 20% and 50% of their total assets (red bars), representing total assets-at-risk of EUR 4.8 billion at the end of September 2024.

Most recent value: 30 June 2024.

Chart 1.50: Forced asset sales in an adverse scenario

x: time/y: EUR billions (left), % (right)



Sources: OPC data collection, CSDB, Lipper, Banque de France calculations.

Note: The percentage of funds affected by forced sales is calculated as the total number of funds experiencing a liquidity shortfall in an adverse scenario, divided by the total number of funds in the sample at a given date. For each fund, the value of forced sales is calculated by multiplying the liquidity shortfall (as a percentage) by the fund's assets under management.

Most recent value: 30 June 2024.

⁵⁵ Jiang et al. (2021) describe the use of dynamic strategies by fund managers. In this framework, funds rely primarily on liquid assets to handle redemptions during tranquil market conditions, but reduce their assets proportionally to maintain portfolio liquidity in times of stress.

Jiang, H., Li, D., and Wang, A. (2021), "Dynamic liquidity management by corporate bond mutual funds", *Journal of Financial and Quantitative Analysis*, Vol. 56, No. 5, September, pages 1622-1652.

⁵⁶ Darpeix, P-E., Rossopoff, B. and Scaufilaire, J. (2024), *Évolution de l'adoption des outils de gestion de liquidité dans les fonds français*, AMF.

Increased risk of volatility on the crypto-asset market, which hit record valuation levels following the US elections

The crypto-asset market has recorded significant growth since June 2024, with valuation up 106% for the year to date. The rise is chiefly due to the 123% increase in the valuation of Bitcoin, which makes up 60% of total crypto-asset valuation (Chart 1.51). The crypto rally was initially driven by approvals from the US Securities and Exchange Commission (SEC) to launch spot Bitcoin exchange-traded products (ETPs) on the market in January 2024, followed by Ether ETPs in July 2024. Spot Ether ETPs (14% of total crypto-asset valuation) are worth USD 12.5 billion. Inflows to spot Bitcoin ETPs slowed significantly after April 2024 and these products were worth USD 21 billion at the start of December 2024.

The results of the US presidential election in November 2024 then triggered widespread interest in crypto-assets, as Donald Trump had promised a favourable regulatory environment for them during his presidential campaign. Buoyed by the excitement, the market's valuation soared by 55% in just one month to record levels, higher than the peak of November 2021. After attracting retail investors on the hunt for high yields in 2021, the crypto-asset market exhibited instability in 2022 due to market interconnectedness and its severe volatility.⁵⁷ This episode generated significant unrealised or realised losses for 50% of investors at the end of 2022 and underlined the risky nature of crypto-assets. Authorities adopted regulatory measures to protect investors and reduce the structural vulnerabilities of the crypto-asset market. The European Markets in Crypto-Assets (MiCA) Regulation introduced an overall framework for digital-asset issuers and service providers in Europe, and the European Securities and Markets Authority (ESMA) recently proposed an initiative for European supervision of crypto-asset service providers.⁵⁸

Tokenisation initiatives gathered pace over the course of 2024. Tokenisation is a process used to issue and register an asset, such as a security, currency or commodity, in digital form, called a token, using distributed ledger technology (DLT). Fund tokenisation initiatives, consisting in issuing units as digital tokens, have proliferated since March 2024. The two main tokenised money market funds had approximately USD 1 billion in assets under management at the start of December 2024. Tokenised US Treasuries were worth USD 2.7 billion at the start of December 2024, up from USD 100 million at the start of 2023, although this is still a tiny amount when compared against the USD 28 trillion in total outstanding US Treasuries.

The emergence of tokenised funds creates new risks for financial stability.⁵⁹ Tokenised asset trading platforms enable 24/7 trading, which is not the case for most markets in financial instruments. The round-the-clock availability of tokenised markets could amplify the volatility of asset prices, making it hard to sell at desired prices outside periods of high activity.⁶⁰ This risk is exacerbated in the case of illiquid tokenised assets. Tokenisation also creates new channels of contagion between the financial sector and crypto-assets, which could promote the transmission of crypto-asset market shocks to the tokenised asset market.⁶¹ Furthermore, technological interconnectedness raises the risk of contagion in the event of the failure of a service provider or a cyberattack. Tokenised funds also present governance risks and technological risks owing to the use of different DLTs, whose interoperability remains limited, causing liquidity to become fragmented. Due to the small size of the tokenised fund market, the risks to financial stability remain limited at this stage, but authorities are watching carefully and pursuing initiatives to promote the safe development of tokenisation. To this end, the European Pilot Regime is fostering innovation in the financial sector while offering a regulatory framework designed to reconcile the needs of investors, market integrity and financial stability.⁶²

⁵⁷ [Crypto-assets: 2022 confirmed already identified risks | Banque de France \(banque-france.fr\)](#)

⁵⁸ [European supervision: crypto first! | Banque de France \(banque-france.fr\)](#)

⁵⁹ [The Financial Stability Implications of Tokenisation - Financial Stability Board \(fsb.org\)](#)

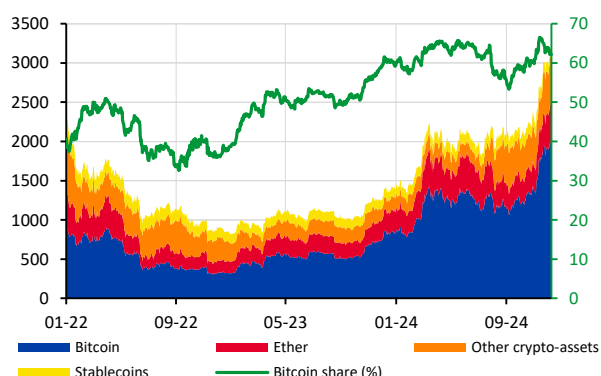
⁶⁰ [Tokenisation in the context of money and other assets: concepts and implications for central banks \(bis.org\)](#)

⁶¹ [Tokenization: Overview and Financial Stability Implications \(federalreserve.gov\)](#)

⁶² Regulation: [2022/858 - EN - EUR-Lex](#).

Chart 1.51: Crypto-asset market valuation and Bitcoin market share

x: time/y [left]: USD billions; y [right]: %

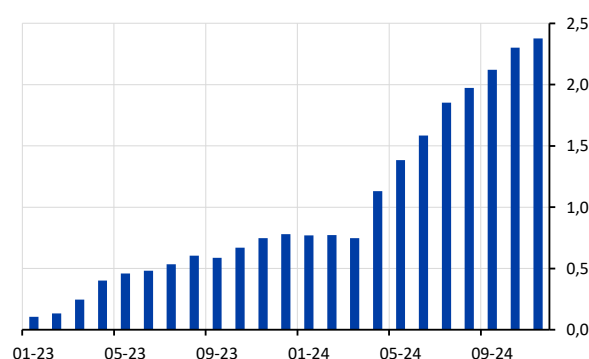


Source: Eikon Refinitiv.

Most recent value: 10 December 2024.

Chart 1.52: Capitalisation of the tokenised US Treasuries market

x: time/y: USD billions



Source: rwa.xyz/treasuries.

Most recent value: December 2024.

1.4 Banks and insurers continue to exhibit resilience

French banks' diversified business models support a modest income growth, but indicators of operational efficiency and profitability remain below those of their euro area peers

Over the first nine months of 2024, French banks saw a slight increase in income, driven by their diversified business models and substantial fees and commissions. Net banking income (NBI)⁶³ increased by 5.5% to EUR 117.3 billion, compared with EUR 111.3 billion in the first nine months of 2023. The growth was supported by historically high fees and commissions (EUR 43.7 billion, up 7.1%) and an increase in income from market activities (EUR 15.9 billion), which exceeded levels recorded over the 2019 to 2021 period.

However, the net interest margin (NIM), which accounts for more than 40% of NBI, making it the largest component, remained largely unchanged. It stood at EUR 47.7 billion in the first nine months of 2024, 0.5% lower than in 2023. The gap between the average return on assets and the average cost of liabilities narrowed from 0.81% in 2021 (before the increase in interest rates) to 0.70% at the end of September 2024. Residual inertia effects related to the balance sheet structure of French banks have not yet fully dissipated. Interest expenses rose sharply, surging by 505% between 2021 and 2024 due to higher returns on deposits (regulated deposits and fixed-term corporate deposits) and financing needs, which were met through securities issuance. By contrast, interest income increased by only 199% over the same period, as outstanding loans – mostly fixed-rate – were renewed slowly due to weaker demand. Lower interest rates, following ECB rate cuts since June 2024, should help sustain credit demand, provided that policy and fiscal uncertainties do not undermine the confidence of non-financial agents. The Eurosystem's bank lending survey for the third quarter of 2024 reported a sharp increase in household demand for housing loans, along with modest growth in NFC demand.⁶⁴

The major euro area banks⁶⁵ have benefited more from rising interest rates, reporting higher income. Their NBI increased by 6% in the first nine months of 2024 compared to the same period in 2023. They recorded additional NIM growth compared to the previous year (up 3.5%), following an exceptional increase in 2023, when the net interest margin surged by 21.3% relative to 2022.

⁶³ Net banking income (NBI), which corresponds to the notion of turnover, is made up primarily of net interest margin (interest income less interest expense), net fees and commissions, and income from market activities.

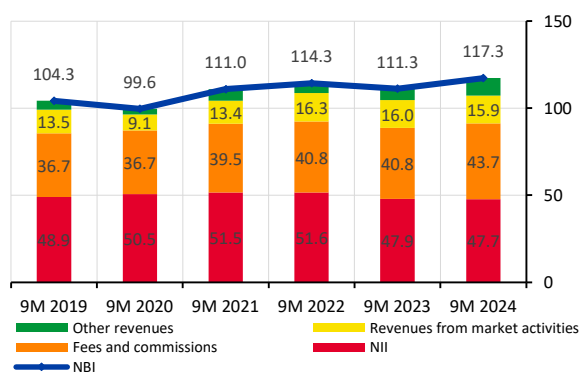
⁶⁴ European Central Bank (2024), *Euro area bank lending survey - Third quarter of 2024*, October, [ECB](#).

⁶⁵ Panel of 22 comparably-sized banking groups with similar business models.

As of the end of September 2024, the net profit of French banking groups increased by 2% compared to September 2023, reaching EUR 27.8 billion, as operating expenses remained under control (up 1.1% to EUR 79.4 billion), despite a 21.2% rise in the cost of risk to EUR 8.7 billion in 2024 due to heightened credit risk. The cost-to-income ratio of French groups improved slightly to 67.7%. Profitability ratios likewise showed a small improvement. RoA was up 5 basis points at 0.43% and RoE rose by 73 basis points to 7%. These indicators are higher for euro area peers, at 0.83% and 12.7%, respectively.

Chart 1.53: Change in NBI and its components of the six main French banks

x: time/y: EUR billions

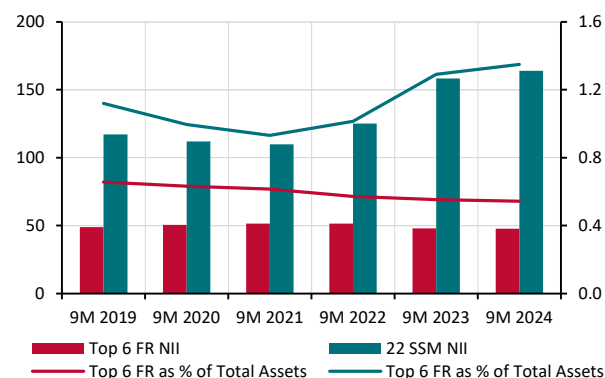


Sources: FINREP and COREP reporting.

Note: 9M denotes the first nine months of the year.

Chart 1.54: Compared change in NIM of the 6 main French banks and 22 major SSM banks

x: time/y: USD billions



Source: FINREP reporting.

The loan portfolio of French banks is exposed to a deterioration in non-financial corporations' financial positions, but the increase in credit risk remains limited

At 2.61%, the non-performing loan (NPL) ratio at French banks remains near historically low levels, despite a slight increase (up 11 bps from the end of 2023). This increase is driven by a deterioration in the NFC loan portfolio, which accounts for 21% of banks' total assets. The NPL ratio for NFCs increased from 3.58% at the end of 2023 to 3.81% in Q3 2024, while the household NPL ratio remained relatively stable.

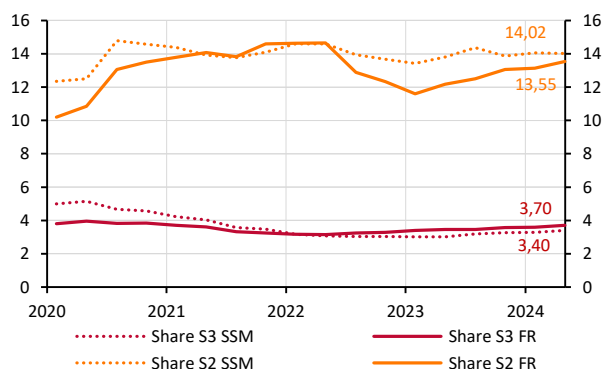
The rise in NPLs primarily affects the SME loan portfolio. The NPL ratio for small and medium-sized enterprises (SMEs) rose by 31 basis points to 4.5%, driven by a rise in corporate failures (see Section 1.2). The proportion of Stage 2 loans (performing loans with significantly increased credit risk) is also rising more rapidly among these counterparties (up 150 bps to 14.67%) than among NFCs overall (up 105 bps to 13.55%). Sectors with the highest NPL ratios include healthcare (8.56%), accommodation and food services (8.54%), and construction (8.42%). The leveraged loan portfolio exhibits a significantly higher NPL ratio than the rest of the NFC portfolio (8.4% vs. 3.2% as of the end of June). In the first half of 2024, leveraged loan issuance was strong, totalling EUR 72.8 billion, with total outstanding reaching EUR 184.3 billion (2.2% of total assets and 10.3% of total NFC loans and securities).

The provisioning ratio for NFC NPLs appears adequate and well above that of European peers (45.2% vs. 42.1%). However, the provisioning ratio for non-performing leveraged loans is lower than the average (34.5%). The observed decrease in the provisioning ratio is due to two factors – one linked to the state-guaranteed loan scheme (PGE scheme) and the other to renewal of the stock. The required provisioning ratio for PGE loans is lower, as the guarantee means that losses given default will be smaller. Furthermore, loans that become non-performing are structurally less provisioned than older loans.

As of September 30, corporate loans secured by commercial real estate⁶⁶ totalled EUR 284.7 billion, accounting for 3.25% of total assets at the six main French banking groups, compared to 5.64% for their European peers. Risks associated with these exposures remain contained: loss ratios are lower than those of their European peers (Stage 3 exposure ratio of 3.41% vs. a European average of 4.57%). The Stage 2 exposure ratio has risen to 14.6%, still below the SSM average of 20.77%, while the Stage 2 provisioning ratio stands at 5.21%, more than double that of European banks (2.43%).

Chart 1.55: Share of Stage 2 and 3 loans to NFCs

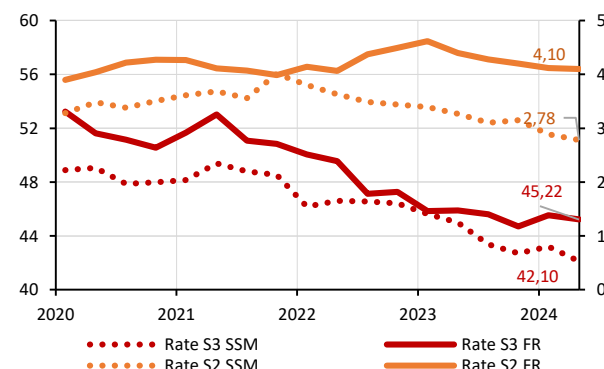
x: time/y: % share of loans



Source: FINREP reporting.
Most recent value: Q3 2024.

Chart 1.56: NFC loan coverage ratio, by stage

x: time/y: % coverage ratio



Source: FINREP reporting.
Most recent value: Q3 2024.

Liquidity and own funds fundamentals remain sound

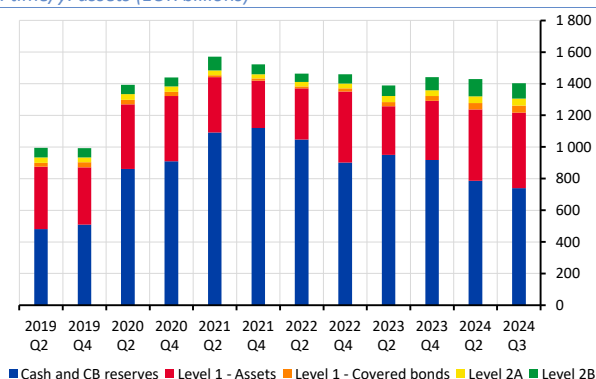
Since the end of 2023, liquidity ratios at the main French banking groups have remained broadly stable and comfortably above regulatory requirements. The average 12-month liquidity coverage ratio (LCR) remained steady at just under 147% as of late September. The net stable funding ratio (NSFR) stood at 114.7% at the end of September 2024, down 50 basis points from December 2023. On the liabilities side, TLTRO amounts declined from EUR 323 billion at the end of 2022 to less than EUR 1 billion in September 2024 and were offset by other funding sources. As a result, outstanding issued debt securities increased from EUR 1,195 billion at the end of 2022 to EUR 1,533 billion in September 2024. The composition remained stable (21% deposit certificates, 15% covered bonds, 11% hybrid instruments, 3% asset-backed securities, and 50% other financial instruments). Meanwhile, the level of HQLA has remained steady since 2022, though the composition of assets has changed. Reserves held with the central bank declined by 10.9 percentage points over the first three quarters of 2024, replaced by government securities, which increased by 7.0 percentage points. The increased exposure to government securities was marked by geographical diversification, while the share of government securities in total HQLA remains low compared to historical levels. The encumbered share of central bank-eligible assets declined by 311 basis points to 23.3%, providing institutions with significant flexibility to obtain refinancing if needed. This flexibility has been reinforced by the new monetary policy framework, in which the central bank determines the amount of liquidity granted based on banks' demand.⁶⁷

⁶⁶ For more details of French banks' exposure to commercial real estate in the broad sense, see the *Analyse et Synthèses* report published annually by the ACPR on the topic.

⁶⁷ Lez P. (2024), "The ECB's operational framework review: why? how?", *Eco Notepad*, Banque de France, September.

Chart 1.57: High-quality liquid assets (LCR numerator) of the six main French banks

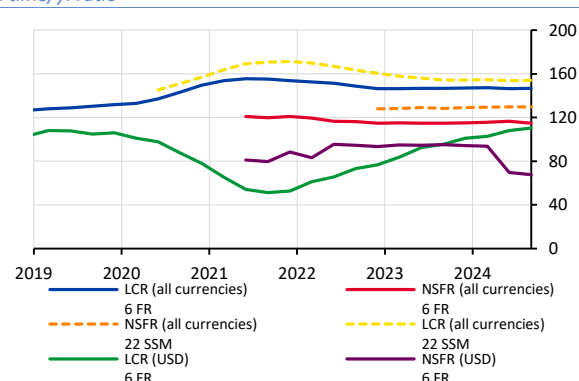
x: time/y: assets (EUR billions)



Source: COREP reporting.

Chart 1.58: Regulatory liquidity ratios of the six main French banks

x: time/y: ratio



Source: COREP reporting.

Note: Ratios relating to the LCR are calculated on an average year-on-year basis.

Most recent value: Q3 2024.

The resilience of France's banks is underpinned by elevated and stable own funds ratios, substantially above regulatory requirements. The Common Equity Tier 1 (CET1) ratio of France's main banking groups stood at 15.3% in September 2024, down 33 bps relative to December 2023. Comfortable CET1 margins (5.3% at end-December 2023) enabled them to cope with increased requirements, including in relation to the countercyclical capital buffer rate, which raised from 0.5% to 1% at the start of January 2024, and other countercyclical or systemic buffers in the European Union. At the end of September, the CET1 margin was 4.5%, compared with 4.2% for comparable euro area peers. The leverage ratio was also at an adequate level (5.1%) in September 2024, exceeding requirements, which are set at 3% plus a buffer for global systemically important banks, as well as, since 2024, Pillar 2 leverage requirements set as part of the supervisory process.

France's six main banking groups have limited exposure to French government debt, which accounts for 3.3% of their total assets and 71% of their CET1 capital.⁶⁸ Securities (sovereign, local government and public agencies) make up approximately 50% of these exposures (1.7% of assets and 36% of CET1), and a large proportion is measured at amortised cost. This situation can be compared against the average exposure of SSM banks to their domestic governments, which is slightly higher (close to 4.3% of assets and 85% of CET1 for total exposures, with holdings of securities accounting for 2.5% and around 50% respectively). Even under strong assumptions regarding the transmission of wider French sovereign spreads to other categories of French debt securities (financial institutions and NFCs), French banks are well-positioned to absorb periods of market stress.

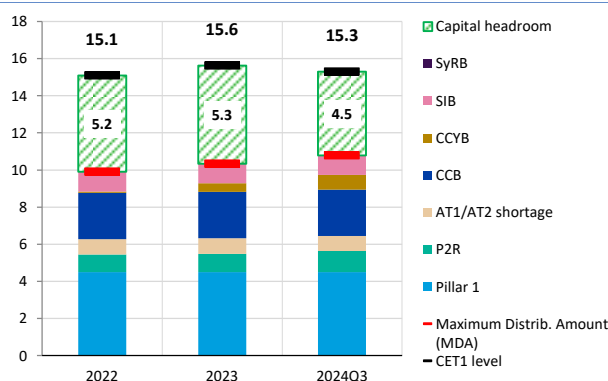
European banks' own funds levels allow them to absorb the changes in regulatory requirements under the CRR3/CRD6 Banking Package. The package transposes the international agreement on finalising Basel III into European Union law. It reinforces the requirements for calculating risk-weighted assets (RWA). Most of the provisions will be applicable from 1 January 2025, except for the market risk requirements, as the European Commission has delayed implementation of this framework by one year due to implementation delays by a number of jurisdictions. The impact of CRR3, which has been quantified by an exercise conducted by the European Banking Authority (EBA),⁶⁹ is significant but absorbable by the main European banks, which boast solid capital positions. And in fact, much of the increase in RWA will not be felt until 2030, as constraints connected with the output floor are gradually phased in. No European bank is expected to show a T1 or CET1 shortfall following the move to CRR3/CRD6. Effective implementation of these provisions at international level will help to strengthen the overall financial system.

⁶⁸ After restating centralised regulated savings, which are held with the CDC savings fund and sometimes classified under public sector.

⁶⁹ European Banking Authority (2024), *Basel III Monitoring Exercise Report*, EBA/REP/2024/22, October, [europa.eu](https://www.eba.europa.eu)

Chart 1.59: Change in CET1 regulatory requirements of the six main French banks

x: time/y: %



Source: COREP reporting.

The sound balance sheets of French and European banks are translating into favourable borrowing conditions in the markets. Despite a rise in bond issuance since 2023 and temporarily elevated volatility in June 2024, credit spreads on French bank bonds remain near their lowest levels since the start of the monetary tightening cycle. The trend is similar to those observed in other European countries. However, French bank stocks have underperformed their European peers since June 2024 amid a broader overall underperformance by the French equity market relative to the European market. Overall, valuation indicators for European banks appear low compared to the broader market, possibly reflecting structural uncertainties among investors regarding profitability prospects.

Chart 1.60: OAS spread on bank senior debt by country

x: time/y: spreads (basis points)

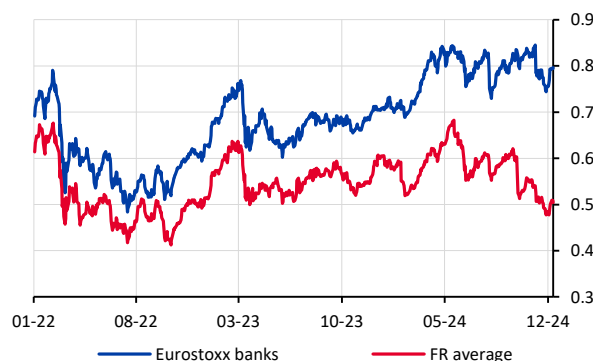


Sources: Iboxx, LSEG Datastream.

Most recent value: 12 December 2024.

Chart 1.61: Price-to-assets ratio of bank stocks

x: time/y: ratio



Source: Bloomberg.

Note: For European banks, an average ratio of the components of the Eurostoxx banks index.

Most recent value: 12 December 2024.

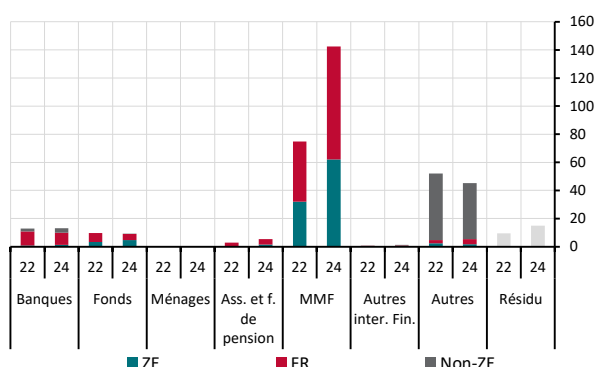
Investment funds are partly absorbing increased issuance of bank debt securities

Direct bank-fund interconnectedness through holdings of bank securities is increasing, primarily via money market funds' (MMFs) holdings of banks' short-term market debt. The gradual repayment of TLTROs has driven banks' securities issuance. MMFs are the primary investors in the short-term segment (46% in Q2 2024) and also appear to have absorbed the most recent increase in issuance (Chart 1.62). A significant domestic presence is also evident: French funds accounted for 56% of MMF holdings of short-term bank debt in Q2 2024. This bank debt makes up a significant portion of their portfolios (over 50%). Interconnections between banks and funds are less pronounced in long-term market financing, i.e. for maturities exceeding one year. In

the second quarter of 2024, investment funds, including MMFs, held just 13.9% of bank debt with a maturity of more than one year (Chart 1.63). Banks and insurers are the largest holders, accounting for 40.9% and 18.6%, respectively, in Q2 2024.

Chart 1.62: Holders of short-term debt securities issued by French banks

x: time/y: EUR billions



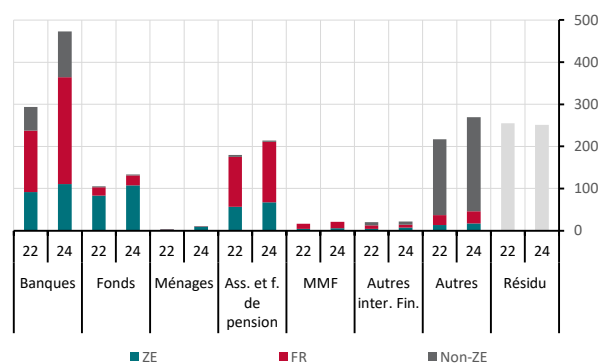
Sources: SHS-S, CSDB, SDW.

Note: "Others" include government institutions, NFCs and investors other than central banks and governments. The residual is the difference between the total short-term debt issued by French banks and holdings of investors included in the SHS-S.

Most recent value: Q2 2024.

Chart 1.63: Holders of long-term debt securities issued by French banks

x: time/y: EUR billions



Sources: SHS-S, CSDB, SDW.

Note: "Others" include government institutions, NFCs and investors other than central banks and governments. The residual is the difference between the total long-term debt issued by French banks and holdings of investors included in the SHS-S.

Most recent value: Q2 2024.

Box 1.7: Channels of bank exposure to private debt funds

By Lucille Collet

The private debt market has grown significantly, reaching an estimated EUR 426 billion in Europe in 2023.⁷⁰ One reason for private debt's expansion is the rise of leveraged buyouts and private equity, which accounted for 77% of private debt deals in Europe between 2021 and 2023.⁷¹ Private debt funds present themselves as an alternative to syndicated loans⁷² for companies lacking access to such financing, explaining their expansion in the heavily indebted SME and mid-tier firm segment. (see Block et al., 2023). The fact that banks are keen to scale back their business in higher capital-intensity segments may also have driven the development of private debt, which serves SMEs and mid-tier firms for the most part. With substantial fundraising supporting larger loan volumes, private debt funds are now entering a number of asset classes, including heavily indebted large corporations, commercial real estate markets and infrastructure, expanding the potential market for private debt funds.⁷³

As competition from funds increases in various market segments, banks are entering the private debt market. At first glance, banks appear to have limited direct capital exposure to private debt funds, accounting for just 6% of investors in European private debt funds. However, several large US and European banks are already present on the private debt market through their asset management companies. Banks are also fostering partnerships with private debt funds based on the originate-to-distribute model. Within

⁷⁰ Preqin Global Report 2023 Private Debt.

⁷¹ IMF (2024), *Global Financial Stability Report*, April 2024, Chapter 2 "The Rise and Risks of Private Credit", [imf.org](https://www.imf.org)

⁷² Syndicated loans are loans provided to a single corporate borrower by a group of lenders, often banks. Such loans are organised by a bank, which assembles a pool of lenders. The share of non-banks in these pools is on the rise. These loans serve borrowers whose project is too large to be financed by a single lender, mostly large corporations and infrastructure projects.

⁷³ AMF (2024), *Cartographie des marchés et des risques*, [amf-france.org](https://www.amf-france.org)

these tie-ups, banks connect corporate borrowers with funds in return for a commission, without taking on balance sheet exposure. Thus, banks and private debt funds act both as competitors and partners.

Banks are exposed to the private debt market through multiple forms of financing. Bank lending may be involved at several points in the financing chain, including loans to funds, loans to investors and loans to target companies. Globally, credit exposures of the main banks to private debt funds were estimated at USD 525 billion at the end of 2023.⁷⁴ These exposures may take the form of credit lines backed by funds' dry powder or net asset value (25% of the USD 525 billion). A significant share of the bank financing for private debt funds (65% of exposures) is in the form of financing secured by loans to companies granted by funds, generally through special-purpose vehicles (SPVs). In such cases, corporate loans provided by the private debt funds, which are recorded in the SPV's assets, are funded by bank loans, which are booked in the SPV's liabilities, allowing the fund to increase its lending capacity. Banks have marginal exposure to private debt funds via repos or derivatives. In addition, private debt funds make up 60% of the buyers of banks' synthetic securitisation products. Banks may also buy collateralised loan obligations (CLOs) issued by private debt funds, but this market is concentrated for now with the United States, and European participants have very weak exposure.⁷⁵

Varying leverage levels within the private debt ecosystem make it challenging for authorities and banks to track interconnectedness. For one thing, banks' definitions of private debt vary, as do their risk management systems. Not all banks have comprehensive methods to identify exposures arising from subsidiaries and business units. Indirect exposures, consisting of loans to underlying companies, are difficult to identify, particularly as banks may also face indirect exposure to private debt funds through joint funding of leveraged buyouts and the private equity market. While systemic risks appear limited at this stage, the variety of loan structures exposes the quality of bank assets to potential downturns in the private debt market. More broadly, the rise of the private debt market could have implications for banks' business models and sources of profitability, depending on where banks are positioned on the value chain. The expansion of private debt may also lead to regulatory arbitrage concerns, as banks could transfer part of their credit activities to funds with lighter regulation and lower transparency.

Insurers continue to enjoy strong levels of liquidity and solvency

The average solvency of insurers is high and has changed little, but individual situations vary. Insurers hold own funds well in excess of their capital requirements. At the end of the first half of 2024, the average solvency capital requirement (SCR) coverage ratio⁷⁶ stood at 246%, slightly lower than at the end of 2023 (Chart 1.64). All entities, but especially bancassurers, were affected by the decline. It was driven by a larger increase in the SCR, than in of own funds as medium and long-term risk-free rates rose slightly in the first half of 2024, after falling between the end of 2022 and the end of 2023.⁷⁷ The disparities between insurance undertakings are significant. For all insurers, own funds levels exceed the regulatory minimum, but 25% of them have a ratio below 170%, while 25% have a ratio above 300%. Other non-life insurance undertakings display especially significant disparities, but their average ratio is close to 280%, while bancassurers, which have to be considered in the context of the conglomerate structure of their group, have an average ratio of below 240%.

⁷⁴ Moody's (2024), *Bank funding of private credit grows rapidly, in step with sector's capital-raising*, 15 October, [Moody's](#)

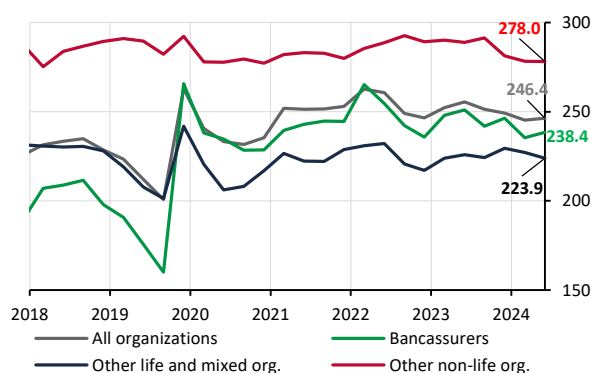
⁷⁵ Cera, K., Daly, P., Hermans, L., Molitor, P., Schwartz Blicke, O., Sowiński, A., and Telesca, E. (2024), *Private markets, public risk? Financial stability implications of alternative funding sources*, European Central Bank, May, [europa.eu](#)

⁷⁶ The solvency capital requirement (SCR) is the level of own funds needed for an insurance undertaking to meet its obligations over the next 12 months with a probability of at least 99.5%. It is calibrated to ensure that all the quantifiable risks to which the insurance or reinsurance undertaking is exposed are taken into consideration. The SCR coverage ratio is the ratio between eligible own funds and the SCR and must be at least 100%.

⁷⁷ Higher interest rates theoretically decrease the value of long-term technical liabilities (discounted at higher rates) by more than assets (increased value of bond investments). But many other factors also impact the solvency of insurance undertakings, such as surrender risk, the cost of options and guarantees, levels of inflows/outflows, and more.

Chart 1.64: Solvency capital requirement coverage ratio

x: time/y: % rate

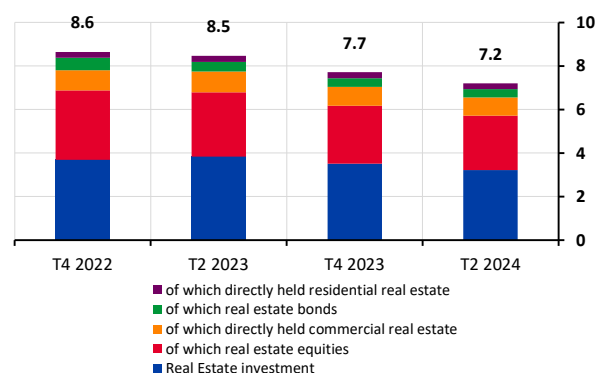


Source: ACPR – quarterly scope.

Most recent value: Q2 2024.

Chart 1.65: Share of real estate in insurers' investments

x: time/y: % rate



Source: ACPR.

Softer real estate prices have had a limited impact on insurers. Before applying the look-through approach to CIUs, insurers' exposure to real estate assets was just over 7% of investments at the end of the second quarter of 2024 (Chart 1.65). Virtually all these exposures correspond to commercial real estate (CRE) equities and CIUs.⁷⁸ Furthermore, more than 90% of this CRE is located in the Ile-de-France region and more than half is in Paris. The exposure decreased over 2023, mainly due to negative valuation effects linked to falling prices.

The share of liquid assets is significant. Even during the period when the surrender rate rose, it remained limited in relation to the share of investments that can be easily and immediately converted into cash, which has been around 50%⁷⁹ for several years. Bonds account for around 60% of insurers' investments,⁸⁰ ahead of equities holdings (just over 20%). Around 80% of these bonds are rated A- or better, while the share of bonds with a sub-BBB- rating is only around 1% (Chart 1.66). In addition, today's higher interest rate levels are being accompanied by improved portfolio returns for insurers, which can reinvest maturing bonds in higher-yielding securities. These gradual improvements are reflected in an increase in the average return on assets of life insurers, which stood at 2.2% in 2023 compared with 2% in 2022, ending the almost steady decline of recent years. However, due to the rise in medium and long-term interest rates in the second quarter of 2024, bonds represent an unrealised capital loss of around 4% across the overall investment portfolio at the end of the first half of 2024, compared with a loss of 3% at the end of 2023. Conversely, unrealised capital gains continued to be recorded for equities, CIUs and real estate, resulting in overall unrealised capital gains for insurers (Chart 1.67).

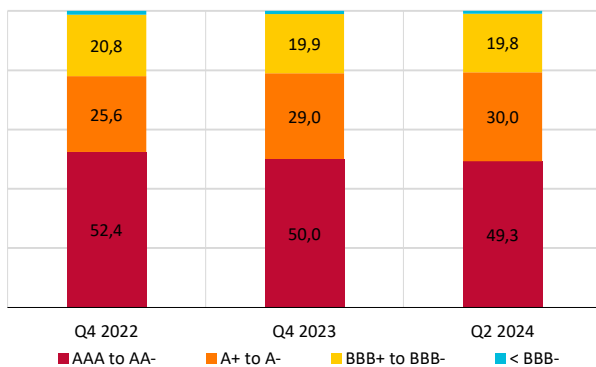
⁷⁸ Assumption: Holdings of real estate equities and CIS are considered to involve CRE exclusively. Direct holdings make up just 1% of investments.

⁷⁹ The calculation method for this ratio is inspired by the standards developed by the Basel Committee under the Basel III framework, which introduced a liquidity coverage ratio (LCR) whose purpose is to promote banks' short-term resilience to liquidity risk. This ratio, which is used for example by the European Insurance and Occupational Pensions Authority (EIOPA), represents the share of unencumbered high-quality liquid assets (HQLA) that may be converted into cash quickly and easily in private markets in the event of a liquidity crisis lasting three calendar days, relative to all investments.

⁸⁰ After applying the look-through approach to CIUs' assets.

Chart 1.66: Insurer bond holdings by rating

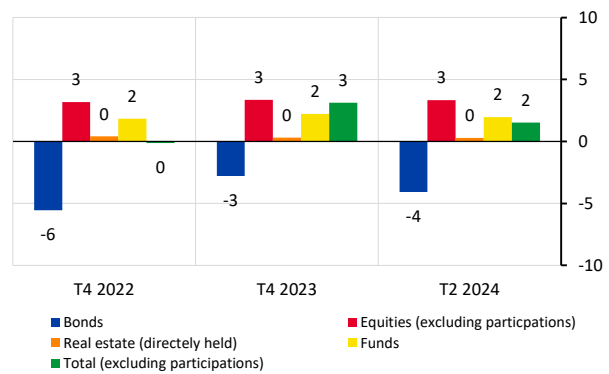
x: time/y: %



Source: ACPR.

Chart 1.67: Unrealised capital gain/loss ratio as a % of the acquisition value of total investments

x: time/y: %



Source: ACPR.

EIOPA's stress-testing exercise confirmed the resilience of French insurers

EIOPA's stress-testing exercise, organised on a three-year cycle, aims to assess the resilience of European insurance groups to scenarios involving severe but plausible shocks.⁸¹ The scenario for the 2024 exercise included ongoing geopolitical tensions leading to high and persistent inflation (including in the cost of claims and expenses), a rapid rise in short-term interest rates, weakened positions for corporates and governments, widening credit spreads, a fall in equity valuations, and changes in the behaviour of policyholders (massive surrenders, reduction in collected premiums). This represented a particularly severe shock for insurers, far exceeding anything experienced in recent decades.

Following the application of these severe shocks, capital and liquidity indicators⁸² fell sharply, but recovered significantly through the use of management actions. The French groups that took part in the exercise recorded a sharp reduction in their solvency ratio after the application of the shocks, from 221% (224% in the last EIOPA stress test in 2021) to 103% in the baseline scenario. After applying management actions to mitigate the impact of the shocks, all French insurers complied with their capital requirements and maintained ratios above the alert thresholds, with an average of 125%, compared with 122% in 2021. Among the management actions most frequently used by French insurers, reducing the share of risky assets and retaining dividends were the most effective. After applying the shocks and management actions, French insurers had sufficient liquid assets to respond to increased liquidity requirements, in particular due to surrender shocks applied to life insurance contracts.

The impact of the shocks varied considerably depending on the business models of the insurers taking part in the exercise. Groups whose main business is non-life were less impacted, as they were less exposed to the scenario. Conversely, insurers whose main business is savings products that are not heavily invested in unit-linked products, with profit participation and surrender options, were the hardest hit. They suffered market shocks combined with massive surrenders in a context of high interest rates.

⁸¹ Ten groups were selected for France, spanning 76.5% of the French market; 32 French entities from these groups took part specifically in the liquidity component.

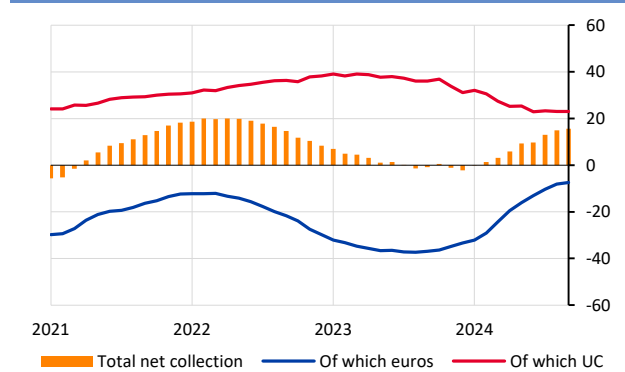
⁸² Insurer resilience was analysed using two components: capital and liquidity. The capital component assessed groups' resilience to market and insurance risks, using the solvency ratio metric. The liquidity component measured entities' vulnerability at a solo level to liquidity risk by analysing inflows and outflows over a 90-day horizon.

Inflows into life insurance are strong, particularly into non-unit-linked products, as household disposable income and the household saving ratio rise

Net and gross inflows into life insurance are at elevated levels. In recent years, insurers have encouraged investment in unit-linked products, where the market risk is essentially borne by retail investors, to offset the decline in returns on euro-denominated funds during the period of low interest rates. Non-unit-linked products experienced virtually uninterrupted net outflows from the end of 2019 to the end of 2023. Unit-linked products supported life insurance with net inflows throughout the period. This trend weakened significantly in the first half of 2024. Net inflows rose sharply compared with the first half of 2023, reflecting the combined effects of an increase in gross inflows, particularly into non-unit-linked products, and a decrease in surrenders for the same products (Chart 1.68). As a reminder, in the months leading up to 2024, the rise in interest rates paid, particularly on fixed-term bank deposits, had attracted some savings into these products. In addition, the increase in the cost of financing for housing loans may have encouraged households to use their savings to finance real estate purchases. Insurance inflows benefited from household saving flows, which continue to exceed pre-Covid levels (Chart 1.69).

Chart 1.68: Net flows into/out of life insurance (12-month cumulative)

x: time/y: EUR billions

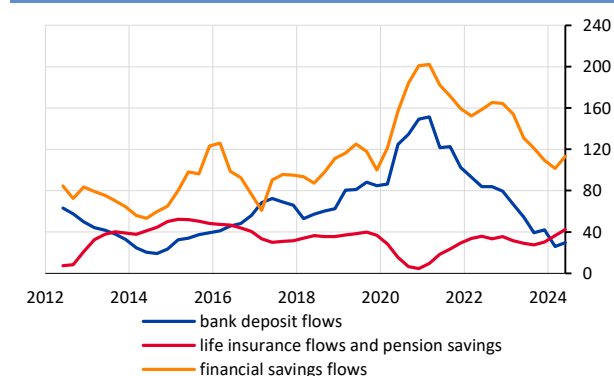


Source: ACPR.

Most recent value: Q3 2024.

Chart 1.69: Household saving flows

x: time/y: EUR billions



Source: ACPR.

Most recent value: Q2 2024.

Non-life insurers are exposed to an increase in cost of claims and extreme risks

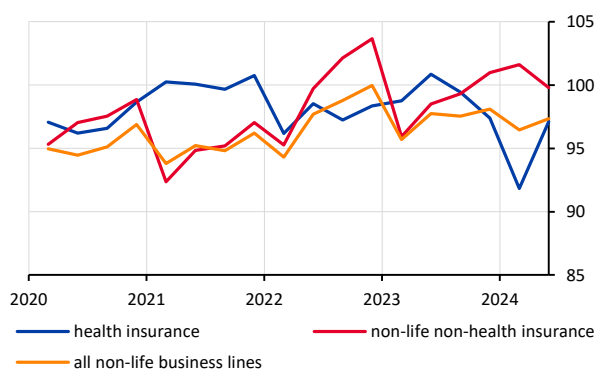
Non-life insurance activity continued to grow in the first half of 2024. After a marked deterioration in 2022, related in particular to the inflationary shock, the combined ratio for all non-life insurance business lines has stabilised since 2023 at a level above pre-shock values and stood at 97.3% at the end of June 2024 (Chart 1.70). After a strong improvement in the first quarter of 2024 (91.8%), the combined ratio for health insurance deteriorated to 97.1% at the end of June 2024. The non-health combined ratio improved from 101.6% to 99.8% over the same period. This reflects the fact that inflation in retail insurance services was significantly lower than overall inflation in 2022 and 2023, despite large increases in the cost of car parts, home repairs, reinsurance and climate catastrophes. In June 2024, insurance services inflation reached a high level, increasing by 7.9% year-on-year. The rapid increase affected all three components, namely home, health and auto.

In the longer term, inflationary effects may be observed and challenges may arise in reinsuring certain extreme risks. As heightened geopolitical tensions could lead to a short-term spike in energy prices, the integration of inflationary effects in underwriting modelling could have longer-term implications for lines of business whose prices are not always revised annually, particularly construction, liability, and death and disability insurance. Tougher reinsurance renegotiation terms could also lead to difficulties in reinsuring certain extreme risks. In particular, the increase in the frequency and intensity of natural catastrophes

represents one of the main risks facing the non-life insurance sector. The increase in the extra premium for natural catastrophes, applicable from 1 January 2025,⁸³ should ensure that these risks are covered more effectively, but will logically also contribute to inflation in non-life insurance services. Reinsurers absorb a significant proportion of claims and are an important link in the risk coverage chain (Chart 1.71). In France, reinsurance for natural catastrophe does not operate like other categories of insurance through standard market coverage, but rather as a public-private partnership. Specifically, the *Caisse Centrale de Réassurance* (CCR – French central reinsurance fund), backed by a state guarantee, reinsures almost the entire market. In 2022 and 2023, the reinsurance balance changed significantly to a positive level.

Chart 1.70: Combined ratios

x: time/y: % rate



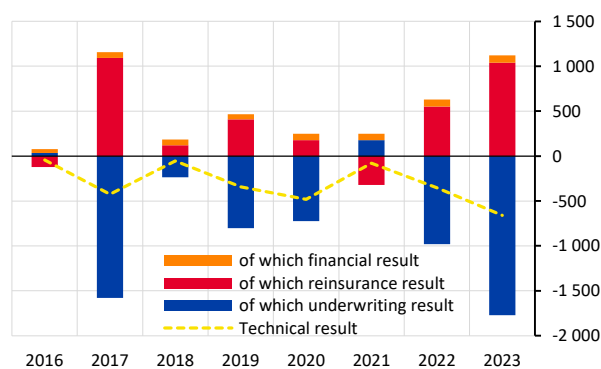
Source: ACPR.

Note: The combined ratio is the ratio of total costs (claims and expenses) to premiums. It assesses an activity's underwriting profitability and does not take financial results into account. The ratio is below 1 if the activity is profitable and above if it is not.

Most recent value: Q2 2024.

Chart 1.71: Underwriting result components of the natural catastrophe segment

x: time/y: EUR millions



Source: ACPR.

Note: The natural catastrophe segment is typically loss-making because claims and expenses exceed premium income (negative underwriting balance). Reinsurance (claims paid by reinsurers less ceded premiums) is used to limit the losses. Financial income is low. The entities in question also operate in more profitable segments.

1.5 Taking cyber and climate-related risks into account will require continued efforts by financial institutions and international cooperation

Preventing cyber risk remains a priority

Cyber risk continues to be one of the main risks to financial stability. According to a survey by the Bank of England,⁸⁴ 80% of financial institutions view cyber risk as a source of risk for financial stability and 31% believe that it is the main risk facing the financial system. A report by Microsoft⁸⁵ drawing on user data shows that phishing attacks remain the main threat across all sectors. By making it possible to create deepfakes and impersonate real people, generative artificial intelligence (AI) facilitates phishing attacks.⁸⁶ The financial sector is one of the sectors that is most impersonated by cyberattackers in phishing attacks aimed at obtaining confidential financial data (Chart 1.72).

Worldwide, the number of cyberattacks identified was stable, including in the financial sector, but some cyberincidents had a major impact in 2024. On 19 July 2024, a software failure at CrowdStrike, a cybersecurity

⁸³ The proportion of property insurance premiums earmarked to fund the natural catastrophe insurance regime will increase starting on 1 January 2025: the additional premium rate applied to home and business property insurance policies will rise from 12% to 20%, while for auto policies it will go up from 6% to 9%.

⁸⁴ Bank of England (2024), *Systemic Risk Survey Results - 2024 H2*, 2 October, [Bank of England](#)

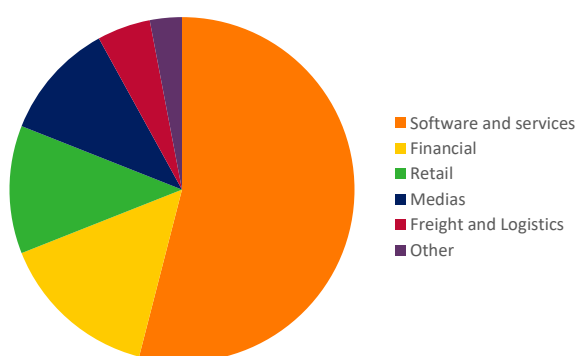
⁸⁵ Microsoft *Digital Defense Report 2024*, [Report 2024](#)

⁸⁶ [Thematic Chapter on Artificial Intelligence - Financial Stability Report - June 2024 | Banque de France](#)

company, affected several million Windows users, including major financial institutions and data providers, which disrupted market updates.⁸⁷ Losses resulting from the outage at the main US financial firms are estimated at USD 1.3 billion.⁸⁸ The incident highlighted the dependency of financial institutions on third-party software and the concentration of service providers, which form contagion channels for cyberincidents and amplify their operational and financial impacts.

Financial institutions are also having to deal with AI-related incidents.⁸⁹ Although these primarily concern the cybersecurity and government services sectors, the financial sector was hit by 5% of these incidents in 2024 (Chart 1.73), according to the OECD's AI Incidents Monitor. While the identified incidents are strongly concentrated in North America, Europe, which is one of the regions that has embraced these technologies most extensively, is also exposed. The International Monetary Fund has stressed that swift adoption of artificial intelligence without addressing the associated risks could create new vulnerabilities.⁹⁰

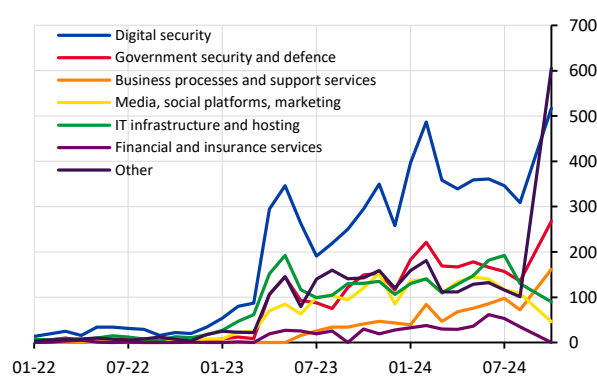
Chart 1.72: Sectors impersonated by phishing cyberattacks, globally



Source: Microsoft Digital Defense Report 2024.

Chart 1.73: AI incidents by sector of activity, globally

x: time/y: number of incidents



Source: OECD AI Incidents Monitor.

Preparedness of financial institutions is a critical factor of resilience. Acting through the Paris Resilience Group, the Banque de France coordinates public/private working groups and orchestrates large-scale crisis management exercises involving the financial sector, financial authorities and government. To ensure that any cyberincidents are dealt with more effectively, the ACPR has set up a crisis management protocol that enables it to receive reports about significant incidents from companies under its supervision.⁹¹ This protocol, which is not binding but supplements existing obligations, is intended to provide a swift response to a cyber crisis. It allows participating entities to share information and coordinate decision-taking.

Between January and July 2024, the ECB organised its first cyber stress test to gauge how banks would respond to and recover from a severe but plausible cyber incident. The ECB asked 109 banks under its direct supervision to take part in this exercise, which was based around a fictitious scenario in which all preventive measures failed and a cyberattack severely affected the databases of each bank's systems. All banks had to answer a questionnaire and submit documentation for supervisory teams assembled by the ECB to analyse. A

⁸⁷ LSEG's workspace platform suffers outage, market sources say, 19 July, [Reuters](#)

⁸⁸ CrowdStrike's Impact on the Fortune 500: 2024, Parametrix Analysis, [Parametrix](#)

⁸⁹ The OECD defines an AI incident as an event where the development, use or malfunction of an AI system directly or indirectly leads to injury or harm to people, property, the environment or fundamental rights, [OECD.AI](#)

⁹⁰ International Monetary Fund (2024), *Global Financial Stability Report: Steadying the Course - Uncertainty, Artificial Intelligence, and Financial Stability*, October, [IMF](#)

⁹¹ Notifier à l'ACPR un incident opérationnel ou un problème affectant une API, [ACPR](#)

sample of 28 banks underwent more in-depth testing. They had to perform an actual IT recovery test and provide evidence that it had been successful, during on-site visits by supervisors.

Overall, the stress test found that banks have response and recovery frameworks in place, but areas for improvement remain. The results have already been fed into the Supervisory Review and Evaluation Process (SREP) conducted by the ECB in 2024 and have helped increase banks' awareness of the strengths and weaknesses of their cyber resilience frameworks. Lessons from the exercise will continue to inform collaboration between banks and supervisors with the goal of continuously strengthening banks' cyber resilience frameworks.

Europe's DORA Regulation, which comes into application in January 2025, will help increase financial institutions' resilience. The new regulatory framework will introduce a formal risk management framework, regular stress testing, enhanced supervision of critical IT service providers, an obligation to report major incidents to competent financial authorities and improved coordination of incident responses. Recommendations issued by the European Systemic Risk Board (ESRB) stress the importance of improving information-sharing, harmonising practices and setting up resolution mechanisms in the event of cyber crises. The creation of a pan-European coordination framework (EU-SCICF) will round out these efforts by strengthening cooperation.

International cooperation is needed to manage the financial risks linked to the climate and environmental crisis

Management of the climate and environmental crisis, as well as the associated financial risks, requires close international coordination owing to the global nature of the challenges. With this in mind, the Banque de France and the ACPR are heavily involved in various international working groups that are helping to advance climate-related work. In 2024, for example, the Banque de France participated in Financial Stability Board working groups on data covering climate-related vulnerabilities and transition plans, and also provided input to work by the Sustainable Insurance Forum (SIF) on these topics. It took part in work by the Basel Committee and the International Association of Insurance Supervisors (IAIS), particularly on bank and insurer disclosures of climate risk data. Within Europe, the Banque de France was involved in discussions on CSRD-CSDDD implementation, the SFDR⁹² review, and the development of prudential transition plans pursuant to the CRD6 and Solvency II directives. Last but not least, it participated actively in the work of the Network for Greening the Financial System (NGFS), by steering several working groups and acting as the network's secretariat.

International climate and environmental negotiations could be affected by the outcome of the US election in November 2024. During his presidential campaign, Donald Trump said that he wanted to take the United States out of the Paris Agreement again and pull out of the United Nations Framework Convention on Climate Change (UNFCCC). Given America's significant involvement in international financial regulatory bodies, the publication schedule and scope of work on environmental risk could also be impacted.

Even so, there is still room for manoeuvre to move the climate agenda forward. The NGFS is actively pursuing its work on a range of topics, including nature-related financial risks, climate scenarios and transition plans. On the international stage, this work is helping to foster better understanding of the mechanisms and challenges of climate change and the unprecedented loss of biodiversity. The European Union may moreover continue to build on its leading position in sustainable finance through measures to strengthen its prudential rules on transparency, monitoring and management of these risks by industry, and supervision by European

⁹² CSRD: Corporate Sustainability Reporting Directive; CSDDD: Corporate Sustainability Due Diligence Directive; SFDR: Sustainable Finance Disclosure Regulation.

financial authorities. To this end, the European Banking Authority (EBA) and EIOPA are operationalising environmental risk supervision by finalising prudential instruments, and drafting reports on potential changes to the treatment of ESG in regulatory ratios. Against this backdrop, the Banque de France and ACPR reiterate their commitment and determination to support international and European work aimed at promoting management of the climate and environmental crisis.

Box 1.8: How does the European Union Green Bond Standard contribute to the development of the green bond market?

By Tristan Jourde and Dilyara Salakhova

The green bond market is expanding fast but is still insufficiently transparent. Green bonds were among the very first financial instruments to be associated with green finance ([ABC de l'économie, 2022](#)). They allow a variety of participants, including state-owned entities as well as corporations, to raise funds to finance environmental projects. The green bond market has expanded swiftly worldwide, particularly since 2016, with Europe being the primary issuer. In July 2024, total outstanding active green bonds were worth EUR 2,600 billion.⁹³ However, development of the green bond market may be held back by the absence of a binding regulatory framework, in particular concerning disclosures of the environmental aspect and actual impact of funded projects. The lack of a standardised framework makes the market less transparent and could fuel suspicions of greenwashing.

To address the lack of standardisation, the European Union (EU) has established rules bolstering transparency and external review requirements for green bonds. As part of its sustainable finance strategy, the EU introduced the European Union Green Bond Standard (EuGBS) Regulation⁹⁴ to provide a “gold standard” for green bonds in Europe. This voluntary standard is intended to enhance the environmental impact of green bonds while reducing greenwashing risks. The regulation came into effect in December 2023 and has applied since December 2024. The EuGBS introduces more stringent requirements for green bond issuance compared with the Green Bond Principles of the International Capital Market Association or the Climate Bond Initiative (CBI) criteria widely used by market participants. The main requirements of the EuGBS designation include the obligation to finance activities that are aligned with the European taxonomy:⁹⁵ specifically, at least 85% of funds must be invested in aligned activities. The regulation also imposes rules relating to transparency about the allocation of capital raised before and after issuance and their impact. An external examiner supervised by ESMA must give an opinion on the compliance of a European green bond issuer with the requirements of the EuGBS regulation.

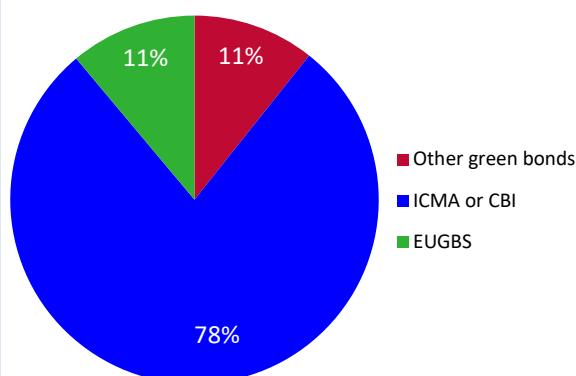
Green bonds that are considered to be partially compliant with the EuGBS are largely in the minority, but their share could increase once the regulation comes into application at the end of the year. Although the EuGBS Regulation does not enter into application until December 2024, some issuers are targeting or have already partly achieved EuGBS alignment, as disclosed in their own green bond framework or in their external review. This is a preliminary estimate derived from CSDB data: once the standard is implemented and green bond issuers are fully in compliance with all EuGBS requirements, alignment with the standard will be adjusted. In June 2024, 11% of outstanding green bonds in circulation were considered to be EuGBS-compliant (Chart 1.74), or approximately 550 out of 9,000 active green bonds. Following application of the European taxonomy from 2021, a growing share of green bonds issued seek to fulfil EuGBS requirements by financing activities aligned with the green activities classification system (Chart 1.75).

⁹³ Total outstandings are calculated using the CSDB database, which records all green bonds issued or held by European entities or registered with a European depository.

⁹⁴ European Union Green Bond Standard. Regulation (EU) 2023/2631 of the European Parliament and of the Council.

⁹⁵ The [European taxonomy](#) is a unified classification system for economic activities that are considered to be “green”.

Chart 1.74: Share of active green bonds that comply with a standard out of total outstandings of EUR 2,600 billion



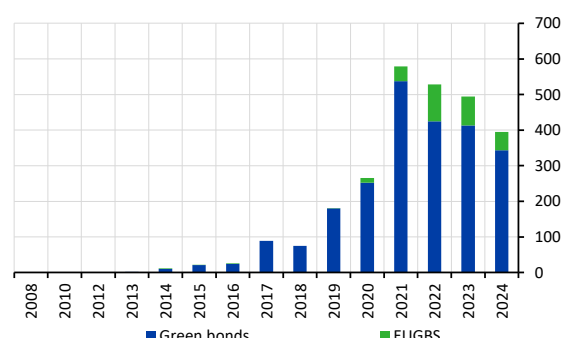
Sources: CSDB, Refinitiv, ICE and WMD, Banque de France calculations.

Note: Share of green bonds that comply with a standard, as identified by data providers Refinitiv, ICE and WMD, out of all green bonds recorded in the CSDB database.

Most recent value: July 2024.

Chart 1.75: Outstanding active green bonds by issue date

x: time/y: outstanding amounts (EUR billions)



Sources: CSDB, Refinitiv, ICE and WMD, Banque de France calculations.

Note: A bond may be issued in several tranches, with potentially different dates. The data reported in this chart are aggregated by bond and only the initial issue date is reported. This may cause issuance amounts to be overestimated at the start of the period and underestimated at the end of the period.

Most recent value: July 2024.

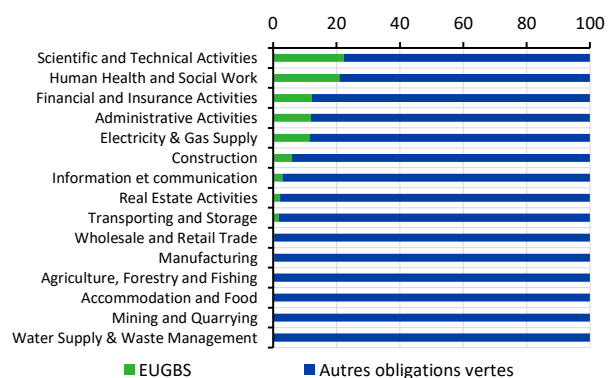
The increase in EuGBS-compliant assets could also stem from a rise in green securitisation. Article 16 of the EuGBS Regulation establishes a dedicated mechanism allowing securitisation transactions to be covered by the EuGBS designation. With the exception of loans financing fossil fuels, there are no restrictions on the base of eligible underlying assets. However, unlike with a standard securitisation mechanism, the originating bank must use at least 85% of the proceeds from selling claims to finance activities that meet the requirements of the European taxonomy.

The compliance of existing green bonds with the EuGBS standard varies significantly according to issuer type. Based on CSDB data, the main issuing sectors of EuGBS-compliant green bonds are scientific activities, such as R&D, human health and welfare, financial activities, general government and the electricity and gas sector. Other sectors, such as manufacturing or mining and quarrying, have not so far issued any green bonds that are deemed EuGBS compliant (Chart 1.78). Many European governments are reporting significant adoption, with around 20% of their green bonds in partial compliance with the standard, compared with an average of 11% for the market as a whole. Among green bond issuers, the European Commission (80%) and European Investment Bank (32%) have particularly high compliance rates.

The premium for partially EuGBS-compliant European corporate green bonds is larger than that for non-compliant green bonds, showing that investors are sensitive to the quality of information on green bonds. An analysis of the premium on green bonds seeks to gauge whether investors accept lower returns to finance projects that will be beneficial to the ecological transition. The green premium assesses the difference between returns on green bonds and those of comparable conventional bonds. While the premium on green bonds aligned with ICMA or CBI standards, which are less stringent than those of the EuGBS, is not very different from the premium for all green bonds circulating on the secondary market, EuGBS-compliant bonds command a larger premium. Although the confidence interval about the size of the premiums is very elevated at this stage, this does suggest that investors are attentive to the transparency of the green bond market and its contribution to financing the ecological transition.

Chart 1.76: Proportion of green bonds that are partially compliant with the EuGBS by issuing sector

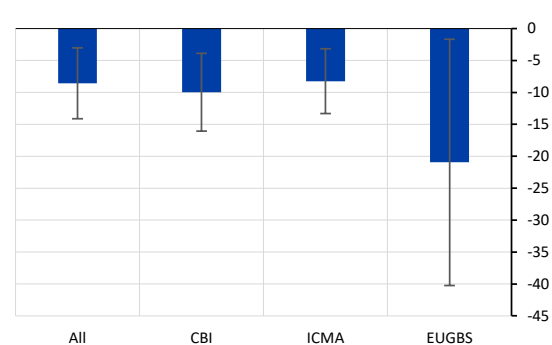
x: %/y: issuing sector



Sources: CSDB, Refinitiv, ICE and WMD, Banque de France calculations.
 Notes: Only institutions with a significant percentage of EuGBS-compliant green bonds are reported.
 Most recent value: July 2024.

Chart 1.77: Green premium on corporate green bonds as a function of designation obtained

x: designation/y: green premium (basis points)



Sources: Bloomberg, Dealogic, Eikon, CSDB, Banque de France calculations.⁹⁶

Note: Premium on green bonds between 2014 and 2023 for the same issuer. The green premium (histogram) and 95% confidence intervals (grey bars) are estimated via panel regressions that include fixed effects for time, issuer and issue date, as well as control variables for bond characteristics.

Guide: A negative green premium means that investors require a lower return to invest in a green bond relative to a comparable conventional bond.

⁹⁶Chouard V. and Jourde T. (2024), "Green premium: can firms fund their green projects at a lower cost?", *Eco Notepad*, Post No. 379, Banque de France.

2. An overview of the French financial system: changes over time, mapping, and interconnections with the rest of the world

Tarik Mouakil, Jonas Heipertz, Edith Stojanovic, François Guinouard

This chapter offers a description of the French financial system largely inspired by the euro area mapping proposed by Andersen and Sánchez Serrano.⁹⁷ It presents the financial exposures of all institutional sectors in a comprehensive matrix based on who-to-whom data underlying the French financial accounts published by the Banque de France. These data provide a comprehensive overview of bilateral financial relations between sectors for all categories of the European System of Accounts (ESA), particularly loans, debt securities (short-term notes and bonds), listed and unlisted shares, investment fund shares/units and derivatives.⁹⁸

The ESA disaggregates the financial sector into eight sub-sectors (Banque de France, banks, insurance corporations together with pension funds, money market funds (MMF), non-MMF investment funds, captive financial institutions,⁹⁹ financial auxiliaries and other financial intermediaries), thus providing a level of disaggregation for non-bank financial intermediaries (NBFIs) comparable to the NBFi benchmark taxonomy developed by the Financial Stability Board (FSB).¹⁰⁰

This study also builds on our December 2023 thematic chapter, which presented an initial analysis of the interconnections between banks and NBFIs based on the FSB taxonomy.¹⁰¹ The FSB taxonomy is more granular than the ESA taxonomy and is harmonised at the international level (facilitating meaningful comparisons between financial sectors of different FSB jurisdictions) but FSB data are less reliable than national financial accounts, and have neither their historical scope nor their quarterly frequency.

Moreover, the financial accounts go beyond financial sector accounting alone, since they cover the non-financial sector. In this chapter the interconnections between financial institutions are considered as part of the broader financial circuit of the French economy, with an analysis of bilateral financial flows with (and between) the various non-financial sectors (non-financial corporations, households and the state). This comprehensive mapping of the financial system brings to light certain stylised facts that demonstrate the often-overlooked role of non-financial players in financial sector dynamics.

The chapter contains three sections. The first section, based on the financial accounts and balance sheet accounts published by the Banque de France on a quarterly basis, describes and analyses the changes in the French financial system over the past 25 years. Several stylised facts emerge. First, there was a rise in the relative financial weight of non-financial corporations (NFCs), which have become the primary sector in terms of financial assets and whose unlisted shares are now the first asset type by size in France. Second, banks continue to play a pivotal role in the French financial system. On the other hand, and in contrast to what occurred at the euro area level, French NBFIs have not been particularly dynamic. The increasing openness of the French financial system, closely linked to euro area integration, is another key development of the past 25 years. Lastly, as in other jurisdictions, the derivatives market in France has grown dramatically.

The second section presents a detailed map of the interconnections between the sectors of the French financial system in the second quarter of 2024, based on an accounting matrix that aggregates the balance

⁹⁷ Andersen (I.) and Sánchez Serrano (A.) (2024), “A map of the euro area financial system”, *European Systemic Risk Board Occasional Paper Series*, No. 26.

⁹⁸ Who-to-whom data are also provided for monetary gold and SDRs, currency, bank deposits, insurance technical reserves and “other accounts receivable/payable”.

⁹⁹ Entities operating essentially within their group (financial or non-financial).

¹⁰⁰ See Appendix 5 for details of the ESA’s financial sector nomenclature.

¹⁰¹ Banque de France (2023), “[French non-bank financial intermediaries: mapping, risks and regulatory framework](#)”, *Assessment of Risks to the French Financial System*, pp. 73-89.

sheet accounts of the eleven French domestic sectors and of the rest of the world, with detailed who-to-whom data. From this matrix, one can extract the financial circuit centred on banks. Banks continue to be the central players in the French financial system, while French investment funds remain largely entangled with them. One can also trace the financial circuit centred on NFCs, which reveals their increasing organisational complexity. It also shows an apparent increase in NFC dependence on foreign NBFIs, which could be a result of internationalisation and tax optimisation strategies.

The third section uses the Eurosystem's Securities Holdings Statistics (SHS) database to map the interconnections between French and “rest of the world” sectors¹⁰² on three financial markets: debt securities, listed shares and investment fund shares/units. This mapping shows that the increasing openness of the French financial system is mostly linked to French sectors’ mounting exposure to foreign – and particularly euro area – NBFIs.

2.1. Changes in the French financial system – major trends since 1999

Systemic sectors in France

From the quarterly balance sheet account tables, one can rank the twelve main ESA sectors by size of outstanding amounts (see Table 2.1).¹⁰³ This ranking reveals some major trends in the evolution of the French financial system over the past 25 years. The sectors whose ranking and relative weight (as a proportion of total financial assets) have increased between 1999 and 2024 are marked in red in Table 2.1. NFCs and banks continue to be the two French sectors with a systemic dimension in terms of share of financial assets, which justifies our focusing on them in the remainder of this section. NFCs have become the leading sector in terms of financial assets, overtaking banks. This stylised fact may seem surprising and we will try to understand it in this section.

¹⁰² The rest of the world includes all non-resident units that carry out transactions with resident institutional units. Many subsidiaries of French financial and non-financial companies are located abroad, resulting in intragroup movements in the flows with the rest of the world.

¹⁰³ The Banque de France publishes statistics on France’s national financial accounts that date back to 1977. However, we have refrained from going that far back in this chapter, as we do not intend to review the period prior to the transition to the euro.

Table 2.1: Ranking of ESA sectors by descending order of financial assets, Q2 2024 vs. Q1 1999
Financial assets in EUR billions and share of total financial assets in %

Ranking in Q2 2024			Ranking in Q1 1999		
Rank	Sector	Total/Share of financial assets	Rank	Assets by issuing sector	Total/Share of financial assets
1	Non-financial corporations (F)	14 667 25.8%	1	Banks (B)	3 698 26.9%
2	Banks (B)	13 148 23.2%	2	Non-financial corporations (F)	3 075 22.4%
3	Rest of the world (RoW)	11 838 20.9%	3	Households (H)	2 456 17.9%
4	Households (H)	7 078 12.5%	4	Rest of the world (RoW)	1 899 13.8%
5	Insurance corporations and pension funds (IC+PF)	3 003 5.3%	5	Insurance corporations and pension funds (IC+PF)	806 5.9%
6	General government (G)	1 830 3.2%	6	General government (G)	639 4.6%
7	Non-MMF investment funds (IF)	1 556 2.7%	7	Non-MMF investment funds (IF)	480 3.5%
8	Banque de France (CB)	1 326 2.3%	8	Money market funds (MMF)	238 1.7%
9	Other financial intermediaries (OFI)	1 073 1.9%	9	Financial auxiliaries (FA)	190 1.4%
10	Financial auxiliaries (FA)	650 1.1%	10	Banque de France (CB)	140 1.0%
11	Money market funds (MMF)	424 0.7%	11	Other financial intermediaries (OFI)	104 0.8%
12	Captive financial institutions and money lenders (CF)	162 0.3%	12	Captive financial institutions and money lenders (CF)	24 0.2%

Source: Banque de France, quarterly financial accounts.

Note: Sectors whose ranking and relative weight (as a proportion of total financial assets) have increased since 1999 are marked in red. The acronyms in brackets are those used in this chapter, not those used in the ESA.

This table shows considerable NBFi sector stability, which is consistent with the trend for 2008-22 highlighted in last year's Financial Stability Report.¹⁰⁴ We can see here that this finding is actually valid since 1999 (see Chart 2.1). NBFIs accounted for EUR 6,868 billion in the second quarter of 2024,¹⁰⁵ that is 32.2% of French financial institutions' total assets, compared with EUR 1,842 billion and 32.4% in the first quarter of 1999. Insurance corporations (together with pension funds)¹⁰⁶ account for around half of this total, with outstanding amounts of EUR 3,003 billion. Investment funds make up more than two-thirds of French non-bank and non-insurance finance, but bear different risks depending on the type of fund.¹⁰⁷

¹⁰⁴ Banque de France (2023).

¹⁰⁵ The sum of lines 5, 7, 9, 10, 11 and 12.

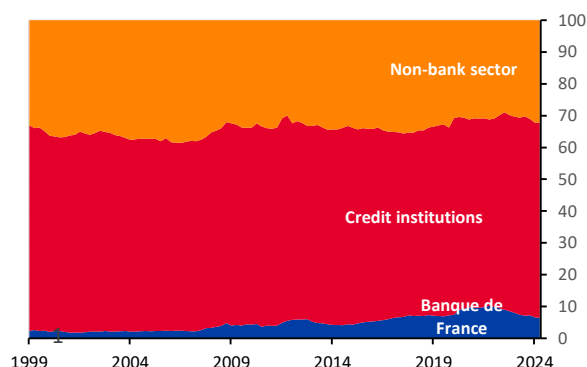
¹⁰⁶ Pension funds' outstanding amount of financial assets is very limited in France: EUR 186 billion in the second quarter of 2024 ([Stat Info. Placements financiers des sociétés d'assurances et des fonds de pension](#), Banque de France, Q2 2024), which reflects the major predominance of unfunded (often referred to as "pay-as-you-go") pension schemes. Furthermore, their development is quite recent, and stems from the creation of undertakings for supplementary occupational retirement provision made possible by the *Pacte* Act in 2019.

¹⁰⁷ Ibid.

A final stylised fact that emerges from changes in the ranking of ESA sectors is the international opening-up of the French financial system. The rest of the world sector now ranks third, its financial assets accounting for 21% of the total assets in circulation in the French financial system (up from only 14% in the first quarter of 1999). Later in this chapter we will try to disaggregate this sector as much as possible: first geographically by distinguishing between the euro area (whose deepening integration is the main factor behind the French economy’s opening-up) and the rest of the world; and second, wherever practical, by breaking it down at the sectoral level. The considerable stability in the French NBFIs sector is largely due to its “outsourcing” and to the development of interconnections between domestic sectors (banks and NFCs in particular) and NBFIs entities established abroad by French financial or non-financial corporations themselves.

Chart 2.1: Change in the breakdown of financial assets by resident financial sector

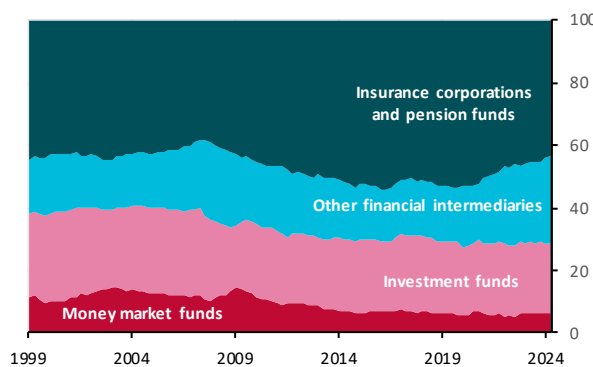
x: time/y: %



Source: Banque de France, quarterly financial accounts.

Chart 2.2: Change in the breakdown of financial assets within the resident non-banking sector

x: time/y: %



Source: Banque de France, quarterly financial accounts.

The main financial assets in circulation in France

In the same way as we did for the holding sectors, we can rank the main financial assets in circulation by issuing sector (see Table 2.2). Again, assets whose ranking and relative weight (as a proportion of total financial assets) have increased since 1999 are marked in red in this table. This new ranking provides some insight into the major trends of the French financial system’s evolution that emerged from Table 2.1.

There has been a rise in the proportion of NFC unlisted shares and other equity (mainly allocated between the NFCs themselves), which have now overtaken bank deposits to become the leading category of financial assets in France (15.9% of total financial assets in the second quarter of 2024 compared with 13.1% in the first quarter of 1999). Their growth has contributed to the relative increase in NFC financial assets. The increasing weight of unlisted shares and equity is primarily due to valuation effects. Compared with other countries, the methodology applied by France assigns a relatively high value to unlisted shares in the national accounts.¹⁰⁸ However, the greater weight of unlisted shares also reflects companies’ increasing organisational complexity.¹⁰⁹ The weight of unlisted shares and other equity from the rest of the world also increased slightly (from 8th to 6th place, accounting for 4.3% of total financial assets in circulation in France in 2024). The weight of listed shares issued by resident NFCs, on the other hand, declined, despite benefiting from valuation effects (4.5% of total financial assets compared with 5.5% in 1999).

¹⁰⁸ ESA 2010 proposes three methods for assessing the market value of unlisted shares: a valuation with reference to either the values of listed shares where appropriate (taking account of lower liquidity); the value of own funds; or discounting forecast profits. France applies the first while other countries more frequently apply the second (resulting in lower values).

¹⁰⁹ See Bidaud (F.) and Fontaine (G.) (2023), “Four decades of wealth and debt in France”, *Bulletin de la Banque de France*, No. 248, Article 8, September-October.

Deposits with the Banque de France (transferable deposits and minimum reserves) enter into the ranking in 2024 (see Table 2.2), due to the Eurosystem's asset purchase programmes of the past years, the shortage of liquidity on the interbank market, and banks placing their excess liquidity with the central bank. The increase in deposits with the Banque de France contributed to the rise in the relative weight of its total financial assets between 1999 and 2024, as was shown in Table 2.1.

Still in line with the findings of Table 2.1, the financial assets issued by resident NBFIs demonstrated no particular dynamism. The weight of the overall category of insurance technical reserves fell slightly from 4.9% to 4.2% of total financial assets. The weight of investment fund shares/units also declined, both for non-MMF investment funds (2.8% of total assets compared with 3.4% in 1999) and for money market funds (down to 29th place with 0.8% from 1.3% in 1999).

Table 2.2 confirms another important stylised fact – the international opening-up of the French financial system. In addition to the increased weight of derivatives issued by the rest of the world (see below), the weight of other liabilities issued by the rest of the world – listed and unlisted shares, loans and other accounts payable – has risen over the 25-year period. Section 2 will present a geographical (distinguishing between euro area and non-euro area) and sectoral breakdown of the rest of the world.

A new stylised fact revealed by Table 2.2 is the sharp increase in the weight of derivatives (which include options, forwards and swaps, in particular) issued both by the rest of the world and by French banks. Their overall share has risen to 6.6% of total financial assets in circulation in France, compared with 1.5% in 1999.¹¹⁰ It is hard to estimate the real weight of derivatives as their accounting is particularly complex and difficult to implement. Certain derivatives operate with margin payments. However, financial accounts hide the majority of these margins as they are included in loans and deposits.¹¹¹ To make them reappear, the mapping of the euro area of Andersen and Sánchez Serrano (2024) includes who-to-whom data on initial margins from the European Market Infrastructure Regulation (EMIR) database. However, who-to-whom EMIR data are not as reliable as the information disclosed in the financial accounts and can be difficult to reconcile.

¹¹⁰ In Table 2.2, the share of derivatives issued by OFIs (0.8%) is not shown.

¹¹¹ Loans and deposits include all initial margins and repayable variation margins. However, certain forwards and options operate on the basis of non-repayable variation margins, “reducing or eliminating the asset/liability positions which may emerge during the life of the contract, [and which] are treated as settlements under the contract, and classified as transactions in financial derivatives” (European System of Accounts 2010, paragraph 5.220).

Table 2.2: Main financial assets in circulation by issuing sector and by descending order of outstanding amounts
Outstanding amounts in EUR billions and share of total financial assets in %, Q2 2024 vs Q1 1999

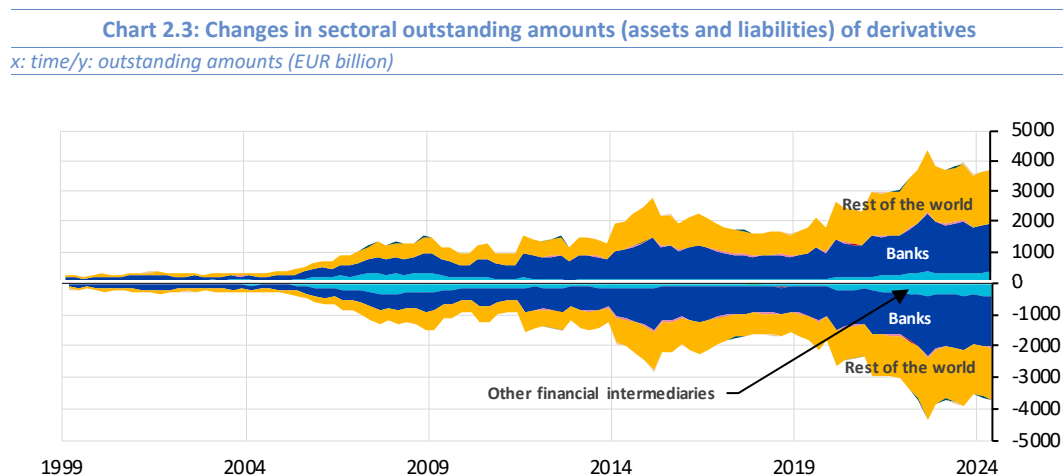
Ranking in Q2 2024			Ranking in Q1 1999		
Rank	Assets by issuing sector	Outstanding amounts/ Share of assets	Rank	Assets by issuing sector	Outstanding amounts/ Share of assets
1	NFC unlisted shares and other equity	8,968 15.9%	1	Deposits	2,324 17.7%
2	Deposits	8,392 14.9%	2	NFC unlisted shares and other equity	1,725 13.1%
3	Bank loans	4,337 7.7%	3	Bank loans	1,241 9.4%
4	Government debt securities	2,709 4.8%	4	Government debt securities	733 5.6%
5	NFC listed shares	2,530 4.5%	5	NFC listed shares	723 5.5%
6	Rest of the world unlisted shares and other equity	2,423 4.3%	6	Insurance technical reserves	634 4.8%
7	NFC loans	2,408 4.3%	7	NFC loans	626 4.8%
8	Insurance technical reserves	2,386 4.2%	8	Rest of the world unlisted shares and other equity	499 3.8%
9	Rest of the world debt securities	2,147 3.8%	9	Deposits with rest of the world	492 3.8%
10	Deposits with rest of the world	1,709 3.0%	10	Bank debt securities	473 3.6%
11	Rest of the world derivatives	1,647 2.9%	11	Non-MMF investment fund shares/units	448 3.4%
12	Bank debt securities	1,625 2.9%	12	Other NFC accounts receivable or payable	437 3.3%
13	Bank derivatives	1,572 2.8%	13	Rest of the world debt securities	347 2.6%
14	Non-MMF investment fund shares/units	1,566 2.8%	14	Other government accounts payable	193 1.5%
15	Other accounts payable by NFCs	1,405 2.5%	15	Money market fund shares/units	174 1.3%
16	Other accounts payable by banks	1,041 1.8%	16	NFC debt securities	170 1.3%
17	Deposits with the central bank	972 1.7%	17	Other accounts payable by households	164 1.3%
18	Rest of the world listed shares	779 1.4%	18	Other accounts payable by banks	157 1.2%
19	Rest of the world other accounts payable	776 1.4%	19	Rest of the world other accounts payable	153 1.2%
20	Rest of the world loans	684 1.2%	20	Rest of the world listed shares	137 1.0%

Source: Banque de France, quarterly financial accounts.

Note: Assets whose ranking and relative weight (as a proportion of total financial assets) have increased since 1999 are marked in red.

Growth of the derivatives market

The growth in outstanding amounts of derivatives over the past quarter century has been dramatic, increasing almost 20-fold between the first quarter of 1999 and the second quarter of 2024. The main driver for the success of derivatives was the demand for hedging against interest rate and foreign exchange rate volatility. According to the latest derivatives report from the European Securities and Markets Authority (ESMA), interest rate derivatives and currency derivatives accounted for 78% and 15%, respectively, of the notional amount of derivatives in the European Union in the fourth quarter of 2022 (5% for equity derivatives, 2% for credit derivatives and 1% for commodity derivatives). One can note two major breakpoints in the growth of derivatives. First, the 2007-08 crisis led to a (worldwide) reduction in derivative outstanding amounts, while a later decline began around 2015 and lasted until early 2019. The latter was in large part most likely caused by the implementation in Europe of the EMIR regulation, which requires reporting of all derivatives to Trade Repositories (since February 2014) and central clearing (since June 2016). These requirements led to an increase in the capital cost of derivative positions, which in turn prompted banks to clear and reduce their notional outstanding amounts of derivatives.¹¹² However, monetary policy is also a likely factor: the decline in outstanding short and long-term contracts on the euro-denominated interest-rate derivatives market after 2015 could be related to the fact that market players, especially banks, did not expect rate changes for several years to come.¹¹³



Source: Banque de France, quarterly financial accounts.

Derivatives are reported at their positive fair value in assets and their negative fair value in liabilities in the financial accounts.

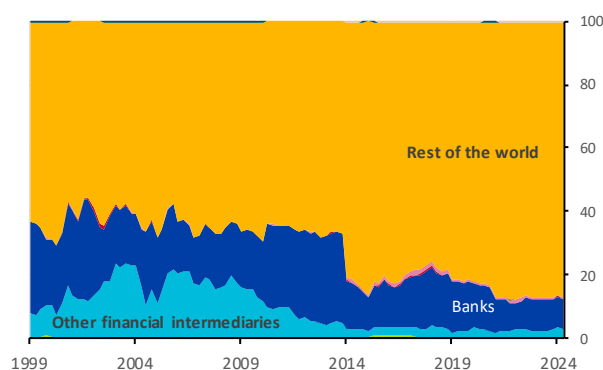
The main salient fact that emerges from this picture is the **drying up of derivative transactions between resident banks and other financial institutions (OFIs)**. Both French banks and French OFIs now trade almost exclusively with the rest of the world. This reflects the growing trend towards the internationalisation, clearing and geographical concentration (notably on the London market for Europe) of the derivatives markets.

¹¹² For further details, see Demange (G.), Piquard (T.) and Vuillemeys (G.) (2023), "Régulation des marchés de produits dérivés : bilan et perspectives", Institut Louis Bachelier, *Opinions & Débats*, No. 27.

¹¹³ See Ehlers (T.) and Eren (E.) (2016), "The changing shape of interest rate derivatives markets", *Bank of International Settlements Quarterly Review*, December.

Chart 2.4: Change in sector holdings of derivatives issued by resident banks

x: time/y: %



Source: Banque de France, quarterly financial accounts.

Changes in the liquidity of the French financial system since 1999

To conclude this overview of changes in the French financial markets over the past 25 years, we can, in the manner of Andersen and Sánchez Serrano (2024), put forward a monitoring of the liquidity of the French financial system that revolves around the concepts of the *liquidity of a financial product* and *market liquidity*. Based on this taxonomy,¹¹⁴ the main liquid financial products in the French financial system are:

- currency;
- deposits with banks and central banks;
- debt securities other than those issued by NFCs;
- listed shares;
- money market fund shares.

This categorisation of liquid financial products remains very basic, as it overlooks the breakdown of each class of assets, for example according to maturity in the case of bank deposits (i.e. all bank deposits are here deemed to be equally liquid, ignoring the differences between sight deposits and time deposits). Similarly, we do not consider specific intra-sector characteristics. For example, all non-MMF investment fund shares are excluded here. However, shares in equity funds could logically have been included, as they are generally held to be more liquid than shares in bond funds or mixed funds. Equally, due to the lack of detail on foreign fund shares, they are all excluded from the liquidity measure, which can considerably distort the calculation of real liquidity.

Nevertheless, we can paint a broad picture of how liquidity in the French financial system has evolved over time (see Chart 2.5) based on the quarterly financial accounts. Net flows of liquid financial products (i.e. excluding valuation effects), of which deposits are still the main component, tended to increase at an accelerating pace in the first few years following the introduction of the euro but came to a sudden halt with the financial crisis of 2008. This initially led to a reduction in liquidity in the first quarter of 2009, followed by a drop in net flows of liquidity creation until the end of 2010. Subsequently, the sovereign debt crisis of 2011-13, and more recently the dash for cash following the Covid crisis, also resulted, at least temporarily, in negative quarterly net liquidity flows. Conversely, the Eurosystem's asset purchase programmes from 2014 onwards, and again after March 2020 in response to the public health crisis, brought about a significant

¹¹⁴ For further details on the different concepts of liquidity, see Banque de France (2008), "Overview", *Financial Stability Review*, No. 11, special issue on Liquidity, February, pp. I-VI.

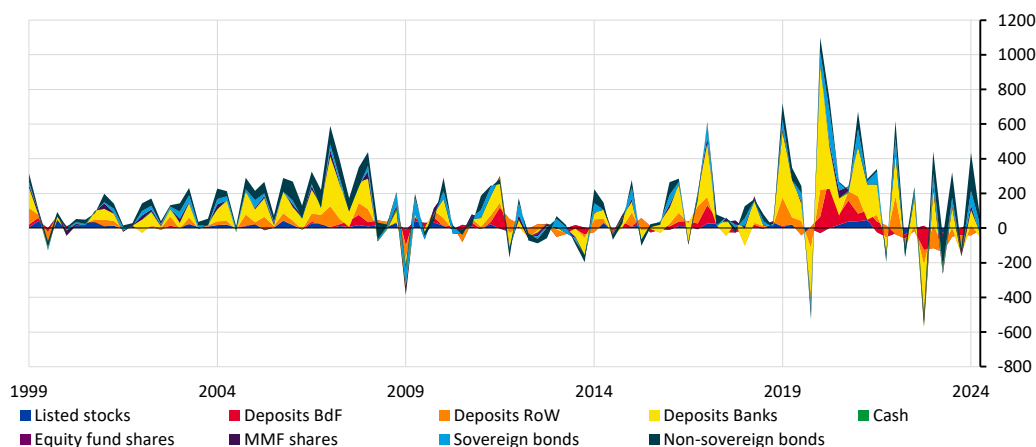
The *liquidity of a financial product* reflects the ease with which it can be exchanged for cash without loss of value.

Market liquidity is a related concept that refers to the market's capacity to absorb transactions in a given volume of assets or securities, without their prices being significantly affected.

increase in liquidity in the financial system (that is mainly reflected here in the growth in deposits with banks and the central bank). The period of quantitative tightening that began in 2022 resulted in a sharp drop in net liquidity flows, which now appear to be driven mainly by sovereign debt and listed share issuance.

Chart 2.5: Net flows in liquid assets by French sector

x: time/y: EUR billions



Source: Banque de France, quarterly financial accounts.

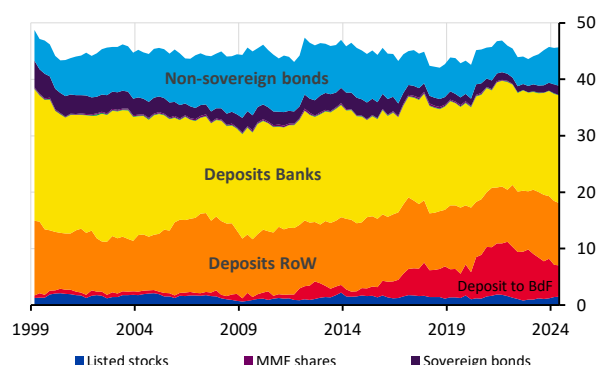
Likewise, we can paint a broad picture of changes in the liquidity of the main sectors of the French economy.¹¹⁵ We can see that the proportion of liquid assets in French banks' balance sheets has remained very stable. Recently, interbank deposits and debt securities on (other) banks or NBFIs have tended to act as an adjustment variable and to absorb the decline in central bank deposits that resulted from quantitative tightening (see Chart 2.6). Conversely, it would appear that the liquidity of non-MMF investment funds has trended downwards over the past several years (see Chart 2.8), due in particular to the decline in the proportion of listed shares on the asset side of their balance sheets. This trend might be linked primarily to developments in the portfolio of mixed funds, as the proportion of equity funds and bond funds in total non-MMF investment fund outstandings remained relatively stable.¹¹⁶ However, this sectoral deterioration in the liquidity of non-MMF investment funds should be nuanced: it would be far less pronounced if fund shares issued by the rest of the world were included in liquid assets, for example (see Chart 2.9).

¹¹⁵ This macroeconomic view does not intend to replace the liquidity ratios calculated and published by the supervisory authorities of these different sectors.

¹¹⁶ See Banque de France (2023) for a breakdown of outstanding amounts of non-MMF investment funds.

Chart 2.6: Change in liquid assets as a proportion of total assets – banks

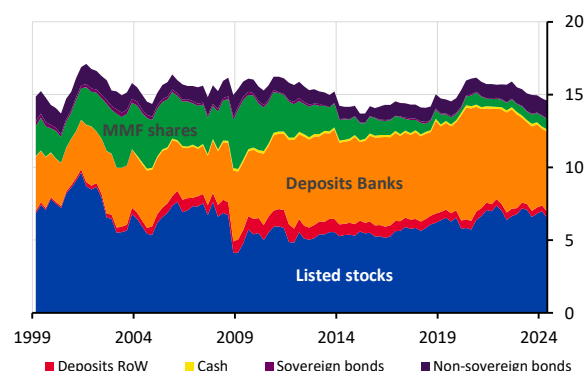
x: time/y: %



Source: Banque de France, quarterly financial accounts.

Chart 2.7: Change in liquid assets as a proportion of total assets – non-financial corporations

x: time/y: %

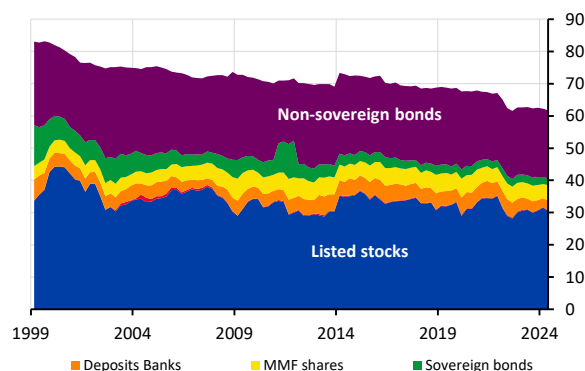


Source: Banque de France, quarterly financial accounts.

For NFCs (see Chart 2.7), there has also been a more recent downward trend in the proportion of liquid assets, which seems to be driven primarily by the contraction in their cash position as represented by bank deposits. However, the liquidity of this sector remains well above its 2000s' level.

Chart 2.8: Change in liquid assets as a proportion of total assets – non-MMF investment funds

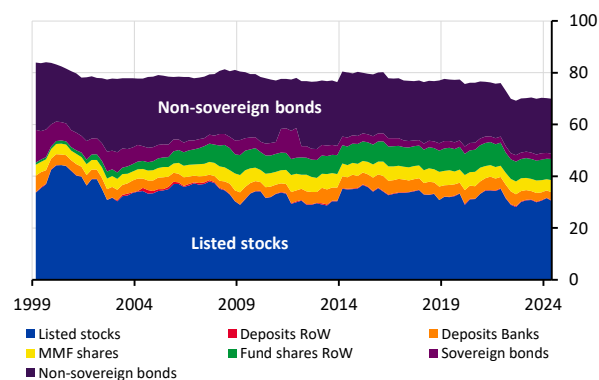
x: time/y: %



Source: Banque de France, quarterly financial accounts.

Chart 2.9: Change in liquid assets (including shares in rest of the world funds) as a proportion of total assets – non-MMF investment funds

x: time/y: %



Source: Banque de France, quarterly financial accounts.

2.2. An account mapping of the French financial system in the second quarter of 2024

Balance sheet matrix

One downside of the balance sheet accounts is that they fail to provide who-to-whom data by issuing-sector type. For instance, although we know how many deposits French NFCs hold, we do not know the exact proportions held by domestic banks or the rest of the world. Therefore, we cannot use the balance sheet accounts in their usual format to map the interconnections between the different sectors of the French financial system.

To solve this problem, we can present the underlying data from the balance sheet accounts in the form of a matrix of financial stocks¹¹⁷ (see Table 2.3). In this matrix, each column corresponds to the financial balance sheet account of a given sector and each row corresponds to a category of financial assets broken down by counterpart sector. It combines the two tables for “assets” and “liabilities and net financial stocks” of the balance sheet accounts published by the Banque de France. Financial assets take a positive sign while financial liabilities take a negative sign. Financial assets appear on the assets side of one unit and on the liabilities side of another, meaning that each row adds up to zero. Finally, in accordance with accounting practice, the balance sheet account for each sector balances, i.e. each column adds up to zero. To do so, the balance – the difference between total financial assets and liabilities – is entered as a liability (i.e. by inverting its sign) and is referred to as the net worth of the sector. For example, the 2,692 figure at the bottom of the first column of Table 2.3 means that French non-financial corporations had net financial liabilities of EUR 2,692 billion in the second quarter of 2024. Similarly, in the net flow matrix presented in the appendix, each column corresponds to the financial account of a given sector and each row corresponds to a financial transactions account for the period under review.

The balance sheet matrix, provided here for the second quarter of 2024, enables us to present inter-sector who-to-whom data for each financial asset item in a single table. Whereas the sub-categories of financial transactions in the Banque de France’s balance sheet accounts are those of the ESA, here financial transactions are disaggregated by sector of the issuer of the financial asset. The downside of merging the asset and liability tables in this matrix is that only the sector's net positions appear, thereby rendering intra-sectoral connections invisible. For example, the NFC shares held by other NFCs are not apparent in Table 2.3.

¹¹⁷ This type of matrix was developed at Cambridge University based on work carried out by Richard Stone, one of the founders of modern national accounting. For a more extensive presentation of these matrices, used in a theoretical framework, please refer to the monetary economics manual of Godley (W.) and Lavoie (M.) (2007), “An Integrated Approach to Credit, Money, Income, Production and Wealth”, Palgrave Macmillan.

Table 2.3: Matrix of France's financial stocks in Q2 2024 in EUR billions

	Non-financial corporations	Banque de France	Banks	Money market funds (MMF)	Non-MMF investment funds	Other financial intermediaries	Captive financial institutions and money lenders	Financial auxiliaries	Insurance corporations and pension funds	General government	Households	Rest of the world	Σ
Financial assets													
(F1) Gold and SDR		174										-174	0
(F21) Currency	24	-291	10						3		133	121	0
(F2M) Deposits with:	885	-806	-3,750	61	51	212		1	45	63	1,975	1,262	0
Banque de France		-960	720							7	3	230	0
Banks	810	33	-5,916	51	47	171			43	97	1,937	2,726	0
General government	15	4	8							-42	1	14	0
Rest of the world	60	117	1,438	10	4	41		1	2	2	34	-1,709	0
(F3) Debt securities issued by:	-488	962	-498	338	412	-255	-2	-97	1329	-2,640	48	891	0
Non-financial corporations	-674	89	21	38	57	2		1	91	4	1	369	0
Banks	18	72	-1,381	125	27	6		5	156	5	15	953	0
Other financial intermediaries			220		6	-357			8			121	0
Financial auxiliaries	2	2	10	2	7			-108	26	1	2	57	0
Captive financial institutions and money lenders			2				-2						0
Insurance corporations and pension funds		1	3		4				-38	1		29	0
General government	5	605	215	7	32	4		1	299	-2,678		1,510	0
Rest of the world	160	192	412	165	280	90		4	786	27	30	-2,147	0
(F4) Loans granted by:	-1,333		4,274	11	-24	113	-13	-178	-91	-195	-1,748	-815	0
Non-financial corporations	581					-1	-18	-141		-16		-404	0
Banque de France		1											0
Banks	-1,342		4,297		-11	-74		-68	-67	-231	-1,554	-950	0
Money market funds				11	-11								0
Non-MMF investment funds					1							-1	0
Other financial intermediaries	-33		-9			286					-182	-62	0
Financial auxiliaries	-19					-4		66	-24			-18	0
Captive financial institutions and money lenders							10	-10					0
Insurance corporations and pension funds	-6								12		-1	-4	0
General government	-34		-5						-1	106	-6	-59	0
Households	-8				-1	-2					12		0
Rest of the world	-470		-9		-3	-91	-5	-25	-11	-53	-16	684	0
(F511) Listed shares issued by:	-1,575	1	68		467	89	28	-9	15	112	309	495	0
Non-financial corporations	-1,747		38		152	5	2	14	39	108	227	1,161	0
Banks	2		-122		14		26		2	1	9	69	0
Financial auxiliaries	6		11		1			-26		1	2	5	0
Insurance corporations and pension funds			2		7			1	-55	1	5	39	0
Rest of the world	164		138		293	84		3	30	2	65	-779	0
(F51M) Unlisted shares and other equity issued by:	-1,146	-61	98		175	-13	14	53	166	480	1,409	-1,175	0
Non-financial corporations	-3,291		122		110		82	225	48	239	1,279	1,187	0
Banque de France		-63								63			0
Banks	10		-276		11			8	40	106	88	13	0
Other financial intermediaries	2					-14	2	1				7	0
Financial auxiliaries	66		31		25		9	-220	52		19	19	0
Captive financial institutions and money lenders			83				-102					18	0
Insurance corporations and pension funds			15		1			-65	25	21	3	0	0
Rest of the world	2,067	2	123		28		24	39	92	47		-2,423	0
(F52) Investment fund shares/units issued by:	257	19	50	-408	-1,183	24	2	34	889	144	388	-215	0
Money market funds	99		1	-409	72		1	15	105	10	16	91	0
Non-MMF investment funds	80	18	31		-1,380	6		17	639	114	319	157	0
Rest of the world	78	1	18	1	125	18		3	146	20	53	-463	0
(F7) Financial derivatives issued by:	-2	-2	2		-2	-123			-3	-1		132	0
Non-financial corporations	-15		6			2						6	0
Banque de France		-3			3								0
Banks	6		-1,421	1	8	43			1	1		1,360	0
Money market funds			1	-5							1	3	0
Non-MMF investment funds			11		-29	1						17	0
Other financial intermediaries	1		41		1	-437						393	0
Insurance corporations and pension funds			8						-8				0
General government			3							-3			0
Households				1							-2		0
Rest of the world	6	1	1,352	3	15	267			4			-1,647	0
(F6) Insurance technical reserves issued by:	49		3						-2,224	5	2,144	24	0
Insurance corporations and pension funds	49		2						-2,247	6	2,144	47	0
General government			1							-1			0
Rest of the world									24			-24	0
(F8) Other accounts receivable/payable	637	3	-413		-7	18		2	-28	26	223	-462	0
Non-financial corporations	-620		207		1	29		23		92	88	179	0
Banks	504	3	-958		1	1		5	1	7	331	104	0
Money market funds				-1									0
Non-MMF investment funds			1		-14						13		0
Other financial intermediaries	9		1			-37					2	25	0
Financial auxiliaries	23		3					-26					0
Insurance corporations and pension funds	14								-29	15			0
General government	131		7							-294	149	6	0
Households	78		82		5	2				193	-361		0
Rest of the world	497		244			22				12		-776	0
(BF90) Net financial assets	2,692	2	157	-1	111	-64	-29	193	-102	2,005	-4,881	-82	0
Σ	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Rounded numbers may result in discrepancies between the total per line/column and the sum of its components.

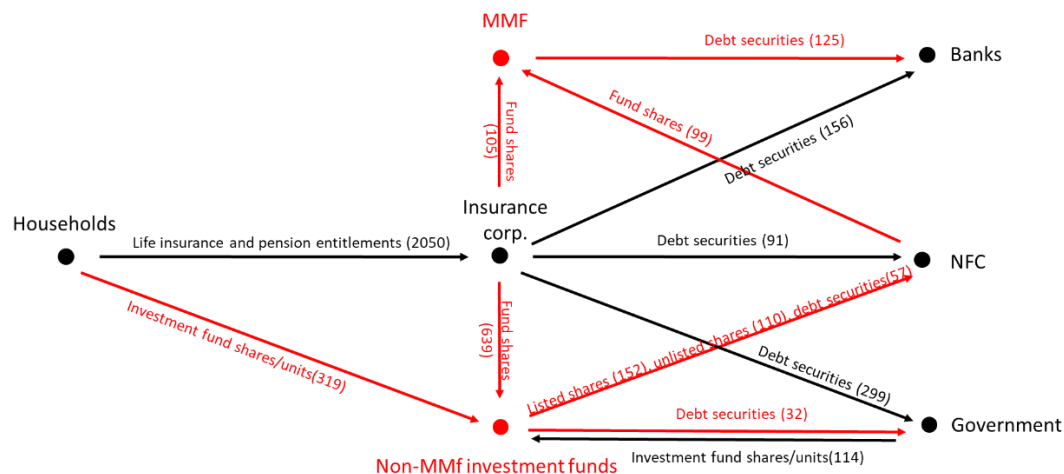
Source: Banque de France, quarterly financial accounts.

This stock matrix, which is a version of the Banque de France's balance sheet accounts broken down by counterpart sector, provides a comprehensive mapping of the interconnections between French financial sectors. To take the previous example, we can now see that of the EUR 885 billion in deposits held by NFCs in the second quarter of 2024, EUR 810 billion were held at domestic banks, EUR 15 billion were held by general government and EUR 60 billion were held with the rest of the world. Using this matrix we could construct an arrow diagram, similar to that of Andersen and Sánchez Serrano (2024), that would present a complete picture of all the interconnections between sectors. However, this type of diagram, in keeping with the tradition of graphical representations of national accounts,¹¹⁸ has the disadvantage of not being easy to disentangle and of putting together financial flows of very different magnitudes. Hence, we have opted for more limited arrow graphs that “zoom in” on the financial circuit specific to the French systemic sectors identified in Table 2.1, namely NFCs and the bank and investment fund ecosystem.

The bank and investment fund ecosystem

We can derive a simplified financial circuit diagram for investment funds from the stock matrix. The nodes represent the economic sectors and the arrows represent the financial flows. The sector that *paid out* holds outstanding *assets*, the amount of which is given for the second quarter of 2024. Conversely, the financial flows *recipient* sector bears a *liability*. For example, money market funds hold bank debt securities of EUR 125 billion, which corresponds to a net liability for the banking sector. Unlike the mappings of Andersen and Sánchez Serrano (2024) that provide an exhaustive overview, our diagram focuses on a single sector – here investment funds, whose financial flows are marked in red. Flows/outstanding amounts relating to other sectors are not exhaustive¹¹⁹ and we have left aside the rest of the world. Lastly, only flows that relate to the largest outstanding amounts of assets and liabilities appear in this diagram.

Figure 2.1: Simplified investment fund financial circuit. Outstanding amounts in Q2 2024 in EUR billions



This circuit provides a simple illustration of the type of financial intermediation carried out by investment funds. We can see that money market funds (MMF) mainly collect funds from insurance corporations (which in turn draw most of their funds from households) and from NFCs. MMF shares can thus be seen as securities

¹¹⁸ For a historical overview of the representations in the form of charts or tables of national accounts, see Vanoli, A. (2002), “A history of national accounts”, Paris, Editions La Découverte.

¹¹⁹ For insurance, only flows received from households similar to *savings flows* (i.e. the sum of *life insurance and annuity entitlements* and *pension entitlements*) are shown, which account for 96% of *insurance technical reserves* that accrue to households as they appear in the stock matrix (see Table 2.1). However, *non-life insurance technical reserves*, which correspond to the estimated amounts needed to meet future claims, do not appear here.

that compete with bank deposits,¹²⁰ but one can see that MMFs then mainly invest in bank debt securities. Moreover, most of the MMF asset management companies are affiliated to banking groups.¹²¹

The financial circuit of non-monetary funds is slightly different: they also derive the bulk of their funds from insurance corporations but they capture directly a significant proportion of savings (from households, NFCs¹²² and also government and social security funds) without using insurers as an intermediary, and mainly invest in the shares and debt securities of non-financial corporations. Non-monetary funds' asset management companies are also mostly bank-affiliated.¹²³

While the credit risk attached to investment funds is nothing like that borne by banks, their use of *leverage* and their *liquidity risk* are not negligible (see Banque de France, 2023).¹²⁴ Furthermore, in Europe, the affiliation of their management companies to a banking or insurance institution does not allow for "active" support from a "sponsor" institution or a third party when they need liquidity.¹²⁵ *Money market funds*, for example, are vulnerable to a liquidity mismatch between assets and liabilities. Investors can withdraw their investment on a daily basis. Meeting redemption requests in times of stress can be costly for money market funds, especially if there is a need to sell assets at depressed prices. This liquidity risk explains why money market funds must comply with liquid asset requirements (ratios of assets coming due within one day and one week). These liquidity reserves are meant to enable the fund to meet redemption requests without having to sell securities. Shares of non-MMF *bond funds* (with a large majority of debt securities) and *mixed funds* (with assets made up of at least two classes of securities), although not considered here to be liquid assets, are exposed to the risk of liquidity mismatch due to the low liquidity of certain debt securities, particularly those of companies with a *high yield* rating. However, as with *equity funds*, their leverage remains contained in France.

In the same way as for funds, we can use the stock matrix to map a simplified financial circuit for banks, and identify their links with the NBFi sector: money market funds and non-MMF investment funds, insurance corporations and pension funds, captive financial institutions, financial auxiliaries and other financial intermediaries (see Figure 2.2).¹²⁶

¹²⁰ Fund shares are legally financial instruments (see MiFID) and even financial securities (see CoMoFi Article L. 211-1).

¹²¹ In 2024, according to our estimates based on the Lipper commercial database, 81% of French money market funds were managed by asset management companies affiliated to a bank (out of the EUR 367 billion outstandings identified in Lipper).

¹²² For clarity, the EUR 80 billion in non-MMF fund shares/units held by NFCs is not shown in the diagram.

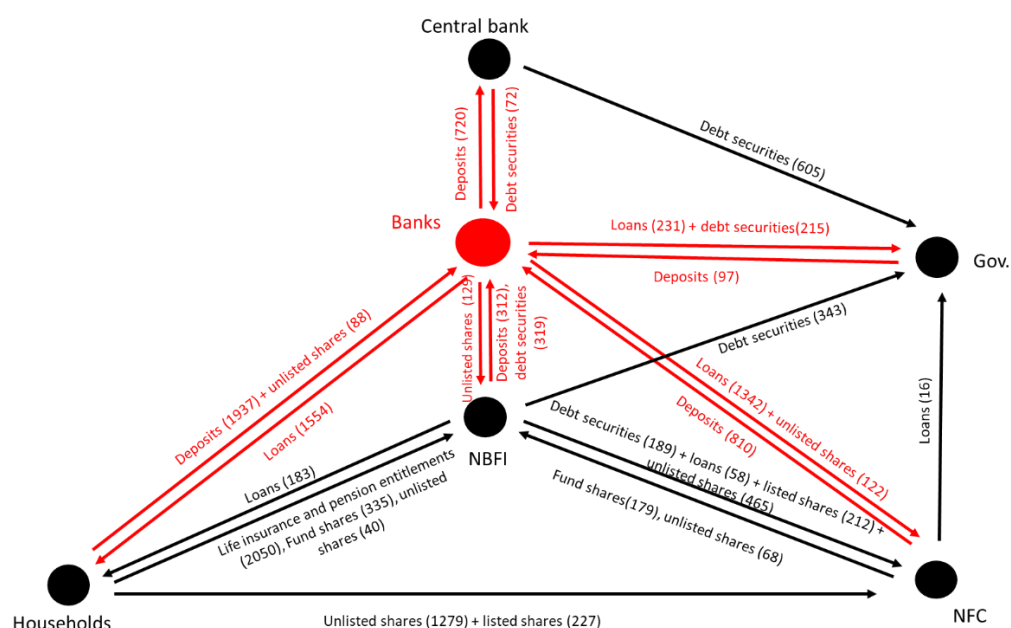
¹²³ In 2024, according to our estimates based on the Lipper commercial database, 64% of French bond funds were managed by asset management companies affiliated to a bank (out of the EUR 151 billion outstandings identified in Lipper).

¹²⁴ This 2023 report provides a more detailed analysis of the risks specifically associated with each type of NBFi.

¹²⁵ In Europe, the MMFR regulation governing money market funds prohibits third party support, unlike the United States, where the sponsor institution can inject liquidity in the event of a shock.

¹²⁶ Figure 2.2 exhibits clear similarities with the "money circuit" traditionally presented in certain monetary economics manuals, with the main difference here being the presence of the NBFi sector. See, for example, Marchal (J.) and Poulon (F.) (1987), "*Monnaie et crédit dans l'économie française*", Cujas, Vol. 2.

Figure 2.2: Simplified bank (and NBF) financial circuit. Outstanding amounts in Q2 2024 in EUR billions



This circuit confirms the central role played by banks, which, thanks to their money creation privilege, finance all the other French sectors. As we saw in Chart 2.1, banks account for 61.3% of the total assets of French financial institutions. If one added the investment funds whose asset management companies are bank-affiliated, the banking sphere would account for 65% to 70%.

All the sectors represented in this circuit are predominantly financed by the banking sector (excluding intra-sector flows), with the exception of general government. For the latter, the Banque de France is still the leading creditor at the French national level with EUR 605 billion (22.6% of general government liabilities, compared with only 1.4% in the first quarter of 1999). This is due to the Eurosystem's asset purchase programmes, which generated liquidity that is now, however, being phased out. It is in this simplified circuit, for the government and for NFCs, that the weight of financing from the non-banking sector appears most significant, at around three-quarters and two-thirds of bank financing, respectively.

Financing from French NBFs, including insurance corporations, accounts for only a marginal proportion of banks' liabilities (EUR 731 billion, or only 6.0% of the liabilities of the entire French banking sector in the second quarter of 2024). However, approximately two-thirds of the financing supplied by the NBF sector to French banks comes from foreign NBFs.¹²⁷

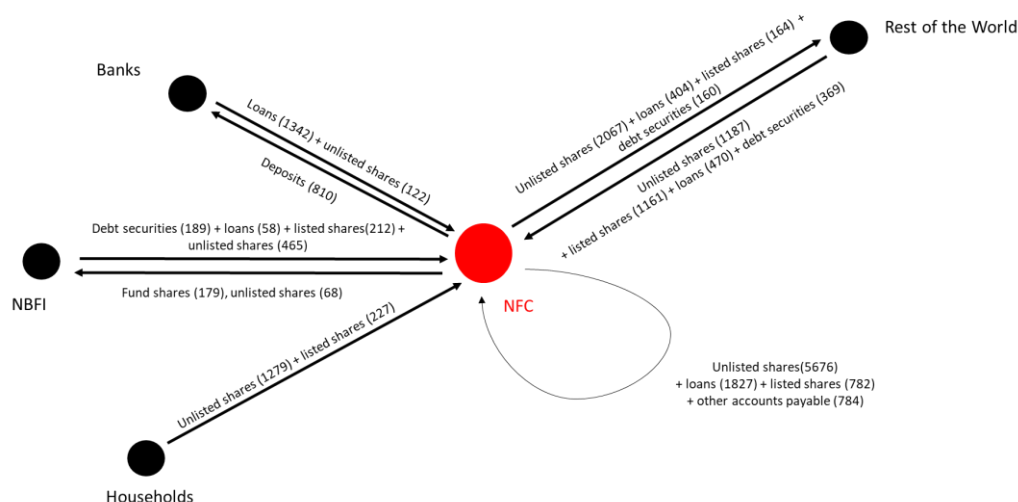
Financial circuit of non-financial corporations

Using the stock matrix (see Table 2.3), one can also map a simplified financial circuit for NFCs. The first difference between Figure 2.3 and Figure 2.2, in which NFCs already appeared, is the presence of the rest of the world sector. The latter emerges as a major partner of NFCs, but with a more balanced net position than with resident sectors. This reflects the complexity and international scope of the organisation of French companies, rather than a dependence on foreign financing. Indeed, a French parent company's ownership of

¹²⁷ Based on supervisory data, the total proportion of funding for the seven main French banking groups from resident and foreign NBFs represent around 16.5% of their liabilities. This level of non-bank financing is slightly higher than the 14% observed among systemically important banks in the euro area (Banque de France, 2023).

a foreign subsidiary (or vice versa) implies a stake in the subsidiary's equity capital while different entities within the same group also provide themselves with liquidity through the granting of loans.

Figure 2.3: Simplified NFC financial circuit. Outstanding amounts in Q2 2024 in EUR billions

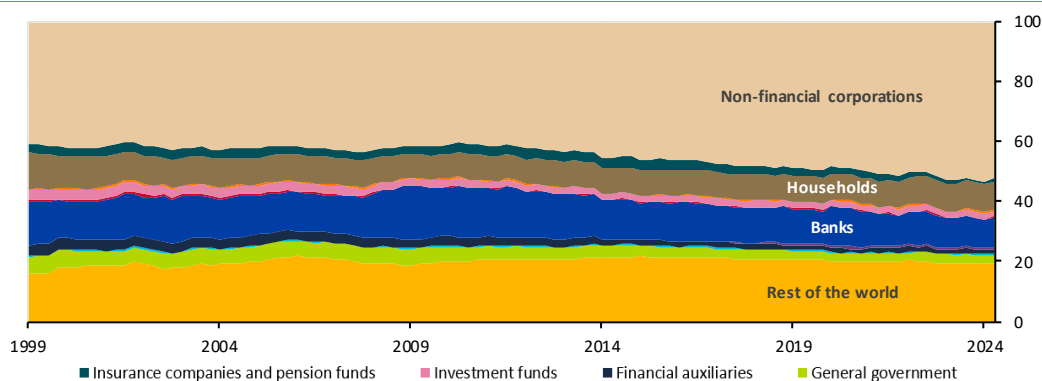


The second difference between Figure 2.3 and Figure 2.2 lies in the mapping of intra-NFC flows.¹²⁸ Their reincorporation into the financial circuit of NFCs is important because the change in the latter's liability composition is most likely related to an upsurge in NFC intragroup flows, which carry two types of risk beyond traditional credit risk: *internal operational risk* and the *risk of greater information asymmetries*.¹²⁹

An analysis of changes in NFC liabilities broken down by holding sector clearly shows an increase in financing originating from NFCs themselves. NFCs now account for the majority of the liabilities of other NFCs (52.3%), whereas intra-NFC financing made up only 40.8% of their liabilities in the first quarter of 1999. Banks' share in NFC financing, on the other hand, has been declining over the past 15 years, accounting for only 10% of liabilities in the second quarter of 2024, compared with 14.6% in the first quarter of 1999.

Chart 2.10: Changes in NFC financing items (% of liabilities)

x: time/y: %

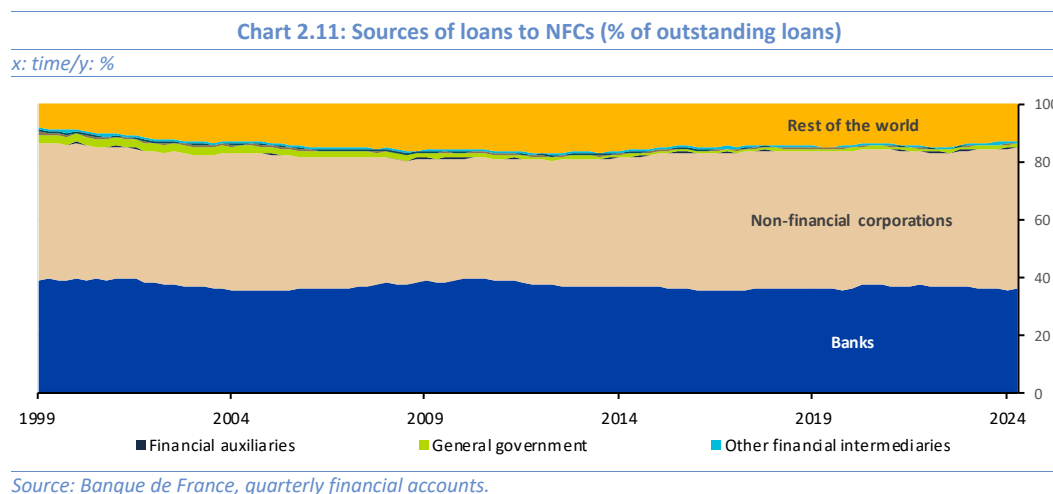


Source: Banque de France, quarterly financial accounts.

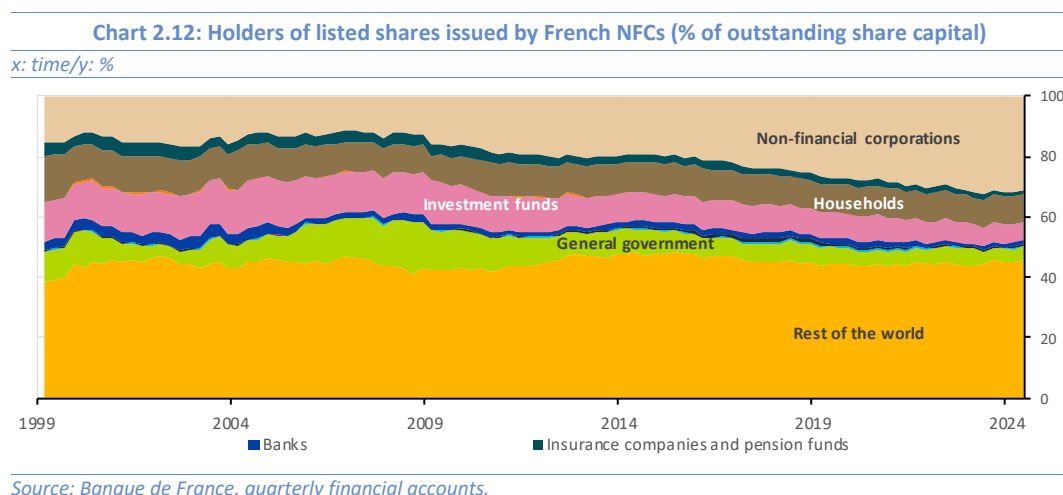
¹²⁸ As already noted, they are hidden in the stock matrix.

¹²⁹ Mouriaux (F.), Sabatini (M.) and Levy-Garboua (V.) (2019), "The euro area post-crisis financial system in perspective (1999-2018)", *Bulletin de la Banque de France*, No. 226, Article 8, November-December.

One can observe the same trends for the loans subset: NFCs now grant half of their outstanding loans themselves, and this proportion has increased over time. This source of credit seems linked to the development of inter-entity loans within increasingly complex groups.¹³⁰ Banks, on the other hand, now provide only 35.9% of NFCs' credit financing, a proportion that has declined over the long term.¹³¹ However, this decline is arguably more apparent than real considering that loans within NFCs are often bank loans redistributed within the same group.



Finally, NFCs and the rest of the world provide most of the equity financing. The latter accounted for the largest proportion of listed shares, with 45.9% of holdings. However, NFCs account for the majority of unlisted shares with 63.3% of holdings, and their weight has been growing over the past quarter century.

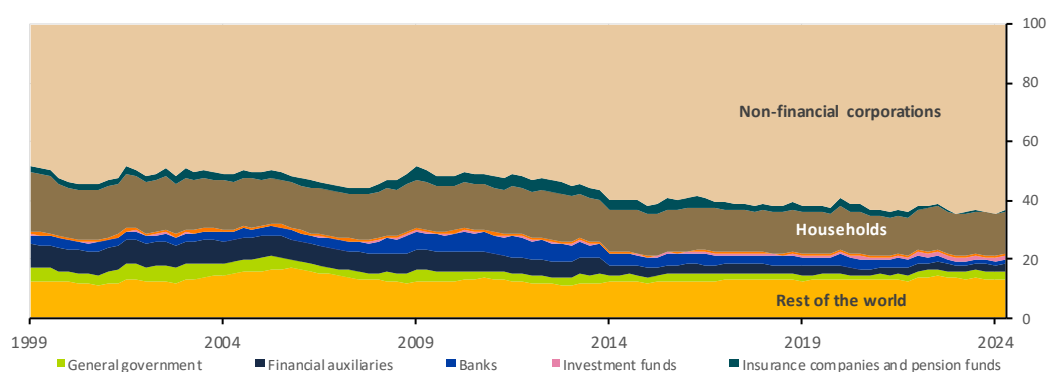


¹³⁰ However, delayed payments are recorded in the financial accounts under a different item (F81, trade credits and advances) from conventional loans (F4).

¹³¹ Excluding all intra-NFC loans, banks provide 70.2% of the loans taken out by NFCs with other sectors (and the proportion of bank financing is even higher because of the bank credit included in loans from the rest of the world).

Chart 2.13: Holders of unlisted shares issued by French NFCs

x: time/y: % of total holdings



Source: Banque de France, quarterly financial accounts.

Mouriaux et al. (2019) also observed on the basis of euro area financial accounts that the share of loans granted to euro area NFCs by the ESA “other financial institutions” (OFI) sector has risen continuously since 1999. They write that this finding, and that of a growing share of the international financial flows of NFCs, are “consistent with the hypothesis that some of the changes in the non-bank financial sector observed since the [2008] crisis may be explained by the development of intragroup and cross-border flows involving the creation of subsidiaries and specialised structures (captive financial institutions) that can also satisfy different grounds for optimisation.”¹³²

However, the relevance of this hypothesis in the French case may not be obvious. The share of loans granted to French NFCs by French OFIs (including captive financial institutions and financial auxiliaries) has in fact remained marginal, rising from 1.1% in the first quarter of 1999 to 1.4% in the second quarter of 2024. However, this hypothesis mainly relates to the increase in credit from foreign OFIs. There was a rather significant increase in the rest of the world’s share of loans granted to NFCs between the first quarter of 1999 and the second quarter of 2024 (up to 12.6% from 8% of total). Moreover, as we shall see, the share of OFIs in the financing originating from the rest of the world has also increased considerably (see Section 2). In other words, it is likely that the optimisation and internationalisation strategies of French NFCs played a non-negligible role in the development of links between the French financial system and foreign NBFIs.

2.3. Financial interconnections with the rest of the world

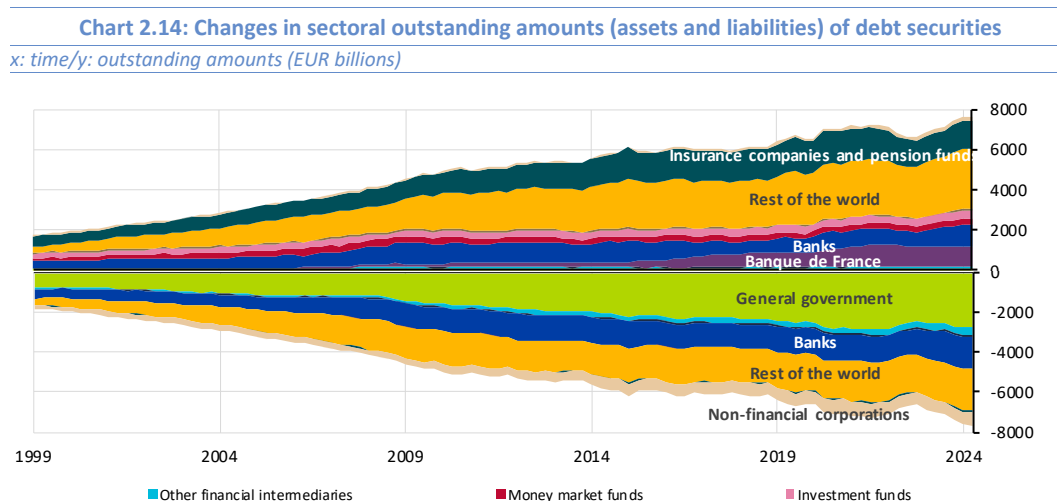
As noted above, a major limitation of the who-to-whom data provided in the stock matrix is that the rest of the world figures cannot be broken down sector by sector. This is particularly limiting as we have already noted that one of the main stylised facts in the evolution of the French financial system over the past 25 years has been its opening up internationally. The rest of the world appears, moreover, to be the main component of French sectors’ exposure to NBFIs.

In an attempt to disaggregate the rest of the world sector as much as possible, we include three tables (Appendices 2 to 4) based on the Eurosystem’s Securities Holdings Statistics (SHS) database in our mapping. They provide a complete set of who-to-whom data between French sectors and their Eurosystem country counterparts for debt securities, listed shares and investment fund shares/units.¹³³ They also provide reliable

¹³² An analysis of entities created by multinational groups was carried out by the IMF Committee on Balance of Payment Statistics. The [BOPCOM 18/03 - Final Report of the Task Force on Special Purpose Entities](#) cites entities responsible for issuing securities on behalf of their group, leasing companies and royalty companies, for example.

¹³³ The euro area mapping put forward by Andersen and Sánchez Serrano (2024) also uses data from the SHS database to round out information taken from the Eurosystem’s quarterly sector accounts.

sectoral data on the holdings of national sectors for the same categories of financial products that are issued by rest of the world sectors outside the Eurosystem. We will use these tables to try to identify and analyse the interconnections between the French financial system and the rest of the world. However, one should note that the SHS breakdown of NBFIs is less refined than that of the ESA, as the SHS OFIs also include captive financial institutions and financial auxiliaries.



Source: Banque de France, quarterly financial accounts.

Note: The outstanding amounts of the holding sectors (assets) take a positive sign and the outstanding amounts of the issuing sectors (liabilities) take a negative sign.

Interconnections with the rest of the world on the debt securities market

Before turning to the specifics of interconnections with other foreign countries, we should first note the increasing significance of the rest of the world, particularly on the holder side, for debt securities (short-term notes and long-term bonds) traded in the French financial system¹³⁴ (see Chart 2.14). The rest of the world accounted for 28% of issues and 40% of holdings in the second quarter of 2024 (compared with 20% and 16%, respectively, in the first quarter of 1999). On the holder side, outstanding amounts held by the Banque de France also increased during the Eurosystem's asset purchase programmes. The trend was, however, reversed at the beginning of 2022, as net asset purchases were halted, and quantitative tightening was introduced in March 2023.

One can also note that general government (35.3% of outstanding amounts) and banks (21.2% of outstanding amounts) are the largest resident issuing sectors in this market. The evolution of bank issuance has been quite erratic, with the rate of growth stagnating from the 2007-08 financial crisis onwards and picking up only very recently from 2022 with rising interest rates and the relative reduction in liquidity. NFCs account for only 8.8% of issuance. On the other hand, growth in government issuance accelerated from the 2007-08 crisis until the Covid-19 crisis, before ostensibly tipping into negative territory with the rise in interest rates in 2022-23. This recent decline is mainly due to valuation effects – the rise in interest rates mechanically led to a

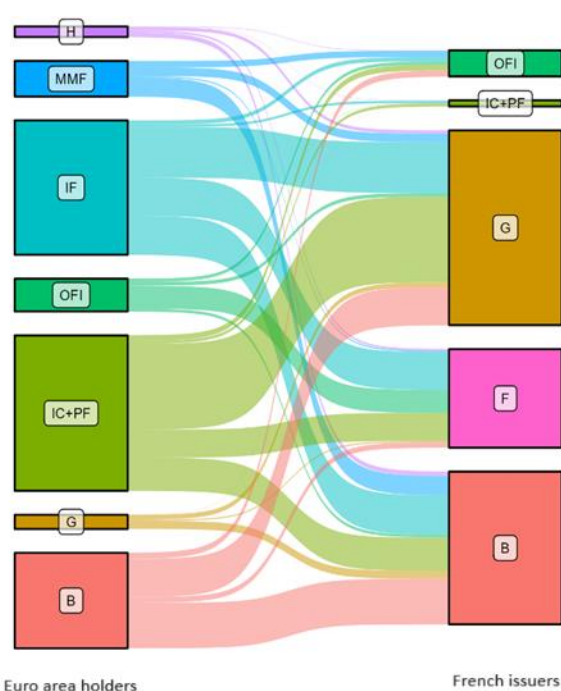
¹³⁴ The debt securities traded in France and shown in Chart 2.4 are all debt securities recorded in the balance sheet accounts, i.e. all the debt securities issued by resident sectors and also those issued by non-residents that are held by resident sectors.

reduction in the market value of government debt securities, especially for those with longer average maturities.¹³⁵

Charts 2.15 and 2.16 show the interconnections between resident and foreign sectors for French and foreign debt securities based on SHS who-to-whom data. For domestic securities, as already discussed, the prominence of investment funds in French banks' liabilities is notable. They account for 38% of euro area holdings of French bank debt securities. For NFCs, the shares of NBFIs and OFIs were 90% (EUR 179 billion), and 23% (EUR 45 billion) respectively of liabilities to the euro area in the second quarter of 2024 compared with only 76% and 3% respectively in the first quarter of 2014. This is in line with the hypothesis of Mouriaux, Sabatini and Levy-Garboua. More broadly, there has been a general increase in the financing originating from NBFIs, and in particular European money market funds, whose share of security holdings by euro area sectors rose from 4.9% in the first quarter of 2014 to 7.3% in the second quarter of 2024. Similarly, euro area OFIs raised their share from 3.2% to 6.8% of holdings by euro area sectors.

Chart 2.15: Holding sectors in the euro area (excluding France) of debt securities issued by resident sectors

EUR 957 billion in Q2 2024



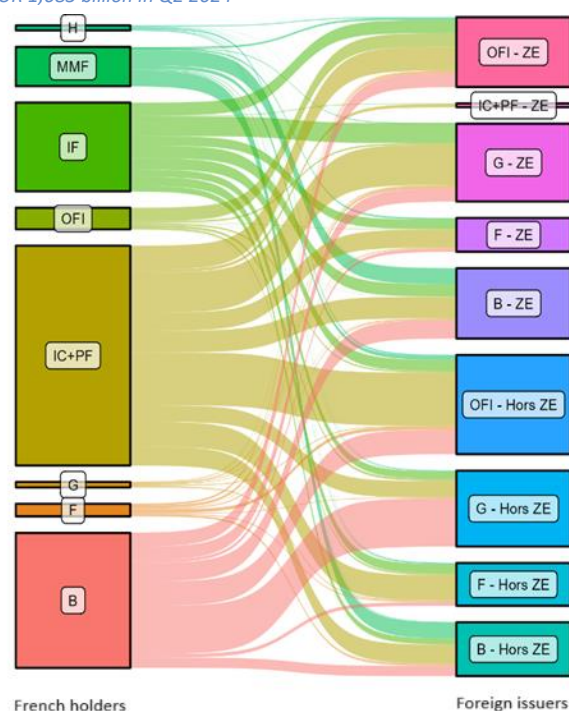
Source: ECB Securities Holdings Statistics by Sector (SHSS).

Note: The width of the arrows is proportional to the amount of the holdings; Eurosystem holdings are excluded;

F = non-financial corporations, B = banks, MMF = money market funds, IF = non-MMF investment funds, OFI = other financial intermediaries, IC+PF = insurance corporations and pension funds, G = general government, H = households.

Chart 2.16: Resident holding sectors of debt securities issued by rest of the world sectors

EUR 1,683 billion in Q2 2024



Source: ECB Securities Holdings Statistics by Sector (SHSS).

Note: The width of the arrows is proportional to the amount of the holdings; Eurosystem holdings are excluded;

F = non-financial corporations, B = banks, MMF = money market funds, IF = non-MMF investment funds, OFI = other financial intermediaries, IC+PF = insurance corporations and pension funds, G = general government, H = households, ZE = euro area, Hors ZE = non euro area.

Regarding foreign debt securities held by resident sectors (see Chart 2.16), one can note the predominance of French insurance corporations as well as the considerable sectoral and geographical diversification of their portfolios. As highlighted in Banque de France (2023), French insurers' securities portfolios tend to be more diversified than European insurers' portfolios. French banks' investments in foreign debt securities

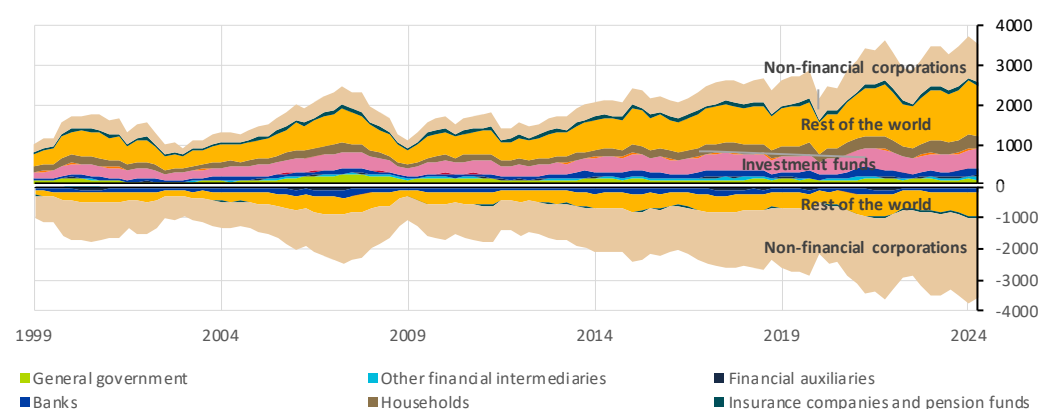
¹³⁵ Securities issued by banks, which have a much shorter maturity, were much less affected by these valuation effects.

appear to be more concentrated in public debt securities and debt securities issued by OFIs, with the bulk of these investments going to non-euro area institutions.

Interconnections with the rest of the world on the listed shares markets

For equities traded in the French financial system, the most notable fact over the past 25 years remains the rising weight of the rest of the world on the issuer side, from 18% of the listed and unlisted shares held by French institutions to 20.1% in the second quarter of 2024. Furthermore, the rest of the world's holdings rose from 31.3% of all French listed shares in 1999 to 36% in the second quarter of 2024.

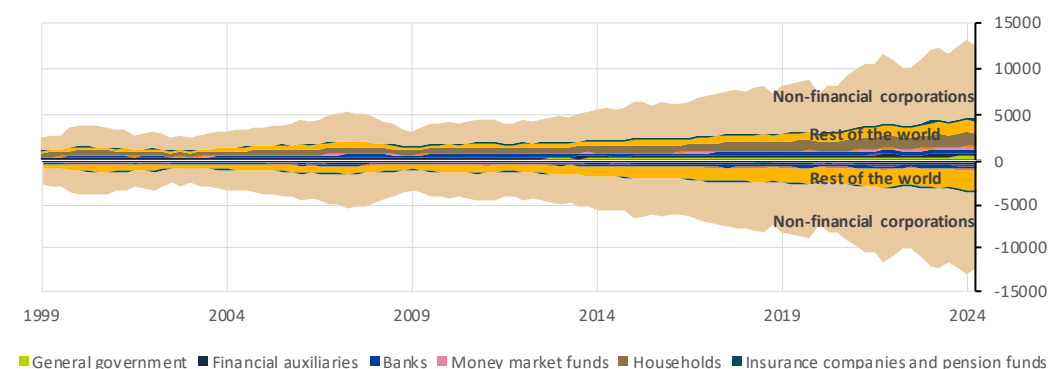
Chart 2.17: Changes in sectoral outstanding amounts (assets and liabilities) of listed shares
x: time/y: outstanding amounts (EUR billions)



Source: Banque de France, quarterly financial accounts.

Note: The outstanding amounts of the holding sectors (assets) take a positive sign and the outstanding amounts of the issuing sectors (liabilities) take a negative sign.

Chart 2.18: Changes in sectoral outstanding amounts (assets and liabilities) of unlisted shares
x: time/y: outstanding amounts (EUR billions)



Source: Banque de France, quarterly financial accounts.

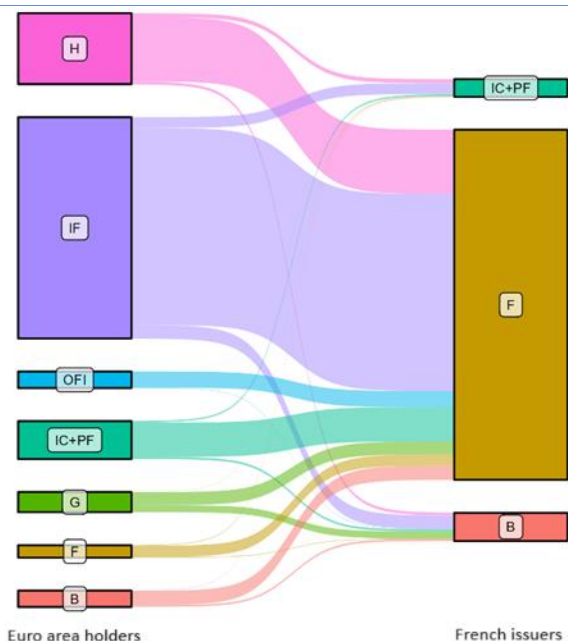
Note: The outstanding amounts of the holding sectors (assets) take a positive sign and the outstanding amounts of the issuing sectors (liabilities) take a negative sign.

Charts 2.19 and 2.20 show the interconnections between resident sectors and rest of the world sectors for French and foreign listed shares based on SHS who-to-whom data. With regard to domestic securities, as already discussed, the prominence of investment funds is notable. In terms of resident listed shares held by the euro area, the increase in holdings by European non-MMF investment funds is particularly noteworthy, up

from 51.8% of euro area holdings in the first quarter of 2014 to 56.2% in the second quarter of 2024. For resident NFCs, this type of financing originates mainly from euro area NBFIs, although their share and that of OFIs increased more modestly than for debt securities. As for French NFCs, the proportion of their listed shares that are held by European NBFIs and OFIs were 71.2% (EUR 156 billion) and 4.6% (EUR 10 billion) in the second quarter of 2024, compared with 69.6% and 1.8% in the first quarter of 2014.

Chart 2.19: Holding sectors in the euro area (excluding France) of listed shares issued by resident sectors

EUR 249 billion in Q2 2024

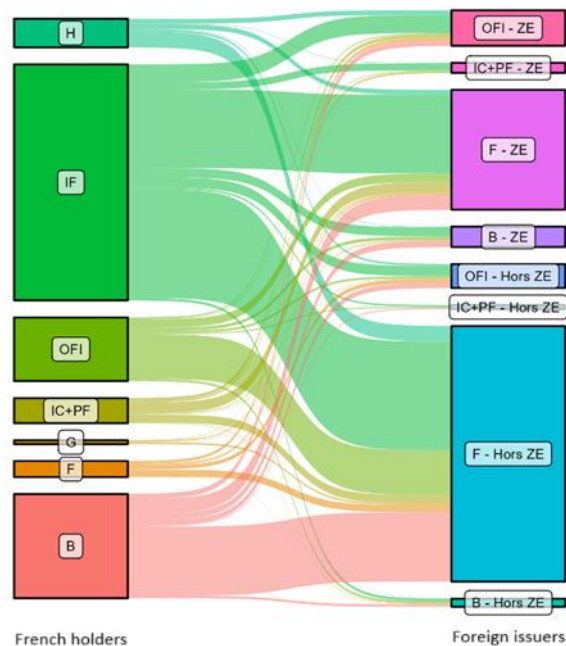


Source: ECB Securities Holdings Statistics by Sector (SHSS).

Note: The width of the arrows is proportional to the amount of the holdings; Eurosystem holdings are excluded; F = non-financial corporations, B = banks, MMF = money market funds, IF = non-MMF investment funds, OFI = other financial intermediaries, IC+PF = insurance corporations and pension funds, G = general government, H = households.

Chart 2.20: Resident holding sectors of listed shares issued by rest of the world sectors

EUR 598 billion in Q2 2024



Source: ECB Securities Holdings Statistics by Sector (SHSS).

Note: The width of the arrows is proportional to the amount of the holdings; Eurosystem holdings are excluded; F = non-financial corporations, B = banks, MMF = money market funds, IF = non-MMF investment funds, OFI = other financial intermediaries, IC+PF = insurance corporations and pension funds, G = general government, H = households, ZE = euro area, Hors ZE = non euro area.

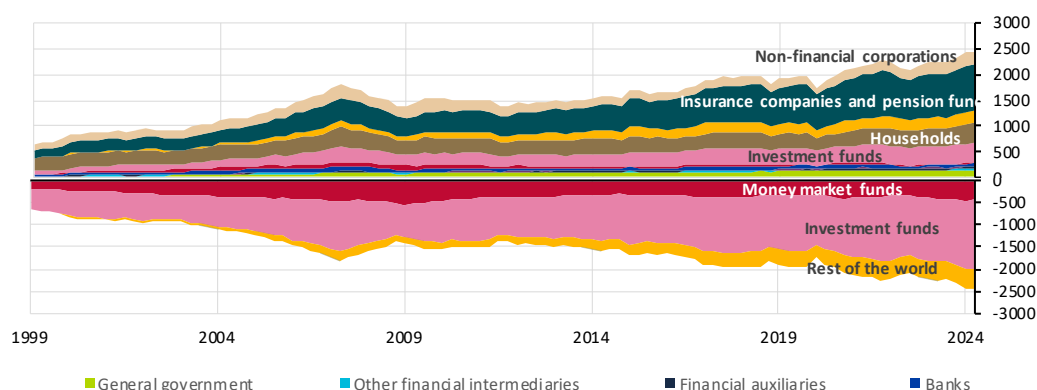
Conversely, in terms of foreign listed shares held in France (see Chart 2.21), the proportion held by French non-MMF investment funds fell from 56.6% of resident sector holdings in the first quarter of 2014 to just 49.5% in the second quarter of 2024. This decline partly explains the fall in the proportion of liquid assets held by resident non-MMF investment funds noted in the first section of this chapter.

Interconnections with the rest of the world on the investment fund shares/units market

For investment fund shares traded in France there has been an increase in the relative weight of the rest of the world, both in terms of holdings and issues. The rest of the world now accounts for 10.1% of holdings, up tenfold since 1999. In terms of issuance of investment fund shares (held by resident sectors), the rest of the world's proportion also increased, from 3% in 1999 to 18.8% in the second quarter of 2024.

Chart 2.21: Changes in sectoral outstanding amounts (assets and liabilities) of investment fund shares/units

x: time/y: outstanding amounts (EUR billions)

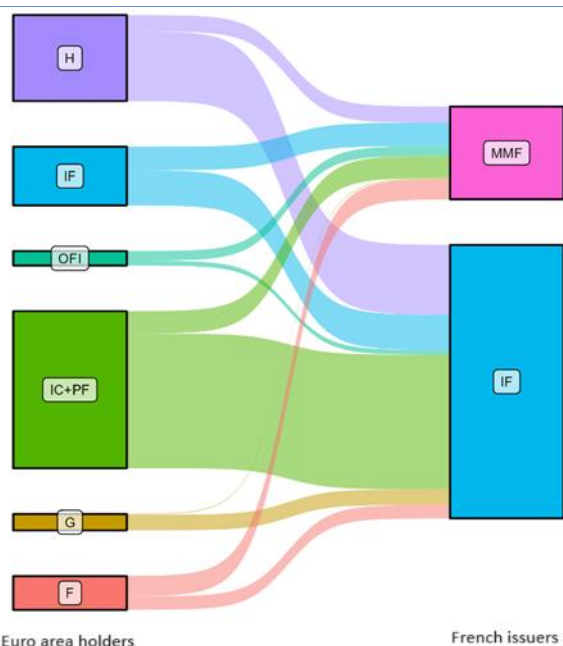


Source: Banque de France, quarterly financial accounts.

Note: The outstanding amounts of the holding sectors (assets) take a positive sign and the outstanding amounts of the issuing sectors (liabilities) take a negative sign.

Chart 2.22: Holding sectors in the euro area (excluding France) of resident investment fund shares/units

EUR 167 billion in Q2 2024



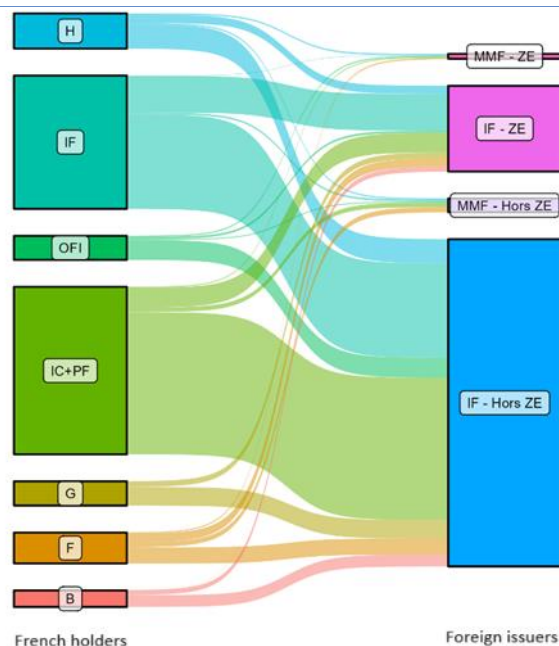
Source: ECB Securities Holdings Statistics by Sector (SHSS).

Note: The width of the arrows is proportional to the amount of the holdings; Eurosystem holdings are excluded;

F = non-financial corporations, B = banks, MMF = money market funds, IF = non-MMF investment funds, OFI = other financial intermediaries, IC+PF = insurance corporations and pension funds, G = general government, H = households.

Chart 2.23: Resident holding sectors of foreign investment fund shares/units

EUR 371 billion in Q2 2024



Source: ECB Securities Holdings Statistics by Sector (SHSS).

Note: The width of the arrows is proportional to the amount of the holdings; Eurosystem holdings are excluded;

F = non-financial corporations, B = banks, MMF = money market funds, IF = non-MMF investment funds, OFI = other financial intermediaries, IC+PF = insurance corporations and pension funds, G = general government, H = households, ZE = euro area, Hors ZE = non euro area.

Looking at shares/units issued by resident investment funds and held abroad (see Chart 2.22), we see that – on the issuer side – the weight of French money market funds has increased at the expense of non-MMF investment funds. MMF shares accounted for 36.8% of resident fund shares held abroad in the second quarter of 2024, compared with only 11.3% in the first quarter of 2014. In terms of holders, for the euro area,

European insurers and pension funds increased their presence to account for 42.5% of euro area holdings of French investment fund shares in the second quarter of 2024, compared with just 25.8% in the first quarter of 2014.

Finally, turning to foreign fund shares held in France, the relative weight of money market funds has not risen to the same extent (see Chart 2.23). On the (resident) holding side, the main development over the past ten years has been the increased importance of insurance corporations, from 32.9% of total resident holdings of foreign funds in the first quarter of 2014 to 38.5% in the second quarter of 2024. Insurers – across the euro area as a whole – seem to have been attracted to investment fund shares in recent years, which is reflected in their balance sheet composition.¹³⁶

Conclusion

This chapter tried to provide a detailed mapping of the interconnections of the French financial system, based on data from France’s financial accounts and balance sheet accounts. In order to address the lack of disaggregation of the “rest of the world” sector in national accounting, we augmented this mapping with who-to-whom data from the Eurosystem SHS database that describe interactions on various markets between the French sectors and their euro area counterparts. Another limitation of the financial accounts is that certain complex financial transactions such as derivatives or repos lack adequate detail or remain hidden.¹³⁷ A solution would be to extend this work along the lines of the mapping of Andersen and Sánchez Serrano (2024). Hence, one could provide a set of who-to-whom data on initial margin payments on derivatives based on European Market Infrastructure Regulation (EMIR) data and another on loans relating to securities purchased under repurchase agreements based on the European Securities Financing Transactions Data Store (SFTDS).

¹³⁶ See Banque de France (2023) for a more detailed analysis of French insurers’ balance sheets.

¹³⁷ However, hidden does not mean absent as the flows they generate are included in the figures for other categories of financial transactions (in particular deposits and loans).

Appendix 1: Matrix of French net financial flows in Q2 2024

	Non-financial corporations	Banque de France	Banks	Money market funds (MMF)	Non-MMF investment funds	Other financial intermediaries	Captive financial institutions and money lenders	Financial auxiliaries	Insurance corporations and pension funds	General government	Households	Rest of the world	Σ	
Net financial flows														
(F1) Gold and SDR													0	
(F21) Currency	1	-2									4	-3	0	
(F2M) Deposits with:	3	13	-35	-5	6	13			2	13	20	-30	0	
Banque de France		39	-21							7		-24	0	
Banks	4	-19	15		6	13			2	9	20	-49	0	
General government	1									-3		2	0	
Rest of the world	-2	-6	-29	-5								41	0	
(F3) Debt securities issued by:	-16	-16	68	-8	4	-22	-1	-12	9	-57		51	0	
Non-financial corporations	-19	-1	1	4					-2	-1		18	0	
Banks	2	-2	1	-10	-1	-2			1		-1	12	0	
Other financial intermediaries			14		-1	-7		-1	-1			-4	0	
Financial auxiliaries			1		1			-8	1			4	0	
Captive financial institutions and money lenders			1				-1					0	0	
Insurance corporations and pension funds			2					-1				-1	0	
General government	-1	-6	14	2	-2	3		-1	5	-55		42	0	
Rest of the world	1	-8	35	-4	6	-14			4	-1	1	-21	0	
(F4) Loans granted by:	-14		4	1		-10		-6	-2	2	1	25	0	
Non-financial corporations	-3						-1	-6		5		5	0	
Banks	-14		-1			-5		-7	3		7	16	0	
Money market funds				1	-1								0	
Other financial intermediaries	-0		4			-23					-7	26	0	
Financial auxiliaries	-1							3	-3			1	0	
General government	3									-3			0	
Rest of the world	1					19		4	-1			-23	0	
(F511) Listed shares issued by:	-22		13		2	15	1			1	4	-15	0	
Non-financial corporations	-11		2		-2	-4				1	4	11	0	
Banks	2				-1		1					-2	0	
Financial auxiliaries								-1		1		1	0	
Insurance corporations and pension funds	-3								2			1	0	
Rest of the world	-10		10		5	20					1	-25	0	
(F51M) Unlisted shares and other equity issued by:	-3		-7				2	9	1		2	-5	0	
Non-financial corporations	-103		13		9		5	32	4	1	13	25	0	
Banks	27		-13		-2			-1			-8	-4	0	
Other financial intermediaries	6											-5	0	
Financial auxiliaries	58		-7		-7		-3	-25	-7		-3	-6	0	
Captive financial institutions and money lenders			2									-2	0	
Insurance corporations and pension funds			-1						3	-1		-1	0	
Rest of the world	9		-1		1			3	1			-13	0	
(F52) Investment fund shares/units issued by:	-8		-1	11	-16	4	1	4	-2		11	-2	0	
Money market funds	-10			11	7		1	-1	-4		1	-4	0	
Non-MMF investment funds	1				-22	1		4	4		9	4	0	
Rest of the world	1		-1			3		1	-2	-1	1	-2	0	
(F7) Financial derivatives issued by:		-1	-3		2								2	0
Non-financial corporations	-1		1										0	
Banque de France		-1			1								0	
Banks	1		-93	-1	1	-3						95	0	
Money market funds			-1	-1								1	0	
Non-MMF investment funds			2		-2	-1						1	0	
Other financial intermediaries			-10		-1	15						-4	0	
Rest of the world			98	1	2	-11			-1			-91	0	
(F6) Insurance technical reserves issued by:									-19		14	5	0	
Insurance corporations and pension funds									-18		14	4	0	
Rest of the world									-1			1	0	
(F8) Other accounts receivable/payable	5	2	25		-1	1			1	-7	3	-30	0	
Non-financial corporations	10		-3			-5				-9	1	5	0	
Banks	-8	2	26			-1					-9	-10	0	
Non-MMF investment funds					-1	-0					1	0	0	
Other financial intermediaries						6					-1	-6	0	
Insurance corporations and pension funds									1	-1			0	
General government	-12									-16	27		0	
Households	1		-3			-1				19	-17		0	
Rest of the world	13		5			2				-1		-20	0	
(BF90) Net lending/net borrowing	54	3	-63	2	3	-1	-4	6	10	47	-59	2	0	
Σ	0	0	0	0	0	0	0	0	0	0	0	0	0	

Note: This matrix combines two tables – “Net acquisitions of financial assets” and “Net liabilities and net lending/net borrowing” – from the financial accounts published by the Banque de France. Net acquisitions of financial assets take a plus sign. Net liabilities take on a minus sign. As each transaction account must balance, the sum of each line is zero. In accordance with national accounting practice, the balance, which is the difference between net increases in assets and liabilities, is entered as a net flow of liabilities (therefore with a minus sign) and is referred to as the sector's net lending (or net borrowing if the balance is negative). Therefore, the sum of each column is also zero.

Source: Banque de France, quarterly financial accounts.

Appendix 2: Assets and liabilities of the French sectors (excluding the Banque de France) vis-à-vis non-resident sectors for debt securities in Q2 2024 in EUR billions

	Non-financial corporations	Banks	Money market funds (MMF)	Non-MMF investment funds	Other financial intermediaries	Insurance corporations and pension funds	General government	Households	Σ
Assets with the rest of the world	40	431	125	284	69	702	17	16	1,683
EA issuing sector	18	155	58	177	50	340	10	5	813
F ^{EA}	1	10	5	30	2	57	2	1	108
B ^{EA}	3	59	50	40	1	69	2	1	224
OFI ^{EA}	6	44	6	42	43	76	2	3	222
IC ^{EA} +PF ^{EA}				2		9			12
G ^{EA}	7	42		63	5	128	4	1	248
Non-EA issuing sector	22	276	67	107	19	362	7	11	869
F*	3	12	3	29	6	79	3	2	136
B*	6	33	50	18	1	60	1	2	172
OFI*	11	77	11	35	5	169	3	5	316
IC*+PF*						1			2
G*	2	153	2	23	7	52		1	242
Liabilities to the rest of the world	369	953			178	29	1,510		3,039
EA holding sector	199	305			52	12	389		957
F ^{EA}	3	3					4		10
B ^{EA}	11	90			12		76		189
MMF ^{EA}	3	38			13		17		70
IF ^{EA}	75	78			8	5	100		266
OFI ^{EA}	45	6			6		7		65
IC ^{EA} +PF ^{EA}	56	66			11	6	169		308
G ^{EA}	2	16					10		28
H ^{EA}	4	9			1	1	7		21
Non-EA holdings	171	648			126	16	1,121		2,082

Sources: ECB Securities Holdings Statistics by Sector (SHSS) and Banque de France, quarterly financial accounts.

Notes: Liabilities to non-euro area residents are identified as the difference between liabilities to the rest of the world from the quarterly financial accounts (QFA) and the sum of holdings of euro area residents; Eurosystem holdings of French securities are included in non-euro area holdings; rounded numbers may result in discrepancies between the total per line/column and the sum of its components.

Appendix 3: Assets and liabilities of the French sectors (excluding the Banque de France) vis-à-vis non-resident sectors for listed shares in Q2 2024 in EUR billions

	Non-financial corporations	Banks	Non-MMF investment funds	Other financial intermediaries	Insurance corporations and pension funds	General government	Households	Σ
Assets with the rest of the world	20	131	296	80	31	5	36	598
EA issuing sector	6	33	141	17	20	2	13	233
F ^{EA}	2	19	99	11	13	1	6	150
B ^{EA}		8	11	4	1		1	25
OFI ^{EA}	3	7	22	1	4		6	45
IC ^{EA} +PF ^{EA}			9	1	2		1	12
Non-EA issuing sector	14	98	154	63	12	3	22	365
F*	9	87	136	56	10	2	20	320
B*		3	3	3	1			10
OFI*	5	6	13	3	1		2	30
IC*+PF*		1	2	1				5
Liabilities to the rest of the world	1,161	69		5	39			1,274
EA holding sector	219	18		1	11			249
F ^{EA}	7							7
B ^{EA}	9	1						10
IFI ^{EA}	124	8		1	7			140
OFI ^{EA}	10							10
IC ^{EA} +PF ^{EA}	22	1			1			24
G ^{EA}	8	4						13
H ^{EA}	40	2			3			45
Non-EA holdings	941	51		5	28			1,025

Sources: ECB Securities Holdings Statistics by Sector (SHSS) and Banque de France, quarterly financial accounts.

Notes: Liabilities to non-euro area residents are identified as the difference between liabilities to the rest of the world from the quarterly financial accounts (QFA) and the sum of holdings of euro area residents; Eurosystem holdings of French securities are included in non-euro area holdings; rounded values may result in discrepancies between the total per line/column and the sum of its components.

Appendix 4: Assets and liabilities of the French sectors (excluding the Banque de France) vis-à-vis non-resident sectors for investment fund shares/units in Q2 2024 in EUR billions

	Non-financial corporations	Banks	Money market funds (MMF)	Non-MMF investment funds	Other financial intermediaries	Insurance corporations and pension funds	General government	Households	Σ
Assets with the rest of the world	26	14	1	114	21	143	21	30	371
EA issuing sector	8	4		32	3	18	5	8	78
MMF ^{EA}	1				1	1		1	4
IF ^{EA}	7	4		31	2	17	5	7	73
Non-EA issuing sector	18	10	1	82	18	126	16	22	293
MMF*	4		1	2	1	4		1	13
IF*	14	10		81	17	122	16	21	280
Liabilities to the rest of the world			91	157					247
EA holding sector			43	124					167
F ^{EA}			9	6					15
B ^{EA}			1						1
IF ^{EA}			11	16					27
OFI ^{EA}			4	2					7
IC ^{EA} +PF ^{EA}			10	61					71
G ^{EA}				7					7
H ^{EA}			7	32					39
Non-EA holdings			48	32					80

Sources: ECB Securities Holdings Statistics by Sector (SHSS) and Banque de France, quarterly financial accounts.

Notes: Liabilities to non-euro area residents are identified as the difference between liabilities to the rest of the world from the quarterly financial accounts (QFA) and the sum of holdings of euro area residents; Eurosystem holdings of French securities are included in non-euro area holdings; rounded values may result in discrepancies between the total per line/column and the sum of its components.

Appendix 5: Nomenclature of the French financial sector according to the ESA

Financial intermediaries except insurance corporations and pension funds S12A					Financial auxiliaries	Captive financial institutions	Insurance corporations and pension funds
Monetary financial institutions			Non-monetary financial intermediaries S12AIF				
Central banks	Other monetary financial institutions S12T		Non-MMF investment funds	Other financial intermediaries			
S121	S122	S123	S124	S125	S126	S127	S128+S129
<div><div>Banque de France</div><div>IEDOM (French overseas departments' note-issuing bank)</div></div>	<div><div>• Commercial banks</div><div>• Mutual or cooperative banks</div><div>• Credit banks</div><div>• Resident electronic money institutions</div><div>• Specialised financial institutions (SFIs) – Euronext Paris – Caisse de garantie du logement locatif social (CGLS) – Agence française de développement (AFD)</div><div>• Regional development companies (RDC) incl. overseas department financial institutions</div></div>	<div><div>• Financial corporations governed by specific legal or regulatory provisions – Financial corporations affiliated to mutual or cooperative banks – Building societies – Mortgage credit institutions – Special status guarantee companies – Sofergies (leasing companies financing energy savings) – Overseas department credit companies – Telecommunications finance companies</div><div>• Financial corporations engaged in various types of activity – Financial leases – Other credit distribution – Financing companies</div><div>• Caisse des dépôts et consignations (CDC)</div><div>• Factoring corporations, French head office</div></div>	<div><div>• SICAV monétaires (money market open-ended investment companies)</div><div>• FCP monétaires (money market open-ended investment funds)</div><div>• SICAF (closed-ended investment funds)</div><div>• FCP Entreprises (workplace investment schemes): – Employee savings plans (FCPE, SICAVAS)</div><div>• Managed futures funds (FCIMT)</div><div>• High-risk investment funds, including venture capital and innovation funds</div><div>• Professional real estate investment funds (SCPI)</div><div>• Real estate collective investment undertakings (OPCI)</div></div>	<div><div>• Investment enterprises</div><div>• Action Logement Services (ALS) Managed by ANPEEC</div><div>• Professional groups for distribution of collective loans to non-bank agents</div><div>• Mutual guarantee companies (SCM)</div><div>• Securitisation vehicles</div><div>• Société de financement de l'économie française (SFEF) – corporation for the financing of the French economy)</div><div>• Micro-lending companies</div><div>• Institutions overseen by the ACPR</div></div>	<div><div>• Portfolio management companies (AMF)</div><div>• Brokerage companies</div><div>• GIE Carte Bleue</div><div>• GIE Carte Bancaire</div><div>• Deposit insurance funds</div><div>• Money changers</div><div>• Financial companies</div><div>• Payment institutions</div></div>	<div><div>• Companies that hold a level of capital that allows them to control a group of subsidiary companies and whose main function is to own that group without providing any other services (they do not administer or manage other units)</div><div>• Selection criteria for these LU – LU with output < EUR 1 million and – LU with over 80% of total assets in equity securities and – LU with 0 to 3 employees and – LU with a balance sheet > EUR 1 million</div></div>	<div><div>• Corporations: – life insurance – non-life insurance – reinsurance</div><div>• Mutual insurance corporations</div><div>• Provident insurance institutions</div><div>• Coface</div><div>• Pension funds</div></div>

Sources: ESA 2010 and Banque de France.

Notes: The European System of Accounts (ESA 2010) breaks down the financial corporations sector (S12) into nine sub-sectors: S121, S122, S123, S124, S125, S126, S127, S128 and S129; ACPR: Autorité de contrôle prudentiel et de résolution (Prudential Supervision and Resolution Authority); FCP: fonds commun de placement; LU: legal unit; SICAF: société d'investissement à capital fixe; SICAV: sociétés d'investissement à capital variable.

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