ASSESSMENT of RISKS to the FRENCH FINANCIAL SYSTEM

June 2019

BANQUE DE FRANCE
EUROSYSTÈME

CONTENTS

Overview

The current global macroeconomic environment appears increasingly uncertain and less favourable than at the end of 2018. Escalating protectionism, rising geopolitical tensions (in the Middle East and China, for example) and increasing political risks that could all come to a head in the autumn with the United Kingdom's exit from the European Union and its domestic political situation, the possible launch of an excessive debt procedure against Italy and simultaneous changes in the presidencies of the main European institutions, all create an unfavourable environment even though growth outlooks, despite downward revisions, remain resilient in both the euro area and France.

In this context, the ranking of the main risks to the French financial system has evolved slightly but they are all now rated high risk.

1. **Risks linked to indebtedness** are deemed the most significant risks, with debt increasing more rapidly than GDP or income: the current level of private sector debt does not point to a generalisation of financial risk at this stage but its continuous rise is contributing to growing macroeconomic fragility and a weakening of the intrinsic resilience of the French economy. Meanwhile, the capacity to mobilise more public resources to cushion future economic and/or financial shocks is deteriorating while France's public deficit is high at 98% of GDP, in excess of the 60% ceiling set out in the European Stability and Growth Pact.

2. **Market risks,** with practically the same significance as for risks linked to indebtedness: the persistent low interest rate environment and greater reliance on leveraged strategies have raised prices of financial and non-financial assets such as equities, bonds and real estate to high levels. The French financial system is not overexposed to these risks but as a stakeholder in the global financial system, it is likely to suffer the repercussions of the destabilisation of players more directly exposed to a correction.

3. **Risks for financial players linked to persistent low interest rates:** while the persistent low interest rate environment may support the economy, it also weakens the traditional business models of financial intermediaries (banks and insurers). The profitability of banks and by extension their stock market valuations have been eroded due to low margins and a context of increased international competition from operators that are often better capitalised and have lower operating costs.

4. **Risks linked to structural changes** are now considered high: the financial sector faces structural challenges that could lead to vulnerabilities in the medium term if they are not adequately addressed. Digitalisation changes the landscape in terms of:

– the concern for cost-efficiency in the banking sector;

– the gradual transformation of the financial sector associated with fiercer competition, including from new operators able to deploy artificial intelligence techniques and with access to large data capturing the profile of economic actors;

– cybersecurity getting a new systemic dimension as market-dominating solution providers offer solutions adopted by a large number of customers.

Lastly, as its consequences become increasingly visible, financial institutions' exposure to the financial risks associated with climate change, whether they be physical (resulting from damages directly caused by climatic phenomena) or transitional (resulting from sudden or inadequately anticipated adjustments that could be caused by the transition to a low-carbon economy) must be monitored much more closely.

These different risks are largely interdependent. The low interest rate environment in place since the early 2010s has fuelled French household and corporate debt dynamics as well as risk-taking on the financial markets. It also contributes to the current pressure on the traditional business models of banks and insurers that is also accentuated by the expansion of non-bank intermediation. Changes in the French – and more generally, European – economy's financing model require the authorities to ensure that their actions to reinforce financial stability remain effective, including in a system where non-bank intermediation is taking on a more influential role.

In order to deal with these structural developments and risks, the specific aim of macroprudential policy is to prevent situations where financial practices exacerbate imbalances and to strengthen the resilience of the financial system as a whole. But the fact remains that macroprudential policy instruments alone cannot prevent macroeconomic imbalances from arising as they require an adjustment of the entire raft of economic policies.

Summary of the main risks to the French financial system in June 2019	Level and outlook
1. Risks linked to indebtedness French household and corporate debt levels continue to rise steadily. The upward trend in corporate debt increases the risk of default and/or difficulties to obtain financing in the event of a macroeconomic shock. Growth in household lending should also be carefully monitored given the gradual easing of lending conditions. The capacity to mobilise public resources to cushion future economic or financial shocks is also becoming increasingly limited with the post-crisis accumulation of deficits.	
2. Market risks The equity and bond markets are witnessing a new risk accumulation phase against a backdrop of a US monetary policy stance that is perceived as more accommodative, although there has been no upward revision to expected company earnings. Investor confidence could be quickly shaken given a combination of uncertainty factors or geopolitical tensions originating from the United States (protectionism and trade tensions), Europe (in the event of a worsening situation in Italy and the United Kingdom) and emerging countries.	
3. Interest rate risks for financial institutions The persistent low interest rates in the euro area support the economy but also fuel pessimism with regard to bank profitability and reinforce the constraints on life insurers' asset-liability management. Moreover, the political situation in certain euro area countries occasionally leads to a widening of sovereign bond yield spreads and raises the fear of a resurgence of the contagion loop between sovereign risk and bank risk in the most vulnerable countries.	
4. Risks linked to structural changes The financial system continues to face structural challenges (digitalisation, cost cutting, search for profit). Rising operating costs remain a focus of attention, as banking institutions must adapt to an ever-changing context. Within the international financial system, the growth in asset management in financial intermediation goes hand in hand with complex interconnections with the banking and insurance sectors. Cybersecurity is also becoming an increasingly systemic issue in part due to digitalisation. Major financial institutions are starting to incorporate the management of risks associated with climate change (physical risks and risks associated with the transition towards a low-carbon economy) into their governance but this trend has to be rolled out across the financial sector as a whole.	

Systemic risk High risk Moderate risk

Note: The colour represents the level of risk based on an expert assessment reflecting the probability that the risk will materialise and its potential systemic impact over the medium term. The direction of the arrow indicates the risk's outlook, i.e. how it is likely to develop over the next six months.

1 A more uncertain macroeconomic environment

The slowdown in the global economy and the uncertainties that weigh on its growth have led several central banks to announce that broadly accommodative monetary policies will be maintained. These announcements have been well received and support the current economic cycle. However, they contribute to the reinforcement of the persistent low interest rate environment, which from a financial stability perspective encourages the rise in private and public debt (see Risks 1 and 2 below), fuels risk-taking on the financial markets with high asset prices exposed to corrections (see Risk 2 below) and exacerbates the growing fragility of financial institutions that struggle to stay competitive (see Risk 3 below).

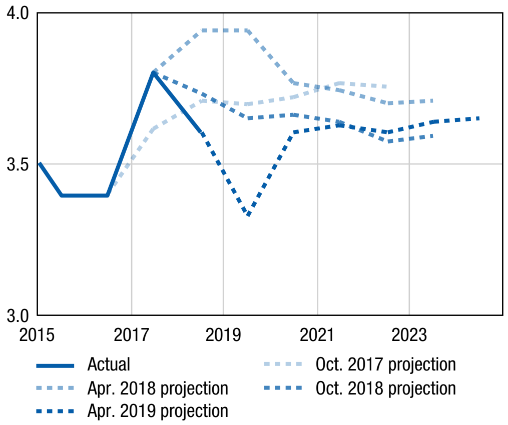
World macroeconomic outlook

The International Monetary Fund (IMF) estimates global growth of 3.3% for 2019, rising to 3.6% in 2020 and 2021 (see Chart 1). The initial optimism for 2019 has been corrected, while the macroeconomic environment became more uncertain. The global growth outlook in 2019, 2020 and 2021 has been revised downwards.

Chart 1

Global GDP and projections

(x: year; y: percentage)

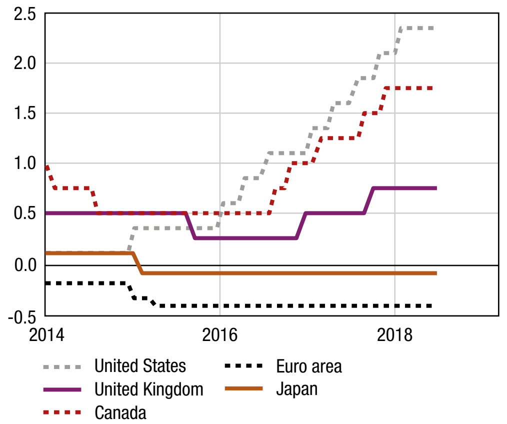


Source: International Monetary Fund (World Economic Outlook).

Chart 2

Key interest rates in G7 economies

(x: year; y: percentage)



Source: Bloomberg.

In the United States

The US Federal Reserve (Fed), which embarked on a monetary policy normalisation cycle that began with a first hike in the Fed funds target rate in December 2015, seems to have taken a more accommodative stance (see Chart 2). The fiscal stimulus during the upswing of the cycle in the United States supported short-term growth (2018 and 2019). It could help to prolong the current domestic economic cycle with an unclear impact in the medium term on inflation and in the medium and long term on growth, even though the present growth outlook also appears to be adversely affected by trade tensions and growing uncertainty at a worldwide level.

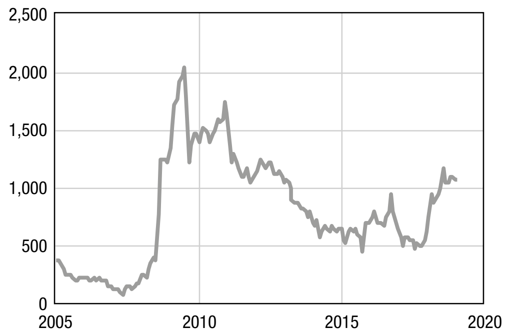
The prospects for US interest rates are unclear. Volumes of debt issuance in the short term should remain high in both the public sector (USD 1,105 billion in net US Treasury bond issuance in 2018, up 106% compared with 2017 – see Chart 3) and the private sector (significant refinancing requirements in the US bond markets, see the "Market risks" section below). This trend is expected to exert upward pressures on interest rates, particularly in the medium and long term. The slowdown, since May, in the rate of reduction of the Fed's security holdings (after a USD 315 billion reduction in 2018) followed by a halt as from next October, and the dominant role of the dollar as an exchange and reserve currency should however ease the upward pressures on interest rates, particularly given that the Fed has indicated that it could adopt a more accommodative stance in the coming months.

Nonetheless, the current gap between US interest rates and those of other major economies (see Chart 4) could remain significant. Ultimately, while the macroeconomic impact in France of economic developments in the United States may remain limited, desynchronisation and resysnchonisation between the US cycle and that of other regions could contribute to asset reallocations and financial market volatility, which would affect the international financial system as a whole.

Chart 3

Net issuance of US treasury bonds

(x: year; y: USD billions (rolling 12-month period))

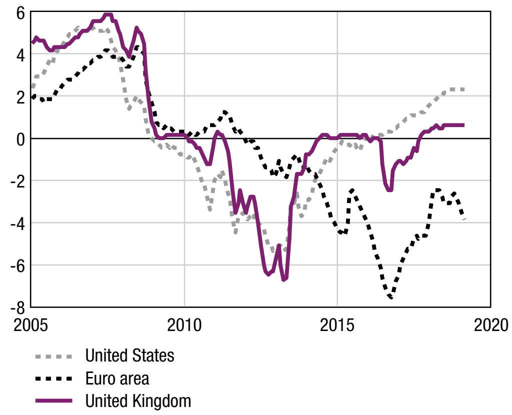


Sources: Financial Information Management (FIMA), US Treasury Department.

Chart 4

Differences in shadow rates[a)]

(x: year; y: percentage)



Source: Kripper (L.), Reserve Bank of New Zealand.
a) Shadow rates are theoretical rates calculated using a model incorporating a short-term interest rate that can be negative. The rate is intended to take account of the impact non-standard monetary policies.

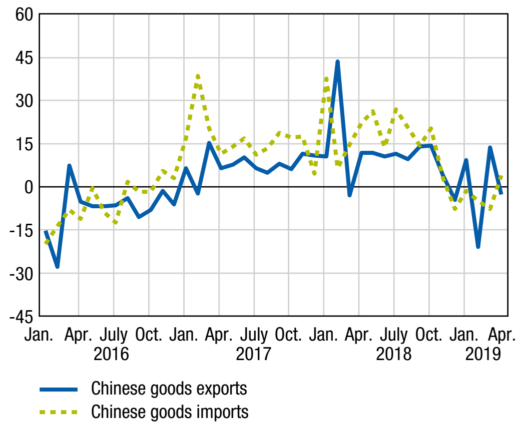
In China

The Chinese economic slowdown observed since the end of 2018 is expected to result in a lower demand for euro area exports. The combination of a short-term weakness in domestic demand linked to efforts undertaken during the past two years to reduce indebtedness, declining structural growth and a trade war with the United States led to a 4.7% decrease in Chinese imports of goods at first quarter 2019 (see Chart 5). Despite a fiscal stimulus (with tax reductions equivalent to 2% of GDP) and monetary policy stimulus (with a 3.5 percentage point reduction in the reserve requirement ratio in one year) that should boost domestic demand, the escalation of the crisis with the United States could dampen growth in China in 2019, whose official target is 6.0%-6.5%. These developments fuel fresh concerns with regard to the financial situation of Chinese companies and a possible increase in non-performing loans in banks' balance sheets.

Chart 5

Chinese trade in goods

(x: year; y: exports and imports of goods (yoy))



Source: Chinese customs services.

China is also actively seeking cyclical and structural growth opportunities outside of its own borders, such as the Belt and Road Initiative, which supports the projects of Chinese companies wishing to invest in emerging economies, particularly in Eastern Europe.

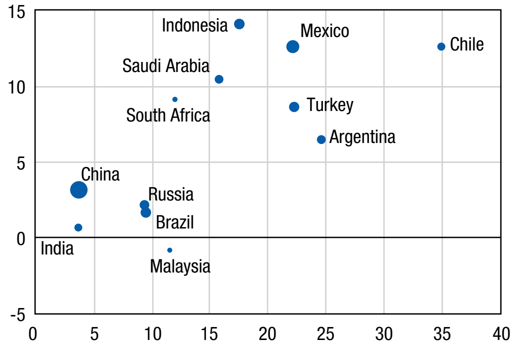
In other emerging economies

Several emerging economies continue to be vulnerable. For most of 2018, the currencies, sovereign signature and stock indices of certain countries such as Argentina and Turkey in particular were destabilised. Although this reflects real vulnerabilities, these upheavals also arose during shifts in US monetary policy. Indeed, these changes in stance now seem to systematically foster significant capital flows (reallocations between emerging economies and portfolio rebalancing between these countries and the United States).

Chart 6

US dollar lending to the non-financial private sector

(x: level in 2018 as a percentage of GDP; y: change as a percentage of GDP from 2007 to 2018)



Source: Bank for International Settlements (BIS).
Note: The size of the bubbles reflects the relative amount in US dollars.

The increasing indebtedness of private players in some emerging economies also represents a major weakness, particularly when there is a significant portion of debt that is short term and/or denominated in foreign currencies, particularly the US dollar (see Chart 6). These private players' US dollar-denominated debt constitutes a dual challenge of (i) macroeconomic fragility for themselves and the economies in which they operate and (ii) financial risk for the international investors exposed.

In the euro area

The euro area is experiencing an economic slowdown. After 1.8% in 2018, economic growth is only expected to amount to 1.2% in 2019[1] (revised upwards by 0.1 percentage point compared with the Eurosystem's March projections due to a stronger first quarter than anticipated and revised downwards by 0.5 percentage point compared with the Eurosystem's December projections), thus falling short of its potential (1.5%). There was uncertainty at the global level (mainly associated with the risk of an escalation of protectionist measures) associated with adverse domestic factors in certain euro area countries at the end of last year (particularly in Germany where there was a slowdown in automotive industry activity and in Italy where doubts may have weighed on investment).

The recovery in 2020 (with growth expected to reach 1.4%) is expected to depend on these adverse circumstances at the domestic level and uncertainties at the global level gradually fading out, while benefiting from the persistence, generally speaking, of the fundamental factors supporting euro area expansion (particularly the resilience of sectors with the lowest international exposures, the monetary policy stance, rising wages, an upturn in foreign demand and a certain fiscal easing).

The recovery is also conditional on a favourable outcome to the political uncertainties in Europe.

The situation in the United Kingdom and the conditions for its exit from the European Union remain unclear (see the box on "Brexit") and continue to be a source of short-term vulnerability.

1 *Eurosystem forecasts published on 6 June 2019.*

In Italy, the Banca d'Italia stresses that, despite a positive current account balance, the downward trajectory in the structural budget deficit poses a challenge in terms of debt refinancing in the event of a sudden rise in interest rates,[2] while the expected economic growth in Italy should remain below the interest rate level attached to short-term sovereign debt issuance. This challenge is even more severe given that the ability of the Italian economy to return to sustainable growth is in question and the structural reforms to be implemented and its compliance with European fiscal commitments are the subject of ongoing political tensions (illustrated by the possibility of an excessive debt procedure against Italy, recently raised by the European Commission).

Focus on Brexit

At a meeting of the European Council on 10 April 2019, the United Kingdom and the European Union (EU) agreed to delay Brexit to no later than 31 October 2019. However, this decision should not lead economic players to slow their preparations for the United Kingdom's departure and in no way eliminates the eventuality of a no deal – or "hard" – Brexit. The United Kingdom can also leave the EU on the first day of each month and the British government has indicated its intent to exercise this option. Lastly, the political situation in the United Kingdom remains extremely unpredictable and in such a context the possibility of a hard Brexit cannot be ruled out.

Among the risks associated with a no-deal scenario, the loss of access to euro-denominated derivatives clearing, the lack of a guarantee of the finality of payments and the invalidity of over-the-counter derivative contracts should lifecycle events arise were of particular concern (see *Assessment of Risks to the French financial system*,[1] Banque de France, December 2018). The public measures taken both in France (a law empowering the government to implement by executive order any measures needed to prepare for Brexit), and at the European level (temporary decisions taken by the European Commission to recognise UK clearing houses) are designed to limit these risks so that they do not represent a danger to financial security. Nevertheless, a hard Brexit would have consequences for financial players. The business continuity plans of banking, insurance and asset management sector operators are closely monitored by the supervisory authorities.

Furthermore, as the Bank of England has pointed out, the impact of a hard Brexit would not be limited to operational repercussions within the financial sector but would principally be macroeconomic, with the possibility of a deep recession hitting the UK economy.

1 https://publications.banque-france.fr/en/december-2018.

Macroeconomic outlook for France

In France, growth has been largely unaffected up to now by the global economic slowdown. According to Banque de France projections, annual GDP growth should remain close to potential (1.3%) at 1.3% in 2019 and 1.4% in 2020.[3] The dynamism of household consumption is expected to be underpinned by strong gains in household purchasing power in 2019.

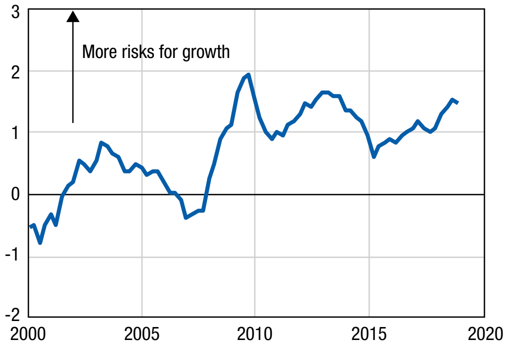
French economic growth appears to be partly supported by an easing of financial conditions and an acceleration of the financial cycle (see Chart 7). The Growth-at-Risk (GaR) indicator,[4] which estimates the growth rate for the year ahead in an adverse scenario (i.e. with a 5% likelihood), indicates that the risk of a slowdown is accentuating (see Chart 8).

2 *Banca d'Italia Financial Stability Report, May 2019:* https://www.bancaditalia.it/pubblicazioni/rapporto-stabilita/2019-1/en-FSR-1-2019.pdf?language_id=1
3 *Eurosystem staff Broad Macroeconomic Projection Exercise (BMPE), June 2019.*
4 *Reference for Growth-at-Risk: Adrian (T.), Boyarchenko (N.) and Giannone (D.) (2019), "Vulnerable growth",* American Economic Review, *Vol. 109, No. 4, pp. 1263-1289.*

Chart 7

Financial condition index used to calculate the Growth-at-Risk indicator

(x: year; y: percentage)

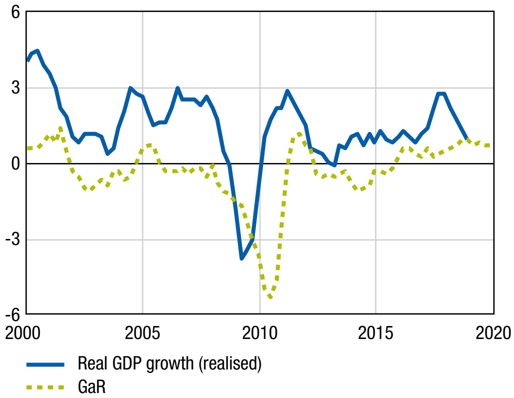


Source: Banque de France.

Chart 8

More uncertain growth in France measured with the Growth-at-Risk (GaR) indicator

(x: year; y: percentage)



Source: Banque de France.
Note: GaR is used to evaluate the impact of a deterioration in financial conditions on extreme values (5th percentile) in a future GDP growth distribution.

Private sector debt

At EUR 3,122 billion at the end of 2018, France's private sector debt was equivalent to 132.3% of GDP, up 45 percentage points of GDP since 2000.

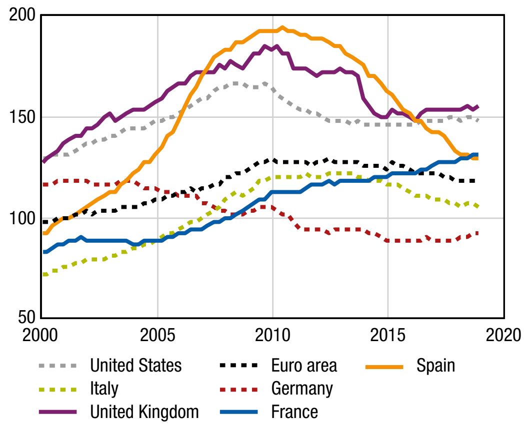
This steady upward trend is unusual compared with patterns seen elsewhere in the world. Debt has fallen since the 2009 crisis in most countries, with drops of 29, 15 and 10 percentage points of GDP in the United Kingdom, United States and the euro area respectively between the end of 2009 and the end of 2018. In contrast, indebtedness in France went up by 20 percentage points of GDP over the same period. Consequently, France's private sector debt is now the highest of all the large euro area countries and is 13 percentage points of GDP above the euro area average. However, it remains lower than in the United States and the United Kingdom, where household debt levels are still extremely high.

The increase in private sector debt, primarily driven by bond issuance by corporates during the 2012-15 period, is also due to the robust rise in household (housing loans) and corporate borrowing (both bonds and loans) since 2017.

Chart 9

Private sector debt by country

(x: year; y: percentage of GDP)

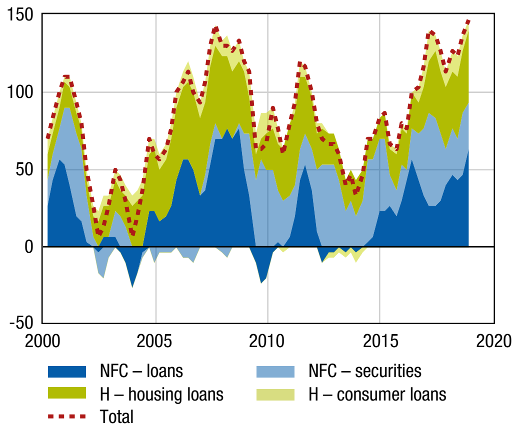


Source: Banque de France.

Chart 10

Breakdown of the change in private sector debt

(x: year; y: EUR billions)



Source: Banque de France.
Note: NFC refers to non-financial companies and H refers to households.

The current rise in corporate debt, like household debt, is consistent with the generally persistent low interest rate environment. However, these developments have their own distinct drivers.

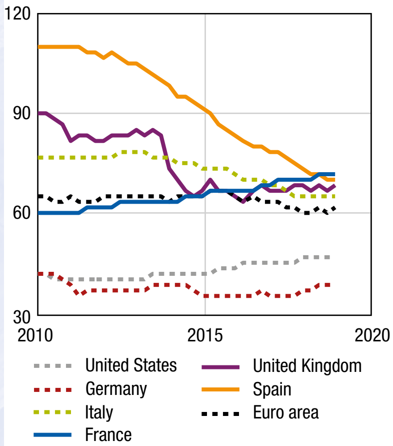
Non-financial company indebtedness

The total debt of non-financial companies (NFCs) amounted to EUR 1,708 billion at the end of 2018, representing 72.6% of GDP (see Chart 11). It has increased at an annual rate of almost 5% since 2017 and accelerated slightly at the end of the period with a year-on-year increase of 5.9% in March 2019 (see Chart 12). The growth in NFC debt was driven by market borrowing (bond issuances) between 2012 and 2015 and then at the beginning of 2017. By contrast, more recently the contribution of lending has matched that of market (debt) financing and the corporate financing mix appears to have stabilised at approximately 65% bank lending and 35% bond issuance (see Chart 13).

Chart 11

Non-financial company indebtedness by country

(x: year; y: percentage of GDP)

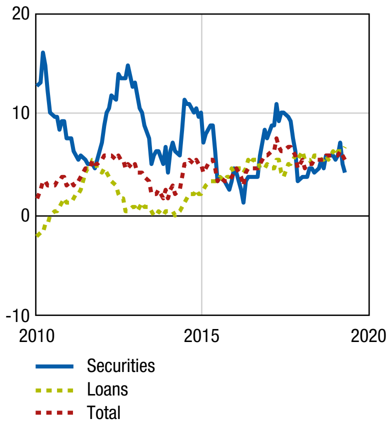


Source: Banque de France.

Chart 12

Comparative growth in lending, market borrowing and total indebtedness of NFCs

(x: year; y: percentage)

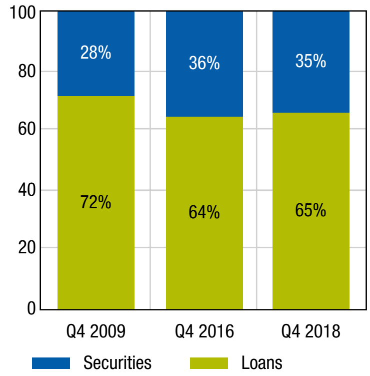


Source: Banque de France.
Note: NFC – non-financial companies.

Chart 13

Relative share of market borrowing and bank lending in total corporate debt

(x: year; y: percentage)



Source: Banque de France.

Dynamic growth in French NFC debt has long been a unique feature within the euro area. For example, between 2011 and 2017, the outstanding debt of French NFCs rose by EUR 322 billion whereas the entire debt stock for the euro area as a whole increased by only EUR 384 billion. As a result, French NFC debt is now 11 percentage points of GDP higher than the euro area average.

The population of NFCs is rather diverse both in terms of financing methods and in terms of determinants and dynamics.

The rate of indebtedness of large enterprises (LEs) and mid-tier enterprises (MTEs) rose a little more than that of small and medium-sized enterprises (SMEs) during the 2016-18 period. LEs, and to a lesser extent, MTEs benefited from available and relatively inexpensive market financing after 2012 while their financing needs encompassed a larger and more longer lasting range of demands than is the case for SMEs, including research and development, international expansion and acquisitions. Their debt therefore increased earlier and relied heavily on the bond markets.[5] However, the growth rate of SMEs debt currently exceeds that of LEs and MTEs.

The high level of debt of LEs and MTEs can be explained by a combination of factors, from the relatively high (headline) corporate tax rate that encourages them to book their debt in France to the importance of large internationalised companies in the French economy, which take out debt financing in France to support group activities as a whole, including the activities of subsidiaries located abroad. Nevertheless, adjusting for their business sector and their size, French groups do not, in general, appear to be more indebted than their peers.[6]

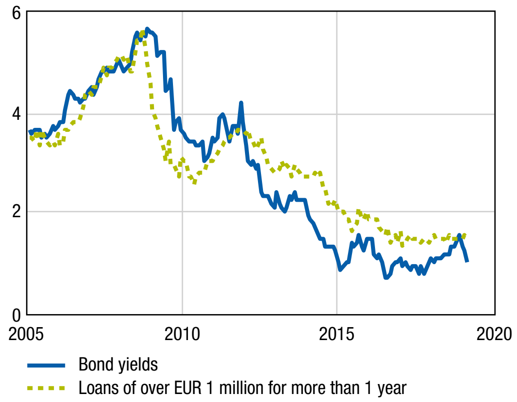
At the macroeconomic level, part of the increase in debt has gone hand in hand with an accumulation of cash and cash equivalents in companies' balance sheets. However, changes in companies' cash management strategies cannot account for the rise in gross

5 *Group gross and net leverage ratios declined however during the 2012-16 period. See Charasson-Jasson (H.) (2017), "The debt of major French groups: changes and financing choices"*, Banque de France Bulletin, *Quarterly Selection of Articles, Winter 2017.*
6 *See IMF Country Report No. 18/244, France, Selected Issues, July 2018.*

Chart 14

Change in interest rates on new lending and new bond issuance

(x: year; y: percentage)

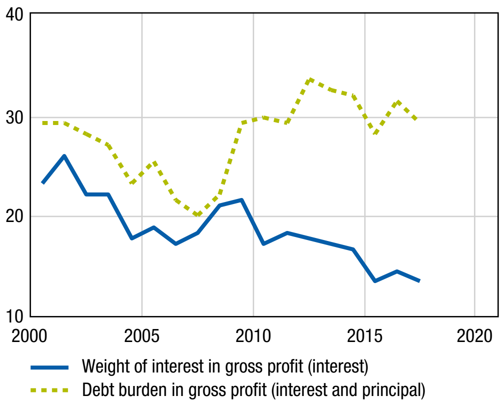


Source: Banque de France.

Chart 15

Debt burden and weight of interest in overall gross profit

(x: year; y: percentage)



Source: Banque de France.

debt: debt net of cash and cash equivalents has risen by 9 percentage points of GDP since 2009 to 39.5% of GDP[7] (compared with a 12 percentage points increase to 72.6% of GDP for gross debt).

The reduction in interest rates (see Chart 14) limited the impact of rising indebtedness on companies' debt burdens. The weight of interest in gross profit has fallen steadily over the past decade to 14% (see Chart 15). However, the debt burden (including principal repayments) accounts for a relatively stable fraction of gross profit, at 29% in 2017.[8] We can also see a slight decrease in the proportion of short-term credit, which could improve the debt burden ratio.[9]

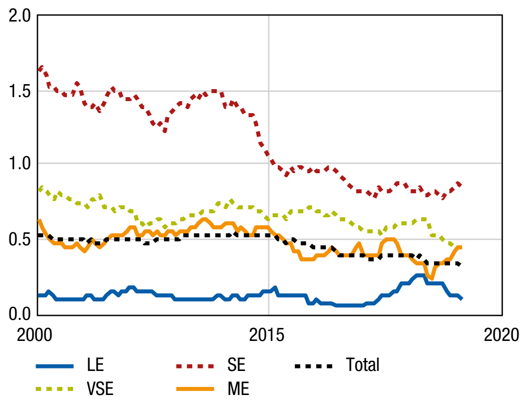
The decline in rates (combined with a relatively favourable growth) has also contributed to a reduction in company delinquency (see Chart 16): the number of defaults has fallen sharply over the past five years and the share of defaults in total outstanding loans has declined somewhat, except for a recently observed increase for medium-sized enterprises.

Beyond the increase in average ratios, the distribution of debt among companies is significant: a substantial part of the debt is concentrated in a relatively small proportion of companies. This more vulnerable sub-population presents a particular challenge in terms of financial stability. Applying the indebtedness criteria developed by the *Haut Conseil de stabilité financière* (HCSF – High Council for Financial Stability),[10] the share of highly indebted large

Chart 16

Economic weight of failing businesses
as a percentage of total outstanding loans

(x: year; y: percentage)



Source: Banque de France.
Note: LE-MTEs – large enterprises and mid-tier enterprises; SE – small enterprises; VSE – very small enterprises; ME medium-sized enterprises.

7 *In this case, cash and cash equivalents include cash and cash deposits (F2), investment fund shares (F52) and short-term debt securities (F31). In reality, if cash and cash deposits alone are deducted, net corporate debt is stable. Over the recent period, companies have partly increased their deposits to replace cash assets that they had traditionally held.*

8 *This ratio differs slightly from the debt burden ratio normally calculated by the Bank for International Settlements (BIS): it uses the debt burden calculated using the BIS method in the numerator and, in order to ensure comparability with the previous calculation, it uses the same gross profit as that used for the calculation of the weight of interest in the denominator.*

9 *The debt service calculated using the BIS method assumes a constant loan maturity.*

10 *A company is judged to be highly indebted if simultaneously (i) its interest coverage ratio is less than three and (ii) its net-debt-to-equity ratio is over 100%. See the HCSF's explanatory note on the high risk (grand risques) measure implemented in May 2016 for which these criteria were developed:* https://www.economie.gouv.fr/files/files/directions_services/hcsf/HCSF_180511_-_Notice_Mesure_Grands_Risques.pdf

enterprises remained stable at 13% in 2017.[11] This apparent stability is the result of both a decline in the share of large companies with an interest coverage ratio of less than three and an increase in the share of companies with net leverage of over 100% of equity. Debt net of cash and cash equivalents held by these highly indebted companies amounted to EUR 56 billion.[12]

The most indebted companies are vulnerable to a rapid deterioration in the macroeconomic environment and/or a sharp rise in interest rates. The impact of a hike in interest rates would be all the more severe given that, in addition to the effect of the gradual refinancing of debt arriving at maturity, 38% of NFC debt is at a floating rate[13] and this proportion is on the rise (the share of fixed rate loans in new lending is down from 56% at the beginning of 2018 to 53% at the beginning of 2019). However, part of this interest rate risk could have been covered using derivatives, particularly by the largest enterprises.

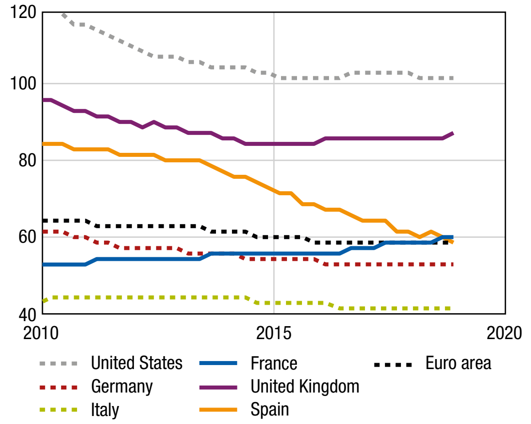
Household debt

Household debt[14] stood at EUR 1,403 billion – the equivalent of 59.8% of GDP – at the end of 2018 (see Chart 17). The French household debt ratio now exceeds that of the euro area (57.6%), Spain (59.6%) and Germany (52.7%), due to an increase of 8 percentage points of GDP in France since the crisis (from 51.8% at fourth quarter 2009) compared with reductions in all its major neighbours (an average fall of 7 percentage points of GDP in the euro area). After a period of stabilisation between 2011 and 2015, the ratio increased from 2016 onwards, driven by strong growth in housing loans in conjunction with a real estate market recovery.

Chart 17

Household debt by country

(x: year; y: percentage of GDP)

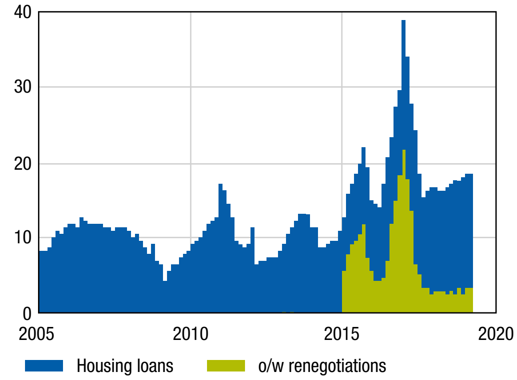


Source: Banque de France.

Chart 18

Property loan new lending, including renegotiations

(x: year; y: EUR billions)



Source: Banque de France.

11 In its December 2017 *Conjoncture in France* report, INSEE shows that among companies for which debt increased, the rate of net indebtedness of the most indebted 10% of companies increased sharply in 2015. See Khder (M.-B.) and Rousset (C), "Is the increase in French firms' indebtedness a cause for concern?", *Conjoncture in France Report*, INSEE, December.

12 The sample includes 226 large enterprises, 29 of which are overly indebted (12.8%), and represents outstanding debt of EUR 698 billion, EUR 56 billion of which was held by highly indebted companies (8.0%).

13 Loans and securities with a residual maturity of less than one year and floating rate loans and securities are treated as floating rate debt.

14 Household debt has also come to include the debts of unincorporated enterprises (S14A in national accounts) and non-profit institutions serving households (S15).

The share of housing loans in French household debt grew to 81% at the beginning of 2019 at EUR 1,013 billion.[15] New lending excluding loan buybacks and renegotiations is up compared with 2017 (see Chart 18). This increase in new lending followed a sharp drop in interest rates between 2013 and 2017, which led to several waves of housing loan renegotiations. Interest rates remain very low at 1.51%. Should housing loan interest rates fall further, a new wave of renegotiations could be a challenge given its long lasting impact on banks' intermediation margins (see Risk 3 below).

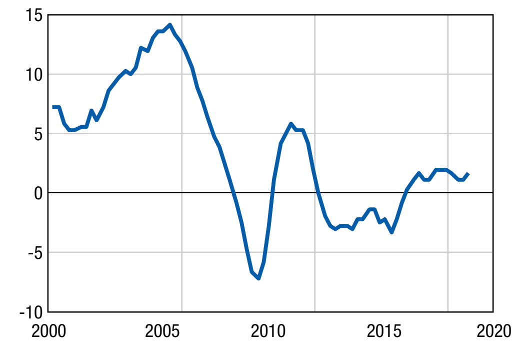
The increase in housing loans reflects the buoyant real estate market (see Chart 19). The residential real estate market (existing homes) recorded a record number of transactions, with approximately 950,000 sales on an annual rolling basis since the beginning of 2017, and stable growth in prices of a little over 3% during the same period.

However, there are significant geographical disparities (see Chart 20): the average growth in prices of 3% conceals sharp increases of over 6.5% in the centres of certain large urban areas (such as Lyon and Paris) and more muted growth of less than 2% in the outskirts of the greater Paris region, rural areas and even in some large cities. These disparities contrast with the homogeneous price dynamics observed both during the period of strong growth from 2005 to 2008 and during the first post-crisis (2008-09) contraction. The influence of demographic factors on these disparities should be explored.

Chart 19

Property price growth rates for existing homes in metropolitan France

(x: year; y: percentage)

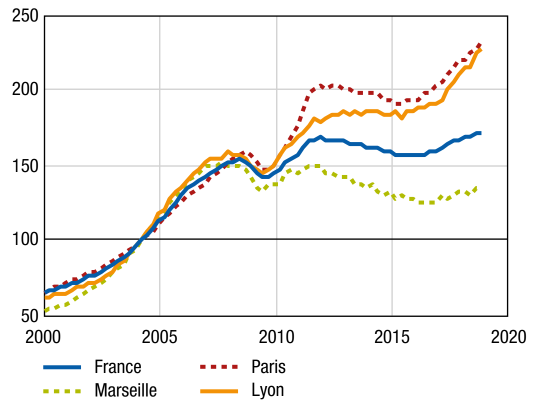


Source: The Notaires-INSEE second-hand housing price indices (nominal prices adjusted for seasonal variations).

Chart 20

Change in existing home property prices

(x: year; y: Q1 2004 = 100)



Source: The Notaires-INSEE second-hand housing price indices (nominal prices adjusted for seasonal variations).

New lending fuels the growth in outstanding property loans, which have risen at a rate of around 6% since the beginning of 2017, at a time when household income has increased by 2.0-2.5%. This results in an upward trend in the debt-to-income ratio, which goes hand in hand with an easing of lending conditions, particularly average initial loan maturity, which rose for the fifth consecutive year (excluding buybacks and renegotiations) to 20.9 years, and thus exceeded the level observed in 2008.

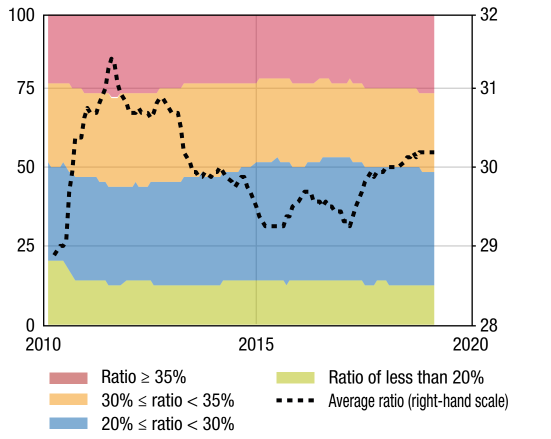
The average debt-service-to-income (DSTI) ratio at origination (see Chart 21) is also up for the third year running reaching 30.1% in 2018 (an increase of 0.4 percentage point compared with 2017). Despite the increase in the average loan amount (up 5%), the deterioration in the DSTI ratio was limited, as low interest rates and the relatively flat

15 According to the 2014 Wealth Survey, property accounts for a greater share than in the monetary statistics. Mortgages/housing loans account for 88% of outstanding amounts, while financing for property improvements accounts for a further 4%. Two other major reasons given for requesting a loan are to purchase a car (4%) and to finance a business activity (2%).

Chart 21

Debt-service-to-income (DSTI) ratio at origination

(x: year; y: percentage)

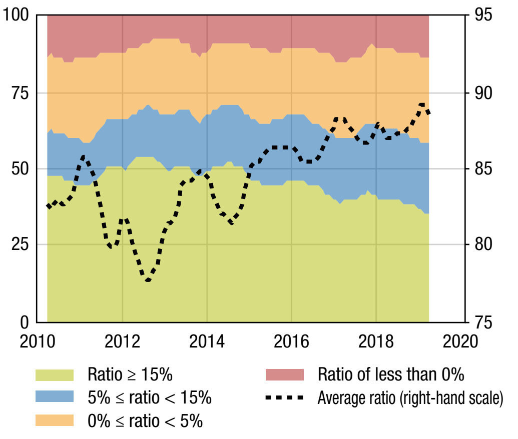


Source: ACPR, annual survey of housing finance and monthly monitoring of new residential lending.

Chart 22

Distribution of deposits and LTV at origination

(x: year; y: percentage)



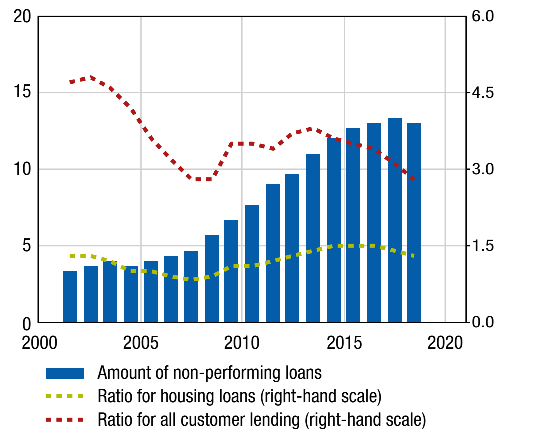
Source: ACPR, annual survey of housing finance and monthly monitoring of new residential lending.
Note: The loan-to-value ratio (LTV) is the ratio between the principal loan amount and the purchase value of the property.

curve profile allow borrowers to extend the duration of their loans without significantly inflating their repayment charges. The increase in the average DSTI ratio at origination is due particularly to the growth in the proportion of transactions with a high DSTI ratio (over 35%), which are mainly carried out by buyers who are already property owners.

Chart 23

Annual change in gross non-performing loan amounts

(x: year; y: left-hand scale – EUR billions, right-hand scale – percentage)



Source: ACPR, annual survey of housing finance and BAFI/SURFI data.
The ratios correspond to non-performing loan amounts as a proportion of either total housing loans or all customer lending.

Lastly, the loan-to-value (LTV) ratio at origination[16] increased for the fourth consecutive year (up 0.3 percentage point) to a historical high of 87.3% in 2018 (see Chart 22). This trend is largely due to the drop in interest rates that allows more money to be borrowed without changing the DSTI ratio, and (excluding buybacks) also first-time buyers, whose average LTV ratio went up by 1.9 percentage point to 90.4%.

The French housing finance market continues to benefit from low delinquency rates. For example, the non-performing loan ratio of 1.3% at 31 December 2018, was down 0.13 percentage point compared with 2017 (see Chart 23).

Credit risk remains low. A possible rise in interest rates would have little impact on credit risk as housing loans granted by French banks continue to be almost exclusively at fixed rates (98.9% of new lending in 2018). Furthermore, almost all of these loans (96.9%) benefit from a credit protection such as a guarantee, mortgage or security, which limits losses in the event of borrower default, and lending practices are mainly based on an evaluation of the borrower's ability to repay (i.e. a DSTI approach) rather than on the value of the financed property (based on the LTV).

16 The LTV (loan-to-value) at origination corresponds to the ratio between the loan principal and the purchase value of the property.

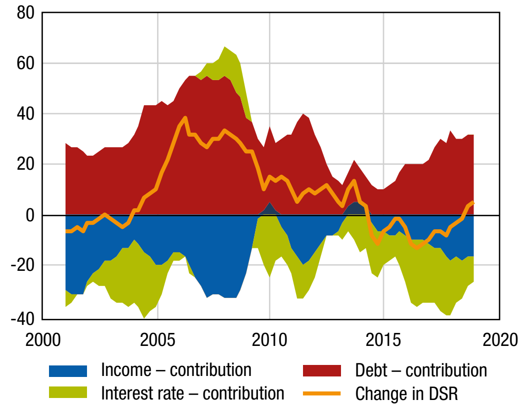
At an aggregate level, the reduction in interest rates and the lengthening of maturities offset the impact of greater indebtedness on the debt burden and debt service ratio (DSR)[17] between 2014 and 2017 (see Chart 24). However, the latter has been increasing again for some time now and this trend is expected to continue in the coming quarters.

The continuous rise in household debt and the easing of lending conditions call for maintained vigilance. Although the debt delinquency rate remains low and wealth effects are relatively marginal in France (consumption is largely unaffected by a rise or fall in property values), the continued growth in the debt-to-income ratio and the increase in debt service would eventually weigh on household consumption and therefore on the economy.

Chart 24

Annual change in debt service ratio (DSR)

(x: year; y: points of household gross disposable income)



Sources: Banque de France calculations; Bank for International Settlements methodology.
Note : DSR, debt service ratio.

Macroprudential measures

Even though they reflect different underlying rationales, the trend in corporate and household debt has led the HCSF[18] to take measures aimed at curbing the exposure of the banking sector to these changes and reinforcing its resilience.

With regard to the risks presented by a sub-population of highly indebted companies, in May 2018 the HCSF decided that systemically important French banks should be subject to an exposure limit to highly indebted companies of the equivalent of 5% of their own funds.[19]

In addition, faced with the overall dynamic of private debt, the HCSF increased the counter-cyclical capital buffer to 0.5% of banks' weighted assets in two steps (to 0.25% in June 2018, and then to 0.5% in April 2019) with the aim of ensuring continued credit supply – particularly to the highly dependent SMEs – in the event of a downturn in the financial cycle and the emergence of a risk of a credit squeeze.

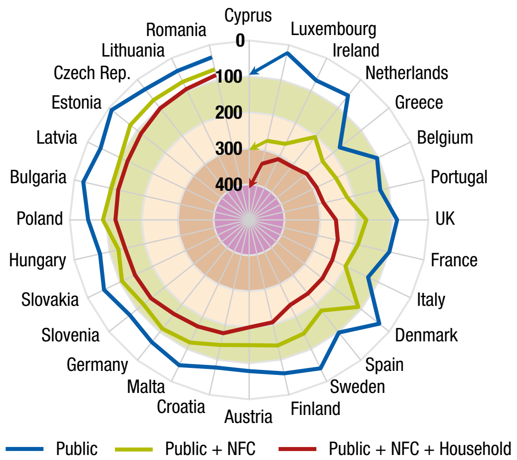
Public debt

Reinforcing financial sector resilience is even more important as the capacity to mobilise public resources to cushion economic or financial shocks becomes gradually more limited. France's public debt in 2018 was the equivalent of 98.7% of GDP, compared with 64% of GDP in 2007, and is expected to stay close to this level during the years to come (see Chart 27). In terms of total debt, France ranks in the higher-end of the average range of European countries (see Chart 25).

Chart 25

Total debt by European country

(Concentric circles as a percentage of GDP)



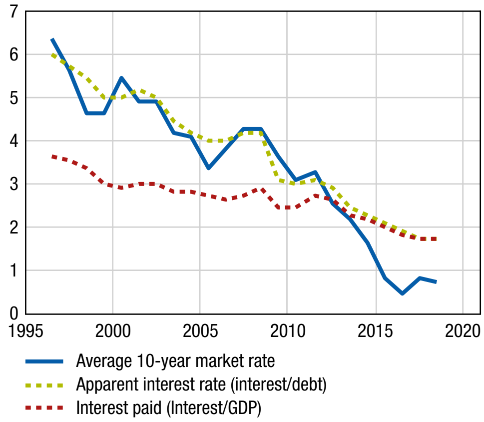
Sources: Eurostat, Banque de France calculations.
Note: NFC – non-financial companies.

17 Debt service charges (interest and principal repayments) calculated in accordance with the BIS methodology, as a ratio of household gross disposable income.
18 See the HCSF Annual Report for more detail.
19 Measure taken within the framework of Article 458 of the Capital Requirements Regulation (CRR). For further details concerning this measure, see decision No. D-HCSF-2018-2 published on the HCSF's website along with the related press release and explanatory note.

Chart 26

French public debt service

(x: year; y: percentage)

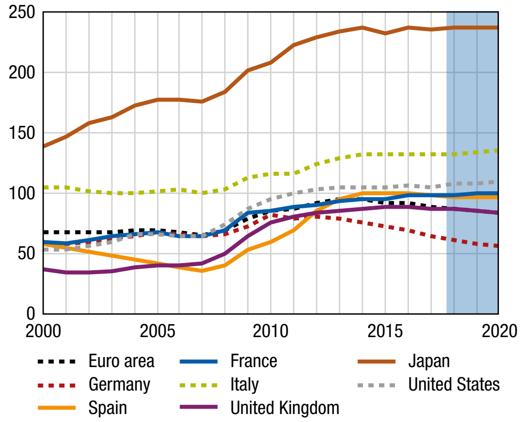


Sources: Eurostat, Banque de France calculations.

Chart 27

Public debt projections

(x: year/ y: percentage of GDP)



Source: Until 2018, the European Commission; projections shown in the shaded area from the Banque de France for France and the European Commission for other countries.

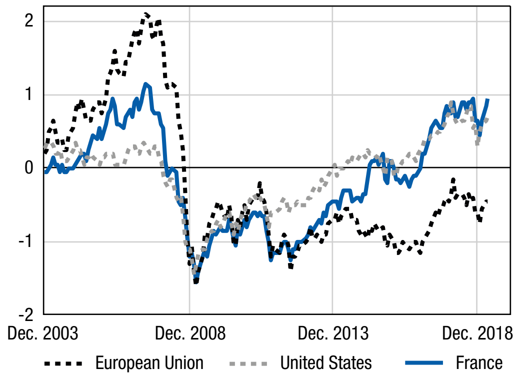
The fall in interest rates has more than offset the increase in debt, allowing the French government to reduce its debt servicing costs to a current historic low of less than 2% of GDP (see Chart 26). Nevertheless, in the future, the capacity to mobilise public resources in the event of a crisis is increasingly limited due to shrinking fiscal space (as budget deficit levels over recent years that have prevented a reduction in the debt-to-GDP ratio).

The equity and bond markets rediscovered their elevated valuation levels. The rise observed since the beginning of 2019 has practically erased the end of 2018 correction: current valuations more or less correspond to those of the summer of 2018. In the equity markets, the cyclically adjusted price-to-earnings (CAPE)[20] ratio climbed to a significantly higher level than the long-term average (see Chart 28). In the bond markets, risk premiums rose slightly (while remaining significantly below their historical long-term average) before declining once more (see Chart 29).

Chart 28

Standardized price-to-earnings ratio

(x: year; y: percentage points as deviations from the average)

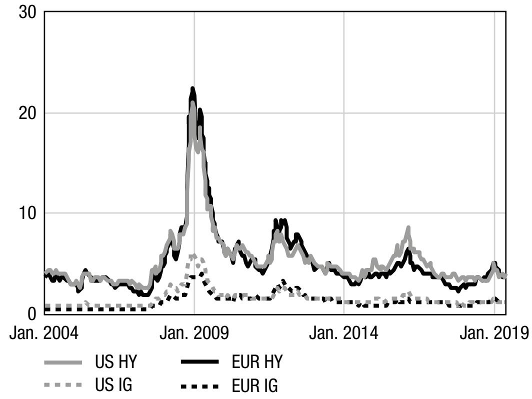


Sources: Datastream, Banque de France calculations.
Key: If the value of the indicator is more than zero, the price to earnings ratio is higher than its long-term average (1985-2019).

Chart 29

Corporate bond market risk premiums

(x: year; y: percentage)



Sources: Bank of America and Merrill Lynch.
Note: US – United States; EUR – euro area; HY – high yield, i.e. high-yield bond spread; IG – investment grade, i.e. investment grade bond spread.

An environment of low interest rates, elevated valuations and volatility

In both cases, these elevated valuations are in part explained by the low interest rate environment. In the equity markets, when the discount rates decrease without any change in the expected dividend projection, the value of shares increases. In the bond markets, the decrease in interest rates eases debt servicing and curbs credit risk, which can justify a reduction in risk premiums. Nevertheless, the current valuation levels seem to go beyond these effects alone to include an element of optimism and/or a lower compensation for risks. Riskier assets are increasingly in demand in a context of search for yield, as illustrated by flows towards private equity (see Chart 30), corporate debt funds (see Chart 31) and, more generally, the development of alternative asset classes.

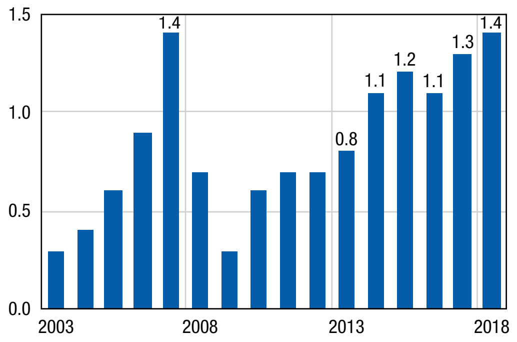
Moreover, the current context of elevated valuations on the equity and bond markets is closer to that of the mid-2000s than that of the end of the 1990s, when levels of extremely elevated valuations were only observed in the equity markets. Therefore, the potential for simultaneous price adjustment across a number of markets is significant.

20 The CAPE indicator is defined as share price divided by the ten-year moving average of inflation-adjusted earnings. This measure is chosen over the Price to Earnings Ratio (PER) or forward PER (dividends paid are replaced with expected dividends for the coming year). It has been demonstrated that the average annual return over a 10-year period decreases with the level of the cyclically adjusted PER. This indicator can be used to take into account changes in prices in net profits during the cycle and to have a relatively accurate and global long-term view of stock market valuation. However, measures of sensitivity to the length of the smoothing period show that the five-year cyclically adjusted PER gives results that are greatly similar or even higher for France. This indicator's weakness is that it does not take into consideration the macroeconomic environment (the economic situation, growth expectations, interest rate levels, etc.). See Campbell and Shiller, "Stock prices, earnings and expected dividends", Journal of Finance*, Vol. XLIII, July 1988, pp. 661-676).*

Chart 30

Private equity transaction volumes

(x: year; y: USD trillions)

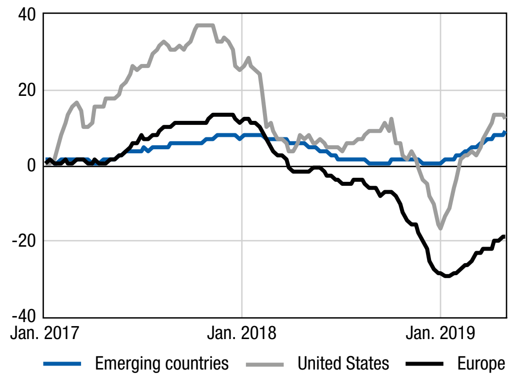


Source: McKinsey Global Private Markets Review 2019.

Chart 31

Cumulative corporate fund flows

(x: year; y: USD billions)



Source: Informa PLC (EPFR database).

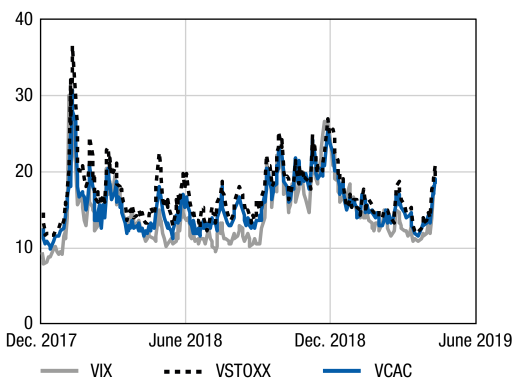
The current market environment is also characterised by general low volatility but with fairly sudden movements. For example, the equity markets experienced strong corrections in February, October and December 2018 leading to increases in the volatility indices.[21] Just as market valuations (both bond and equity) rapidly returned to their previous levels, increases in the volatility indices have always been short-lived. It would thus appear misleading to speak of a return of market volatility (see Chart 32).

The interest rate environment also partly explains these phenomena of reduced volatility with brief jolts: the context of low interest rates and the search for yield results in very similar investor behaviour with strong competition on the primary markets but

Chart 32

Implied volatility of options on the stock market

(x: year; y: percentage)

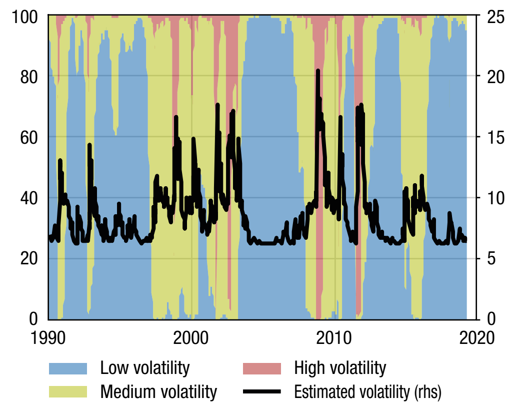


Source: Bloomberg.

Chart 33

Volatility intensity indicator[a)]

(x: year; y: percentage)



Sources: Bloomberg, Banque de France calculations.
Note: The MSGARCH model used here on the CAC 40 allows us to estimate the probability of a low/medium/high volatility regime (calculated on yields).
a) The MSGARCH model allows us to estimate the probability of a low/medium/high volatility regime on the CAC40 index (calculated on yields).

21 *See the European Central Bank's* Financial Stability Review *published in May 2019.*

few subsequent transactions on the secondary markets until new information leads a significant proportion of participants to adjust their allocation and portfolios in a similar way, leading to a sharp price correction.

Lastly, periods of low volatility are conducive to increased risk-taking. When prices are excessively stable, economic and financial players are inclined to take more risk out of optimism encouraged by the absence of shocks and reinforced by the persistently stable prices. This is particularly true when they measure risk using pro-cyclical metrics such as value-at-risk (VaR), whose level declines as volatility decreases. However, despite occasional jolts, we are witnessing one of the longest periods of reduced volatility in 30 years (see Chart 33).

Risk-taking

Lastly, investors' increased appetite for risk is an effect of a shift in risk within each market segment. Thus, in addition to the increase in the issuance of high yield securities or the development of leverage finance (see box), the proportion of more poorly rated bonds in investment grade universe (bonds with a rating of BBB+ to BBB-) has increased sharply in recent years.

Box

Leverage finance[1]

The surge in leverage finance, and particularly leveraged loans (see Chart 34), which has been extremely sharp in the United States and strong in Europe and France, may be interpreted as a symptom of the acceleration of the financial cycle and of risk-taking in the markets.

The global stock of leveraged debt (leveraged loans and high-yield bonds) was estimated at the end of 2018 at EUR 4,029 billion (see Table 1). In France alone, the stock is thought to be EUR 122 billion. As no official definition exists, these stocks are estimated using trade databases and represent a low starting bracket for comparison with other data, such as indebted company balance sheets.

Table 1

Outstanding amounts of leveraged debt of non-financial companies

(in EUR billions)

	France	European Union	United States	Rest of the world	Total
Leveraged loans	57	362	1,627	118	**2,107**
o/w collateralised loan obligations (CLOs)	*0*	*183*	*533*	*1*	***717***
High-yield bonds	65	513	1,038	371	**1,922**
Total	**122**	**875**	**2,665**	**489**	**4,029**

Source: Bloomberg (data as at end-December 2018).
Note: Outstanding amounts of leveraged loans do not only include institutional leveraged loans.

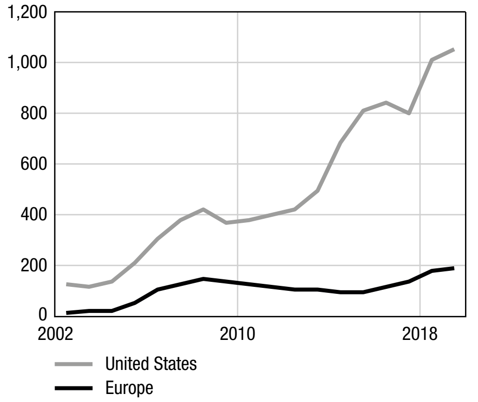
The development of this market segment fits with a context of abundant liquidity and persistent low interest rates, which encourages investors searching for yield to turn to riskier, higher-earning assets. These changes lead to a squeezing of the risk premium (see Chart 35).

1 See the European Central Bank's Financial Stability Review published in May 2019.

Chart 34

Outstanding amounts of institutional leveraged loans

(x: year; y: USD billions)

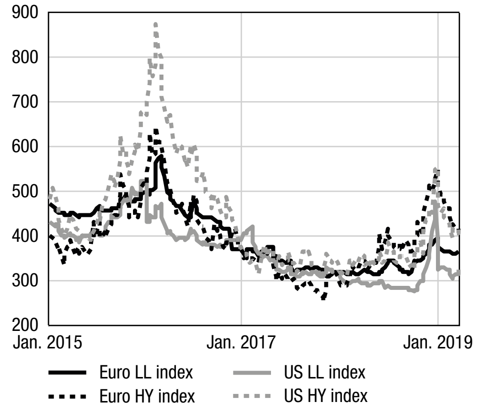


Source: Standard &Poor's Leveraged Commentary and Data (Q1 2019).

Chart 35

Risk premium on high-yield bonds and leveraged loans

(x: year; y: basis points)



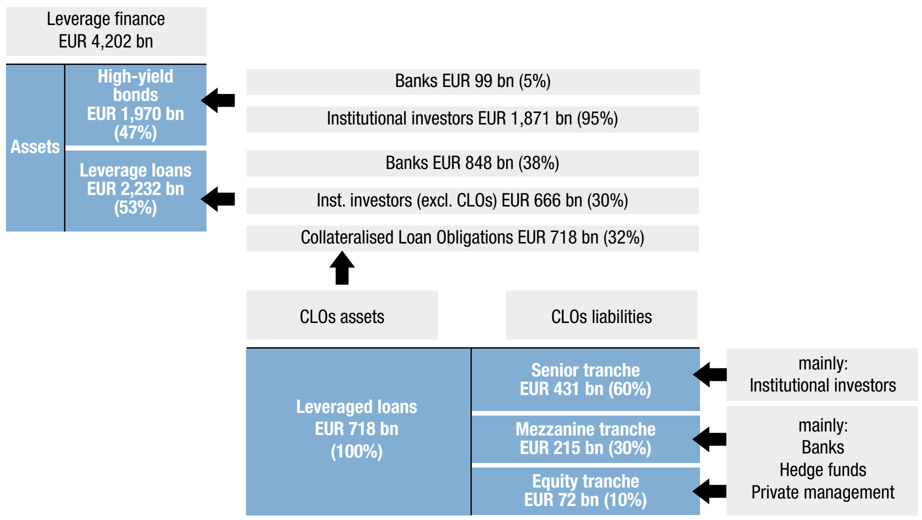
Source: Standard &Poor's Leveraged Commentary and Data (Q1 2019).
Note: LL: Leveraged loans; HY: High-yield bonds.

Non-bank lenders (the "Other financial institutions" category) are very active in these markets and hold an expanding share of outstandings (see Table 2). According to Standard & Poor's Leveraged Commentary and Data (S&P LCD), the banks that financed approximately 60% of new leveraged loans in 2010 accounted for only around 20% in 2018.

Table 2

Breakdown of global outstanding amounts of leveraged debt

(in EUR billions)



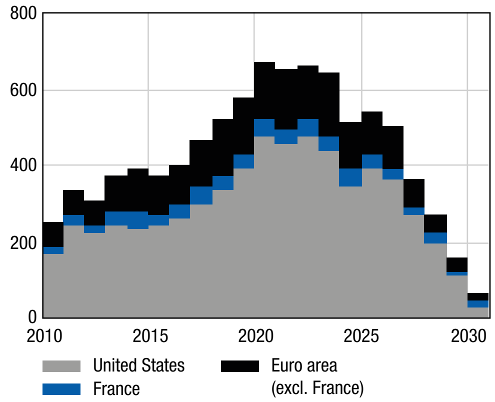
Source: Bloomberg (data as at end-December 2018).
Note: Outstanding amounts of leveraged loans do not only include institutional leveraged loans.

In these circumstances, markets appear inclined to take greater risks over time as long as the low interest rate environment persists. At the same time, they are extremely sensitive to shifts (upward and downward) in interest rate outlooks, particularly US interest rates. For example, in the event of a downward shift, risk-taking tends to increase, reinforcing the impact of a subsequent upward shift, which would expose investors to a three pronged risk: first, an abrupt and simultaneous price correction in those markets with historically elevated valuations; second, in connection with these corrections and, in addition, with a change in risk appetite and a long-term evolution of the relative yields of the different market segments or asset classes, a portfolio reallocation that would accentuate the price corrections, particularly in the least liquid market segments or asset classes; and third, a rise in interest rates and outflows in certain segments would exacerbate the already significant fragility of some issuers who would struggle to refinance their debt and/or would have to cope with an increase in their financing and refinancing costs.

Chart 36

Maturity dates, by geographical zone

(x: year; y: USD billions)

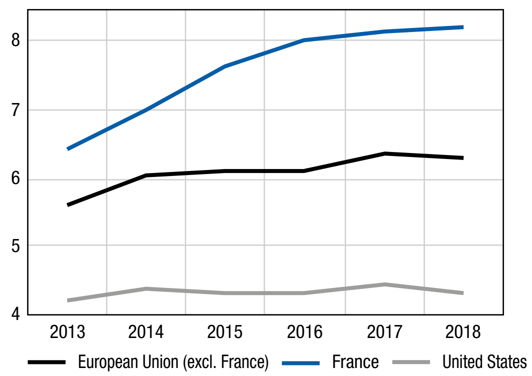


Sources: Dealogic, Banque de France calculations.

Chart 37

Change in the interest coverage ratio (ICR) of BBB Corporates

(x: year; y: unity)



Sources: Dealogic, Banque de France calculations.

As the Fed pointed out in its May 2019 Financial Stability Report,[22] if these bonds were downgraded to a speculative rating, certain investors could be forced to sell rapidly. Given the small size of the speculative debt market, a significant volume of these sales in a relatively illiquid market could result in amplified price decreases. An upward revision of the interest rate outlook would only accentuate these developments.

This effect is less pronounced – both in terms of volume and interest rate differentials – for non-financial companies in Europe and France, especially since non-financial companies with lower average credit quality (rated BBB+ to BBB-) have a somewhat higher, and increasing, interest coverage ratio (the fall in interest rates and improved earnings having clearly offset the effect of the rise in debt). Nonetheless, they continue to be sensitive to an interest rate hike.

French financial sector exposures

The direct exposure of the French financial sector to these risks (especially those associated with a US dollar environment) seems rather limited.

With regard to banks, the commitments of the five main French groups[23] to non-financial companies located in the United States[24] amounted to EUR 265 billion at the end of 2018, or 12% of all commitments to this type of counterparty (EUR 2,240 billion)

22 Board of Governors of the Federal Reserve System, Financial Stability Report, May 2019: https://www.federalreserve.gov/publications/files/financial-stability-report-201905.pdf.

23 BNPP, BPCE, GCA, GCM and SG.

24 Data taken from quarterly disclosures of international exposures, immediate risk.

Table 3

Gross exposure

(in EUR billions)

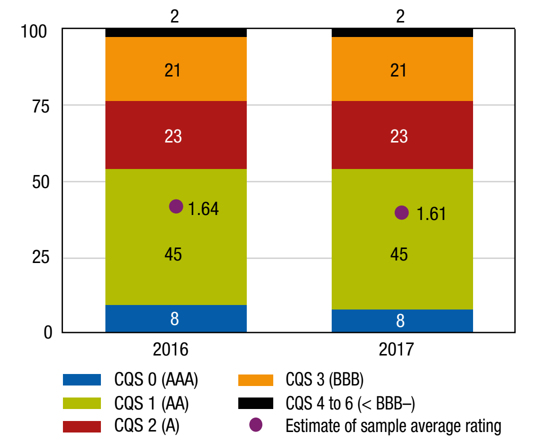
	Amount at 31 March 2019	Change since 31 March 2018
1. United States	704.9	9%
2. Italy	335.7	10%
3. Japan	231.3	23%
4. Belgium	229.1	1%
5. United Kingdom	223.7	-10%
6. Germany	206.1	-3%
7. Luxembourg	148.8	-15%

Source: ACPR.
Note : These gross exposures include all loan types to companies, retail customers, financial institutions, governments and central banks.

Chart 38

Proportion of securities with a rating of BBB+ or lower

(x: year; y: percentage)

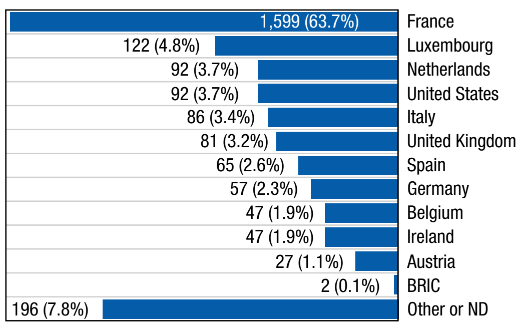


Source: ACPR (prudential data, market values).
Note: Ratings apply to bonds, structured securities and guaranteed securities. Estimates of a sample's average rating are shown in white.

Chart 39

Exposure by country of French life insurers

(USD billions and percentage of overall exposure)



Source: ACPR (prudential data, market values).
Note: BRIC countries refer to Brazil, Russia, India and China.

and 4% of total commitments (EUR 6,475 billion). By way of a comparison, commitments to non-financial companies located in France come to EUR 1,027 billion.

Moreover, at the end of March 2019, the cumulative gross exposures of the five main French banking groups exceeded the EUR 100 billion threshold for seven countries (see Table 3). Italy – up 10% year-on-year – continues to account for the second largest banking exposure after the United States. A significant proportion of these exposures come from banks' subsidiaries (and therefore has a self-contained logic), with Italian sovereign debt holdings close to EUR 68 billion. Only the overall gross exposure to the United Kingdom was down significantly year-on-year, with a 10% decrease. With regard to exposures to emerging countries potentially at risk, Turkey is placed 19th with an exposure of EUR 31 billion, down 19% year-on-year. Other significant exposures include China (EUR 46 billion), Brazil (EUR 30 billion), Russia (EUR 28 billion) and India (EUR 21 billion).

As for French life insurers, they have not significantly increased the risk associated with their overall asset allocation strategy in a search for yield. The proportion of inferior quality securities (with a rating of BBB+ or lower) in the asset portfolio amounts to around 23% and does not appear to be worsening despite a number of securities held by insurers being downgraded (see Chart 38). Equally, exposure to emerging countries is very limited. Brazil, Russia, India and China together account for less than 0.1% of insurers' investments (see Chart 39). Lastly, the average maturity of securities remained stable (6.5 years in 2018 compared with 6.4 years in 2016) even though lengthening maturities – when the term premium is positive – can generally enhance returns at the expense of increased credit risk.

Nevertheless, French institutions remain exposed to these risks in the event that market corrections lead to price movements to which they are indirectly exposed, to destabilising flows in the segments in which they are active, or to defaults among their counterparties.

4 Risk 3: Interest rate risks to financial institutions

The traditional business models of financial intermediaries are all in some way weakened by the low interest rate environment: banks' intermediation margins suffer from a flattening yield curve; and the performance of life insurers enabled by a gradual but continuous decline in interest rates deteriorates when this trend is interrupted, while non-life insurers lose the benefit of the return on assets accumulated due to the lag between premium payment and the settlement of claims.

The banking sector intermediation margin continues to deteriorate

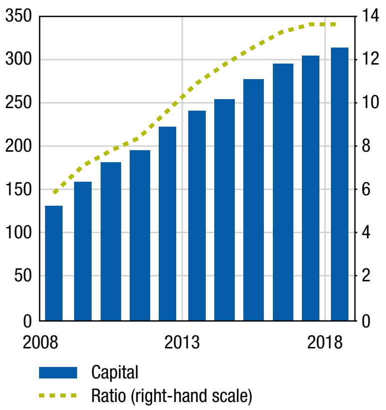
The French banking sector's prudential ratios are sound. For example, the aggregate CET1 solvency ratio of the six main French banking groups[25] remained stable in 2018 at 13.6%: tier 1 (CET1) capital amounted to EUR 312 billion (up 3.0%) for EUR 2,300 billion of risk-weighted assets (up 3.3% – see Chart 40).

Furthermore, French banks report comfortable liquidity ratios (see Chart 41): at 31 December 2018, the aggregate LCR[26] of the six largest groups had improved to 132.1% from 131.6% in December 2017 as banks increased their high quality liquid assets (the LCR numerator) by 2.3% to compensate for the 1.9% increase in net cash outflows (the LCR denominator).

Chart 40

CET1 capital and CET1 solvency ratio

(x: year; y: EUR billions (left-hand scale) and percentage (right-hand scale))

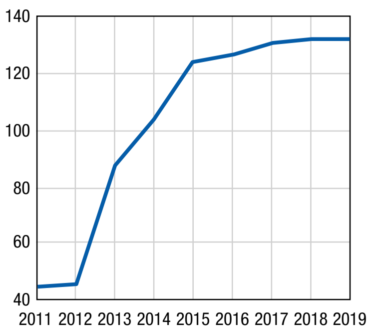


Sources: ACPR (BAFI/SURFI and COREP tables), Basel III Quantitative Impact Study (QIS) data and financial disclosures; ACPR calculations.

Chart 41

Short-term liquidity coverage ratio (LCR)

(x: year; y: percentage)

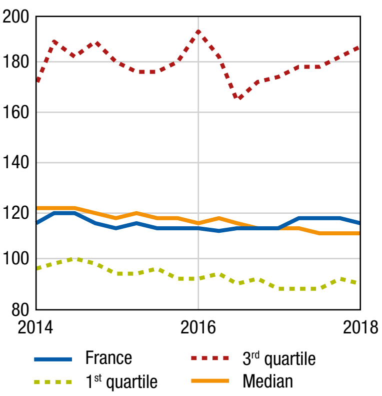


Sources: Basel III QIS data until June 2016 and ACPR (COREP) data from December 2016.

Chart 42

Loan-to-deposit ratio

(x: year; y: percentage)



Sources: ACPR and the European Banking Authority (FND_32).

Structurally, French banks have changed the structure of their liabilities within which deposits play a more important role (see Chart 42). In line with the trend of previous years, there was a 3.1% increase in deposits, which were up EUR 101.8 billion, including a rise of EUR 96.8 billion in "deposits other than from credit institutions". The Loan-To-Deposit (LTD) ratio, which fell sharply after the crisis, increased slightly by 2.4 percentage points from 114.2% at the end of 2017 to 116.6% at the end of 2018, in line with the median of European banks. The decline in interest rates has made it

25 BNP Paribas, the BPCE group, the Crédit Agricole group, the Crédit Mutuel group, La Banque Postale and Société Générale.
26 The liquidity coverage ratio, defined as the ratio of high quality liquid assets (HQLA) to total net cash outflows over a 30-calendar day period.

easier to collect these deposits and once interest rates start to rise the strengthening of the overnight deposit base, provided it remains stable, should make a significant contribution to the recovery of the net interest margin.

However, at this stage the further prolongation of the low interest rate environment keeps up the pressure on French banks' profitability, which has been in steady decline since 2012. It particularly affects the profitability of credit intermediation: the lower interest rates on new lending flows are gradually passed on to outstanding loans (all the more quickly when new lending consists in buybacks or renegotiations), and the net interest margin (NIM), which reflects the profitability of credit intermediation and varies with the slope of the yield curve, is currently being squeezed as the curve flattens (see Chart 43).

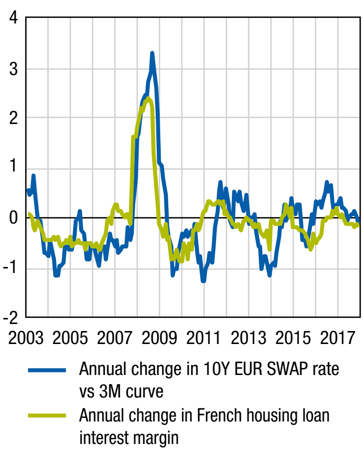
Indeed, the NIM of French banks fell 16 basis points (bp) between 2012 and 2018 (see Chart 44). This is an atypical situation as the NIMs of European banks and US banks increased by 7 bps and 46 bps, respectively, over the same period (with the latter particularly benefiting from an upturn in interest rates at the end of the period). The decline in France can be explained (among other factors) by the ability of households to renegotiate their loans or repay them early (subject to any contractual penalties that might apply). In a highly competitive French housing loan market, buybacks and renegotiations accounted for an annual average 17.3% of new lending in 2018, or 3.6% of the average outstanding loan amount (a significant reduction compared with the May 2017 peak of 52.6% of new lending and 19.5% of the average outstanding loan amount), which resulted in a decline in income over the remaining life of the renegotiated loan stock.

This drop in credit intermediation returns has only been partly offset by the upturn in volumes of loans (see Chart 45) while the cost of risk has so far remained stable. However, the measurement of the cost of risk – the sum total of net losses and net

Chart 43

Annual change in the housing loan interest margin and in the slope of the yield curve

(x: year; y: percentage)

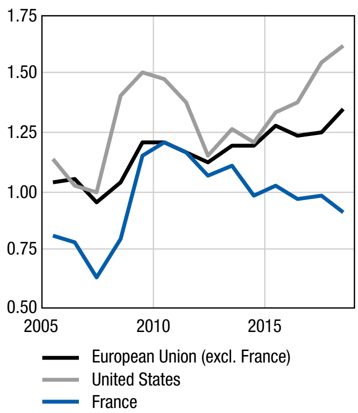


Sources: Bloomberg, Banque de France calculations.
Note: interest margins correspond to the difference between interest rates offered by banks on housing loans and the average weighted rate of return on new deposits from households.

Chart 44

Deterioration of the net interest margin of French banks since 2012

(x: year; y: percentage)

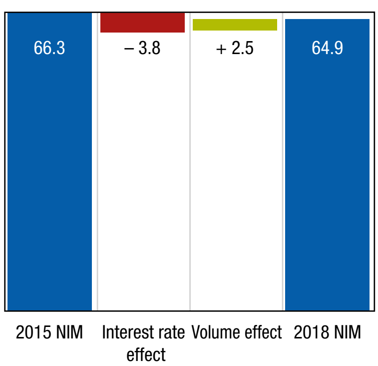


Sources: financial disclosures, APCR calculations.
Note: ratios based on a sample of 28, mainly global systemically important (G-SIBs), banks.

Chart 45

Breakdown of the 2015-18 change in net interest margin via credit volume and margin variations

(EUR billions)



Sources: FINREP disclosures, Banque de France calculations.
Note: NIM, net interest margin.

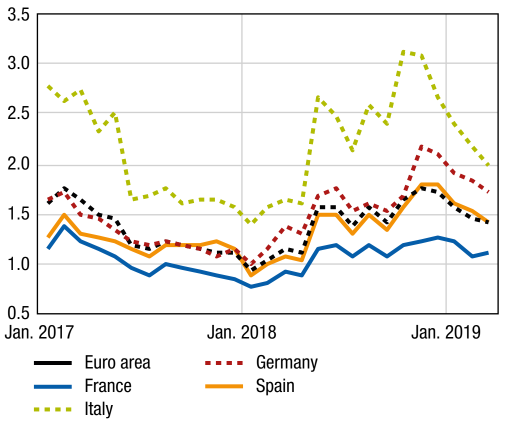
provisions (including for liabilities and charges) on outstanding loans – essentially provides a backward-looking view of the risk. It does not preclude the possibility of a future deterioration in loan performance bearing in mind, for example, that the lending conditions for housing loans to households have been eased (see Risk 1 above).

Overall, while the market recognises that French banks are robust (for example, their credit spreads are among the lowest in the European banking sector, which is an indication of market confidence in their soundness – see Chart 46) the pressure on intermediation earnings contributes to the uncertainty as to the sustainability of previous business models. The difference between the cost of equity (COE)[27] and banks' expected return on equity (ROE) points to a transitional situation which, if it were to persist, would ultimately weigh on banks' ability to raise capital to finance their development and transformation or to cope with an economic or financial shock (see Chart 47).

Chart 46

Credit spreads of euro area banks

(x: year; y: percentage)

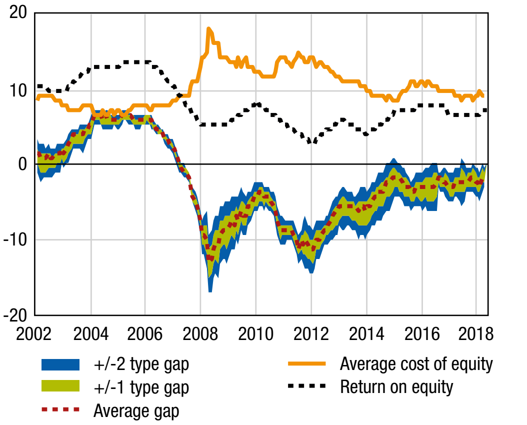


Sources: Gilchrist (S.) and Mojon (B.) (2014), "Credit risk in the Euro Area", The Economic Journal, *Vol. 128, No. 1, September; Banque de France calculations.*

Chart 47

Persistent gap between French banks' cost of equity and return on equity

(x: year; y: percentage)



Sources: Bloomberg, IMF, ECB; Banque de France calculations.

The traditional life insurance model is under pressure

Historically, the development of life insurance has been driven by the downward trend in interest rates over the past 40 years, which ensured that the return on the life-insurer's assets generally exceeded contemporaneous bond yields. However, the persistent low interest rate environment places the entire European sector in an uncomfortable position, forcing it to lower returns on policies, tighten costs and reduce margins. Furthermore, a rise in interest rates after a long period of low rates would result in a return on assets lower than contemporaneous bond yields, and would probably lead to a loss of attractiveness for this type of instrument. The inertia in asset portfolio yields (see Charts 48 and 50) benefits insurers while interest rates fall but leaves them exposed in the event of an interest rate rise. In addition, to cope with the liquidity of their euro-denominated contracts[28], life insurers maintain a duration gap by keeping

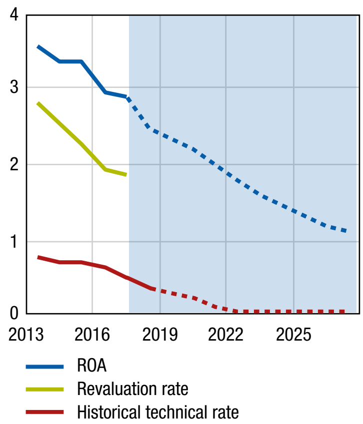
27 It is important to note, however, that COE is an unobservable variable that is estimated on the basis of projections of a security's future performance and particularly sensitive to modelling parameters such as the assumed dividend level, the return expected by the market and the supposed sensitivity of the given sector or action to the overall index.

28 Euro-denominated contracts are life-insurance with-profit-sharing contracts offering a guarantee on premium and little constraints regarding redemption.

Chart 48

Return On Assets (ROA) forecast, excluding unit-linked policies

(x: year; y: percentage)

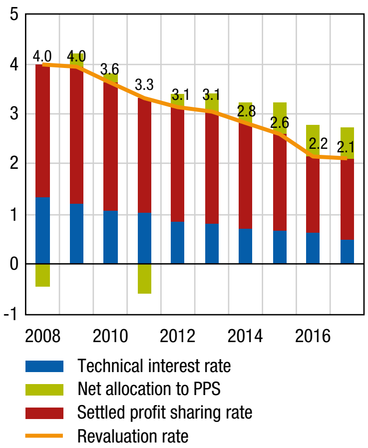


Source: ACPR (accounting data for ROA and TIR, disclosure data for revaluation rate; scope: Top 16).
Note: the grey area indicates simulations.

Chart 49

Breakdown in the rate of profit-sharing since 2008

(x: year; y: percentage)

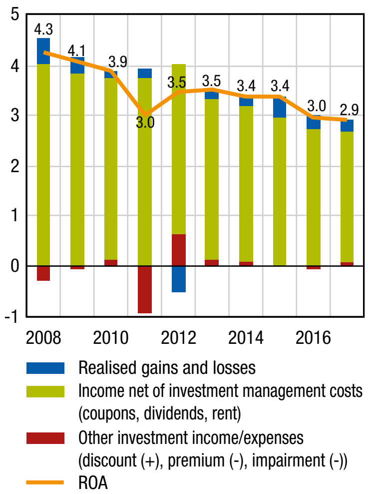


Source: ACPR (accounting data; scope Top 16).
Note: PPS – provision for profit-sharing.

Chart 50

Breakdown of Return On Assets (ROA), excluding unit-linked policies, since 2008

(x: year; y: percentage)



Source: ACPR (Accounting data; scope Top 16).

the maturity of assets somewhat shorter than that of liabilities, this, however, reduces the return offered to policyholders. Finally, while inflows to unit-linked policies have predominated in the last few years, inflows into euro-denominated contracts seem to have attracted renewed interest recently.

Given guaranteed rates of close to zero, the situation of the French sector is relatively less precarious than elsewhere in Europe, where the existence of high guaranteed returns (relative to the current interest rate environment) is a major handicap. Nonetheless, French life insurers have had to adapt from 2015 onwards, by reducing the revaluation rates allocated to policyholders each year and by building up reserves to be able to partially absorb any interest rate shock (see Chart 49).

The significant increase in the provision for (deferred) profit-sharing from 1.4% of life insurance outstandings at the end of 2011 to 3.9% at the end of 2017 (see Chart 51), should allow insurers to smooth the profit-sharing of policyholders over time and thereby limit the yield differential with other instruments if interest rates were to rise.

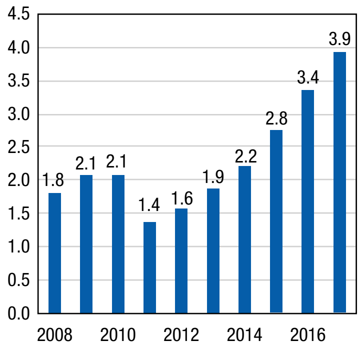
However, the longer the low interest rate environment persists, the longer the decline in the return on assets is likely to continue (for example, under extreme assumptions,[29] this decline in the return on assets could last almost 10 years and fall at a rate of approximately 20 bps per year). The unrealised gains on bond portfolios, which have been very high for the past four years, are gradually decreasing and would be consumed in the event of an interest rate rise. Hence, life insurers would be more rapidly constrained in their ability to offer enhanced returns on their contracts following a sharp rise in interest rates. In that context, they would also be more rapidly exposed to losses from the sale of their underlying bond assets if policyholders were to cash in guaranteed contracts redeemable at any time.

29 Reinvestment of maturing fixed-rate bonds in zero-rate bonds and zero net inflows on euro-denominated instruments.

Chart 51

Provision for profit-sharing set aside since 2008

(x: year; y: percentage)

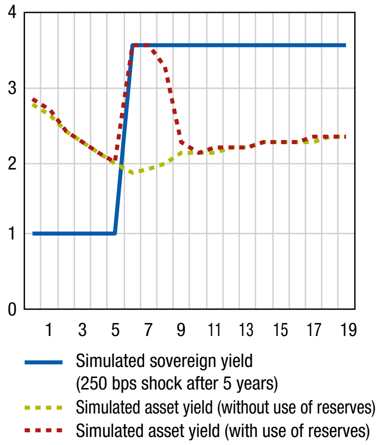


Source: ACPR (accounting data; scope Top 16).

Chart 52

Simulation of the inertia in life insurers' asset yields and of the depletion of the provision for profit-sharing

(x: number of years; y: percentage)

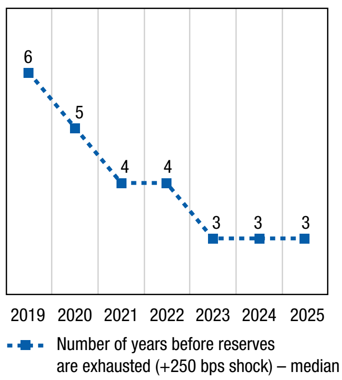


Sources: ACPR (prudential data) and Banque de France simulation.

Chart 53

Simulation of a deferred interest rate shock and life insurers' median capacity to absorb the shock using set aside funds

(x: year; y: number of years)



Source: ACPR (prudential data) and Banque de France simulations.
Note: The shock (in basis points – pbs) simulates a sudden increase in the French 10-year sovereign yield over different horizons (from 1 to 7 years). The curve shows the number of years available to life insurers to meet the post-shock interest rate based on their asset yield and the level of their provision for profit-sharing at end-2017.

In this situation, insurers would indeed tap into their provisions for profit-sharing in order to temporarily enhance the return on their policies and reduce the yield differential between insurance contracts and other instruments. However, this would not protect life insurers in the long term against a scenario of a sharp rise in interest rates in the medium term. In a simulation of an increase in the French sovereign yield of 250 bp over five years, insurers could revalue their euro-denominated contracts at the new rate for a two-year period only and the provision would be exhausted after four years (see Chart 52).[30]

The longer the period during which insurers are exposed to low interest rates, the less they are able to keep up with an interest rate rise: if the increase in the sovereign yield mentioned above occurred over a one-year rather than a five year horizon, the provision would dry up after six years (see Chart 53).

Non-life insurance is less structurally affected by the interest rate environment

Non-life insurance is less structurally affected by the interest rate environment because the duration of liabilities varies from one line of business to another, and for some of them can be very short. It does, however, lose the benefit of more comfortable financial results when interest rates fall.

30 Charts 55 and 56 show the median situation of French life insurers. Thus, 50% of life insurers use their provision for profit-sharing more rapidly and 50% use it over a longer period. The simulation ignores new business and any new profit-sharing created during the projection.

Non-life insurance revenue for 2018 increased 2.9% year-on-year. At the same time, claims stayed at the high level of 2017, which saw substantial claims volumes due to natural disasters. In comparison, claims in 2018 related to less serious events and were primarily borne by insurers (a 2.4% increase in fire and other property insurance claims and a 4.7% rise in other motor vehicle insurance claims), while reinsurers' claims declined. Nonetheless, the combined ratio (excluding health insurance) improved and dipped under the 100% threshold at 99%, down 3.1 percentage points on 2017.

5 Risk 4: Risks linked to structural changes

The financial sector faces structural challenges that could lead to vulnerabilities in the medium term if they are not adequately addressed. Three of these look significant: the ability of European banks to improve their structural level of profitability; the pressure on business models due to the rapid development of non-bank intermediation; and the financial sector's adaptation to new, emerging risks, particularly cyber-risk and climate-related risks.

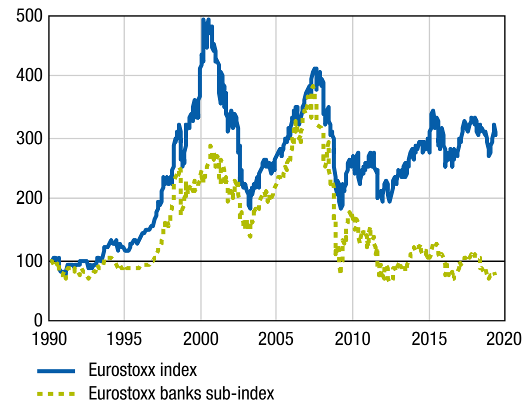
Banking sector profitability faced with structural challenges

While these changes may affect all financial participants in one way or another, the banking sector is particularly affected. European banks, and French banks in particular, are facing intense pressure on their business models, as the rather negative market perception confirms. 2018 was the third worst year in terms of stock market price developments since 1990 (see Chart 54), meaning that the market value of listed French and European banks continues to be less than their book value and their price-to-book ratio further deteriorated to a level close to its record lows. By contrast, US banks have also seen a decline in this ratio but it is still higher than 100% (see Chart 55). These valuations are symptomatic of doubts about the fundamentals of their profitability in an environment in which competition from new entrants and the need for digital adaptation (and the related investments) and better operating cost-efficiency are compounded with the pressure exerted by the low interest rate environment on the profitability of banks' traditional business model based on credit intermediation (see Risk 3 above).

Chart 54

Under-performance of the bank index

(x: year; y: 1 January 1990 = 100)

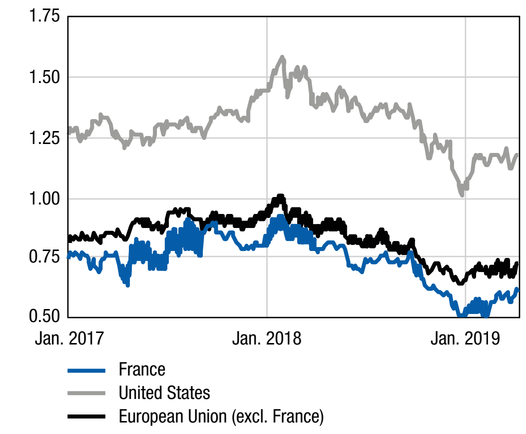


Source: Bloomberg.

Chart 55

Price-to-book ratio of French, European and US banks

(x: year; y: unity)



Source: Bloomberg.

An analysis of the performance gaps between French banks and their European and US peers illustrates these different problems. The economic profitability (measured using the return on assets indicator) of US banks is twice that of euro area banks (0.42%). This difference is mainly due to (i) contrasting business models (US banks hold assets on their balance sheet for a shorter period of time and tend towards riskier and higher-earning assets), and also (ii) on average, a slightly higher interest rate level and yield curve slope in the United States than in the euro area.

Nonetheless, beyond this initial difference in level, the economic profitability of banks in both the euro area and the United States improved in the same proportions (up

24 bps and 26 bps, respectively) while the economic profitability of French banks was largely unchanged during the period.

US banks mainly benefited from an increase in the profitability of their credit intermediation business (measured through the net interest margin – NIM). This activity barely contributed to the growth in the profitability of European banks. The increase in European banks' profitability is primarily due to savings on their management expenses.

In France, income earned from other business (insurance, asset management) makes a very positive contribution to French banks' results, thus confirming the merit of the "bancassurance" model. However, the growth in this income does not make up for the deterioration of credit business profitability (see Risks 1 and 3 above) and market activities, and the increase in management expenses, which weighs heavily on the overall profitability of banking institutions.

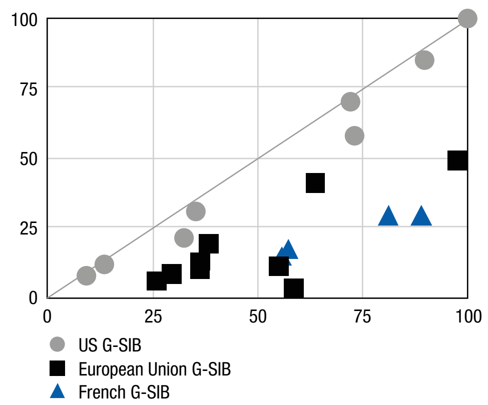
The profitability gap between European and US banks, beyond the cyclical differences mainly related to the growth and interest rate environment, is not structurally linked to the size of the banks' balance sheets. While American banks of the same size report similar profit levels, the profitability of European banks is lower. For example, even though the two largest US and European banks – JPMorgan Chase and HSBC – are comparable in terms of the size of their balance sheets, HSBC's operating profit in 2018 was 50% lower than that of JPMorgan Chase (see Chart 56).

Furthermore, French banks are also confronted with rising costs, measured through the cost-to-income ratio, whereas the trend is downward in the other euro area countries and the United States (see Chart 57). While the rise in costs is mainly the result of the one-off transformation and restructuring expenses reported by the banks, with these expenses stripped out, costs still increased by 1.9%. Better cost-efficiency is thus a fundamental challenge for the years to come.

Chart 56

Net profit of European and US G-SIBs according to their balance sheet size

(x: percentage; y: percentage)

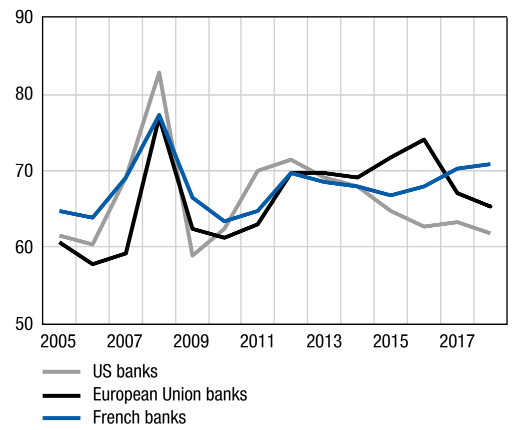


Sources: Standard & Poor's (SNL database), Banque de France calculations.
Note: G-SIBs – globally systemically important banks; data are standardised with respect to JPMorgan Chase & Co.'s balance sheet size and net profit before tax.

Chart 57

Cost-to-income ratio level

(x: year; y: percentage)



Source: ACPR.

In addition to the extra investments needed for their digitalisation, in the medium term French banks will also have to cope with heightened competition from new digital players entering their markets and also, more structurally, a transformation of intermediation models triggered by the low interest rate environment and sometimes facilitated by digitalisation.

Competition from online banks and neobanks is already significant, particularly on banks' retail commission income. An ACPR study published in October 2018[31] found that, in 2017, online banks and neobanks accounted for a minor share of current accounts in France (3.9%) but attracted more than a third of new customers. However, their particularly attractive fee structures, which, to date, result in the majority of them remaining in loss making territory, exert a downward pressure on prices.

A thorough transformation of financial intermediation

The evolution of the structure of financial intermediation is also already well underway. Globally, the non-banking sector, which was worth USD 183.1 trillion in 2017 and includes insurers, pension funds, other financial intermediaries (mainly asset managers) and financial auxiliaries,[32] is growing more rapidly than the worldwide banking sector (USD 150.8 trillion in 2017). The trend break marked by the crisis can be seen particularly clearly in the euro area (see Charts 58, 59 and 60).

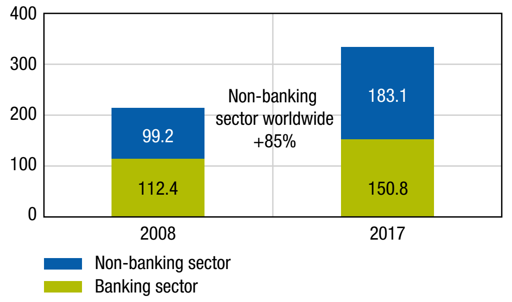
Focus on comparative balance sheet growth in the banking and non-banking sectors

The non-banking sector includes insurers, pension funds and other financial intermediaries (mainly asset managers). Balance sheet amounts are in thousands of millions of euro or US dollars.[33]

Chart 58

Growth in the banking and non-banking sectors worldwide

(x: selected years; y: USD trillions)



Sources: Financial Stability Board (data from the Global monitoring report on non-bank financial intermediation, 2018) and Banque de France calculations.
Note: The non-banking sector includes insurers, pension funds, other financial intermediaries (mainly asset managers) and financial auxiliaries.

While French banks' business mix allows them to benefit from this development, it should be noted that competition is fierce in the non-banking sector, where the same type of competition can be seen between the established operators and new digital players.

Lastly, these structural developments also result in the emergence of new risks and/or sources of vulnerabilities.

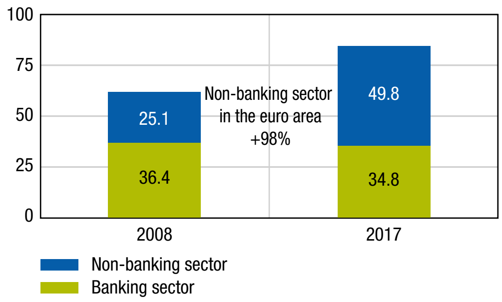
The growth of the non-banking sector is coupled with the development of new types of non-banking intermediation which, although they only account for a small fraction of the non-banking sector, are still a source of maturity transformation, liquidity and credit risks. Indeed, the activities of the non-bank financial intermediation sector (NBFI, sometimes referred to as shadow banking) amounted to EUR 51,576 billion worldwide in 2017.

31 https://acpr.banque-france.fr/sites/default/files/medias/documents/20181010_etude_acpr_banque_en_ligne_neobanque.pdf
32 See the Global monitoring report on on-bank financial intermediation, *Financial Stability Board (FSB), 2018. Public bodies, i.e. central banks for the banking sector (USD 30.1 trillion) and public financial institutions for the non-banking sector (USD 17 trillion), are not included in these figures.*
33 *This scope is defined by the FSB under the term "Monitoring Universe of Non-Bank Financial Intermediation" (MUNFI), and notably includes life insurers, pension funds and other non-bank financial intermediaries.*

Chart 59

Growth in the banking and non-banking sectors in the euro area

(x: selected years; y: USD trillions)

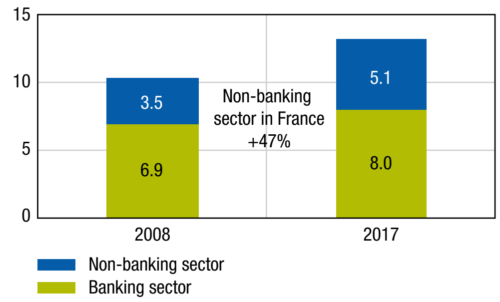


Sources: Financial Stability Board (data from the Global monitoring report on non-bank financial intermediation, 2018) and Banque de France calculations.
Note: The non-banking sector includes insurers, pension funds, other financial intermediaries (mainly asset managers) and financial auxiliaries.

Chart 60

Growth in the banking and non-banking sectors in France

(x: selected years; y: USD trillions)



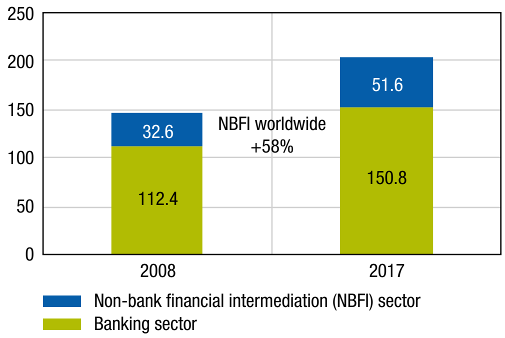
Sources: Financial Stability Board (data from the Global monitoring report on non-bank financial intermediation, 2018) and Banque de France calculations.
Note: The non-banking sector includes insurers, pension funds, other financial intermediaries (mainly asset managers) and financial auxiliaries.

Intermediation by non-banks grew 1.7 times more rapidly than banking intermediation between 2008 and 2017 (see Chart 61). In terms of the geographical breakdown of these assets, the three leading countries are the United States, China and the Cayman Islands with 28.9%, 16.0% and 10.4%, respectively. In this context, it is becoming increasingly important to be able to effectively apply appropriate regulation in the sector in order to strengthen financial stability and even to be able to deal with a destabilisation of this chain of intermediation, which is taking on a more influential macroeconomic role.

Chart 61

Growth in the banking and non-bank financial intermediation (formerly shadow banking) sectors

(x: selected years; y: USD trillions)



Sources: Financial Stability Board (data from the Global monitoring report on non-bank financial intermediation, 2018) and Banque de France calculations.
Note: The NBFI sector refers to the scope of financial intermediaries defined by the Financial Stability Board (FSB) as non-bank financial intermediaries (for example investment funds), excluding the insurance sector. This scope is smaller than the non-bank sector.

Structural developments bringing new risks

Other transformations at work more generally in the economy are likely to have a significant impact on traditional financial players and the financial system as a whole, as new risk factors emerge that call for far closer monitoring.

In addition to the specific challenges to financial sector profitability mentioned above, digitalisation also entails a change in the nature of cyber-risk, which is gradually becoming more systemic. Cyber-risk had long been considered an operational risk whose importance was inflated with the development of digitalisation, but which was rather idiosyncratic in nature. However, this risk has been given a systemic dimension by the surge in dominant providers and the development of new IT solutions shared between a large number of players, based on cloud computing technologies and concentrating the provision of specific services and the IT infrastructures that support them.

Therefore, effectively combating cyber-risk requires better cooperation both between players and internationally, particularly in three areas: the regulation and supervision of cybersecurity; the classification of cyber incidents and related information sharing between authorities; and lastly, preparations for operational crisis management, including carrying out cyber resilience exercises.

Climate change is also a major trend with increasingly serious and pressing repercussions, as was stressed by the Intergovernmental Panel on Climate Change (IPCC) in their most recent report published in October 2018. These repercussions are now a source of financial risks for financial institutions, which are the focus of heightened scrutiny from the financial stability authorities.[34] These risks are of two types:

– physical risks, resulting from damages directly caused by meteorological or climatic phenomena;

– transitional risks, resulting from sudden or inadequately anticipated adjustments that could be caused by the transition to a low-carbon economy.

Although some financial institutions have started to better understand and track these risks, their monitoring and management should now be systematic across the entire sector.

34 The Banque de France provides the secretariat for the Network for Greening the Financial System (NGFS) and its approximately 40 central banks and supervisor members. The NGFS published its first report in April 2019. The ACPR published two Analyses et Synthèses *on 10 April 2019 on the climate-related risks faced by banking groups (https://acpr.banque-france.fr/sites/default/files/medias/documents/as_101_climate_risk_banks_en.pdf) and insurers (https://acpr.banque-france.fr/sites/default/files/medias/documents/as_102_climate_change_insurers_en.pdf)*

Box

Risks associated with climate change

The Central Banks and Supervisors Network for Greening the Financial System (NGFS), for which the Banque de France provides the secretariat, published its first detailed report entitled *A call for action* in April 2019. This report explicitly acknowledges that risks associated with climate change represent a threat to financial stability and sets out six (non-binding) recommendations.

The NGFS thus encourages central banks and supervisors (i) to integrate climate-related risks into financial stability monitoring and microprudential supervision, (ii) to integrate sustainability factors into own-portfolio management, (iii) to bridge the data gaps and (iv) to build broad understanding and awareness.

At the same time, it singles out actions that can be taken by policymakers to support the work of central banks: (i) agreeing on a disclosure of financial information associated with environmental and climate-related risk on a solid and internationally consistent basis; and (ii) supporting the development of a taxonomy of economic activities.

The members of the NGFS also acknowledge that a significant amount of analytical work must still be undertaken in order to equip central banks and supervisors with appropriate tools and methodologies to identify, quantify and mitigate climate risks in the financial system. This calls for continued technical work and close and specific cooperation with academic research.

Following its report, the NGFS is planning to continue its work on (i) the management of environmental and climate-related risk with the preparation of a technical handbook for supervisory authorities and financial institutions as well as on (ii) scenario-based risk analysis and (iii) best practices for incorporating sustainability criteria into central banks' portfolio management (particularly with regard to climate-friendly investments).

Consistent with the NGFS' recommendations, in April 2019 the ACPR published two reports on the way in which French banks and insurers integrate risks associated with climate change. These studies highlighted the following findings.

– Significant progress has been made in terms of governance of risks associated with climate change: in addition to announcements that policies were in place to disinvest from heavy greenhouse gas emitting sectors, overall, banks and insurers have started to adopt strategies that comply with the objectives of the Paris Climate Agreement.

Some have also set up procedures to regularly report the exposures to these risks to their highest decision-making bodies. There has also been a gradual integration of these risks into standard risk management procedures, going beyond the simple corporate social responsibility (CSR) approach that was widespread in 2015 and in which risks associated with climate change were essentially perceived by these institutions as a risk to their reputation. However, the progress observed is not consistent and there are major gaps in the operational roll-out of climate strategies at business line level.

- Significant progress in terms of transition-risk awareness, which reflects the considerable exposure of French financial institutions. For example, with regard to banks, the 20 most carbon-intensive sectors represented 12.2% of net exposures to credit risk in 2017, down slightly compared with 2015, while approximately 10% of French insurers' investments were in transition-risk sensitive sectors (fossil fuel, electricity or gas producers or consumers). French institutions are continuing to develop tools to analyse this risk and some have already developed initial portfolio sensitivity measures. Substantial analytical work is still required to accurately measure the exposures of financial institutions. Certain methods that are sometimes used to assess these exposures, such as large exposure limits, are undermined by significant methodological biases that give an incomplete and distorted view of exposures depending notably on the concentration level of the banking sectors concerned.

- Transition risk is likely to materialise through various channels, one of which is the damages and interest that a legal entity would have to pay if it was found to be responsible for global warming. This type of risk, which is sometimes characterised as liability risk and included within reputational risk in certain publications, does not yet appear to have been appropriately analysed by French banks and insurers. This is an unsatisfactory situation, given the growing number of instances observed at international level.

- However, progress was modest in terms of physical risks, to which, it is true, the assets on French bank and insurer balance sheets are relatively little exposed: indeed their exposures are generally located in areas considered not very vulnerable with regard to currently available climate change scenarios, and the majority are located in France.

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