



ASSessment
of
RISKS
to the
FRENCH FINANCIAL SYSTEM

December 2017

Finalised on 11 December 2017

PREFACE

The assessment of risks and vulnerabilities in the French financial system brings together analyses prepared by staff from the Banque de France and the Autorité de contrôle prudentiel et de résolution (ACPR – Prudential Supervision and Resolution Authority). The exercise is steered and coordinated by the Banque de France’s Financial Stability Directorate, and a report is published twice annually, in June and December. The process is part of the financial stability assignment entrusted to the Banque de France by Law No. 2013/672 of 26 July 2013 on the separation and regulation of banking activities, and is coordinated with France’s Haut Conseil de stabilité financière (HCSF – High Council for Financial Stability).¹

The following report seeks to identify the risks and vulnerabilities present in the French financial system along with the system’s strengths and sources of resilience. This analysis is used in particular to inform the deliberations of the Banque de France’s governing authorities, the college of the ACPR and the HCSF. It also seeks to provide support for the proposals on macroprudential policy made by the Governor of the Banque de France to the HCSF and, where applicable, to assess the impact of these proposals on financial stability.

François Villeroy de Galhau
Governor of Banque de France

¹ The High Council for Financial Stability (HCSF) is the French macroprudential authority charged with supervising the financial system as a whole, with the aim of safeguarding its stability and ensuring that the financial sector makes a sustainable contribution to economic growth (Article L. 631-2-1 of the French Monetary and Financial Code). The HCSF has a total of eight members: five ex officio members, and three qualified persons selected on the basis of their skills. The ex officio members are the French Minister of the Economy and Finance, the Governor of the Banque de France and Chairman of the ACPR, the Vice-Chairman of the ACPR, the Chairman of the Autorité des Marchés Financiers (French Financial Markets Authority), and the Chairman of the Autorité des Normes Comptables (French Accounting Standards Authority).

1.	SUMMARY: ASSESSMENT OF RISKS AND VULNERABILITIES IN THE FRENCH FINANCIAL SYSTEM	4
2.	MACROECONOMIC ENVIRONNEMENT	8
2.1	Macroeconomic outlook: improved global growth, monetary policy to normalise gradually	9
a.	US monetary policy normalisation set to have limited spillover effects for growth in the United States and Europe	10
b.	Gradual normalisation of Eurosystem monetary policy	11
c.	Forecast scenario for the United Kingdom	11
d.	Vulnerability of emerging economies to tighter US monetary policy	12
2.2	Risks linked to debt in the private non-financial sector	14
a.	NFC debt is growing uninterruptedly, with large firms reporting especially sharp increases	14
b.	Household debt continues to increase as lending conditions are eased	18
3.	RISKS FOR FINANCIAL INSTITUTIONS	23
3.1	Risks to the French banking sector	23
a.	Profitability levels are holding up overall in the banking sector	23
b.	Impact of market risk repricing on banks	26
c.	Geopolitical uncertainties	27
d.	Change in and quality of exposures	27
e.	Solvency and liquidity ratios improved during the first half of 2017	29
f.	Adjustments to the business models of French banks	30
3.2	Risks for insurance	30
a.	Profitability, earnings and trends in the non-life sector	30
b.	Profitability, earnings and trends in the life sector	32
c.	Initial observations on Solvency II implementation	36
3.3	Digitalisation of financial activities, open banking and cyber-risk	38
a.	Analysing the systemic consequences of cyber-risk	38
b.	Open banking, encouraged by the introduction of PSD2, raises new cyber-risk challenges	40
3.4	The future of securitisation in Europe	41
4.	RISKS FOR FINANCIAL MARKETS	44
4.1	Repricing of risks on financial markets	44
a.	Asset prices are still in an expansion phase	44
b.	Are US, European and French equity markets overvalued?	44
c.	The low-volatility regime is having procyclical effects	46
d.	Major risk of a repricing of risk premiums	47
4.2	Regulatory risks for markets	49
a.	Review of the supervisory architecture for central counterparties (EMIR 2)	49
b.	Benefits of a location requirement for systemically important euro-denominated clearing	50
4.3	Regulatory developments and financial markets	51
a.	Risks relating to the introduction of MiFID 2	51
b.	Leverage ratio, purchase programmes: what are the consequences for the repo market and its participants?	52

1 Summary: Assessment of risks and vulnerabilities in the French financial system

There are three main types of risk to the financial system: risks linked to the macroeconomic environment; risks to financial institutions; and risks stemming from financial markets.

With regard to the macroeconomic environment, **the outlook for economic growth has improved both globally and in France**, and the French economy on the whole now looks better able to withstand future macro-financial shocks.

The cross-analyses contained in this report suggest there has been an acceleration in the French financial cycle. Although this trend is consistent with the improvement in the macroeconomic outlook, it is still being monitored closely due to its potential to fuel further rises in non-financial sector borrowing. Debt levels among households and non-financial corporations (NFCs) are already high and are growing steadily in the low interest rate environment, and this is creating vulnerabilities in the French financial system.

With regard to financial institutions, profitability levels are holding up well despite major structural challenges in the sector, notably persistently low interest rates, competitive pressures, digitalisation, cyber-security and the need to adapt to the new regulatory framework. The finalisation of the Basel III framework, announced on 7 December, marks the end of an ambitious project to increase the security of the global financial system. Its gradual implementation since 2008 has already made the European banking system more resilient, as evidenced by the improvement in bank solvency and liquidity ratios.

As far as financial markets are concerned, volatility levels are currently very low, liquidity is abundant and risk premiums are being compressed. Under these conditions, markets are particularly vulnerable to speculative bubbles and to collective myopia. **In consequence, the risk of a sharp correction in asset prices cannot be ruled out, notably in the event of a change to inflation or growth expectations, errors in economic policy or a rise in geopolitical tensions.**

To sum up, this report identifies a number of reassuring signs regarding the economic outlook and the resilience of financial institutions. **However, it also pinpoints some pockets of vulnerability in non-financial sector debt and in trends in asset prices.** With monetary policy now beginning a gradual process of normalisation, the Banque de France is keeping a close eye on how these risks to the financial system evolve.

The macroeconomic environment

The cyclical recovery that began in the global economy in mid-2016 is continuing to gather pace. Growth prospects have improved significantly since the last assessment was published in June 2017, with Europe, Japan, China and the United States all seeing a pick-up in economic activity. The IMF now expects world GDP to expand by 3.7% in 2018 (October 2017 forecast), after 3.2% growth in 2016, and, according to Eurosystem forecasts, euro area GDP should grow at its fastest pace in a decade in 2017, rising by 2.4%. France's growth outlook has also improved, with the economy now projected to expand at an annual average rate of 1.8% in 2017. However, the already strong upward trend in household and NFC debt is accelerating, raising fears of a build-up of vulnerabilities and risks that could materialise in the downward phase of the cycle.

Identified risks

1. Risks linked to household and NFC debt: acceleration in the financial cycle

The report highlights the positive outlook for the economy and confirms the acceleration in the French financial cycle observed over the past three quarters. Although this acceleration reflects the improvement in the economic context, it could also prove stronger than economic fundamentals suggest, raising risks to the health of the financial system.

Macroprudential authorities are paying close attention to trends in NFC and household debt, especially since borrowing in this segment is already high. We have raised this risk **to the top of our risk matrix (see table)**. NFC debt-to-GDP ratios have been rising steadily since 2010, contrasting with trends in other major European countries. The surge has mainly been driven by market borrowing on the part of large enterprises, which have taken advantage of low bond rates and abundant cash levels among investors. More recently, the increase has been fuelled as much by bank loans as by debt securities: since mid-2016 outstanding bank lending to NFCs has been rising fairly steadily, at a rate of 5.4% year-on-year, while market borrowing has continued apace, rising by 7.7% year-on-year. It is important, therefore, to monitor the sustainability of NFC debt, as well as the vulnerability of firms' financial health to a rise in interest rates.

With regard to households, the residential real estate market is continuing to pick up pace and growth in residential property prices is accelerating (3.5% year-on-year in the second quarter of 2017) despite some divergences across regions. Excluding loan buybacks and renegotiations, growth in outstanding mortgage lending remains strong, at 6% year-on-year, and lending conditions have been easing for several quarters. As a result, banks need to be especially vigilant with regard to the pricing of their loans and the profitability of their new lending.

2. Market risk: threat of a sudden correction in risk premiums in light of the current disconnect between ultra-low volatility, high valuations and persistent political uncertainty

Risks are continuing to build up in the financial markets. US and European equity markets have reached record highs, while risk premiums in credit markets have fallen to record lows, in a context marked by ultra-low volatility. **As a result, we are keeping the risk of a repricing of risk premiums at a high level for the next six months.** The repricing could be triggered by a surprise in economic or monetary policy, or by an increase in risk aversion in search for yield strategies caused by political or geopolitical events or a financial crisis in China.

This scenario – involving a sharp drop in equity markets and a surge in credit spreads – would lead to huge investment losses for financial corporations and households and drive up financing costs for both financial and non-financial corporations. The correction could also potentially trigger massive withdrawals from low-rate savings products, posing a particular threat to insurers.

Authorities and market participants are now focusing their attention on two items in the regulatory agenda: the review of the supervisory architecture for central counterparties (CCPs) as part of the EMIR II directive, and the operational risks posed by the implementation of MiFID II. Regarding EMIR II, and in particular the section on third-country CCPs, the Banque de France supports the European Commission's proposal for a reinforcement of supervisory powers based on a proportionate approach. The application of MiFID II – which will enhance post-trade transparency, strengthen investor protection and ensure closer supervision of participants – poses a number

Table 1

Summary of the main risks to the French financial system in December 2017: level and outlook	
Main risks to the French financial system	Level and outlook in December 2017
<p>1. Risk linked to non-financial sector debt: acceleration of the financial cycle</p> <p>Debt levels are continuing to rise among non-financial corporations (NFCs) and households, in contrast with the trends observed in other European countries. Activity in the residential real estate market remains robust, and a close watch needs to be kept on lending conditions and on the sustainability of mortgage debt.</p>	
<p>2. Market risk</p> <p>Risk of a sudden correction in risk premiums in light of the disconnect between ultra-low market volatility, high valuations for certain asset classes and persistent global political uncertainty. In Europe, this risk is partially counterbalanced by the perception of a gradual monetary policy normalisation.</p>	
<p>3. Risk linked to the low interest rate environment</p> <p>Financial institutions remain resilient in an environment marked by ultra-low interest rates and favourable macroeconomic conditions. A downward correction in asset prices or a sharp rise in long-term interest rates represent potential sources of risk.</p>	
<p>4. Uncertainties over the implementation of regulatory reforms</p> <p>The finalisation of the Basel III framework marks the completion of the post-crisis bank reforms, but vigilance is still needed: there is an ongoing risk of global regulatory fragmentation in the banking sector while new European market regulations pose operational risks.</p>	
<p>  Systemic risk  High risk  Moderate risk </p> <p><i>Note: The current level (shown by the colour code) is based on an expert assessment that reflects the probability that the risk will materialise and its potential systemic impact over the medium term. The outlook (shown by the direction of the arrow) shows the likely change over the next six months.</i></p>	

of operational risks, mainly related to the degree of preparation of market participants and uncertainties over the assets falling within the directive's scope.

The market appears to have already taken on board the increase in the new bank regulatory ratios and the implications of this for bank intermediation activities in securities financing transactions, as demonstrated by the normalisation of the euro repo market in 2017.

3. Risk linked to the interest rate environment: financial institutions remain resilient in a context of historically low interest rates and positive macroeconomic conditions. A downward correction in asset prices or a sharp rise in long-term interest rates represent potential sources of risk.

French financial institutions are demonstrating their resilience in a buoyant economic and financial environment, characterised by persistently low interest rates.

At the end of the first half of 2017, French banks reported solid results, underpinned by strong growth in non-interest income and a low cost of risk, despite a slight fall in profitability. An analysis of individual business lines shows that investment banking, insurance and asset management all performed well. In retail banking, the main strategic focus is on improving profitability through cost-cutting, and banks are stepping up investment in new technology while also scaling back their branch networks. These restructuring efforts are generating short-term costs while the benefits are only expected to be felt in the medium or long term.

With regard to interest rate risk, the stress tests conducted by the ECB on bank portfolios show that most European banks, including those in France, manage their interest rate risk well, although they still need to pay close attention to the quality of their liability modelling, and to the efficiency of their hedging instruments.

Overall, French banks continue to face structural challenges and need to keep up efforts to adjust their business models. The main areas of focus are improving their operating efficiency, exploiting the opportunities offered by digital banking, and increasing their safeguards against cyberattacks.

In the case of insurers, risks vary according to the segment in which they operate. In life insurance, firms need to adapt their business models to the persistently low interest rate environment to ensure their resilience. Low interest rates are directly impacting indicators such as returns on assets, which declined significantly in 2016, or the «wealth» of insurance firms as measured by their unrealised capital gains and profit-sharing reserves, which have been rising since 2014. This wealth would be rapidly eroded in the event of an unexpected rise in interest rates. That said, insurers are developing strategies to adapt to low interest rates, with, on the asset side, search for yield strategies or the transfer of risk to policyholders through the sale of unit-linked policies, and, on the liability side, a cut in the revaluation rate for existing policies. In the non-life segment, insurers and reinsurers are being directly affected by the rise in climate risk, although they still seem capable of absorbing the shocks from the recent major weather events. Health insurers meanwhile are facing intensifying competition, at a time when low interest rates are already putting pressure on margins.

The recent entry into force of Solvency II, which is based on more rigorous assessment of risks, should encourage insurers to improve the quality of the information they provide to both prudential authorities and the general public.

4. The finalisation of the Basel III regulatory framework marks the completion of the post-crisis bank reforms, but vigilance is still needed: there is an ongoing risk of global regulatory fragmentation in the banking sector, while new European market regulations pose operational risks

The reforms to prudential regulations since the 2007 crisis have made the European banking system more resilient. French banks' solvency and liquidity ratios are improving, while at the international level, the finalisation of the Basel III regulatory framework, announced on 7 December 2017, marks the end of a long process of revision of the rules applicable to banks. The deadline for implementing this framework should allow banks to prepare gradually for the change, while also ensuring the continued sound financing of the French and European economies along with healthy credit growth. Nonetheless, there remains a risk of regulatory fragmentation at the global level due to the possibility that the US administration might go back on some aspects of the post-crisis framework. This would lead to differences in the way Basel Committee rules are applied in the United States and in other countries, distorting the level playing field, which is an essential foundation for the market. The changes in financial market regulation are also raising potential operational risks, linked to the cost of the transition to the new CCP supervisory architecture and to MiFID II. However, these costs are more than outweighed by the expected benefits of EMIR II and the new MiFID II regime.

2 Macroeconomic environment

The cyclical recovery in the global economy that began in mid-2016 is continuing to gather pace. Growth prospects have brightened significantly since the June 2017 risk assessment, with Europe, Japan, China and the United States all seeing a pick-up in the pace of economic activity. In its October 2017 forecast, the International Monetary Fund (IMF) said it thought world GDP would expand by 3.7% in 2018, after 3.2% in 2016, while according to Eurosystem forecasts, euro area GDP is set to grow at its fastest rate in a decade, rising by 2.4% in 2017.

French GDP growth is expected to increase markedly in 2017, climbing to a working-day-adjusted average annual 1.8%, after 1.1% in 2016, and then remaining around that level, at 1.7% in 2018, 1.8% in 2019 and 1.6% in 2020. That would be well above the potential growth rate, which is estimated at around 1.3% for the years covered by the projection. As a result, the output gap should close in 2019, and the possibility of maintaining a high growth rate in 2020 would also depend on the future path of potential growth.

Over the 2018-2020 period, exports are expected to strengthen significantly as global demand for French products and services rises at a sustained pace. The catch-up process following the disappointing performances observed through to early-2017 should lead to improved market shares in 2018 notwithstanding some delayed adverse effects from the currency appreciation during the summer. The upturn in economic activity and low interest rates should lend ongoing support to business investment, which is expected to considerably outpace GDP growth. However, business investment is unlikely to maintain the elevated growth of 2016 and 2017, which drove the investment rate above its previous peak in 2008 but which was also accompanied by high financing requirements and debt ratios. Household consumption should remain robust, with purchasing power gains on the back of a pick-up in earned income, while unemployment looks set to continue declining. Tax measures contained in the Budget Act should provide additional support to household income from end-2018. Some of these gains will go towards boosting the saving rate towards 15.2%, or close to its long-run average, by end-2020. After a vibrant performance in 2017, household investment looks likely to decelerate sharply in 2018-2020 before settling at a growth rate similar to that of household income, which would be more sustainable over the long term.

Chart 1

Summary of growth projections



Source: Banque de France, end-October 2017.

Chart 2

Summary of inflation projections



Source: Banque de France, end-October 2017.

Table 1

Summary of projections for France						
	2015	2016	2017	2018	2019	2020
HICP	0.1	0.3	1.2	1.4	1.2	1.6
HICP excluding food and energy	0.6	0.6	0.6	0.8	0.9	1.2
GDP deflator	1.1	0.4	0.6	0.9	1.3	1.5
Real GDP	1.0	1.1	1.8	1.7	1.8	1.6
Contributions (in GDP percentage points) ^{a)} :						
Domestic demand excl. changes in inventories	1.2	2.0	1.8	1.6	1.6	1.6
Net exports	-0.5	-0.8	-0.5	0.2	0.1	0.1
Changes in inventories	0.3	-0.1	0.6	-0.1	0.0	0.0
Private consumption (53%) ^{b)}	1.3	2.1	1.2	1.5	1.7	1.6
Government consumption (24%)	1.1	1.2	1.5	0.7	0.7	0.7
Total investment (22%)	0.9	2.7	3.5	2.8	2.4	2.3
Government investment (3%)	-3.0	-0.1	-1.3	3.0	2.5	2.4
Household investment (5%)	-2.1	2.4	5.1	2.1	1.3	1.9
Business investment (NFCs-FCs-IEs) (13%)	3.1	3.6	4.1	3.0	2.8	2.4
Exports (29%)	4.0	1.9	3.3	5.9	4.3	3.7
Imports (31%)	5.5	4.2	4.7	4.7	3.6	3.3
Household real gross disposable income	0.8	1.8	1.6	1.7	2.5	1.8
Net job creation (thousands)	60	197	281	147	184	192
ILO unemployment rate (France and overseas territories, % of labour force)	10.4	10.1	9.6	9.6	9.2	8.8

Annual growth rate unless stated otherwise.

a) Because of rounding, the sum of contributions does not necessarily match GDP growth.

b) Percentages in parentheses show the GDP share of each item in 2016.

Sources: Insee for 2015, 2016 and the first three quarters of 2017, published on 29 November 2017, Banque de France projections shaded in blue.

Inflation, as measured by the Harmonised Index of Consumer Prices (HICP), should continue to increase in 2018 (1.4%) and 2019 (1.2%) at a rate close to that of 2017 (1.2%), with the 2018 uptick essentially attributable to tax measures relating to tobacco and energy. It is expected to increase more sharply in 2020, rising to 1.6% on an average annual basis. Stripping out food and energy, inflation should move more gradually, putting on 0.8% in 2018, 0.9% in 2019 and 1.2% in 2020, after 0.6% in 2017, reflecting the decline in the unemployment rate and the impact of several other specific factors. This projection is subject to a number of uncertainties surrounding economic activity and the pick-up in inflation (Chart 1 and Chart 2).

2.1 MACROECONOMIC OUTLOOK: IMPROVED GLOBAL GROWTH, MONETARY POLICY TO NORMALISE GRADUALLY

The global economic recovery continues. In its October 2017 forecast, the IMF estimated that growth would firm to 3.6% in 2017 and 3.7% in 2018, compared with 3.2% in 2016. Overall, the forecasts for 2017 and 2018 were revised upwards over the course of the year. According to Eurosystem forecasts, euro area GDP is set to grow at its fastest rate in a decade, rising by 2.4% in 2017. France's GDP growth is expected to reach 1.8% on an average annual basis in 2017, up two-tenths of a percentage point (pp) on the Eurosystem's June 2017 forecast and marking a sharp acceleration compared with 2016 (1.1%).

Amid this pick-up in the global economy, three points in particular deserve attention: potential spillover effects in different economic regions from the normalisation of US monetary policy (sections a and d), the effects of the Eurosystem's October 2017 announcement that it was recalibrating its asset purchase programme (section b), and Brexit's impact on UK economic activity (section c).

These events do not represent a source of macroeconomic risk for France in the short term.

a. US monetary policy normalisation set to have limited spillover effects for growth in the United States and Europe

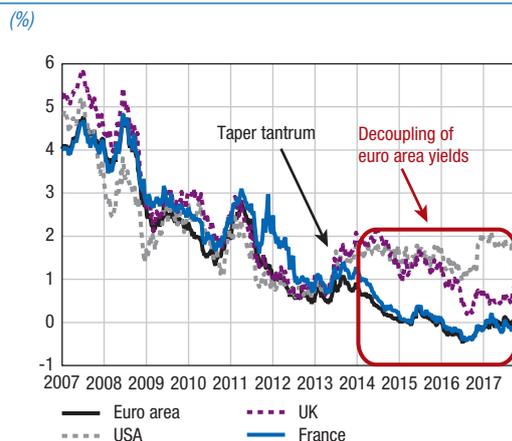
In October 2017, the US Federal Reserve (Fed) began gradually curtailing its securities holdings by decreasing the reinvestment of portfolio income.¹ **Balance sheet normalisation may have two main effects: (i) an increase in the term premium and/or (ii) an increase in the credit spread.** While in principle both these channels may pass the effects of the Fed's balance sheet normalisation through to the real economy, the increase in the term premium is expected to be the primary channel through which normalisation affects the US economy. An empirical study of quantitative easing (QE) and tapering announcements reveals that the term premium responds more markedly and virtually symmetrically to these announcements, while the credit spread response is economically insignificant.² What is more, credit spreads are currently close to their long-term level, while the term premium is negative and well off historical levels. We estimate that **a 100 basis point (bps) increase in the US term premium³ could shave approximately two-tenths of a point off growth for the US economy after one year.** Restricting the focus to the trade channel, spillover effects for the euro area would remain measured and would be particularly weak in the case of France.

This research does not consider possible contagion effects between US long rates and those of the euro area. **However, a gradual reduction in the Fed's balance sheet should have only a limited impact on euro area interest rates.** Five-year sovereign yields for the United States, United Kingdom and France, and an equivalent for the best-rated euro area Member States, moved in step until 2014 before diverging thereafter (Chart 3). Since short- and medium-term interest rates (maturities of one day to five years) are influenced by short-term and medium-term monetary policy expectations, this decoupling reflects the different trajectories of Fed and ECB monetary policies.

Since the spillover effects for euro area economic conditions from US monetary policy normalisation are expected to be limited, it seems unlikely that normalisation will materially impact euro area inflation and hence ECB monetary policy. This argument is backed by empirical research on spillover effects, which shows that, since early-2017, euro area bond markets have had more of an impact on US markets than the reverse.⁴

Chart 3

5Y yields on US, UK and French government debt



Source: Banque de France, end-October 2017.

1 The procedures used to reduce the Fed's balance sheet are set out in an [addendum](#) published in June 2017.

2 The announcement that QE was being introduced (25/11/2008) had no impact on the credit spread, while the tapering announcement (22/05/2013) raised it by 1 basis point.

3 In April 2017, a Fed study (Bonis, Ihrig and Wei, 2017) estimated that the ten-year term premium would be 100 bps higher if the Fed's asset purchase programmes did not exist and that by end-2017, it would stand at about 85 bps. Keep in mind that the estimated decrease in ten-year rates attributable to Fed asset purchases varies depending on the programme and estimation method (see Table 1 in Chen et al., 2012).

4 See B. Cœuré, "Monetary policy, exchange rates and capital flows", a presentation at the 18th annual Jacques Polak conference hosted by the International Monetary Fund on 3 November 2017.

b. Gradual normalisation of Eurosystem monetary policy

Euro area inflation has moved in a favourable direction since 2014. **Inflation was 1.4% in October 2017, well above the levels seen since 2014 (Chart 4), reflecting brighter economic conditions and the positive effects of monetary policy measures put in place by the Eurosystem.** That being said, inflation remains below its target, notably owing to euro appreciation. As long as inflationary expectations remain anchored in the euro area, recent exchange rate developments should have a short-lived impact on inflation, given the reduction in the Fed's balance sheet. Chart 4 shows that long-term inflationary expectations have remained consistently well anchored, even during the low inflation period of 2014-2016, pointing to confidence in the Eurosystem's ability to bring inflation to a level that is close to but below 2% in the medium term. Moreover, several studies have demonstrated that a below-target inflation rate exerts only a marginally detrimental effect on the anchoring of inflationary expectations.⁵

The recalibration of the asset purchase programme announced on 26 October 2017 reflects mounting confidence that inflation rates will gradually converge towards the target of close to but below 2%. Even so, owing to muted domestic price pressures, an ample degree of accommodation remains necessary.

This monetary support is provided by additional net asset purchases, the sizeable stock of acquired assets, forthcoming reinvestments and the use of other monetary policy instruments alongside the purchase programme. These other instruments include programmes to provide liquidity to banks over the medium term (TLTROs), the negative rate on the deposit facility and forward guidance. These tools serve the same objective and are mutually reinforcing. Thus, the portfolio rebalancing effect caused by QE is enhanced by the negative rate on the deposit facility, as banks holding excess liquidity have a greater incentive to use their reserves. Similarly, the direct effect of asset purchases on the yield curve (through reduced term premiums) is accentuated by forward guidance, which lessens uncertainty surrounding the future trajectory of policy rates.

In contrast to what was observed in the United States in May 2013, financial markets did not throw a taper tantrum following the 26 October announcement. In fact, French equity markets continued to head upwards while ten-year interest rates fell in the days following the ECB's announcement.⁶

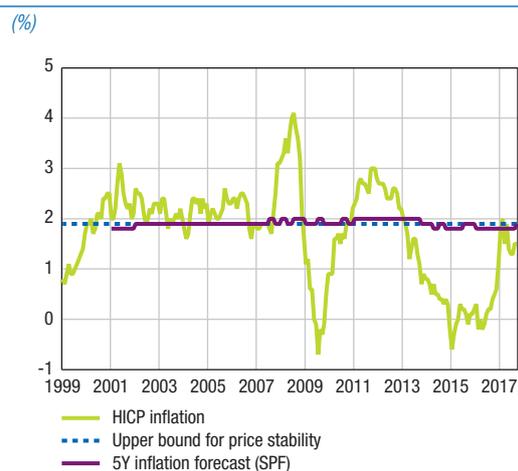
c. Forecast scenario for the United Kingdom

The UK is expected to see moderate growth over the coming years, following the outcome of the referendum on leaving the European Union.

GDP growth is forecast to decline markedly relative to the pre-Brexit period, decreasing demand for imported products. Average estimates suggest that import

Chart 4

Euro area inflation nears its target



Source: Banque de France, end-October 2017.

⁵ See Galati, G., Z. Gorgi, R. Moessner and C. Zhou (2016), "Deflation risk in the euro area and central bank credibility", DNB Working Papers 509, Netherlands Central Bank, Research Department. In this same vein, Levieuge et al. (2015) develop an asymmetric credibility indicator, according to which a negative difference between expected inflation and the target leads to less loss of credibility than a positive difference. See Levieuge G., Y. Lucotte and S. Ringuédé (2015), "Central Bank Credibility and the Expectations Channel in Emerging Inflation-Targeting Countries: Evidence Based on a New Credibility Index", National Bank of Poland Working Paper No 209.

⁶ See the "Risks for Financial Markets" section.

growth will slow drastically from an average annual rate of 3.5% over the 2000-2016 period to less than 2% over the coming years, which would translate into a reduction of 0.2% a year in demand for euro area products and services. Demand for French products and services could contract by approximately 0.1%, which is still marginal relative to the average annual increase of 4% in non-euro area demand for French products and services.

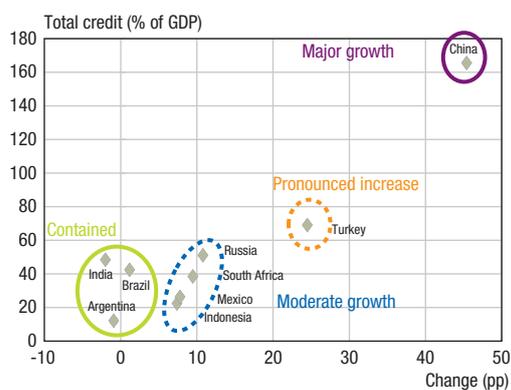
This scenario could be revised in the event that certain specific risks, such as a hard Brexit, materialise. The uncertainty surrounding Brexit could also have a bigger-than-expected impact on consumer spending and investment in the United Kingdom, with more pronounced spillover effects for the UK's European partners.

d. Vulnerability of emerging economies to tighter US monetary policy

The effects of US monetary policy on emerging economies are chiefly transmitted through the financial channel via an impact on financing conditions. Thus, the expansion of the Fed's balance sheet led to a positioning of investor portfolios with regard to emerging countries that resulted in increased capital inflows,⁷ higher financial asset prices and higher nominal exchange rates against the dollar.⁸ The balance sheet reduction initiated by the Fed in October 2017 and the expected continued upward trajectory of policy rates expose emerging markets to the risk that these effects could go into reverse, causing financing conditions to become tighter. Furthermore, unexpected tightening of US monetary policy would expose these countries to shocks of a greater magnitude.⁹ China is a case apart because of its low level of financial openness and appears in this respect to have little sensitivity to spillover effects (Box 1).

Chart 5

Debt of non-financial corporations: level (% of GDP) and pp change since end-2011



Source: BIS data for Q1 2017, Banque de France calculations.

The vulnerability of emerging countries to these risks appears to depend on certain domestic factors. In this regard, the exposure of the balance sheets of non-financial corporations (NFCs) to international financing conditions is now the principal factor of vulnerability for these countries. NFCs have seen their debt levels go up in recent years, and since 2012 they have ramped up their use of external financing (Chart 5). Furthermore, the stock of external debt remains largely denominated in foreign currencies,¹⁰ exposing balance sheets to the risk of local currency depreciation against the dollar. The external debt of emerging country governments has been stable since 2012 at a level below that seen in the early-2000¹¹ (Chart 6). While the macroeconomic fundamentals of emerging economies have improved, the external and fiscal positions of these countries have become weaker, rendering them more vulnerable to a downturn in net capital inflows.

7 Fratscher, Lo Duca & Straub, "On the International Spillovers of US Quantitative Easing", The Economic Journal, 2017.

8 Apostolou & Beirne, "Volatility spillovers of Federal Reserve and ECB balance sheet expansions to emerging market economies", ECB Working Paper, 2017.

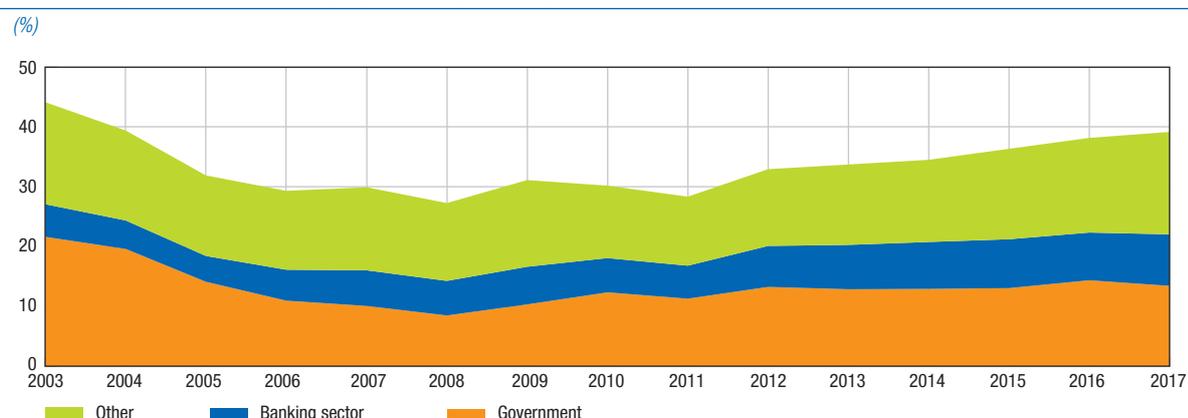
9 Gupta et al., "Should Emerging Markets worry about U.S. Monetary Policy announcements?", World Bank Working Paper, 2017.

10 In Q2 2017, 74% of the stock of external debt of emerging economies was denominated in foreign currencies according to BIS data available for Argentina, India, Mexico, the Philippines, Poland, Russia, South Africa, Thailand and Turkey.

11 Twenty countries are considered here: Argentina, Brazil, China, Egypt, India, Indonesia, Iran, Malaysia, Mexico, Nigeria, Pakistan, the Philippines, Poland, Russia, Saudi Arabia, South Africa, South Korea, Taiwan, Thailand and Turkey. These are the 20 largest emerging countries by GDP at purchasing power parity measured by the IMF. Note that certain international rankings no longer consider some of these countries to be emerging nations.

Chart 6

Average external debt of emerging countries (% of GDP)



Source: World Bank QEDS data for Q2 2017, IMF WEO, Banque de France calculations.

Box 1

Risks linked to interconnections within the Chinese financial system

The structure of China's financial system is becoming more complex, and growing interconnections between banks and non-banks are creating risks for financial stability in a setting of massive and fast-rising debt (260% of GDP at end-2016 according to the BIS). Financial institutions are using leverage to fund rapid credit growth and offer attractive returns in an interest rate environment subject to regulatory restrictions. While the four largest Chinese banks¹ look to be relatively well capitalised, the risks appear to be concentrated with second-tier banks and the shadow banking system, which was valued at approximately 80% of GDP at end-2016 with USD 8.5 trillion in assets. The major banks take most of the deposits, while second-tier banks rely on short-term market financing and wealth management products to boost their balance sheets and lend to at-risk sectors through complex, lightly-regulated structures, either on an off-balance sheet basis or through shadow banking via wealth management products, non-standard loans, secured loans, investment receivables and the like. These structures also enable banks to reduce the share of non-performing loans on their balance sheets. The linkages between banks and shadow banking are growing, as banks employ leverage and techniques to circumvent the regulations in order to lower their capital changes and boost returns, while increasing the share of intrabank credit.

Cooler Chinese growth could trigger business failures, notably in sectors suffering from excess capacity, with the fall-out spreading swiftly through the financial system. Meanwhile, higher interest rates could place second-tier banks in some difficulty, reducing their profitability and causing defaults on the market financing held by other financial institutions.

Since end-2016, China's authorities have been working to bolster financial sector rules, notably to capture off-balance sheet exposures and restrict credit growth. Recently, outstanding amounts of WMPs and certificates of deposit have declined, indicating a marginal reduction in risk within the financial system. The Chinese authorities must keep up their efforts to rein in credit growth and regulatory arbitrage, while protecting financial stability, which has been undermined by interconnectedness inside the financial system.

The Chinese financial system is fairly closed to the rest of the world. Consequently, **France has limited direct financial exposure to China**. French banks had ultimate risk exposure of USD 52 billion at end-2016, putting China 11th in terms of international exposure. The main channel of contagion in the event of a Chinese financial crisis would be through the macroeconomy and investor sentiment, leading, respectively, to a contraction in global trade and a collapse on international financial markets.

¹ Agricultural Bank of China (ABC), Bank of China (BOC), China Construction Bank (CCB), Industrial and Commercial Bank of China (ICBC).

2.2 RISKS LINKED TO DEBT IN THE PRIVATE NON-FINANCIAL SECTOR

The debt of private non-financial agents, i.e. households and companies, has risen at a sustained rate since the crisis, far outpacing economic activity. It amounted to 129.6% of GDP in the first quarter of 2017,¹² up 29.6 points since 2008. Total lending to NFCs came to 72.1% of GDP while total lending to households stood at 57.7% of GDP. The increase has become more pronounced in recent times, with broad credit¹³ divided by GDP expanding strongly at an annual 5.7 pp in Q1 2017 compared with 3.3 pp in Q4 2016. Accordingly, **credit to private non-financial agents is growing faster than its long-run trend**. The Basel Gap, or the broad credit-to-GDP gap¹⁴, an indicator followed by many countries, tracks the difference between the broad household and NFC debt ratio (i.e. bank and market debt) and its long-run trend. In France, this gap is strongly positive and chiefly driven by the increase in NFC debt securities. The bank credit-to-GDP gap differs from the Basel Gap in that it zeroes in on domestic bank debt.¹⁵ In France, the bank gap is widening and is back at its highest level since Q1 2014. The contribution from NFCs to broad credit continues to increase, driven by debt securities (section a). Households are also making a positive and rising contribution (section b).

a. NFC debt is growing uninterruptedly, with large firms reporting especially sharp increases

- **Growth in NFC debt in France contrasts with developments among euro area NFCs**

Outstanding NFC debt makes an important contribution to growth in private non-financial sector debt. Total outstanding NFC debt amounted to some EUR 1.610 trillion in Q1 2017, comprising EUR 1.010 trillion in outstanding bank credit and EUR 600 billion in debt instruments¹⁶ (Chart 7).

Since 2010, total NFC debt has increased at an average annual rate of 4.7%. This has translated into a constant increase in the ratios of debt to GDP, value added and NFC revenues.

Even if debt levels are not the highest in the euro area, this trend contrasts with the stability or decline seen in other large European countries (Chart 8).

- **Trends vary across company classes**

Contrasting trends are observed across different classes of companies. Total NFC debt (loans and securities) could be broadly divided in June 2017 into EUR 684 billion for large companies, EUR 416 billion for intermediate-sized enterprises and EUR 514 billion for small and mid-sized enterprises (SMEs). The increase in debt was much more pronounced between 2011 and 2016 for large companies and mid-tier firms (30 pp and 20 pp of value added respectively) than for SMEs (2 pp increase, Chart 8).

In the case of SMEs, weak debt growth is not attributable to identified credit constraints. Surveys of SMEs by the Banque de France and the ECB suggest both relatively elevated demand for credit and a high rate of fully or partly successful loan applications. In fact, according to the Banque de France survey, the percentage of loan applications that were fully or at least 75% successful reached its highest ever level for cash loans (94%) and investment loans (95%).

¹² Excluding NFC intragroup loans. Market securities are recorded at nominal value, with the debt ratio of private non-financial agents rising to 131.8% when securities are counted at market value.

¹³ Including intragroup loans.

¹⁴ https://publications.banque-france.fr/sites/default/files/medias/documents/qs46_summer-2017_web.pdf

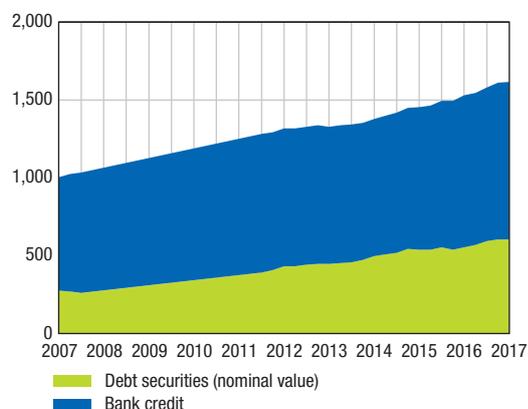
¹⁵ i.e. debt instruments (bank loans and debt securities) issued by domestic private non-financial agents and held in the assets of domestic banks.

¹⁶ Measured at nominal value; EUR 660 billion at market value.

Chart 7

Bank credit and market debt in EUR billion

(EUR billion)

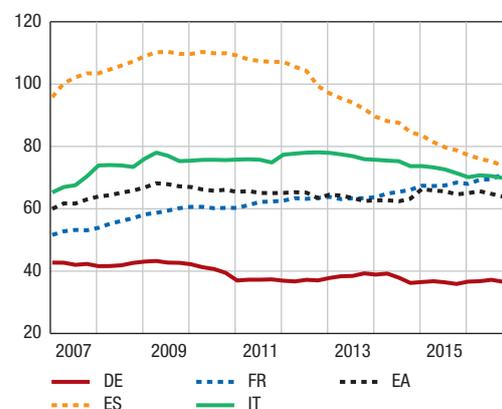


Source: Banque de France.

Chart 8

NFC debt ratio (gross debt / GDP)

(%)



Source: Banque de France.

Note: Debt is consolidated, i.e. it corresponds to the sum of debt securities issued by NFCs at nominal value plus total credits net of claims recorded as credit in the assets. Calculated this way, debt consolidates intragroup loans to resident and non-resident entities. Consolidated debt is not be confused with net debt, which is the difference between companies' gross debt and their cash.

Furthermore, a significant portion of NFC debt – EUR 154 billion in June 2017 – is held by real estate companies (SCIs).

• Market debt plays a significant role

Market debt has increased sharply in recent years amid a shift in the financing mix of large companies towards debt securities. While market financing concerns a growing number of firms, an analysis of issues of debt securities points to continued substantial concentration, with utilities, which are inherently large and recurring issuers, accounting for a major share.

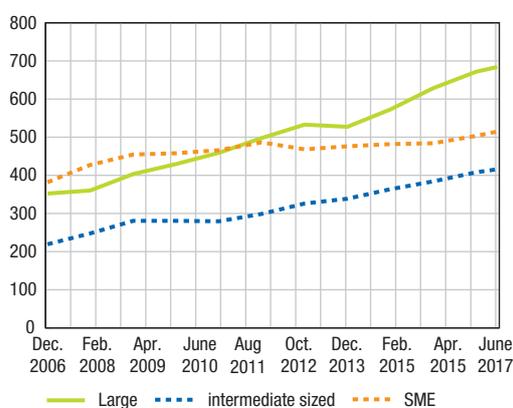
Thus, the respective contributions from bank credit and market debt to overall debt patterns have evolved significantly over time. Between 2011 and 2016, large companies recorded sharp growth in market debt (56%) and a smaller 9% increase in bank debt. Market debt has also soared by 160% among intermediate-sized enterprises, although the overall outstanding amount remains limited at around EUR 60 billion.

Most recently, NFC debt patterns have been driven by growth in credit and debt. Accordingly, since mid-2016, there has been a relatively steady increase in outstanding credit (5.4% year-on-year in September 2017), while growth in market debt has picked up once again (7.7% year-on-year increase).

Chart 9

NFC debt, by company size

(EUR billion)



Source: Banque de France.

Note: NFC debt consolidated at the level of the institutional sector. Classification by size for loans in the "real estate companies and miscellaneous" category, which are not usually broken out in the statistics.

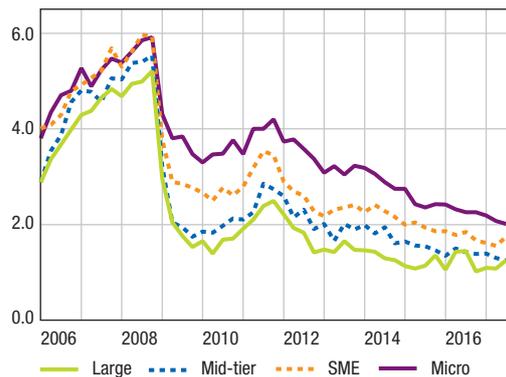
- **Lower interest rates have mitigated the impact of increased debt on debt charges**

The increase in NFC debt has taken place against the backdrop of a sharp decline in interest rates since 2011, driven by the ECB's monetary policy and, more generally, a persistently low interest rate environment.

Chart 10

Lending interest rates, by company size

(APR, %)



Source: Banque de France. Most recent value: Q3 2017.

The cost of credit thus hit a record low 1.4% at end-2016.

While large companies saw their interest rate conditions reach the symbolic threshold of 1% in 2016, the cost of credit has risen slightly since, climbing to 1.3% in Q3 2017 (cf. Chart 10). The cost of market financing, which affects the largest companies, followed the same downward trend, falling below the bank lending rate in 2013 and settling at around 0.8% in mid-2016. The average cost for SMEs, which is higher, followed a similar trend and stood at around 1.7% in the third quarter of 2017.

Given the decline in interest rates, which are on average lower than elsewhere in the euro area, the ratio of financial charges to gross operating surplus has been heading downwards in recent years.

That said, the low financial charges of French NFCs could be affected by an increase in NFC lending

rates: (i) a large portion of this debt is at floating rates and would therefore be directly impacted by higher rates; (ii) unlike households, NFCs often have to refinance their debt, making them more sensitive to an increase in rates, even for their fixed rate debt. However, **companies have taken advantage of the favourable conditions to take on long-term debt, so partially pushing back the impact of higher interest rates.** While a gradual increase in interest rates during a cyclical upswing would be offset by higher gross operating surpluses, a more sudden jump could pose a challenge as firms might not have built up an adequate liquidity buffer.

- **Debt patterns in line with a recovery in investment and developments in cash management.**

Investment loans have risen at a sustained pace since 2010. Although they slowed slightly between 2012 and 2015, they have been steadily accelerating since then. Cash loans have been surging since the beginning of 2015. As a rule, there is a fairly clear correlation between debt and investment dynamics, as well as between growth in inventories and outstanding cash loans, even if an analysis by credit type needs to consider market debt substitution effects.

- **Investment and acquisitions**

The investment rate of French NFCs, measured by the ratio of investment to value added, has jumped sharply since 2012 and reached 22% on an annual basis in 2016, a 30-year high. The self-financing ratio meanwhile, which relates companies' saving to their investment flows and changes in inventories, has decreased since the late 1990s, when it peaked at 100%: company saving currently covers 80% of financing for investment and changes in inventories, explaining their use of debt.

A substantial portion of the debt of large groups is used to finance acquisitions, particularly outside the country. In 2016, the debt of large groups rose by EUR 87.2 billion (after EUR 77.4 billion in 2015) and financing requirements linked to French foreign direct

investment climbed EUR 18 billion to EUR 52.1 billion, up from EUR 34.0 billion in 2015. Furthermore, some of these acquisitions involved leveraged buyouts (LBOs) and very large amounts of debt (see Box 2).

Box 2

Risks linked to NFC leveraged financing

The current period has been characterised by strong growth in structured issues and LBO transactions, although their level remains short of the peak seen in 2008. Echoing that earlier period, the market for leveraged transactions is being driven by historically low interest rates, plentiful liquidity and fierce competition linked to the high profitability of these activities. However, current deals display a number of specific features including (i) a gradual easing of covenants; (ii) a big presence for transactions consisting in rolling over existing loans, sometimes under more aggressive conditions and (iii) an increase in the share of financing provided by non-banks. The default rate on these transactions is still very low, but is sensitive to a cyclical reversal, especially since a large proportion of the loans will mature in 2018-2019.

- **Cash management**

NFC debt also has to be considered against the sharp increase in firms' cash holdings (EUR 579 billion in Q2 2017), which have more than doubled since Q1 2008, rising by EUR 330 billion. The share of deposits and cash in NFCs' quarterly gross operating surpluses is growing rapidly and rose from 300% in 2008 to over 625% in Q1 2017. As a result, NFC net debt (debt – cash) measured by the Banque de France has risen modestly since 2007, reaching 48.6% of GDP in Q2 2017, compared with 45.9% in 2008.

The change in debt largely reflects developments in cash management approaches. This may be interpreted as a consequence of the rise of market financing (which is inherently less adjustable) and, more generally, as reflective of efforts to build up emergency cash reserves following the crisis. Firms seem to have opted to transition towards having larger cash cushions.

This trend has been exacerbated by regulatory and institutional developments that have promoted the growth of corporate bond markets, and also by steps by major groups in France to centralise financial management. The increase in their debt in France is being used to bolster cash holdings for use in domestic and international acquisitions.

These developments are taking place against the backdrop of a decline in interest rates that has been accompanied by a contraction in spreads and hence a reduction in carry costs. With the arrival of very long maturities (20 years and over), companies' debt-related costs are decreasing, enabling them to build up their cash holdings so that they can respond if investment opportunities come along.

Reduced carry costs could also encourage opportunistic behaviour in the shape of carry trades if the return on companies' deposits and cash exceeds the cost of borrowing. Some factors, especially growth in the volume of issues of corporate paper offering negative yields across all maturities from one day to one year, raise questions about such strategies.

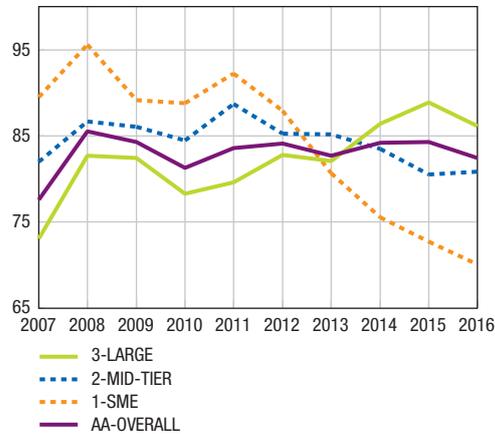
- **The increase in leverage is relatively contained, except among large companies, but goodwill continues to make up a large share of equity**

Leverage, measured by the ratio of debt to equity, is not deteriorating on average, indicating that companies' equity has increased strongly alongside debt. Improved margins in particular have bolstered equity. Moreover, the substantial accumulation of liquidity is helping to lower net leverage. However, it is worth noting that leverage trends are rather disparate,

Chart 11

Gross weighted NFC leverage ratios

(by size)



Source: Banque de France.

Note: NFC debt consolidated at the level of the institutional sector

especially by company size. According to aggregate data from our sample, overall gross and net leverage ratios (sum of debt/sum of equity)¹⁷ have fallen since 2012, reaching 82% and 49% respectively in 2016 compared with 84% and 60% in 2012 (Chart 11). Among large companies, however, net leverage¹⁸ decreased by 9 points, from 64% to 55%, while gross leverage rose by 3 points, from 83% to 86%.

Debt is particularly associated with acquisitions, which give rise to the recognition of goodwill in the buyer's assets that reflects the difference between the purchase value of the target and the book value of its equity. As a result, the equity of some companies is sensitive to the quality of goodwill recognised in assets. The pick-up since 2013 in goodwill relative to total equity remains measured, with the average goodwill-to-equity ratio in 2016 remaining below the level reached in 2012 (55% in 2016, compared with 60% in 2012). But goodwill represents an elevated share of equity at the most heavily indebted groups,

consistent with the fact that debt is particularly associated with acquisitions, while tangible and intangible investments tend to be self-financed. As a result, the most costly acquisitions tend to be associated with larger amounts of debt.

b. Household debt continues to increase as lending conditions are eased

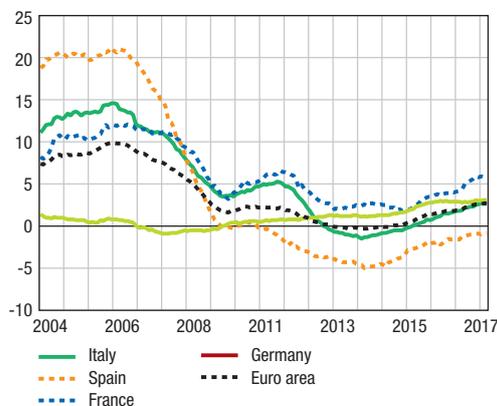
• The debt ratio of French households is climbing faster than the euro area ratio

Household debt¹⁹ continued its steady rise since the early 2000s to reach 90.3% of gross disposable income at the end of the second quarter of 2017, supported by vibrant growth in outstanding loans (Chart 13, Chart 14). The debt-to-GDP ratio (57.9%) is still well below that of UK or US households, but is drawing closer to the overall euro area ratio (58.1%). Unlike in other countries, French household debt did not turn downwards in the wake of the financial crisis.

Chart 12

Household lending growth rate

(en%)



Source: Banque de France, ECB.

Rising debt at the macroeconomic level has translated into a relative increase in the vulnerability of indebted households. According to individual-level survey data, the main median debt ratios for French households are rising, consistent with what is being seen among euro area households, except that the changes are generally larger in France: the median debt-to-income ratio thus rose by 17.6 pp between 2009 and 2015 among French households, compared with an 8.4 pp rise for euro area households. Debt service-to-income ratios showed a 3.3 pp increase and a 0.5 pp decline respectively (Chart 14).

In early 2015, French households carried a relatively high real estate debt burden compared with their European neighbours. However, debt-to-income and

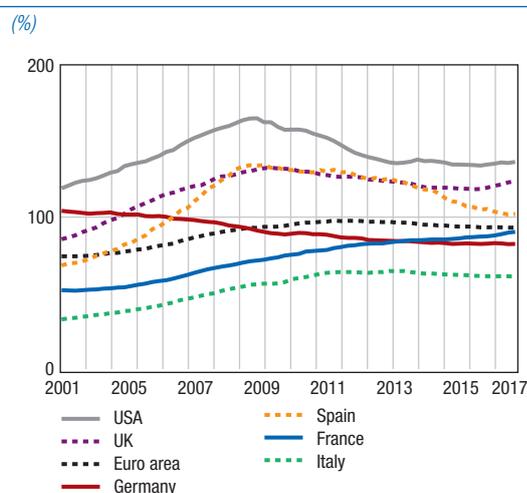
¹⁷ In other words, the average of the leverage ratios weighted by the relative share of each group in total equity for the sample as a whole.

¹⁸ Outstanding debt divided by equity.

¹⁹ Household debt: sum of outstanding loans granted by resident and non-resident financial institutions.

Graphique 13

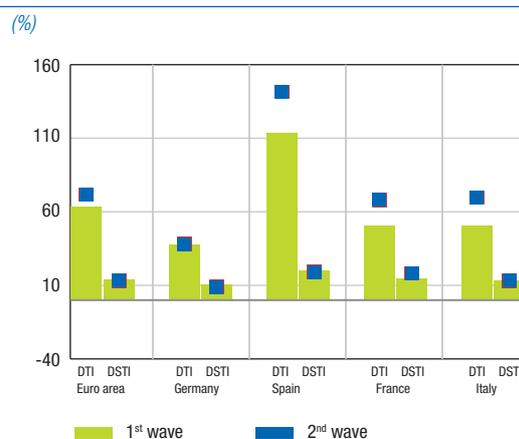
Household debt ratio



Source: Banque de France, ECB.
Note: household debt ratio = debt / gross disposable income

Chart 14

Change in debt ratios between 2009 and 2015



Source: ECB, Household Finance and Consumption Survey.

debt-to-assets ratios were below the European average. This suggests that the average maturity of French loans is somewhat shorter than in other countries.

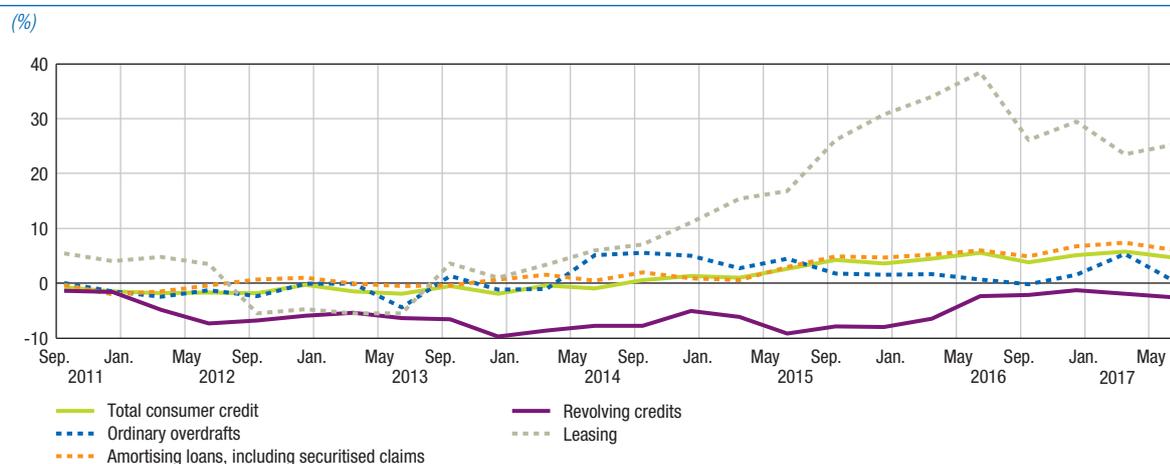
• Consumer lending sustained by the economic upturn

Outstanding consumer loans totalled approximately EUR 175 billion in mid-2017. Consumer credit experienced sustained growth in France in 2017, and has been accelerating since mid-2014 on the back of the economic recovery and vigorous household consumption. Consumer credit is growing slightly faster in France than in the euro area as a whole.

Growth in consumer lending has been driven by amortising loans (6.1% increase) and, more marginally, by leasing (5.3% year-on-year increase at end-June 2017 – Chart 15). Analyses by the Banque de France show that about two-thirds of the increase in consumer credit since 2015 can be attributed to auto financing.

Chart 15

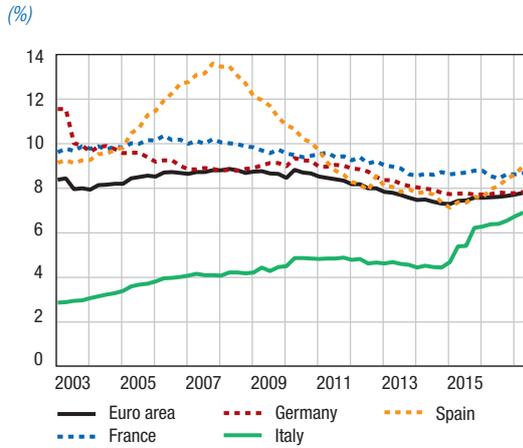
Consumer lending growth rate, by instrument



Source: Banque de France.

Chart 16

Household consumer debt ratio (debt/gross disposable income)



Source: Banque de France, ECB.

The average and median income of households taking out consumer loans increased by approximately 25% (24% and 28% respectively) between end-2006 and end-2016, far exceeding the growth in consumer prices (11.6% increase for the CPI excluding tobacco). By mid-2017, they stood at EUR 31,155 and EUR 26,304 respectively.

Increase take-up of consumer credit by French households resulted in a higher consumer debt ratio compared with the euro area average (9.0% compared with 7.8%, Chart 16). However, the consumer debt ratio among the least affluent French households (gross income below the first quartile) is close to the euro area average (4.5% and 4.4% respectively) and well below the ratios recorded by the same category of households in Germany (6.7%) and the Netherlands (8.3%).

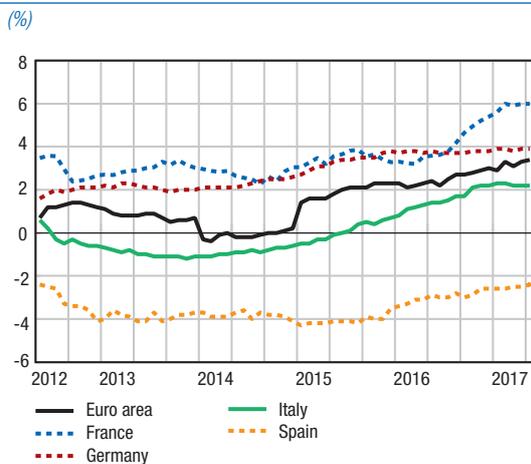
• The easing of credit standards over recent quarters has spurred rapid growth in home loans

The real estate market continued the recovery that began in 2014. Prices surged, putting on 3.5% in the year to Q2 2017. Transaction volumes were also strong, hitting a record high of 920,000 transactions in the existing homes segment in June 2017. After falling once again in 2016 (by 80 bps over the year), interest rates on long-term home loans have edged up by 12 bps since January 2017, suggesting that they may have reached a turning point.

New lending, which accelerated markedly in 2016 to reach record levels in early 2017, hit a soft patch owing to the decline in loan buybacks and renegotiations, which fell from 62% to 27% of new loans between January and July 2017. Excluding buybacks and renegotiations, however, new lending remains sustained and is fuelling the accelerated growth in outstanding amounts (6% year-on-year in September 2017, Chart 17).

Chart 17

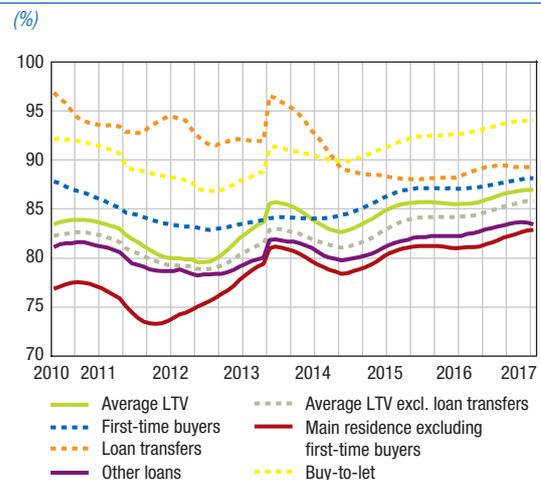
Home lending growth rate



Source: Banque de France, ECB.

Chart 18

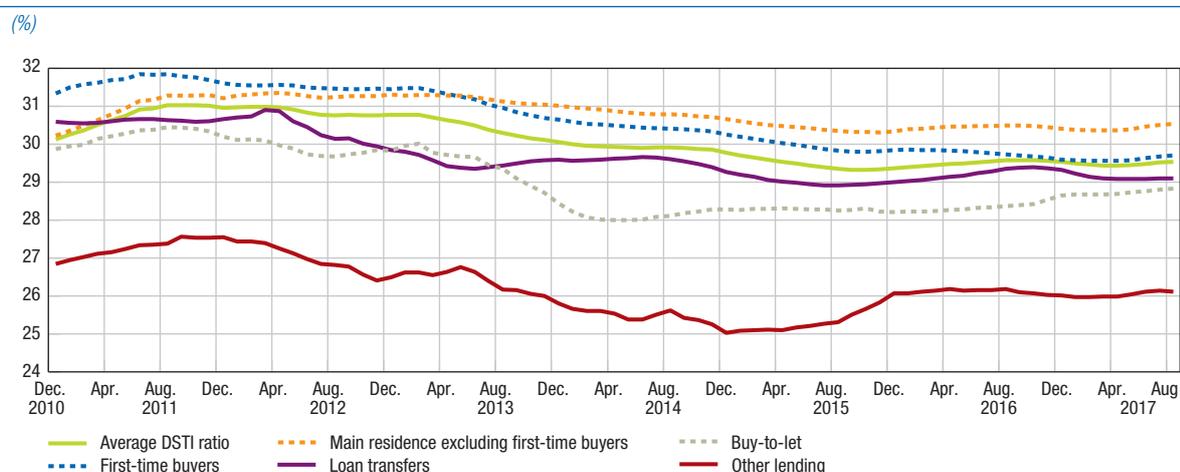
Average LTV ratio



Source: ACPR, monthly monitoring of new residential lending; 12M moving averages; most recent value: Aug. 2017.

Chart 19

Average DSTI ratio



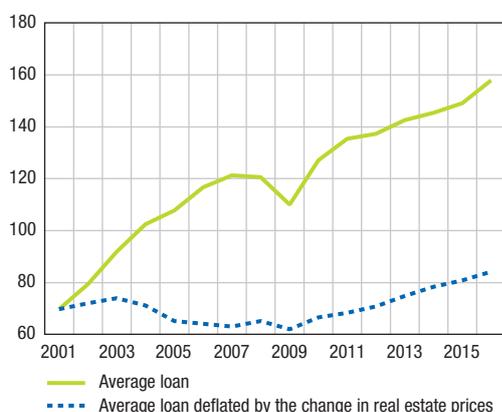
Source: ACPR, monthly monitoring of new residential lending; 12M moving averages; most recent value: Aug. 2017.

Whereas between 2009 and 2015 the average down payment fell from 21% to 14% (Chart 18) and other lending conditions improved on the whole, **lending conditions, e.g. average down payment, DSTI,²⁰ LTI²¹ and initial maturity, have been gradually easing since end-2015** (Chart 19 to Chart 22).

Chart 20

Average loan

(monthly, EUR thousand)

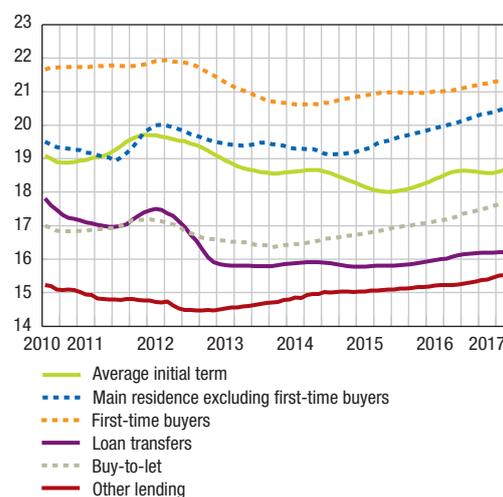


Source: Banque de France.

Graphique 21

Initial maturity

(years)



Source: ACPR, monthly monitoring of new residential lending; 12M moving averages; most recent value: Aug. 2017.

Accordingly:

- over the recent period, the increase in loan size (Chart 18) has gone hand in hand with longer maturities, particularly between October 2015 and April 2016 and since the start of 2017. Increased loan sizes and lengthier maturities in turn have

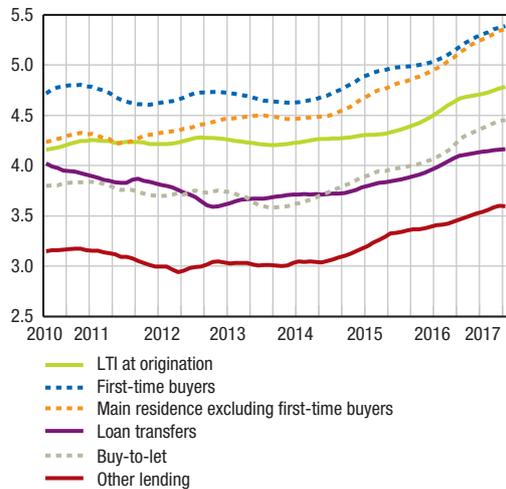
²⁰ Debt service-to-income ratio.

²¹ Loan-to-income ratio, or the number of years required to repay a home loan.

Chart 22

LTI ratio, new lending

(years)



Source: ACPR, monthly monitoring of new residential lending; 12M moving averages; most recent value: Aug. 2017. The loan-to-income (LTI) ratio at origination is the ratio of the average initial loan amount to the borrower's estimated annual income at that date. The LTI ratio thus shows how many years of income a borrower would need to repay a residential loan.

accompanied the decline in interest rates (making it possible to contain the increase in monthly payments, since virtually all new loans are fixed rate).

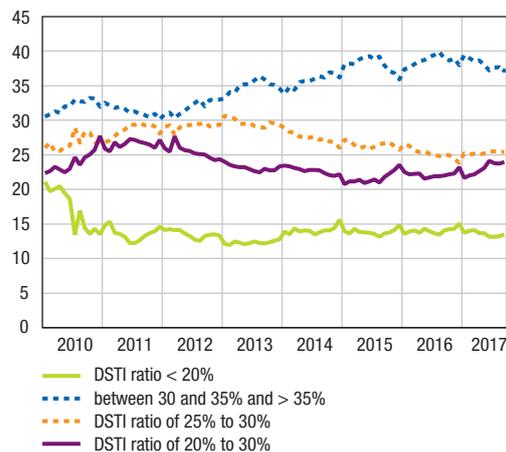
- the average DSTI ratio²² at origination rose slightly in 2016 to 29.6% compared with 29.4% in 2015, while remaining below the levels reached in 2011. The structure of new lending by DSTI followed more or less the same pattern: transactions in which the borrower's DSTI was below 20% continued to be the least well represented, while the share attributable to borrowers whose DSTI was between 20% and 30% was largest and continued to rise. Meanwhile, the share of new lending to borrowers with a DSTI of over 35% increased over the first few months of 2017. Second-time buyers and buy-to-let investors made the biggest contribution to the increase in the share of borrowers with DSTIs of more than 35%.

Overall, borrowers stepped up their use of leverage. In this setting, the non-performing loans ratio increased after 2008 but remains low (1.5%).

Chart 23

Structure of new lending as a function of the DSTI ratio

(% of number of transactions)

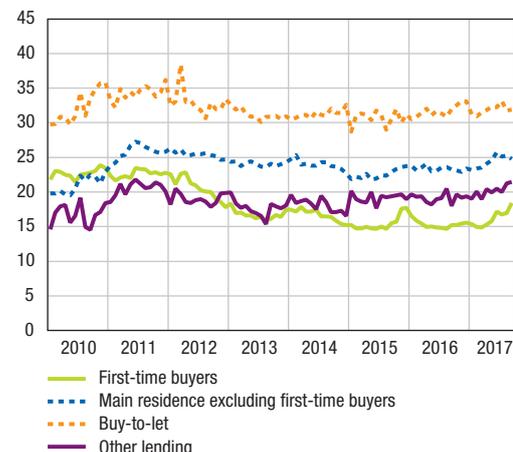


Source: ACPR, monthly monitoring of residential lending; most recent value: September 2017.

Chart 24

DSTI ratio ≥ 35%

(% of number of transactions)



Source: ACPR, monthly monitoring of residential lending; most recent value: September 2017.

²² The ratio that tracks how much a household spends on interest charges relative to income.

3 Risks for financial institutions

Risks to the French financial system are broadly unchanged from those reported in the June 2017 assessment. The banking sector (section 1) and insurance sector (section 2) alike continue to demonstrate their resilience.

3.1 RISKS TO THE FRENCH BANKING SECTOR

French banks maintained their overall profitability in the first half of 2017, in part thanks to strong non-interest income and the ongoing decline in the cost of risk. However, the gap between banks' profitability and the cost of equity required by investors has remained steady for over a year. Market expectations about future bank profitability are improving notably because of cyclical factors, but the structural problems that affect French banks, especially high structural costs, continue to have an adverse impact on the profitability expected by the markets. As a result, banks must continue to adjust their business models, in particular to boost operating efficiency.

The quality of French banks' exposures rose on the whole as the nonperforming loans (NPL) ratio headed down, reflecting improvements by French banks in their main zones of exposure and in relation to specific counterparties. At European level, however, the situation remains problematic in some countries to which French banks are exposed, although initiatives by European authorities should encourage banks to speed up the NPL resolution process. No significant deterioration in lending conditions was observed.

French banks made further headway in their compliance with solvency and liquidity regulatory ratios, although some of them progressed at a slower pace than in previous halves. Compared with the June 2017 risk assessment, gaps relative to the new regulatory requirements narrowed, while completion of the Basel III framework, announced on 7 December, has provided a settled regulatory framework with sufficient implementation lead times to allow for necessary adjustments. In the nearer term, the introduction of IFRS 9 and finalisation of MREL/TLAC requirements continue to pose significant challenges.

Other challenges remain, particularly for French banks, including:

- the risk of a sudden increase in interest rates and greater volatility that would result from monetary policy normalisation. The severity of the impact of risk repricing on financial markets would depend on the size and speed of these changes and on the nature of bank balance sheets. Interest rate risk in the banking book does however look to be well managed at most French banks;
- geopolitical uncertainties, which could affect banks directly, as well as through second-round effects. Brexit, for one, could generate risks for French banks based in the United Kingdom. Elsewhere, the policy pursued by the US administration could cause fragmentation in international banking rules that might disrupt the level playing field for major international banks.

a. Profitability levels are holding up overall in the banking sector

- **Weak income from retail banking is being offset by strong performances in other activities and the continuing fall in the cost of risk**

At the end of the first half of 2017, the six²³ largest French banks continued to post resilient performances, although profitability dipped slightly compared with the first half

23 BNP Paribas, Crédit Agricole Group, BPCE Group, Groupe Crédit Mutuel, La Banque Postale and Société Générale.

of 2016, notably owing to adverse non-recurring items.²⁴ An analysis by business line reveals contrasting trends, with the strong performance from corporate and investment banking, insurance and asset management offsetting weakness in retail banking in France at the income and profitability levels.

Despite the slight decline in net banking income (NBI) combined with increased management expenses, net profit for the first half of 2017 totalled EUR 14.1 billion – close to the result for the same period in 2016 – owing to a 30.6% decrease in the cost of risk compared with the first half of 2016. The cost of risk continues to go down in all business lines and across all the major banking groups, thanks in particular to the low interest rate environment and ongoing improvements in the situation for certain zones, especially Italy.

Ultimately, French banks' return on equity (RoE) declined slightly from 7.7% to 7.1% between 30 June 2016 and 30 June 2017. The weaker net profit compared with the first half of 2016 and the increase in equity both contributed to the decrease in RoE over the first half of 2017. Restated for the main nonrecurring items, RoE was broadly stable at around 7.7%.

- **Market expectations about bank profitability in 2018 are bullish**

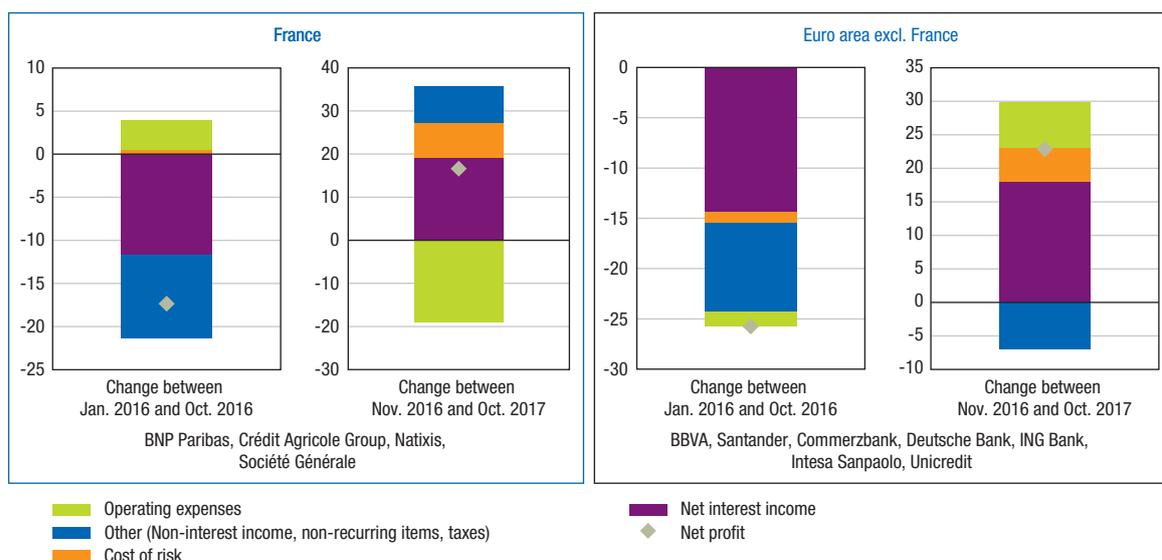
Market expectations about the net profit of European banks in 2018 have been rising since November 2016. The reasons for this trend vary across geographical zones (Chart 25). French banks are being hurt by their substantial operating costs.

Markets have raised their expectations for French banks' net profit in 2018 up by 16.6%, as compared with 22.8% for euro area financial institutions. The change reflects upside revisions to net interest income, which made a positive 19.1 pp contribution to the change in expectations, and to other income (+8.4 pp), as well as a downside

Graphique 25

Change in market expectations for bank net profit in 2018

(Contribution to the changes of the Net Profit in pp, breakdown per main component.)



Source: Bloomberg – Banque de France calculations.

²⁴ Mainly capital gains on the disposal of Visa Europe shares in H1 2016 and litigation costs for some banks in H1 2017.

revision to the cost of risk (+8.2 pp contribution). These were partly offset by a sharp upside revision to operating costs, which made a negative contribution of 19.1 pp. These expectations are consistent with the business model of French banks, which have the capacity to diversify their income but which also have to bear heavy structural costs. As with French banks, the upside revision to profit expectations for euro area banks (excluding French ones) was driven by interest income (+18.1 pp contribution) and the anticipated reduction in the cost of risk (+4.9 pp). Conversely, and unlike in the case of French banks, the markets cut their expectations for other income and operating costs, which made a negative 7 pp contribution and a positive 6.8 pp contribution respectively to the change in expectations.

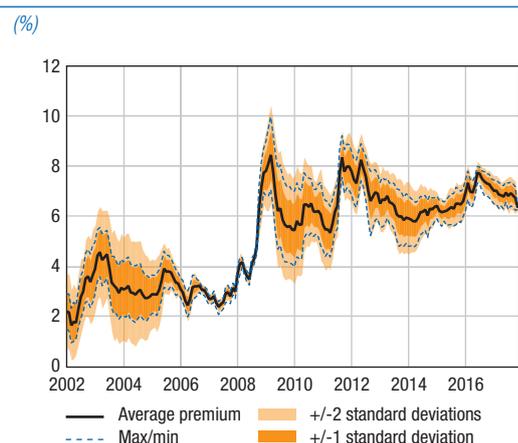
- **Cost of equity remains stable and above RoE in the banking sector**

The decline in risk premiums is not reflected in the profitability required by investors.

Chart 26 shows how risk premiums for French banks (average estimate of 6.4% in November 2017, down over a point compared with summer 2016) have declined and sit at levels comparable to those of their European counterparts but above those of US banks (3.8% in November 2017). The difference in risk premiums between the United States and Europe reflects a bigger increase in the US risk-free rate towards the end of the period. Despite these developments, the cost of equity (CoE)²⁵ has remained stable, because of increased sensitivity to non-diversifiable risk (higher beta), especially since 2012 (Chart 27). Thus, in November 2017, the average CoE of French banks was 10%, or 3 pp higher than the pre-crisis average. Uncertainty over the measurement of CoE has risen in the post-crisis period, as reflected in the estimation range, which has widened since 2009. That said, the gap²⁶ separating the return required by investors and banks' RoE (Chart 27) narrowed on improved earnings for banks but was still negative at the end of 2017.

Chart 26

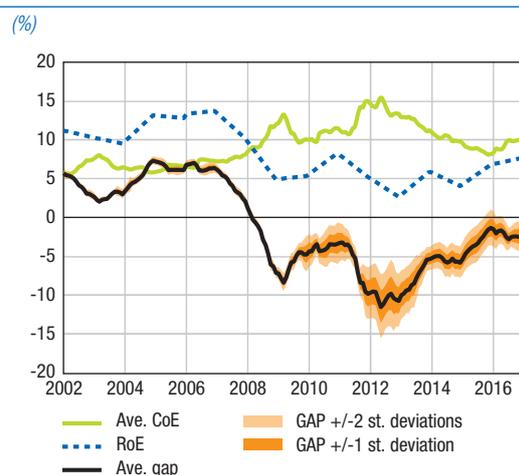
Risk premium, French banks



Source: Bloomberg, Banque de France calculations.

Chart 27

Average CoE and RoE, French banks



Source: Bloomberg, Banque de France calculations.

25 Since the cost of equity (CoE) is not an observable value (expectations of future cash flows being inherently uncertain), we use a model to assess financial assets: taking as our starting point the estimated market risk premium and beta of banks (degree of exposure of banks to systematic risk, i.e. non-diversifiable risk), we use the CAPM model's formula to calculate the return required by investors for individual banks (CoE) : $E[r_{i,t}] = r_f + \beta_{i,t} * p_{M,t}$ where r_f is the risk-free rate at time t , $\beta_{i,t}$ is the beta of bank i at time t , $p_{M,t} = k_t - r_f$ is the risk premium of market M and $E[r_{i,t}]$ is the expected return on asset i , at time t , in our case the bank's CoE. We therefore equate $E[r_{i,t}]$ to bank i 's CoE at time t .

26 Indicator used to gain information about banks' cost of funding on financial markets. Theoretically, if a bank's return is too low relative to the investment risk, its share price should fall as investors turn away. The price lowers until it adjusts to reflect the return required by shareholders. This is an imperfect measure because of the time horizon difference between RoE, which is an accounting measure that records profitability at time t , and CoE, which is a forward-looking measure reflecting the returns expected by investors.

b. Impact of market risk repricing on banks

A sudden increase in interest rates and volatility could affect: (i) the banking book, by influencing net interest income (NII) and the economic value of equity (EVE) through assets and liabilities that are sensitive to interest rates; (ii) the securities portfolio, in the case of fair value assets.

• Results of the sensitivity analysis of interest rate risk in the banking book conducted by the ECB and areas to watch in terms of financial stability

On 9 October 2017, the ECB published the results of the stress test of interest rate risk in the banking book (IRRBB), which found that interest rate risk is well managed in most European banks.²⁷ Higher interest rates would lead to higher net interest income for most of the banks in the sample (76%), with an average increase of 10.5% through to 2019 following a +200 bps shock across the entire yield curve. At the same time, 77% of the banks covered by the Single Supervisory Mechanism (SSM) would see their economic value of equity (EVE)²⁸ decrease, with a -2.7% CET1 impact on average. The results for French banks were broadly in line with these trends, although French institutions were less favourably positioned partly because of methodological choices specific to the exercise.

Two areas to watch include the robustness of customer behaviour modelling by banks and the effectiveness of their hedging strategies linked to the use of interest rate derivatives in asset/liability management. To measure exposure to interest rate risk, irrespective of the metric used, banks must partly rely on assumptions about customer behaviour to estimate the change in their balance sheet over time. As part of this, they need to model the change in deposit volumes on the liabilities side and loan volumes on the assets side, which raises the issue of estimating the level of loan prepayments. There is a danger that these models, which are often calibrated over recent periods and do not factor in a complete cycle of interest rate increases, might underestimate the reaction by depositors to higher interest rates (e.g. reallocation of savings to higher-earning products). Some banks might also use derivatives to take directional positions, e.g. to take advantage of higher interest rates. It is important that such actions should be consistent with the bank's appetite for interest rate risk.

• Level 3 assets and valuation risks in the event of increased volatility

If a substantial repricing of risk were to take place on financial markets, banks would also be affected through their fair value assets and liabilities. These instruments are valued based on their market price, if one exists, or by means of models, which may use unobservable inputs in the case of level 3 instruments. If volatility goes up, the change in value of level 3 instruments²⁹ – which may be recorded (i) in the trading book, (ii) at fair value under the FV option or (iii) as available for sale – could result in losses that are taken to profit and loss or recognised in equity, depending on how they are booked.³⁰

Since 2014, level 3 assets held by French banks have decreased while level 3 liabilities have remained steady. Between June 2016 and June 2017, the amount of level 3 assets in the fair value portfolios of the five main French groups³¹ fell by 18%, mainly owing to lower valuations for the derivatives asset class. All five French banks recorded a decline in the ratio of level 3 assets to CET1, which fell on average from 19.5% to 15% between June 2016 and June 2017.

²⁷ <https://www.bankingsupervision.europa.eu/press/pr/date/2017/html/ssm.pr171009.en.html>

²⁸ The economic value of equity (EVE) is measured by the difference between the present value of asset cash flows and liability cash flows in the banking book. The present value of cash flows decreases if interest rates go up and increases when they go down. The final sign for the direction of the change in EVE following an interest rate shock depends on the respective durations of assets and liabilities. If assets have a longer duration than liabilities, this implies a negative (positive) change in EVE if interest rates go up (down).

²⁹ Assets whose fair value may be determined only using a model whose inputs are not directly observable on the markets.

³⁰ Fair value changes in instruments recorded in the trading book or at fair value under the FV option are taken to profit and loss, while changes in the fair value of AFS assets are recognised in equity.

³¹ BNPP, GCA, SG, GCM and BPCE.

c. Geopolitical uncertainties

• Brexit's impact on French banks

The risk associated with Brexit mainly affects French credit institutions and investment firms doing business in the United Kingdom through a subsidiary or branch, or under the freedom to provide services. As it is unclear whether Brexit will be hard or soft, there are many uncertainties about the UK's departure from the European Union, including: (i) reciprocal procedures for market access under the future framework governing EU/UK relations; (ii) the continuity of existing financial contracts that expire after March 2019; (iii) the impact of the potential relocation to the euro area of the clearing for financial contracts denominated in euros and (iv) the existence of a transitional period from March 2019 and the procedures governing that period.

French banks operating in the UK face strategic and operational risks when it comes to identifying the costs and benefits of keeping their UK base and safeguarding business continuity. They will need to determine the legal procedures for continuing to exercise their activities, notably if the UK is named a third country, comply with the processes for registering with local authorities, and bear the associated financial and operating costs. Banks will also have to set up mechanisms that are capable of ensuring the continuity of contracts and financial transactions that are already in place. Some groups are already making plans to relocate the structures and staff that handle clearing for euro-denominated financial contracts.

• Impact on French banks of the US policy stance on deregulation

The stated determination of the Trump administration to deregulate the US financial system creates two risks for French credit institutions:

- unequal treatment of US and European banks;
- reduced ability of the US financial system to absorb economic shocks going forward, creating greater vulnerability to economic cycles and potential spillover effects.

As regards the existing regulations, the executive orders signed by President Trump in February 2017 seek to review the *Dodd-Frank Act*, the regulatory reform package designed and implemented in the wake of the 2008 financial crisis. In terms of the international regulatory developments currently underway, the US Treasury report entitled *A Financial System That Creates Economic Opportunities*,³² published in June 2017, proposes, among other things: (i) restricting the *liquidity coverage ratio* (LCR) to GSIBs; (ii) postponing US application of the *net stable funding ratio* (NSFR), scheduled for 1st January 2018; and (iii) postponing the *fundamental review of the trading book* (FRTB). If implemented, these proposals would lead to significantly different treatment for US and European banks.

d. Change in and quality of exposures

• The NPL ratio is falling in the main areas where French banks do business and across all counterparties

At end-June 2017, the overall NPL ratio for France's major banks stood at 3.4%, compared with a European average of 4.5%. Furthermore, the average NPL coverage ratio was 51% for French banks and 45% for European banks. These indicators show that French banks are maintaining exposures of relatively satisfactory quality, even if

³² <https://www.treasury.gov/press-center/press-releases/Documents/A%20Financial%20System.pdf>

these average values may mask less satisfactory situations in some sectors or at certain foreign subsidiaries. The NPL rate for domestic exposures and in the main areas where French banks do business is declining, although it remains extremely elevated in the case of Italian exposures.

As regards the time taken to resolve NPLs, French legal procedures are relatively lengthy, forcing French banks to keep material amounts of old NPLs on their balance sheets. At end-2016, about one-half of French banks' NPLs were over two years old and around one-quarter were over five years old.

Accordingly, efforts are still needed to improve the treatment of NPLs. The ECB's updated guidance on this issue³³ should encourage banks to speed up their NPL recovery and reduction processes (Box 3 on initiatives by European authorities).

Box 3

Initiatives by European authorities to tackle NPLs

Several European bodies contributed to the NPL debate in 2017, placing the emphasis on setting up best practices and measures to prevent the re-emergence of critical situations.

As the banking supervisor, the ECB took measures targeting banks with elevated NPL levels, while introducing tools to promote best practices in NPL management. In particular, it:

(i) drafted guidance describing its expectations for NPL management, which was published on 20 March 2017. On 4 October 2017, the ECB organised a consultation on a draft addendum to the guidance specifying quantitative supervisory expectations (e.g. time period within which the ECB expects banks to have dealt with NPLs and fully covered any residual risk);

(ii) held in-depth discussions with high NPL banks about the adequate and realistic nature of their three-year NPL reduction plan;

(iii) published a report in June 2017 identifying factors in the legal and regulatory environment that could affect banks' resolution of NPLs.

Based on the action plan approved by ECOFIN and published on 11 July 2017, the European Commission launched two consultations (one on 10 July on the development of secondary markets and the protection of secured creditors, and one on 10 November on minimum prudential requirements to tackle the under-reserving of new loans that become non-performing). Starting at end-2017 and through 2018, these exercises should result in several proposals to improve the treatment of NPLs in Europe.

On 11 July 2017, the European Systemic Risk Board (ESRB) published a report on the macroprudential issues connected with NPLs. By the end of 2018, it is planning to put forward macroprudential proposals aimed at preventing NPL problems from re-emerging.

- **In relative terms, banks have curbed their exposure to NFC counterparties with elevated probabilities of default**

Between end-2014 and June 2017, the large French banks increased, in relative terms, their exposure to NFCs with low probabilities of default (under 2%) while scaling back their exposure to NFCs with more elevated probabilities, i.e. over 2% (Chart 28). This

³³ See "Addendum to the ECB Guidance to banks on non-performing loans: Prudential provisioning backstop for nonperforming exposures", October 2017.

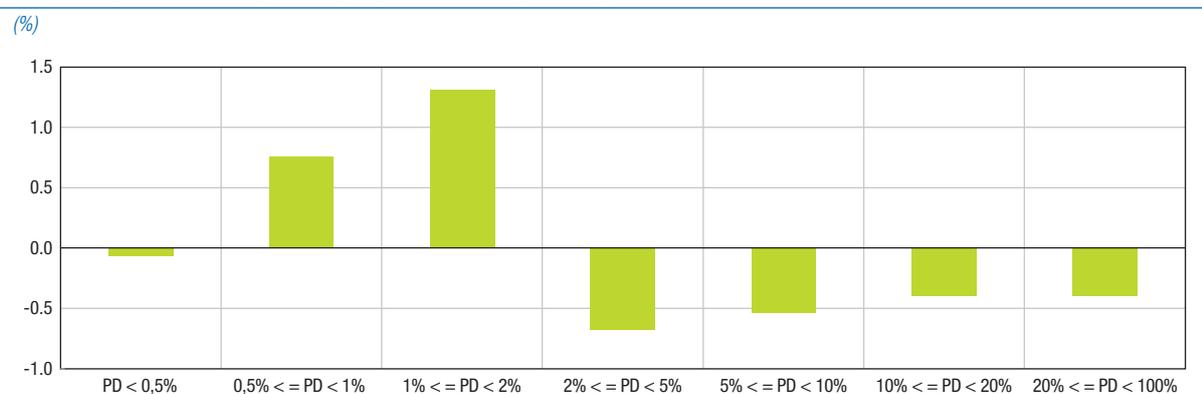
change in portfolio quality may reflect moves by banks to refocus on the most solvent NFCs but it may also result from an automatic improvement in borrower solvency linked to the business cycle.

- **Lending conditions**

The results of the ECB's October 2017 euro area bank lending survey³⁴ show that the overall terms and conditions applied by French banks on new loans to companies (i.e. the actual terms and conditions agreed in the loan contract) were broadly unchanged in the third quarter of 2017 although margins on business loans narrowed again owing to heavy competitive pressure. Banks did not report a material easing of lending conditions for housing loans in the third quarter of 2017.

Chart 28

Change in share of exposures by segment of default probability, French banks, between end-2014 and June 2017



Source: COREP, ACPR calculations. Note: sample of five large French banks, exposures in default excluded.

e. Solvency and liquidity ratios improved during the first half of 2017

During the first half of 2017, the aggregate CET1 ratio of France's six main banking groups rose by 30 bps to reach 13.6% at end-June 2017. This was chiefly attributable to a slight increase in core equity as a result of earnings retention. RWAs were relatively stable over the period.

At end-June 2017, the aggregate leverage ratio under full Basel III stood at 4.8%, 10 bps higher than in December 2016.

As regards total loss-absorbing capacity (TLAC) requirements, the TLAC ratio of France's four G-SIBs, as a percentage of RWAs, edged up to 20.6% at end-June 2017. Similarly, the TLAC ratio as a percentage of leverage exposure rose by 10 bps compared with end-December 2016 to 6.7%. Differences relative to the Financial Stability Board (FSB) requirements that will apply from 2019 narrowed considerably. French GSIBs, a new list of which was published on 21 November,³⁵ are largely in compliance with these requirements. The new list downgraded the systemic importance of BNPP (moved down a bucket) and BPCE (no longer in the list of G-SIBs³⁶ but still considered to be a domestic SIB).

³⁴ <https://www.ecb.europa.eu/stats/pdf/ecb/blsurvey2017q3.en.pdf?4130db0d7707a90372cf112470ebf0ad>

³⁵ <http://www.fsb.org/2017/11/fsb-publishes-2017-g-sib-list/>

³⁶ https://acpr.banque-france.fr/sites/default/files/liste_eism_2017_au_titre_de_2016_0.pdf

The liquidity coverage ratio (LCR) is above the minimum requirement of 100% at all the main banking groups although the aggregate ratio inched down to 130.4% at end-June 2017 compared with 130.6% at end-December 2016. All the six main banking groups have an NSFR of over 100%.

f. Adjustments to the business models of French banks

The changes that banks have been making to their business models in recent years are set to continue in the coming quarters, as banks not only diversify their income sources but also allocate resources to businesses that offer the highest potential growth and the best trade-off in terms of benefits vs. restrictions. These restrictions come in a variety of shapes, including the impact of new rules (entry into effect of NSFR, FRTB, MiFID 2) and the impact of competition on margins.

Controlling costs is one of the strategic priorities of French banks and has translated into new cost-saving plans. In a fiercely competitive environment, banks are going to have to unlock greater operating efficiency by stepping up their investments in new technologies. Some banks are also restructuring their retail banking businesses by downsizing their branch networks. These reorganisations generate short-term costs but their effects are not felt until the medium or long term.

3.2 RISKS FOR INSURANCE

The **property and casualty insurance sector is facing rising climate, financial and commercial risks**. Hurricanes could cost reinsurers close to USD 100 billion, while regulatory changes, including the right to terminate creditor insurance contracts and the 2013 national interprofessional agreement on supplementary health insurance for employees, could increase the competitive squeeze on margins at a time when low interest rates continue to undermine the return on assets. Even so, (re)insurers have comfortable financial margins to cope with the increase in these risks in the short term.

Further out, the business model for life insurance is set to change as more risk is transferred to policyholders and the industry moves to a risk assessment-based prudential framework under Solvency II. This should make it possible to maintain the sector's resilience.

a. Profitability, earnings and trends in the non-life sector

• What do (re)insurers estimate the impact of recent natural disasters to be?

The damage done in September by Hurricane Irma to the islands of Saint Martin and Saint Barthelemy caused public attention to focus on the impact of natural disasters on insurers. According to the French Insurance Federation (FFA), after Hurricanes Irma and Maria hit Saint Martin, Saint Barthelemy, Martinique and Guadeloupe, insurers had registered 33,000 claims for an estimated total cost of EUR 910 million by end-October. Given that many claims are submitted late, and owing to the uncertainty over the final cost of certain major claims, these figures could be revised upwards in the coming weeks, potentially to EUR 1.5 billion (Source FFA). In recent years, the costs of natural disasters have been rising: while the annual cost of natural disasters has averaged EUR 1.8 billion in France since 2008, the 2016 storms cost EUR 2.3 billion. And the cost of natural disasters in the insurance sector could reach new heights globally in 2017.

However, insurers have several mitigation measures to transfer a portion of the risks that they take on, either to reinsurers or through the issuance of specific bonds redeemed if no disaster occurs within the life of the bond, known as "cat bonds".

Reinsurers are particularly affected by large natural disasters. In the third quarter of 2017, SCOR³⁷ estimated the cost of Hurricanes Irma, Harvey and Maria and the Mexico earthquakes at EUR 430 million after retrocession and tax. German reinsurers Munich Re and Hannover Re, meanwhile, published profit warnings. Munich Re, the world's second-largest reinsurer, may miss its net profit target of EUR 2-2.4 billion for FY 2017, while Hannover Re also said that it might not meet its target of reporting net profit of over EUR 1 billion for FY 2017.

Use of the financial market to insure against climate risk has increased over the last decade. According to Artemis, a media source, cat bond capacity, i.e. the volume of bonds available to cover the risk of natural disasters, amounted to USD 26.8 billion at end-2016. Issuance meanwhile amounted to USD 7.1 billion last year.

In practice, an insurer looking to protect itself against a natural disaster could, for example, issue cat bonds, whose payment is conditional on the disaster not occurring. This gives the insurer an alternative to standard reinsurance contracts, enabling it to reduce its exposure to very large risks and maintain its financial soundness. Investors meanwhile earn potentially attractive interest payments while simultaneously diversifying their investments. However, some cat bonds are set to be exercised following the most recent natural disasters, reducing the expected return and potentially even resulting in losses. S&P Global Ratings, a credit rating agency, has identified 13 cat bonds that might suffer losses because of the damage done by Hurricane Irma. More generally, Harvey and Irma should offer an opportunity to assess the robustness of alternative reinsurance. The Swiss Re Cat Bond Price index, which seeks to capture the market price of cat bonds, lost 16%³⁸ in early September in response to these events.

³⁷ Caisse centrale de réassurance (CCR), a public reinsurance group, estimated the cost of insured damage caused by Irma to Saint Martin and Saint Barthelemy at around EUR 1.2 billion. However, CCR did not disclose the cost that it would actually have to bear.

³⁸ Source: Bloomberg.

Box 4

Modelling natural risk

(Re)insurers need to quantify the risks represented by natural disasters and estimate the losses that they could cause. They have created models to increase their understanding of these types of risks, notwithstanding the unpredictability of natural disasters.

The first natural disaster forecasting models used in the insurance sector were based on historically observed data on the frequency and intensity of climate events. But since climate is not stationary, particularly with global warming in prospect, merely analysing historical data proved insufficient. The industry responded by developing new models for forecasting natural disasters, which can be divided into three modules:

- a hazard module that characterises the climate event (flooding, precipitation intensity, location, etc.) and defines a spectrum of probable events that have occurred or could occur. Each event is characterised by the period within which it recurs, i.e. frequency, and by the main physical risk factors. In the case of a storm, for example, factors would include wind speed, movement, direction and pressure;
- a vulnerability module to convert the damages resulting from natural disasters into financial losses;
- a finance module to price insurance products.

To better identify future climate risk, insurers must be able to draw on interdisciplinary skills. *Caisse centrale de réassurance* (CCR), a public reinsurance group, has for example set up partnerships with various experts, including *Météo France*, the national meteorological service.

- **Annual termination option for borrowers' insurance contracts linked to a home loan: prices set to go down from 1 January 2018**

From 1 January 2018, any borrower may be authorised to terminate an insurance policy that was taken out to guarantee repayment of a loan.³⁹ If adopted despite the appeal submitted by banks to the *Conseil Constitutionnel* on 6 October, this new provision will build on amendments introduced by the Lagarde Act in 2010 and by the Hamon Act in 2014,⁴⁰ while going a step further by applying not only to loan offers made from 21 February 2017, when the legislation was published, but also to all in-force insurance contracts from 1 January 2018. The aim is to allow borrowers to take advantage of competition by enabling them to switch insurance to a different insurer from the one recommended by default by their credit institution. Increased competition may lead to lower prices and thus to narrower margins for insurers. Bancassurers will have to contend with pressure from traditional insurers, brokers and even FinTechs, which could offer insurance switching support services and a more straightforward, digital-centred array of products and services. Most borrowers interested in making a switch are expected to do so over a two or three-year horizon. As a result, the coming months will be crucial and will give an initial idea of the scale of the shift. The issue is a major one since in 2016, 87% (EUR 5.8 billion) of insurance contributions by borrowers to creditor insurance for home loans (EUR 6.7 billion) went to contracts taken out by credit institutions for their customers, while just 13% (EUR 0.9 billion) went to contracts where borrowers had switched insurers.

- **2013 national interprofessional agreement: possibility of increased competition two years on from the introduction of general supplementary health coverage for employees**

The Employment Protection Act adopted on 14 June 2013, which transposed the national interprofessional agreement (ANI) signed on 11 January 2013, requires private companies in France to offer employees supplementary health coverage. As a result, since 1 January 2016, any private firm employing at least one person (including the manager) must set up a group supplementary health insurance contract in which all employees must be enrolled (note that the legislation does provide a few exemptions, for example for people covered by the CMUC or ACS supplementary health mechanisms). Statistics gathered from accounting records show that personal insurance accounted for 55% (EUR 21 billion) of health insurance premiums in 2016 compared with 45% (EUR 17 billion) for the group portion. Moreover, personal insurance entities enjoy a better ratio of claims to health insurance premiums than group insurance entities (78% vs. 91%). The future path of these indicators needs to be carefully monitored, because entities positioned in personal health insurance could see premiums go down without being able to adjust their costs proportionately. A decline in written premiums could even threaten the survival of some entities. Meanwhile, the entities that are best represented on the group market could underprice in a bid to be more competitive, which would hurt their claims ratio and ultimately their profitability.

b. Profitability, earnings and trends in the life sector

- **Low interest rate environment: life insurers are adapting but new risks are emerging**

After holding relatively steady since 2013, the return on assets (RoA) dropped steeply in 2016. Directly affected by the downturn in recurring income from bond

³⁹ Pursuant to Article 10 of Act No. 2017-203 of 21 February 2017 ratifying two executive orders on consumer credit contracts relating to real estate assets for residential use and simplifying the arrangements for implementing obligations in terms of the compliance and safety of products and services.

⁴⁰ The Lagarde Act allowed any borrower to take out loan insurance from the institution of his or her choice. Accordingly, since 1 September 2010, credit institutions have been required to inform borrowers that they may take out insurance from the intermediary of their choice provided that intermediary offers coverage equivalent to the contract offered by the credit institution. Furthermore, since 26 July 2014, under the Hamon Act, borrowers have been allowed to change their loan insurance without cost or penalty during the 12 months following signature of the loan proposal. This gives borrowers a cooling-off period and allows them to switch to a different insurance contract, provided it offers equivalent coverage.

coupons, RoA fell sharply in 2016 to 2.97% from 3.37% in 2015 (Chart 29). RoA varied widely across insurers, notably reflecting portfolio age and the policy on realising capital gains and losses. Overall, the realisation of capital gains continued to support RoA, but to a lesser extent than in 2015.

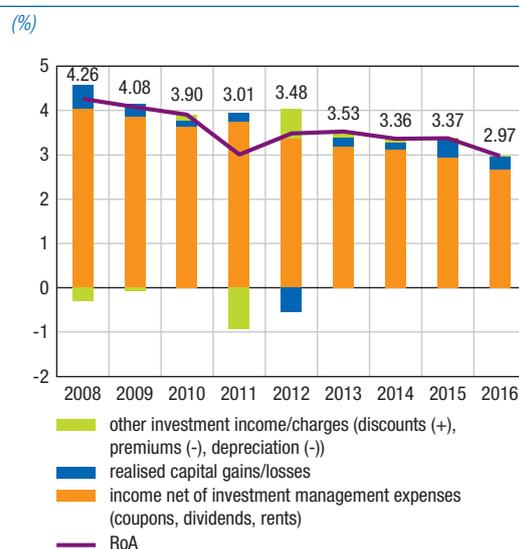
Making the strong assumption that maturing fixed income securities are reinvested in zero-coupon bonds, RoA will continue to fall at a rate of about 20 bps per year over a ten-year horizon⁴¹ (Chart 30).

Meanwhile, the decline in revaluation rates is gaining momentum.

Even though profit-sharing payouts may result from binding contractual clauses or the regulatory requirement to share profits within eight years (through the profit-sharing reserve mechanism, which allows for deferred payment), **the revaluation rate applied to guaranteed non-unit linked contracts dropped sharply in 2016** to 2.2% compared with 2.6% in 2015 (Chart 31).⁴² In particular, the technical interest constraint continues to ease gradually: approximately 80% of the mathematical reserves of life insurance contracts had a technical interest rate of below

Chart 29

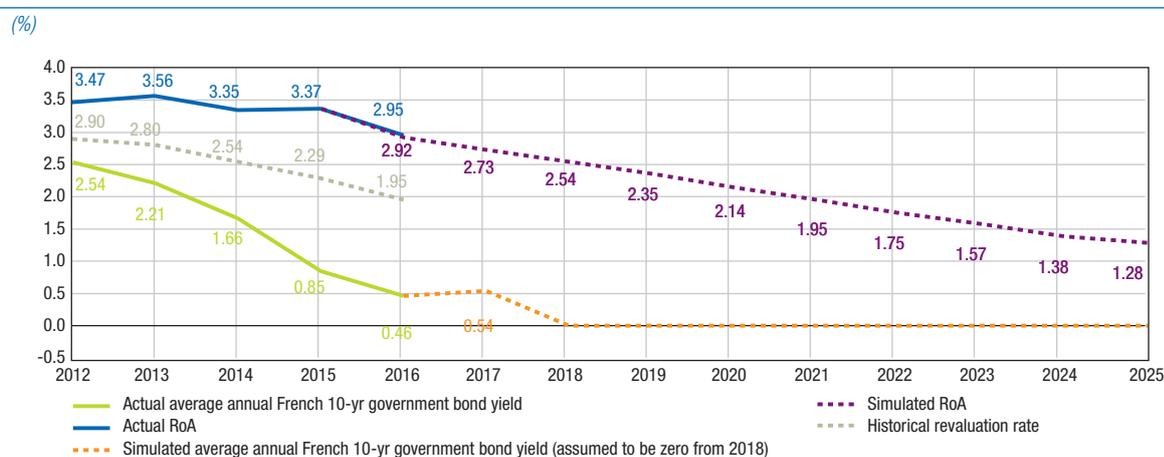
Decomposition of RoA (excluding investments of unit-linked products) since 2008



Source: Accounting data (scope: Top 16).

Chart 30

RoA projection (excluding investments of unit-linked products)



Source: Accounting data for RoA; reporting data for revaluation rate (scope: Top 15).

Note: Since the revaluation rate projection depends on insurers' individual strategies, it cannot be performed based solely on liability items.

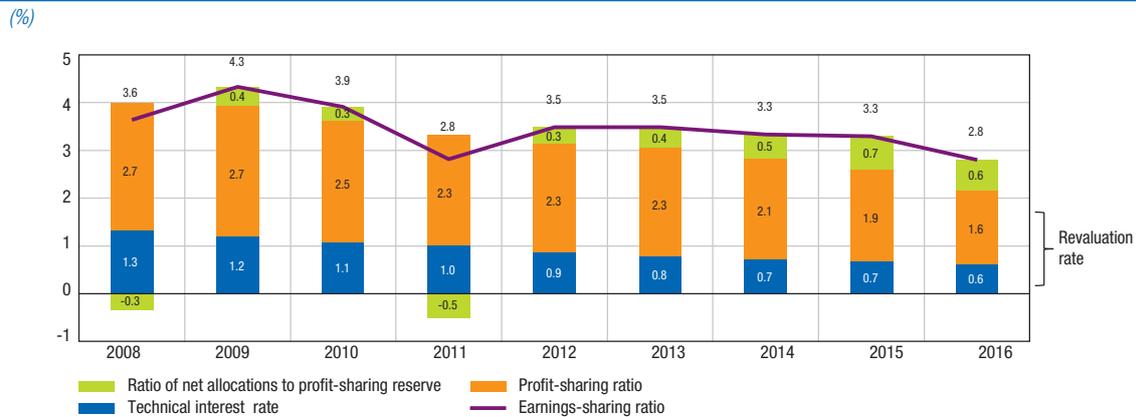
41 RoA on investments, excluding unit-linked contracts, is projected from 2016 to 2025 based on asset-by-asset reporting at end-2015 for France's 15 main life and mixed insurers. The simulations were subject to the following assumptions:

- French 10-year government bond yield curve extended at 0%;
- two asset types are considered: amortising assets with fixed coupons and other assets (amortising assets with variable coupons and non-amortising assets);
- cash from portfolio investments (maturing fixed income securities, investment income) reinvested in the two asset types in order to maintain a constant asset allocation strategy;
- annual net inflows of zero;
- non-redeemable securities held (capital losses/gains not realised), no identified credit risk on issuers of amortising assets with fixed coupons, no change in net book value of other portfolio securities;
- financial income from amortising assets with variable coupons and non-amortising assets determined based on a constant rate equal to its observed value over the 2014-2015 period;
- share of investment expenses in RoA constant over the projection horizon and equal to the 2014-2015 average.

42 Because of accounting lags, the adjustment rate measured here is different from that reported by insurers.

Chart 31

Decomposition of profit-sharing since 2008



Source: Accounting data (scope: Top 16).

Note: For the sake of consistency, the profit-sharing reserve and the capitalisation reserve are measured as a proportion of technical reserves and unrealised capital gains/losses as a proportion of the net book value of investments.

0.5% in 2016.⁴³ At the same time, net allocations to profit-sharing reserves remained close to the level seen in 2015 (0.63% vs. 0.69%). As a result, **the total amount in profit-sharing reserves rose for the fifth year running**, both in absolute value and as a percentage of mathematical reserves (from 2.8% at end-2015 to 3.5% at end-2016).

In general, profit-sharing is often greater for older portfolios owing to more elevated technical rates and higher-earning assets.

- **Substantial unrealised capital gains on fixed income securities would decline markedly if interest rates go up suddenly**

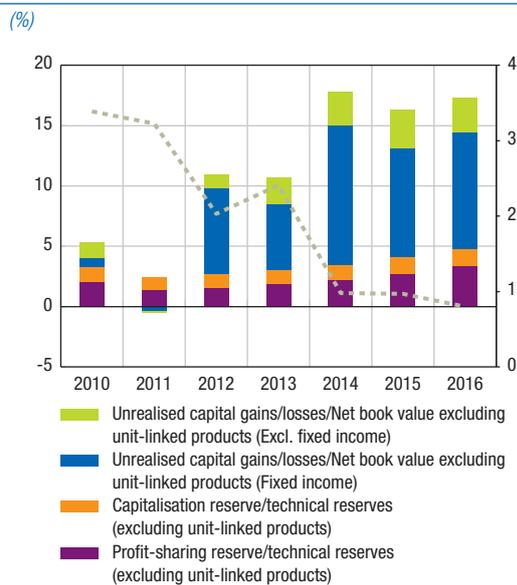
Insurance firms have seen their wealth surge since 2011 (Chart 32). However, unrealised capital gains on fixed income securities, which have been substantial since 2014, would be rapidly eroded if interest rates jump higher. In such a scenario, insurers could draw on their capitalisation reserves to absorb a portion of the potential capital losses realised in the event of a wave of surrenders. As with RoA and profit-sharing ratios, wealth levels vary from insurer to insurer, partly as a function of portfolio age.

- **Measures adopted by insurers are causing new risks to emerge**

Some of these measures include reduced capital guarantees for new nonunit-linked contracts (capital guarantee after expenses), increased entry fees and annual management expense charges, reduced commissions and renegotiation of certain contracts. At the same time, insurers are putting the emphasis on increasing the proportion of unit-linked products in the written premiums year-to-date at end-September 2017 on a cumulative basis, net inflows to redeemable unit-linked

Chart 32

Wealth levels, insurers



Source: Accounting data (scope: Top 16).

⁴³ See Analyses et Synthèses No. 84, on this topic.

products amounted to around EUR 20 billion as contrasted with outflows of about EUR 14 billion for non-unit linked policies, although the latter still account for 80% of outstanding life insurance. This is enabling insurers to transfer financial risk to policyholders and automatically improve solvency ratios by recognising future supplementary income. Some insurers are also diversifying their risk by moving into health and death & disability insurance.

On the **asset side**, some insurers search for yield by increasing the share of equities, unlisted securities, real estate and even infrastructure projects. They are also looking for profitability on bonds by extending maturity, stepping up exposure to corporate bonds and expanding their geographical diversification. Insurers are additionally setting up hedging policies to cope with increased interest rate risk, notably by means of derivatives. Last but not least, some insurers systematically realise a portion of the unrealised capital gains generated over the course of the year.

In other words, there is a general awareness within the industry, seen in balance sheet management, underwriting policies and other measures, of the risks linked to very low interest rates and to the possibility that interest rates could suddenly go up.⁴⁴ Even so, **the measures that insurers are taking may cause new risks to emerge**. This is true, for example, of the commercial risk linked to promoting unit-linked products and renegotiating contracts, which entail enhanced diligence to ensure compliance with the rules on the duty to provide advice. Fierce competition in health and death & disability insurance also comes with the risk of margin loss. Moreover, financial risk is mounting as investment policies focus on the hunt for yield.

Finally, many uncertainties surround the effectiveness of these measures, including uncertainty about policyholder behaviour, the gradual decline in bond yields, balance sheet inertia and the consequences of an increase in rates, which may be magnified the longer low interest rates persist. These uncertainties are being amplified in the current setting of tax reforms.

- **Ongoing uncertainty over the impact of changes to the tax and regulatory framework on policyholder behaviour**

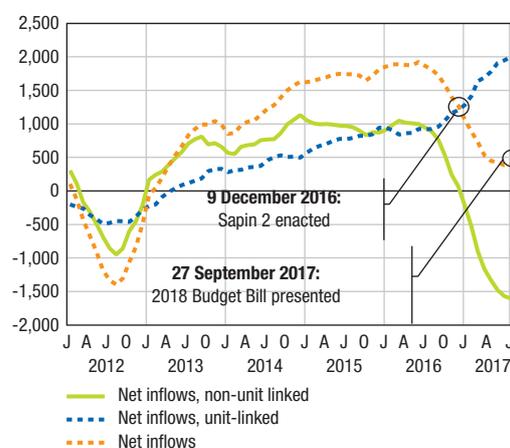
The decline in net inflows to life insurance investments since September 2016 (Chart 33) seems primarily linked to the commercial strategy adopted by insurers, which are steering policyholders towards unit-linked products, combined with the impact at end-2016 of the Sapin 2 Act, which introduced powers to temporarily restrict surrenders for the whole or a significant part of the market. Tax measures contained in the 2018 Budget Act may also influence life insurance policyholders.

The 2018 Budget Act introduces a 30% flat-rate withholding tax that applies irrespective of the length of time for which the contract is held. This has the effect of lowering the tax on contracts maturing in eight years or less while raising the tax on contracts maturing in over eight years. The tax increase from 24.7% to 30% on contracts maturing in over eight years applies however only to single people holding over EUR 150,000 in life insurance contracts

Chart 33

Monthly net flows in redeemable products (12 M rolling average)

(EUR million)



Source: ACPR data— weekly data on life insurance flows.

44 See H1 2017 risk assessment.

and to couples holding over EUR 300,000. While the target tax base is broad, at approximately 60% of outstanding contracts according to calculations based on data from Insee's 2014 wealth survey, the additional taxation will remain marginal as the new rules will apply solely to income from payments made on or after 27 September 2017 when the available amounts held in life insurance contracts exceed EUR 150,000/300,000. Moreover, the allowances for gains on life insurance contracts (EUR 4,600 renewable each year for a single person, EUR 9,200 for a couple) will be maintained.

Introduction of the flat-rate withholding tax could still have the effect of reducing the average period for which contracts are held, since the new tax treatment gives far less incentive to hold contracts for a long time. A decrease in the duration of their liabilities would prompt insurers to modify their asset allocations correspondingly.

Setting aside the tax impact, which looks muted, the returns earned on contracts could be a much more significant determinant of flows of funds over the coming months. The steady decline in the revaluation rate of nonunit-linked life insurance contracts (which has fallen from 4.10% to 1.93% for individual contracts in the space of a decade) could make these products less attractive than other saving products that would prove more responsive in the event of an increase in interest rates.

c. Initial observations on Solvency II implementation

The Solvency II prudential framework came out of the directive of the same name, which was adopted by the European Parliament on 22 April 2009 and came into application on 1 January 2016. Solvency II applies in France to three-quarters of insurers, which together account for over 99% of the assets of the French insurance market. **The new framework puts risk management at the heart of the prudential system applicable to insurance.** It is characterised, among other things, by prudential requirements that seek to better reflect the risks borne by insurance entities, based on three pillars:

- **mark-to-market valuation of technical provisions and two capital requirement levels** (MCR and SCR, the latter being assessed based on the insurer's risk profile) make up Pillar 1;
- Pillar 2 sets out the governance rules that must be respected, including rules pertaining to investments (prudent person principle);
- Pillar 3 contains requirements on prudential disclosures and publication. Solvency II also enhances oversight for insurance groups.

• The transition to Solvency II has not caused a solvency “shock”

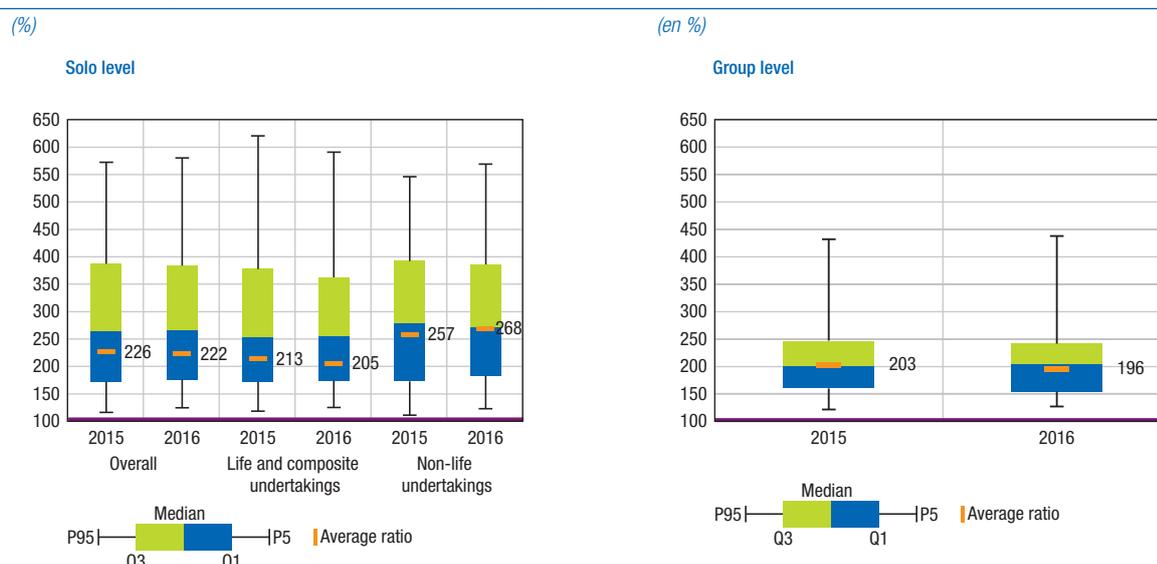
The first round of annual reporting under Solvency II (at end-2016) shows market solvency to be at a comfortable level⁴⁵ (Chart 34).

Average coverage rates for the solvency capital requirement (SCR) changed little between 2015, i.e. during the first round of reporting when Solvency II was put in place, and end-2016, remaining well above 100%: at end-2016, they stood at 222% on a solo basis and 196% on a group basis. Individual situations vary considerably: while some entities have coverage rates of close to 100%, others hold capital covering up to five or six times their required amount. In particular, non-life entities are characterised by higher SCR coverage rates overall than those of life insurers, which tend to hold capital

45 The 494 insurance entities established in France and subject to Solvency II on a solo basis at 31 December 2016 account for 99.9% of the sector's total assets.

Chart 34

SCR coverage rates, insurance entities and groups subject to Solvency II at 31/12/2016



Scope: all S2 entities, coverage rate calculated taking account of transitional measures and volatility adjustment. Source: ACPR.

that is much closer to the regulatory requirement (in particular, the profit-sharing mechanism has led SCR coverage rates to be smoothed over time).

Among the 153 entities that are still subject to Solvency I, coverage of the minimum required solvency margin is much higher than it used to be, reflecting the fact that the remaining population now comprises very small entities which are giving themselves more room to manoeuvre owing to the volatility of their risk. The Solvency I population is also essentially composed of mutual insurers, which keep earnings within the organisation and thus generally have much higher capital.

• Review of the first round of insurers' public reports

Solvency II implementation has brought increased reporting requirements for insurers: the data that must be produced are more numerous, more complex and must be submitted more frequently. Data quality, meanwhile, is an integral part of risk mapping, and insurers are taking this dimension on board to an increasing extent. From the ACPR's perspective, the quantitative data provided annually and quarterly are subject to consistency checks to make sure that reported information is reliable.

Representing the first round of complete full-year reports (quantitative and narrative reporting), 2017 presented a real challenge, and progress is still needed, not just in terms of insurers' information systems but also in terms of the supervisor's ability to receive and process data in order to obtain high-quality, appropriate information.

In a new development under Solvency II, insurers are subject to disclosure requirements to improve transparency about their strategic choices. The information, which can be consulted by the public in solvency and financial condition reports (SFCRs), could still be improved. Specific areas requiring attention include the consistency and overall coherence of the information made available to the public (some reports were hard to find on the firm's website, some insurers provided insufficiently precise data on the impact of measures from the long-term guarantees package, others failed to provide all of the templates required for publication in the annexes, etc.).

In this regard, while the main market players seem to be broadly in line with the compliance obligations, a significant proportion of compliance shortcomings remain across the market as a whole. Problems include failure to file, sign or provide completed reports, total or partial lack of templates and online publication issues. Also, notwithstanding the regulatory expectations, which determine the structure and certain content requirements, some reports are rather abstract and hard for non-expert readers to follow.

Supporting this observation, some reports fail to sufficiently illustrate the activity, operation, governance or risk profile of the entity or group. Furthermore, the information provided may not be sufficiently granular, while annual data should be set in the context of previous and future years. Some reports do not disclose information on remuneration policies and practices, including on the early and supplementary retirement schemes for the governance body of the entity or group. Further, the procedures that enable key function holders to be in contact with the people who effectively run the entity are not always sufficiently described.

Further evidence for this observation was provided by an in-depth review of SFCRs published by entities using internal models, which revealed relative compliance despite a variety of shortcomings but also, and more significantly, considerable disparity in the level of detail provided to the public. In particular, improvements could be made to the granularity of information provided in order to clarify the key issues and methodological choices associated with the internal models used by insurance entities.

In other words, the SFCR is not yet the uniform instrument for market discipline that lawmakers want it to be. The first round of reports elicited few reactions from observers, who appear to be adopting a wait-and-see attitude: however their expectations may increase over the coming years.

3.3 DIGITALISATION OF FINANCIAL ACTIVITIES, OPEN BANKING AND CYBER-RISK

a. Analysing the systemic consequences of cyber-risk

Financial institutions are a favourite target of cyber-attacks, accounting for 36% of attacks reviewed by FireEye in 2016 for the Europe Middle East region,⁴⁶ as part of a trend that has been ongoing for some years. But the cost of cyber-crime for the global economy, estimated at around USD 450 billion in 2016,⁴⁷ is considerable and looks set to increase exponentially.⁴⁸

Cyber-risk, or the risk of actual or potential loss resulting from inadequate organisation, an operational failure, or inadequate security of an information system (IS), is on the rise. Initially an idiosyncratic operational risk that affected institutions unevenly (with retail business, for example, notably impacted at the reputational level), it has evolved to take on systemic importance for at least three reasons: i) increased capacity for harm linked to changes in the nature of the risk, ii) interconnections between the information systems of financial institutions and market infrastructures and iii) technological innovation and the growing presence of technical providers (Chart 35).

⁴⁶ M-Trends 2017 Report. One-fifth of attacks worldwide are thought to target the finance sector, making it the number-one target ahead of government (9%).

⁴⁷ According to Hiscox Insurance.

⁴⁸ Cybersecurity Ventures, a provider of research and reports on cyber-crime, suggests a figure of USD 6 trillion by 2021.

Chart 35

IT risk is taking on systemic importance owing to a combination of three factors¹⁾

Change in the nature of the risk	Interconnections between information systems	Technological innovation and presence of technical service providers
<ul style="list-style-type: none"> • Attacks targeting institutions' IT environments (not just customer hardware) to steal from and/or destroy them • Processes themselves are becoming more complex: dark net, social engineering, exploit kits, increased computing power, employees inadequately prepared to use IT tools 	<ul style="list-style-type: none"> • Between participants: presence within the same group, interbank relations, (re)insurance, outsourcing, intrinsically systemic importance of some participants • Cross-border nature of tools/ infrastructure (internet, SWIFT, CCPs), which themselves have systemic importance 	<ul style="list-style-type: none"> • Arrival of new intermediaries and technologies (FinTech, GAFA/BATX), additional areas of weakness possible in relation to financial institutions • Growth in outsourcing through cloud computing/big data services involving digital flows of essential information that could be intercepted and are less easily checked by client entities, which often rely on their service providers

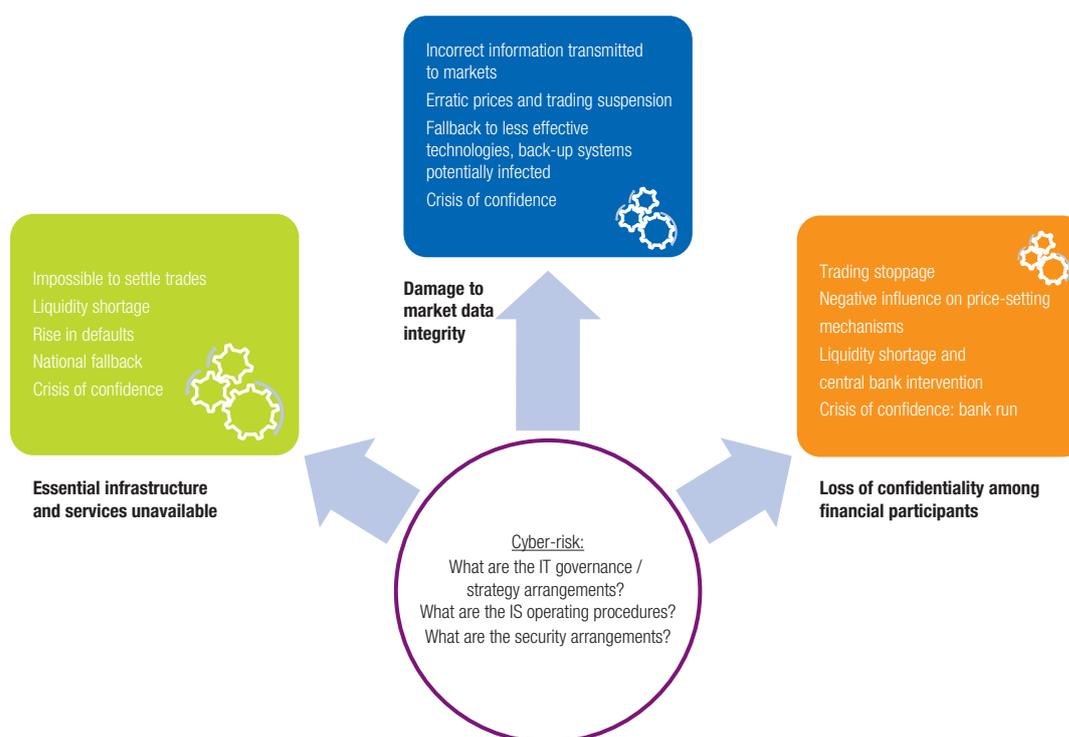
Source: Banque de France.

1) Some definitions: Social engineering is a scamming tactic that seeks to manipulate people using ransomware, phishing and other types of attack; Exploit kits are tools used to exploit security vulnerabilities in operating systems or software; SWIFT, which stands for Society for Worldwide Interbank Financial Telecommunication, is a system used to process international banking transactions; GAFA/BATX are Google, Amazon, Facebook, Apple / Baidu, Alibaba, Tencent, Xiaomi; For more on cloud computing, see "The risks associated with cloud computing", Analyses et Synthèses No. 16, Autorité de contrôle prudentiel et de résolution, July 2013

Furthermore, while cyber-risk starts out as an operational risk for an individual entity, it can have knock-on consequences for the entire financial system through at least three transmission channels that can trigger a loss of confidence or even the risk of a run: i) unavailability of infrastructures and critical services, ii) damage to the integrity of market data and iii) confidentiality breaches (Chart 36).

Chart 36

Cyber-risk: channels of transmission to the financial system



Source: Banque de France, Financial Stability Board, Office of Financial Research.

Note also that it is not necessary for the initial fault to be caused by a systemically important entity or an operator of vital importance to set off a chain reaction. A simultaneous attack on several participants could for example have the same effect on the financial system.

Several international bodies, including the G7, the Bank for International Settlements, the International Association of Insurance Supervisors, and the International Organization of Securities Commissions, have already published or are beginning to work on guidance to ensure the resilience of financial systems and participants and to reduce the incidence of IT risk. For financial institutions, anticipating cyber-risk means in particular paying attention to IS governance, operation and security, and hence to staff training.

b. Open banking, encouraged by the introduction of PSD2, raises new cyber-risk challenges

Opening up access to bank data, enabling them to circulate more easily and connecting bank information systems with the outside world should make it possible to respond to changing practices and needs. The second Payment Services Directive (PSD2), which will come into effect in 2018, both promotes and provides a framework for these changes (Box 5). However, it is important to properly anticipate the cyber-security challenges raised by the open banking model, and in particular two risks:

- data protection. It will be legally possible to share personal data, including the sensitive payment data traditionally held by account managers, with account aggregators (also known as account information service providers) and payment initiation service providers. These third-party participants will have to comply strictly with the data protection requirements contained in PSD2 and the new European General Data Protection Regulation (GDPR) that will come into force in May 2018. Note that the new regulation covers only the personal data of individuals and not the data of legal entities such as companies or associations that are also affected by PSD2.
- IS security risk. Third-party participants represent potential targets for cyber-attacks, insofar as they gather and store a large volume of sensitive data, including online banking logins and passwords. What is more, PSD2 will result in regular interconnections between account managers, third-party participants and users. These links are potential entry points for cyber-attacks and IS security vulnerabilities. PSD2 includes an obligation to use strong user authentication through secure application programming interfaces (APIs) but the relevant procedures have yet to be specified in regulatory technical standards (RTS), which will not be applicable until the second half of 2019⁴⁹.

Ultimately, the challenge is to provide a secure framework for communication between parties without upsetting the user-friendliness of the new services. In the short term, the aim is to ensure that cyber-security risks are under control during the 18-month transitional period. Because of the increased cyber-security risks, all financial institutions, including new participants regulated as part of PSD2 implementation, are urged to take on board the ACPR's published recommendations on the use of cloud computing in July 2013⁵⁰ and the draft recommendations issued by the European Banking Authority (EBA).⁵¹

⁴⁹ The RTS, which are scheduled to be adopted in late 2017 or early 2018, provide for an 18-month transitional period.

⁵⁰ "The risks associated with cloud computing", Analyses et Synthèses No. 16, Autorité de contrôle prudentiel et de résolution, July 2013.

⁵¹ European Banking Authority, Recommendations on outsourcing to cloud service providers, ABE/CP/2017/06.

Box 5

PSD2 overview

PSD2 is designed to promote competition, competitiveness and security in payment services on the European market, notably by making it possible to establish a framework for at-risk activities provided until now by unregulated participants. Accordingly, from 2018, account aggregators that are registered by the ACPR or equivalent European authorities may, provided they obtain explicit customer consent, gather, free of charge, information contained in payment accounts through the application programming interfaces (APIs) that payment service providers managing accounts, i.e. credit institutions, payment institutions and electronic money institutions, are required to provide. It should be noted that while PSD2 only covers payment accounts, the aggregation services offered on the French market span a fairly broad spectrum of accounts and products, including credit, savings and life insurance. Payment initiation service providers make up the other category recognised and regulated by PSD2. These participants will have to be authorised by the ACPR or fulfil European passporting formalities to operate in France. They will then be able to offer users various services, such as the ability to pay for online purchases by credit transfer.

3.4 THE FUTURE OF SECURITISATION IN EUROPE

- **The new regulatory framework promotes sound and transparent securitisation**

After being shunned in the wake of the 2007-2008 financial crisis, securitisation has recently been the subject of regulatory developments aimed at stimulating the sluggish market⁵² (Chart 38), notably through the introduction of a new European framework that seeks to promote the emergence of more simple, transparent and standardised (STS) products that allow investing institutions to benefit from reduced capital charges in accordance with the July 2016 revisions to the Basel weightings.⁵³

Community law is being amended within the broader context of the CMU through two regulations adopted by the European Parliament on 26 October 2017:

- a cross-cutting regulation that modifies several pieces of sector-specific legislation (banks, insurance and markets) by (i) harmonising definitions, (ii) simplifying due diligence rules, (iii) implementing the direct approach for risk retention by the originator; the regulation also specifies the self-certification or third-party certification criteria for STS securitisations;
- a second regulation amending Regulation No. 575/2013 (CRR), which is specific to the banking sector and sets up a new EU prudential framework covering the methods used to measure regulatory capital. In particular, it establishes the hierarchy of approaches to use depending on the investor's situation and the characteristics of the transaction and specifies the general approach to prudential treatment as well as the more favourable treatment applied to STS securitisations.

Through the STS label, the new regulatory framework is designed to bolster investor confidence by creating transparency requirements that exceed those of the existing framework. However, there is tension between (i) the desire of investors and originators to be sure of obtaining the STS label for their transactions, notably because of the reputational consequences and the costs involved if the transaction has to be reassessed owing to noncompliance with the criteria,⁵⁴ and (ii) the regulator's goal of making market participants accountable (truthful disclosures by originators and due diligence obligations for investors).

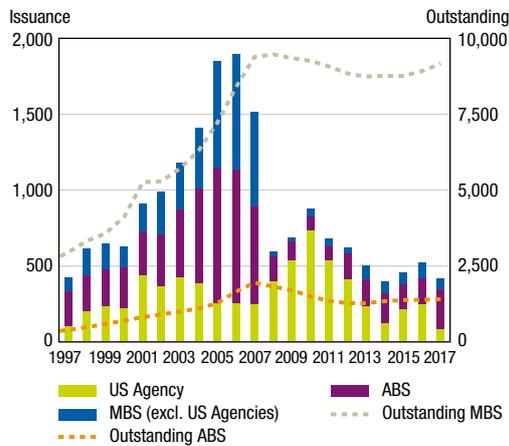
⁵² Annual securitisation issuance worldwide remained modest in 2016, at barely USD 900 billion, or less than one-third of the amount recorded in 2006.

⁵³ <https://www.bis.org/bcbs/publ/d374.pdf>

⁵⁴ The administrative sanctions for the originator if the transaction has to be reassessed could be as much as 10% of the institution's revenues.

Chart 37

Issuance and outstanding amounts (USA), USD billion



Sources: Dealogic, SIFMA.

Note that synthetic securitisations are not generally eligible for the STS framework,⁵⁵ but account for a significant share of the securitisations involving significant risk transfer currently performed by French banks in the euro area.

• The European market remains flat

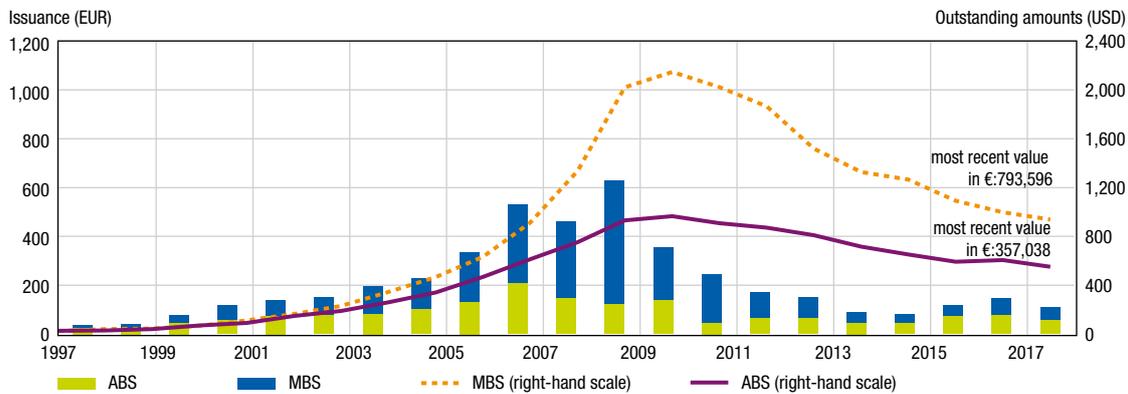
It is hard at this stage to anticipate how securitisation issuance might evolve in the post-crisis period following the implementation of the new European framework, because of (i) the flat primary market, (ii) the substantial share of off-market securitisations carried out either as conventional securitisations originated solely to obtain Eurosystem refinancing or as synthetic securitisations designed to deliver immediate regulatory capital gains.

The securitisation market remains depressed in Europe with public issuance amounting to approximately EUR 200 billion in 2016,⁵⁶ led by the United

Kingdom (EUR 34 billion) and Germany (EUR 10 billion). Issuing banks hold a large share of securitised loans on their balance sheets (68% in 2016), which provides a source of collateral for Eurosystem refinancing. Issuance levels remain below those seen prior to the crisis and are exceeded by maturing issues. As a result, outstanding amounts in the euro area have been declining since 2009 (Chart 38).

Chart 38

Issuance in Europe (EU), USD billion



Sources: Dealogic, SIFMA.

Synthetic securitisation is making a comeback in Europe, mainly off-market: bilateral synthetic securitisation issuance was estimated at EUR 94 billion in 2016, compared with EUR 60 billion in 2015. Note that this trend is not prevalent among French securitisation entities, as this type of securitisation accounts for a mere 0.1% of their total assets.⁵⁷

⁵⁵ A review clause on the eligibility of synthetic securitisations for the STS framework is provided for in the cross-cutting regulation. These securitisations are currently eligible under certain specific conditions for SME loan portfolios.

⁵⁶ For illustration purposes, by end-2016 the ECB had bought EUR 8.3 billion in ABS on the primary market, out of a total stock of ABS purchases of EUR 22.8 billion.

⁵⁷ Source: Banque de France.

- **The revised regulatory framework is making the French market clearer**

Outstandings on the French market have been virtually unchanged for four years, standing at EUR 228 billion at end-June 2017,⁵⁸ 22% of which is eligible for ECB refinancing operations. This total amount includes vehicles issuing non-subordinated securities offering the same level of seniority, which is a broader scope than that represented solely by vehicles meeting the more conservative Basel and European definitions of securitisation.⁵⁹ In terms of the nature of underlying assets, household financing makes up 64% of securitised assets, while home loans have seen their share shrink over recent years to go below 50% in Q1 2017 (8.6% decrease since 2011). The downtrend is offset by an increase for auto loans and consumer credit, which are up 7% since 2011.

Alongside the new European framework, **the domestic securitisation regime has also just been revised** following the adoption on 4 October 2017 of an executive order modernising securitisation and asset management.⁶⁰ The order provides a definition for securitisation vehicles⁶¹ and modernises the regime by making it clearer for the international market. It also establishes the new category of “finance vehicles (organismes de financement or OF)”, comprising the **newly created sub-category of specialised finance vehicles (organismes de financement spécialisés or OFS)**, which are untranchéd alternative investment funds subject to the AIFM Directive and thus entitled to receive the AIFM marketing passport for the EU, and **securitisation vehicles (organismes de titrisation or OT)** (subject to AIFM exemption arrangements). These two types of entities may lend directly to non-financial corporations. Table 2 shows that specialised financing vehicles make up a hybrid category that lies between debt funds and securitisation vehicles.

This new and more flexible regime for financing vehicles responds to demand from investment fund professionals and their investors, who now gain access to a new market of underlying assets that used to be partly reserved for the banking sector.

Table 2

Finance vehicles: two distinct legal categories		
Main features	OT	OFS
Issuance of debt securities	✓	✓
Eligibility to “Fonds de prêts à l’économie” (FPE) label FPE status	✓	✓
Ability to grant loans to non-financial corporations	✓	✓
Insurance risk transfer		X
Tranching of liabilities		X
Eligibility to “ELTIF” (European Long term investment fund) Label	X	
Repurchase of units/shares from the shareholder	X	
Purchase of capital securities/equity/quasi-equity	X	
Management company may be a foreign company	X	

⁵⁸ Source: Banque de France, ECB statistics.

⁵⁹ According to the Basel and CRR definitions, to be considered as securitisations, issues must be tranchéd and offer the investor a level of subordination that matches the risk level of the underlying assets.

⁶⁰ Executive Order 2017-1432 of 4/10/2017 will come into application on 3 January 2018, with the exception of the reforms to depositaries of securitisation entities, which will come into effect in 2019.

⁶¹ Securitisation entities are described as a non-uniform group including two types of entities with very different purposes:

- conventional securitisation entities that meet the Basel definition and/or whose purpose is bank refinancing;
- vehicles with untranchéd liabilities whose purpose is to finance infrastructure or that are direct lending funds (FPEs), which are the only vehicles allowed to apply for authorisation as European long-term investment funds (ELTIF), subject to certain conditions, including compliance with the provisions of the AIFM Directive.

4 Risks for financial markets

4.1 REPRICING OF RISKS ON FINANCIAL MARKETS

a. Asset prices are still in an expansion phase

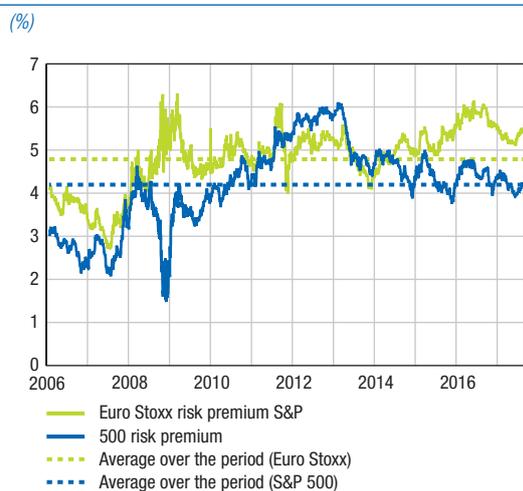
Equity markets have continued to head upwards since the last risk assessment, with new records set for US, Japanese and European indices. Without hitting the highs of the US market, which is sitting at more than 2.5 standard deviations above its average since 1987, euro area equity markets surged 11% from the beginning of 2017 to get back to pre-crisis levels. They were driven by tech stocks, which put on 20%.

Against a backdrop of brightening macroeconomic prospects, the market is expecting earnings per share (EPS) to increase by 54% in the euro area over three years, outperforming the US market (36% growth expected), although not by enough to close the sizable EPS gap separating the two zones. At the same time, compression of risk premiums, which are now close to their long-run average, is supportive of equity market growth (Chart 39), notwithstanding the uptick for the Euro Stoxx premium from July onwards. If compression continues, dividend per share forecasts would see the Euro Stoxx at around 460 points in 2019, up from 374 at present.⁶²

Since early 2016, euro area credit markets have held strong appeal for investors hunting for more attractive returns. Asset reallocations to credit markets have brought down the level and volatility of credit spreads (Chart 40), to the extent that by end-October 2017 spreads had settled at levels close to those seen in early 2007. In a setting of rock-bottom interest rates and volatility, investors looked to high-yield bonds as a way to boost the returns on their fixed income portfolios. As a result, the average credit premium for this asset class is historically low at around 2%, reflecting under-remuneration of the risk exposure.

Chart 39

Equity risk premiums



Sources: Bloomberg, Banque de France calculations.

Chart 40

Iboxx corporate index (swap spread, bps)



Source : Bloomberg.

b. Are US, European and French equity markets overvalued?

The sharp increase in stockmarket prices since 2009, especially in the USA (x3.5), where levels are well above those of the last two peaks (2000 and 2007), may point to excessive market bullishness with regard to the business cycle and particularly vis-à-vis growth

⁶² Banque de France estimates derived from the dividend discount model (DDM), also known as the Gordon-Shapiro model.

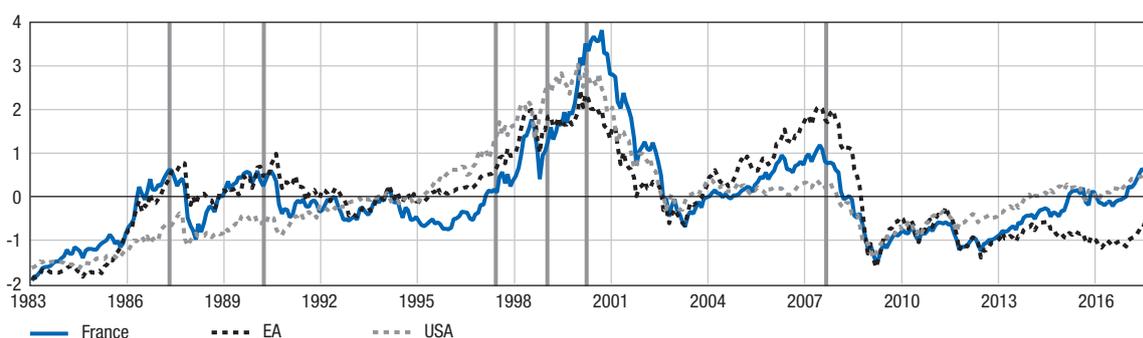
in profits, which seem at first glance to be extremely high in the USA and France. We use the cyclically-adjusted⁶³ price earnings ratio (PER)⁶⁴ to analyse the level of market valuations.

In the USA, the cyclically-adjusted PER has been rising since 2009 and now stands at an elevated level (25⁶⁵ in October 2017), which is a first sign of overvaluation. Earnings growth has been less vibrant than that of share prices, causing cyclically-adjusted PER to reach an initial critical threshold defined as a z-score⁶⁶ of 0.5⁶⁷ (grey line in Chart 41), which has characterised market corrections in the past.

In France, too, the cyclically-adjusted PER⁶⁸ has been rising since 2009 to reach elevated levels (20 in October 2017). The current level has led historically (since 1983) to an average annualised return of 6% in the following decade. Yet early signs of overvaluation are starting to emerge. The current PER level is on the right tail of the distribution curve, and the decorrelation between earnings growth and the market index needs to be watched: after 1973, the upward trend in the stockmarket index diverged from the earnings trend before 1987, 2000 and 2007 in the lead-up to sharp corrections. Since 2009, the market index has risen by a factor of 2.5 while earnings have grown at a slightly slower pace (x2). Cyclically-adjusted PER has reached an initial critical threshold (z-score of 0.5;⁶⁹ grey line in Chart 41).

Chart 41

Adjusted PER in France, euro area and USA (z-score)



Sources: Datastream, Banque de France calculations.

The European stockmarket index, meanwhile, is not showing signs of overvaluation, since its level is similar to that of 2014 (Chart 41), but EPS are fairly sluggish. The cyclically-adjusted PER is not showing signs of overvaluation.

However, cyclically-adjusted PERs in France and the USA may appear high because of base effects. Since cyclically-adjusted PER is calculated based on average earnings over ten years, the indicator should, *ceteris paribus*, automatically decline if the 2008 and 2009 troughs fall outside the smoothing period.

63 Cyclically-Adjusted Price Earnings (CAPE) is an indicator developed by Campbell and Shiller (1988) and calculated as the ratio of the share price corrected for inflation over earnings corrected for inflation and smoothed over ten years.

64 PER is defined at firm level as the share price divided by earnings per share (net profit divided by the number of shares). It may be defined as the ratio of market capitalisation to the firm's net profit. PER is relatively neutral to share buybacks by companies because the share price is similarly neutral.

65 The index measured using the Shiller method is above 30 because it uses a different earnings series, namely reported earnings, which include non-recurring accounting events, such as restructuring and goodwill depreciation, while our measurement uses operating earnings.

66 The z-score consists in centering the variable around its average and dividing it by its standard deviation = [cyclically-adjusted PER – Average (cyclically-adjusted PER)]/Standard deviation.

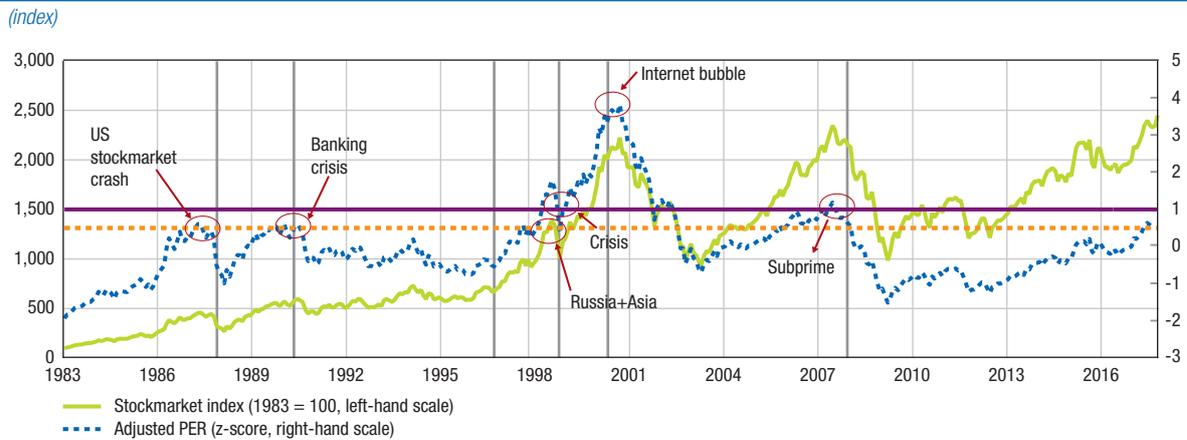
67 Since 1983, whenever adjusted PERs have breached the 0.5s threshold, there has been a stockmarket correction (1987, 1990 and 1997), with an even larger correction when the threshold of 1 was breached (1998, 2000 and 2007).

68 Market indices provided by Datastream, which offer greater historical depth than the CAC 40 and Euro Stoxx.

69 Since 1983, whenever adjusted PERs have breached the 0.5s threshold, there has been a stockmarket correction (1987, 1990 and 1997), with an even larger correction when the threshold of 1 was breached (1998, 2000 and 2007).

Chart 42

Stockmarket index and adjusted PER in France



Sources: Datastream, Banque de France calculations.

c. The low-volatility regime is having procyclical effects

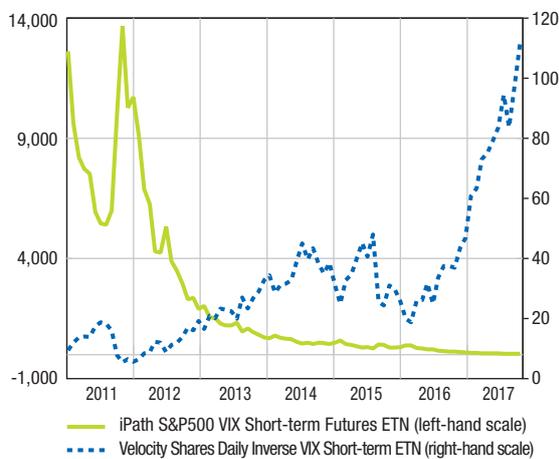
The volatility of equity indices in the USA (S&P 500) and the euro area (Euro Stoxx 50) reached record lows in October. Looking beyond the records, low volatility is a global phenomenon that has occurred in most asset classes worldwide since the start of 2017. As with the compression of risk premiums, a number of hypotheses have been put forward to explain the low-volatility regime, starting with the stabilisation of macroeconomic expectations. Another suggested reason is the “put” that markets are thought to have on central banks, i.e. the belief they will get central bank support in the event of an adverse scenario.

Low volatility does not mean diminished risks for financial stability, however. By modifying the assessment of risk, a decline in volatility may actually encourage excessive risk taking, leading in the event of a reversal to a procyclical unwinding of positions. A decline in volatility can have four effects:

- investment strategies betting on a continued low-volatility regime become highly profitable (Chart 43). These strategies, however, automatically accentuate the decrease in the price of volatility because of increased supply of protection-selling positions. While these strategies drive volatility down when it is weak, they push it higher when volatility is rising. In other words, they exert a procyclical effect;
- the low-yield environment makes hedges against volatility risk relatively more costly, while muted volatility reduces the perceived utility, lessening the incentive for investors to hedge their positions;
- low volatility encourages high-leverage strategies. Accordingly, the margin debt ratio, i.e. the amount borrowed to buy shares divided by the capitalisation of the New York Stock Exchange (NYSE), reached a record 2.8% in 2017, which is above the level that preceded the onset of the 2008 financial crisis;

Chart 43

Return on strategies buying or selling volatility protection



Source: Bloomberg.

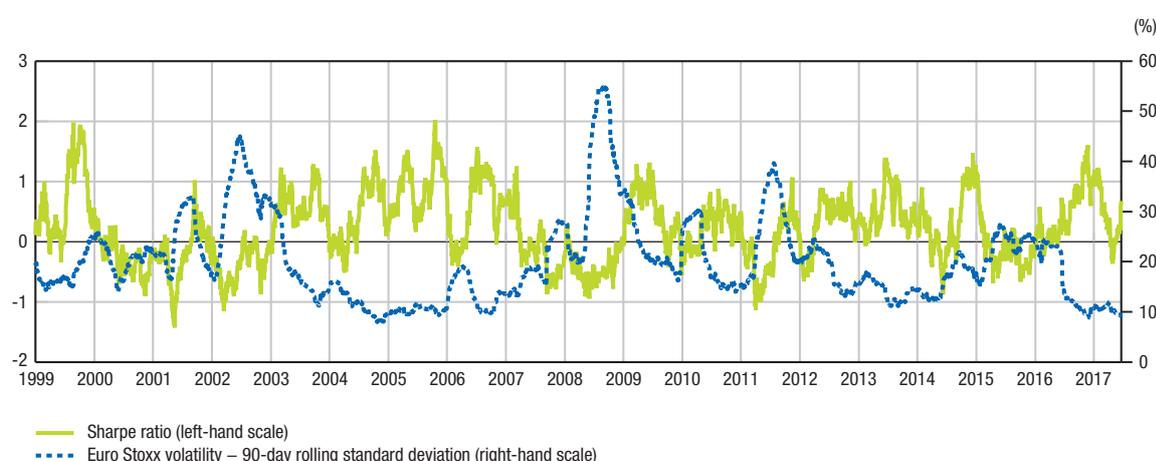
Guide: VIX future contract: 1 tick = USD 1,000

- Value-at-Risk risk management models are sensitive to volatility and permit greater risk taking when volatility decreases. The same goes for Sharpe ratio-type measures of the risk/reward trade-off⁷⁰ (Chart 44) and risk parity and volatility control strategies that target a specific level of volatility. A decrease in volatility enables greater risk taking. Conversely, renewed volatility causes model limits to bite, forcing procyclical sales of risky assets.

A persistent low-volatility regime can thus accentuate financial cycles and the probability of a crisis.⁷¹

Chart 44

Euro Stoxx Sharpe Ratio



Sources: Bloomberg, Banque de France calculations.

d. Major risk of a repricing of risk premiums

The elevated level of valuations on some market segments – especially US equity markets and European corporate bonds – combined with the procyclical effects of low volatility, create a major risk of repricing. Euro area and US equity markets display price sensitivity of -0.3% and -0.5% respectively to a 1 basis point increase in the risk premium. However, a 1 basis point increase in the risk premium has a neutral effect on prices if dividends per share increase at the same time by 3% and 5% respectively.

In a setting of historically low volatility, reflecting market participants' expectations that monetary policies will remain accommodative or at least that policy normalisation will take place in a gradual and predictable way, a resurgence of risk aversion stemming from external factors (geopolitical, political, macroeconomic) or financial factors (change in market expectations) could trigger a repricing of risk premiums and thus support the emergence of new risks for financial stability.

⁷⁰ Sharpe ratio: comparison of risk-adjusted returns for different asset classes. A negative Sharpe ratio, such as that seen for equities in 2016, indicates that the class is underperforming a risk-free investment, while a ratio of more than one shows that the class outperformed a risk-free investment.

⁷¹ J. Danielsson, M. Valenzuela, I. Zer (2016), "Learning from History: Volatility and Financial Crises", Finance and Economics Discussion Series 2016-093. Washington: Board of Governors of the Federal Reserve System.

Box 6

ICOs

Initial Coin Offerings (ICOs) have experienced a boom since the start of 2017, led by such offerings as the Filecoin ICO, which raised USD 186 million in just one hour. ICOs raised USD 2.3 billion over the year, or 20 times more than in 2016. The global phenomenon spread to France, where ICOs were successfully organised.

ICOs are a virtual currency version of the crowdfunding concept: in this type of offering, online supporters who back a project by providing virtual currency or legal tender receive digital assets known as tokens. In practice, these tokens represent a form of economic interest in the project and offer holders certain rights, such as preferential rights to use the platform or application being funded (as in a standard crowdfunding transaction) or the right to receive a portion of the earnings generated by the company or to exercise voting rights (like equities).

Since tokens issued during an ICO are managed by means of the blockchain used for the ICO itself, the approach is based on exchange mechanisms that are similar in every respect to those of virtual currencies, and tokens are generally exchangeable on the same platforms. These tokens are thus similar to virtual currencies, such as Bitcoin and Ether, potentially augmented to include special rights. The exponential rise of ICOs, which echoes that of virtual currencies, has spawned a market that is developing alongside the traditional market whilst being structured in the same way.

ICOs initially developed outside any regulatory framework even though they pose obvious risks:

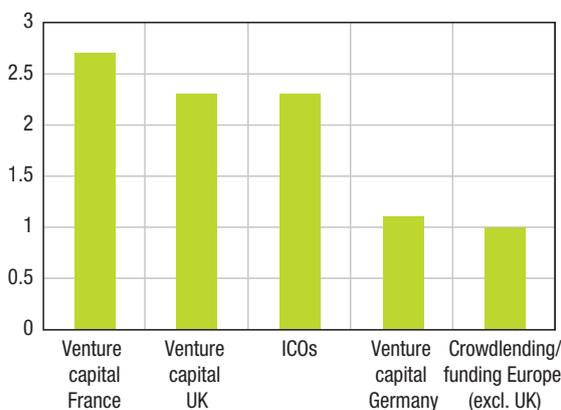
- for investors: i) they are not subject to the regulations relating to protection: there are no guarantees about the reliability of the information provided on the funded projects, or even about the actual existence of these projects; ii) insofar as, like virtual currencies, tokens do not meet the requirements to be treated as legal currencies, they do not offer holders any guarantees as to security, convertibility and value; iii) these assets are subject to the price volatility of virtual assets and even to the formation of speculative bubbles; iv) the security of the technologies used to manage ICOs or hold tokens cannot be guaranteed.
- for the company: the anonymity that characterises the issuance and transfer mechanisms of most virtual currencies (including tokens issued during ICOs), represents a risk of use i) for criminal purposes (online sale of unlawful goods or services) or ii) for money laundering or terrorist financing purposes.

Ultimately, if traditional financial participants such as credit institutions, asset managers, institutional investors and market infrastructures enter the market for virtual assets and currencies, the development of these instruments could create risks for financial stability.

Chart 1

Venture capital fundraising versus ICOs over the first three quarters of 2017 and crowdlending/funding over 2013-2015

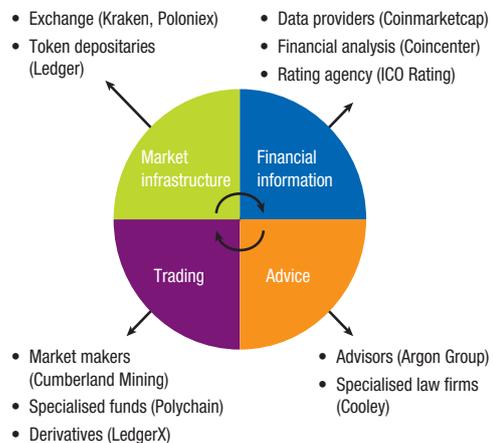
(EUR billion)



Source: Bloomberg, most recent value 12/10/2017.

Chart 2

Structure of a financial market for crypto-assets (examples provided for illustration purposes)



Sources: Coinschedule, Dealroom, Cambridge Center for Alternative Finance.

4.2 REGULATORY RISKS FOR MARKETS

a. Review of the supervisory architecture for central counterparties (EMIR 2)

On 13 June 2017, the European Commission published a proposal for a regulation to reform the supervisory architecture for central counterparties (CCPs) in the European Union (EU) through amendments to the regulation establishing the European Securities and Markets Authority (ESMA) and to the European Market Infrastructure Regulation (EMIR), which regulates over-the-counter derivatives markets and CCPs. The revision would affect CCPs established in the EU and CCPs from third-countries that provide clearing services in the EU. With the UK set to leave the EU, the rules dealing with third-country CCPs take on critical significance given the systemic importance to the EU of UK clearing services. The Commission is proposing to set up a supervisory architecture for EU CCPs aimed at enhancing the harmonisation of CCP supervision within Europe by devolving more powers to ESMA and to a specialised independent committee reporting to ESMA. National competent authorities would therefore share the task of supervising CCPs with this European body. In addition, the central banks of issue of the currencies in which CCPs clear transactions would also have binding power to review decisions concerning CCPs. The Banque de France is in favour of greater convergence in supervisory practices, which will make European CCPs more resilient, while drawing on the experience and expertise acquired by national authorities.

Moreover, the UK's EU exit creates the need to review the European framework for supervising third-country CCPs. UK CCPs clear several markets of systemic importance for the EU⁷² and will become, once the UK leaves the Union, third-country CCPs according to the definition under EU law. The mechanism for recognising third-country CCPs currently provided for by EMIR does not offer ESMA any margin of discretion or genuine supervisory power, even though some recognised CCPs are strongly interconnected with the EU financial system. The Commission is therefore proposing to consider third-country CCPs differently depending on their systemic importance to the EU:

- for non-systemically important CCPs, the current recognition mechanism based on the equivalence of national regulatory frameworks will be maintained. However, the equivalence of the regulatory framework and recognition of each CCP will be reviewed regularly subject to criteria that must be met;
- for CCPs of systemic importance to the EU, compliance with EMIR requirements will be mandatory and checked by means of direct ESMA supervision. A “compliance with comparable requirements” mechanism will allow CCPs to request exemptions if EMIR requirements can be satisfied through compliance with local regulations;
- some clearing activities may be considered to be so “substantially systemically important” to the EU that the EU's financial stability cannot be guaranteed unless the CCP in question establishes its business in the EU. In this case, the Commission would have the discretionary power to refuse recognition (thus requiring relocation), based on a recommendation from ESMA and with the agreement of affected central banks of issue.

The Banque de France strongly supports the mechanism proposed by the Commission for the framework for third-country CCPs that want to serve the EU market. Accordingly, it likewise supports measures to strengthen the supervisory system for third-country

72 LCH Ltd provides clearing for interest rate swap markets in 18 currencies, including six EU currencies, and repos in the sovereign debt of numerous Member States. ICE Clear Europe Ltd clears CDS markets, including CDS in euros (iTraxx contracts), and listed short-term interest rate derivatives.

CCPs, as well as a location requirement for systemically important clearing activities involving transactions denominated in EU currencies, especially euros.

b. Benefits of a location requirement for systemically important euro-denominated clearing

The mechanism proposed by the Commission for third-country CCPs is based on a thoroughly appropriate proportionate approach.

Extraterritorial supervision of third-country CCPs by a European authority is appropriate for clearing activities of systemic importance to the EU, but only if they are denominated in non-EU currencies: in this case, there is no justification for relocation. However, when it comes to clearing activities that are denominated in EU currencies, which are essential to financing of the economy, monetary policy implementation and financial stability, it is vital that European authorities should be able to exercise not only direct but also primary supervision. They cannot rely on third-country authorities, whose primary duty is to ensure the financial stability of their own monetary zones, to maintain EU financial stability. Experience shows that the interests of authorities can part ways, especially in a crisis.

The aim of a location requirement would be to place substantially systemically important clearing activities denominated in Union currencies (particularly euros) under the direct and primary supervision of EU competent authorities, and especially the central banks that issue the currencies in question. Involving the issuing central banks is crucial insofar as these clearing activities generate liquidity risk for the currencies, creating moral hazard for the issuing central banks if the risk is not properly managed. Moreover, for certain classes of financial instruments such as repos and interest rate derivatives (OTC and listed), these activities could have material implications for monetary policy.

The introduction of a location requirement for clearing is drawing considerable attention from the market and from European and non-European authorities as regards the interest rate swap market. This segment has enormous systemic importance given the volumes cleared – some EUR 300 trillion – of which 95% is cleared by LCH Ltd, a UK CCP that clears these products in 18 currencies, including six EU currencies that make up one-third of volumes.

Discussions have mainly looked at relocation impacts on market participants, including the following:

Increased collateral requirements as swap portfolios are separated so that clearing done currently by a single CCP (LCH Ltd) would be done by two CCPs, one of which would be located in the EU: clearing members would be required to post margin calculated on the basis of two separate portfolios rather than a single portfolio with a wider scope for netting. However, this increase would be relatively small when set against the outstanding collateral currently available to clearing members and affected clients. Furthermore, the key factor is not so much the notional amounts of collateral but the cost of financing, which is modest, especially in a low interest rate environment.

Fragmentation of the interest rate swap market between two CCPs: some participants have mentioned a risk that only transactions by banks established in the EU, accounting for less than 15% of volumes, will be relocated. Curtailed liquidity owing to smaller volumes and fewer market participants would lead to a relative price deterioration for the CCP clearing smaller volumes as part of a phenomenon known as basis risk. There are strong incentives for the market as a whole to clear all transactions denominated in an EU currency through an EU CCP: for one thing, the CCP would be covered by a more secure framework for liquidity risk management because of its authorisation

within the EU, supervision by the competent central banks of issue, and the last-resort financing that central banks can provide if need be; moreover, dividing flows in the same currency between two CCPs would be detrimental to non-European participants as well, because they would have to increase the number of transaction channels with multiple CCPs and hence the associated margin requirements. Note that basis risk does not manifest itself systematically in all market segments cleared by more than one CCP, as shown by the situation on the credit derivatives market.

Managing the transition could also prove complex, but clearing services that already exist on the continent could facilitate matters by taking over from UK-based clearing services. Furthermore, if a significant portion of interest rate swaps in EU currencies already cleared in the UK before the location requirement takes effect feature long-term maturities, a grandfathering clause should be used to cover a portion of the stocks as they mature before making it mandatory to relocate outstanding cleared amounts pre-existing the new requirement.

Overall, the collective long-term and structural benefits provided by a location policy in terms of financial stability and the security of transactions on corresponding markets outweigh the transitional complexities, for which technical solutions have already been provided.

Box 7

Risks for financial markets of Brexit without agreement

On 20 October, the European Council said that insufficient progress had been made in the first stage of negotiations on the outline of the withdrawal agreement. The decision on beginning phase two of talks on the agreement for a new partnership was therefore pushed back to December, increasing the likelihood of a “cliff-edge” scenario in which the UK would lose its management and marketing passports, become a third-country vis-à-vis the EU and could at best be covered by equivalence regimes offering no long-term guarantees. The main risks concern an interruption in the manufacture and distribution of financial services, and proper supervision of the new flows that are established.

Reciprocal access by participants to UK and European markets will depend on future cooperation agreements, options for delegating management and the continuity of existing contracts. In the case of collective management, a European third-country marketing passport regime is provided for under the AIFM Directive but has not yet been activated by the Commission and does not feature in the UCITS Directive. UK managers would thus be required to open a branch and would be able to market only in Member States that have given their authorisation. Portfolio management could however be delegated to the United Kingdom subject to proper application of the provisions set out in the legislation. As regards the provision of investment services, MiFID 2 sets out different frameworks depending on whether the investment firm’s client is a retail or professional client.

Delegation and outsourcing practices will have to be effectively supervised as regards risks and the materiality of fund activities to ensure there are no empty shells. In-force contracts will draw primarily on UK/US law, which poses a cross-cutting problem for the financial sector in terms of the powers of the European courts. European arrangements will need to be adjusted to supplement the standard mechanisms.

4.3 REGULATORY DEVELOPMENTS AND FINANCIAL MARKETS

a. Risks relating to the introduction of MiFID 2

The MiFID 2 legislative package will come into application on 3 January 2018. While numerous benefits are expected in terms of transparency, investor protection and oversight of market participants, risks for financial stability could materialise.

A temporary interruption in activities or a shift in trading venues, particularly European venues, could occur given the complexity for participants of complying with transparency obligations (barely 40% of firms are expected to be ready in January).⁷³ The new venues for bonds and derivatives are the organised trading facilities (OTFs) that must be authorised in time for clients to be able to use them.

Some grey areas concerning transparency requirements and the final touches to exemption rules may create uncertainty for market participants, which could affect market liquidity. Moreover, the inability to trade with counterparties that do not have a legal entity identifier (LEI) might create additional difficulties in the absence of an alternative. Another factor, namely the requirement to invoice or internalise research expenses and to distinguish them from execution expenses, has the benefit of putting a price on this activity. The impact on research budgets and the overall research market could lead to greater concentration and specialisation among participants.

Last, market fragmentation risks exist. MiFID 2 seeks to sharply reduce OTC activities and step up the rules for using dark pools, i.e. trading systems that operate without pre-trade transparency, by increasing trading requirements and by developing a new type of transparent venue (OTFs for non-equity instruments). Participants do however expect an increase in the market share of electronic platforms, notably for fixed income securities, which have been slower to develop in this area than equities. In addition, MiFID 2 provides an initial definition of algorithmic and high-frequency trading and contains a number of measures to regulate these approaches.

b. Leverage ratio, purchase programmes: what are the consequences for the repo market and its participants?

The repo market is a central cog in the financial system, enabling liquidity and securities to circulate between banking and institutional counterparties. The market was characterised by severe cyclical pressure on core euro area securities in late 2016, which added to the structural pressures connected with regulations and the ECB's purchase programmes (see the June 2017 risk assessment for a description).

Banks are adapting their market practices to the new environment, notably by prioritising netting for repos to reduce their capital requirements. This creates incentives both for central clearing through CCPs to reduce the number of counterparties and for standard maturity dates. Market participants also like securities-for-securities lending transactions, which do not include a cash leg and are equivalent to a repo/reverse repo structure because of their reduced impact on the leverage ratio. More worryingly, unsecured transactions appear to be on the rise, since they have the advantage of using less leverage than a secured transaction.

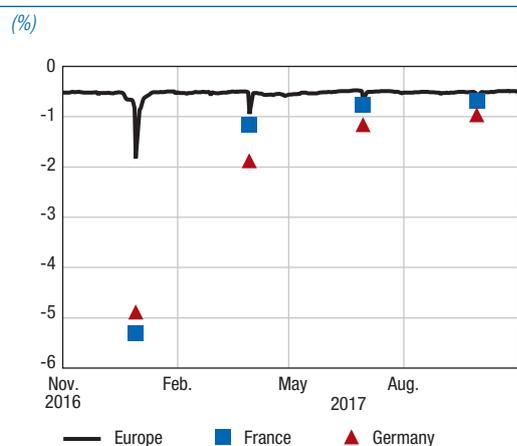
The establishment of Eurosystem lending facilities has made the market more fluid by putting good-quality collateral into circulation in the European financial system, notably German and French securities, which had been under the heaviest strain in late 2016. Market participants are upbeat about how the facilities are working, highlighting more relaxed conditions for accessing the Bundesbank facility and easy access to the Banque de France facility. Some market participants that are structurally cash lenders are however suffering from excess liquidity within the system.

Adjustments by participants and the introduction of central bank lending facilities led to normalisation on the repo market over 2017: the quarter-end transitions of March, June and September 2017 did not provoke any noteworthy stress (Chart 45) and market participants do not expect the late 2016 pressures to resurface at the end of 2017. After

⁷³ <https://www.ft.com/content/5bcaafdc-b022-11e7-beba-5521c713abf4>

Chart 45

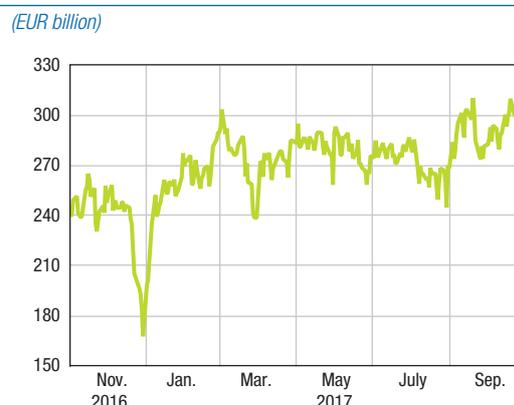
Repo rate, EUR



Source: RepoFundsRate.

Chart 46

Initial repo volume, Europe



Source: RepoFundsRate.

contracting on a trend basis since 2009, activity on the repo market increased between December 2016 and June 2017 according to the ICMA. Market participants are reporting a return by former participants and the arrival of new market makers in the shape of Canadian and Asian banks.

End users look to be hardest hit by recent developments on the repo market. Banks appear to have become more selective, preferring counterparties that can net their positions or offer additional business opportunities, and are reluctant to carry cash on their balance sheets. For example, some hedge funds are buying short-term commercial paper for use in repos to offset their reverse repo transactions. While large counterparties, such as some insurers and pension funds, can use their bargaining power with banks to maintain their activity, some smaller counterparties may find themselves squeezed out of the market, with those holding directional positions especially affected. Thus, money market funds with excess cash may struggle to find a counterparty with which to place their cash in a reverse repo, while institutional investors are forced to pay a premium corresponding to the cost of using their balance sheet for directional repo transactions, making this low-margin activity much more expensive. Standardisation of maturity dates, if it happens, could increase rollover risk by concentrating transactions on a few dates, and create liquidity risk for counterparties.

The rise of initiatives such as collateral exchange platforms for end users and CCP sponsoring could partly respond to the withdrawal of banks from some market segments. However, the intermediation role played by banks looks vital, both in terms of connecting supply and demand (matching, warehousing) and performing counterparty credit analyses. CCP sponsoring, meanwhile, is more costly and may generate additional risks for CCPs.

Strain on interest rates linked to quarter-end collateral shortages is reckoned to be connected to the procedures for determining certain regulatory requirements, including the leverage ratio, which are prompting banks to window dress their balance sheets at the end of the quarter (Chart 46).

Box 8

Reforming benchmarks

Following on from the Libor and Euribor manipulation scandals between 2008 and 2012, it was decided to stop using “expert judgement” as the sole means to set critical benchmark rates. From 1 January 2020, no new contract may refer to Euribor unless the methodology used to compile the rate has not been made compliant with the European Benchmark Regulation in the intervening period.

However, tests by the European Money Markets Institute (EMMI), whose findings were presented on 5 May 2017, show that a smooth transition to Euribor indices determined solely on the basis of real trades seems unlikely. Consequently, as provided for by the European regulations, EMMI will continue for the time being producing its benchmark indices using the current methodology, while developing a hybrid methodology combining an expert judgement approach with a calculation method based on actual transactions, which will be designed to replace it. Note that the UK’s Financial Conduct Authority (FCA) said on 27 July that it no longer believed it was possible to produce a Libor based on transactions and that a transition to an alternative benchmark was clearly required.

Without prejudice to the conclusion of EMMI’s work, the Eurosystem decided to produce a new index for the overnight interest rate. On 21 September, the ECB published a press release reporting the Governing Council’s decision to develop an index for unsecured deposit transactions based on money market statistical reporting (MMSR) data, and to produce it before 2020. A public consultation of stakeholders on the specifications for this index got underway on 28 November 17. Since 21 November, the ECB has also published statistical series derived from aggregate MMSR data.

Furthermore, the ECB, European Commission, ESMA and FSMA announced on 21 September that they were setting up a public/private working group to identify an alternative risk-free overnight rate for the euro area, which would be used in various contracts and financial instruments.

Given the large number of contracts indexed to it, Euribor is identified as a critical index by the European Benchmark Regulation. Its phase-out and replacement could create risks for the continuity of contracts set to mature after 2020, and the transition to new benchmark indices will have to be monitored by the competent authorities to limit the impact on market functioning.