

# ASSESSMENT OF RISKS TO THE FRENCH FINANCIAL SYSTEM

JUNE 2023



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## Overview

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**The financial system came under severe strain in the first half of 2023, in the wake of several US regional bank failures and problems at Credit Suisse.** Risks of contagion to the French financial system were contained, thanks in particular to the solid fundamentals of French banks and to the strengthened regulatory framework along with a robust supervision of banks. More generally, however, these tensions serve as a reminder that pre-existing vulnerabilities, linked to excessive leverage at some participants, both financial and non-financial, or to inappropriate risk management, are more likely to materialise in an environment where funding is more expensive

**Since late 2022, the economic outlook has rather improved but, in the short term, the context remains marked by slowing growth and a high level of inflation.** To fight the risk of persistent inflation, and thus preserve the stability of the financial system, the European Central Bank has raised its key rates eight times since July 2022.

**The financial system is proving resilient in the face of the swift tightening of financing conditions and the changing macroeconomic environment.** Since the end of 2022, the growth rate of financing volumes and real estate prices has slowed. If the credit slowdown remains orderly, it will, over time, help to correct vulnerabilities linked to high levels of leverage among non-financial participants and to high property prices. But at a time of economic uncertainty and rising funding costs, the risk of a potentially disruptive shock for the most vulnerable participants remains.

**Given the persistently elevated risks to financial stability, careful vigilance must be maintained to preserve the resilience of the French financial system.** Banks and insurers can rely on high solvency and liquidity ratios to manage adverse developments in macro financial risks. Market tensions have abated since the early 2022, but markets are still at risk of a disorderly correction. Procyclical fire-sales from non-bank financial intermediaries could fuel such correction.

**Highly leveraged non-bank intermediaries with high liquidity risk are the most vulnerable to adverse market movements.** Besides, a sharper than expected economic slowdown or a disorderly tightening of financing conditions could weaken the most indebted non-financial players. These differentiated risks are developed below.

\*

\* \*

**The French banking sector is not exposed to the same vulnerabilities as those affecting the banks that caused the March 2023 crisis and must cope with higher funding costs.**

**Poor risk management and non-viable business models were the fundamental reason for the banks' failures that erupted in march 2023.** Following a spell of severe market volatility, contagion risks were swiftly contained owing to the low direct exposures of the French financial system to these institutions, coupled with the resilience of French banks. This strength is underpinned by Europe's strict prudential and supervisory framework within the Banking Union. In the European Union, the Basel III regulatory framework established internationally following the global financial crisis applies to all banks, even the smallest, whereas in the United States it applies to just 13 banks. US regional banks are therefore subject to considerably less strict requirements. A robust regulatory framework needs to be accompanied by robust supervision. The euro area's model of active supervision under the Single Supervisory Mechanism (SSM) contributes to the strength of French banks. It features an intrusive approach tailored to banks' characteristics and completed with rigorous and regular stress tests, including for interest rate risk.

**French banks continue to exhibit high levels of solvency and liquidity.** French banks are subject to strict rules on interest rate risk and can draw on a diversified and sound funding structure characterised by a stable deposit base. For this reason, they are well positioned to adapt to monetary policy tightening and to take advantage of higher interest rates. In the short term, however, they must cope with higher funding costs owing to the impact of an increased share of interest-bearing deposits in total deposits and the rollover of their market debt at higher rates. After the solid financial performances of 2022, the increased cost of liabilities and more muted credit activity could reduce the profitability of French banks in the short term, but they will benefit from higher interest rates in the medium run.

## **Insurers maintain a solid balance sheet structure, but must continue to adapt to an environment of higher interest rates**

**The effects of inflation and higher interest rates vary across segments and entities.** In the non-life segment, inflation may impact the cost of benefits for several years, because activities are exposed to higher costs of claims and expenses (as benefits may be spread over several years, but prices are not always revised annually). Life insurers, meanwhile, need to cope with an average return on assets lower than market returns and a risk of increased surrenders, particularly for non-unit-linked funds. However, surrender rates remain contained, thanks especially to the revaluation of insurance contracts that took place in 2022. Furthermore, tax incentives specific to life insurance contracts should continue to limit outflows.

## **The risk of a disorderly market correction remains very elevated and could disrupt non-bank institutions with the greatest exposure to leverage and liquidity risk**

**Financial market vulnerabilities could amplify the transmission of shocks.** Interest rate volatility remains at historically high levels, owing to uncertainty about the speed with which inflation is set to slow. This is undermining market liquidity. At the same time, some valuation indicators for risky assets, especially on equity markets, are signalling excessive optimism and hence the risk of a correction in the event of a shock. Valuations remain vulnerable to an abrupt and unexpected repricing of risk premia. The market stress of recent months (energy markets, UK pension funds, US regional bank failures) shows that pockets of vulnerabilities can quickly have broader repercussions for the prices, liquidity and volatility of financial assets.

**Some categories of non-bank financial intermediaries are exposed to significant liquidity risk, which could lead them to adopt procyclical behaviour that might exacerbate adverse market dynamics.** According to the Financial Stability Board (FSB), approximately 14% of global financial assets are managed by non-bank financial intermediaries exposed to similar risks to those of banks. These participants could experience significant financing needs in the event of a market shock, via margin calls or redemption requests, which could strengthen adverse market dynamics through forced asset sales. Heavily leveraged participants are especially vulnerable to these dynamics, making it essential to bolster the regulatory framework applicable to them.

**A dedicated thematic chapter analyses the risks for investment funds invested in private equity and private debt, whose growth has slowed markedly since the second half of 2022.** Following several years of brisk growth, these funds now account for a major share of financing in certain economic sectors (growth companies and heavily leveraged companies). Today, they are exposed to significant valuation and credit risks, which need to be properly understood by investors.

## **Vulnerabilities linked to the elevated debt of government and certain large corporations need to be watched**

**Despite carrying high levels of debt compared with European averages, French non-financial corporations (NFCs) are displaying resilience.** They are benefiting from relatively stable earnings and also from the fact that their debt is mostly at fixed rates and over relatively long maturities, which insulates them from a sudden interest rate shock. Since December 2022, the growth rate of NFC financing has slowed but remains positive. The number of business failures continues to normalise, pursuing a trend in place since November 2021, and is reverting to pre-pandemic levels. However, risks for the business sector, and particularly for the most heavily leveraged firms, continue to increase owing to the gradual pass-through of higher interest rates to funding costs, against the backdrop of a slowing economy. Vulnerabilities could increase if credit standards are tightened.

**Public finances are on a trajectory that must be controlled if sovereign debt is to remain sustainable.** Government support measures, including first and foremost the electricity and gas price shields, have protected households and companies by absorbing much of the energy shock. These measures contributed to maintaining debt and the fiscal deficit in 2022 at far higher levels than had been projected before the energy crisis. Assuming no change in policy, this debt will not decrease in the coming years. Stepped-up efforts to lower the level of public debt is a prerequisite to maintaining the investor appeal of French government securities.

## **Real estate markets are showing signs of cooling, especially the commercial segment, which has experienced a marked dip since the fourth quarter of 2022.**

**As interest rates continue to go up, home lending is normalising in a progressive and orderly fashion in France, where loan production continues to be brisker than in the rest of the euro area.** Normalisation is due to the increase in interest rates, which nevertheless remains less pronounced in France than in neighbouring European countries partly because of the usury rate. House prices, which respond with a lag to interest rate increases, are slowing, after several years of extremely vigorous growth. A moderate and orderly house price correction, such as is being observed at present, should make it possible to bring the household price/income ratio back to more moderate pre-Covid levels. Although households have a high debt ratio, their repayment capacity is protected by France's home financing model, which is almost exclusively based on fixed rates, and by the improvement in credit standards following the introduction of the measure by the *Haut Conseil de stabilité financière* (HCSF – High Council for Financial Stability) in late 2020. This measure set a maximum debt-service-to-income ratio of 35% for borrowers and a maximum credit period of 25 years for home loans, with flexibility allowed for up to 20% of loan production. The two technical adjustments relating the 20% flexibility margin announced by the HCSF in June 2023 maintain this safety net for borrowers while allowing some flexibility for lenders (cf. section on the measures taken by the authorities).

**Commercial real estate has slumped since the fourth quarter, following a decade of strong growth and a marked slowdown following the Covid-19 crisis.** Commercial real estate prices could be particularly sensitive to rising funding costs owing to significant use of leverage by market participants, overvaluation risks and the reduced appeal of buy-to-let investing on certain segments in the wake of the pandemic. The decrease in prices and trading volumes is not however uniform across all sectors and is less pronounced than in other advanced economies. For banks and insurers, these exposures remain modest relative to their total assets. Open-end real estate investment funds are exposed to liquidity risk in the event of an investor withdrawal, but these risks are offset by the presence of investors displaying stable behaviour and the introduction of liquidity management tools.

#### **All financial institutions must step up their adaptation to the structural risks posed by cyber and climate change threats**

**Climate risks continue to increase, as confirmed by the synthesis report by the IPCC published on 20 March 2023, and are going to become harder for financial institutions to manage.** Financial supervisors are therefore paying increased attention to assessing and monitoring the transition and physical risks associated with climate change, notably through stress tests. Furthermore, regulatory requirements in terms of climate risk management and extra-financial disclosures are being strengthened.

**The financial system remains exposed to an extremely elevated risk of cyberattacks.** The threat of cyberattacks is exacerbated by geopolitical tensions, while artificial intelligence developments could make these attacks more sophisticated and easier to implement.

# ASSESSMENT OF RISKS TO THE FRENCH FINANCIAL SYSTEM | JUNE 2023

CYCLICAL

STRUCTURAL

Vulnerabilities

Resiliences

<p><b>Market risk and liquidity risk of the most vulnerable investment funds</b></p> <ul style="list-style-type: none"> <li>Elevated valuations</li> <li>Interest rate volatility</li> <li>Impact of market shocks on non-bank participants most exposed to leverage and to liquidity risk</li> </ul>	<p><b>Debt sustainability of non-financial participants in a context of rising interest rates</b></p> <ul style="list-style-type: none"> <li>Commercial real estate market adjustment</li> <li>High NFC gross debt, significant disparities</li> <li>Elevated government debt</li> </ul>	<p><b>Adjustments by banks and insurers to higher interest rates and credit risk</b></p> <ul style="list-style-type: none"> <li>Business and income sensitive to macroeconomic conditions</li> <li>Increased funding costs</li> <li>Cost of the digital transition</li> </ul>	<p><b>Cyber threats exacerbated by geopolitical tensions</b></p> <ul style="list-style-type: none"> <li>Increased digital area of exposure</li> <li>Vulnerabilities easier to exploit through artificial intelligence</li> </ul>	<p><b>Climate change related exposures</b></p> <ul style="list-style-type: none"> <li>Risk of disorderly transition as adaptation actions and policies are delayed</li> <li>Impacts of climate catastrophes</li> </ul>
<p><b>Bond yield volatility</b></p>	<p><b>NFC funding rate</b></p>	<p><b>Aggregate LCR of 6 main FR banks</b></p>	<p><b>Most feared cyberthreats in 2023</b></p>	<p><b>Price of EU emissions allowances (€ per ton of CO2)</b></p>
<ul style="list-style-type: none"> <li>Market structure benefiting from diversified participants</li> <li>Robust market infrastructures</li> </ul>	<ul style="list-style-type: none"> <li>Debt largely medium and long term</li> <li>Credit standards for home loans</li> <li>Bulk of participants' debts at fixed rates</li> </ul>	<ul style="list-style-type: none"> <li>Strong solvency supported by excellent earnings in 2022</li> <li>Elevated liquidity and diversified funding</li> </ul>	<ul style="list-style-type: none"> <li>Crisis exercises</li> <li>Regulatory work</li> <li>Operational preparations</li> </ul>	<ul style="list-style-type: none"> <li>Domestic efforts and European coordination</li> <li>Climate stress test exercises</li> </ul>
<p>→ ST</p>	<p>→ ST</p>	<p>→ ST</p>	<p>→ ST to LT</p>	<p>→ ST to LT</p>

■ Very high risk

■ High risk

■ Moderate risk

→ Future path (horizon)

## Measures taken by authorities

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With inflation still running significantly above its target and projections indicating that it was unlikely to return to the target in the short term, the Governing Council of the European Central Bank (ECB) **raised policy rates several times** in the first half of 2023. Since **21 June 2023**, the interest rate on the main refinancing operations, the marginal lending facility and the deposit facility have thus stood at **4.00%, 4.25% and 3.50%** respectively. The Governing Council said that it was now assessing policy according to a meeting-by-meeting, data-dependant approach, and considering the outlook for headline inflation, core inflation dynamics and the strength of monetary policy transmission, with the aim of helping inflation to get back to its 2% target in the medium term. The Governing Council also decided that **asset purchase programme (APP) reinvestments would be discontinued as of July 2023**, with the tilt towards companies with a positive environmental footprint maintained until reinvestments end. **Redemptions coming due under the pandemic emergency purchase programme (PEPP) are set to continue to be fully and flexibly reinvested at least until the end of 2024.**<sup>1</sup> Meanwhile, the Governing Council will regularly assess the contribution of targeted long-term refinancing operations (TLTROs) to the monetary policy stance as they are repaid by banks. In this respect, early repayment measures introduced by the Council helped to avoid a “cliff” effect. Finally, the ECB's existing tools continue to be available to address potential liquidity needs, such as the weekly main refinancing operations with a fixed rate full allotment procedure.

Following bank failures in the United States and Switzerland, European authorities issued a reminder<sup>2</sup> of the strict regulatory and supervisory standards to which European financial institutions are subject, and underlined their compliance with the order according to which shareholders and creditors bear losses<sup>3</sup> during crisis management. This prudential framework will be strengthened by effective implementation of the Basel III framework: the “banking package”,<sup>4</sup> which finalises Basel III in Europe, entered the trilogue procedure in March 2023 and is expected to be completed in 2024 for application in 2025. Looking at the longer term, in April 2023 the European Commission announced proposals<sup>5</sup> to adjust the crisis management and deposit insurance (CMDI) framework, with a view to **extending the resolution framework to more small and medium sized banks**, facilitating external financing<sup>6</sup> for market exits, and limiting the involvement of deposit guarantee funds outside resolution.

In France, the *Haut Conseil de stabilité financière* (HCSF – High Council for Financial Stability) decided at its December 2022 meeting to raise the credit protection reserve rate (countercyclical bank capital buffer) to 1% and said that it was not planning additional increases in 2023. This requirement will take effect on 2 January 2024. Furthermore, the decision of 7 April 2022 to **raise this reserve rate to 0.5% came into effect on 7 April 2023**. This macroprudential measure supplements the recommendation on home loan credit standards issued in 2020 and converted into a legally binding decision on 1 January 2022, which set a maximum debt-service-to-income ratio of 35% and a maximum credit period of 25 years for 80% of home loan production. On 13 June 2023, the HCSF announced two technical adjustments relating to the 20% flexibility margin, in response to operational difficulties encountered by banks in implementing the measure, without changing the overall balance of the measure or its scope<sup>7</sup>. In view of the seasonal nature of certain transactions and in order to facilitate the operational management of the measure by the banking networks, the HCSF considered that, following a limited overshoot in one quarter of one or other of the allocation limits within the 20% flexibility margin, the ACPR could consider that compliance with these allocation limits for the overall production of that quarter and the following two quarters constitutes appropriate and sufficient corrective action. Furthermore, in view of the effective use of flexibility for purchases of principal residences and taking into account ongoing structural changes in the property market, the High Council has decided to increase from 20% to 30% the proportion of the 20% flexibility margin that is free to be used, thereby giving additional flexibility to rental investment. This change does not affect first-

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<sup>1</sup> Meanwhile, the Governing Council will regularly assess the contribution of targeted long-term refinancing operations (TLTROs) to the monetary policy stance as they are repaid by banks. The next payment date is June 2023.

<sup>2</sup> [Silicon Valley Bank \(europa.eu\)](#)

<sup>3</sup> [SRB, EBA and ECB Banking Supervision statement on the announcement on 19 March 2023 by Swiss authorities](#)

<sup>4</sup> [Banking Package 2021 \(europa.eu\)](#)

<sup>5</sup> [Reform of bank crisis management and deposit insurance framework \(europa.eu\)](#)

<sup>6</sup> Deposit guarantee fund (SRF), as opposed to shareholder and creditor contributions to losses and recapitalisation, mainly in the case of a bail-in.

<sup>7</sup> Press release from the HCSF meeting on 13 June 2023



time buyers, whose 30% share of the flexibility margin remains unchanged, or other buyers whose share was not fully used. The HCSF stressed that lending standards must contribute structurally to the security of housing loans.

Meeting on 7 March 2023, the HCSF called on credit institutions to continue to keep a close watch on their exposures to the most heavily indebted large companies. At its meeting on 13 June 2023, the HCSF announced the introduction in August 2023 of a 3% sector-specific systemic risk capital buffer for the exposures of systemically important French banks to heavily indebted large French companies where such exposures exceed 5% of capital,<sup>8</sup> to replace the “large exposures” measure<sup>9</sup> lapsing on 30 June 2023.

The European Systemic Risk Board (ESRB) published a report in January 2023 assessing **vulnerabilities in the commercial real estate sector**,<sup>10</sup> along with a **recommendation**<sup>11</sup> for relevant authorities at European and national level in all European Economic Area (EEA) countries. The recommendation aims to improve monitoring of systemic risks linked to commercial real estate, ensure sound financing practices and strengthen the resilience of financial institutions that are exposed to the sector. Member states are required to comply before end-March 2026 (March 2024 for risk monitoring).

As part of its biannual bank stress test exercise conducted in 2023, in January the European Banking Authority (EBA)<sup>12</sup> published **the macroeconomic and financial scenarios** that will be used to test the resilience of EU banks over a three-year horizon. The adverse scenario considers the **most severe decline in GDP included so far in the stress tests**, based on heightened geopolitical tensions leading to domestic and global stagflation. The scenario takes into account the reaction by central banks, reflected in an across-the-board increase in interest rates worldwide.

French and European authorities are working actively to **expand the micro and macro-prudential framework beyond banks alone**. Since the 2008 crisis, total assets in the European non-bank financial sector have more than doubled, and the sector’s share of total lending to businesses has risen from 15% to 26%. Because of this, the authorities are working to make the sector more resilient.

Authorities are also taking measures aimed at addressing the structural vulnerabilities affecting the financial system. In terms of the **regulation of digital assets**, in May 2023 the European Council adopted<sup>13</sup> a **regulation<sup>14</sup> on Markets in Crypto-Assets (MiCA)**, establishing a global framework for issuers of digital assets and digital asset service providers. This regulatory framework seeks to protect investors, preserve financial stability and ensure compliance with anti-money laundering rules, while fostering innovation and supporting the attractiveness of the crypto-asset sector. It will undoubtedly need to be supplemented by a “MiCA 2” fairly quickly, notably on the regulation of crypto-conglomerates and that of DeFi (decentralized finance). In April 2023; the ACPR published a discussion paper on possible regulatory approaches to DeFi which was submitted to a broad public consultation. The paper provides an analysis of the structure and risks of disintermediated finance and its various components before formulating different regulatory framework scenarios.

Several initiatives were completed this semester to address the **exposure of our economies to the risks linked to overstepping planetary boundaries**. The **Corporate Sustainability Reporting Directive (CSRD)**, adopted in December 2022, came into force in January 2023. Member states must now transpose the directive into domestic law so that the first affected companies can begin reporting procedures starting in 2024. Meanwhile, in June the Commission published delegated acts<sup>15</sup> laying out **technical criteria for four environmental objectives of the EU Taxonomy**. In February 2023, the Parliament and Council reached agreement on a **European Green Bond Standard**. In February 2023, the Eurosystem conducted a stress test on its own balance sheet<sup>16</sup>, building on the climate stress tests carried out in the European financial sector in 2022.

<sup>8</sup> [HCSF\\_20230613\\_CP.pdf \(economie.gouv.fr\)](#)

<sup>9</sup> Decision No. D-HCSF-2018-2 of 11 May 2018, extended for two years on 30 June 2021.

<sup>10</sup> [Vulnerabilities in the EEA commercial real estate sector \(europa.eu\)](#)

<sup>11</sup> [Recommendation of the European Systemic Risk Board of 1 December 2022 on vulnerabilities in the commercial real estate sector in the European Economic Area \(ESRB/2022/9\) \(europa.eu\)](#)

<sup>12</sup> [EBA launches 2023 EU-wide stress test. | European Banking Authority \(europa.eu\)](#)

<sup>13</sup> [Digital finance: the Council adopts new rules on markets in crypto-assets - Consilium \(europa.eu\)](#)

<sup>14</sup> [Regulation \(EU\) 2023 / on crypto-asset markets \(europa.eu\)](#)

<sup>15</sup> [Taxonomy Regulation \(europa.eu\)](#)

<sup>16</sup> [Results of the 2022 climate risk stress test of the Eurosystem balance sheet \(europa.eu\)](#)



# 1. Cross-cutting analysis of vulnerabilities

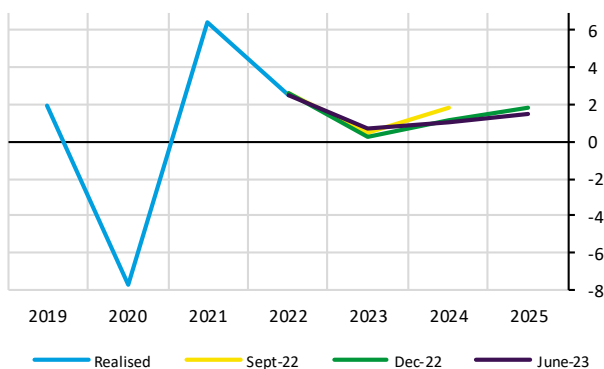
## 1.1 Financing conditions continue to tighten amid ongoing economic uncertainty

The economic outlook improved compared to late 2022, but in the short term, the context remains marked by slower growth and high inflation.

Activity in the euro area and France has slowed since mid-2022, but was resilient in the face of passed shocks. Growth reached 3.6% in the euro area and 2.6% in France in 2022. It should slow down in 2023 to reach 0.9% for the euro area (0.5% forecast in December 2022) and 0.7% for the France (0.3% forecast in December, see Chart 1.1). The slowdown would be less severe than expected at the end of 2022 thanks to diversification of energy supply sources coupled with falling prices, which ensured that the bleakest scenarios for winter 2022-2023 were averted. At the same time, the IMF is estimating that global growth will be 2.8% in 2023, after 3.4% in 2022. Economic growth is expected to accelerate gradually in 2024 and 2025. Yet many sources of uncertainty remain, owing to ongoing geopolitical tensions and the evolution of foreign demand.

Chart 1.1: Growth rate, France

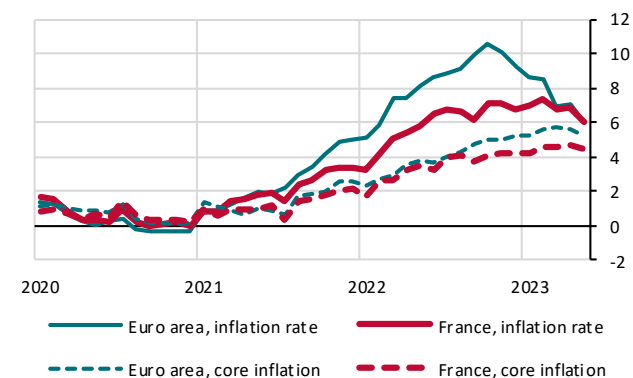
x : time / y : percentage



Source : Banque de France

Chart 1.2: Headline and core inflation, France and euro area

x : time / y : percentage (year-on-year)



Notes: Harmonised index of consumer prices (HICP) and HICP excluding energy and food. Most recent value: April 2023. Core inflation calculated from January 2022

Sources : Banque de France, Eurostat

The inflation outlook is improving as energy prices come down, but core inflation remains too high. After rising in 2022 at a pace not seen since the 1980s, inflation eased in 2023 as energy prices decreased and logistics and maritime shipping costs normalised (see Chart 1.2). At the end of May 2023, inflation stood at 6.1% in the euro area (6.9% in March 2023) and 6% in France (6.7% in March 2023). Although headline inflation has decelerated, underlying price pressures persist. Core inflation, which excludes energy and food, remains high in May 2023 in the euro area (5.3% down from 5.7% in March 2023) and in France (4.4% down from 4.6% in March 2023). Inflation is expected to slow in 2024 and 2025, returning towards its 2% target as current upside drivers run out of steam and monetary policy normalisation measures impact price-setting mechanisms. However, uncertainties remain about the future path of commodity prices and the speed with which monetary policy tightening is transmitted to core inflation. Furthermore, the stretched labour market and uncertainties about wage levels could contribute to persistent underlying inflationary pressures.

Upside risks for energy prices persist owing to the geopolitical situation connected with the war in Ukraine and global economic uncertainty. At end-June 2023, natural gas benchmark prices in the EU had fallen by around 80% from their peak in 2022 thanks to a combination of mild temperatures, high inventories, coordinated redistribution of supply sources within Europe and energy-saving efforts. Even so, prices remain significantly higher (x2.6) than the average observed between 2010 and 2020. Prices of petroleum products also fell, with Brent giving up 35% between June 2022 and June 2023. Futures prices on international markets suggest that energy prices will be relatively settled at these more moderate levels over the coming months. However, there are still uncertainties over how the geopolitical situation will evolve with Russia's war in Ukraine, raising the possibility of energy supply difficulties in winter 2023-24 that would pose an upside risk

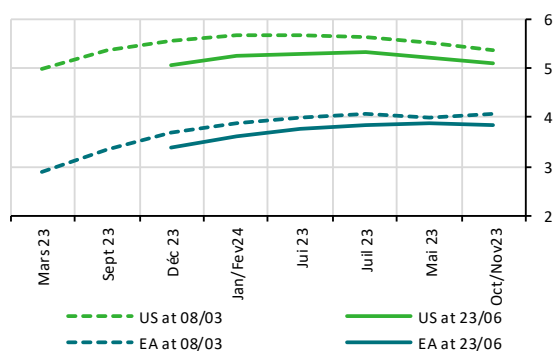
to inflation and downside risk to growth. More generally, the geopolitical context as a whole poses a risk to France’s commodity import prices.

### The French financial system must continue to adapt to tighter financing conditions

The ECB’s policy rate response from 2022 onwards to the pick-up in inflation was exceptionally swift compared with past movements. Rates were hiked eight times by a combined 400 basis points (bps) in less than one year, while unconventional policies were progressively unwound. Tightening was accompanied by exceptional volatility in market interest rates as market participants revised their expectations (as happened following the banking stress of March). At the end of June 2023, market participants were expecting that policy rates would stabilise before starting to fall over the course of 2023 in the United States and in early 2024 in the euro area. The ECB said it will assess its future decisions according to a meeting-by-meeting approach, based on the outlook for headline inflation, core inflation dynamics and the strength of monetary policy transmission.

Chart 1.3: ECB and Fed policy rate expectations

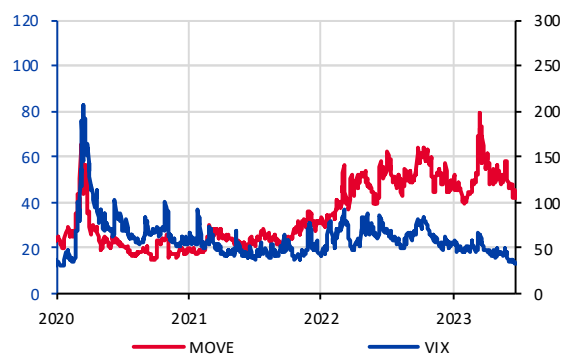
x : time / y: rate



Source : Bloomberg

Chart 1.4: Implied volatility of bonds (MOVE, right-hand side) and equities (VIX, left-hand side)

x : time / y: rate



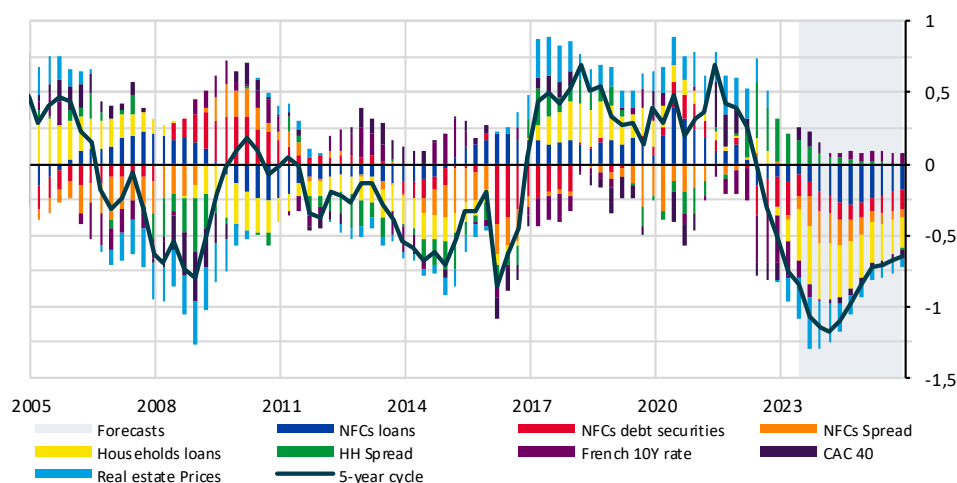
Note : the MOVE index measures the implied volatility of US Treasuries based on options. The VIX index measures the implied volatility of S&P500 stocks

Source : Bloomberg

**As lending rates have gone up in recent months, financing conditions have tightened, further increasing the vulnerabilities of the weakest participants.** In this environment, the growth rate of financing volumes provided to non-financial corporations (NFCs) and households has slowed but remains positive. Real estate markets are also showing signs of cooling, especially the commercial segment, which has experienced a marked dip since the fourth quarter of 2022. The financial cycle indicator is expected to continue to contract, although less swiftly, until 2024, amid slowing bank credit and real estate prices. Despite its speed, this trend has taken place smoothly so far in France and the euro area. However, a disorderly tightening of financing conditions could be disruptive to participants exposed to excessive debt or poor interest rate risk and liquidity risk management.

Chart 1.5: Financial cycle<sup>17</sup>

x : time / y: index



Note: The financial cycle indicator is constructed from eight underlying variables: the change over two years in outstanding loans to domestic NFCs by domestic monetary financial institutions; the change over two years in outstanding debt securities issued by domestic NFCs; the change over two years in outstanding loans to resident households and non-profit institutions serving households by domestic credit institutions; the growth over one year in real estate prices; the change over one year in ten-year sovereign yields; the annual return on the CAC 40; the spread between the average interest rate on home loans and French ten-year government bonds; and the spread between the average interest rate on NFC loans and French ten-year government bonds. The more the cycle's value is positive and increasing, the more it indicates that financing conditions are easing; conversely, negative and falling values correspond to tightening periods and may provide an early indicator of financial stress or even a systemic crisis.

Source : Banque de France calculations

## 1.2 The French banking sector's fundamentals remain sound.

### French banks continue to have a diversified funding structure, but their funding costs are increasing

While recent bank failures in the United States and the difficulties that led to UBS's takeover of Crédit Suisse affected confidence in the banking system, French and European banks proved resilient and their financing conditions stabilised. These events highlighted specific weaknesses at the affected banks, involving pre-existing situations arising from poor risk management or non-robust business models. The US regional bank failures stemmed from mismanagement of interest rate and liquidity risk, featuring extreme misalignment between long-term fixed-rate assets and deposits, which were highly volatile because they were largely uninsured and heavily concentrated. Fears of spillover to the European banking system were mainly contained, thanks to the sound and diversified balance sheet structure of European banks, their lack of material direct exposure to the banks in crisis, and the swift response by US and Swiss authorities. By June 2023, however, valuations of bank stocks and subordinated securities had not regained their levels of early March (cf. Box 1.1).

#### Box 1.1: A string of bank failures or crises since March



Trouble began in the banking sector on 8 March 2023 with the decision by Silvergate, a small Californian bank with heavy exposure to crypto-assets, to go into liquidation. The bank, which had USD 11 billion in assets at the end of 2022, had experienced significant difficulties since the collapse of FTX, a crypto exchange platform, in November 2022. The bank's share price, which stood at USD 136 in January 2022, was worth just USD 13 in January 2023.

The stress was made worse by difficulties at Silicon Valley Bank (SVB), which was hit by a massive run on deposits on 9 March 2023, leading to its failure the next day. With total assets of USD 209 billion in December

<sup>17</sup> EcoNotepad n° 75 : The four seasons of the financial cycle and the countercyclical capital buffer, Banque de France

2022, SVB, a regional bank specialised in financing the tech sector, had enjoyed rapid post-pandemic growth. However, its financing was based almost exclusively (approximately 90% of liabilities) on deposits from customers exposed to the start-up sector. 94% of these deposits were not covered by deposit insurance. SVB invested a large part of these deposits in long-term bonds which were not recorded at their market value (hold to maturity securities). The bank was exposed to a risk of losses on its fixed-rate assets in the event of rising interest rates and to a high liquidity risk due to its liabilities that were largely composed of volatile deposits. Starting in the second half of 2022, SVB depositors started withdrawing their funds to meet their cash needs. SVB responded by selling at a loss long-dated bonds whose value declined as interest rates rose. The announcement on 8 March of a USD 1.8 billion loss on these security sales coupled with a failed attempt to raise capital sparked massive withdrawals of USD 42 billion during the day of 9 March 2023. These events resulted in US authorities placing SVB in resolution the next day.

**The problems at Signature Bank, a US regional bank with total assets of USD 110 billion at end-2022, gathered pace with the Silvergate and SVB collapses.** The bank, which was heavily exposed to crypto-assets, suffered an initial 17% decrease in deposits between end-2021 and end-2022 (17% of total deposits outstanding). Weaknesses shared with SVB and Silvergate, including heavy reliance on uninsured deposits and a concentration of depositors in the crypto sector, caused investors and depositors to lose confidence. After withdrawals of over USD 10 billion (20% of deposits) on 10 March, Signature Bank was placed in resolution by the authorities on 12 March. Citing a systemic risk exception, the FDIC issued a joint announcement on 12 March with the Federal Reserve and the Treasury assuring that all SVB and Signature Bank deposits would be covered by the deposit protection scheme, including those exceeding the regulatory limit of USD 250,000.

**Weakened by the SVB failure, First Republic Bank (FRB), which had total assets of USD 213 billion at end-2022, entered resolution on 1 May 2023 before being taken over by JP Morgan.** The SVB failure triggered major withdrawals of deposits – a large proportion of which were uninsured – from First Republic. To prevent a contagion effect, 11 major US banks provided FRB with USD 30 billion worth of deposits on 16 March. The bank's difficulties escalated on 1 May, when the group announced its quarterly earnings and recognised a loss of USD 100 billion in deposits – much worse than expected. The FDIC announced on the same day that JP Morgan, America's number-one bank by asset size, would take over all of FRB's deposits and virtually all of its assets.

**These tensions rekindled recurring issues at Credit Suisse, ultimately leading to its takeover by UBS on 19 March 2023.** In recent years, the Swiss bank had recorded significant losses owing to shortcomings in its risk management and internal control procedures, notably during the failures of Greensill Capital, a financial services provider, and Archegos, a family office, in March 2021. In 2022, Credit Suisse recognised a 40% decrease in deposits and booked a loss of CHF 7.3 billion. Investor confidence fell further after Credit Suisse's main shareholder announced on 15 March that it no longer wished to support the bank. Credit Suisse's stock continued to slide, even after the Swiss National Bank (SNB) provided the bank with CHF 50 billion in liquidity support on 16 March. On 19 March, Swiss authorities authorised the takeover of Credit Suisse by UBS, which received liquidity support from the SNB and a loss protection guarantee from the government. Under the takeover deal, approximately CHF 16 billion worth of Additional Tier 1 capital (AT1) convertible bonds<sup>18</sup> was written down in full, based on a viability event clause written into the Credit Suisse's AT1 instruments contracts. The loss suffered by AT1 bondholders, coupled with the partial recovery for Credit Suisse shareholders, caught market participants off guard, because it was not consistent with the usual seniority ranking between creditors and shareholders. In a joint press release issued on 20 March, ECB Banking Supervision, the Single Resolution Board and the European Banking Authority clarified that under the EU resolution framework, core equity instruments are the first ones to absorb losses and only after their full use would Additional Tier 1 be required to be written down.

<sup>18</sup> **Contingent convertible bonds (CoCo bonds)** issued by banks are eligible to be included as **Additional Tier 1 capital (AT1)** if they meet certain loss absorption criteria. The convertibility of these AT1 instruments is based on a predetermined solvency-related threshold: if it is breached on the downside, CoCos are converted into equity or their nominal value is partially or fully written down. In the case of AT1 securities issued by French banks, a temporary write-down clause is the most common absorption mechanism. The AT1 securities issued by Credit Suisse were primarily based on a permanent loss absorption mechanism. The AT1 CoCo market is estimated to be worth approximately USD 275 billion.

After the stock prices of euro area banks trended upwards in early 2023, the turmoil of March triggered a fall, which was coupled with heightened volatility and higher CDS premia. Between October 2022 and the start of March 2023, strong earnings at European banks and firmer-than-expected economic prospects helped European bank stock prices to head higher. Through contagion effects, US regional bank failures and the crisis at Credit Suisse stoked increased volatility in equities and CDS spreads at European banks. Although these tensions have since stabilised, bank valuation indicators remain below their pre-march 2023 level and sit at historically low levels (cf. Chart 1.6). The stress in March 2023 did not have a pronounced impact on the cost of equity<sup>19</sup> (CoE) of French banks. That being said, CoE has been extremely elevated since the start of Russia's war in Ukraine (cf. Chart 1.7). In addition, the divergence between the CoE of banks and NFCs in the CAC40 is tending to widen, indicating that investors are demanding a higher risk premium to hold bank stocks.

Chart 1.6: Price-to-earnings ratio, banks

x : time / y : PER, 1 January 2020 = 100

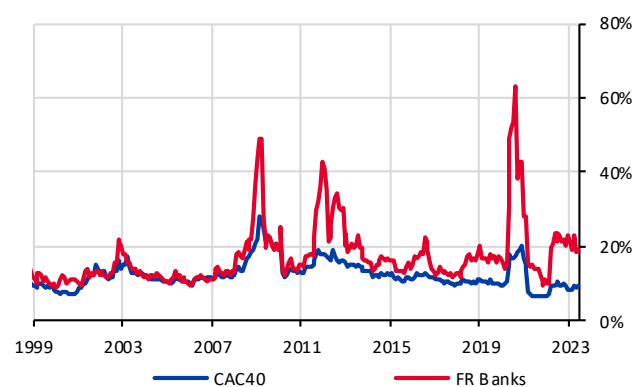


Notes : series are expressed as an index where 1 January 2020 = 100. Most recent value: May 2023.

Sources : Datastream Refinitiv, IBES, Banque de France calculations

Chart 1.7: CoE of French banks vs. the CAC40 CoE

x : time / y : CoE as a percentage



Notes : CoE shown are based on an average weighted by the market capitalisation of French banks and companies respectively. Most recent value: May 2023.

Sources : Refinitiv Eikon, Banque de France calculations

Contagion effects linked to the banking stress of March 2023 can be seen in increased interdependencies between the stocks of the main European and US systemically important banks.<sup>20</sup> The shock caused pre-crisis links to intensify (cf. Chart 1.8), with the result that the average correlation between bank stocks rose from 0.56 to 0.73 (cf. Chart 1.9; the black lines show correlation coefficients above 0.70). The density of the network, defined as the number of significant links over the number of possible links, rose from 51% to 57% following the stress of March 2023. The increased density is linked to the emergence of new links between banks that were thrown into difficulty by the crisis, and particularly between Credit Suisse and a number of US banks. Such a change in the structure of interdependencies between bank stocks reflects the emergence of contagion effects that typically stem from factors such as market stress, herd behaviour, loss of investor confidence or increased risk aversion. These spillovers effects help shocks to spread between bank stocks, increasing the risk of market correction.

<sup>19</sup> **Cost of equity (CoE)** is a measure of the cost of a company's equity, estimated from the company's stock price and investment analyst forecasts for the stock's future performance. Accordingly, the CoE corresponds to the rate of return demanded by shareholders, which depends in turn on the rate-free risk and the risk premium that they require. The risk premium is a function of investors' overall level of risk aversion, the company's dependence on economic and financial conditions, and, potentially, the firm's idiosyncratic risk.

<sup>20</sup> The methodology used is described in Banque de France Eco Notepads, Post No. 270: "The war in Ukraine is strengthening market interconnections".



Chart 1.8: Network of bank interconnections from July 2021 to early March 2023 (excluding the Ukrainian crisis)

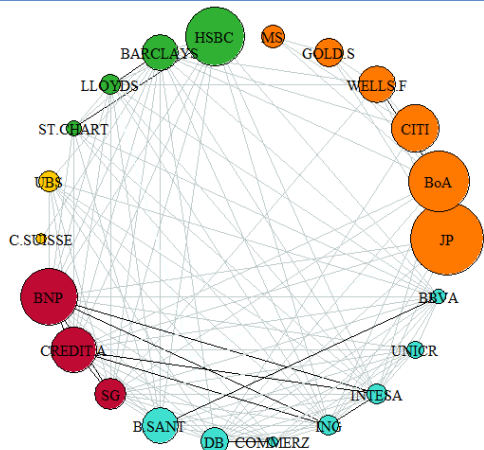
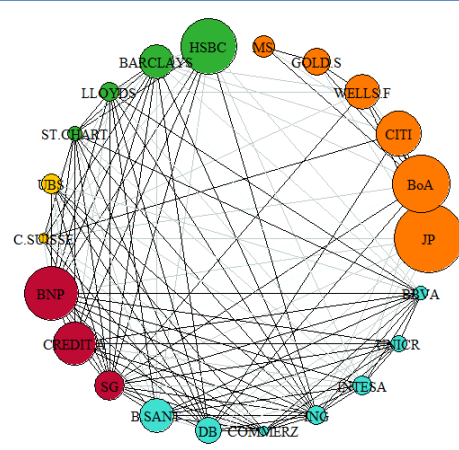


Chart 1.9: Interconnection network following the banking stress of March 2023



Guide : Each node represents a bank; its colour shows domiciliation (orange: United States; green: United Kingdom; yellow: Switzerland; red: France; blue: rest of Europe); its size is determined by the bank's total assets. The black and grey lines indicate that the correlation is positive and significant at a 0.01% threshold, above or below 70% respectively.

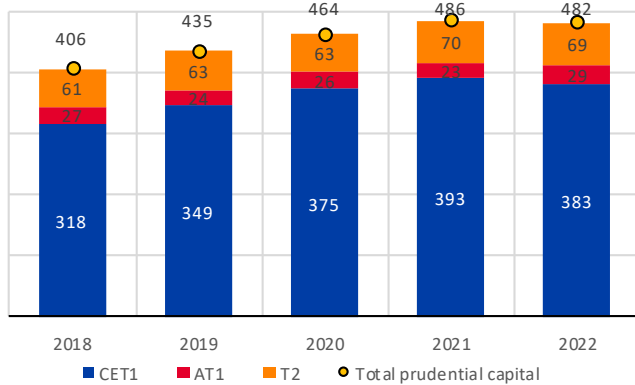
Notes : Daily price changes between July 2021 and 2023. The period from February 2022 to June 2022, characterised by the Ukrainian crisis, is excluded from the analysis. The selected period of banking sector stress begins in mid-March 2023 and extends to the end of May 2023. The model used to estimate interdependencies and contagion is detailed in Banque de France Eco Notepads, Post No. 270: "The war in Ukraine is strengthening market interconnections".

Sources : Refinitiv Datastream; Banque de France calculations

**The terms of Credit Suisse's takeover generated significant uncertainty on the AT1 market owing to a reversal of the order of priority between shareholders and AT1 holders.** This development was unexpected but also confined to Switzerland. Total outstanding volume of AT1 instruments issued by European banks stands at USD 255 billion, of which USD 29 billion by France's six main banking groups (6% of total prudential capital). The entire AT1 market plunged after the terms of the takeover were announced on 19 March 2023. The joint press release by European authorities (SRB<sup>21</sup>, EBA<sup>22</sup> and SSM<sup>23</sup>) and that of the Bank of England reiterating the clear seniority of AT1 holders over shareholders in their respective jurisdictions helped to reassure investors (cf. Chart 1.11). Accordingly, AT1 yields stabilised, but above pre-crisis levels.

Chart 1.10: Composition of the total prudential capital of France's six main banking groups

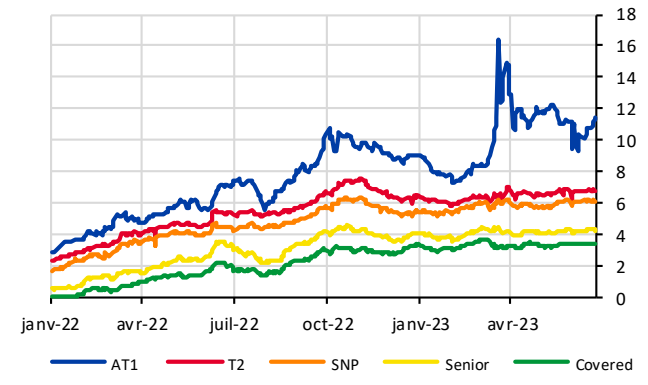
x : time / y : amount in EUR billion



Sources : COREP reports, ACPR

Chart 1.11: Yields on AT1 and T2 securities, covered bonds and senior debt of French banks

x : time / y : percentage



Sources : Refinitiv Eikon, Banque de France calculations

**French banks continue to have satisfactory access to market funding.** They took advantage of favourable conditions to issue large volumes of securities in January and February 2023. Issuance slowed from March 2023 onwards, but volumes were on a par with those seen in 2022. By mid-May, France's six largest banking groups were able to cover between 60% and 80% of their 2023 issuance programmes. Banks' funding costs have risen

<sup>21</sup> Single Resolution Board (SRB), the resolution authority for Europe's Banking Union.

<sup>22</sup> European Banking Authority (EBA), one of the three supervisory authorities in Europe's system of financial supervision.

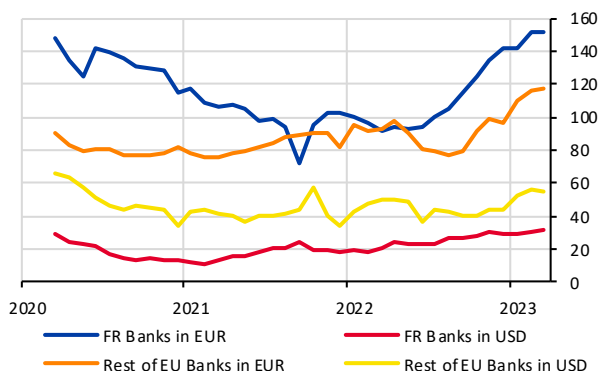
<sup>23</sup> Single Supervisory Mechanism (SSM): the first pillar of the Banking Union, the SSM is tasked with supervising the euro area's largest banks.



significantly since early 2022 owing to higher risk-free rates, but flattened out in 2023. Total outstanding commercial paper<sup>24</sup> issued by French banks increased by EUR 30 billion in the first quarter compared with the end of 2022.

Chart 1.12: Outstanding EUR-denominated paper issued by French banks on CP markets in Q1 2023

x : time / y : EUR billion

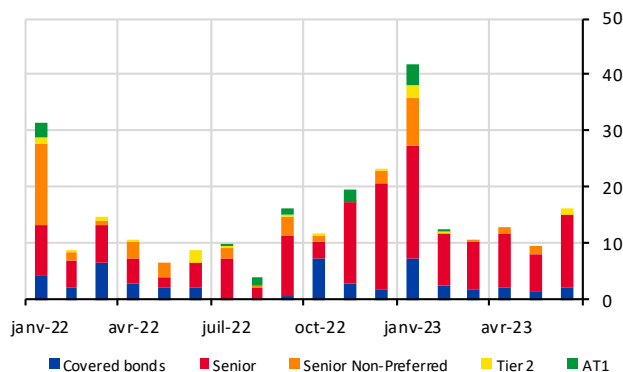


Guide : total outstanding amount on Negotiable European Commercial Paper (NEU CP) and EURO CP (ECP/London) markets.

Sources : Banque de France and CSDB

Chart 1.13: Bond issuance, French banks

x : time / y : EUR billion



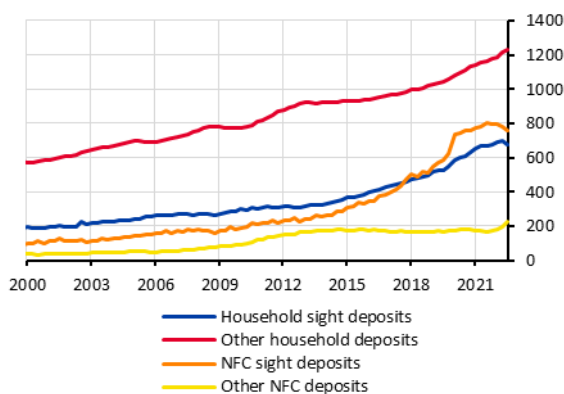
Notes : Issues of debt securities with an initial maturity of more than one year.

Sources : Eikon, Banque de France calculations

**Bank funding costs linked to household and NFC deposits rose as some deposits were reallocated from sight deposits to interest-bearing deposits.** The share of household and NFC sight deposits in total deposits has increased since 2012, in a trend that paralleled the declining return on interest-bearing deposits. While the pass-through from higher interest rates to the return on sight deposits has been limited, regulated savings passbooks and term deposits have seen a much larger increase in their return. Consequently, since mid-2022, outstanding non-interest-bearing sight deposits have decreased slightly, while interest-bearing deposits have risen, automatically pushing up bank funding costs. However, the scale of these reallocations remains small relative to whole bank deposits. Overall, outstanding household deposits at France's six main banking groups rose slightly between February 2022 and May 2023, climbing EUR 53 billion to EUR 1,778 billion, while NFC deposits contracted slightly, decreasing by EUR 8 billion to EUR 706 billion. **French banks therefore continue to benefit from a stable and diversified funding structure, featuring wholesale financing and retail deposits.** Retail deposits and secured wholesale financing make up 58% of the funding structure.

Chart 1.14: Historical analysis of deposit flows for the purposes of comparison with the last upswing

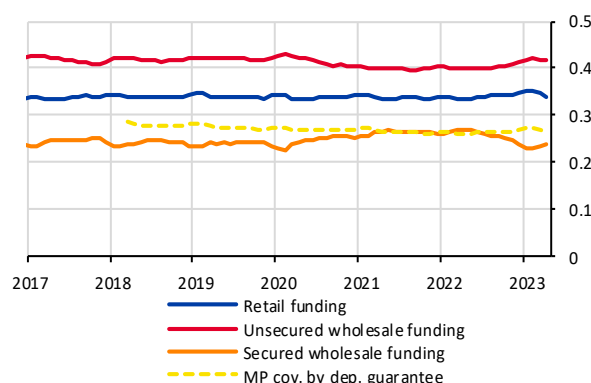
x : time / y : EUR billion



Guide : deposits and transferable deposits categories used to calculate term deposits. Source : SDW

Chart 1.15: Funding structure, France's six main banking groups

x : time / y : percentage



Source : ACPR

<sup>24</sup> **Commercial paper** consists of negotiable debt securities issued by banks, other financial entities, companies and public entities on the money market.

## Box 1.2: Lessons from the March 2023 events for prudential regulation and resolution

### The prudential framework demonstrated its effectiveness during the March banking crisis

The bank failures in the first quarter of 2023 had disruptive effects beyond direct contagion channels, raising questions about potential blind spots in international prudential standards. However, before setting out to amend these rules, it is important to have a clear vision of the role played in recent crises by internal shortcomings at affected institutions, insufficient application of the rules, insufficiently rigorous supervision and, finally, any potential gaps in the regulations. In this regard, at first glance, the bank failures of the first quarter of 2023 vindicate Europe's decision to apply Basel rules to all banks, no matter how small. While the Basel framework applies to all European banks, just 13 US banks are fully subject to the rules.<sup>25</sup> Neither *Silicon Valley Bank* nor *First Republic Bank* were subject to the framework, and their failures were partly due to the lack of appropriate risk measurement indicators, especially for liquidity and interest rate risk in the banking book. These might have signalled the vulnerabilities of these institutions had the rules been applied to them. Internationally, the regulatory priority should therefore be to ensure that the standards are applied to all banks whose interconnections with the wider financial system could cause systemic risk in the event of difficulties. Implementation of simplified regulatory approaches should be subject to the requirement that such methods are at least as robust as the standard rules and consistent with the *Basel Core Principles*.

A recurring theme in recent failures has been exposure to interest rate risk in the banking book coupled with the onset of extraordinarily intense and rapid liquidity crises, which raises questions about the appropriateness of the banking prudential framework. In terms of supervising liquidity risk in particular, the recent events call for discussions about regulatory assumptions concerning deposit outflows: in the age of digitisation, the question may arise of a transformation of the liquidity risk incurred by banks, and therefore of the ratios attached to it, given customers' real-time access to information and transactions on bank accounts. The Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR) were created to verify the immediate availability of liquidity to cope with a 30-day shock and the stability of funding over a one-year horizon, respectively. These requirements seek to ensure that liquidity risk is adequately managed by banks. They are supplemented by supervisory tools that enable more detailed risk monitoring and structured dialogue between banks and supervisors. The Basel III framework thus provides for monitoring of the concentration of liabilities, by product and by counterparty. This would have been especially useful in the case of SVB, one of whose problems was an excessive concentration of liabilities. Before making changes to the Basel framework, it is therefore important to determine whether these tools, when correctly used, already enable supervisors to have a sufficiently detailed and exhaustive view of the risks of each bank, particularly as regards liquidity. One response to the crisis could be to strengthen and systematically use these Pillar 2 tools.

Likewise, as regards interest rate risk, the economic value of equity (EVE) test provided for under the Basel framework would have revealed excessive sensitivity among the failing banks to the increase in interest rates, had it been applied. In the first analysis, the Basel regulatory framework does offer a way to correctly manage interest rate risk through, among other things, a comparative analysis of institutions' sensitivities based on standardised interest rate shock scenarios. However, the Basel Committee has launched in-depth work to determine whether adjustments are needed to take account of recent events.

### Discussions on the resolution framework

Since the global financial crisis of 2008, regulators have sought to strengthen their ability to deal with bank failures by drawing up a resolution framework to manage such situations at the most systemically important institutions, while minimising the use of public money. This framework, which was introduced in the European Union in 2016 with the entry into force of the Bank Recovery and Resolution Directive (BRRD), has considerably strengthened the resilience of major European banking groups to solvency crises. Under this framework, these groups have had to build significant loss absorption capabilities that are considerably larger than those of non-EU competitors. In addition, European lawmakers created a Single Resolution Fund financed by the entire EU banking sector, which will have over EUR 75 billion in funding at its disposal this year.

<sup>25</sup>In accordance with the tailoring approach.

However, recent bank failures underline the need to make resolution more operational and easier to use, in order to be able to respond to the emergence of fast-moving banking panics.

In the first place, it must be possible to provide significant amounts of liquidity during a crisis. For this, existing financing sources in the EU need to be supplemented by a credible liquidity provision mechanism. This mechanism should protect public money and be predictable for all market players, which is not the case at the moment. A mechanism of this kind could involve the Eurosystem.

Next, authorities must be more prepared to deploy all the resolution tools at their disposal. Since 2016 and implementation of the BRRD, emphasis has been placed on being ready to activate bail-ins, which form the cornerstone of the resolution process, ensuring fair contributions from shareholders and creditors in the event of a crisis. Recent banking crisis have shown that business transfer tools could be usefully deployed in addition to bail-ins.

Finally, resolution should remain the preferred crisis management tool to limit moral hazard, protect depositors and avoid drawing on public funds. International resolution standards, which apply to large systemically important groups, ensure that authorities take a consistent approach in the event of crises. More banks, including small and medium-sized institutions, should be subject to resolution preparation and planning measures and be held to a standard similar to that required of major groups. This should make it possible to more effectively anticipate and prepare for business transfers from smaller struggling banks to healthy banks, and thus ensure a consistent and smooth market exit. Building loss absorption capability for these banks, which would therefore be required, would also ensure better protection for their depositors. Within the EU, the Commission's proposal for a revised crisis management and deposit insurance (CMDI) framework targets this objective by proposing to expand the scope of resolution.

## French banks demonstrated resilience to interest rate, liquidity and credit risks, since 2022.

**France's six main banking groups<sup>26</sup> reported solid financial performances in 2022.** Earnings were up, with like-for-like net banking income reaching a record EUR 168 billion (up 5.3% compared with 2021), while management expenses remained under control, in line with business growth and inflation. This combination maintained operational efficiency, as measured by the cost-to-income ratio, which stood at 66.4%.

While the cost of risk at the six groups increased by 21.8%, essentially due to provisioning of performing loans, it remains historically low (26 bps). Income from ordinary activities rose by 1.7% to EUR 46 billion, but when non-recurring items such as asset sales following Russia's invasion of Ukraine are factored in, consolidated net profit fell by 11% to EUR 29.5 billion. Restated for these exceptional items, net profit rose by 2.6% to EUR 34 billion. Profitability declined, although this did not reflect the groups' strong operating performances: return on equity (RoE) was down seven-tenths of a percentage point to 6.4%, linked to the decrease in average return on assets (RoA) from 0.37% to 0.32%. The French banks is on a par with that of banks in Japan and the rest of Europe, while US and Nordic banks continue to report significantly higher RoE.

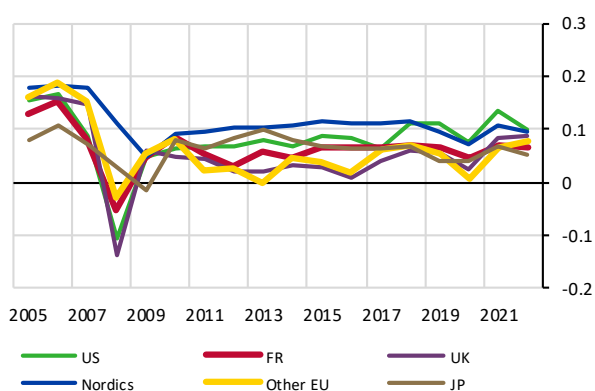
The financial data reported by France's four main groups<sup>27</sup> on their first quarter of 2023 earnings were mixed. Banks continued to report high net profit (43.9% increase, lifted by exceptional capital gains on one disposal), but gross operating profit fell by 13.9% compared with first quarter of 2022. The cost of risk fell by 27.1%. Annualised RoA increased by 0.14 pts to 0.41%, while annualised RoE climbed from 5.5% in first quarter of 2022 to 7.6% in first quarter of 2023.

<sup>26</sup> BNPP, Société Générale, Crédit Agricole Group, BPCE, Groupe Crédit Mutuel and La Banque Postale.

<sup>27</sup> BNPP, Société Générale, Crédit Agricole Group and BPCE are the only groups that publish earnings on a sub-six-monthly basis.

Chart 1.16: RoE - international comparison

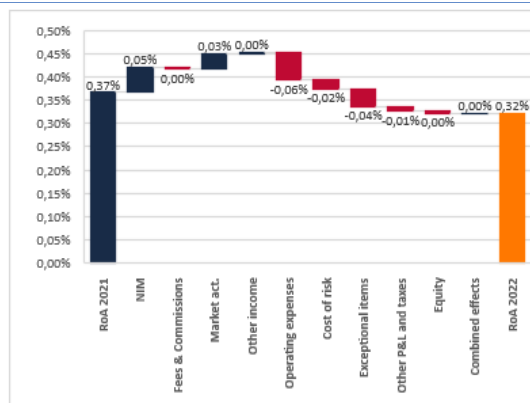
x : time / y: percentage



Source : ACPR

Chart 1.17: RoA component factors

x : time / y: percentage changes



Source : ACPR

**Net interest income (NII), which reflects the income of France's six main banks linked to the level of interest rates, rose by 7.2%** in 2022 to EUR 77.3 billion, lifted by higher rates and increased loan volume. For French banks, the ratio of NII to balance sheet total increased slightly in 2022 (+4 basis points to 0.78%), at a slower pace than in other European countries (+19 basis points to 1.42%). In the short term, the rapid increase in the cost of certain funding sources, including regulated and term deposits and issuance of new debt, and declining lending volumes could curb the progression of the NII, but, in the medium term, banks should benefit from this rise in interest rates.

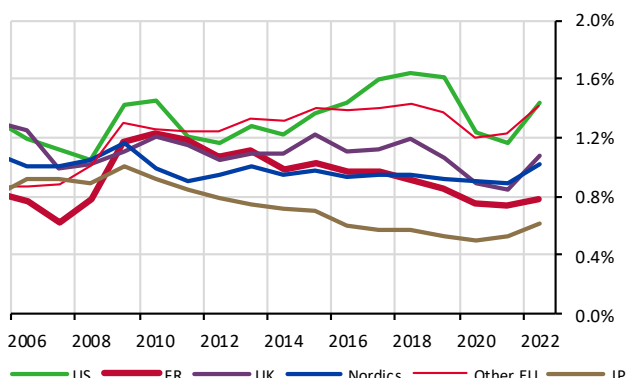
**Like all EU banks, French banks are subject to Basel rules governing interest rate risk**, which provide for measures to assess the impact on forecast NIM and EVE in various interest rate scenarios, including parallel +/- 200 bps shocks. In the event of a decrease in EVE exceeding 15% of the value of CET1, the competent authorities may determine enhanced supervisory measures. This metric integrates the effects of hedging strategies as well as portfolio unrealised capital losses measured at amortised cost. At end-March 2023, the warning thresholds had not been exceeded for any of France's six large banks. A parallel 200 bps interest rate increase would have boosted forecast NIM by 6.1% while reducing EVE by 8%.

**Unrealised losses on debt security portfolios are contained relative to the level of own funds.** In Q1 2023, these portfolios were worth approximately EUR 785 billion, or 9.2% of the total assets of France's six main banks – a quarterly increase of more than 12% relative to the fourth quarter 2022:

- 27% are measured by fair value through profit or loss (FV PL): the issue of unrealised capital losses does not therefore arise, since fluctuations in value are booked directly through profit or loss;
- 30% are measured by fair value through other comprehensive income (FV OCI): unrealised capital losses linked to higher interest rates therefore impact shareholders' equity and are included in regulatory ratios. At end-2022, the impact amounted to EUR 5.3 billion, equivalent to 1.4% of CET1;
- 43% are measured at amortised cost: at end-2022, unrealised capital losses on these portfolios totalled EUR 8.4 billion, corresponding to 2.2% of Common Equity Tier 1 (CET1) capital and their immediate recognition would cause the aggregate CET1 ratio to fall by just 33 bps if they impacted equity directly (see Chart 1.19).

Chart 1.18: Total NIM of France's six largest banks, by quarter (EUR billion)

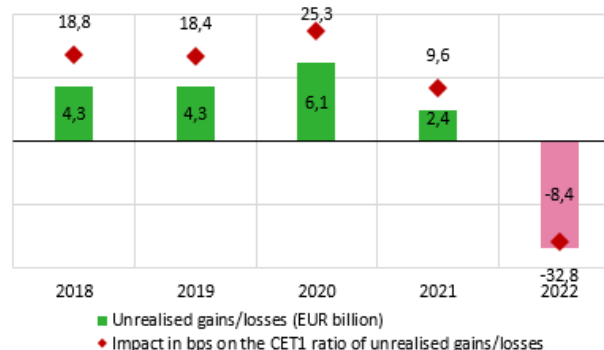
x : time / y : EUR billion



Source : ACPR

Chart 1.19: Impact on the aggregate CET1 ratio that would result from recognising unrealised capital gains/losses on debt securities measured at amortised cost

x : time / y : Unrealised capital gains/losses in EUR billion and impact in bps on the CET1 ratio



Source : ACPR

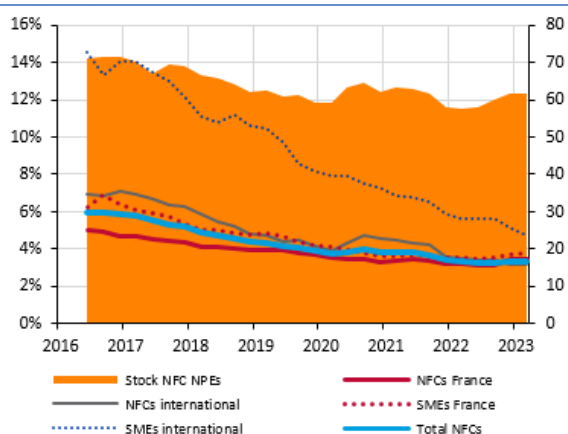
**After stabilising in the second half of 2022, asset quality indicators did not show signs of significant deterioration in the first quarter of 2023.** The non-performing exposures (NPE) ratio stood at 3.35% for NFCs, close to a record low, and 2% for households. Outstanding loans whose credit risk has risen significantly (IFRS9 stage 2) accounted for 8.3% of the total, with a significant decline for NFC outstandings (12.1%), while the share of household stage 2 outstandings was 9%. Banks made downward adjustments to the economic scenarios used in their provisioning models to reflect year-end macroeconomic uncertainties. After rising slightly in 2022, the annualised cost of risk fell to a record low of 18 bps at end-March 2023.

The provisioning coverage ratio was down slightly at 1.52% overall, driven by the decrease in NPL provisioning to 47.5%. The decrease in NPE provisioning reflected twin effects: reduced need for provisioning when loans under the PGE State-guaranteed loan scheme become non-performing, because the lion's share is covered by the State guarantee (between 70% and 90%); and renewal of the stock.

Among riskier asset classes subject to enhanced monitoring, exposures to companies employing leveraged finance were stable at 203 billion in Q4 2022, or 11% of the NFC loan portfolio. Credit standards for this type of loan continue to feature insufficient covenants. The NPL ratio for leveraged exposures increased to 5.5%. Meanwhile, exposures to commercial real estate increased by 6.7% to EUR 267 billion, or 3.3% of the total balance sheet, with an all-time low NPE ratio of 2%.

Chart 1.20: NFC NPEs and NPE ratios, by geographical area

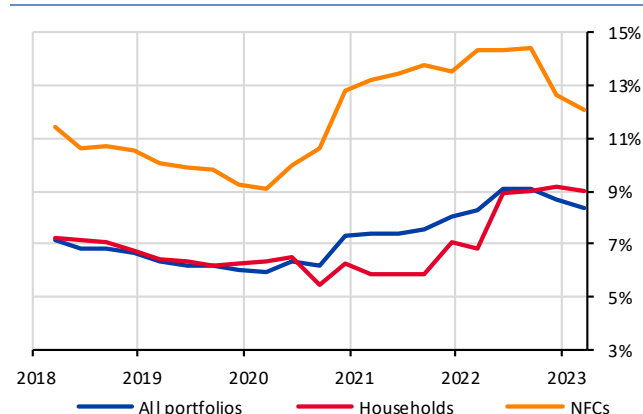
x : time / y left : percentage; y right : amount in EUR billion



Non-Performing Exposures (NPEs) are loans or securities with significant credit risk. When an exposure becomes non-performing when there are indications that the borrower is unlikely to repay the loan, or if more than 90 days have passed without the borrower paying the agreed instalment.  
Source : ACPR

Chart 1.21: Share of stage 2 IFRS9 loans

x : time / y : percentage



Notes : IFRS9 Stage 2 exposures are exposures that have deteriorated significantly in credit quality since initial recognition but with no evidence of a credit loss event.  
Source : ACPR

## French banks continue to report high levels of solvency and liquidity

**The French banking system has solid fundamentals:** solvency and liquidity positions are well above prudential regulatory requirements, deposit bases are diversified, and funding programmes for 2023 are already well advanced.

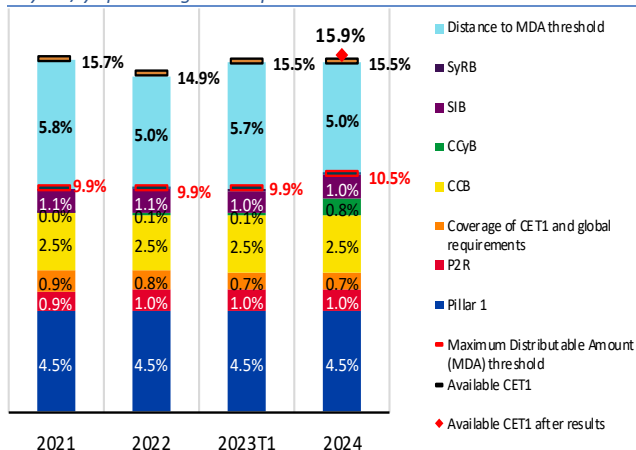
**As a result, France's six main banking groups were able to maintain average Liquidity Coverage Ratios (LCR) and Net Stable Funding Ratios (NSFR) that were well above the minimum requirement of 100% at the end of March 2023.** At that date, the average 12M LCR was down by 6.1 points year-on-year to 146.5%, while the NSFR was 4.3 points lower at 115.1%, notably due to shorter TLTRO III residual maturity. French banks say they anticipated the gradual reduction in excess liquidity linked to TLTROs in their funding programmes and can cover any liquidity requirements through defensive instruments such as covered bonds. In fact, reduced use of Eurosystem refinancing freed up a portion of the assets of French banks, whose asset encumbrance ratio fell by 2.5 points at end-March 2023 compared with end-March 2022, while the encumbered share of central bank eligible assets fell by 6.0 points, regaining the low recorded in 2016 (33%) and bolstering the ability of French banks to deploy their assets and obtain additional liquidity.

**The solvency ratios of France's six main banking groups are well above regulatory requirements:** their Common Equity Tier 1 (CET1) ratio was 15.55% at the end of March 2023, or 567 bps over regulatory requirements, a year-on-year increase of 70 bps, on the back of a 3.5% increase in CET1 coupled with a 1.2% decrease in risk-weighted assets (RWA). The average leverage ratio of France's six main banking groups was 5.0% at end-March 2023, which was unchanged over one year: the 5.5% increase in T1 equity offset the 5.4% increase in leveraged exposures, owing to the end, since April 1<sup>st</sup> of 2022, of the temporary exemption for Eurosystem deposits when calculating leverage, which was coupled with balance sheet growth. Banks are also in compliance with total loss absorbing capacity (TLAC) ratios and the minimum requirement for own funds and eligible liabilities (MREL).



Chart 1.20: Decomposition of the CET1 solvency ratio and margin

x : year / y : percentage decomposition

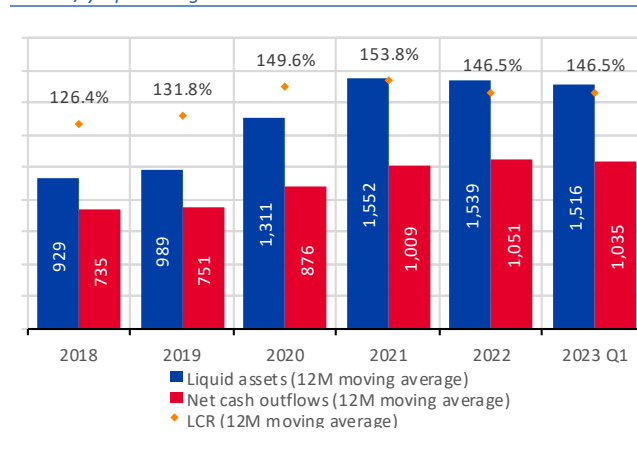


Notes : final results for 2021 and 2022, projections for 2024.

Source : ACPR

Chart 1.21: Aggregate LCR, France's six main banking groups

x : time / y : percentage and amount in EUR billion



Source : ACPR

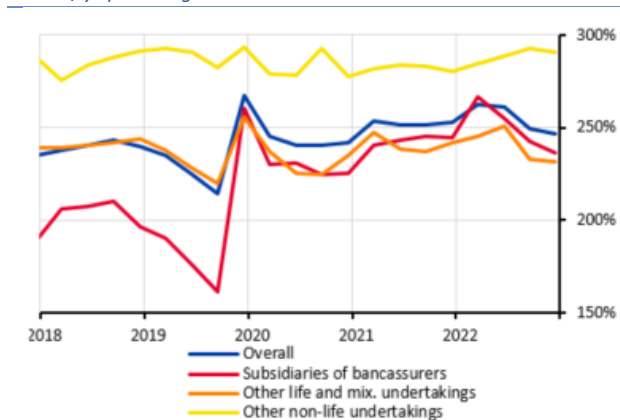
### 1.3 Insurance undertakings have a solid balance sheet structure but must adapt to the new interest rate environment

The average cover ratio of French insurers remains satisfactory, but they are exposed to the impact of inflation and rising interest rates on their business.

The insurance sector's capital requirements are comfortably covered, although levels vary considerably across undertakings. Overall, insurers hold surplus capital to cover capital requirements<sup>28</sup> and at end-2022 their coverage ratio stood at 247% (see Chart 1.24). Higher interest rates have played a part in reducing insurers' liabilities, particularly through the mechanism for discounting cash flow used to calculate the best estimate (BE) of technical provisions.<sup>29</sup> However, insurers had to set aside provisions for increased surrender risk, which may have caused an increase in liabilities. Disparities between insurers remain significant, notably depending on type of activity, i.e. life, non-life, mixed, reinsurance and bancassurers. For example, 25% of insurers have a ratio of lower than 170% while 25% have a ratio in excess of 300%. Other non-life undertakings have an average ratio of 290%, while the subsidiaries of bancassurers, which need to be analysed in the context of their group's conglomerate structure, have lower ratios.

Chart 1.24: Solvency capital requirement coverage ratio

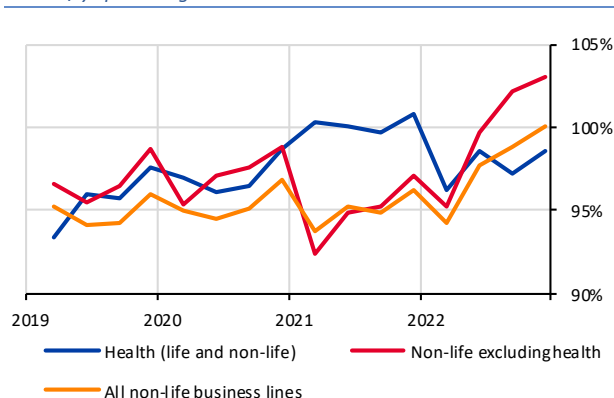
x : time / y : percentage



Source : ACPR

Chart 1.2522: Combined ratios at 31 December 2022

x : time / y : percentage



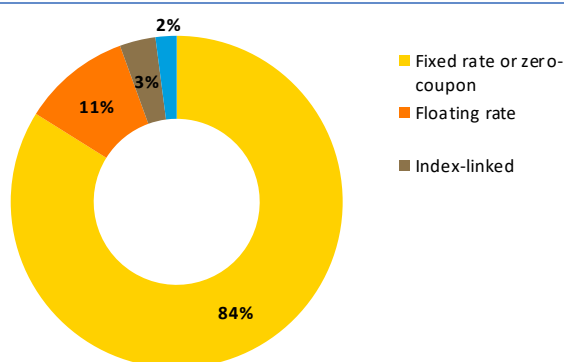
Source : ACPR

<sup>28</sup> The capital requirement is the capital needed to absorb shocks caused by major risks. At end-2022, the aggregate amount stood at EUR 180 billion.

<sup>29</sup> To calculate the BE, insurers sum discounted cash flows, that is, cash flows whose amounts are divided by the risk-free rate supplied by EIOPA. If interest rates go up, cash flows are automatically divided by a larger denominator, so the amounts of these flows ultimately go down.

**The effects of inflation and higher interest rates vary across activities and undertakings.** Inflation especially impacts non-life insurers offering long-term guarantees, including construction, liability and death & disability coverage. For these, inflation can impact the cost of benefit payments for several years, as benefits may be spread over several years, but prices are not always revised annually. These activities are exposed to an increase in costs of claims and expenses, which are usually below 100% of premiums, making it possible to maintain positive underwriting profitability, but which may increase above 100% due to more claims and/or inflation. In 2022, these combined ratios increased significantly in non-life insurance (excluding health) and reached 103% in the fourth quarter, well above the long-run average (see Chart 1.25). The current inflationary environment is also impacting relative returns on assets. Returns on equities, collective investment schemes and real estate may change as a function of the level of inflation, but bond income is fixed in the vast majority of cases.

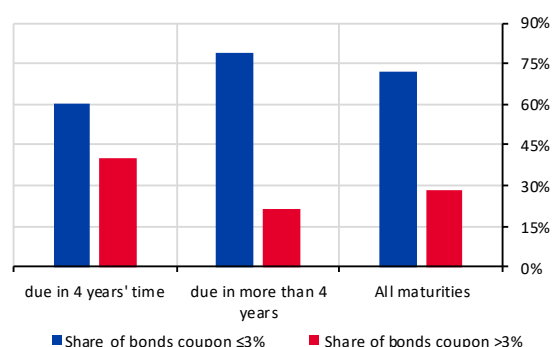
Chart 1.26: Breakdown of insurers' bond portfolios, as a % of total bond investments at 31 December 2022



Scope : After applying the look-through approach to CIS  
Source : ACPR

Chart 1.27: Portfolio residual maturity

x : maturities / y : percentage of bonds coupon rate



Note : The total bond portfolio of insurers can be broken down as follows maturity, 72% of bonds have a coupon rate of less than 3% and have a coupon rate of less than 3% and 28% of bonds have a coupon rate greater than 3%.  
Source : ACPR

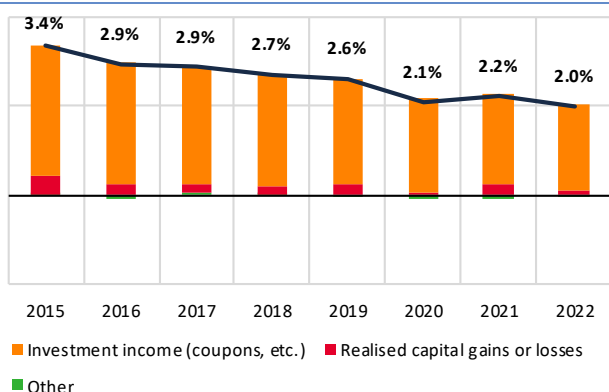
## Insurers have sufficient financial resources to meet their commitments, in spite of interest rate developments.

**The downtrend in interest rates over recent years has squeezed insurers' financial income, particularly bond coupons.** Bonds make up about 60% of insurers' investments<sup>30</sup> (21% sovereign bonds, 25% financial sector bonds and 11% NFC bonds) (see Chart 1.29). Average RoA has been declining more or less constantly for several years and reached 2.0% in 2022. Despite the increase in interest rates in 2022, the recurring portion of the RoA earned by insurers continued to slide, falling below 2% as older high-yielding bonds were replaced by lower-yielding ones. Insurers continue to hold HY bonds acquired before the low interest rate period in their portfolios. Accordingly, at end-2022, 40% of bond investments maturing in the next four years had a coupon of over 3% (compared with 45% at end-2021, 54% at end-2020 and 60% at end-2019, see Chart 1.27). In addition, contrasting developments on financial markets restricted the realisation of capital gains, which represented 0.1 of a point of RoA, compared with 0.25 in 2022 (see Chart 1.28).

<sup>30</sup> After applying the look-through approach to CIS assets.

Chart 1.28: Insurance vulnerability indicators: return on assets (RoA)

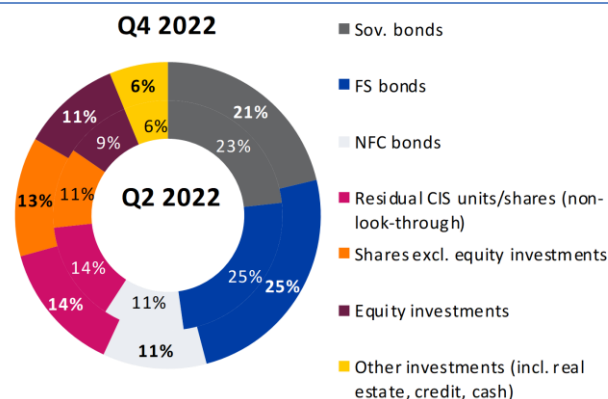
x : time / y : percentage



Source : ACPR.

Chart 1.29: Decomposition of insurers' assets in Q4 2022

x : time / y : percentage

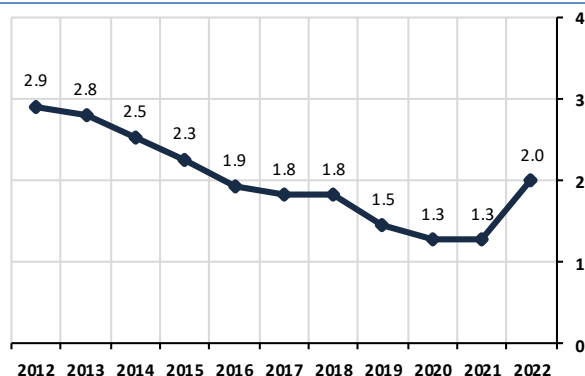


Source : ACPR.

In this setting, the revaluation of individual life insurance contracts rose significantly, climbing from 1.3% in 2021 to 2% in 2022. The increase came on the back of a 0.2%-per-year trend decrease between 2012 and 2020. It was partly financed by drawing on the profit-sharing reserve (PSR), which stood at just over 5% of technical provisions at end-2022.<sup>31</sup> The effect of higher interest rates on issuers will be very different depending on the future rate pathway. If long rates stabilise at around 3%, insurers will be able to maintain revaluation rates and profitability at satisfactory levels in the medium term by drawing on the PSR and reinvesting in higher-earning assets when their old investments mature.

Chart 1.30: Revaluation rate, non-unit-linked contracts

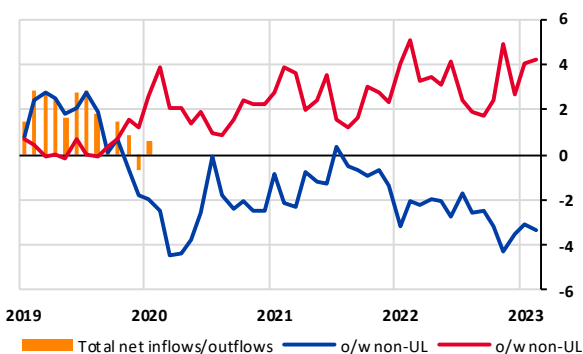
x : time / y : percentage



Source : ACPR

Chart 1.31: Net cumulative flows into/out of life insurance

x : time / y : EUR billion



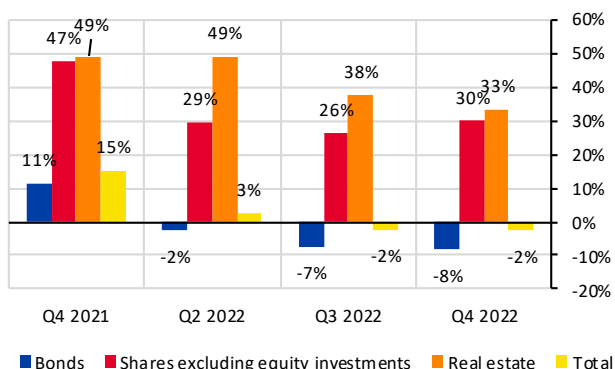
Source : ACPR

Another swift rise in interest rates would expose insurers even more to the risk of increased surrenders if they are unable to offer attractive returns due to the inertia of their investment income. Given their liquidity reserves and in view of the assets that are still recording capital gains, insurers would however be forced to sell assets at capital losses only in low-probability scenarios. At end-2022, bonds were showing unrealised capital losses of around 8% on average, but unrealised gains were still being recorded on equities and real estate, and the liquidity ratio of issuers remains high. Higher interest rates have not sparked net outflows from life insurance. To offset declining returns on non-unit-linked funds, in recent years insurers have promoted investments in unit-linked products, whose market risk is borne essentially by retail investors. As a result, non-unit-linked vehicles have seen virtually uninterrupted outflows since the end of 2019, while unit-linked products have posted net inflows over the period as a whole (see Chart 1.31). Gross inflows totalled 132 billion in 2022 (compared with 138 billion in 2021) and the average market surrender rate remained contained at 4.6%, notably owing to the tax incentive to limit exits during the first eight years of contracts.

<sup>31</sup> 5.4% according to the latest available statistics.

Chart 1.32: Capital gain/loss ratio

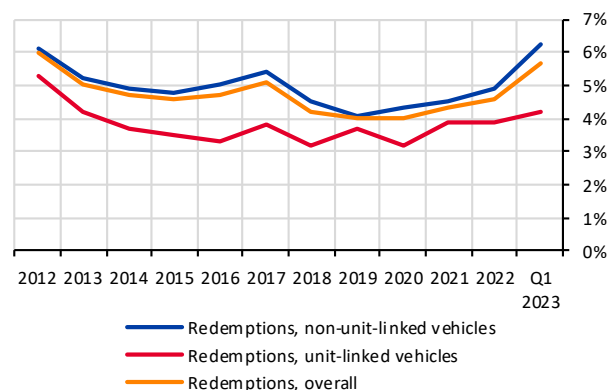
x : quarter / y : percentage



Source : ACPR

Chart 1.33: Life insurance contract surrender rate

x : time / y : percentage



Source : ACPR

## 1.4 Some categories of non-bank financial institutions are vulnerable to higher interest rates and market volatility

At end-2021, assets held by non-bank financial institutions (NBFIs) accounted for around half of the total financial assets held worldwide and about one-third in France. According to estimates by the Financial Stability Board (FSB), NBFIs sectors account for 49% of the total USD 486,600 billion in assets held globally,<sup>32</sup> with volumes growing by 6.6% on average between 2016 and 2021. These holdings are divided between pension funds (9%), insurers (8%) and other financial institutions (32%).<sup>33</sup> Within the euro area, total financial assets are estimated to be USD 110,700 billion. Of this, 36% is held by banks and 51% by NBFIs sectors (9% by insurers, 3% by pension funds and 39% by other financial institutions). In France, NBFIs sectors have a relatively smaller share of activity, while banks account for the lion's share (56% out of total assets of USD 22,000 billion). Also, in France, insurers account for a relatively larger share compared with the rest of the euro area, while other financial institutions have a smaller share (16% each). According to FSB estimates, the share of financial assets held by non-bank institutions exposed to bank risks (credit intermediation, maturity and liquidity transformation), such as open-end investment funds, stands at USD 67,800 billion globally and USD 1,680 billion in France.

### The risk of a disorderly market correction persists

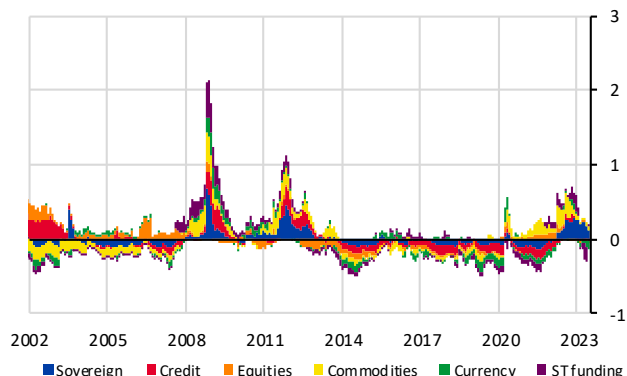
Since October 2022, financial market tensions have gradually normalised in Europe and the United States. Banking sector stress did not result in significant spillover to other sectors. The composite market stress indicator (see Charts 1.34 and 1.35) eased further, continuing a trend in effect since the end of October 2022, driven in particular by softer commodity prices and cooling tensions in connection with collateral scarcity. Volatility peaked on bond markets in March 2023 following the bank crisis and as market participants reassessed the future trajectory of monetary policy. Implied volatility in equity markets remained at moderate levels, emphasising the weak intra-sector contagion from the shocks that hit the North American banking sector.

<sup>32</sup> Amounts obtained by the FSB from 28 jurisdictions at end-2021.

<sup>33</sup> Other financial institutions include non-bank financial institutions, insurers, pension funds and public institutions.

Chart 1.23: Composite indicator of market stress<sup>34</sup> in France

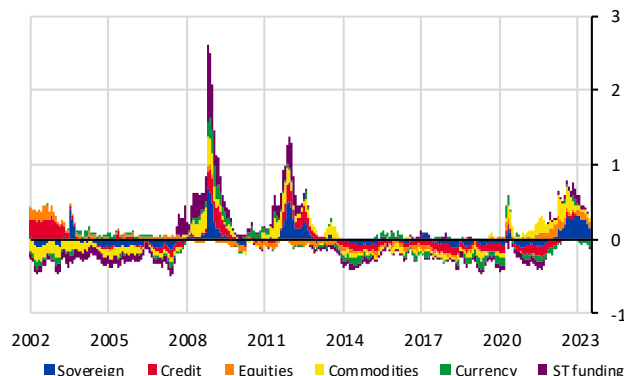
x : time / y : z-score



Note : Composite market stress indicator calculated based on sovereign, equities, credit, currency, commodities and short-term funding sub-indices. Sources : ICE, Bloomberg, SFT-DS, Banque de France

Chart 1.24: Composite indicator of market stress in Europe

x : time / y : z-score

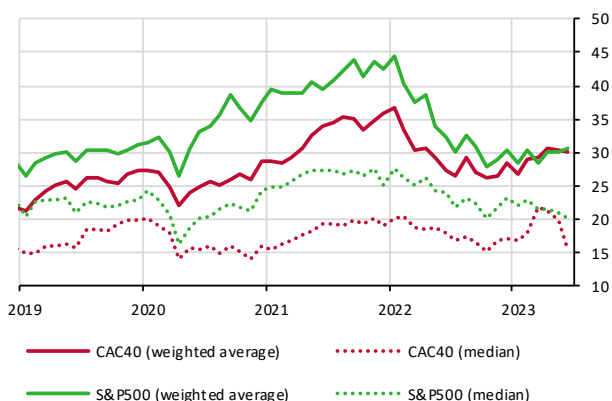


Note : Composite market stress indicator calculated based on sovereign, equities, credit, currency, commodities and short-term funding sub-indices. Sources : ICE, Bloomberg, SFT-DS, Banque de France

**Valuation indicators for French stocks are still down relative to where they were at the end of 2021, but have gained ground since the start of the year.** The average cyclically adjusted price-to-earnings (CAPE) ratio<sup>35</sup> for the CAC40 index has outperformed the S&P500 ratio since March 2023, for the first time since 2007. On 1 May 2023, it stood at 30.7, compared with 35.8 in December 2021, driven by the consumer discretionary (especially luxury) and tech sectors. However, amid rising yields on the sovereign bond market, the relative return on equities fell to its lowest level since 2008. Despite edging up since February, the equity risk premium demanded by investors is historically low, indicating that the equity market remains vulnerable to a sudden increase in investor risk aversion. Accordingly, the risk of an equity market correction remains high.

Chart 1.36: The CAC40 CAPE ratio has exceeded that of the S&P500 since March 2023

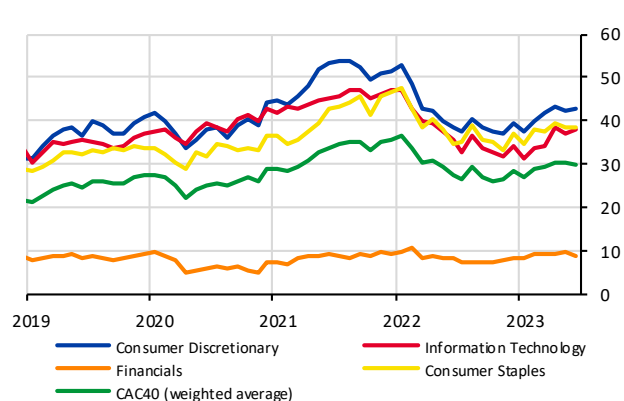
x : year / y : CAPE ratio



Note : Most recent value: 1 June 2023 Sources : Refinitiv Eikon, Banque de France calculations

Chart 1.37: A number of sectors are driving the increase in the CAC40 CAPE ratio

x : time / y : CAPE ratio



Note : Most recent value: 1 June 2023 Sources : Refinitiv Eikon, Banque de France calculations

**After bond yields surged in 2022, average yields on the French corporate debt market remained relatively stable between December 2022 and May 2023** on both the investment grade (IG) and high yield (HY) segments. Credit spreads narrowed significantly from their peak in the second half of 2022, but remain above the levels recorded prior to Russia's war in Ukraine and the policy rate hikes, contrasting with equity risk premiums, which are at historically low levels. These credit spreads are contributing to the increase in funding costs, especially in the high

<sup>34</sup> The market stress indicator is presented in the Eco Notepad n°318 : [Markets normalising in 2023 following episodes of stress in 2022](#)

<sup>35</sup> The cyclically adjusted price-to-earnings ratio is calculated by dividing market capitalisation by average net earnings, in this case over five years, adjusted for inflation.

yield sector, with the HY spread widening by 50 bps between December 2021 and May 2023 and the IG spread increasing by 10 bps. In this setting, primary issuance of HY debt has been depressed since the end of 2021. Transaction costs on the bond market have deteriorated in response to the severe volatility, which has hurt market liquidity. The same phenomenon is apparent on US and euro area sovereign debt markets.

Chart 1.25: Credit spreads on French corporate bonds  
x : time / y : in basis points



Sources : Refinitiv Eikon, Banque de France

Chart 1.26: Liquidity of French sovereign debt  
x : time / y : Bloomberg index



Note : The government bond liquidity index measures the level of market arbitrage for different French government debt securities. The higher the index, the worse the liquidity situation.

Sources : Bloomberg. GVLQ indices. Government bond liquidity index

### Box 1.3: The role of CDS markets

Credit Default Swaps (CDS) are derivative products used to buy or sell insurance against the default risk of an issuer. Issuers may be companies, financial institutions or governments. The CDS market caters to three trading purposes: insure against the default of an issuer by purchasing CDS; speculate by taking risk through the purchase or sale - sometimes on an unsecured basis - of CDS; and exploit the price spread between bonds and CDS. CDS may be written for a single issuer (single-name) or for a basket of issuers. The latter are called CDS indices. The most common indices are European and US indices referencing the most liquid corporate CDS, namely Itraxx and CDX.NA.

Globally, the CDS market has been dominated by indices since the 2008 financial crisis. Whereas single-name CDS on corporate issuers represented USD 30 billion in daily trading volumes in Q4 2010 (see Chart 1.30), this had fallen to just USD 7.9 billion by Q4 2022. At the same time, daily volumes for CDS indices rose from USD 78.4 to USD 117.0 billion. Trading in sovereign CDS has fallen since the European sovereign debt crisis, shrinking from USD 16.5 billion to USD 3.2 billion between Q3 2013 and Q4 2022.

In France, single-name CDS are more represented in the gross positions of French investors. Although indices continue to dominate (EUR 2,002 billion in Q1 2023, see Chart 1.31), French investors appear to trade relatively more single-name CDS (EUR 714 billion) than their international counterparts. In addition, as Chart 1.32 shows, single-name CDS account for about one-half of the net positions of French investors, with French counterparties selling EUR 21 billion and EUR 60 billion worth of single-name CDS and CDS indices respectively in Q1 2023. These CDS therefore remain vital as they result in almost as much credit risk transfer between investors as indices.

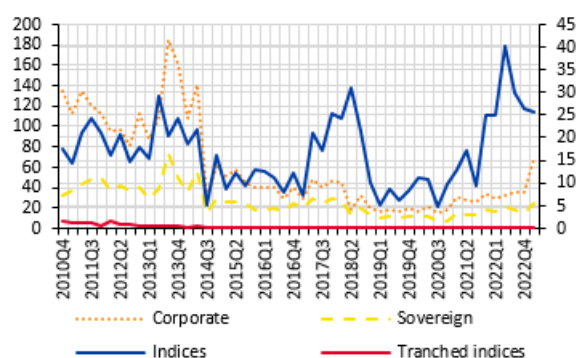
Single-name CDS market liquidity is weak (nine transactions a day on average on Deutsche Bank in Q4 2022 according to DTCC) although it is greater than that of the underlying bonds. The bout of stress affecting Deutsche Bank showed how much price signals on equity, debt and CDS markets may be correlated.

Chart 1.27: Average CDS daily volumes, by type of underlying, world

Chart 1.28: Gross CDS positions, FR investors, by type of underlying

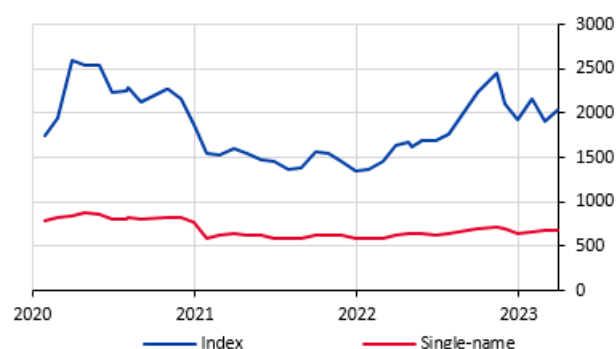


x : time / y : USD billion, indices (left-hand scale), corporates and sovereigns (right-hand scale)



Note: average daily volumes, world.  
Source : DTCC average daily volumes, Trade Information Warehouse reports [DTCC](#)

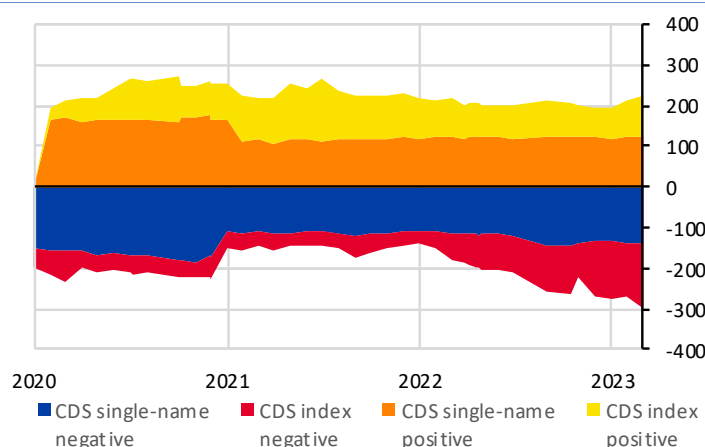
x : time / y : EUR billion



Scope : France.  
Notes : Gross CDS positions, FR investors, by type of underlying (single-name and index). The decrease in positions observed between 2020 and 2021 is potentially due to the exit of UK subsidiaries of FR investors that were expected to be part of the DTCC reporting scope.  
Sources : DTCC, Banque de France calculations

Chart 1.29: Net CDS positions, FR investors, by type of underlying

x : time / y : EUR billion



Scope : France  
Notes : Net positions are summed for all investors and products. They are separated by sign (positive or negative) to better reflect the amount of risk bought or sold by French investors. The chart distinguishes positions by type of underlying (single-name or index). LCH Sa positions are excluded from the calculation of net positions.  
Sources : DTCC, Banque de France calculations

## Some investment funds remain highly exposed to liquidity risk

**Investment funds are exposed to a variety of risks in the event of financial market stress, especially when they operate with low liquidity reserves or if they are leveraged.** Following a financial market shock, investment funds may have to contend with significant capital outflows and/or margin calls. In 2022, these movements remained orderly for French investment funds. Redemptions were limited for bond funds and remained close to normal for equity funds. In case of market shocks, the response to liquidity needs may lead to procyclical and potentially disruptive behaviour, such as forced sales that magnify volatility trends on certain market segments. Bond and money market mutual funds, which tend to offer investors daily liquidity for the redemption of shares, are especially exposed to this type of risk and may exacerbate it if they allocate a significant proportion of their portfolios to illiquid assets. These risks can however be mitigated by the effective use of liquidity management tools (LMTs) in investment funds (Financial Stability Board recommendations, 2017).<sup>36</sup> Despite increased

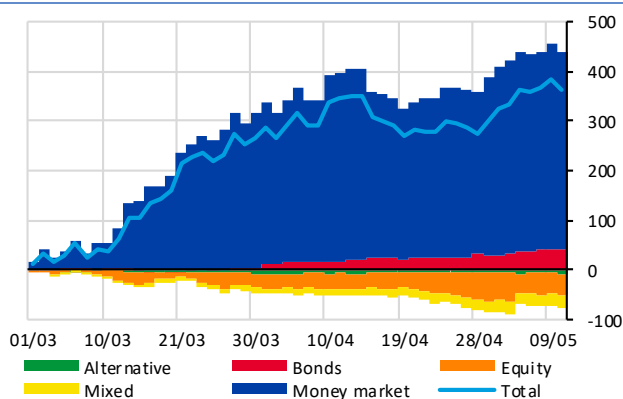
<sup>36</sup> <https://www.fsb.org/2017/01/fsb-publishes-policy-recommendations-to-address-structural-vulnerabilities-from-asset-management-activities/>

deployment of LMTs, there is still considerable room for progress to make these tools a market standard for French investment funds.

**Recent banking stress resulted in significant transfers out of USD money market funds invested in private debt and into USD money market funds invested in government debt.** This trend was paired with an acceleration in deposit withdrawals from US regional banks following the SVB collapse. European USD-denominated government debt money market funds (mainly domiciled in Luxembourg and Ireland) recorded inflows of EUR 24 billion between 1 March and 12 April, representing a 34% increase in total assets under management. Investors also increased their holdings of EUR-denominated private debt money market funds, which are primarily invested in bank debt securities.

Chart 1.30: Cumulative flows, by fund type

x : 1 March – 6 April 2023 / y: cumulative flows since 1 March in EUR billion

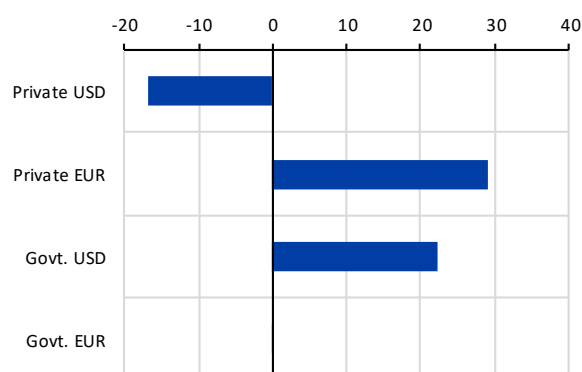


Note : Cumulated flows into / out of funds domiciled in more than 83 countries

Sources : Lipper, Banque de France calculations

Chart 1.31: Flows into money market funds domiciled in Europe between 1 March and 12 April

x : EUR billion / y : Type of money market fund



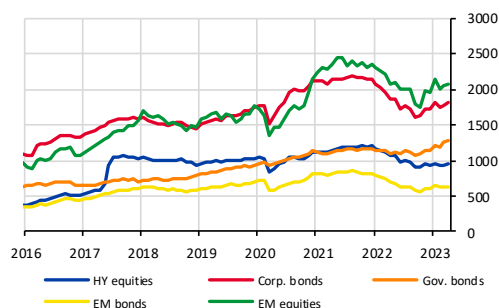
Scope : Funds classified by asset investment category and currency, based on their importance in the fund.

Sources : Lipper, Banque de France calculations

**In an environment characterised by interest rate normalisation, some investment funds, especially bond and money market funds, are exposed to portfolio illiquidity risk.** The low interest rate environment prompted investors to seek higher returns and to invest in less liquid segments, including HY and emerging bond funds, whose worldwide assets under management (AUM) totalled EUR 900 billion and EUR 600 billion respectively in 2022. However, bouts of market stress in 2022 led to a decrease in bond market liquidity and a slight deterioration in the average bid-ask spread for assets held by French bond funds, especially owing to the increase in this spread on the HY segment.

Chart 1.32: Open-end funds were particularly attracted to certain illiquid segments during the low interest rate period

x : time / y : net assets under management in EUR billion

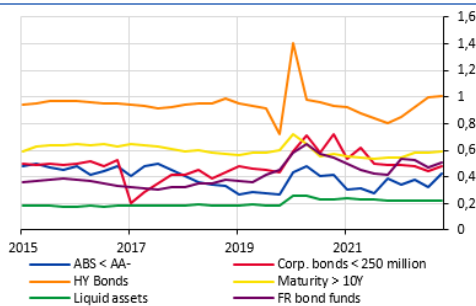


Note : Open-end funds only domiciled in more than 83 countries. The categories are not mutually exclusive. EM: Emerging Markets.

Sources : EPFR, Banque de France calculations.

Chart 1.46: Deterioration in the average bid-ask spread for assets held by French bond funds

x : time / y : percentage of price



Note : The bid-ask spread is expressed as a percentage of the ask.

Most recent value: December 2022.

Sources : OPC, CSDB, Refinitiv, Banque de France calculations

**Investment funds remain vulnerable to an increase in interest rates owing to the elevated duration built up over recent years, which implies a sharp decline in asset values in the event that rates go up.** Funds could then be subject to increased liquidity risk due to investor redemption requests. Despite declining over 2022 from 6.2 to 5.1, the average duration of French bond funds was still higher than the average recorded over the 2016-2019 period (4.7; see Chart 1.47). In addition, the average rating of French bond fund portfolios deteriorated between 2020 and end-2021. Despite some normalisation in 2022, characterised by an increase in the share of high-quality assets in fund portfolios, the default probability of assets held by French bond funds remained above the average recorded between 2015 and 2020 (3.5% compared with 2.5%).

**The vulnerability of money market funds, a segment that is also highly exposed to liquidity risk, has increased in recent years.** Money market fund portfolios look increasingly similar (39% of assets in common at issuer level on average in December 2022, compared with 25% in 2016; see Chart 1.48), which reduces the potential for diversification between funds for investors and exposes money market funds and the assets in which they are invested to simultaneous outflow shocks. Since money market funds are extensively invested in illiquid assets, such as commercial papers, a massive wave of sales by these funds could have a pronounced impact on prices on underlying markets and trigger a liquidity crisis. In addition, although French money market funds strengthened their liquidity buffers following the Covid-19 crisis, the buffers shrank in 2021 and 2022, reverting to pre-crisis levels. Nevertheless, standard-form French money market funds immediately pass on portfolio losses to their net asset value. This limits the cliff effect that may occur on other types of funds in the event of a deviation of the net asset value above a certain threshold and which may have the effect of accelerating redemptions<sup>37</sup>.

Chart 1.33: Fund duration is down, making valuations less sensitive to an additional interest rate shock

x : time / y : duration

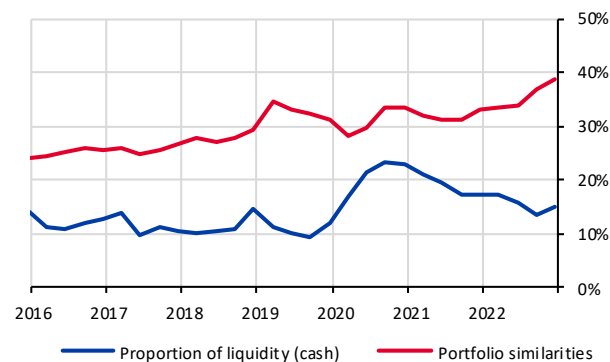


Most recent value: December 2022.

Sources : OPC titres, CSDB, calculations: Banque de France

Chart 1.34: Liquidity of French money market funds and portfolio similarities<sup>38</sup>

x : year / y : percentage



Note : Liquidity buffers are estimated using the field "deposits and loan claims", which includes all deposits the MMFs have placed in other institutions, in particular in banks. This category includes any loans that the MMFs may have granted.  
Sources : CIS, CSDB, Banque de France calculations

**A fund's resilience and ability to weather a bout of liquidity stress also depends on the composition of the fund's liabilities** (see Chart 1.50), with different types of investors potentially behaving differently in the event of an adverse shock. Insurers in France hold a larger proportion of units of funds invested in debt securities (28% of holdings) relative to the euro area average. This may be a factor of resilience, insofar as insurers tend to exhibit relatively stable behaviour as investors.<sup>39</sup> Non-euro area investors represent the main sector of investors in these funds (44% on an aggregate basis, 38% in France). These holdings are probably more sensitive to the overall macroeconomic environment and hence potentially more volatile. Finally, for a significant proportion of funds (33.4%), investors are concentrated in a single sector (over 80% of the fund's value). A market reversal affecting the holding sector could be a source of vulnerability for these funds.

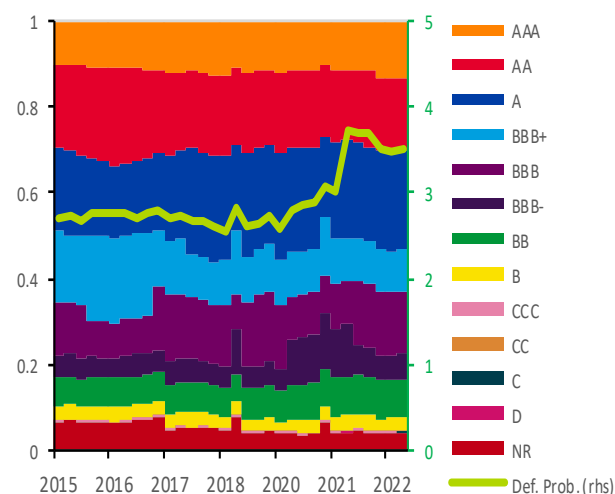
<sup>37</sup> In Europe, low volatility variable net asset value (LVNAV) funds pass on losses to the net asset value only if there is a deviation of more than 20 basis points. See Vulnerabilities in money market funds (ESMA, 2021).

<sup>38</sup> The portfolio similarity ratio captures shared exposures and indicates the risk that portfolios will move in the same direction in the event of a shock. Most recent value: December 2022. For each pair of funds, the number of similar components (per issuer) between the portfolios of the two funds is calculated (divided by the average number of assets in the portfolios of both funds). The level shown is the average for all fund pairs, weighted by AUM for each pair.

<sup>39</sup> Coppola (2022). In Safe Hands: The Financial and Real Impact of Investor Composition Over the Credit Cycle. R&R, *The Review of Financial Studies*.

Chart 1.35: Credit risk of bond funds remains high despite declining in recent months

x : time / y : percentage (left); probability of default (right)

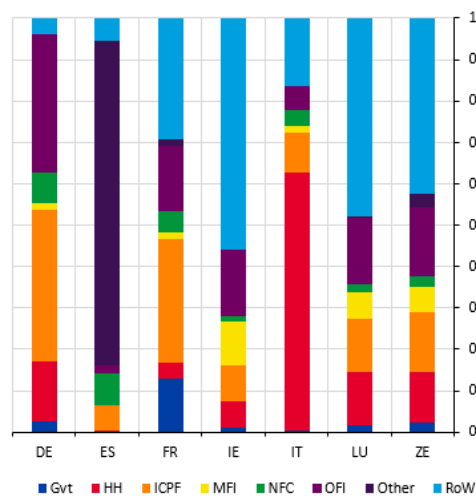


Note : Data for bond funds domiciled in France. CSDB ratings. If unavailable, the rating is the average of S&P, Moody's and Fitch ratings. Most recent value: 30/12/2022.

Sources : OPC, CSDB, Eikon, Banque de France calculations

Chart 1.36: Decomposition of liabilities of debt funds, by holding sectors

x : country / y : percentage of holding sector in fund units, by country



Scope : Gvt: government, HH: households, ICPF: insurance companies and pension funds, MFI: banks and money market funds, NFC: non-financial corporations, OFI: investment funds and other financial institutions, RoW: rest of the world (including the Eurosystem). Total amount of debt fund units in the sample at Q3 2022: EUR 5,409 billion. Total amount of debt fund units in SDW at Q3 2022: EUR 7,924 billion.

Sources : SHS-S, CSDB

## The crypto-asset market remains highly volatile

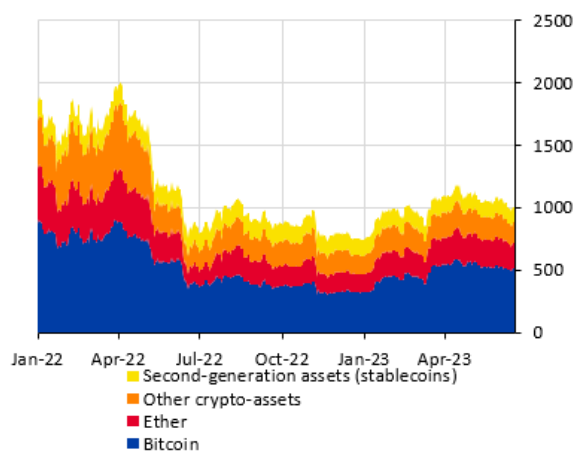
Capitalisation of the crypto-asset market has increased by 48% since the beginning of 2023 and reached USD 1,180 billion as of June 25th 2023 (approximately one-third of the peak of over USD 3,000 billion observed in November 2021; by comparison, global equity markets were worth over USD 93,000 billion in 2020).<sup>40</sup> The rising value of crypto-assets has a lot to do with the increase in Bitcoin, the number-one crypto-asset, which accounts for almost 50% of total market capitalisation and which has gained 85% year-to-date (see Chart 1.51). The increase was fuelled by the US Fed's decision in March to slow rate hikes following several regional bank failures. Previous rate hike decisions had caused investments in risky assets, including crypto, to decelerate.

**Regional bank failures have severely affected the crypto-asset ecosystem, and vice-versa.** With confidence in crypto shaken by the FTX failure, Silvergate, a Californian bank at the forefront of crypto-asset services, announced in early January 2023 that its deposits had fallen by approximately 68%. These problems continued, and in early March 2023, Silvergate announced its voluntary liquidation, causing the value of its own stock and many crypto-assets to plummet (see Box 1.1). SVB and Signature Bank also declared bankruptcy several days later, which rocked the entire crypto-asset ecosystem. These banks notably held deposits from crypto-asset participants, such as USDCoin (USDC), which lost its dollar peg on 11 and 12 March because USD 3.3 billion in assets used to back the peg were deposited at SVB (see Chart 1.52). Contagion effects spread swiftly to DAI, a decentralised stablecoin, which also broke its dollar peg, as its reserve was largely made up of USDC. The announcement by the authorities that they would guarantee all deposits held by SVB and Signature Bank reassured investors and stabilised the stablecoin market. Conversely, unbacked crypto-assets, including Bitcoin, appreciated over March 2023.

<sup>40</sup> Market capitalisation of domestic listed companies (current USD) | Data (banquemoniale.org)

Chart 1.37: Crypto-asset capitalisation

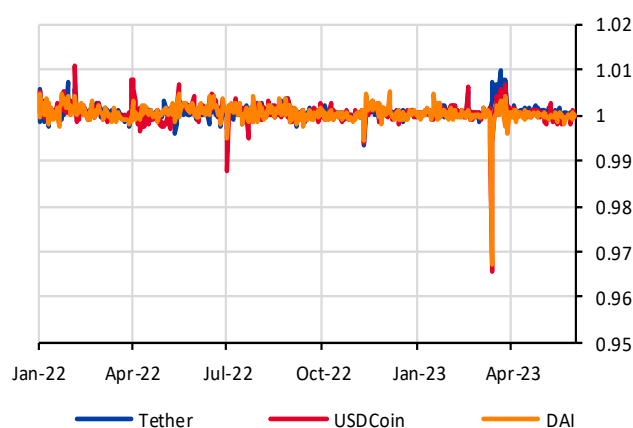
x : time / y : USD billion



Most recent value: 18 June 2023  
Source : Eikon

Chart 1.38: Some stablecoins temporarily lost their peg in March 2023

x : time / y : USD



Note: Stablecoins are designed to maintain a 1:1 dollar peg. This chart shows how USD Coin and DAI broke their pegs in March 2023 following the collapse of SVB.  
Source : Eikon

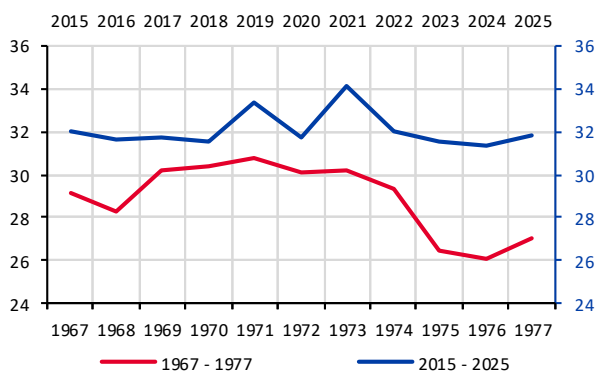
## 1.5 Vulnerabilities of non-financial participants remain elevated, owing to the level and profile of their debt

### Tighter financing conditions have increased the vulnerabilities of the most heavily indebted non-financial corporations (NFCs)

Companies have, at least partially, passed on to prices the increase in the cost of their inputs, making it possible to limit the aggregate fall in margins. In fact, the profit margin decreased by just two percentage points relative to its record level in 2021 (see Chart 1.53) following the end of support measures linked to the health crisis. According to Banque de France projections, in 2023 and 2024, corporate profit margins are expected to shrink moderately and temporarily owing to economic conditions, before climbing again in 2025. The fact that margins were held at close to pre-Covid levels and turned out to be higher than expected in December has helped NFCs to be more resilient to the increase in funding costs.<sup>41</sup> However, the ability of NFCs to preserve profit margins may vary according to their size and sector of activity.

Chart 1.39: NFC profit margins, comparison with 1970s

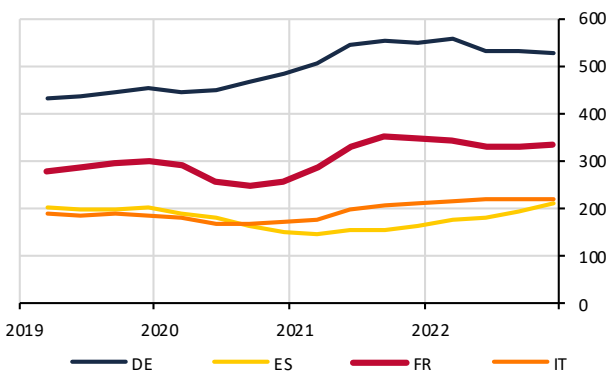
x : time / y : percentage of value added, annual average



Sources : INSEE until 2022, Banque de France projections from 2023

Chart 1.40: NFC gross disposable income

x : time / y : EUR billion



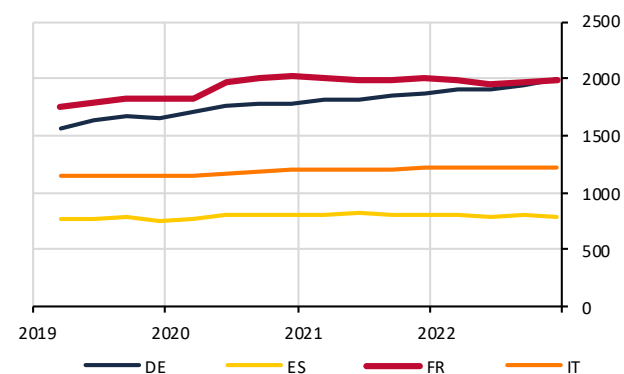
Sources : SDW, Quarterly sectoral account

<sup>41</sup> Banque de France macroeconomic projections, March 2023 [Macroeconomic projections – March 2023](https://www.banque-france.fr/actualites/actualites-macroeconomiques-projections-macroeconomiques-mars-2023) | Banque de France ([banque-france.fr](https://www.banque-france.fr))

**Although contained, the decline in NFC profit margins has led to an increase in the debt service burden.** The burden can be measured by the NFC debt service ratio, which divides companies' principal and interest payment flows by their income. French NFCs continue to carry high debt, chiefly due to bank borrowing, but the level has been stable from a consolidated perspective since the end of 2020. The structure of NFC debt, which is mostly at fixed rates over long maturities (cf. chapter 2 of this report), has made it possible to contain the increase in the interest burden borne by NFCs. As a result, the average interest rate weighted by the maturity of French NFC debt is lower and growing more slowly than the European average. The debt service ratio of French NFCs nevertheless began rising in early 2022, climbing from 38% in January to 43% in December, owing to the slight decrease in disposable income in the first half.

Chart 1.41: NFC consolidated debt

x : time / y : EUR billion

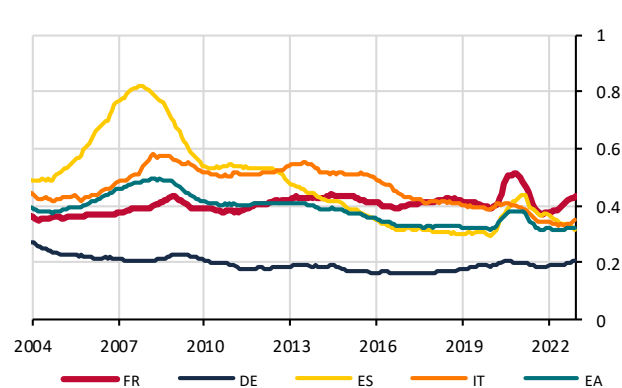


Notes : Consolidated debt does not take intra-group debt into account. Bank and bond debt are aggregated.

Sources : SDW, quarterly sectoral account

Chart 1.42: NFC debt service ratio

x : time / y : percentage



Note : DSR calculated using the BIS formula with several conversions – consolidated debt, income adjusted for interest payments, interest rate weighted by maturity bucket.

Source : Banque de France

**In this setting, French NFCs remain resilient, but tighter financing conditions and higher debt service costs could increase the vulnerabilities of the most indebted companies.** Failure rates are up but remain below those recorded in 2019, in spite of the share of NFC failures in terms of outstanding loans back at its pre-Covid level. Chapter 2 of this report highlights how financing conditions remained favourable for French NFCs in Q1 2023. Bank lending to NFCs continues to grow at a rate exceeding the euro area average. Financing dynamics in the coming months will depend on developments in loan demand among NFCs and credit standards in an environment of higher interest rates and market issuance volumes. An orderly slowdown in NFC debt could lessen the sector's vulnerabilities, but more pronounced tightening of financing conditions could pose a risk to the most heavily indebted companies.

### The residential real estate market is experiencing an orderly slowdown

**As interest rates continue to go up, home lending is normalising in a progressive and orderly fashion in France and remains less pronounced than in other European countries.** Despite a sharp slowdown, home lending has stayed brisk in France, particularly in comparison with the country's European neighbours. The decrease in home loan production is primarily attributable to cooler household demand. After a slowdown in the first quarter of 2023 (44.7 billion euros against 71.6 billion euros in the first quarter of 2022, hence -37.6%), new loans for house purchase stabilized at 15 billion euros per month in April 2023 (Chart 1.57), which is higher than the average production observed before 2015 (9.5 billion per month) and also higher than in the rest of the Euro Zone (almost four times higher than in Spain and Italy<sup>42</sup>). The interest rate on home loans in France rose sharply, climbing to an average of 2.7% in April 2023, compared with 1.8% in October 2022. However, the increase was slower than in neighbouring countries, where rates were already higher: 3.13% in the euro area, including 4.05% in Italy and 3.8% in Germany in April 2023 (see Chart 1.58).

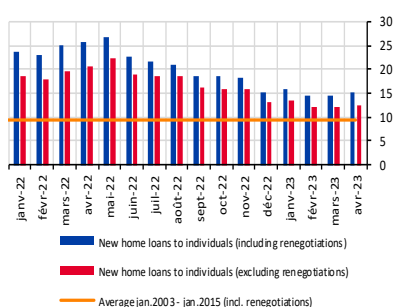
<sup>42</sup> Source: Banque de France ([link](#)).



**House prices, which respond with a lag to interest rate increases, are experiencing a marked but differentiated slowdown.** House prices (new and existing segments combined) rose by 2.7% year-on-year in Q1 2023 (1 pp increase relative to average growth rates observed between 2015 and 2019)<sup>43</sup> compared with 4.6% in the fourth quarter of 2022, while transaction volumes continue to normalise gradually from the post-Covid record levels (cumulative total of 1,069 thousand transactions in the existing homes segment in the year to March 2023, compared with 1,206 thousand at the peak in August 2021).<sup>44</sup> House prices have risen extremely vigorously in recent years, and the trend became even more pronounced during the Covid crisis: in the fourth quarter of 2022, the ratio of house prices to household disposable income – a measure of housing affordability – was 8% higher than the five-year average in the period leading up to the health crisis. A moderate and orderly house price correction, such as the one taking place right now, should make it possible to bring the price/income ratio back to more moderate pre-Covid levels (see Chart 1.59).

Chart 1.43: New loans to individuals and renegotiations

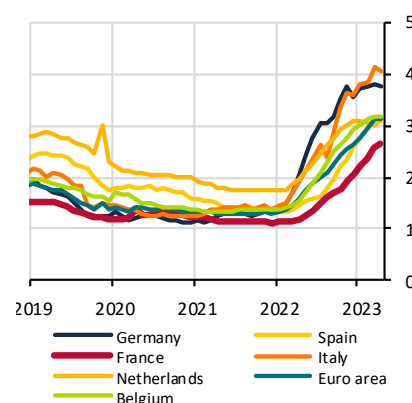
x : time / y : EUR billions



Source : Banque de France

Chart 1.44: Interest rates on new mortgages in Europe

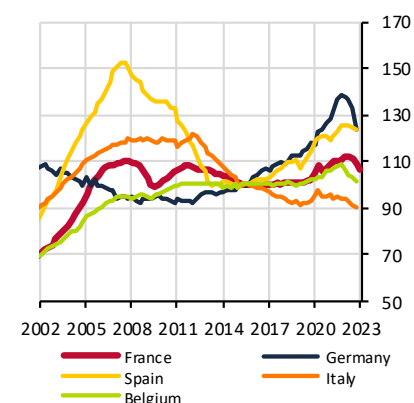
x : time / y : percentage



Source : BCE

Chart 1.45: Price-to-income ratio for new and existing homes - European comparison

x : axe temporel / y : index 2015=100



Note : Nominal house prices divided by net disposable income per person.  
Sources : OCDE, calculations Banque de France

**Access to credit is being maintained equitably across different borrower categories.** In France, home loans remained accessible in 2022 to all borrower categories, whether for primary residences or not, with a seasonal peak in the fourth quarter for buy-to-let investments. The share of first-time buyers in home loan production stood at 42.5% in Q1 2023 (on average, they accounted for almost one in every two loans for the purchase of a primary residence in the first quarter of 2023). This share has increased relative to previous years (4.2 pp increase to 39.2% in 2022 for new loans excluding bridge loans and 3.7 pp increase to 36.7% in 2022 for new loans including bridge loans, compared with 2021) (see Chart 1.60). In addition, based on data on guaranteed loans from the main French loan guarantee agency, distribution by borrower age was stable overall, with a slight increase for people aged 18-29 (see Chart 1.61).<sup>45</sup>

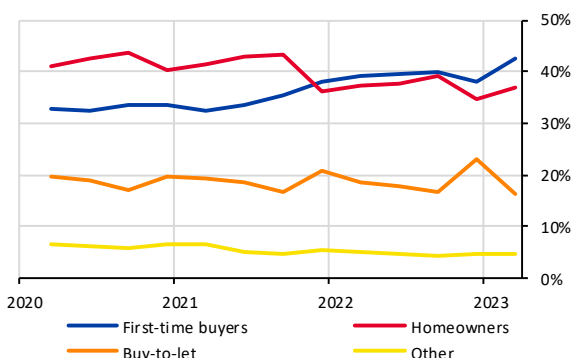
<sup>43</sup> Source: INSEE ([link](#)).

<sup>44</sup> Source: IGEDD ([link](#)).

<sup>45</sup> Crédit Logement data cover about 25% of the total market (approximately 40% of all guaranteed loans).

Chart 1.460: Structure of quarterly production of new home loans

x : time / y : percentage

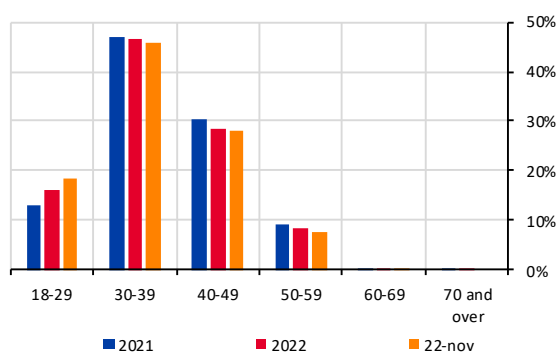


Most recent value : Q1 2023.

Sources : Banque de France, ACPR calculations

Chart 1.471: Distribution of borrowers by age, loans maturing in over 20 years

x : year / y : percentage



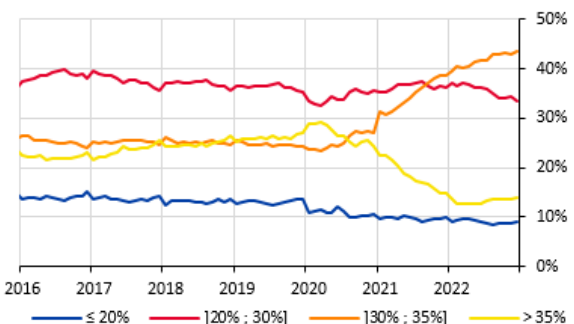
Source : Crédit Logement

**France's home financing model has structural features that promote resilience and therefore reduce the short and medium-term impact of inflation and higher interest rates on households and on the property market more generally.** First, although house prices are starting to slow, French households are protected from a potential reverse wealth effect because they do not use their property assets as collateral to obtain additional (consumer) loans. Second, home loans are almost all at fixed rates (98.5% of new loans in March 2023), which insulates households that have already taken out loans against an increase in rates. The management of interest rate risk thus falls onto the financial institutions. France's home loan guarantee scheme helps to further ensure the resilience of this financing model, limiting bank losses in the event of default on the loan. Moreover, rates on new loans are capped by the usury rate, which shields households from overly swift rate increases. Since February 2023, as a temporary measure, this rate has been adjusted on a monthly rather than a quarterly basis, to keep better step with rising bank refinancing rates and promote smooth credit production.

**Credit standards have improved since introduction of the HCSF's measure in late 2019.** By capping the debt-service-to-income ratio at 35% and the loan period at 25 years, the measure introduced by the HCSF ensures that households do not bear an excessive repayment burden. Although the HCSF's standard did not prevent a record volume of loan production from being generated in 2021 and the first half of 2022, it did lead to a sharp decrease in loans with a debt-service-to-income ratio of above 35%, which are considered to be at greater risk (see Chart 1.62). On 13 June 2023, the HCSF announced two technical adjustments to the measure governing residential real estate standard, which address the operational difficulties encountered by banks in implementing the measure, without changing the overall balance of the measure or its scope<sup>46</sup>.

Chart 1.482: Breakdown of new loan production, by debt-service-to-income ratio

x : time / y : percentage



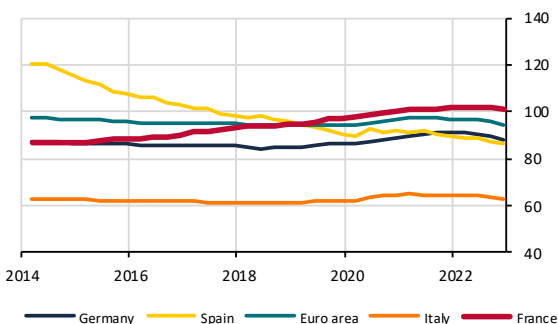
Note : Loans excluding repurchases, renegotiations and consolidation.

Most recent value : December 2022.

Source : ACPR, monthly home loan production statistics

Chart 1.493: Household debt (as a % of gross disposable income) – European comparison

x : time / y : percentage



Most recent value : Q4 2022.

Source : Banque de France

<sup>46</sup> Source : HCSF ([lien](#))

**In the current environment of rising inflation, which tends to erode the purchasing power of gross disposable income and to put household solvency under pressure, the level of household debt relative to gross disposable income (GNI) stabilizes, but at high levels and higher than those of other European countries:** French household debt represents 101% of GNI in December 2022 against 94% in the euro zone (see Figure 1.63). The number of cases of over-indebtedness increased slightly in 2023 but remains well below the pre-Covid period. The number of applications, which are mostly composed of consumer debt or current expense debt from low-income households<sup>47</sup>, rose by 3% over the first five months of 2023 relative to the same period in 2022. However, there were 23% fewer applications than in the same period in 2019.<sup>48</sup> In addition, the household debt/income ratio is highly contrasted by income level, and significantly higher for wealthy households (the median ratio is above 90% for households above the 6th income decile, compared with 30% for households below the 2nd income decile<sup>49</sup>). This important leverage can, although high-income households also have a lower effort rate than others, create significant stress in the event of an income shock. Besides the protection provided by the home lending model, a number of macroeconomic factors and support measures have contributed to the resilience. For one thing, households have built up EUR 157 billion<sup>50</sup> in excess financial saving since the pandemic (between Q1 2020 and Q2 2022). For another, support measures targeting electricity prices, including the price shield, have lessened the impact of higher energy expenditures. Furthermore, the unemployment rate is stable (7.1% of the working population in Q1 2023, or 0.3 of a point below the level in the fourth quarter of 2021 and the lowest reading since the first quarter of 2008, not counting the second quarter of 2020).<sup>51</sup> Compared with its European neighbours, France looks to be relatively resilient, and its households seem less exposed to higher interest rates and inflation: ECB survey data indicate that France is above its European peers in terms of net demand for consumer credit, which was steady in the first quarter of 2023.<sup>52</sup> Despite these factors of resilience, the economic slowdown and tighter financial conditions could eventually put pressure on household solvency, calling for close monitoring.

### Public finances are on a trajectory that must be controlled

**Based on measures taken at this stage, after 4.7% in 2022 the government deficit could reach of even exceed 5% of GDP in 2023.** Despite the scaling back of emergency support measures and the stabilisation of the net cost of the price shield, this widening in 2023 is essentially seen stemming from the normalisation of the revenue windfalls seen in 2022 and, to a lesser extent, from the delayed impact of past inflation on government expenditure. The ratio of government revenue to GDP is expected to fall by 1 percentage point in 2023, although this will be partially offset by 0.5 percentage point decline in the ratio of expenditure to GDP. On the revenue side, the gradual normalisation of corporation tax and abolition over a two year period of the *cotisation sur la valeur ajoutée des entreprises* (CVAE – corporate value added contribution), should shave 0.5 percentage point off the tax-to-GDP ratio. Other revenues should fall to a similar extent (notably due to a reduction in support from the European fund for the recovery plan). In parallel, the expenditure ratio is projected to decrease by 0.5 percentage point due to the end of the public health crisis measures and recovery plan, even though they are partially being replaced by new measures such as France 2030, the green fund and support for apprenticeships. The delayed impact of the inflation surge in 2022 should increase government expenditure slightly, excluding discretionary fiscal consolidation measures. The debt interest burden in particular is predicted to remain fairly stable versus 2022 as a percentage of GDP, as the impact of higher interest rates this year should be offset by a decline in the inflation benchmarks to which France's indexed debt is tied.

**In 2024-2025, at constant legislation, the government deficit is forecast to narrow, reaching 4.5% of GDP at the end of the forecast horizon.** This gradual decline should be driven by the fall in the expenditure ratio coupled with a stabilisation of the revenue ratio. The expenditure ratio should fall by around 1 percentage point, driven by the lifting of the price shield and by both the pension and unemployment insurance reforms. The tax-to-GDP ratio is projected to remain stable, as the elasticity of taxes and social security contributions to GDP is equal to unity. At

<sup>47</sup> According to Banque de France ([link](#)), in Q1 2023, 10,5% of applications for over-indebtedness comprise at least one real estate debt, while 72,4%, 75,9% and 73,7% of applications comprise respectively at least one consumer debt, one current expense debt or one other type of debt.

<sup>48</sup> Source: Banque de France ([link](#)).

<sup>49</sup> Source : HFCS 2017 ([link](#))

<sup>50</sup> Source: Banque de France ([link](#)).

<sup>51</sup> Source: INSEE ([link](#)).

<sup>52</sup> Source: ECB ([link](#)).

the end of the projection horizon, it should be close to its pre-Covid level (44.7% of GDP in 2019 excluding the double-counting of the CICE), whereas the expenditure ratio should be around 2 percentage points higher than in 2019. A third of this rise should be due to the increase in the debt burden, and the remaining two-thirds to an increase in primary expenditure. This lasting growth in primary expenditure is attributable to the measures currently in force (France 2030, support for apprenticeships, reform of technical colleges), and to the fact that, at constant nominal expenditure, the expenditure ratio will be impacted by a denominator effect caused by the lasting loss of potential GDP. These factors should only be partially offset by the pension and unemployment insurance reforms, which will continue to ramp up after 2025.

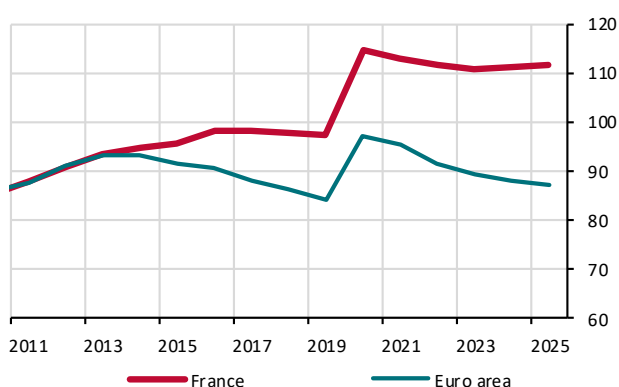
**The government debt-to-GDP ratio is not expected to shrink and should remain close to 111% over the entire projection horizon** (see Chart 1.64). After rising more than in the euro area during the Covid crisis (+15 GDP points between 2019 and 2021 compared with +11 points in the overall euro area), France’s debt-to-GDP ratio is only seen declining by 1 percentage point by 2025 from its 2021 peak, compared with a drop of 8 percentage points for the euro area as a whole (to 87% of GDP in 2025, according to Eurosystem projections), which will wipe out nearly all of the previous rise. This should lead to a lasting widening of the gap between France and the euro area.

**Consequently, French public finances do not appear to have enough leeway to respond to new external shocks and higher interest rates than those of the previous decade.** After debt peaked in 2020, the post-Covid rebound created a “snowball effect” (resulting from the differential between the nominal interest rate  $r$  and nominal GDP growth  $g$ ) that supported a decrease in the debt ratio. The return of GDP growth to its potential level, coupled with the normalisation of monetary conditions, is set to gradually bring down the decreasing impact of the snowball effect. At constant legislation, the government debt ratio should start rising again from 2025. For this reason, controlling the trajectory of government spending is critical to preserving the sustainability of French government debt.

**A deterioration in the government debt trajectory could lessen the investor appeal of French sovereign debt, increasing the need to keep government debt under control.** The French State continued to finance itself under good conditions while interest rates were rising. French sovereign spreads over German benchmark securities of equivalent maturities remained stable. Bid-to-cover ratios (ratio of demand to supply of sovereign debt during issuance) fell slightly in late 2022, possibly driven by switching into short-term products amid rising interest rates. Since the start of the year, the bid-to-cover ratio has headed upwards, reflecting the return of these investors owing to more attractive yields on long-term sovereign bonds. The maintenance of good financing conditions depends on the ability of traditional financial players to make up for the decrease in holdings of government debt by the Eurosystem.

Chart 1.504: Government debt, since 2006

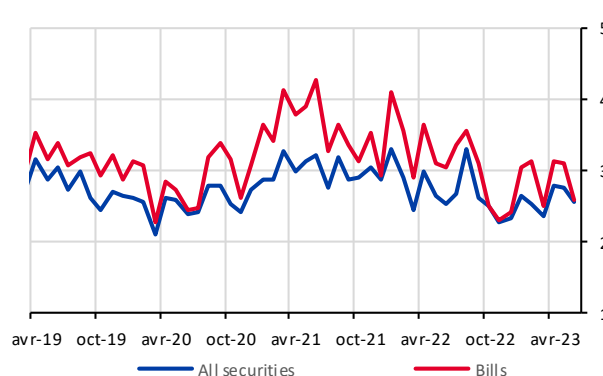
x : time / y : percentage



Source : Banque de France projections March 2023

Chart 1.515: Bid-to-cover ratio, French sovereign issues

x : time / y : ratio



Scope : The bid-to-cover ratio consists of the quantity of securities demanded by investors during auctions divided by the quantity of securities offered by the issuer.

Most recent value : April 2023.

Sources : AFT, Banque de France calculations

## 1.6 Financial institutions must accelerate their adaptation to the structural risks posed by cyber and climate threats

### Monitoring of the financial system's climate risk exposures needs to be strengthened

**The synthesis report of the Intergovernmental Panel on Climate Change (IPCC), published on 20 March 2023,** found that climate risks are much higher than previously forecasted. If the policies implemented at end-2020 are maintained, this would lead to global warming of between 2.4°C and 3.5°C above pre-industrial levels by the end of the century. With continued warming, climate change-related risks are going to become increasingly hard to manage. Heatwaves, heavy precipitation, severe droughts and increased frequency and intensity of rare climate events are going to accelerate, which is going to create physical risks for the financial sector. The risks linked to a disorderly transition are also mounting as adaptation action and policies are delayed.

**Financial supervisors are paying increased attention to assessing and monitoring the transition and physical risks associated with climate change:**

**An initial means of assessment is to conduct stress tests.** These consider various scenarios – more or less adverse, more or less long term – in which physical and transition risks could materialise and assess their consequences for financial institutions.

In 2022, the ECB conducted an exercise of this type that underlined the need for banks to step up their efforts to develop climate stress testing frameworks. In the same year, EIOPA carried out its first climate stress test exercise. This measured the impact of a disorderly transition on the balance sheets of supplementary occupational pension funds.

The ACPR is continuing work to prepare for the next climate exercise, which will follow the 2020-2021 pilot. The exercise will be carried out over 2023-2024 and will focus on insurers, with which market-wide work was begun in 2022. Finally, the European Commission asked the three European supervisory agencies to carry out a stress test in 2023-2024 to assess the medium-term resilience of the financial sector with respect to the transition risk implied under the Fit for 55 package.

**Monitoring of the exposure of financial institutions to physical and transition risks is starting to develop.** Under the climate action plan adopted by the ECB in 2021 following its strategic review, a Eurosystem expert group has developed a set of climate-related statistical indicators, which aim to measure the carbon footprint of the financial sectors of euro area countries and their exposure to physical risks.

**In 2022, various European and domestic provisions came into effect organising enhanced transparency with regard to extra-financial disclosures by financial institutions.** In particular, Article 29 of France's Energy and Climate Act,<sup>53</sup> whose requirements integrate those of the Sustainable Finance Disclosure Regulation (SFDR),<sup>54</sup> entails an obligation for market participants, such as portfolio management companies, insurance and mutual insurance undertakings, credit institutions and investment firms performing management activities on behalf of third parties, to publish a report on the approach taken to recognise ESG criteria in their investment policies. Accordingly, at end-December 2022, the ACPR published Instruction 2022-I-24 detailing the article's scope of application and the content of the report for entities licensed to carry out life insurance transactions.

**Other supervisory initiatives include the publication by the ACPR and AMF of a third joint monitoring report on the climate commitments by members of the Paris financial centre,** including banks, insurers and management companies, and **on-site inspections** on the integration of climate risk in subscription and provisioning practices, calculation of capital requirements and governance arrangements. Finally, as part of its involvement in the exercise due to be performed by the EBA in 2023-2024 at the Commission's request, the ECB will conduct a review of the alignment of European banks with its expectations in terms of recognising climate risk.

<sup>53</sup> Energy and Climate Act No. 2019-1147 of 8 November 2019.

<sup>54</sup> European Regulation of 27 November 2019, whose main provisions took effect on 10 March 2021.

#### Box 1.4: Assessment of the exposure of French investors to climate-related transition risk

This box seeks to determine which categories of French investors are most exposed to “brown” assets, that is, assets issued by entities that are engaged in activities that are harmful to the climate and, consequently, heavily exposed to climate transition risk. The analysis is carried out by type of economic agent and economic sector (investment funds, insurers, banks, non-financial corporations, households, other non-bank financial institutions), and draws on a European database of securities holdings at end-2022 (SHS-S; i.e. bank loans are not taken into account).

Brown assets are identified using climate data provided by ISS-ESG, a commercial data provider, and selected for the study from among many available sources. ISS-ESG assigns a climate score of between 0 and 100 to each company and each country.<sup>55</sup> Securities issued by corporations and governments whose climate score is below 50, which corresponds to the “high” and “very high” climate risk categories identified by ISS-ESG, are considered under the analysis to be brown assets. France’s various institutional sectors hold around EUR 985 billion in brown assets (excluding fund units), of which EUR 28 billion is exposed to “very high” climate transition risk, out of total securities holdings of EUR 4,800 billion, or around 20% of the total outstanding amounts held by French investors (see Chart 1.66).

A more granular analysis reveals that insurers, funds and banks are the investor categories in France that hold the most brown assets (EUR 401 billion, EUR 340 billion and EUR 239 billion respectively; see Chart 1.67), compared with EUR 109 billion and EUR 86 billion respectively for NFCs and households. In terms of the percentage of their total asset holdings, funds appear to be the most exposed to climate transition risk, with brown assets making up 24% of the total, followed by households on 23%, banks on 22%, insurers on 20% and NFCs on 12%. Furthermore, in some investor categories, a significant share of transition risk exposure stems from indirect asset holdings via investment fund units.<sup>56</sup> These indirect holdings amount to EUR 163 billion for insurers, EUR 78 billion for funds, EUR 29 billion for NFCs, EUR 24 billion for households<sup>57</sup> and just EUR 10 billion for banks.

Overall, greater involvement by different investor categories, and particularly investment funds, is needed to attenuate the risk posed by climate change to the financial system.

<sup>55</sup> The ISS-ESG climate score is based on a combination of indicators factoring in sector, past emissions and a forward-looking assessment based on greenhouse gas emissions reduction policies. For example, oil, gas and coal sector companies are counted as brown assets, while companies from the renewable energy sector are classified as green assets (“very low” climate transition risk).

For government bonds, the climate score assesses the effectiveness of a country’s government in implementing policies aimed at reducing greenhouse gas emissions within the territory and in adapting to a changing climate by reducing the nation’s vulnerability to climate risks. France’s score is above 50, meaning that assets issued by the French public sector are not considered to be brown assets.

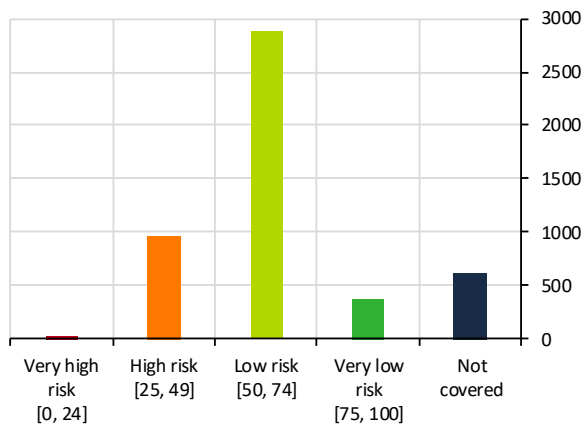
<sup>56</sup> Many economic agents invest on financial markets via investment funds. As a result, losses at investment funds are ultimately passed on to other investor categories, exposing the wider financial system to contagion risk.

<sup>57</sup> Households also hold brown assets via life insurance products. This box does not study these indirect holdings.



Chart 1.66: Outstanding assets (equities and debt securities) classified by climate risk category, held by French investors

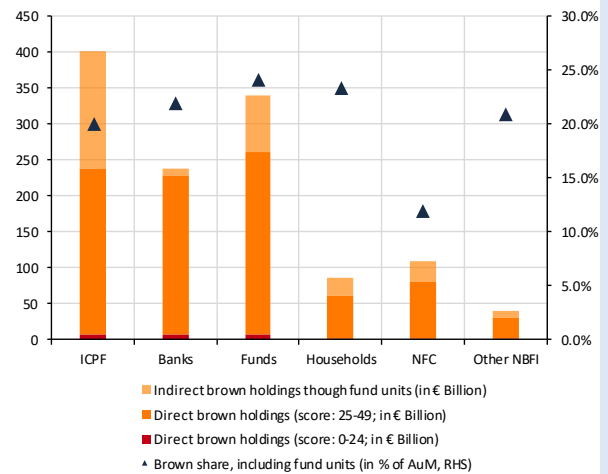
x : climate risk category / y : outstandings in EUR billion



Note: Assets are classified based on an aggregate score showing the climate risk of the issuing entity. The scores come from ISS-ESG, a climate data supplier, and cover companies and governments. The interpretation by risk category is proposed by the data provider. Sources : ISS-ESG, SHS-S, CSDB, Banque de France calculations

Chart 1.67: Holdings of brown assets (equities and debt securities) by different categories of French investors

x : institutional sector / y : outstandings in EUR billion (left); percentage (right)



Note : Holdings of brown assets in EUR billion and as a percentage, by category of French investors, in the final quarter of 2022. Only securities are considered; bank loans are excluded from the analysis. The figures shown are estimates that may vary depending on the selected definition of brown assets. Non-bank financial institutions (NBFIs); non-financial corporations (NFCs). Sources : SHS-S, OPC titres, ISS-ESG, CSDB, Banque de France calculations

## Cyber risk is on the increase, with cyberattacks becoming more sophisticated and easier to carry out

As in other developed countries, the French financial system is heavily dependent on technology, and this reliance represents one of the main factors of exposure to cyber risk. Technological exposure is described as an attack surface, that is, a set of vulnerabilities that may be exploited to mount a cyberattack. Technological dependence may be assessed by the intensity of adoption and use of online and/or mobile banking and electronic payment (card, credit transfer, direct debit) systems<sup>58</sup>. This heavy reliance increases the possible infection vectors and, consequently, the risk of cyberattacks occurring. BlackBerry's monitoring report on cyber threats, which analyses cyberattacks that were foiled between December 2022 and the end of February 2023,<sup>59</sup> shows that the financial sector was the most targeted sector by cyberattacks in the first quarter of 2023 (34% of attacks), followed by the health sector (14%).

The development of new technologies creates the risk of an increase in cyberattacks and also of more sophisticated attacks. ChatGPT, a conversation agent based on generative artificial intelligence that had around 186 million unique users in March 2023,<sup>60</sup> could be used to carry out cyberattacks. ChatGPT facilitates cyberattacks through phishing and attacks using malicious code. In addition, some users are careless when using ChatGPT and share sensitive company data.<sup>61</sup>

To date, no major cyberattack targeting the French financial system has been recorded. However the recent attack on ION Group illustrated the risk linked to using third-party service providers, including IT providers, and the potential systemic impact for the financial system. The Cleared Derivatives division of ION Group, an Irish provider of trading software for the financial sector, was hit in late January 2023 by a ransomware cyberattack

<sup>58</sup> This indicator of the technological dependence of a country's financial sector is created based on the share of the population that uses digital payments, which is converted into a z-score using the method established by the Carnegie Endowment for International Peace ([Carnegie Endowment - Cyber Risk Scenarios, the Financial System, and Systemic Risk Assessment - 2019](#))

<sup>59</sup> [Global Threat Intelligence Report here](#)

<sup>60</sup> [Presque 200 millions d'utilisateurs pour ChatGPT | Les Echos](#)

<sup>61</sup> [3.1% of workers have pasted confidential company data into ChatGPT - Cyberhaven 21/03/2023](#)

that disrupted activities on derivatives markets. However the attack's effects on the sector were mild, since the company responded immediately and market participants put workarounds in place to continue doing business.

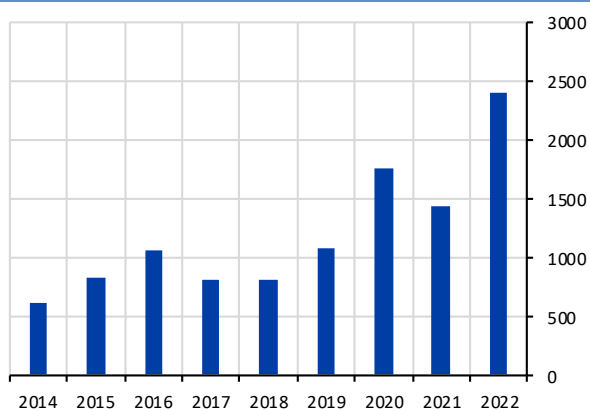
**Investments in the cybersecurity of the French financial system have enabled the sector to increase its resilience to cyber risk.** In 2022, the BIS<sup>62</sup> drew attention to the fact that the costs of cyberattacks are inversely proportional to IT spending, suggesting that investing in IT defences lowers the cost of cyberattacks. The financial sector is the sector that invests the most in cybersecurity every year.<sup>63</sup> Cybersecurity investments are rising because security tools need to adapt to a changing and increasingly sophisticated threat. The global cybersecurity index (GCI)<sup>64</sup> shows that the French financial sector is among those that invest the most to protect themselves against cyberattacks.<sup>65</sup>

**The intensification of cyber risk calls for continued preparations by the financial sector to manage a cyber incident and its impacts, with a view to boosting collective cyber resilience.** The crisis simulation exercises organised annually by Paris Resilience Group have been based since 2018 around a severe but plausible cyber crisis scenario. They aim, on the one hand, to test the capacity of each entity to keep its critical services operating, and, on the other, to strengthen the response and coordination capacity of the financial sector as a whole. Year in, year out, these exercises confirm the Paris financial centre's high cyber maturity and help to identify future avenues to further improve the overall risk management system.

**At European level, the DORA Regulation, which is slated to come into application in January 2025, significantly strengthens the prudential framework** applicable to financial sector companies (excluding payment systems)<sup>66</sup> in terms of IT risk. It notably requires all entities to implement a digital operational resilience testing policy. DORA also sets rules on performing threat-led penetration tests (TLPTs) for critical systems. DORA's TLPT requirements may be supplemented on a voluntary basis by adopting the TIBER-EU European framework.<sup>67</sup>

Chart 1.68: Number of attacks identified by the University of Maryland based on data available on the web

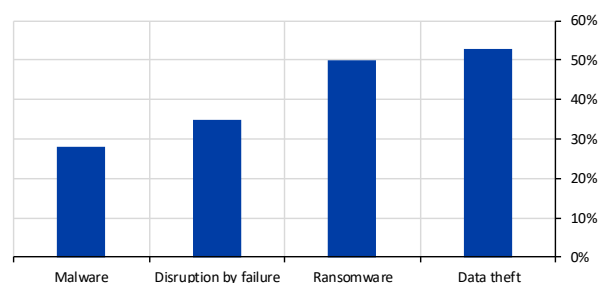
x : time / y : number of identified cyberattacks



Note : Cyberattack data come from the web and are enhanced by CISSM. They are not exhaustive but present a general trend.  
Source : CISSM University of Maryland

Chart 1.6952: Types of attacks that companies fear most

x : time / y : percentage



Note : The percentage shows the share of respondents that fear of this type of attack; four most common responses out of 925 respondents.  
Source : Allianz Risk Barometer 2023

<sup>62</sup> BIS - Aldasoro, I., L. Gambacorta, P. Giudici, and T. Leach. 2022. The drivers of cyber risk.

<sup>63</sup> Mapping IT Spending Across Industry Classifications: An Open Source Dataset, Kennedy and Stratopoulos 2017

<sup>64</sup> ITU - Global Cybersecurity Index 2017

<sup>65</sup> This index, which measures the commitment of different countries to cybersecurity, is calculated using quantitative and qualitative data. It is estimated using five pillars: legal, technical, organisational, capacity building and cooperation. A score is calculated for each one.

<sup>66</sup> Systemically important payment systems are already covered by the SIPS2 Regulation of November 2017 and the Eurosystem's Cyber Resilience Oversight Expectations (CROE) published in December 2018.

<sup>67</sup> Threat Intelligence-based Ethical Red Teaming (TIBER-EU framework)

## 2 Thematic chapter: Financing conditions of French companies

An increase in interest rates affects the financing decisions of companies in different ways, notably via a voluntary (or forced) decision to either scale back use of debt (reduce cash holdings, put off investments), or to continue use of more costly external funding.

In the first quarter of 2023, despite the historically swift pace of rate hikes by the ECB since July 2022, financing of French NFCs continued to increase on a 12-month basis, although it did slow down. As a result, French NFC debt and treasury buffers remained at historically elevated levels compared with the pre-Covid period.

French NFCs can finance themselves at lower rates than companies in the rest of the euro area, owing to the more gradual increase in the cost of new bank loans. This greater inertia in bank interest rates is especially beneficial to large companies, however, which have stepped up their relative use of bank credit compared with bond financing. French NFCs also benefit from a debt structure featuring fixed rates and long maturities that smooths the effects of higher interest rates.

In addition, the company failure rate has continued to normalise since November 2021. While the total number of failures remain lower than the pre-pandemic level, it is rising more rapidly for SMEs and large companies than among microcompanies.

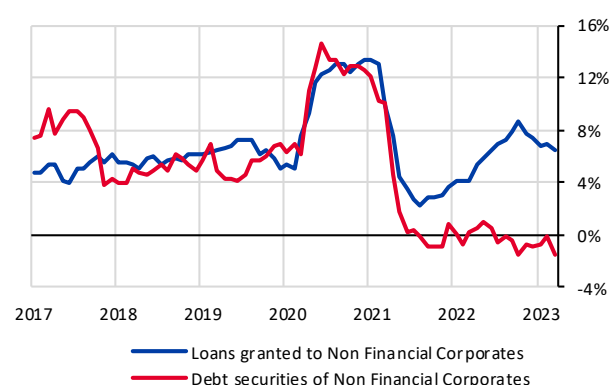
### 2.1 Financing for French corporations continues to grow, but at a slower pace since late 2022

**Against a backdrop of rising interest rates, business financing remains brisk in France, although trends for market financing and bank financing have diverged** (see Chart 2.1). Outstanding stocks of debt securities are down 1.5% over 12 months, while bank credit continues to grow, despite slowing slightly since October 2022 (EUR 80.5 billion increase, or 6.4% in March 2023).

**Contrasting dynamics for bank and market financing volumes are attributable to the change in funding costs: the increase in interest rates had a stronger and faster impact on markets than on bank credit.** The switch began in the first quarter of 2022, as the cost of market financing (4.13% in March 2023 compared with 0.89% in December 2021, see Chart 2.2) became more expensive than bank financing (3.52% for outstanding greater than EUR 1 million in March 2023 compared with 1.38% in December 2021).<sup>68</sup> Bank liabilities, which include non-interest-bearing deposits partly account for this divergence between market and bank rates. Recent months have thus seen some financial reintermediation into bank credit.

Chart 2.1: Annual nominal year-on-year change in outstanding debt stocks

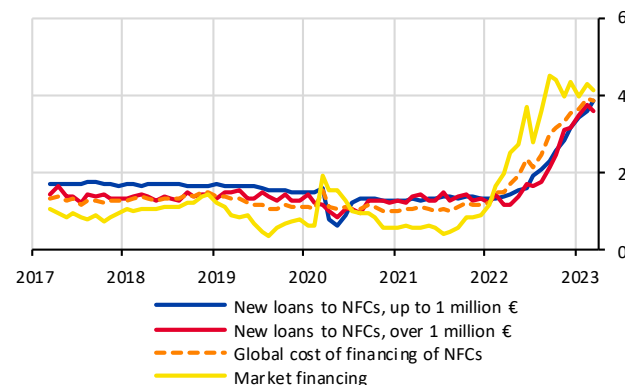
x : year / y : percentage



Source : Banque de France

Chart 2.2: Cost by funding source

x : time / y : percentage



Source : Banque de France

**French NFCs enjoy lower bank lending rates than counterparts elsewhere in the European Union.** The average interest rate on bank loans of more than EUR 1 million in March 2023 was 4.6% in Italy, 4.43% in Spain and 3.91%

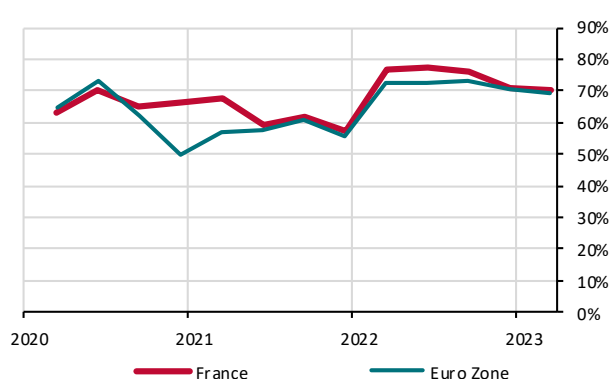
<sup>68</sup> Business financing - March 2023 | Banque de France (banque-france.fr)

in Germany, compared with 3.52% in France.<sup>69</sup> Based on default probabilities reported by lending banks, the share of new bank loans to French NFCs whose average default probability corresponds to investment grade is lower in France than in the rest of the euro area (see Chart 2.4).

**Market funding conditions are more homogeneous within the euro area.** The yield average bond yield of French investment grade (IG) NFC debt was 4.13% in March 2023, against 4.11% for German NFCs, 4.32% for Spanish NFCs, and 4.35% for Italian NFCs. In order to 2022, the long-term market debt of French NFCs was held at 56% by non-residents. These foreign holders are mainly residents of the euro zone (58%), and, to a lesser extent of the United States (18%) and the United Kingdom (12%). The market for commercial papers issued by French NFCs (EUR 56 billion in March 2023) is more domestic (64% of holders are French money market funds). The credit quality of the debt issued by French NFCs remains comparable to that from the rest of the euro zone, with 70% investment grade issues in Q1 2023 (see Chart 2.3).

Chart 2.3: Share of IG market debt issues (BBB included)

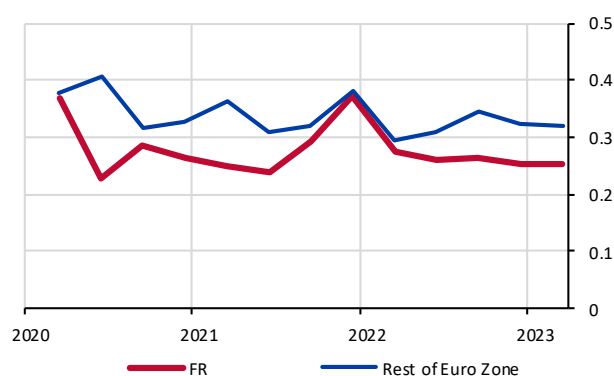
x : time / y : percentage



Sources : CSDB, Banque de France calculations

Chart 2.4: Share of new bank loans whose probability of default corresponds to IG (BBB included)

x : time / y : percentage



Scope : Credit lines, term loans and revolving credits taken out by French (European) NFCs from banks. IG corresponds to a credit quality step of three or lower, i.e. a probability of default of less than 0.4%, as per the Eurosystem credit assessment framework.<sup>70</sup> On average, issues without an associated probability of default accounted for 14.5% of French NFC issues and 38.5% of European NFC issues.<sup>71</sup>  
Sources : AnaCredit, Banque de France calculations

**The increase in NFC funding costs is more measured in real terms, when inflation is taken into account.** As inflation erodes the real value of the amounts exchanged, the real rate is measured as the nominal rate less the rate of inflation expected over the decision horizon. For a savings or investment decision, it is ultimately the real rate that counts: an elevated nominal rate, if accompanied by high inflation, results in a lower cost of credit.<sup>72</sup> However, the increase in nominal interest rates, combined with slower inflation, has meant that real interest rates have gone up for NFCs. In fact, these rates have been positive since January 2023 (see Chart 2.5).

**Nominal growth in the stock of bank credit also needs to be seen in the context of the increase in prices:** corrected for inflation,<sup>73</sup> real growth in credit was more moderate<sup>73</sup> while still remaining positive (0.4% in March 2023, see Chart 2.6).

**Slower growth in the stock of debt paved the way for a small improvement in the debt ratio of NFCs, which also benefited from an increase in value added.** The increase in financing volumes was smaller than the increase in value added, as revealed by a review of 1.4 million 2022 tax returns in the FIBEN database in early June 2023, which showed a moderate decline in the debt/VA ratio in 2022 relative to 2021. Although the ratio did not return

<sup>69</sup> MFI Interest Rate Statistics, [Loans - Interest rates - Bank interest rates - ECB Statistical Data Warehouse \(europa.eu\)](#)

<sup>70</sup> [Eurosystem credit assessment framework \(ECAAF\) \(europa.eu\)](#)

<sup>71</sup> Probabilities of default are provided by banks' internal models, in accordance with the internal ratings-based approach. [AnaCredit Reporting Manual Part II – Datasets and data attributes, second edition \(europa.eu\)](#)

<sup>72</sup> For a discussion on the difference between real and nominal rates, see Box 1 of the December 2022 Risk Assessment.

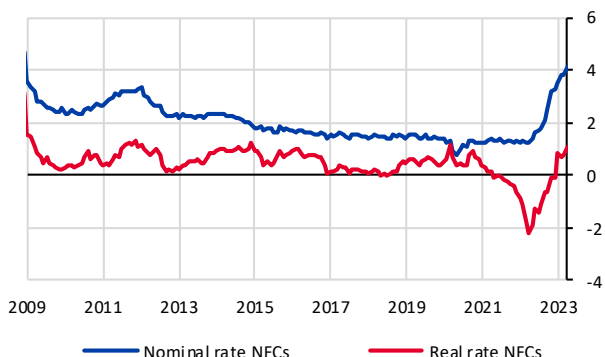
[https://publications.banque-france.fr/sites/default/files/medias/documents/2022\\_s2\\_ers\\_final.pdf#page=4](https://publications.banque-france.fr/sites/default/files/medias/documents/2022_s2_ers_final.pdf#page=4)

<sup>73</sup> Using the GDP deflator, see [Gross domestic product balance | INSEE](#)

to 2019 levels, the decrease was apparent for microcompanies, SMEs excluding microcompanies and mid-tier firms.

Chart 2.5: Real interest rate on loans to French NFCs

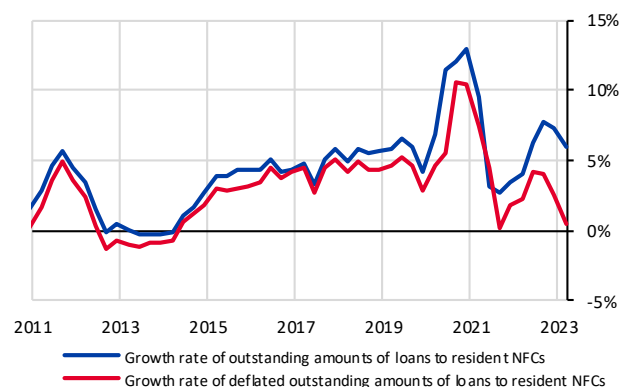
x : time / y : EUR billion



Note: The real interest rate is obtained by deflating the nominal interest rate using five-year inflation expectations  
Sources: SDW MFI Interest Rate Statistics (MIR), Eikon

Chart 2.6: Annual real year-on-year change in outstanding stocks of bank credit

x : time / y : percentage



Source : Banque de France data (webstat) for outstanding loans. INSEE data for GDP deflator

## 2.2 Tighter financing conditions have a greater impact on small and medium-sized companies

**Growth in bank credit differs by company size, with large companies seeing a bigger increase than SMEs and mid-tier firms.** In March 2023, lending to large companies increased by 13.2% year-on-year (see Table 2.1), compared with 5.6% and 5.0% respectively for mid-tier firms and SMEs.<sup>74</sup> In addition, SMEs have little or no access to external non-bank financing, with bank loans accounting for 85% of their debt.<sup>75</sup> By comparison, bonds make up 70% of the debt of large companies.<sup>76</sup> Large companies are thus able to diversify their funding sources. Furthermore, the trend in outstanding credit to large companies captures a variety of situations, since some large companies opt to deleverage.

**SMEs are more affected than large firms by the increase in bank lending rates.** Interest rate spreads between SMEs and large companies widened from 17 bps in December 2021 to 151 bps in March 2023 (see Chart 2.7).

**Large companies also continue to benefit from negative real rates, unlike SMEs and mid-tier firms, which have to contend with positive real interest rates.** Inflation expectations on a 3-5 year horizon among business leaders stood at 3% in March 2023, whereas large companies could finance themselves at 2.57%, compared with 3.36% for SMEs not including VSEs and 3.12% for mid-tier firms in March 2023.

<sup>74</sup> [Financing of enterprises - March 2023 | Banque de France \(banque-france.fr\)](#)

<sup>75</sup> [Le financement des entreprises face aux crises | Banque de France \(banque-france.fr\)](#)

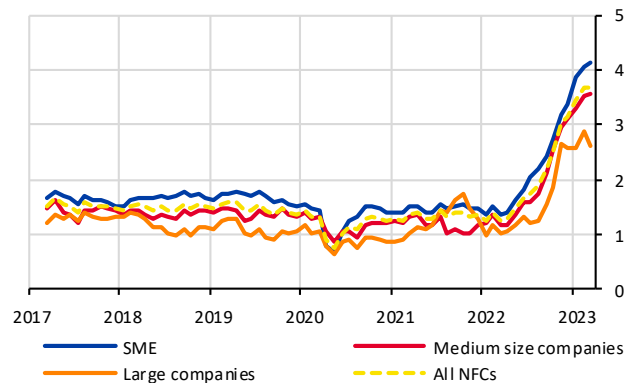
<sup>76</sup> Cf. Lé, Mathias and Vinas, Frédéric (2022). Firm Listing Status, Firm Size, and the Financing of Investment, The Review of Corporate Finance Studies, 2022, cfac038, <https://doi.org/10.1093/rcfs/cfac038>

Table 2.1: Interest rate, by company size  
Amounts in EUR billion and percentage

	Outstandings (in bns)	Annual growth rate (%)			Costs in % (annual interest rate)		
		March 23	Jan-23	Feb-23	Mar-23	Jan 23	Feb 23
Total NFCs	1330,7	6,8	6,9	6,4	3,45	3,68	3,68
inc. SME	574	5,5	5,3	5	3,85	4,07	4,12
inc. Intermedi ate-sized business	353,1	6,3	6,5	5,6	3,28	3,51	3,58
inc. large companies	196,8	12,2	13	13,2	2,59	2,88	2,61

Source : Banque de France

Chart 2.7: Interest rate, by company size  
x : time / y : percentage



Source : Banque de France

### 2.3 The interest burden of French NFCs is increasing gradually thanks to their favourable debt structure

**French NFCs are protected against a sudden interest rate shock by the structure of their debt.** Higher interest rates affect the financial expenses of companies through three channels: (i) Existing floating rate debt, (ii) fixed rate debt that is coming due soon and needs to be rolled over, and (iii) new borrowing requirements. The first two categories, namely floating rate debt and fixed rate debt with a residual maturity of less than one year, made up approximately 25% of business debt at end-2022. The third channel, which is subject to greater uncertainty, will depend on growth in demand for loans and the change in credit standards in response to higher interest rates. In the first quarter of 2023, the share of companies that applied for new credit was stable, and these requests were comfortably accommodated.<sup>77</sup> Consequently, from an aggregate point of view, the financial expenses borne by companies should increase moderately in 2023. However, the smallest companies, which rely on more expensive bank credit, are being closely monitored.

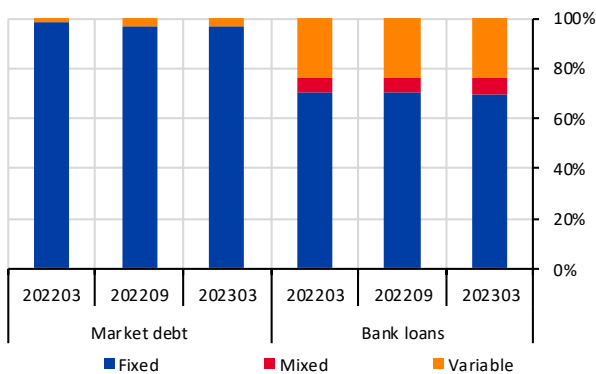
**The debt structure of French NFCs, which is mostly made up of fixed rate loans at long maturities, is relatively stable.** Floating rate debt makes up a tiny share of the outstanding debt stock (24% of outstanding bank loans, 3% of market debt in March 2023, see Chart 2.8). Moreover the share is much smaller than it is elsewhere in the euro area (46% of credit in March 2023). Within new bank lending flows, however, the share of floating rate loans has risen and they now account for 41% of new loans, up from 29% in March 2022. The debt of French NFCs also remains focused on long maturities (55% of outstanding bank loans and 43% of market debt have a residual maturity of 5 years or more, see Chart 2.9). The average interest rate on outstanding debt is therefore increasing gradually and remains considerably lower than the cost of new borrowing (2.19% for the outstanding stock of credit maturing in over five years in March 2023, compared with 3.68% for new loans).

<sup>77</sup> Access to bank financing for companies | Banque de France ([banque-france.fr](https://www.banque-france.fr))



Chart 2.8: Structure by rate type of outstanding debt, French NFCs

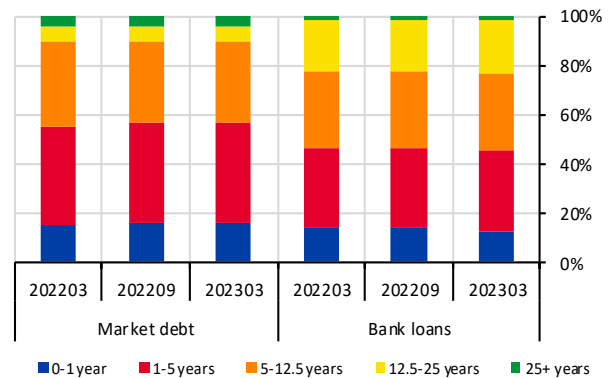
x : time / y : percentage



Sources : AnaCredit, SDW Securities Issues Statistics (CSEC), Banque de France calculations

Chart 2.9: Distribution of outstanding debt by residual maturity bucket, French NFCs

x : time / y : percentage



Sources : AnaCredit, CSDB, Banque de France calculations

### Box 2.1: Pace of interest rate repricing on bank loans to French NFCs.

The sensitivity of NFC loans to interest rate risk depends on a number of parameters: fixing interest rates (fixed or floating), the maturity, interest rate renegotiation dates and the pace of amortised principal<sup>78</sup>. By aggregating these parameters, a measure of the sensitivity of NFC loans can be constructed.

The repricing cash flows<sup>79</sup> indicator has two key benefits : for floating rate loans, it provides principal amount at the first contractual reset date; for fixed-rate<sup>80</sup> loans, it estimates the sensitivity of amortization to interest-rate risk, based on the assumption that repaid flows are rolled over and replaced by loans based on new rates.<sup>81</sup>

This indicator is obtained by summing the principal and interest payments for each future maturity, based on the repayment dates or, for variable-rate loans, the dates when the principal is updated to reflect the new interest rate. The cash flows repaid (or revalued each year) are then computed as a proportion of the total cash flows on the loan at a reference date to obtain a ratio.

Using the AnaCredit lending database, it is possible to construct this measure for each loan granted<sup>82</sup> by a French bank to a resident NFC and present an aggregate view covering all French banks. The data reveals a disparity depending on the type of loan: for fixed-rate loans, 26% of outstanding loans are revalued within the year (see graph 2.10); for variable-rate loans, annual revaluation concerns almost two-thirds of outstanding loans (62%, see graph 2.11). These percentages are compared with the residual maturity of the portfolios considered: for fixed-rate loans, 3% of loans have a residual maturity of less than one year (see graph 2.10); for variable-rate loans, this percentage rises to 19% (see graph 2.11). **According to this measure, the average interest rate repricing period for the stock of fixed rate loans to French NFCs is shorter than the average maturity of their loans** (see Chart 2.10).

This is chiefly because the structure of loan amortisation is factored in. Accordingly, the transmission of interest rate increases does not depend solely on whether rates are fixed or floating, but also on the amortisation schedule and the frequency of interest payments. Given that 75% of loans to French NFCs had a fixed amortisation schedule<sup>83</sup> in March 2023, the amount of principal repaid and the cumulative maturity of NFCs decreases over time. Floating rate loans have shorter residual maturities than fixed rate loans. Their repricing cash flow profile does not differ greatly from their residual maturity profile in this case (see Chart 2.11). Finally,

<sup>78</sup> « principal » is sometimes replaced by the term « amortisation ». It corresponds to the amount of capital repaid at each credit maturity date.

<sup>79</sup> This measure uses the concept of repricing cash flows defined by the Basel Committee in its standard on interest rate risk in banking book (IRRBB), [Interest rate risk in banking book - BIS](#).

<sup>80</sup> For fixed-rate loans, it's common to distinguish between "traditional" fixed-amortization loans, where the borrower regularly repays part of the principal plus interest, and "bullet" amortization loans, where the borrower pays interest only for the duration of the loan and repays the entire principal at the final maturity date (no intermediate repayment of principal).

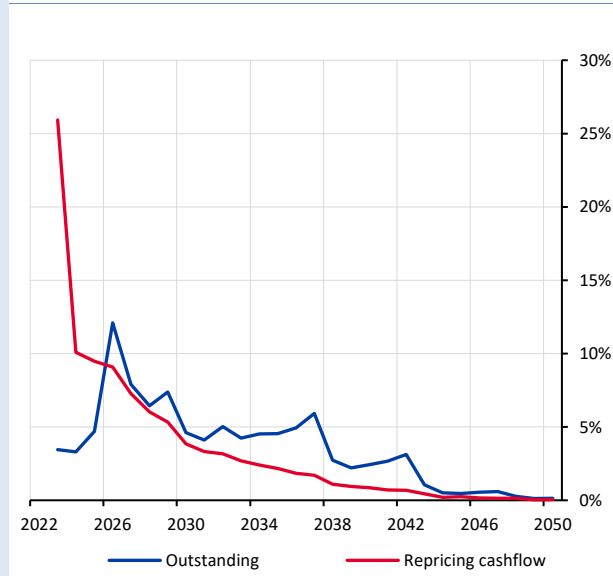
<sup>81</sup> In March 2023, 68% of loans by French banks to French NFCs were at fixed rates, and 32% were at floating rates.

<sup>82</sup> The main types of instruments are credit lines, term loans and revolving loans. These make up over 85% of French bank lending to French companies.

<sup>83</sup> Fixed - the same amount of principal is repaid over each amortisation period.

the average aggregate maturity of repricing cash flows is 4.9 and 2.3 years for fixed rate and floating rate loans respectively. This profile has been stable over the last five years.

Chart 2.10: Distribution of outstanding amounts by residual maturity and repricing cash flows, fixed rate loans  
x : time / y : percentage

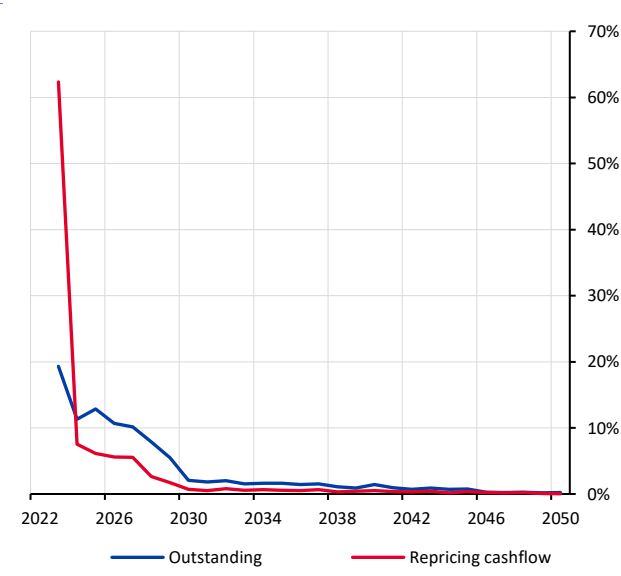


Note : The red line shows the evolution of the repricing cashflows indicator. The blue line represents the breakdown of the total fixed-rate loan portfolio by residual maturity. According to the graph, for example, 12% of loans mature in 2026.

Scope : France

Sources : AnaCredit, Banque de France calculations

Chart 2.11: Distribution of outstanding amounts by residual maturity and repricing cash flows, floating rate loans  
x : time / y : percentage



Note : The red line shows the evolution of the repricing cashflows indicator. The blue line represents the breakdown of the total outstanding variable-rate loan portfolio by residual maturity. According to the graph, 5% of loans mature in 2028.

Variable-rate loans include loans with mixed interest rates

Scope : France

Sources : AnaCredit, Banque de France calculations

## 2.4 Despite tighter financing conditions, investment loans continue to grow briskly and corporate cash balances remain at a high level

**Growth in investment loans continues to outpace economic activity.** At end-March 2023, the year-on-year change in the outstanding stock of investment loans showed sustained growth of 7.2%, considerably exceeding the GDP growth forecast of 0.6% for 2023.

**Meanwhile, cash loans remained at historically high levels in 2022 compared with historical long-term averages.** Growth in cash loans is moderating, but the outstanding stock was still equivalent to approximately 13% of GDP at the end of 2022, compared with an average of 9% over the 2006-2019 period (see Chart 2.12). Companies therefore maintain solid cash positions, thanks in particular to the State-guaranteed loans (PGE scheme) provided during the health crisis.<sup>84</sup> Outstanding cash, which was down slightly in early 2023, remains well above end-2019 levels (2.2% decrease in January 2023 to EUR 892 billion, not linked to a PGE effect, compared with EUR 689 billion at end-2019).<sup>85</sup> Cash is made up of 6.4% money market CIS units, 68.8% sight deposits and 24.8% interest-bearing deposits. The shares of the first two components have shrunk slightly since end-2021, while that of interest-bearing deposits has increased.

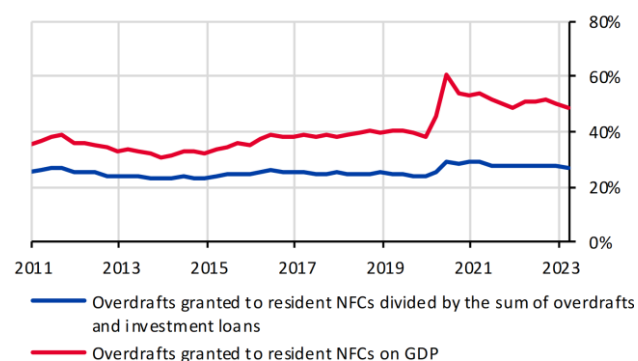
**Companies with better credit quality are repaying PGE loans faster, as forecast.** PGE State-guaranteed loans worth a total EUR 143 billion were granted to 685,000 legal units between March 2020 and January 2023. By February 2023, around 36% of these loans had already been repaid. The outstanding stock of PGE loans is therefore decreasing gradually, with the quality of the remaining loans tending to decrease, as expected. This is

<sup>84</sup> See Vinas, Frédéric (2020). "Outstanding loans to enterprises increased sharply in France in the first half of 2020", *Bulletin de la Banque de France*, Banque de France, issue 232.

<sup>85</sup> [situation-financiere-menages-snf\\_juin-2022\\_v3\\_0.pdf \(banque-france.fr\)](#)

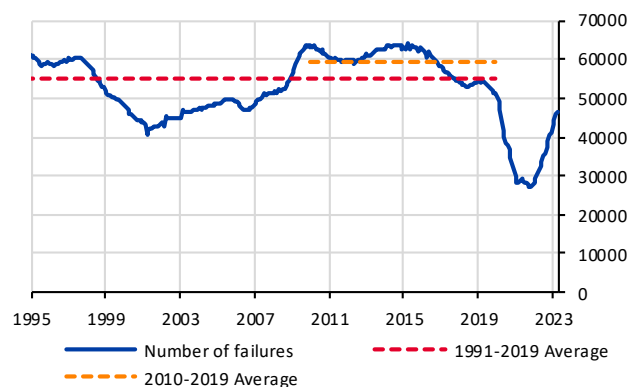
because companies in better shape repay their loans first, either because they no longer need them or to demonstrate their healthy position to external counterparties. However, the estimated losses for the State on PGE loans, prepared for the Treasury, remain unchanged at 4.6%.

Chart 2.12: Share of cash loans to French NFCs relative to total credit and GDP  
x : time / y : percentage



Source : Banque de France

Chart 2.13: Number of failures (12-month cumulative)  
x : time / y : total number of failures



Source : Banque de France

## 2.5 Business failures continue to recover

**Business failures fell sharply following the outbreak of the health crisis** (see Chart 2.13), as the government deployed measures to support cash balances, including the PGE scheme, but also solidarity funds and the pause on payments to URSSAF, the social security and employment agency network. These support measures enabled many companies to avoid defaulting on payments as activity underwent a massive contraction.

**The number of failures began growing in November 2021**, notably fuelled by the gradual phase out of public support measures linked to Covid-19, against the backdrop of Russia's invasion of Ukraine. At the end of May 2023, the 12-month cumulative number of failures continued to increase, rising to 47,231 (see Table 2.2), but remains well below the pre-pandemic average of 59,300 failures over the 2011 to 2019 period.<sup>86</sup>

Table 2.2: Number of failures over 12 months, by size at end-May

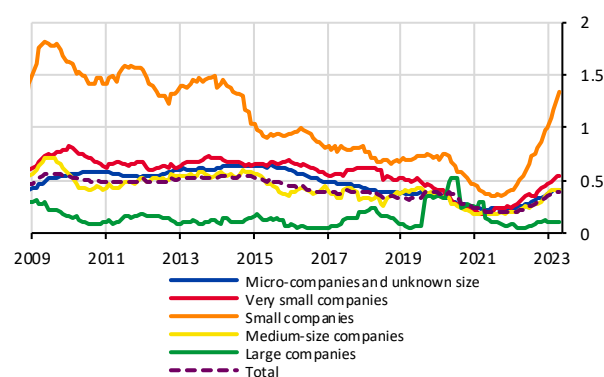
Number of failures

	2019	May 22	May 23 prov	May 23/ May 22	May 23/ May 2019
SMEs comprising	51119	32378	47190	45,7%	-7,7%
microenterprise and intermediate size	48747	30398	43609	43,5%	-10,5%
very small businesses	1478	1237	2208	78,5%	49,4%
small businesses	650	550	1041	89,3%	60,2%
mid-sized companies	244	193	332	72,0%	36,1%
intermediate-sized companies	26	23	41	78,3%	57,7%
Overall	51145	32401	47231	45,8%	-7,7%

Source : Banque de France.

Chart 2.14: Share of NFC failures in outstanding credit

x : time / y : Number of failures (12-month cumulative), Dec. 2006 to April 2023 (+ May 2023 provisional)



Source : Banque de France.

<sup>86</sup> Business failures | Banque de France (banque-france.fr)

**However, failure levels are increasing faster among SMEs, mid-tier firms and large companies than among microcompanies, which represents a source of risk for employment and credit quality.** Microcompanies and companies of indeterminate size are alone in keeping failure numbers below pre-pandemic levels. These firms accounted for 92% of failures over the last 12 months. Conversely, among SMEs (excluding microcompanies) and mid-tier firms, failure numbers are well above pre-crisis levels. In this setting, the number of jobs potentially threatened by failures is going up. However, this assessment does not factor in the ability of workers to quickly find a new job in the current low unemployment environment. In addition, the share of outstanding credit attributable to failing companies is increasing (see Chart 2.14 and also part 1.2 of this report), particularly among smaller companies and to a lesser extent among very small enterprises. This trend is attributable not only to a volume effect but also to the increase in average outstandings attributable to these companies relative to non-failing companies, and is being monitored specifically.

### 3 Thematic chapter: Commercial real estate

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**The commercial real estate sector is usually defined as all real estate assets (business premises but also housing) owned by legal entities.** These assets may be occupied by their owners in order to carry on their business activities or rented out by real estate professionals or real estate companies (*sociétés civiles immobilières* – SCIs) to private individuals or legal entities. The latter is referred to as income-producing real estate and was worth an estimated EUR 482 billion in December 2022. The main participants on the commercial real estate market are companies from the real estate sector, companies from outside the real estate sector that use real estate for conducting their business, and real estate investment funds. The real estate assets of French corporations were worth EUR 988 billion in 2021, while the gross assets of French real estate funds were worth EUR 314 billion in December 2022. The footprint of foreign entities on the French market is harder to quantify.

**Commercial real estate is an area that is being monitored by central banks and supervisors, after a decade of strong growth followed by a pronounced slowdown since the Covid-19 crisis,** in connection with structural changes linked to the rise of telework and online commerce. The slowdown could be amplified by monetary policy normalisation, which significantly increases funding costs for market participants owing to their heavy use of debt. In addition, the low liquidity of this asset class, and hence the difficulty in making regular and accurate valuations, exposes financial system participants to a cyclical reversal. Finally, investment funds have become central players in the commercial real estate market over recent years. If faced with liquidity constraints, they could magnify the fall in prices.

**In terms of the consequences for the real economy of a pronounced reversal in the cycle, real estate professionals, who account for a significant share of economic activity in France, could be affected, but all non-financial corporations (NFCs) could potentially be impacted.** A slowdown in construction would hurt the construction sector, which accounted for 6.7% of jobs in France in 2020 and 5.5% of value added in Q4 2022. Falling rental yields would hit companies from the real estate sector, which accounted for 12.8% of the value added of the French economy in Q4 2022. In addition, a valuation correction could affect all companies via the channel of asset quality (real estate assets accounted for 11% of total NFC assets in 2021) and their access to credit. This is due to the fact that, since firms can use real estate assets as collateral, a cyclical reversal could affect their borrowing capacity.

**Given these risks, the European Systemic Risk Board (ESRB) issued a recommendation in December 2022 for national macroprudential authorities.** The recommendation lists the systemic risks linked to commercial real estate, recommends enhanced monitoring of sector vulnerabilities and encourages macroprudential measures (borrower-based measures, capital buffer) to be introduced, where necessary. At this stage, the exposures of French financial institutions to a valuation reversal remain limited. Bank exposures to commercial real estate accounted for a small portion of their total assets at end-2022 (3.3%). Insurers are more exposed (8.4% of assets at end-2022, including indirect exposures via real estate funds), but their exposure has remained stable over time. Investment funds other than real estate funds also have relatively low exposure. However, this asset class is a significant channel for the transmission and amplification of shocks that could affect the French financial system. Demanding valuation levels relative to other euro area countries mean that commercial real estate represents a structural vulnerability that must be monitored. A continued decline in prices would chiefly impact real estate funds, depending on their redemption policies and available liquidity management tools, along with corporate borrowing capacity.

#### 3.1 The commercial real estate market is entering a downswing, driven by cyclical and structural factors

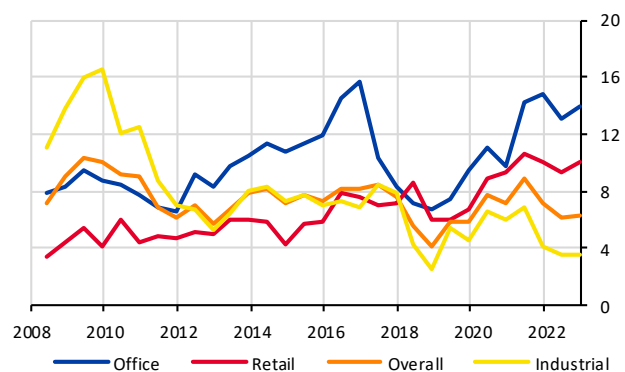
**While transaction volumes in 2022 were slightly down (4%) relative to the ten-year average, the sharp slowdown in the fourth quarter was unprecedented.** As more and more people work remotely, the annual decrease was primarily driven by the office sector (down 20% relative to the average over the 2012-2022 period),

principally in the Île-de-France region (including a 68% fall for the La Défense business district). Conversely, despite the rise of online commerce, the retail sector recorded significant growth in transaction volumes in 2022, reporting a 15% increase relative to the historically low average over the 2012-2022 period. Finally, investment in the logistic and industrial sector was down 12.5% compared with 2021, after the extremely brisk growth of recent years.<sup>87</sup>

**Buy-to-let investment lost some of its appeal on certain market segments, with rising vacancy rates and decreasing rental yields.** In fact, the vacancy rate was up across all sectors in France (office, retail and warehouses). It increased particularly strongly for offices, consistent with a trend that began in 2020, rising from 7% to 14% in the space of three years (see Chart 3.1). This development is more significant than in other European countries (see Figure 3.2). Rental yields, measured as the ratio between rental income and purchase value, have fallen across all market segments since 2013 owing to the continued increase in prices. However, they held steady over 2022 between 1.7% and 1.9% (see Chart 3.3), in line with the European average (see Chart 3.4). Likewise, the risk premium, which compares rental yield to the yield on ten-year government bonds, has declined since 2022 but remains positive.<sup>88</sup> France is in line with the European average, unlike Italy for example, where the spread is virtually zero.

Chart 3.1: Vacancy rate in France, by segment

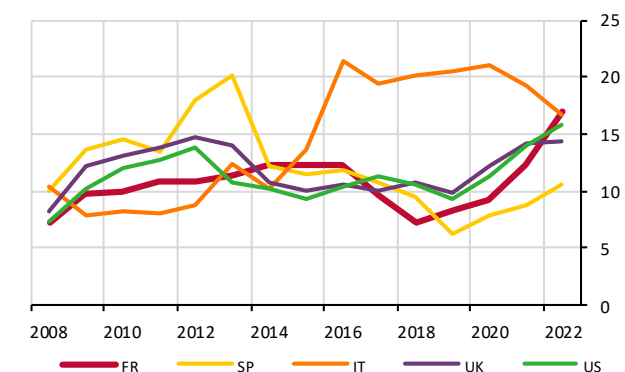
x : time / y : vacancy rate, percentage



Source : MSCI

Chart 3.2: Office vacancy rate, by country

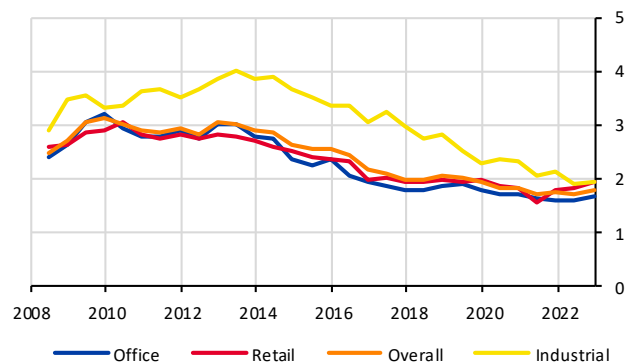
x : time / y : vacancy rate, percentage



Source : MSCI

Chart 3.3: Rental yield in France, by segment

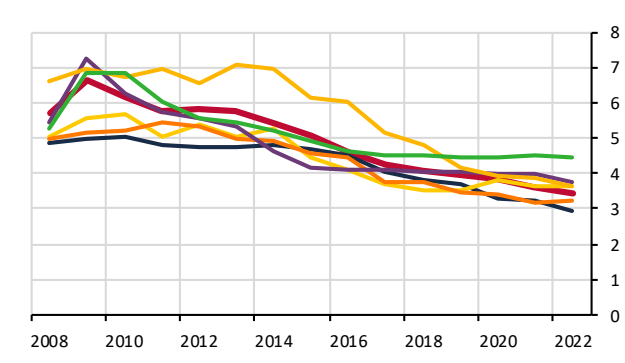
x : time / y : rental yield, as a percentage



Source : MSCI

Chart 3.4: Office rental yield, by country

x : time / y : rental yield, as a percentage



Source : MSCI

**As transactions slowed, prices dropped steeply, although dynamics varied across sectors.** In the fourth quarter of 2022, retail saw a smaller decline (1.6% year-on-year) than offices, which were down 5.3% (see Chart 3.5). However, the reversal for office prices was smaller than in the United Kingdom or in Germany (see Chart 3.7).

<sup>87</sup> Sources: BNP Real Estate, Immostat.

<sup>88</sup> Sources: MSCI and Eurostat.

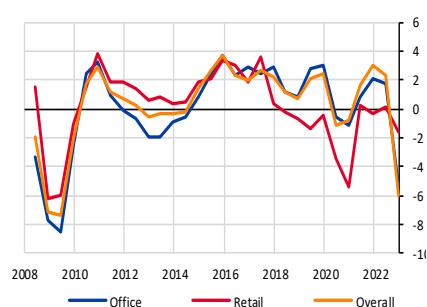


Even so, France's extremely elevated prices raise the question of possible asset overvaluation, with 72% of investors thinking that French commercial real estate is overvalued.<sup>89</sup>

The scale of the correction appears to be specific to commercial real estate, as confirmed by a comparison of the prices of equities issued by companies in the real estate sector with the overall CAC40 index. While the two indices moved in the same direction until the Covid-19 crisis, the stock of real estate companies continued to slide until the end of October 2020. In 2021, the real estate index failed to regain its pre-crisis level, unlike the CAC40. Finally, although many uncertainties persist about the future path of economic conditions, the CAC40 has rebounded sharply since the end of 2022, while the real estate sector has remained depressed (see Chart 3.7). That being said, between January 2022 and May 2023, prices fell less dramatically in France (15%) than in the euro area as a whole (35%).<sup>90</sup> Moreover, the price-to-book ratio of real estate companies, which has been below 0.7 since June 2022, shows no sign of exuberance, suggesting that the Covid crisis drove a sustainable normalisation of prices.

Chart 3.5: Price growth rates in France, by segment

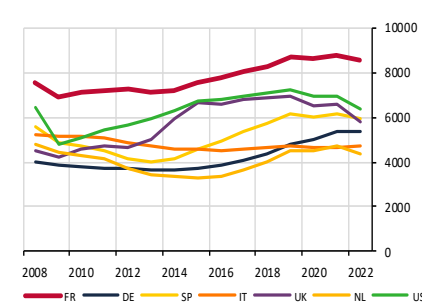
x : time / y : percentage price growth



Source : MSCI

Chart 3.6: Office prices, by country

x : time / y : office prices in EUR/m<sup>2</sup>



Source : MSCI

Chart 3.7: Prices of equities issued by French real estate companies

x : time / y : base 100 index (2018)



Source : Datastream

### 3.2 Financing for commercial real estate market participants remains stable, despite the increase in interest rates and financial sector uncertainties

**The increase in interest rates and investors' hunt for safety might have stoked fears of funding difficulties for commercial real estate market participants, magnifying the fall in prices.** The two main sets of players on the market are companies, which may or may not be from the real estate sector, and real estate investment funds. Companies are particularly exposed to a potential contraction in the supply of bank credit for the purchase of real estate assets or assets backed by real estate assets. Real estate funds are also exposed on the liability side to higher interest rates, owing to their use of leverage. However, the main risk remains the withdrawal of investors, depending on the liquidity of the fund's liabilities.

**Several types of companies take on debt to finance their real estate needs and activities or use real estate as collateral.** Companies from the real estate sector other than SCIs accounted for 8.8% of outstanding NFC debt in Q4 2022 (market debt and bank credit). SCIs, meanwhile, accounted for 12.9% of debt, and bank loans to other NFCs connected with real estate made up 5.4% (see Chart 3.8).

**Despite being heavily indebted, companies in the real estate sector are characterised by several factors that make them resilient to higher interest rates.** Their heavy debt is closely linked to the fact that their business requires major fixed costs to be financed. Thus, the net debt/EBITDA ratio of France's major real estate groups stood at 4.7 in late 2021, compared with 2.0 for France's large groups as a whole.<sup>91</sup> Just 17.2% of outstanding debt securities is rated investment grade excluding BBB, compared with 40.1% for other French NFCs in December

<sup>89</sup> Source: RICS, via ECB.

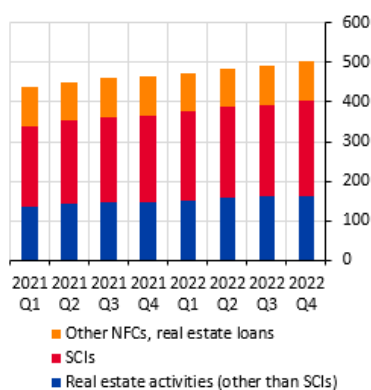
<sup>90</sup> Source: Datastream.

<sup>91</sup> [The financial situation of the major groups recovered in 2021, after the shock of the health crisis | Banque de France \(banque-france.fr\)](https://www.banque-france.fr)

2022.<sup>92</sup> Significant leverage exposes companies from the real estate sector to an increase in funding costs. However, their proportion of bank loans is higher than that of other NFCs: 54.6% of the financial debt of France's major real estate groups is held by banks, compared with 33.9% for French large groups as a whole.<sup>93</sup> Accordingly, as regards debt falling due, they benefited from the fact that bank lending rates rose more gradually than market rates. Furthermore, their debt is mostly characterised by fixed rates (70.5% of outstandings)<sup>94</sup> and long maturities (64.1% of outstandings have maturities of over five years, compared with 38.3% for other NFCs, see Chart 3.9), which insulates these companies in the medium term against a sudden increase in rates. Consequently, the non-performing loan ratio for these companies is stable and below that of other NFCs.

Chart 3.8: Outstanding debt linked to real estate assets

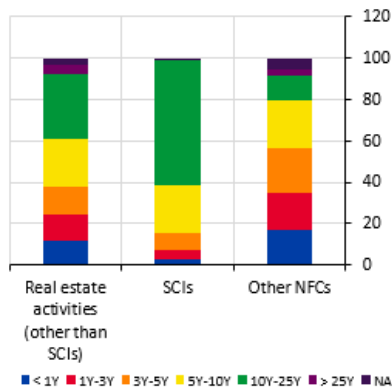
x : time / y : outstanding NFC debt linked to real estate, EUR billion



Sources : AnaCredit, CSDB

Chart 3.9: Residual maturity of debt, by NFC type in Q4 2022

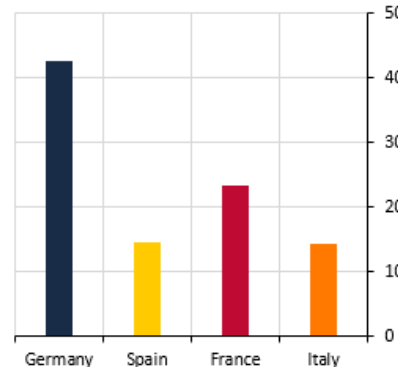
x : NFC type / y : distribution of outstandings by maturity bucket, as a %



Sources : AnaCredit, CSDB

Chart 3.10: Share of bank loans backed by a real estate asset in Q4 2022

x : country / y : share of bank loans to NFCs backed by a real estate asset, as a %



Source : AnaCredit

**A decrease in the value of real estate assets represents another risk for the financing of companies as a whole.** In Q4 2022, 23.4% of bank loans to French NFCs were backed by real estate assets (see Chart 3.10). Falling real estate prices and doubts about the quality of these assets could ultimately put creditors off and thereby affect the borrowing capacity of NFCs, especially companies whose main activity is real estate, which use real estate as collateral more than other companies do.

**These factors could cause the supply of credit to commercial real estate participants to contract.** However, bank credit standards (interest rate, maturity, loan-to-value ratio) remain stable or did not move along a different path compared with other NFCs in 2022. Participants with the highest default probabilities continue to obtain bank financing. However, the share of loans backed by real estate assets in the production of credit to French companies has fallen since the start of 2022 (see Chart 3.12). In addition, the upturn in high yield issues on the bond market since mid-2022 has not been observed for companies from the real estate sector. In fact, their bond market issues have primarily been by top-rated companies (investment grade excluding BBB, whereas the vast majority of the outstanding market debt of real estate companies is rated BBB).

**Finally, while recent turmoil linked to US bank failures may have spurred a withdrawal by financial participants from commercial real estate in the United States, the same mechanism does not appear to have operated in France.** In the United States, 70% of bank loans backed by real estate assets (43% of all loans backed by real estate assets) are held by small, lightly regulated regional banks.<sup>95</sup> Uncertainties concerning them and depositor withdrawals might prompt these banks to turn towards safer assets or to tighten their credit standards, which would particularly affect commercial real estate participants. This is not currently the case in France, where the situation of credit institutions remains stable (see below).

<sup>92</sup> Source: CSDB.

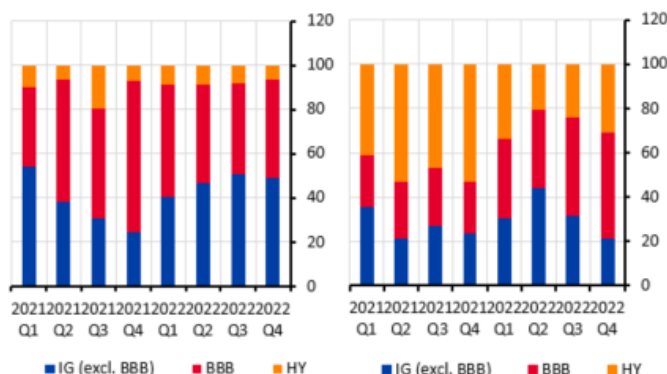
<sup>93</sup> [The financial situation of the major groups recovered in 2021, after the shock of the health crisis | Banque de France \(banque-france.fr\)](https://www.banque-france.fr/en/press-releases/2022/06/2022-06-15-the-financial-situation-of-the-major-groups-recovered-in-2021-after-the-shock-of-the-health-crisis)

<sup>94</sup> Source: CSDB, AnaCredit.

<sup>95</sup> Source: [Financial Stability Review, Fed.](https://www.federalreserve.gov/monetarypolicy/financialstabilityreview/)

Chart 3.11: Distribution of debt security issues, by rating for real estate activities excluding property companies (left) and for other NFCs (right)

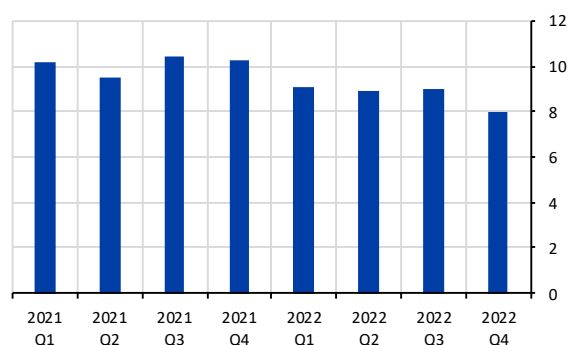
x : time / y : share of debt security issues, by rating, as a percentage



Source : CSDB

Chart 3.12: Change in the share of new loans backed by a real estate asset

x : time / y : share of new loans backed by a real estate asset, as a percentage



Source : AnaCredit

**Real estate investment funds are the other major players on the commercial real estate market and are exposed to liquidity risk to varying degrees.**

Real estate funds are playing a growing role on the commercial real estate market, although levels of involvement vary considerably across jurisdictions (see Chart 3.13). In France, funds include retail and professional real estate collective investment schemes (OPCIs and OPPCIs) as well as real estate investment companies (SCPIs). While the latter invest solely in physical assets, the former follow more diversified strategies. Real estate alternative investment funds also exist. The portfolio composition of such funds is freely determined by the articles of association.<sup>96</sup> Foreign funds may also be active on the French market, although their footprint is hard to assess.<sup>97</sup> Real estate funds are particularly exposed to the vulnerabilities typically associated with investment funds. When real estate prices are under strain, open-end funds, i.e. funds whose units can be bought or sold on request more or less quickly, are exposed to liquidity risk, because while their assets are extremely illiquid,<sup>98</sup> some funds, depending on frequency of valuation, whether notice is required, and the types of liquidity management tools in place, may allow investors to redeem their units quickly. Depending on available sources of liquidity, the resulting distressed sales could amplify the fall in real estate prices and affect residual fund unitholders, who bear the final risk.

**Domestic participants and insurers, whose behaviour is extremely stable, are the investors with the greatest presence in the liabilities of French real estate funds, thereby limiting exposure to liquidity risk.**

Funds are not all equally exposed to liquidity risk, which depends among other things on their investor base. Fears shared by all developed economies about commercial real estate, and the difficulties encountered by some foreign financial intermediaries, create liquidity risk exposure for real estate funds whose investor base is largely international. These funds may then act as channels through which international shocks can spread. Meanwhile, the institutional investor sector may act as a factor of resilience or of risk, since not all investors are equally likely to withdraw. Liabilities of French real estate funds appear to have relatively low exposure to these risks owing to the strong presence of French insurers (approximately 50% of the liabilities of real estate funds according to European securities holding data),<sup>99</sup> whose behaviour is extremely stable<sup>100, 101</sup>. Thus, while investments in real estate funds have slowed since the Covid crisis, after a period of strong growth, French funds were not hit by massive disorderly redemptions in 2022 (see Chart 3.14). That being said, the retail OPCI sector, which has recorded net outflows

<sup>96</sup> Source: ASPIM.

<sup>97</sup> The ESRB estimates that, on average, cross-border participants accounted for 70% of investments in European commercial real estate between 2018 and 2022. This finding, based on private databases, tends to overestimate the role of large transactions. Cf. *Vulnerabilities in the EEA Commercial Real Estate Sector*, ESRB, January 2023, p.40.

<sup>98</sup> Cf. Chapter 2 of the H2 2022 Risk Assessment.

<sup>99</sup> Source: SHS-S.

<sup>100</sup> Cella, Elluil and Gianetti (2013). Investors' Horizons and the Amplification of Market Shocks. *The Review of Financial Studies*, 26(7).

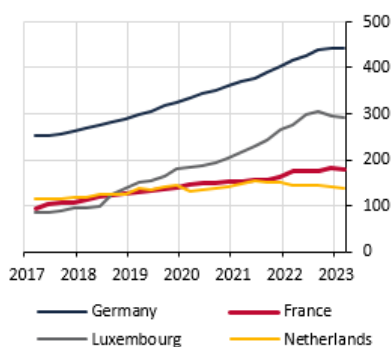
<sup>101</sup> Coppola (2022). In Safe Hands: The Financial and Real Impact of Investor Composition Over the Credit Cycle. R&R, *The Review of Financial Studies*

since Q4 2022,<sup>102</sup> appears to be more exposed to redemption risk and must therefore take care to maintain adequate liquidity management tools.<sup>103</sup>

**While fund units comprise the bulk of their liabilities, real estate funds also finance themselves through debt.** Real estate funds have higher financial leverage than other types of funds,<sup>104</sup> making them more sensitive to the increase in interest rates. However, not all funds are exposed to the same degree. French funds have relatively low financial leverage (see Chart 3.15) and even this has been shrinking slightly in recent years.

Chart 3.13: Assets under management, real estate funds

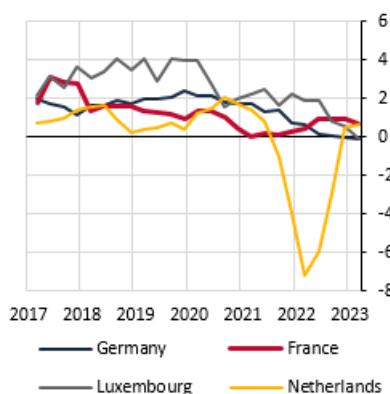
x : time / y : real estate fund assets under management, EUR billion



Sources : ECB, IVF

Chart 3.14: Net flows into/out of real estate funds, 12M moving average

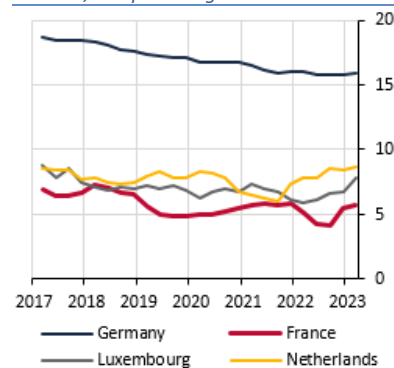
x : time / y : net flows divided by assets under management, as a percentage



Sources : ECB, IVF

Chart 3.15: Financial leverage, real estate funds

x : time / y : share of loans in real estate fund liabilities, as a percentage



Source : ECB, IVF

### 3.3 Financial institutions have relatively little exposure to a reversal in commercial real estate valuations

**In terms of the financial system's exposures to commercial real estate, the impact of the cyclical reversal appears to be limited.** While bank exposures to commercial real estate at end-2022 were higher than in late 2021, they remain modest relative to total assets. Moreover, risk indicators, such as pre-sale ratios, loan-to-value ratios, debt ratios, loan periods and ratios of exposure to doubtful loans, continue to head in the right direction. Meanwhile, insurer exposures to real estate assets are relatively low compared with total assets and have been stable in recent years. Finally, exposures of investment funds other than real estate funds pose limited risk, owing to the size of the market. Banks, and to a lesser extent insurers, are still the main institutions that are indirectly exposed to a reversal in real estate commercial valuations.

#### Bank exposures are on the rise, but the risks remain under control

According to data collected by the ACPR from banks as part of its half-yearly survey, production of loans to real estate professionals<sup>105</sup> was up slightly in 2022 (1.7% increase compared with 2021, see Chart 3.16) on record first-half production (H1 2022), but contracted in the second half by 4.8% compared with H2 2021. The change in the structure of production reflects some market normalisation, as segments hit by the health crisis, such as foreign assets, offices and buy-to-let investments, saw their share of production go up:

- Assets located in France account for the majority of production, but their share declined by 2.7 points relative to 2021 to 62.3%, while the share of assets located internationally, and particularly elsewhere in Europe, saw their share increase by 2.5% to 24.7%;
- Residential real estate financing for real estate professionals continued to dominate, but its share of production decreased by 2.8 pts to 40.6%, while the shares of business premises (+1.4 pts to 9.9%) and

<sup>102</sup> Source: ASPIM.

<sup>103</sup> However, these funds account for a small share of the gross assets of real estate funds at this stage, namely EUR 24 billion, compared with EUR 314 billion for the sector as a whole (Source: ASPIM).

<sup>104</sup> Loans accounted for 5.7% of the liabilities of French real estate funds, compared with 1.17% for all French funds in Q4 2022. Source: ECB, IVF.

<sup>105</sup> The ACPR survey defines real estate professionals as companies that derive the majority of their income, i.e. over 50%, from the sale or rental of real estate assets.

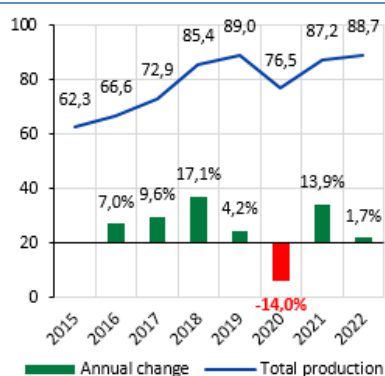
offices (+1.7 pts to 18.8%) increased, although the office segment failed to regain its pre-2020 level (see Chart 3.17);

- Investors (real estate companies, specialised financing and investment funds) continue to dominate and their share of production increased by 0.6 of a point to 53.3%, while the share of developers and estate agents inched down by 0.8 of a point to 45%.

**Overall gross exposure to commercial real estate totalled EUR 267.2 billion at 31 December 2022, up 6.7% on 31 December 2021**, compared with an increase of 9.3% between 31 December 2020 and 31 December 2021. The relatively sustained increase in exposure in 2022 was particularly due to brisk production in H1 2022. In relative terms, these exposures continue to rise as a share of total equity (+3.6 pts to 57.6%) but remain modest relative to total assets (+0.1 of a point to 3.3%) (see Chart 3.18).

Chart 3.16: Credit production for real estate professionals

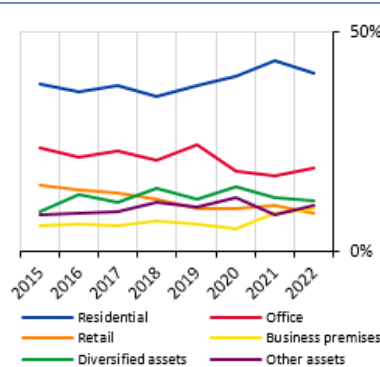
x : time / y : lending to real estate professionals, EUR billion



Source : ACPR

Chart 3.17: Structure of credit production for real estate professionals, by asset type

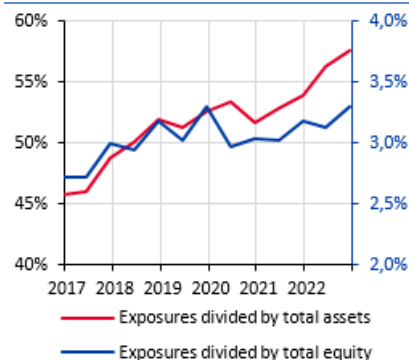
x : time / y : share of asset type relative to total lending to real estate professionals



Source : ACPR

Chart 3.18: Exposure relative to banks' total assets and total equity

x : time / y : total gross exposures divided by banks' total assets (right-hand scale) and total equity (left-hand scale)



Source : ACPR

### Risk indicators continue to head in the right direction:

- The share of transactions with a pre-sale ratio<sup>106</sup> of zero continued to come down from the peak reached in H1 2021 (36%), falling to 23.5% in H2 2022 (see Chart 3.19);
- Loans with a loan-to-value (LTV) ratio of below 60% continue to dominate, at 75.7% in December 2022 (see Chart 3.20);
- Loans with an interest coverage ratio (ICR)<sup>107</sup> of over 2 are in the vast majority, at 79.2% in December 2022;
- Loans with a debt service coverage ratio (DSCR)<sup>108</sup> of over 1.5 are in the majority, at 60.5 % in December 2022;
- Initial maturity increased slightly, by one month to 4.1 years, but remains relatively shorter than the average since 2015, while residual maturity fell slightly, by one month to 3.7 years;
- The non-performing exposures ratio fell to its lowest level, at 2% in December 2022, down 7 bps on December 2021 (see Chart 3.20).

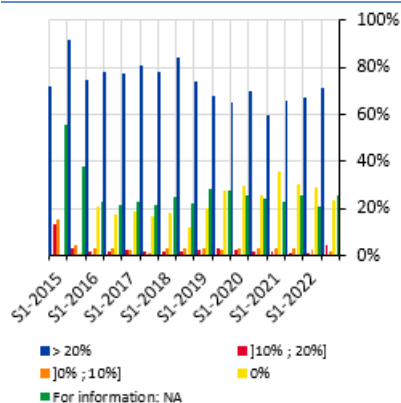
<sup>106</sup> Pre-sale ratio: value of surface area already sold when the loan is granted relative to the total expected revenue for the real estate programme.

<sup>107</sup> Interest coverage ratio (ICR): EBITDA of the borrower divided by annual interest on debt, taking all loan types into account.

<sup>108</sup> Debt service coverage ratio (DSCR): EBITDA divided by annual principal and interest payments, taking all loan types into account.

Chart 3.19: Pre-sale ratio

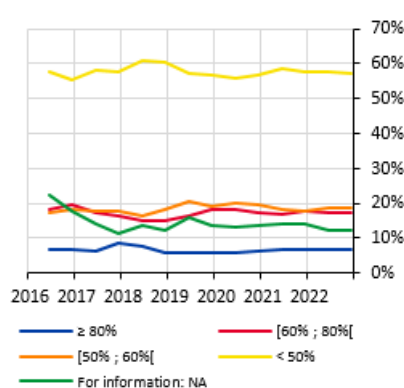
x : time / y : share of pre-sale ratio tranches in total production (loans to special purpose developers and estate agents in France)



Source : ACPR

Chart 3.20: LTV ratio

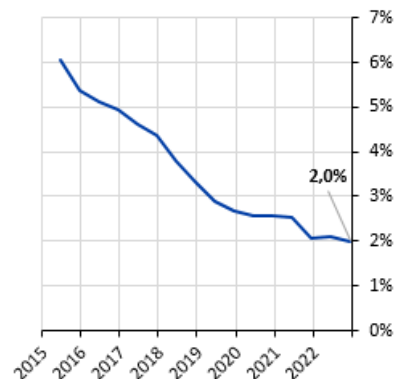
x : time / y : share of LTV tranches in total outstandings



Source : ACPR

Chart 3.21: Gross non-performing and impaired exposures ratio

x : time / y : gross non-performing and impaired exposures ratio



Source : ACPR

## Insurer exposures remain limited and continue to record unrealised capital gains

Insurer exposures to real estate assets are concentrated on the assets side and at end-2022 stood at EUR 208 billion, or 8.4% of the total assets of insurers based in France. The Solvency II solvency capital requirement (SCR) following a real estate shock for entities using the standard formula stood at EUR 15.7 billion at end-2022. This amount can be interpreted as the capital loss that insurers would incur after a 25% fall in the market value of their real estate assets.

These exposures have been relatively stable over time and are concentrated in French office real estate. These assets are mainly held via SCIs (EUR 81 billion) or real estate collective investment schemes (EUR 95 billion),<sup>109</sup> while direct holdings are more marginal and include real estate held for own use in an amount of less than 2%.

Table 3.1: Real estate exposures of the insurance sector

Exposures to the real estate sector, in EUR billion

In EUR billions	Q4 2020	Q4 2021*	2021	Q1 2022*	Q2 2022*	Q3 2022*	Q4 2022*
Real estate	205	210	221	216	218	218	208
of which directly-owned commercial property	35	33	37	34	35	25	24
of which directly-owned residential property	11	9	11	9	9	7	7
of which property shares (including holdings)	57	59	63	60	59	87	81
of which real estate UCIs	100	106	108	111	114	97	95
of which other property	2	2	2	2	2	2	2

\* Quarterly base corresponding to approximately 95% of outstandings of the annual base

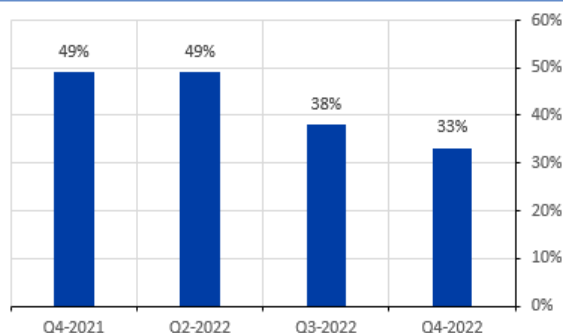
Source : ACPR

Excluding own use, and based on assets for which information is of sufficient quality (about 50% of the scope), we can estimate that assets held by insurers are mainly (two-thirds) intended for office use. Assets for retail use, meanwhile, account for between 10% and 15% of real estate holdings, and residential for between 15% and 25%. The vast majority of these assets are located in France (99.3% of assets held directly and 93% of assets held indirectly). Although the market has contracted, directly held securities, i.e. physical real estate, continue to exhibit significant unrealised capital gains, with the ratio standing at 33% in late 2022.

<sup>109</sup> Including 18.5% and 44.2% respectively of assets covering unit-linked liabilities.



Chart 3.22: Real estate capital gains ratio  
*x : time / y : capital gains ratio, as a percentage*



\* Quarterly base corresponding to approximately 95% of outstandings of the annual base

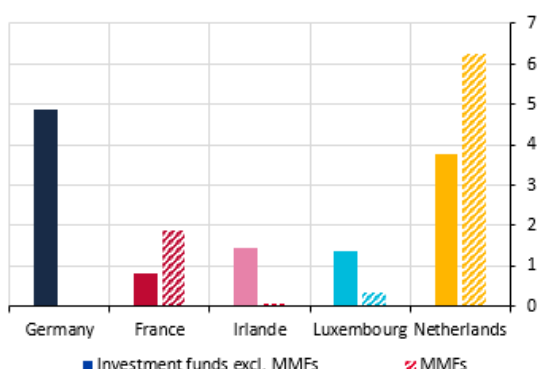
Source : ACPR

Besides direct exposures to real estate assets, insurers are also exposed to real estate sector companies, and particularly to companies operating their own or leased real estate assets. At the level of the insurance market as a whole, these exposures amount to EUR 27.6 billion and are concentrated in large real estate companies, chiefly via senior bonds (57%) and equities (30%). Subordinated securities issued by these companies and held by insurers are worth EUR 238 million. Insurers also have EUR 7.3 billion worth of exposure to the construction sector.

### Exposures of investment funds, not including specialised funds, to issues by real estate participants remain limited

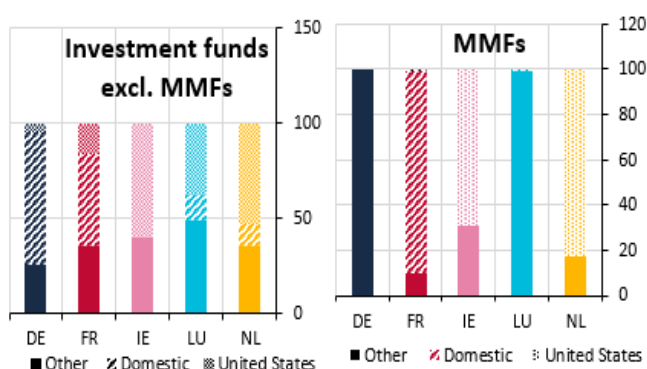
Investment funds other than those specialised in real estate have low exposure to the commercial real estate market. Investment funds may hold debt securities or equities issued by companies from the real estate sector, or units of real estate funds. Accordingly, they are theoretically exposed to a market reversal. However, commercial real estate exposures in Q4 2022 amounted to less than 1% of the market assets of French investment funds, excluding MMFs, compared with over 4% in Germany (see Chart 3.23). Real estate participants are more present in the portfolios of French MMFs, but the amount of exposure remains small (less than 2%). Among these assets, the share of issuers from the US, where the market has entered a contraction phase, is extremely small (see Chart 3.24). While this point needs to be watched, it is unlikely disrupt these participants, due to the small size of exposures.

Chart 3.23: Share of fund market assets exposed to commercial real estate, Q4 2022  
*x : time / y : Share of fund market assets issued by commercial real estate participants, as a percentage*



Sources : SHS-S, CSDB

Chart 3.24: Share of fund real estate-exposed market assets, by country of issuer, Q4 2022  
*x : time / y : Share of fund real estate-exposed market assets, by country of issuer, as a percentage*



Sources : SHS-S, CSDB

## 4. Thematic chapter: Private capital markets

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### 4.1 Overview of private capital markets

#### Private capital markets represent an alternative funding source for risky assets

**Private markets encompass all non-bank intermediation providing funding in the shape of equity or non-bank credit via unlisted instruments.** Financed assets are generally companies, real estate assets or infrastructure. The private capital market features several different strategies: Private equity (equity stakes in unlisted companies), private credit (direct financing through non-bank private loans) and real assets (real estate, infrastructure, land, etc.).<sup>110</sup> Private capital markets are organised around asset managers, which are typically lightly regulated and which raise capital from investors, most of which are institutional investors such as pension funds, insurers and asset managers. Private funds are typically closed-end, with long-term investment horizons, given the low liquidity of unlisted investments. Private equity funds are wound down after several years through the sale of units to another fund, an initial public offering, or a sale to a non-financial corporation as part of a merger/acquisition. The market tends to be concentrated around a few asset managers: in 2022, three managers managed 15% of assets under management at private funds.

The study of private markets is based on partial data, generally from trade data or industry associations. Private equity funds benefit from higher visibility that makes them easier to be studied, in contrast to other market segments such as private debt and real assets that are more opaque. The lack of data makes it difficult to establish a good overview of the risks to institutional investors and regulators.

**Private funds are classified as alternative funds, which are regulated in the European Union under the AIFM Directive.**<sup>111</sup> The AIFM Directive requires alternative funds to hold regulatory capital (0.01% of portfolio value), to report regularly to investors and supervisors, and to disclose use of leverage.<sup>112</sup> Private funds are not uniformly regulated, owing to the many different legal forms that such funds may take. Under the AIFM Directive, for example, a distinction is drawn between retail funds and funds intended for professionals. Retail funds must be licensed by the AMF, whereas professional funds are subject to a streamlined procedure. Private funds may be registered as either type of fund.

**Private equity investments can help to finance a company at different stages in its life cycle,** from creation to growth and even recovery from distress. Different types of fund exist:

- **Venture Capital:** Investment in start-up companies with major growth potential.
- **Development Capital:** Investment in companies with a track record of more than three years, with the aim of supporting their expansion. This type of financing is not focused on specific sectors, unlike venture capital, which is concentrated in innovative sectors.
- **Buyout:** Investment in mature companies. Leveraged buyouts (LBOs) account for the lion's share in this category. LBOs employ leverage to obtain absolute control of a firm and increase the return expected when the company is sold.
- **Capital Reversal / Restructuring:** Investment in struggling companies with a view to restructuring them.

#### The global market has grown strongly in recent years

**Worldwide, the volume of assets under management in private funds was estimated at USD 13,000 billion in 2022 (see Chart 4.1) and has grown at a sustained pace in recent years.**<sup>113</sup> Private funds account for approximately 5% of total assets managed by non-bank financial intermediaries. Private equity (buyout, venture

<sup>110</sup> Some funds also pursue mixed strategies, such as equity investments in infrastructure developers.

<sup>111</sup> The AIFM Directive seeks to establish a harmonised regulatory framework for alternative funds in the EU in order to ensure investor protection and monitor systemic risk.

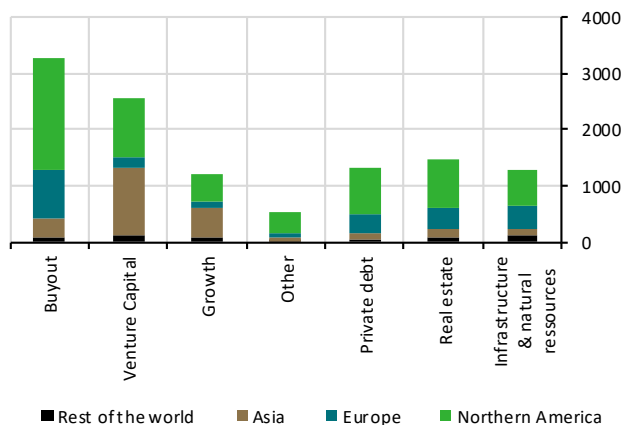
<sup>112</sup> Leverage is considered to be substantial when the exposure of an alternative investment fund exceeds three times its net asset value. [Guide AIFM - Société de gestion \(amf-france.org\)](#)

<sup>113</sup> According to the FSB, total global financial assets stand at USD 486,600 billion, of which USD 239,000 billion (49%) is held with non-bank financial intermediaries.

capital, growth) made up 61% of assets under management at global private capital funds in 2022, compared with 11% for private credit funds and 12% for real estate funds. Assets under management<sup>114</sup> in the private equity segment have increased rapidly in recent years, climbing from approximately USD 500 billion to USD 3,000 billion between 2004 and 2022 in the United States,<sup>115</sup> and from approximately EUR 200 billion to EUR 1,000 billion between 2004 and 2022 in Europe (see Chart 4.2).

Chart 4.53: Total estimated value of assets under management, by private market strategy, H1 2022

x : strategy / y : USD billion

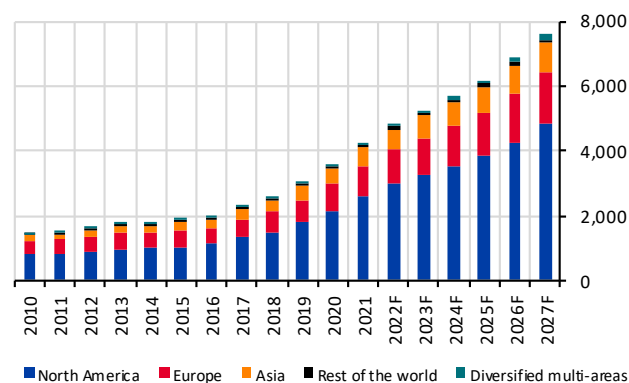


Note : The buyout category includes buyout funds, balanced funds, co-investments and multi-manager co-investments, while other categories include funds of funds, mezzanine funds, hybrid funds and private investment in public equity funds.

Sources : Preqin, McKinsey

Chart 4.2: Assets under management in private equity, by main geographical area, 2010 to 2027 (forecast)

x : time / y : USD billion



Notes : Here, private equity refers to buyout and growth funds and excludes venture capital.

Source : Preqin

**The capital raised by funds is not usually deployed in full straight away**, with some set aside pending appropriate investment opportunities. Investment periods usually last five years on average, whereas funds typically have a lifespan of approximately ten years. These reserves, which are called dry powder, are paid by investors in response to capital calls by fund managers. Globally, dry powder in private markets stood at USD 3,200 billion in 2022, including USD 1,900 billion for private equity funds,<sup>116</sup> reflecting high inflows through to 2021. Dry powder is not counted in assets under management.

**Several factors have driven the growth in assets under management.** First, unconventional monetary policies lowered the cost of capital. Lower risk-free rates and liquidity injections caused market risk premiums to come down. The resulting increase in equity prices may have spurred reallocations to private assets. Second, private equity offers a way to address the need for stable financing over longer periods than that covered by bank debt and appears better suited to the high-growth companies emerging in the tech sector. Third, expected returns in private equity are more attractive than those offered by traditional asset classes, especially when interest rates are low, owing to the highly risky nature of their assets, i.e. growth or heavily leveraged companies. The increasingly frequent integration of private equity investments in the allocation strategies of institutional investors, with a view to portfolio diversification and partly linked to the high returns displayed, also supported the market's growth.

### The European private equity market is concentrated

**European private equity funds are chiefly financed by pension funds (20% of investors), funds of funds (16%), insurers (9%) and government agencies (8%)** (see Chart 4.4). Investor profiles vary depending on the strategy pursued: government agencies are over-represented among venture capital investors (18%), whereas pension funds are over-represented among buyout investors (27%). While institutional investors account for the bulk of funding, private individuals and family offices account for a significant portion of investments (15% of private

<sup>114</sup> This is the total market value of investments managed by private equity funds for clients.

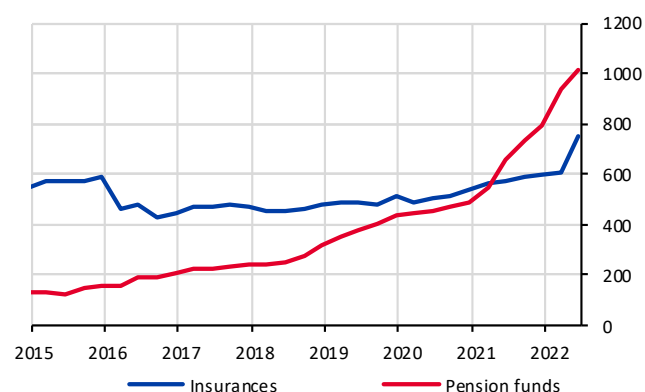
<sup>115</sup> Assets under management in 2004: [The powerful forces reshaping America's capital markets | Financial Times \(ft.com\)](#).

<sup>116</sup> Preqin Global Reports 2023: Private Equity | Preqin, Preqin is a provider of trade data on alternative funds, including private finance funds (private equity, venture capital, private debt) | [Preqin | Alternative Assets Data, Solutions and Insights](#)

equity). Banks have weak exposure as investors (6% of investments), but may be exposed through credit instruments taken out by funds' target companies or via credit lines extended to funds.

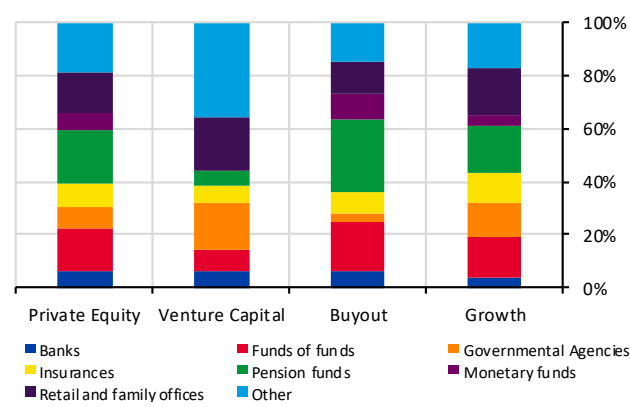
**Holdings of shares in unlisted companies by euro area funds and insurers have increased steadily since early 2017.** Investments by euro area funds totalled EUR 1,009 billion in Q1 2022, up around EUR 355 billion year-on-year (see Chart 4.3). French insurers held EUR 35 billion in private equity funds in Q4 2022, or 1.4% of their investments on average.

Chart 4.3: Holdings of unlisted shares, by institutional sector (euro area)  
x : time / y : EUR billion



Note : Funds include pension funds and non-MMF investment funds.  
Sources : QSA-SDW, ECB

Chart 4.4: Exposure of EU institutional investors in 2021  
x : strategy / y : percentage



Source : Invest Europe

**At the end of 2021, private equity funds accounted for 6.5% of all assets under management for alternative investment funds, and 0.5% of all the assets in the European financial system.** Overall, private markets, including private equity funds, private credit funds, real estate and infrastructure funds, made up 1% of all the assets in the European financial system. So while the market is expanding strongly, it remains relatively small. However, these markets could be a source of systemic risks through their interconnections with other systemically important financial institutions or owing to the dominant role that they play in financing certain sectors of the economy.

**European private markets are concentrated at three levels: strategy, sector and geographical region.** The buyout segment is over-represented on the European market, accounting for 36% of assets under management, compared with 28% for the global market. Investments are concentrated by sector as well: the information and communication technologies sector accounted for 33% of all transactions by value in 2022, compared with 17.9% for consumer goods and services and 17.5% for business goods and services.<sup>117</sup> Last but not least, the private equity market is concentrated in the United Kingdom and France, which represented 29% and 13% of transactions by value in 2022 within Europe respectively.<sup>118</sup>

### Fund inflows and liquidations slowed in 2022 following the peak of 2021

**The private equity market in Europe was extremely active in 2021, saw a sharp slowdown in the second half of 2022.** Higher interest rates and economic uncertainties disrupted the favourable environment for private equity, triggering a marked decrease in inflows of money, new investments by funds and liquidations of existing investments from the second half of 2022 onwards. Unsupportive macroeconomic conditions and severe volatility on financial markets caused asset values to fall and liquidity to contract. As a result, private equity funds pushed back the dates that were initially set for their liquidation,<sup>119</sup> and investors scaled back their investments (see Chart 4.5). By volume and value, fund liquidations fell by half between 2021 and 2022 and were 42% below the ten-year

<sup>117</sup> Invest Europe Annual Report: Investing in Europe, Private Equity Activity 2022, <https://www.investeurope.eu/research/activity-data/>

<sup>118</sup> Pitchbook European PE Breakdown, April 19 2023, [Q1 2023 European PE Breakdown | PitchBook](https://pitchbook.com/news/reports/2023-france-private-capital-breakdown)

Pitchbook France Private Capital Breakdown, May 30 2023, <https://pitchbook.com/news/reports/2023-france-private-capital-breakdown>

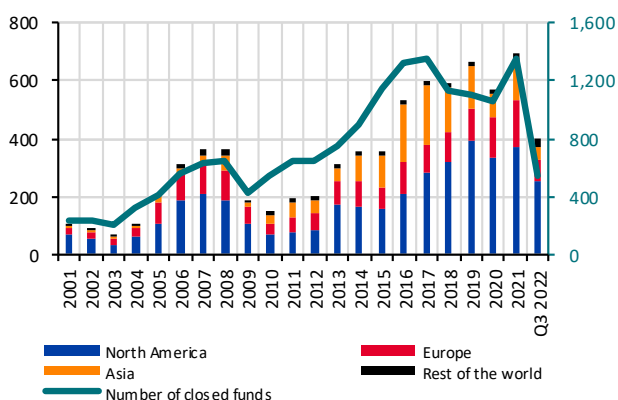
<sup>119</sup> Article L. 214-28 of the French Monetary and Financial Code states: "Unitholders may not request redemption until a set period not exceeding ten years has expired. When the said period has elapsed, the unitholders may demand the fund's liquidation if their requests for redemption are not met within one year". There is currently no legal obligation for funds to comply with the liquidation date that was initially set.

average (see Chart 4.6). However, private credit funds were not affected to the same extent. In fact, fundraising by private credit funds rose by 2% between 2021 and 2022.<sup>120</sup>

**More generally, investments in private funds are procyclical, despite the long-term investment horizon.** Private funds specialise in risky and illiquid investments. As such, they offer a long-term investment option for investors looking to diversify their asset portfolios. Investments in such funds are usually pitched as a way to gain protection against market volatility. However, investment flows into these funds are just as sensitive to market movements as investments in listed markets. Private equity, venture capital and private credit financing flows all exhibit co-movements with stock returns that are similar to fixed income and equity markets.<sup>121</sup> Accordingly, investments in private funds are procyclical. That being said, the ability of these funds to delay disinvestments when the financial cycle reverses may play a countercyclical role. In the event of market stress, there is no guarantee that private funds will play a mitigating role for the financial cycle.

Chart 4.5: Geographical distribution of fundraising by private equity funds

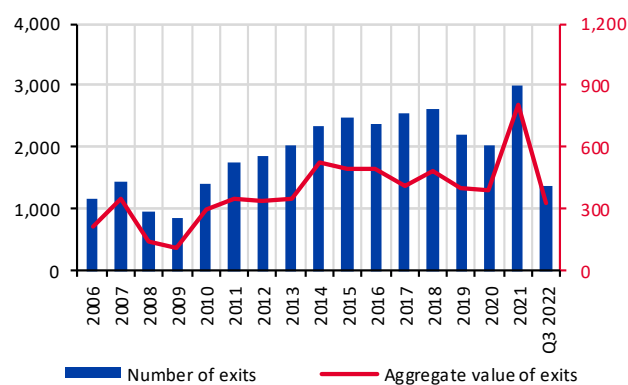
x : time / y : USD billion



Source : Preqin

Chart 4.6: Annual private equity fund liquidations, worldwide

x : strategy / y left : value of liquidations (USD billion); right : number of liquidations



Note : Number of exits represent the total number of PE deals that were either taken public or sold to external buyers

Source : Preqin

<sup>120</sup> McKinsey Global Private Markets Review 2023 | McKinsey

<sup>121</sup> BIS - Rise of private markets

### Box 4.1: Links between the SVB failure and private markets

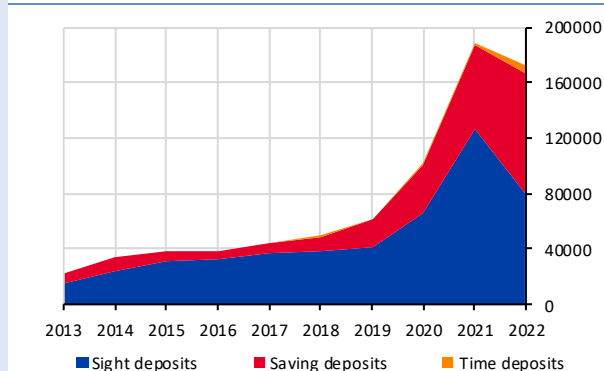
Between 2019 and 2021, SVB benefited from exponential growth in the venture capital business, with the bank's balance sheet tripling as a result over those years. SVB attributed this expansion to the rapid increase in customer deposits, which was a direct consequence of growth in fundraising and investments by venture capital funds. 63% of SVB's deposits came from companies in the tech and healthcare sectors that were backed by venture capital funds. The concentration level was even higher in SVB's off-balance sheet items, where the two sectors accounted for 88% of liabilities.

The collapse in the business of the venture capital funds in the second half of 2022 not only caused SVB's growth to slam to a halt, but also put its customers under financing strain, forcing them to use their cash and hence to withdraw their deposits.

Compounding this under-diversification, SVB's overexposure to venture capital increased the vulnerability of its liabilities. During the recent low interest rate period, the venture capital market was lifted by the hunt for yield by investors. However, higher interest rates triggered significant disinvestment. The procyclical behaviour of the venture capital market is acknowledged to have been a factor that exacerbated SVB's exposure to liquidity risk.

Chart 4.7: SVB deposits

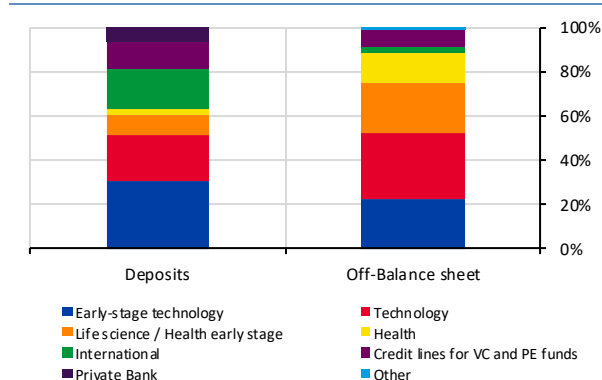
x : time / y : EUR million



Sources : Bloomberg, Banque de France calculations

Chart 4.8: SVB deposits, distribution by sector

x : deposits / y : percentage



Source : SVB Earnings Q4 2022

## 4.2 Analysis of the risks to financial stability

### Private funds remain too opaque and vulnerable to valuation risk

#### The market's lack of transparency creates a risk of misvaluation

Valuation of private assets is complex and non-transparent. This exposes funds, as well as their investors, to the risk that their assets might be misvalued. However, investments on private markets allow investors to diversify their portfolios with a less liquid asset class and hence reduce portfolio volatility over the long run.

The methods used to value assets on private equity markets depend on the assumptions made by asset managers. Conversely, on listed markets, continuous quotation and disclosures of company fundamentals ensure that valuation is transparent. These valuations represent the sum of the opinions of all investors present on the market and also reflect more frequent trading. Private equity funds are free to choose the valuation method that best suits their investments, but these valuation policies are subject, in the case of European funds, to regulatory requirements under the AIFM Directive and formal monitoring by national market authorities. Funds are under a regulatory obligation to use a valuation method and to report this to the regulator, demonstrating "a sound, transparent, comprehensive and appropriately documented valuation process".<sup>122</sup> Some of the most widely used

<sup>122</sup> Article 67 of Delegated Regulation (EU) No. 231/2013.



methods by private funds include the multiples method<sup>123</sup>, the discounted cash flow method,<sup>124</sup> which is commonly employed in LBOs, or valuation at the anticipated price at the likely time of sale, which is used by venture capital funds to value companies without tangible assets or profits. The assumptions used to prepare these valuations and data on “comparables” may lead to variable results that are hard to verify.<sup>125</sup> Another source of risk stems from the illiquid nature of investments, which also increases valuation risk given the time between valuation updates.

**The lack of transparency in methods used to value private assets could create overvaluation risks.** These risks could stem from potential agency conflicts between asset managers and investors, with the former subject to a financial incentive to overvalue their assets. For example, management fees often comprise a significant variable portion that is linked to the value of investments. Within a management company itself, agency conflicts may arise between directors and fund investment teams, who have an incentive to increase the capital allocated to their asset class.<sup>126</sup>

**To mitigate valuation risk, the most important thing is to reduce the market’s lack of transparency.** In the face of informational asymmetries and the wide range of valuation methods, an ex-ante regulatory approach is needed to improve market transparency. Regulatory efforts could therefore focus on improving the quality of fundamental information on target companies, facilitating the transmission of this information to investors and regulators, and simplifying or even standardising contracts between investors and asset managers. However, the market's growing heterogeneity makes it difficult to establish a standardised and transparent valuation approach that could act as a benchmark for the regulator and market participants.

#### *As interest rates increase, valuation risk could materialise*

**The assets in which private funds invest (heavily leveraged companies under LBOs, growth companies) are directly exposed to the increase in interest rates.** The highly risky nature of these assets, which precludes traditional financing approaches, makes them attractive during periods of low interest rates, when the hunt for yield can get out of control. When interest rates go up, potential overvaluations may materialise when funds are liquidated. Private funds are generally characterised by significant sector concentration. In addition, their investments are highly sensitive to a reversal in the business cycle and tighter financing conditions, as private equity funds count on improved business performance and significant cash flow to repay the elevated debt of target companies (see next section). Furthermore, the survival of the innovative but not-yet-profitable companies in which venture capital funds invest often depends on additional financing rounds. Beyond the lack of valuation transparency, some fundamental qualities of the market thus contribute to valuation risk, which is more likely to materialise when interest rates are rising.

**Valuation risk in private markets could materialise initially connected markets.** In an adverse environment, funds may choose to delay liquidation to avoid realising losses. Furthermore, the value of funds may not fully reflect the deterioration in the economic environment, owing to the methods used and valuation frequency. In this setting, it is possible that investors in conducting a strategic rebalancing of their portfolio, may elect to sell more liquid assets to offset postponed repayments and rebalance the sector exposures of their portfolios.

#### **Leverage at different levels of the funding chain contributes to credit risk**

##### *The financial structuring of private funds makes it harder to identify leverage*

**Private funds do not generally carry debt, but use of financial leverage is commonplace at multiple stages in the funding chain.** Debt may thus be carried by the target company, or by intermediaries such as holding companies that act as financial vehicles to hold the target. Monitoring this debt is complex-eas private funds are exempt from the risk transparency approach under the AIFM Directive.

<sup>123</sup> This approach consists in comparing valuation multiples (company valuation/EBITDA) with a sample of comparable companies.

<sup>124</sup> This method measures the value of an asset according to the discounted value of future cash flows, based on company fundamentals and assumptions for growth and operating margin.

<sup>125</sup> Real estate funds also use “fair market price” valuation methods that rely heavily on expert appraisals.

<sup>126</sup> Morris, Peter and Phalippou, Ludovic, A New Approach to Regulating Private Equity (February 16, 2011). Available at SSRN: <https://ssrn.com/abstract=1762840> or <http://dx.doi.org/10.2139/ssrn.1762840>

**Strategies followed by LBOs, which make up the main investment category in private finance, involve significant use of leverage, which increases the credit risk of the overall structure.** This debt is not held by the fund, but by the target companies or by a holding company. Interest on this debt is repaid through profit earned by the target. Banks and investors involved in financing LBOs are therefore exposed to the associated credit risk. The increase in the cost of debt linked to higher interest rates could severely impair the profitability of these strategies.

**Funds also have direct access to credit facilities,** typically secured against unallocated commitments or net asset values, not underlying investments. Use of these credit facilities is hard to quantify but appears to have grown since the second half of 2022, aimed at supporting underperforming investments pending an improvement in conditions.<sup>127</sup> In 2022, these facilities were worth USD 100 billion, or less than 1% of the estimated value of private markets. However they increased by 50% between September 2021 and September 2022. Most lenders of such facilities are banks, insurance companies and a few private credit funds.

#### **Box 4.2: LBO strategies expose target companies to elevated debt**

**An examination of the debt growth rates of companies subject to an LBO offers a way to assess the impact of these transactions on the debt and associated credit risk of the target company.** The sample comprises 797 European companies, across all sectors that were the subject of an LBO between 1992 and 2023. The control group comprises a random sample of 7,149 companies whose debt data were available for the same period. Based on the European database of loans, AnaCredit, which tracks all bank and non-bank credit instruments on a monthly basis, it is possible to study the monthly change in the debt of these companies. In the first place, a comparison of the debt growth rate of LBO companies with the average growth rate, weighted by outstanding debt and over the affected period, of companies that were not subject to an LBO, offers a way to study the average impact of an LBO over time on company debt.

**An LBO investment results in a marked increase in the debt growth rate – around 8 percentage points at the time of the investment** (see Chart 4.9). The average debt growth rate of LBO companies is similar to that of other companies before the investment, but once the investment takes place, the debt growth rate of companies subject to LBOs follows a different path. The difference in rates fluctuates but remains positive over time. The increase in the debt growth rate could potentially be due to other effects attributable to firm characteristics. By studying the change in the debt of these companies each time a new loan is taken out, controlling for changes in revenues, interest rates, and firm-specific characteristics. Being the subject of an LBO has a positive and significant impact on the debt growth rate of a company. An LBO leads to an average increase of 2.8 percentage points in the debt growth rate when each new loan is taken out, relative to a comparable company that was not the subject of an LBO.

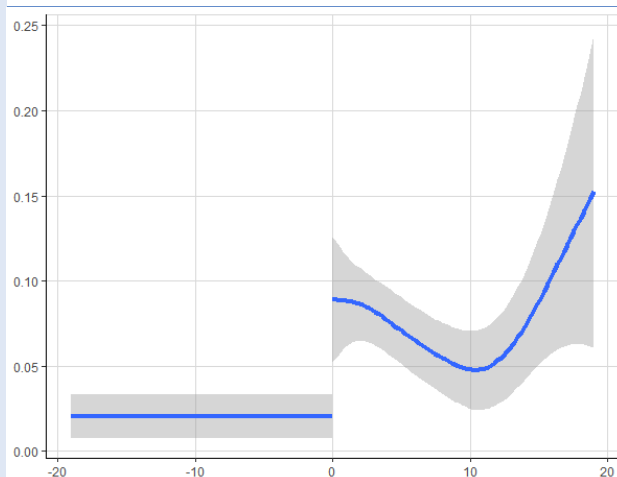
**This study also confirms that LBOs lead to increased credit risk at target companies.** In fact, an LBO leads to a 6.3 percentage point increase in the growth rate of the company's default probability<sup>128</sup> between two loans and a 2.1 percentage point increase in its interest rate. In other words, LBOs not only have a direct impact on the company's debt, but also on its funding costs and on its probability of default.

<sup>127</sup> [NAV facilities gain momentum among alternatives funds - Citco](#)  
[GPs quench thirst with NAV financing as liquidity dries up | PitchBook](#)  
[Subscription lines and private equity- Institutional | BlackRock](#)

<sup>128</sup> The probability of default is estimated by banks in accordance with the internal ratings-based approach under Basel III.

Chart 4.9: Effect of LBOs on NFC debt over time

*x* : time in quarters (0 = LBO date) / *y* : Difference relative to the debt growth rate weighted by outstanding debt of non-LBO companies

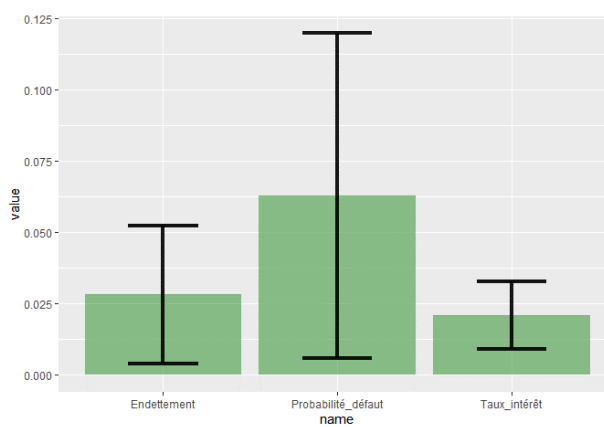


Note : The average debt growth rate between two new loans of companies that are subject to an LBO is compared over time with the average debt growth rate between two new loans of companies that are not subject to an LBO.

Sources : AnaCredit, Eikon, Banque de France calculations

Chart 4.10: Effect of LBOs on the change in NFC debt, probability of default and interest rate

*x* : variable of interest (debt growth rate, probability of default growth rate, interest rate growth rate) / *y* : coefficient of treatment variable (LBO investment)



Note : the growth rate (of debt, default probability or the interest rate) is regressed on a binary variable equal to 1 starting at the moment when the company is acquired under an LBO, the revenue growth rate is lagged by one period, and the credit growth rate is lagged in the final two regressions. Time and company fixed effects are added.

Similarly, standard errors are clustered at time and firm level.

Sources : AnaCredit, Eikon, Banque de France calculations

### Private credit funds specialise in heavily leveraged companies

Private credit funds may supply companies with access to debt when credit risk is elevated, particularly when they lack access to bank credit or the bond market. Private credit funds specialise in segments associated with elevated credit risk, such as mezzanine debt, distressed debt, or direct loans, which account for the bulk of private credit fund investments.<sup>129</sup> Some companies may thus find themselves reliant on private credit funds to access financing. Tighter financing conditions therefore create growth opportunities for these funds, which saw a rebound in inflows in the second half of 2022.

**The main asset managers specialising in private markets manage private equity and private credit funds.** This dual exposure may facilitate the financing of heavily leveraged investments, such as LBOs, and increase the concentration of credit risk associated with these investments. With the increase in interest rates, which may benefit private credit funds as lenders, the resulting difference in returns relative to private equity funds may even spur some substitution of debt for equity on private markets.

### The fact that funds are closed does not rule out liquidity risk for investors and underlying companies

**Private funds are typically closed to redemptions.** This shields funds from liquidity mismatches between their long-term assets and liabilities, but also points out that investors may not recover their investment until portfolio companies are sold. The lack of liquidity in private funds is known to investors, which operate on long-term investment horizons. However, according to Franzoni et al. (2012), investments in private equity funds are the subject of a liquidity risk premium, which the authors put at 3% but which is not factored in by investors. By recompiling asset prices using a four-factor model, the authors identify all the risk premiums associated with these investors, which amount to 18% of the price. When these premiums are taken into account, the rate of return on investments is close to zero, suggesting that these risks are not correctly taken into account when prices are set on the market. Thus, the risk associated with the lack of liquidity seems poorly rewarded for investors.

**Private funds are attempting to adapt to growing liquidity needs among certain investors.** Asset managers have developed the secondary market<sup>130</sup> to offer liquidity options to their investors more regularly and to support

<sup>129</sup> [2022 Annual Global Private Debt Report.pdf \(pitchbook.com\)](#)

<sup>130</sup> [PE secondaries will reach new heights in 2023 | PitchBook](#)

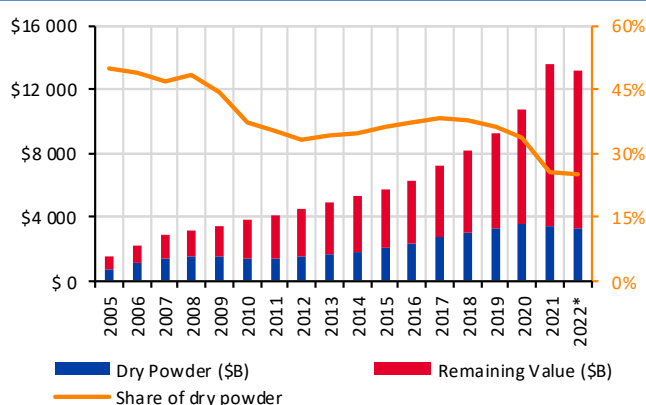
portfolio reallocations. Development of retail investment could also lead to growing demand for liquidity and new requirements by regulators<sup>131</sup> and also by institutional investors, which may question the stability of the liabilities of affected funds. The shorter duration of investments, which fell from 3.6 years in 2013 to 2.6 years in 2022,<sup>132</sup> might thus be explained by the increased presence of investors with shorter investment horizons.

**Delays in liquidating funds create new liquidity pressures for their investors.** Between 2017 and 2020, 45% of AMF mediation cases involving private equity concerned the information provided about these funds and the failure to return investments at the initially set date. In 2022, asset managers widely delayed fund closures to cope with valuation risk in a setting of rising interest rates. The consequences of the potential portfolio rebalancing that would arise from the need for investors to cope with a liquidity shock remain undetermined. Besides the imbalances in portfolio allocations that this might cause, investors might turn towards other more liquid markets to meet their liquidity needs.

**Dry powder is decreasing as liquidations are held up.** Although fund reserves remain at very high levels, the share of dry powder relative to assets under management decreased between H2 2019 and H2 2022 (see Chart 4.11). Dry powder may be used to cushion liquidity shocks, in particular to support the refinancing needs of target companies at a time when fund liquidations are being pushed back. But the ability of funds to tap their dry powder to meet immediate liquidity needs remains uncertain (notably the capacity of investors to respond to fund calls), which may entail increasing use of credit facilities.

Chart 4.11: Dry powder on private markets

x : time / y : USD billion (left side) / percentage (right side)



Source : Pitchbook

The secondary market is where investors buy and sell fund units among themselves.

<sup>131</sup> [Rapport sur les travaux du GT fin de vie.pdf \(amf-france.org\)](#)

The AMF is considering stepping up requirements for fund liquidation, with a view to protecting retail investors.

<sup>132</sup> [Q1 2023 Global Private Market Fundraising Report | PitchBook](#)

The average time taken to close a private fund fell from 3.6 years in 2013 to 2.6 years in 2022.

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