



ASSessment of **R**ISKS to the **F**RENCH FINANCIAL SYSTEM

June 2017

Preface

This 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). The exercise is steered and coordinated by the Banque de France's Financial Stability Directorate, with an assessment published twice annually, in June and December. This is done as part of the financial stability assignment entrusted to the Banque de France by Act 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).

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 seeks to provide support for 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 prudential proposals or measures on financial stability.

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Governor of the Banque de France

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

The Banque de France tracks stress in the French financial sector through a range of indicators. Some of these indicators measure systemic risk (Chart 1).

Composite Indicator of Systemic Stress (CISS)

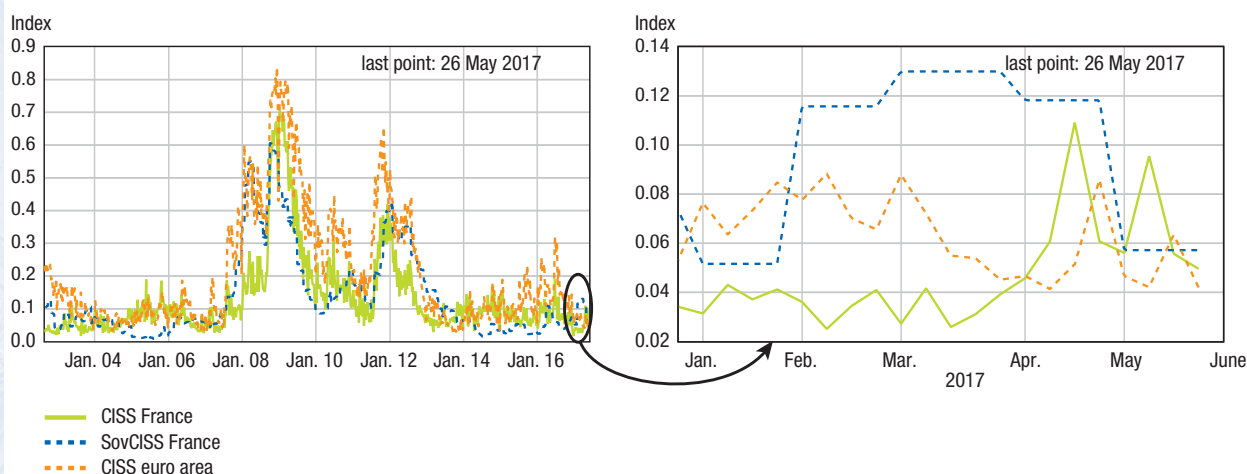
The CISS distils information from five financial market sectors, namely the bond, money, stock and foreign exchange markets, and financial intermediaries. It is standardised to present a value between 0 and 1 and expressed as a four-week moving average, with a high value signalling pressure on the five underlying markets or “pillars”. The CISS captures spillover between risk pillars. The sovereign CISS (SovCISS), meanwhile, is an indicator of stress on sovereign bond markets, whose pressures can spill over onto other financial market segments. The main data used to construct this indicator are taken from the yield curve and include measures of credit risk, volatility and liquidity. The SovCISS, which also presents a value between 0 and 1, is constructed in the same way as the CISS.

In 2016, the Composite Indicator of Systemic Stress or CISS (cf. Box opposite) for the euro area exhibited greater volatility, particularly after the surprise result of the UK referendum. The indicator's increase in H1 2016 and volatility in summer 2016 reflected turbulence on the stockmarkets of several euro area countries, and particularly stress among Italian financial intermediaries, but also mounting policy uncertainty. That being said, stress levels remained below those seen at the height of the 2012 sovereign debt crisis or during the onset of the Greek crisis in 2009. The indicator normalised somewhat in the second half, reverting to pre-2016 levels.

As a rule, France's CISS,¹ which is centred on French market risks, is fairly closely correlated with the euro area CISS. The level of financial stress measured by the CISS for France has been stable overall compared with the euro area gauge since 2013 but became more volatile during the lead-up to the French presidential elections in May 2017. Accordingly, the increase in the CISS for France between March and May 2017 was attributable to developments in sovereign risk against a backdrop of electoral uncertainty, rather than to a less resilient financial system. The sovereign CISS (SovCISS) for France and the euro area rose in step during the first few months of 2017. Following the French elections, the CISS for France headed back down to historically low levels, fluctuating around 0.05.

Chart 1

Composite Indicator of Systemic Stress (CISS)



Sources: ECB, Bloomberg, Banque de France calculations based on Hollo, Kremer and Lo Duca (2012). Data to 26/05/2017.

¹ The CISS for France is computed in accordance with Hollo, Kremer and Lo Duca (2012), “CISS - A Composite Indicator of Systemic Stress in the Financial System”, ECB working document.

MACROECONOMIC ENVIRONMENT

The macroeconomic environment is characterised by firmer growth in advanced and emerging countries although risks persist amid US economic policy uncertainty and the possibility of a swifter-than-expected increase in interest rates.

Macroeconomic conditions have improved since the December 2016 exercise, with growth firming simultaneously in advanced and emerging countries. International institutions have revised upwards their growth outlook for the global economy to 3.3%-3.5% in 2017 (after 3.1% in 2016) and 3.5%-3.6% in 2018. Stronger growth will likely drive a pick-up in consumer prices, a trend that may be supported by US fiscal stimulus measures announced by the administration of US President Donald Trump.

According to the Eurosystem's June projections as part of the Broad Macroeconomic Projections Exercise, French GDP will expand by an average annual 1.4% in 2017 (after 1.1% in 2016) and 1.6% in 2018 and 2019, causing the output gap² to narrow. However, economic growth in France in 2017 is expected to remain below that of the euro area. Domestic demand may be more contained but exports should rebound in response to global demand. Core inflation (excluding food and energy) is expected to flatten out at 0.6% in 2017 before picking up to 1.2% in 2018 and 1.4% in 2019.

In the short term, there is still much uncertainty over the nature, timing and scale of the economic policy measures planned by the new US administration. In Europe, the economic effects of Brexit look to be limited at this stage, though downside risks to UK growth remain considerable in the medium term. In emerging countries, while the economic situation has stabilised overall, future developments will be shaped by global financial conditions, and in this regard, it is vital for these economies to have safety nets (adequate foreign exchange reserves, balanced external accounts, access to international markets) and appropriate crisis management tools to cope with major financial shocks.

In this environment, the French financial system remains under pressure. The main area to watch concerns the scenario of a swifter-than-expected rise in long-term interest rates, which could occur if inflation accelerates in the USA, or, within Europe, if markets lose confidence in certain euro area countries and their capacity to reduce public debt. The potential consequences of this would include: (i) repricing of financial assets, (ii) a heavier debt burden for non-financial companies and households, whose debt remains on an upward trend and (iii) pressure on the effectiveness of asset/liability management by financial institutions. Risks relating to the completion of regulatory reforms, which were flagged by the December 2016 risk assessment, also remain in place.

IDENTIFIED RISKS

- 1. Market risk: threat of a sudden correction to risk premia and portfolio reallocations against the backdrop of an unprecedented disconnect between ultra-low market volatility and the overall level of policy uncertainty.**

In the wake of the US elections in November 2016, the increase in US sovereign interest rates gathered pace, with ten-year Treasury yields putting on 60 basis points in the month after the elections. This trend got further support from upward revisions to

² The difference between an economy's potential and actual output.

growth forecasts and economic policy announcements by the incoming administration, particularly on fiscal stimulus measures. The prospects of US monetary tightening provoked some volatility in flows to and from emerging countries, albeit without unleashing the massive capital outflows seen in 2013, and caused sovereign yield curves in Europe to steepen. However, rates stopped climbing overall in early 2017, with European yields staying at historically low levels.

Meanwhile, valuations soared on some equity markets, particularly in the USA, even as volatility remained historically low. At the same time, political risk increased materially at the global level, reflecting an unprecedented disconnect between markets and policy risk. This could prove temporary, resulting in an abrupt repricing of risk premia if economic or monetary policy expectations change. Repricing would have consequences for the valuation of bond portfolios included in the assets of financial institutions, as well as for equity markets. A sudden correction would derail the decline in risk premia for European bank stocks and exacerbate the negative gap between the level of returns required by investors and actual returns, which has been a source of vulnerability for French and European banks since the crisis. Furthermore, within the euro area, uncertainty connected with elections, notably in France, were a source of volatility in early 2017 on equity and bond markets, which did however revert quickly to levels seen at the start of the year once the polling results were known.

One destabilising factor highlighted by bond market participants is the influence of new regulatory standards on market functioning. In late 2016, for example, the euro area securities lending market came under unprecedented stress, evidenced by a significant increase in the cost of collateral. The issue stems from the fact that banks, in an effort to satisfy regulatory reporting requirements for liquidity coverage and net stable funding ratios, are drastically reducing quarter-end exposures, causing trading volumes to plummet and pushing up prices for high-quality collateral.

2. Risk linked to debt in the non-financial sector: debt remains on an upward trend among non-financial companies and households. A larger-than-expected increase in interest rates could exacerbate the debt burden of non-financial companies. A close watch needs to be kept on household real estate debt and commercial real estate.

The debt of non-financial companies, most of which is carried by large firms, continued to grow at a sustained pace in 2016, reaching 71.3% of GDP at the end of the year (consolidated debt, i.e. net of intra-group transactions). Although debt levels have risen since 2007, the leverage ratio remains under control on average because of the simultaneous increase in equity. Tighter financial conditions would however affect the burden of this debt, whose composition reflects, in the case of large groups, increased use of market financing (major companies raise 60% of their financial debt on bond markets, compared with an average of 37.5%), and represent a material risk factor. Debt is used to pay for non-financial assets as well as foreign direct investment. Trendwise, investment in intellectual property rights, which has continued to rise steadily, even during the crisis, is driving investment dynamics, while investment in construction has slowed since 2013.

Macro- and microprudential authorities continue to keep a close eye on prices on residential and commercial real estate markets. Residential prices recovered markedly in 2016, climbing to record highs despite their recent softening. As a result, household debt has continued to rise at a moderate pace since the crisis and reached 57.4% of GDP by the end of 2016. Thanks to the fall in interest rates over the period, however, the debt service to income ratio has stayed relatively stable. Real estate lending conditions remain under surveillance but there is no evidence of increased delinquency rates.

The commercial real estate market was the subject of stress tests launched in 2016 as part of work led by France's Haut Conseil de stabilité financière (High Council for Financial Stability – HCSF). The exercise was used, among other things, to assess the capacity of financial institutions to withstand a rapid run-up in interest rates. The results of tests using a series of price shock scenarios suggest that the effects would be limited at the level of the financial sector as a whole and would not in principle have systemic consequences.

3. Risk linked to the interest rate environment: interest rates remain at historically low levels but a sudden increase in long-term rates would put pressure on financial institutions.

France's financial institutions are demonstrating their resilience amid economic and financial conditions characterised by persistently low interest rates.

At end-2016, French banks continued to post solid performances despite the many challenges facing them. Their structural qualities and robust fundamentals in terms of solvency and liquidity have mitigated the adverse effects of low rates on profitability. French banks maintained their overall profitability in 2016 in part thanks to strong non-interest income and the continuing decline in the cost of risk. Market sentiment towards the French banking sector improved substantially, in particular thanks to the steepening of the yield curve since the end of the previous year. With the improving growth outlook for France and Europe, the negative impact of macroeconomic factors on bank profitability is expected to diminish. That being said, the French banking sector is indirectly affected by the weakness of other European banking sectors to which it is exposed. This is pushing up the cost of capital and pulling down stockmarket valuations, which could be problematic going forward. A sharp increase in rates could also have a detrimental impact depending on the individual quality of interest rate risk management systems.

In other words, French banks continue to face structural challenges, requiring them to keep up their ongoing efforts to adjust business models. Among other things, they are working to improve operating efficiency, tap into digital banking opportunities, and improve systems to guard against cyber attacks.

French insurance companies also boast solid fundamentals. However, the unprecedented low interest rate environment is eroding their margins and returns, forcing them to rethink their traditional business models. Two scenarios would adversely impact profitability in the insurance sector: a prolonged low interest rate environment or, conversely, a sudden end to this environment. In the first case (extended period of low interest rates), the downward trend in returns on assets would create at least two types of risk: that of financial losses for entities guaranteeing high technical rates; and that of diluted returns. This is prompting insurers to diversify their investments into assets that are non-depreciable but also riskier or more volatile, such as equities or real estate. Tests conducted by EIOPA in 2016 show however that French and European insurers are holding up well during this prolonged period of low interest rates. In the second scenario (sudden sharp increase in interest rates), insurers would face the risk of large-scale surrenders by policyholders. Also in this second scenario, the arrival of a new entrant offering policyholders better rates than those currently available would be a threat to existing firms, which cannot quickly adjust the rates that they offer, further exacerbating the possibility of large-scale surrenders. Insurers would have to draw on their reserves to absorb this shock.

In sum, banks and insurers alike face risks that they must prepare for, whether the low interest rate environment continues or ends abruptly.

4. Regulatory risk for French banks: ongoing uncertainty over the completion of Basel III and the risk of international fragmentation of banking regulations.

Reforms to prudential rules since the 2007 crisis have made the European banking system more resilient. Since the December 2016 risk assessment, work on revising the international and European regulatory frameworks has continued, albeit with different institutions progressing at different speeds. In terms of international initiatives, efforts to finalise the last remaining components of the Basel III framework have stalled and regulatory uncertainty persists, particularly since US authorities are in the process of reviewing several parts of US financial regulations. The Basel Committee, meanwhile, is currently holding a consultation on the revision of the framework for systemically important banks. Within the European Union, the full revision of the CRR/CRD framework, which is intended to round out reforms implemented within the Union after the financial crisis, is also underway and poses no particular risk to the French banking sector.

Amid the ongoing uncertainty, banks continued to bolster their financial positions, step up efforts to adapt to the new framework introduced by the European Bank Recovery and Resolution Directive (BRRD) and ready themselves for the introduction of the new IFRS 9 accounting standard.

Table 1

Summary of the main risks to the French financial system in June 2017: level and outlook	
Main risks to the French financial system	Level and outlook June 2017
1. Market risk Threat of a sudden correction to risk premia and portfolio reallocations against the backdrop of an unprecedented disconnect between ultra-low market volatility and the overall level of policy uncertainty.	→
2. Risk linked to debt in the non-financial sector Debt remains on an upward trend among non-financial companies and households. A larger-than-expected increase in interest rates could exacerbate the debt burden of non-financial companies. A close watch needs to be kept on household real estate debt and commercial real estate.	→
3. Risk linked to the interest rate environment Interest rates remain at historically low levels but a sudden increase in long-term rates would put pressure on financial institutions.	↑
4. Regulatory risk for French banks Ongoing uncertainty over the completion of Basel III and the risk of international fragmentation of banking regulations.	→
 Systemic risk  High risk  Moderate risk	

The current level (shown by the colour code) is based on an expert assessment that reflects the probability that the risk will occur 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.

2 Macroeconomic environment

Macroeconomic conditions have improved since the December 2016 exercise, with growth firming simultaneously in advanced and emerging countries. The international institutions have revised their growth outlook for the global economy upwards to 3.3%-3.5% in 2017 (after 3.1% in 2016) and 3.5%-3.6% in 2018. Stronger growth (as well as higher oil and commodity prices) will likely drive a pick-up in consumer prices, a trend that may be supported by US fiscal stimulus measures announced by the Trump administration.

According to the June projections conducted as part of the Eurosystem's Broad Macroeconomic Projections Exercise, French gross domestic product (GDP) will expand by an average annual 1.4% in 2017 (after 1.1% in 2016) and 1.6% in 2018 and 2019. This is higher than the potential growth rate, which will cause the output gap to narrow. However, economic growth in France is expected to remain below that of the euro area. Domestic demand may be more contained but exports should rebound in response to global demand. Core inflation (excluding food and energy) is expected to flatten out at 0.6% in 2017 before picking up to 1.2% in 2018 and 1.4% in 2019. This projection does not take account of France's economic policy stance and reforms following the elections, or changes in the expectations of economic agents, which could impact the composition and level of activity and inflation.

In the short term, the main macroeconomic points to watch identified during this exercise concern the US economic policy outlook, given the elevated uncertainty about the nature, timing and scale of the measures planned by the new administration and also about whether these measures will be passed by Congress and implemented. An increase in US customs tariffs and retaliation measures by trade partners would have a dampening effect on global trade and activity.

In Europe, the economic effects of Brexit look to be limited at this stage, though downside risks to UK growth remain considerable in the medium term. Most emerging countries have improved their external positions, strengthening their resilience with financing conditions likely to tighten in connection with higher US interest rates.

Despite an improving economic situation, France continues to implement an excessive deficit procedure, and the structural efforts that have been announced fall short of the targets set by the Stability and Growth Pact (SGP).³ This leaves little room for fiscal manoeuvre.

The main risk to the French economy and the stability of the French financial system is that of an excessive increase in euro area interest rates reflecting a sudden loss of confidence owing to the impaired fiscal and financial situation of certain countries.

³ The European Union's Stability and Growth Pact (SGP) is a set of rules governing coordination of the fiscal policies of EU countries. It seeks to promote sound public finances and comprises two arms, namely a preventive arm to ensure that EU countries conduct sustainable fiscal policies, and a corrective arm, which deals with the measures to be taken by countries if their government debt or deficit is deemed excessive. The excessive deficit procedure provided for in Article 126 of the Treaty on the Functioning of the European Union underpins the corrective arm of the EU SGP.

1. IMPACT OF THE US PRESIDENTIAL ELECTION AND BREXIT

a. What to expect from the new US administration?

Recent months have brought a flurry of economic stimulus announcements from the United States, including investments in infrastructure, income tax cuts, replacement of the current corporate tax system with a destination-based cash flow tax (DBCFT) and, more recently, a cut in the corporate income tax rate from 35% to 15%. The timeliness of the fiscal stimulus, which estimates put at between 0.5% and 2% of GDP a year in 2018 and 2019, may be questionable given that America's economy appears to be growing at close to potential.⁴ The proposed stimulus comprises several components, the most controversial of which is a destination-based or border adjustment tax (BAT), although it stands little chance of being implemented quickly. The BAT reform is intended to correct a number of anomalies in the US tax system, linked notably to the fact that taxation is based on companies' global profits, with American multinationals being taxed in the United States on their foreign profits (less tax charges in the country where they are operating) at the moment when the money is repatriated.⁵ From a US point of view, a BAT would take away incentives for tax evasion by US multinationals (e.g. manipulating transfer prices or moving production activities abroad for tax purposes), at the expense of foreign countries, whose tax base would shrink.

It is important to stress that in theory, according to proponents of this reform, the BAT will not impact trade balances, owing to offsetting dollar appreciation once the mechanism comes into effect. But this adjustment could be imperfect insofar as: (i) the dollar, as a reserve currency, is affected by factors other than the US trade balance, (ii) the reform could modify savings and investment behaviour in other countries, and (iii) the dollar is already relatively high compared to its fundamentals. Furthermore, it is worth noting that many observers judge the BAT to be incompatible with World Trade Organization (WTO) rules.

Based on our estimates, a fiscal stimulus could prove beneficial to the United States, even if the gains would be limited at this point in the cycle, with a GDP gap of close to zero, while the inflationary risks are significant. The effects on the country's main partners may be ambiguous, particularly if the United States introduces a DBCFT, which would have an adverse impact on trade.

As regards the corporate tax cut, effects on US growth are likely to be moderate because of weak multipliers.⁶ Considerable uncertainty remains over the measures that will actually be implemented given the internal disagreements within the Republican majority.

b. Persistent uncertainty surrounding Brexit, even if the short-term effects of the referendum have been limited

On 29 March 2017, the UK Prime Minister Theresa May officially invoked Article 50 of the Treaty on European Union, triggering the procedure to take the United Kingdom out of the Union, nine months after the country voted in favour of Brexit. The effects of the referendum, on both the British economy and that of its main partners, seem to have been limited until now, with most of the adjustment being made through substantial sterling depreciation, which has helped to keep the economy competitive in the short run. The main difficulties, however, probably still lie ahead, with considerable uncertainty still surrounding the result and length of the negotiations. A transition

⁴ Although some evidence of slack persists, including on the labour market.

⁵ Most rich countries apply a territorial taxation system for companies under which only income generated within the country's borders is subject to tax.

⁶ https://www.cbo.gov/sites/default/files/114th-congress-2015-2016/workingpaper/49925-FiscalMultiplier_1.pdf

period now looks likely and will itself clearly be the subject of intense discussions, but its content and duration currently remain unspecified.

This is causing mounting uncertainty, which has been further exacerbated after the general elections on 8 June resulted in a hung parliament. The economic literature suggests that this uncertainty will affect the economy with a lag and could have persistent effects depending on the nature of the shock, particularly in the event of an interaction with a negative financial shock:

- **In the very short term, an almost immediate impact has been plainly evident on financial markets**, with spillover effects affecting the equity markets of the United Kingdom's main partners,⁷ as well as sterling depreciation. The effects of the pound's slide now appear to be feeding through to inflation, in a setting of decelerating wage growth and a low savings rate, heralding downside adjustments to consumer spending in the near term.
- **In the medium term, Brexit could lead to a confidence-sapping increase in uncertainty**, persistent sterling depreciation and increased financing costs (via risk premia), even before the material effects (higher tariffs) are actually put in place.
- **In the longer term, reduced flows of capital, trade and people** between the United Kingdom and the European Union (EU) and the rest of the world may act as a drag on potential growth.

2. RISKS FOR EMERGING COUNTRIES

a. The economic situation is showing signs of stabilising

After cooling for five years, economic growth in emerging countries as a whole stabilised overall in 2016 at 4.1% according to the International Monetary Fund (IMF). Despite the decline in potential growth facing many emerging countries, a cyclical recovery appeared to be taking shape at the beginning of 2017 as commodity prices rebounded. While emerging countries as a whole remain a key source of growth for the global economy, their situations and trajectories vary widely. Activity remains vigorous in China, which saw 6.9% growth in Q1 2017 on a year-on-year basis, largely reflecting fiscal stimulus measures. With 7% GDP growth year on year in Q4 2016 after 7.4% in Q3, India is still the fastest-expanding G20 economy, despite the temporary negative effects expected from the demonetisation measures introduced in late 2016. Russia offered further signs of the stabilisation that began in H2 2016, recording a 0.3% expansion in Q4 2016 after a 0.4% contraction in Q3, in connection with the recovery in oil prices and more steady inflation.

Conversely, Brazil experienced a pronounced recession in 2016, with the economy shrinking by 3.6% on an average annual basis after 3.8% in 2015, amid waning confidence among economic agents. The economic situation also remains delicate in South Africa and a number of low-income countries. After narrowing in 2010-2015, the growth gap between emerging and advanced economies was unchanged.

⁷ "The impact of Brexit-related shocks on global asset prices", Marek Raczek, Mo Wazzi and Wen Yan, in *Bank Underground* <https://bankunderground.co.uk/2017/04/19/the-impact-of-brexit-related-shocks-on-global-asset-prices/>

Following the financial turbulence of November 2016 in the aftermath of the US elections, **financial conditions in most emerging economies stabilised in early 2017**, as credit spreads contracted, stockmarket indices headed higher and currencies either stabilised or appreciated, with the exception of the Turkish lira, the Malaysian ringgit and the Indonesian rupiah. Credit growth slowed in 2016, particularly in Brazil, India and Russia, but accelerated in China, which remains vulnerable because of growing interconnectedness between banks and the increasingly powerful non-banking sector.

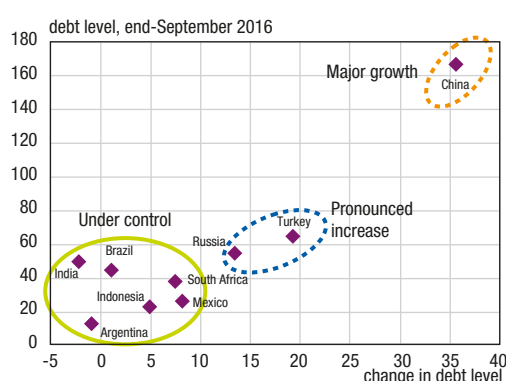
After bottoming out in 2015, **net capital flows towards emerging countries recovered somewhat in 2016**, while remaining in negative territory, with a cumulative negative total of USD 177 billion in the first three quarters of 2016, compared with a negative USD 490 billion for 2015 as a whole. The recent trend is attributable to capital outflows from China and Russia, which amounted to USD 304 billion for the first three quarters of 2016. When China and Russia are stripped out, other emerging economies continued to report net inflows totalling USD 127 billion for the first three quarters of 2016. In the final quarter of 2016, the US elections were followed by a sharp drop in investments in funds specialising in emerging economies, before a rebound in early 2017.

b. But risks persist amid high uncertainty over US economic policy

A more pronounced fiscal stimulus supporting activity in the United States or China and a stronger recovery in commodity prices would improve the growth outlook for emerging countries. But risks to emerging economies remain significant and include (i) renewed protectionism; (ii) sharper-than-expected tightening of financing conditions and increased risk premia against a backdrop of weak corporate balance sheets in some countries, higher US interest rates and dollar appreciation; (iii) political and geopolitical risks; and (iv) a bigger slowdown for the Chinese economy.

Chart 2

Debt of non-financial companies: level (% of GDP)
and percentage point change since end-2012



Source: BIS, to end-September 2016.

Thus, while macroeconomic fundamentals may be improving, signs of fragility persist, and the debt levels of non-financial companies in particular are rising in several major emerging countries (Chart 2), including China, but also Turkey and Russia, making them sensitive to changes in credit conditions. In China especially, the increase in debt is being chiefly supported by the lightly supervised shadow banking sector, which is valued at 80% of GDP. This is driving economic growth but also the formation of bubbles in such areas as real estate, bonds and bitcoin. These sources of vulnerability, which could have consequences for global financial stability, need to be monitored, particularly in China, whose authorities must steer a course between maintaining credit-supported growth and financial stability. Box 1 summarises the external vulnerabilities to which emerging countries are exposed.

Box 1

External vulnerability of emerging countries: a mix of cheer and caution

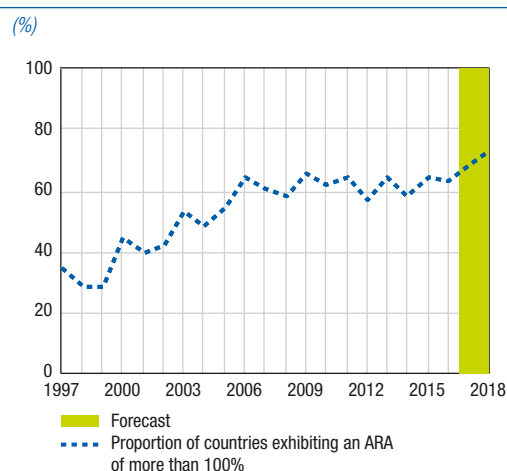
The different indicators tracking the external vulnerability of emerging countries call for caution.

On the one hand, the proportion of countries reporting an adequate level of reserves, i.e. above 100% as measured by the IMF's Assessing Reserve Adequacy (ARA) metric,¹ has increased considerably since the end of the 1990s (Chart A). Access to international markets has also improved, with a larger share of external debt denominated in domestic currencies and a smaller share of debt maturing in less than one year (Chart B).² After remaining unchanged since 2008, the share of debt denominated in domestic currencies appeared to begin declining in 2015.³

On the other hand, median primary and current account balances are now showing deficits and are at more concerning levels than those seen during the surplus periods of the 2000s. The IMF is even forecasting the median deficit to increase for the sample considered here (Chart C). **Meanwhile, primary deficits would considerably curtail the fiscal room to manoeuvre afforded to emerging countries in the event of a negative shock (Chart D).**

Chart A

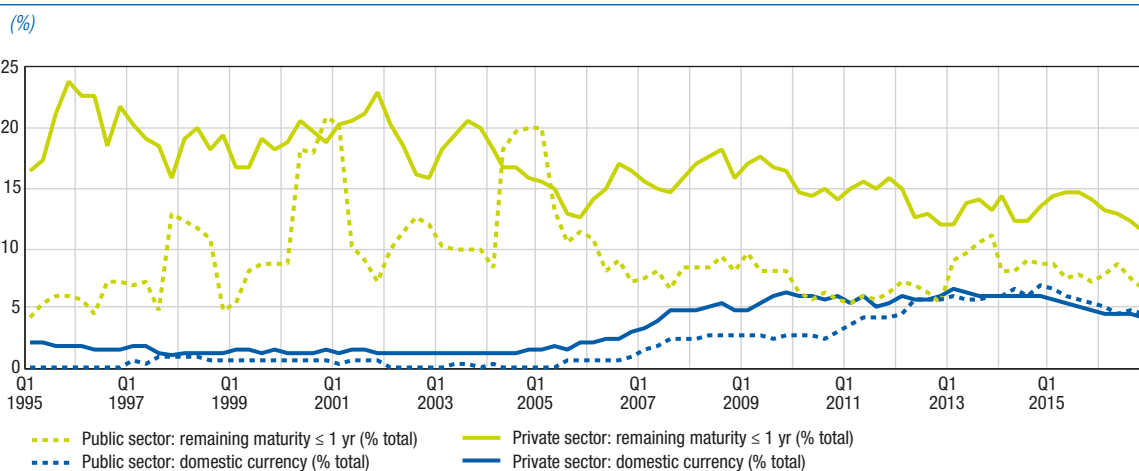
"Adequate" level of international reserves



Sources: International Monetary Fund, Banque de France calculations.

Chart B

Profile of debt issued on international markets (weighted average)



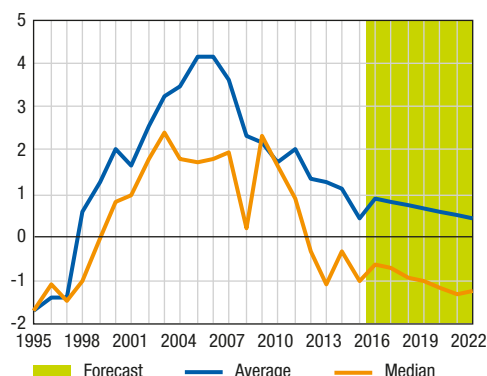
Sources: BIS, Banque de France calculations.

- 1 Chart A shows all countries for which data were available to calculate the ARA (20 in 1997 and 51 in 2016). The ARA metric calculated by the IMF is used to assess a given country's level of reserves as a function of a series of indicators, including exports, money supply (M2), short-term external debt and other external liabilities. International reserves are divided by a weighted sum of these indicators, with weightings determined by the exchange rate regime. The metric is adjusted here for capital controls where relevant (which reduces the weight of the money supply). For more details, see <http://www.imf.org/external/np/spr/ara/>
- 2 In Charts B to D, 20 countries are considered: Argentina, Brazil, China, Egypt, India, Indonesia, Iran, Malaysia, Mexico, Nigeria, Pakistan, 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.
- 3 The development of local currency bond markets is however positive for emerging countries as an alternative to financing denominated in foreign currencies, particularly when it comes to funding investments.

Chart C

Current account balances

(% of GDP)

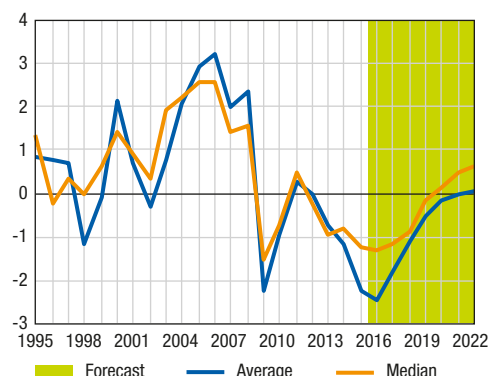


Sources: International Monetary Fund, Banque de France calculations.

Chart D

Primary balances

(% of GDP)



Sources: International Monetary Fund, Banque de France calculations.

Continued dollar appreciation is one of the major risks for emerging economies, with potential negative effects in terms of tighter financial conditions (approximately 95% of their external debt is denominated in dollars), higher risk premia and adverse impacts on capital flows. The domestic financial conditions of emerging countries thus depend heavily on global financial conditions, at a time when the monetary policies pursued by advanced countries have generated considerable volatility in capital flows in recent years. In this setting, it is vital for emerging countries to have safety nets that will help to protect them against serious economic and financial crises.

French banks look to be only mildly exposed to the risks emanating from emerging countries, since the corresponding exposures account for a small share of their overall international exposures.

3. RISKS RESULTING FROM MACROECONOMIC CONDITIONS IN EUROPE

The central scenario reflects improving macroeconomic conditions in Europe and France amid an upswing in the financial cycle

- **Growth came in below expectations in 2016 but should increase gradually in 2017**

French GDP growth contracted slightly in 2016 to 1.1% (Table 2 and Chart 3) as pro-domestic demand factors were partly neutralised by the heavily negative contribution from external trade. On an average annual basis, GDP growth is expected to increase gradually to at least 1.4% in 2017, then 1.6% in 2018 and 2019, exceeding the potential growth rate and thus causing the output gap to narrow. Even so, the economic growth rate in France is set to remain below that of the euro area⁸ (1.9% in 2017, 1.8% in 2018 and 1.7% in 2019). This projection is based on technical assumptions and quarterly accounts to 16 May 2017.

The projection does not take account of France's economic policy stance and reforms following the elections, or changes in the expectations of economic agents, which could impact the composition and level of activity and inflation. According to forecasts,

⁸ See detailed forecasts at: https://publications.banque-france.fr/sites/default/files/medias/documents/bpme_06_2017_fr.pdf

household purchasing power, which was strong in 2016 after oil prices went down, is set to wane. The pick-up in energy inflation will be only gradually offset by renewed growth in earned income. Accordingly, household consumption is expected to cool slightly, especially in 2017.

- **While the economic upturn is supportive of business investment, the low rate environment is sustaining conditions that facilitate public and private sector debt, whose risks need to be measured**

Business investment should continue to be supported by increasing economic activity and low interest rates, even though debt levels are high (see section 4 below). The growth rate is however expected to be slower than in 2016, which featured a heavy impact from the temporary measure to allow increased business write-downs on certain capital goods that was phased out in April 2017. In spite of the slowdown, the business investment rate is forecast to overtake its previous 2008 peak in 2018, after already recovering markedly since 2013. Household investment should continue to benefit from several temporary factors in 2017, including zero-interest loans, the Pinel buy-to-let scheme and low borrowing rates, which account for the strong growth in debt discussed in section 5. After the weak levels seen in recent

Table 2

Summary of projections for France (annual % growth rate*)					
	2016 (30/05) wda	2016 (28/04) wda	2017	2018	2019
HICP	0.3	0.3	1.2	1.2	1.4
HICP excluding food and energy	0.6	0.6	0.6	1.2	1.4
GDP deflator	0.4	0.8	0.9	1.1	1.3
Real GDP	1.1	1.1	1.4	1.6	1.6
Contributions (in GDP percentage points)**:					
Domestic demand excl. changes in inventories	2.0	1.9	1.6	1.5	1.5
Net exports	-0.8	-0.7	-0.5	0.1	0.1
Changes in inventories	-0.1	-0.1	0.3	-0.1	0.0
Household consumption	2.1	1.8	1.3	1.5	1.5
Government consumption	1.2	1.4	1.1	1.0	1.1
Total investment	2.7	2.7	2.6	2.1	2.0
Government investment	-0.2	-0.7	1.4	1.9	2.1
Household investment	2.4	2.1	3.2	1.2	0.4
Business investment (NFCs-FCs-IEs)	3.6	3.8	2.6	2.5	2.6
Exports	1.9	1.2	3.3	5.1	4.2
Imports	4.2	3.5	4.8	4.3	3.8
Household real gross disposable income	1.8	1.9	1.1	1.6	1.7
ILO unemployment rate (France and overseas territories, % of labour force)	10.1	10.1	9.7	9.6	9.3

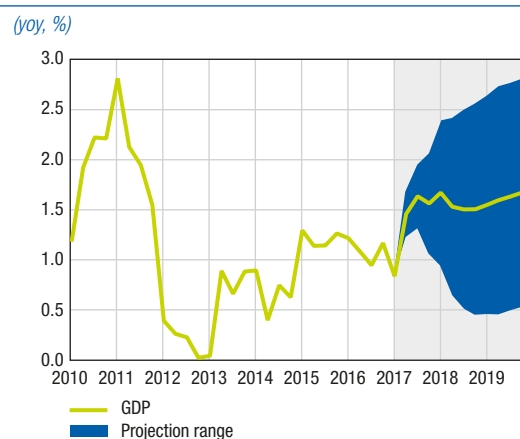
* Annual growth rate unless stated otherwise.

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

Sources: INSEE for 2016 and Q1 2017, published on 28/04 and 30/05, Banque de France projections shaded in blue.

Chart 3

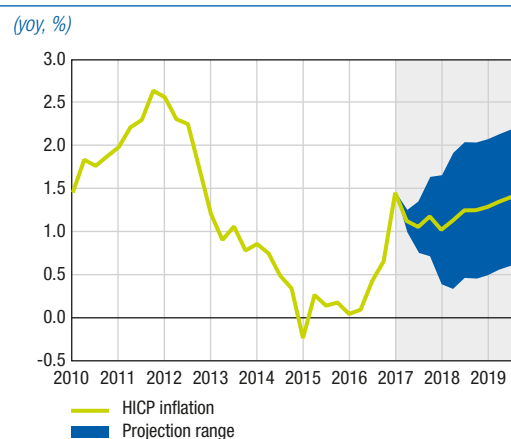
Projection range for real GDP growth



Sources: INSEE for 2000-2017Q1, Banque de France projections.

Chart 4

Projection range for HICP inflation



Sources: INSEE for 2000-2017Q1, Banque de France projections.

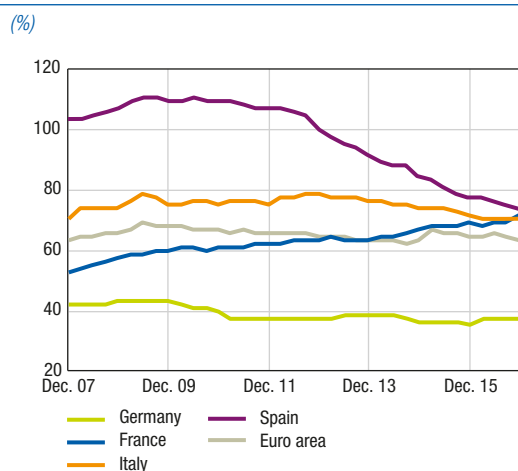
years, **inflation measured by the harmonised index of consumer prices (HICP) is expected to pick up** from 0.3% in 2016 (Table 2 and Chart 4) to 1.2% on an average annual basis in 2017, pushed up by the energy component. After holding steady in 2018, inflation will rise again in 2019, driven upwards by other components (inflation excluding food and energy linked to the gradual acceleration of nominal wages). **The improvement in public finances must be continued**, at a time when long rates are heading upwards in the wake of monetary normalisation by the US Federal Reserve (Fed) and higher inflation and growth are expected in Europe. After reaching 3.4% of GDP in 2016, the government deficit could remain just off the 3.0% threshold in 2017, at 3.1% of GDP. The ratio of government spending (excluding tax credits) to GDP is expected to contract by 0.2 of a percentage point (pp): after a less well contained increase in government spending in 2016 compared with 2014 and 2015, spending moderation will be continued in 2017 according to the initial budget act, but largely because of a reduced debt burden. The structural primary adjustment – excluding debt charges – calculated using the European Commission's methodology, should be zero.

4. RISKS LINKED TO THE DEBT OF NON-FINANCIAL COMPANIES

a. The debt of French non-financial companies continues to rise but average leverage remains largely under control

Chart 5

NFC consolidated debt as a ratio of GDP (nominal value)



Source: Banque de France, national accounts data.

The consolidated debt of non-financial companies (NFCs) is made up of two main elements:⁹ (i) debt securities and (ii) loans from financial institutions. **In 2016, French NFC debt comprising these two elements continued to grow at a sustained pace (6%), once again outpacing the rate elsewhere in the euro area.** The increase in the NFC debt ratio since end-2007 in France contrasts with the stability or decline observed in other major euro area countries, which are engaged in a deleveraging process. In terms of levels, the debt-to-GDP ratio of French NFCs (net of intragroup transactions) stood at 71.3%¹⁰ in late 2016. This was higher than the euro area average (63.5%), below the ratio of Spain, close to that of Italy, and well above the ratio recorded by Germany (Chart 5).

French NFC debt has increased by almost 20 points of GDP since 2007. Much of the growth is attributable to large companies, which continue to prefer market financing. Although growth in

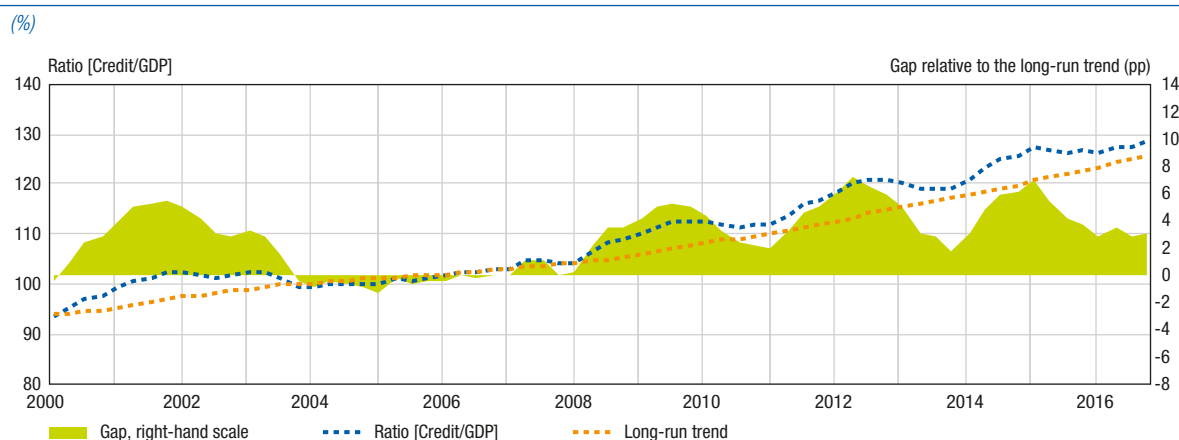
bank loans remained sustained over the period, at 4.5% in 2016, debt securities showed much faster growth, recording 7.3% in 2015 and 2016. Outstanding debt securities issued by NFCs account for 37.5% of total NFC debt, and the share is much higher in the case of very large corporate groups, standing at 60% for bond financing alone (see Box 2 on the debt dynamics of large French industrial and commercial groups). This points to wide differences in terms of access to market financing according to firm size.

⁹ A third component – “other credits” – essentially comprises intragroup loans that are only counted in non-consolidated debt. Trade credits are excluded for two reasons. First, their amount is known with a lag. Second, these transactions generally appear on the asset and liability sides of the same sector, so including them would lead the debt ratio to be overestimated.

¹⁰ The Banque de France performs a full consolidation in its Stat Info report on the debt of non-financial agents. This consists essentially, for French data, in subtracting intragroup transactions in France and globally. Since this granularity is not available for other countries' data, consolidation is approached by subtracting outstanding loans recorded under NFC assets from outstanding loans recorded under NFC liabilities.

Chart 6

Credit-to-GDP ratio, trend and gap for NFCs

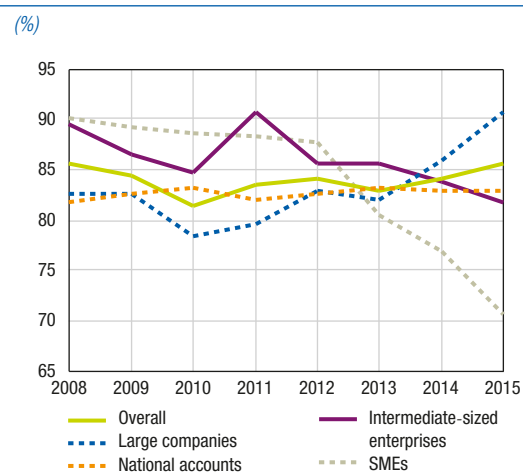


Source: Banque de France, national accounts data.

Note: the scope of debt used here comprises debt securities (at market value), bank loans and other loans.

Chart 7

Gross debt-to-equity ratio

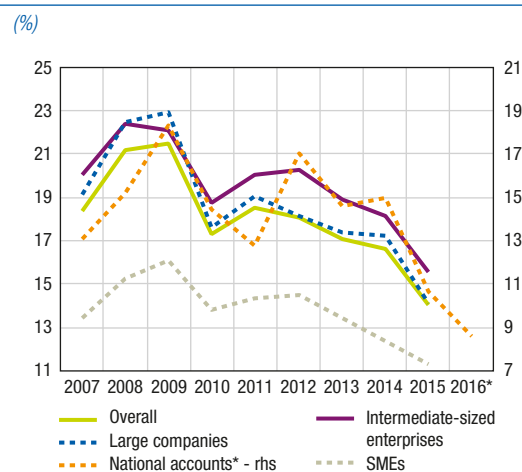


Sources: Banque de France, company data (legal units).

Note: In national accounts data, financial assets and liabilities are measured at market value; equity is obtained from the balance of financial assets – liabilities + shares.

Chart 8

Financial charges divided by gross operating surplus



Sources: Banque de France; INSEE.

* Balance of interest paid less received before recognition of FISIM¹, divided by gross operating surplus.

¹ Financial intermediation services indirectly measured (FISIM) capture the share of services provided by financial intermediaries that is not billed to customers. The national accounts thus consider a portion of the interest charges on bank loans to companies as intermediate consumption rather than paid interest.

Sustained growth in the debt ratio of NFCs kept the gap between the NFC credit-to-GDP ratio¹¹ and its long-run trend broadly stable in 2016 at around three percentage points (Chart 6).¹² The gap has narrowed since 2015, but its high level speaks of continued strong growth in the stock of debt relative to GDP growth.

¹¹ Ratio calculated without global debt consolidation: the scope of debt used here comprises debt securities (at market value), bank loans and other loans.

¹² The credit-to-GDP gap for the NFC sector is measured as the percentage point gap between the credit-to-GDP ratio and its long-run trend. The trend is measured using a Hodrick- Prescott filter with a lambda parameter set to 400,000, which corresponds to a cycle of around 30 years. The statistical filter and calibration of the lambda parameter were proposed by the Basel Committee and taken up by the ESRB in its guidelines. The filter is calculated in "real time", i.e. at each date, and the trend value (and hence also the gap value) is estimated solely using data available at each point in time. The long-run trend is estimated over the 1970-2016 period.

That being said, the overall stability of the debt-to-equity ratio (i.e. the leverage ratio) shows that French companies generally have their debt under control. **The increase in the debt level since 2007 has not caused the leverage ratio to climb higher because equity has seen comparable growth** (Chart 7). However, whereas the leverage ratio has declined steadily among small and mid-sized enterprises (SMEs) since 2011, reflecting the twin impacts of deleveraging and equity consolidation, it rose by seven percentage points among large companies between 2013 and 2015, reaching 90% at end-2015.¹³ At the same time, the cost of debt has fallen significantly since 2012, reflecting a decline in interest rates across all firm categories (Chart 8).

Box 2

Debt dynamics of large French industrial and commercial groups

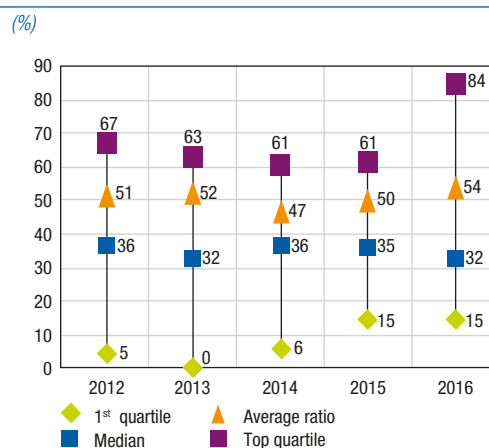
An analysis of individual data taken from the consolidated balance sheets of the 80 largest listed French industrial and commercial groups¹ sheds additional light on the debt picture obtained by analysing NFC parent company accounts (legal units) (Chart A). By conducting an individual analysis, it is possible to avoid the problem of double counting linked to intra-group debt, which can distort leverage ratios, and to gain a better idea of the overall solvency of the group beyond specific aspects linked to the internal organisation of their financing structures. However, consolidated data reflect the global situation of such groups, which often have a very international footprint, and not only their business in France. Large listed groups also have features that set them apart from other large companies and especially from smaller companies, notably in terms of the financial resources that they can draw on. Even so, there are real benefits to examining them insofar as their weight in the French economy directly influences average NFC debt ratios, and the risk of concentration of bank exposures towards these counterparties represents a financial stability issue.

The average net debt ratio² of France's large listed groups rose in 2016, up four points compared with 2015 to reach 54%, reflecting a 9.2% increase in gross financial debt. The

increase in net debt was driven in particular by groups whose leverage ratios were already high (top quartile). Large French groups continued to take advantage of favourable market conditions to borrow and restructure debt, and displayed a pronounced appetite for the bond market, which remains their preferred source of financing and now accounts for a record high of almost 60% of the financial debt of large groups. **These firms kept growth in their financial debt under control, however,** because

Chart A

Net financial debt¹ divided by equity of French large listed groups² (distribution and average ratio)



Sources: Financial reports of the 80 largest groups at 31 December 2016. Banque de France calculations, May 2017.

¹ Net financial debt is calculated using the following formula: gross financial debt – cash and cash equivalents at the close of the financial year.

² Companies with negative equity were withdrawn from the assessment (3 companies out of a sample of 80).

- 1 The study covers non-financial groups listed in Paris that published annual accounts at 31 December 2016 and that belong to Euronext compartment A (market capitalisation over EUR 1 billion). Companies in the study must have met the criteria for at least two years.
- 2 Net financial debt is calculated using the following formula: gross financial debt – cash and cash equivalents at the close of the financial year.

¹³ Aggregate leverage ratio measured using financial statements of legal units resident in France, broken out by company size as defined by the Economic Modernisation Act. Debt is not restated for double counting and accordingly does not take the effects of intragroup relations into account. It is understood here in gross terms, i.e. without deducting cash assets. This leverage ratio cannot therefore be compared directly with the ratio used in the box describing the situation of large French corporate groups.

cash and equity also increased, by 3.6% and 4.4% respectively. Overall, the increase in debt **does not mean that firms' financial structures are out of balance (the median net debt-to-equity ratio was stable over the period at just over 30%), but a watch does need to be kept on companies exhibiting the highest ratios (i.e. in the top quartile)**. These 20 or so groups account for over half of the total financial debt of the large listed groups in the sample. However, it would be hard to say that their high leverage ratio, which averages 150% in the top quartile, poses a risk to financial stability without first performing a more detailed analysis of their balance sheets, notably by considering specific features in terms of their financial structure relating to their sector of activity, business model, State ownership and so on.

However, there are two areas that do need to be monitored. First, financial investments are increasing sharply, with flows linked to acquisitions of non-current financial assets increasing by 30% relative to 2015.³ **Second, goodwill⁴** remains at a stable but relatively high level, at over one-half of the groups' equity (53%). This amount of goodwill could be a source of weakness in the event of a cyclical reversal because international financial reporting standards (IFRS) would require companies to recognise asset impairment on their balance sheets, which would automatically have a negative impact on their earnings and, ultimately, their equity.

3 This figure needs to be put into context because one-half of the increase was attributable to a single acquisition in the manufacturing and construction sector.

4 Goodwill measures the excess of the cost of acquisition of an asset over the value of its expected future profits, measured by discounting forecast cash flows generated by the asset. IFRS require companies to test goodwill for impairment at the end of each financial year, by updating forecasts to reflect changes in a series of indicators, some of which may be external to the firm.

b Why do companies take on debt?

At the macroeconomic level, the debt dynamics of French NFCs primarily reflects increased financing requirements, driven by financing for investments. The gross saving of French NFCs (as defined by the national accounts)¹⁴ is insufficient to cover their investments and changes in inventories. The investment rate of French NFCs, measured by the ratio of investment to value added, continued to rise in 2016 and had returned to its pre-crisis peak by Q4 2016, reaching 23.6% in nominal terms, or a 30-year high. The self-financing ratio meanwhile, which relates companies' saving to 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.

Debt is not used solely for the purpose of acquiring non-financial assets. It is also used to fund the purchase of financial assets, notably foreign direct investments (FDI, i.e. the acquisition of ownership stakes by French companies in foreign companies and cross-border treasury operations). In 2016, financing requirements stabilised relative to the previous year, while FDI-related financing requirements surged higher, climbing to EUR 32 billion year on year in December 2016, or the highest level seen since 2013.

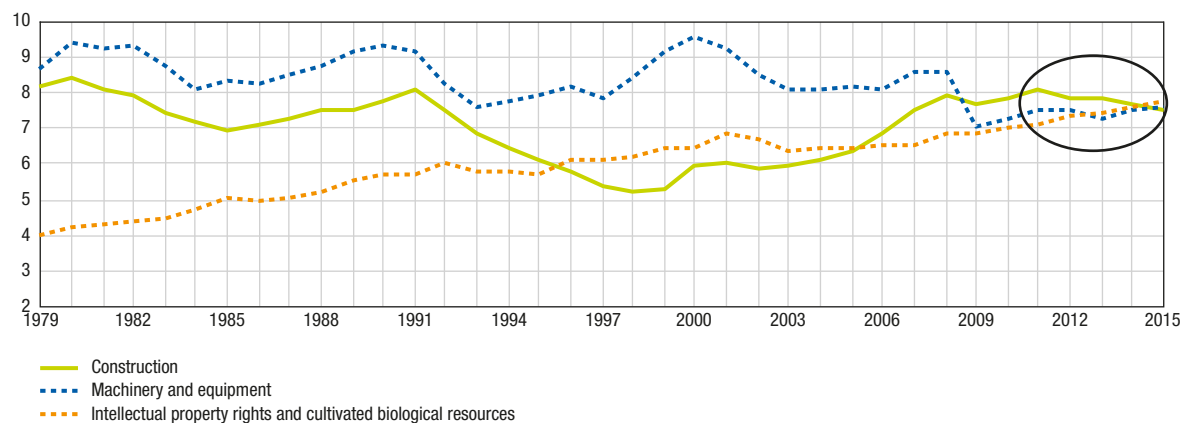
The national accounts break down NFC investments by asset type. This reveals more contrasting trends than can be seen by looking only at the overall investment rate, which has rebounded strongly since the 2009 crisis (Chart 9) and is not showing any alarming signs. **The rate of investment in machinery and equipment plummeted in 2009 but began climbing again thereafter and has continued to rise, albeit without returning to its pre-crisis level so far**. After standing at between 8% and 9% of added value in 2007 and 2008, business investment in machinery and equipment is now fluctuating between 7% and 8%. Investment in construction, which held up during the crisis, has been falling since end-2013 and is no longer the driving force in investment dynamics. **Investment in intellectual property rights, meanwhile, has risen steadily, and its growth** was unaffected by the crisis. The temporary higher depreciation allowance

¹⁴ For NFCs, gross saving as defined by the national accounts is equal to gross disposable income, because NFCs do not have consumption expenditure.

Chart 9

NFC investment rate, by asset

(% of value added)



Source: INSEE.

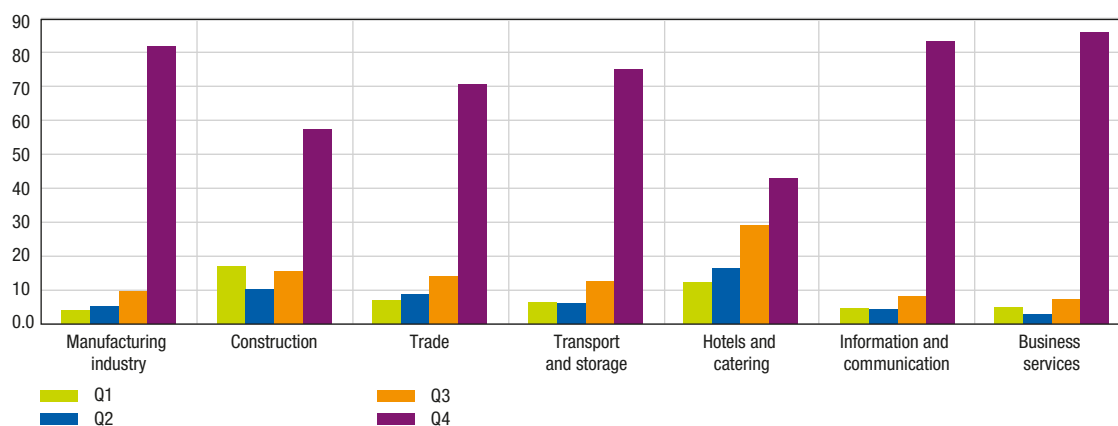
scheme encouraged NFCs to invest in productive investment, with this type of investment growing by 3.4% in 2015 and then 3.8% in 2016.¹⁵ However, this measure alone cannot explain recent business investment dynamics: in particular, investment in market services, which were not affected by the measure, has also risen in recent years, gaining 4.4% in 2015 and 4.6% in 2016.

In terms of the linkages between bank loans, investment and effective credit allocation, a recent Banque de France study showed that new loans issued by the banking sector in 2015 mainly went towards the most productive companies (legal units)¹⁶ (Chart 10).

Chart 10

Share of medium-term loans issued in 2015, by productivity quartile

(%)



Scope: The companies examined are those contained in the FIBEN database both at end-2014 and at end-2015, and whose outstanding medium/long-term credit increased between the two dates.

Note: the first quartile, shown here as Q1, includes the 25% least productive companies in that sector. The fourth quartile (Q4) contains the 25% most productive firms, while Q2 and Q3 are the two intermediate quartiles.

Sources: Authors' calculations based on data from the FIBEN database and the Banque de France's central credit register.

¹⁵ This fiscal measure, which was designed to support productive investment, allowed companies subject to the actual assessment taxation system to deduct 40% of amounts committed to "productive investment" (such as manufacturing or handling equipment) from their taxable income.

¹⁶ "The financial situation of companies in France in 2015", Benjamin Bureau, Matthias Bürker and Thibault Libert, Banque de France Quarterly Selection of Articles, No. 45 - Spring 2017, pp. 53-69.

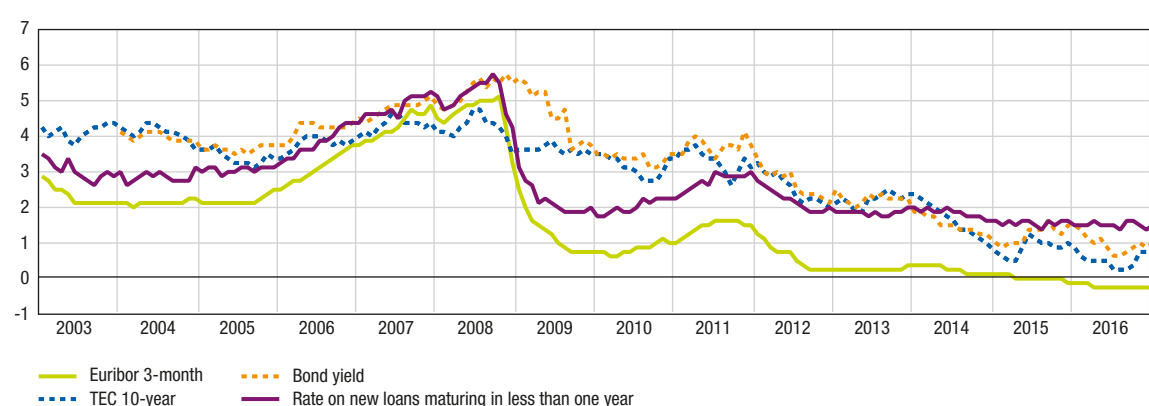
On average, the 25% most productive companies in a given sector were allocated 70.8% of the total volume of credit issued during 2015. **Bank loans are therefore primarily going towards companies that make the biggest contribution to economic growth.**

c. What are the risks for company debt ratios going forward?

The low interest rate environment has substantially reduced French NFCs' debt servicing costs (Chart 11), which fell to historically low levels in 2016 (Chart 8 above). **The main point of concern today involves the impact on their debt burden of a sudden increase in short and long-term interest rates.**

Chart 11

Rates on new loans by amount and term and market rates



Source: Banque de France.

Higher rates would mean a direct increase in floating rate debt, which accounts for 65% of all outstanding debt, and also push up the cost of fixed rate financing (refinancing risk).

To assess this risk, the **average impact of an increase in market rates** (short rate: Euribor 3-month; long rate: 10-year constant maturity (TEC) rate)¹⁷ **on interest rates for new bank loans and corporate bonds was econometrically estimated** over the 2006-2015 period, drawing among other things on disaggregated data collected as part of the Banque de France's cost of credit survey. These effects were estimated *ceteris paribus*, that is, assuming a constant debt structure (fixed vs floating debt) and without taking account of developments in demand for financing.¹⁸

The results of the estimate vary considerably depending on **the nature of the scenario of increase in market rates used:**

- an increase in short rates feeds through quickly (within a month) to the rates for large amount short-term loans, treasury loans and floating rate loans;
- an increase in the long rate (TEC 10-year) would have a greater impact on bond financing costs, with the effect on bank loans being felt exclusively on the long-term segment and concentrated on small-amount loans.

¹⁷ The 10-yr TEC rate shows the yield to maturity of a fictitious French government bond maturing in exactly ten years. It is obtained by interpolating yields on the secondary market for French government bonds with the closest maturities to exactly ten years.

¹⁸ Pass-through models may be used to calculate the impact of an increase in interest rates on business financing costs, distinguishing between rates on loans maturing in less than one year, rates on loans maturing in more than one year, and bond yields. The simulated effects are applied on a full-year basis: – In the case of loans, to outstanding floating rate loans to NFCs, to outstanding fixed rate loans to NFCs maturing in less than one year and to annual flows of new fixed rate loans to NFCs maturing in more than one year; – In the case of bonds, to the stock of floating rate euro denominated bonds issued by NFCs, maturing fixed rate bonds and short-term issues (initial term of less than one year).

The pass-through does not generally vary according to company size, sector or rating.

Ultimately, applying simple assumptions, a 100 bps increase in short-term interest rates would result in an increase over one year in NFCs' financial charges of about EUR 2.5 billion on a full-year basis. The effect would be magnified if accompanied by an equivalent increase in long-term interest rates, for a combined cost of over EUR 4.5 billion. **A scenario featuring more pronounced increases (100 bps for short rates, 200 bps for long rates) would see financial charges rise by EUR 6.5 billion, or approximately 1.8 points of gross operating surplus (EBITDA) at end-2016 (or 0.6 point of value added).**

5. RISKS LINKED TO REAL ESTATE AND HOUSEHOLD DEBT

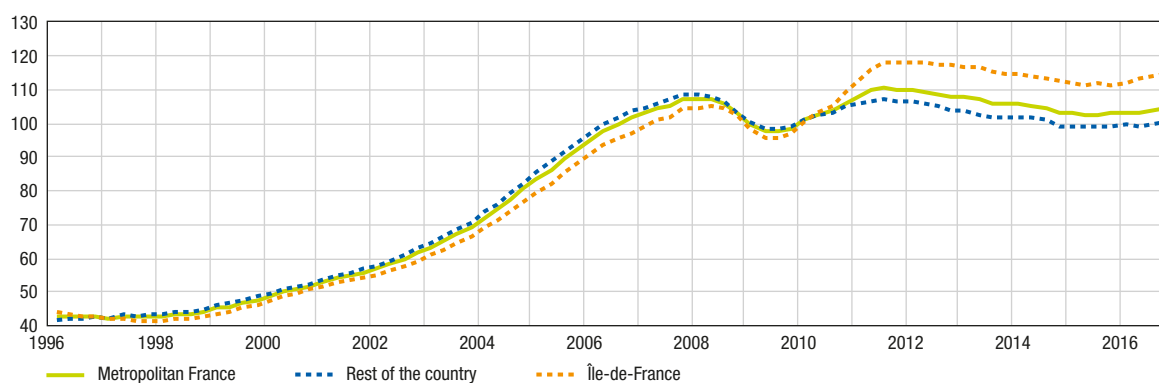
a. Recovery on the residential real estate market and increased household debt

• A vibrant residential real estate market

All the indicators point to a pronounced recovery in residential real estate in 2016. Insee's residential real estate price index reported a 1.7% year on year increase in Q4 2016, with a 3.1% rise over the same period in the Île-de-France region, which surrounds Paris (Chart 12). The recent turnaround has brought French residential real estate prices close to historical highs, especially in Île-de-France.

Chart 12

Existing homes price index – Q1 2010 = 100



Source: INSEE.

Higher prices have been accompanied by an upturn in the number of transactions and housing starts. In Q4 2016, the total number of housing starts was 8% higher year on year while the number of transactions in the existing homes segment was up by 5.6%.¹⁹

Against a backdrop of moderate economic growth, this vigorous performance was driven by favourable housing credit conditions for households, which boosted demand. The average lending rate was down by 77 bps year on year at the end of 2016, declining to 1.55%.²⁰ Moreover, France's housing policy provided active support for real estate activity and prices, notably through the expansion of zero-interest loans and the success of the Pinel buy-to-let scheme.

¹⁹ Source: Ministry for the Environment, Energy and the Sea.

²⁰ Source: Banque de France.

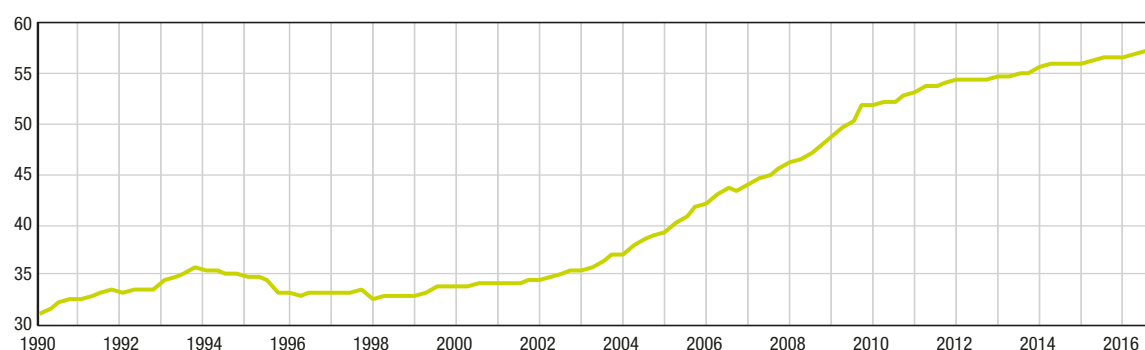
- **Household debt continues to grow**

Household debt climbed to EUR 1,275 billion in Q4 2016,²¹ or 57.4% of GDP, a level comparable to the euro area average (Chart 13). The household debt-to-GDP ratio continues to grow, but the pace has slackened considerably since 2010 compared with the 2000s. However, the simultaneous decline in interest rates over the same period has made it possible to keep the debt service-to-income ratio relatively stable.

Chart 13

Household debt-to-GDP ratio, France

(% of GDP)



Sources: Banque de France, INSEE; Banque de France calculations.

Since early 2015, household demand for home loans, as reported by the monthly bank survey on credit distribution, has been rising more or less steadily while lending criteria have remained stable overall, particularly because of competitive pressures.

The Banque de France's statistics on overindebtedness show that household defaults are never (or rarely) due to imprudent real estate loans. In 2016, the share of total outstanding real estate loans to households that were the subject of an overindebtedness case was around 0.3% (compared with 2% for consumer loans).

b. After a deterioration in 2016, there were mixed signals from indicators on the outlook for credit standards in early 2017

- **Indicators report contrasting recent developments, but delinquency levels are stable**

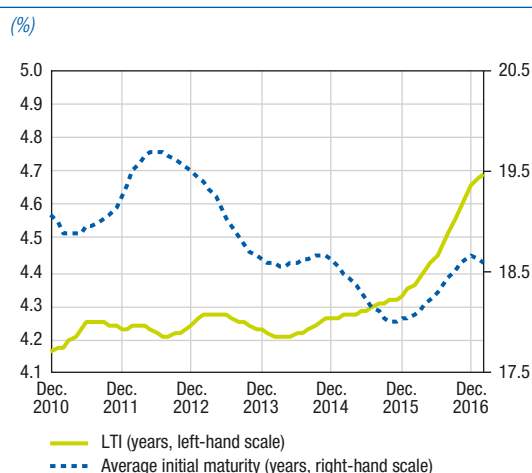
The average loan amount, which has been rising constantly since January 2013, reached EUR 155,000 in February 2017, up 5.1% compared with EUR 147,500 one year earlier.

After registering a sharp rise from November 2015 onwards, following an almost uninterrupted decline going back to mid-2012, average initial loan maturity (excluding bridge loans) began edging downwards in late 2016 to reach 18.61 years in February 2017 (Chart 14).

The debt service-to-income (DSTI) ratio followed a fairly similar path: after increasing by 26 bps between October 2015 and October 2016, it fell by 12 bps to 29.47% (Chart 15). In all, 22.1% of loans granted between March 2016 and February 2017 had DSTI ratios of over 35%, a proportion that was below the levels reached between end-2010 and end-2011.

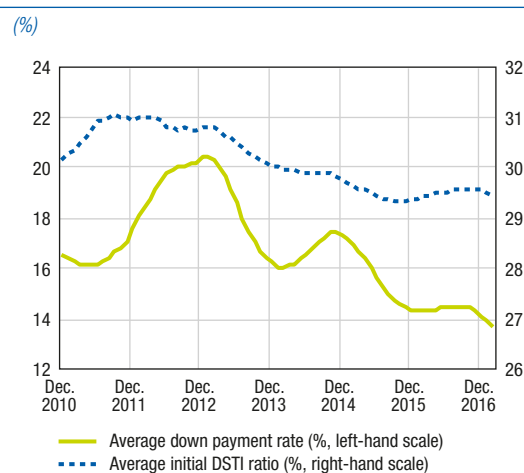
²¹ Source: national accounts, Banque de France.

Chart 14

Average initial maturity and loan to income ratio
(LTI, 12-month average, in years)

Source: ACPR, monthly monitoring of new residential lending.

Chart 15

Average DSTI ratio and average down payment rate
(12-month average)

Source: ACPR, monthly monitoring of new residential lending.

Besides a small uptick in early 2016, the personal down payment rate has been declining since late 2012 and hit 13.65% in February 2017 (Chart 15). In particular, this reflects an increase in the share of borrowers receiving loans with no down payment, which surged by 153 bps between July 2016 and February 2017 to 12.36%.

After previously rising rapidly, the loan-to-income (LTI) ratio, which measures the number of years of income required to repay a real estate loan, seems to have evened out: following a 0.36 of a year increase between October 2015 and December 2016, it has gone up by just 0.02 of a year since (Chart 14). Movements in the LTI continue to reflect the impact of the increase in average loan size and the slight rise in interest rates, which are only partly offset by the decline in the DSTI ratio and initial maturity. Overall, borrowers have not carried so much debt since December 2010.

In this setting, delinquency rates on home loans remain stable: among the main French banks, the proportion of outstanding home loans in default²² in France remains strictly around 2% and the quarterly default rate is showing no signs of a tangible increase.

• Focus on the most vulnerable households

Several points may be gleaned from European comparisons based on an analysis of data from the Household Finance and Consumption Survey and the Insee's Asset Survey carried out in 2014-2015. Specifically, French households look to be slightly more indebted than those of the euro area as a whole (DSTI and loan-to-value (LTV) ratios for their primary residences). Based on these data, the risk associated with household debt increased between the two rounds of the survey, without appearing to constitute a concern at this stage. The most at-risk loans, which comprise debt held by households with an overall DSTI ratio of more than 35%, income below EUR 27,500 and total net assets of less than EUR 100,000, account for 2.65% of total real estate loans, 5.97% of total consumer loans and 2.85% of households' total debt and amounted to EUR 34 billion in gross outstanding bank loans before provisions (provisions on doubtful loans to resident households are around EUR 20 billion). The pick-up on the real estate market since 2015 and the simultaneous decline in certain credit standards (LTV and LTI) do however mean that a watch should be kept on the soundness of new borrowers.

²² Loans to non-SME retail clients secured by a real estate asset.

c. Limited risks for household solvency

An increase in interest rates could adversely impact household solvency through one direct channel and two indirect channels. In practice, these effects look to be limited in France.

- **The direct effect of an increase in interest rates would be very limited owing to widespread use of fixed rate loans**

The vast majority of outstanding real estate loans are at fixed rates (90.6% in 2016). Moreover, three-quarters of floating rate loans have a mechanism to cap changes in monthly payments. An increase in interest rates would therefore have a very limited impact on repayments of existing loans.

- **Indirect effect through a fall in real estate prices: no wealth effect**

An increase in interest rates could cause real estate prices to decline or at least grow at a more muted pace. According to work by the Banque de France, a 100 bps interest rate shock at the start of the year in France would cause real estate prices to decline by 0.3% per quarter over a horizon of one year (two years respectively).²³ The change in the value of real estate assets would have a mild impact on the resources of home-owning households, and hence on their repayment capacity, for two reasons:

- the lack of remortgaging mechanisms, where borrowers take out new mortgages secured against the additional home equity of properties that have already been pledged as collateral;
- changes in rents are decorrelated in the short term from the market value of rented assets (rents are linked to inflation through the rent benchmark index).

Moreover, if real estate prices go down across the board, a decrease in unrealised wealth in connection with a real estate asset will be detrimental to the asset owner only if he sells and does not put the proceeds towards buying another real estate asset (instead allocating the money to general consumption or a non-real estate investment), because on average this asset will suffer the same rate of impairment.

- **Indirect effect via a macroeconomic downturn**

An increase in interest rates is likely to cause economic conditions to worsen and increase potential default situations (unemployment, loss of income, etc.). However, households that have taken out real estate loans generally have job or income security, which is required under lending criteria, well above that of the average French person. In addition, unemployment fluctuations chiefly concern people aged under 25 and over 50, which are two groups that are less concerned by real estate lending. The sharp upturn in unemployment since the 2008 crisis has moreover not materially affected default rates for real estate loans. The pick-up on the real estate market since 2015 and the simultaneous easing of certain lending criteria (LTV and LTI) do however mean that a watch should be kept on the soundness of new borrowers.

²³ Estimates derived from a time-varying BVAR model described in detail in "Insight from a Time-Varying VAR Model with Stochastic Volatility of the French Housing and Credit Markets", Avouyi-Dovi, Labonne, Lecat and Ray (2017), Banque de France Working Paper No. 620.

Box 3

Results of stress tests on commercial real estate conducted under the supervision of France's *Haut Conseil de stabilité financière* (HCSF – High Council for Financial Stability)¹

At the request of the HCSF, Banque de France staff prepared a set of stress test scenarios to assess the impact on the financial sector of a fall in commercial real estate (CRE) prices. Three two-year scenarios were created:

- Scenario 1: prices fall by 15% across the French CRE market (excluding offices in the Île-de-France region) and by 30% for offices in Île-de-France, in connection with the adjustment required to restore rental yields (reversion to long-run average);
- Scenario 2: prices fall by 30% for offices in Île-de-France, replicating the decline observed during the real estate crisis in the early 1990s in France;
- Scenario 3: prices fall by 60% for offices in Île-de-France, i.e. the most severe scenario.

The results of the stress tests conducted by the *Autorité de contrôle prudentiel et de résolution* (ACPR) and the *Autorité des marchés financiers* (AMF) suggest that the effects of the three scenarios would be limited at the level of the overall financial sector and would not have a systemic impact:

- In the banking sector, the overall impact on firm solvency would be extremely weak, consistent with the small share of CRE exposure on bank balance sheets: the average impact on the CET1 ratio of the most severe scenario would be limited to between 2 and 3 bps of risk-weighted assets;
- In the insurance sector, just one entity would have a slight equity shortfall (ratio of 99.3%) in the most severe scenario (before the stress test, the same entity had the weakest SCR of the sample as well as larger than average exposure to real estate);
- In the case of open end funds (real estate collective investment undertakings – OPCIs), the stress tests, which added an assumption of substantial outflows to the price scenarios, suggested that the funds' capacity to cope with redemption requests was not in question, but found that liquidity requirements (minimum ratio) could become restrictive for certain funds during several months. Some of these funds might also cease to comply with diversification requirements (ratio for maximum holdings of physical real estate/unlisted assets).

¹ See the [press release](#) and [detailed memo](#) published by the HCSF.

3 Risks for financial institutions

The risks facing the French financial sector are broadly unchanged from those reported in the December 2016 assessment. The banking and insurance sectors alike continue to demonstrate their resilience.

1. RISKS FOR THE FRENCH BANKING SECTOR

French banks are adequately capitalised, and their liquidity ratios comply comfortably with the regulatory requirements. They maintained their overall profitability in 2016 in part thanks to strong non-interest income and the ongoing decline in the cost of risk. Market sentiment towards the French banking sector improved substantially, helped in particular by the steepening of the yield curve since the end of the previous year. With the brighter growth outlook for France and Europe, the negative impact of macroeconomic factors on bank profitability is expected to diminish. However, a sudden increase in rates could also have a detrimental impact depending on the individual quality of interest rate risk management systems. Moreover, the structural challenges still facing French banks require them to keep up their ongoing efforts to adjust business models. Among other things, they are working to improve operating efficiency, tap into digital banking opportunities, and improve systems to guard against cyberattacks. Work on strengthening the regulatory framework continued, both within Europe, particularly through the legislative proposal to revise the Capital Requirements Regulation (CRR) and the Capital Requirements Directive (CRD IV), and internationally, even if completion of the Basel III reforms had to be postponed owing to a lack of consensus.

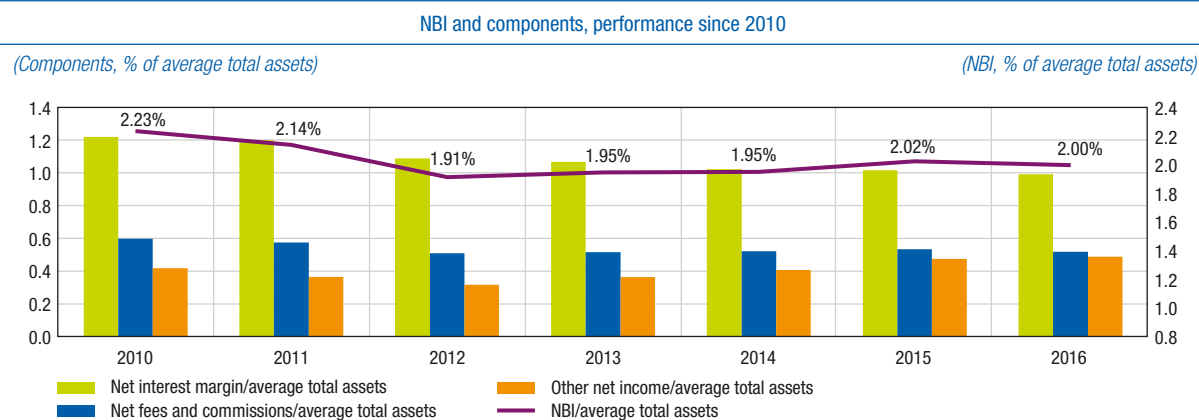
a. Impact of the low interest rate environment on bank profitability

- Overall, banks are maintaining their profitability despite the impact of the low interest rate environment on net interest margins

At end-2016, French banks continued to post solid performances despite the many challenges facing them in a persistent low interest rate environment.

As at end-2016, net banking income (NBI)²⁴ was down just 0.3% compared with 2015. As a share of average total assets, which increased by 1% in 2016, NBI stood at 2%, or 2 bps less than in 2015 (Chart 16). However, NBI components displayed contrasting trends. Net interest margin was down 3 bps at 0.99%, consistent with the trend in

Chart 16



²⁴ NBI in 2016 also reflects non-recurring effects, including a positive impact from the sale of Visa Europe shares and a negative impact from asset/liability management transactions conducted as part of the reorganisation of the Crédit Agricole group.

place since 2010, when it was 1.22%. This decline was offset by strong growth for other net income in a wide spectrum of activities (trading activities, insurance, leasing, etc.), which gained 2 bps.

The cumulative pre-tax income of France's six largest banks was close to the amount recorded in 2015, at EUR 37.6 billion (down 0.9%). The adverse impact of lower NBI and higher management expenses (the cost-to-income ratio climbed by 1.2%) was offset by the decrease in the cost of risk, which shrank markedly by 20% compared with 2015, across all banks and business areas. French banks also benefitted from a more clement economic environment, including in international retail banking and energy-related sectors, as well as from smaller litigation provisions.

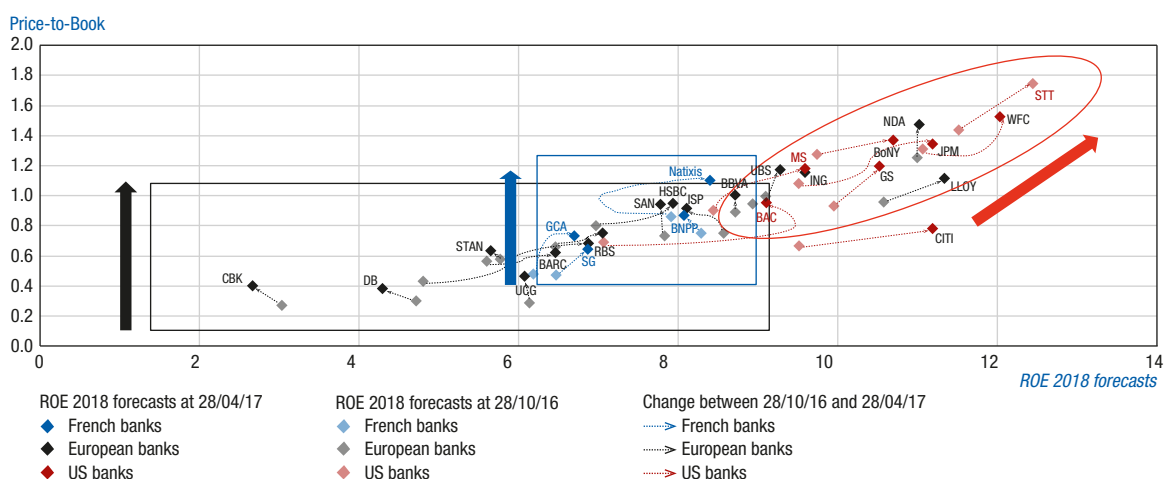
Q1 2017 earnings are consistent with the trends observed in 2016. Net income at the four largest banks was EUR 5.3 billion in Q1 2017, up 18% on Q1 2016. An analysis by business line shows that a substantial proportion of these strong performances can be attributed to a rebound in corporate and investment banking, which benefitted from a more supportive financial environment than in Q1 2016, and to vigorous activity in insurance/asset management.

• Risk indicators and profit guidance from market analysts

Although profitability was stable in France in 2016, bank valuations have been rising since autumn 2016 on firming market sentiment driven in part by brighter economic prospects. International comparisons reveal that US banks' price-to-book ratios²⁵ are increasing and climbing above 1, reflecting the improved performances expected by market analysts (shift towards the north-east quadrant in Chart 17). By contrast, the increase in price-to-book ratios among European and French banks seems decorrelated

Chart 17

Price-to-book ratios and ROE 2018 market forecasts



Sources: Bloomberg, Banque de France calculations.

Note: French and European banks: BBVA: Banco Bilbao Vizcaya Argentaria, SA; SAN: Banco Santander SA; BARC: Barclays Plc; BNPP: BNP Paribas SA; CBK: Commerzbank AG; GCA: Crédit Agricole Group; CS: Credit Suisse Group AG; DB: Deutsche Bank AG; HSBC: HSBC Holdings Plc; ING: ING Bank NV; ISP: Intesa Sanpaolo SpA; LLOY: Lloyds Banking Group Plc; NDA: Nordea Bank AB; RBS: Royal Bank of Scotland Group Plc; SG: Société Générale SA; STAN: Standard Chartered Plc; UBS: UBS AG; UCG: UniCredit SpA. US banks: BAC: Bank of America Corporation; BoNY: Bank of New York; JPM: JP Morgan; MS: Morgan Stanley; STT: State Street Corporation; WFC: Wells Fargo & Co.

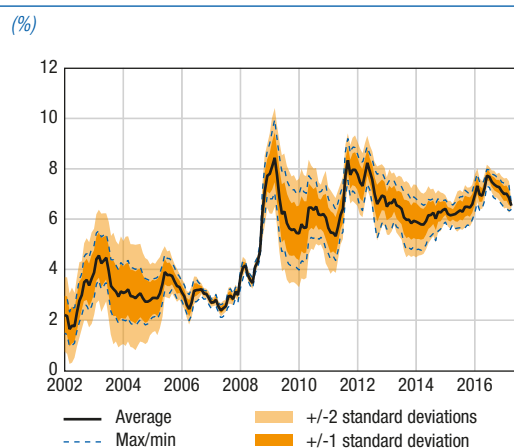
²⁵ Coefficient measuring the relationship between the market value of equity (stockmarket capitalisation) and the book value, obtained from the share price of bank *i*/net assets of bank *i*. A bank whose ratio is above one is generally a growth stock whose net assets are expected by investors to grow.

with return on equity (ROE) forecasts for 2018, since ROE is not expected to change (vertical shift in Chart 17).

Risk premia have been decreasing since 2016 in connection with the rise in the risk-free rate, which is good for the banking sector and its ability to attract investors. Chart 18 shows how risk premia have come down on the French market (estimates average 6.6% in April 2017, down one percentage point relative to summer 2016). These premia are in line with those of the European market but higher than those in the United States (4% in April 2017). The US/Europe spread reflects the larger increase in the risk-free rate in the United States towards the end of the period. Note that a potential source of vulnerability lies in the fact that the decline in the risk premium in France may not be reflected in banks' cost of equity (COE²⁶ or the return required by investors – Chart 19), which has been steady since 2012 because of a simultaneous increase in sensitivity to non-diversifiable risk (increase in beta coefficient in the COE formula described in the footnote below). Accordingly, in April 2017, the COE of French banks was still 10%, or 3 pp above the pre-crisis average, and with a larger range of uncertainty²⁷ (Chart 19). The gap²⁸ separating the return required by investors (COE) and banks' ROE narrowed thanks to improved earnings for banks, but remains negative. This persistent spread between banks' COE and ROE suggests that

Chart 18

Market risk premium, France

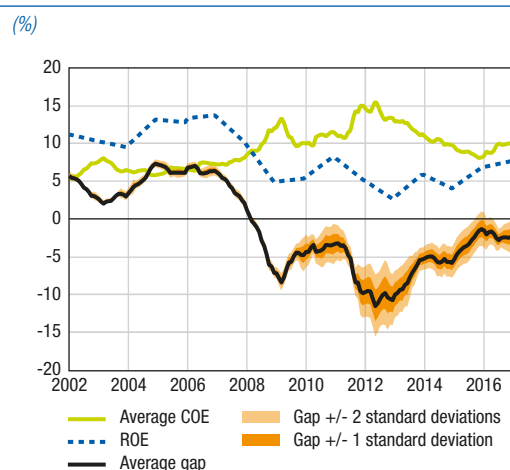


Sources: Bloomberg, Banque de France calculations.

Note: Average from 45 risk premia calculated using different assumptions: forecast dividend growth rate at 18 months, 2 years and 3 years, GDP at 3, 4 and 5 years, risk-free interest rate, horizon varying from 3 to 10 years and Eurostoxx 600 dividend yield.
+/- 1 (2) standard deviation(s) = Premium in a range of sensitivity to parameters of +/- 1 (2) standard deviation(s).

Chart 19

Average COE and ROE of French banks



Sources: Bloomberg, Banque de France calculations.

Note: Average COE of French banks/Average of 130 estimates / COE +/- 1 (2) standard deviation(s) = COE in a range of sensitivity to parameters of +/- 1 (2) standard deviation(s).
Average gap = Gap between the average estimated COE and average ROE of French banks.

- ²⁶ Since the cost of equity 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 to systemic, i.e. non-diversifiable, risk), we use the Capital Asset Pricing Model (CAPM) formula to calculate the return required by investors for individual banks (COE): $E[r_i, t] = r_{ft} + \beta_{i,t} * pM_t$ where r_{ft} is the risk-free rate at time t , $\beta_{i,t}$ is the beta of bank i at time t , $pM_t = k_t - r_{ft}$ 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 COE. We therefore equate $E[r_i, t]$ to bank i 's COE at time t .
- ²⁷ Measurement uncertainty for the COE has increased since the crisis because the estimation range, which measures the dispersal of estimates around the mean, has widened to four points since 2009, giving a COE of between 8% and 12% in 2017.
- ²⁸ Indicator used to gain information about banks' cost of financing 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 timing 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.

investors want French banks to keep on adjusting their business models to respond to the structural and cyclical challenges facing them.

b. Risks linked to a swift rise in interest rates

After a protracted period of low interest rates, the question arises as to how banks might be affected if rates go up, and especially if they rise swiftly and substantially (noting that French government ten-year bond yields climbed by around 72 bps between 30 September 2016 and 12 May 2017).

The exposure of French banks to the risk of an increase in interest rates may be considered to be potentially significant in theory, insofar as French banks hold a high proportion of fixed rate assets in their banking books (weighted average of 74.8% for the six largest French banks).²⁹

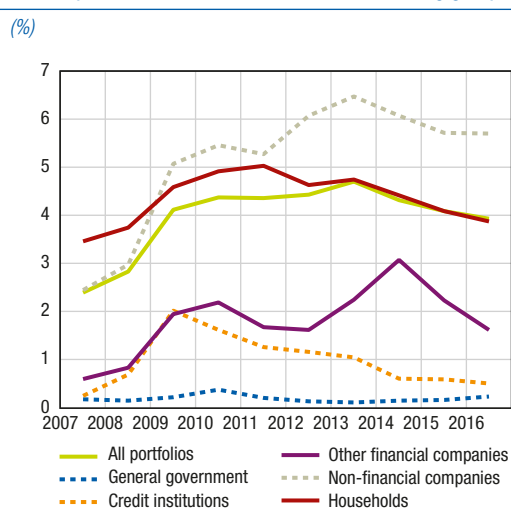
Within the framework of their asset/liability management activities, banks assess their interest rate risk and set up hedging strategies to reduce or remove these risks. These hedges are based not on contractual constraints but on economic constraints derived from run-off models (i.e. run-off assumptions for balance sheet items). There is therefore a risk that hedges could be under- or oversized if actual run-off deviates from the model's predictions. In the end, while the interest rate risk is always hedged by banks, the effectiveness of these macro-hedges depends on underlying assumptions about the speed with which assets and liabilities are run off.

At the end of February 2017, to identify interest rate risk in the banking book (IRRBB), the European Central Bank (ECB) began an analysis of the impact of different interest rate curve scenarios on the IRRBB Basel metrics.³⁰ The results of this analysis will be discussed in the context of the 2017 Supervisory Review and Evaluation Process (SREP) of the Single Supervisory Mechanism.

c. Quality of exposures and lending criteria

Chart 20

Impaired asset ratios of French main banking groups



Source: ACPR.

The quality of the assets of French banks continued to improve in H2 2016, notably owing to lower ratios of impaired assets in the business sector. As regards the ongoing relaxing of lending criteria, a watch must be kept to ensure that they are not eased excessively. In terms of international risks, French banks increased their international exposures by 4% between end-2015 and end-2016, but there was no evidence of excessive growth in exposures to a particular zone.

• Asset quality

The ratio of impaired assets declined between 2015 and 2016, falling from 4.09% to 3.93% (Chart 20), as the increase in impaired assets (1%) was outpaced by growth in total credits (4.9%). The fall in the ratio primarily reflects the decline observed for households (21 bps to 3.88%) and financial companies (62 bps to 1.62%). General government's ratio of impaired assets edged up 7 bps to 0.24%, while that of non-financial companies was steady at 5.71%.

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

30 ECB Banking Supervision conducts sensitivity analysis focused on effects of interest rate changes, see press release, 28 February 2017.

French banks' impaired asset ratios are well below those of their European competitors, as shown by Chart 21: the non-performing loan (NPL) ratio of France's main banking groups was stable at 4% at end-2016, sitting between the first quartile and the median of the sample.

• Changing lending criteria

The latest figures published by the Banque de France highlight an increase in outstanding loans. Outstanding home loans to individuals accelerated in March, growing by 5.4%, or the highest rate in the last five years. In terms of new monthly home lending, loan renegotiations recently showed a decline, accounting for 52% of new loans in March, down from 60% in February.

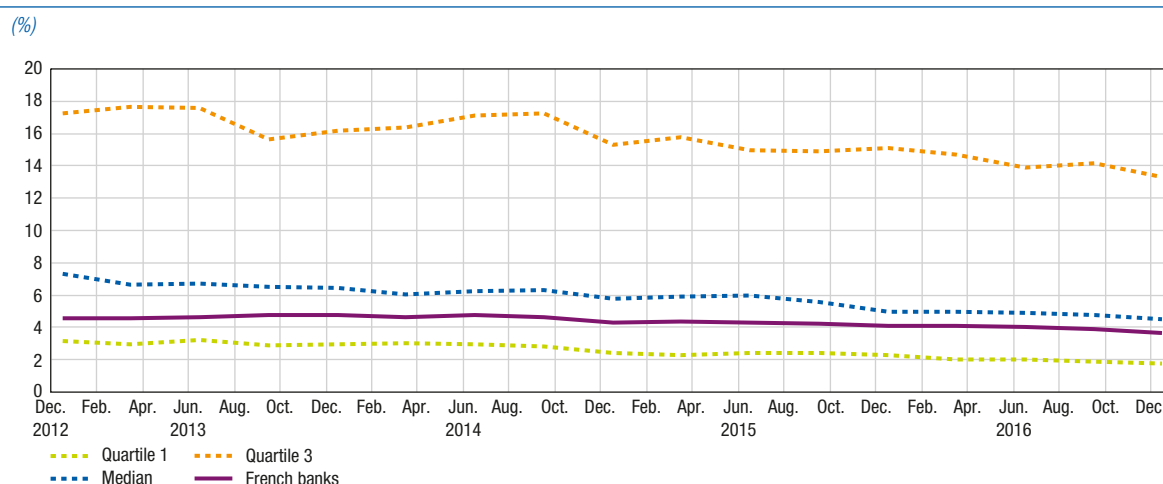
According to the ECB's April 2017 survey of bank credit distribution, the strong loan growth is attributable to two mutually-supportive factors:

- on the supply side, faced with a fresh squeeze on margins for standard loans and severe ongoing competitive pressures, banks continued to slightly ease their criteria for business loans in net terms and for home loans to households. Banks also cited other factors, such as the impact of the ECB's non-standard monetary policy measures and the negative rate on the ECB's deposit facility, as reasons for the strong loan growth;
- on the demand side, while the low general level of interest rates supported demand across all lending categories, favourable prospects on the residential real estate market drove demand for home loans, while inventories and working capital were important positive contributors to demand for business loans in Q1 2017.

While continued easing of lending criteria enabled banks to make up for the decline in margins with a volume effect, it might lead them to extend credit to households or companies whose creditworthiness could deteriorate rapidly in a stressed scenario.

Chart 21

NPL ratio of French banks compared with a sample of European banks



Source: ACPR.

d. Difficulties affecting banking systems in Europe and risks of contagion

Despite a reduction over 2016, the direct exposure of French banks to the Italian banking sector remains a source of vulnerability.

At 31 December 2016, Italy was still the number-two country in terms of the international exposures of the five largest French banks, with an outstanding amount of EUR 289.5 billion. The exposure of the five largest French banks to Italian credit institutions is also on the decline and stood at EUR 21.9 billion at 31 December 2016, for a year-on-year fall of 2%.

Within Europe, the situation remains problematic for some institutions, whose high levels of non-performing loans (NPLs)³¹ represent one of the main concerns for the stability of the European banking sector in the months ahead. Despite recent advances in lowering NPL levels, not enough progress has been made, and structural obstacles to the resolution of NPLs persist.

- **A section of the European banking sector is struggling with structural challenges linked to non-resolution of issues relating to high NPL levels**

Some European countries (Cyprus, Greece, Portugal, Slovenia, Italy and Ireland) have made little headway in reducing NPL levels since last December. Although some countries with high levels did register a decline, NPLs still remain overly elevated relative to historical peaks. Resolving NPL problems will probably take time and necessitate a global strategy involving all stakeholders. A variety of European institutions with different approaches (micro and macroprudential) have set up working groups to come up with solutions for banking systems reporting high NPL levels. Box 4 reviews NPL levels in Europe and describes initiatives currently underway, particularly within the ECB, to address the issues.

Box 4

Euro area NPLs: situation and current initiatives

At end-2016, the average weighted NPL ratio was 5.1% in the EU and 5.4% in the euro area. Although the EU and euro area ratios remain on a downtrend, they are still over 5% and have not reverted to pre-crisis levels. A more granular analysis highlights substantial differences across member states. Six countries had an NPL ratio of more than 10% at end-2016 (Cyprus, Greece, Portugal, Slovenia, Italy, Ireland), with Cyprus and Greece reporting very high rates of around 45%. Coverage ratios were 40% for Cyprus and 48% for Greece.

High levels of NPLs within the euro area pose significant risks to financial stability, and their persistence sows doubt about the quality of Europe's banking sectors. Elevated NPL levels also have consequences for bank financing, as investors demand higher risk premia.

In Q2 2015, the ECB launched a number of initiatives to curb the NPL levels recorded by European banks, including targeted measures for the most severely affected institutions (implementation of NPL reduction plans, special ad hoc reporting arrangements to enable closer and more regular monitoring). On 20 March 2017 it published the final version of guidelines for tackling NPLs, which describe its expectations in terms of the organisation and governance

³¹ In general, a "non-performing loan" is considered to be any loan where it is probable that the institution will not receive some or all amounts owing under commitments made by the counterparty in accordance with the initial contractual provisions due to financial difficulties suffered by that counterparty. A harmonised definition of non-performing assets was provided by the European Banking Authority for reporting purposes. According to this definition, non-performing exposures are those that are either more than 90 days past due or if the debtor is assessed as unlikely to pay its credit obligations in full without realisation of collateral, regardless of the existence of any past-due amount. This is the definition used by the ECB.

of NPL management but also in terms of identifying, writing off and valuing non-performing loans. The ECB additionally plans to extend the analysis conducted in 2016 of the regulatory and legal factors that are supportive or non-supportive of effective NPL management to include all euro area countries.

Other European initiatives are underway aimed at identifying, monitoring and providing standardised responses to the problems posed by NPLs. Proposed solutions include improving the effectiveness of legal procedures to deal with debt recovery, business difficulties and personal insolvency, and developing secondary markets for NPLs.

e. Adjustments to business models

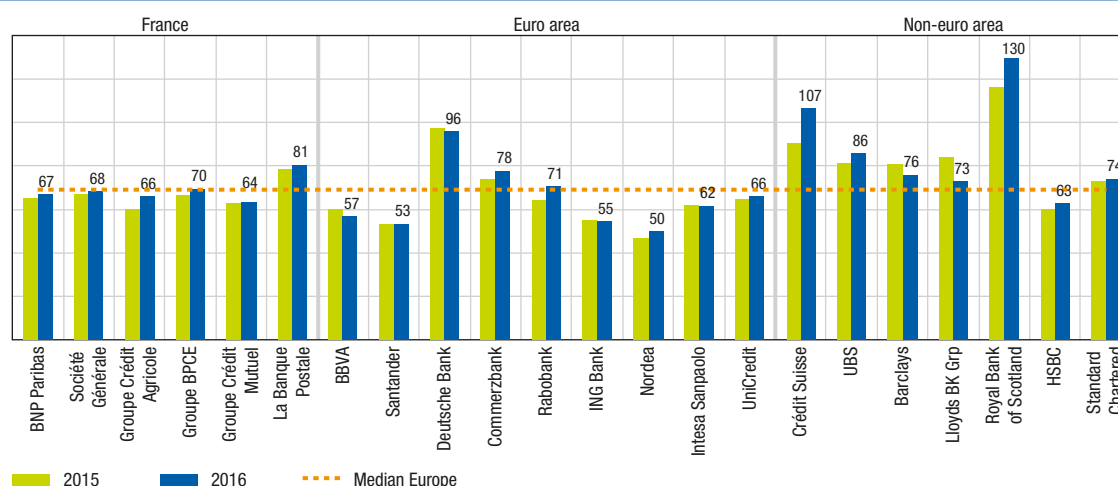
Given the severe constraints that they are currently under, French banks have already begun adjusting their business models.

• Cost cutting

The cost-to-income ratio of the main French banks increased slightly from 2015 to 2016 but remains on a par with the ratios of the banks' main European competitors: in 2016, the cost-to-income ratios of all the main French banks except LBP were close to or below the median for Europe's large banks (69.1%) (Chart 22). Ultimately, the cost-cutting policies pursued by the large banks since 2012, although hampered by transitional costs and new charges required to implement the programmes, should have a positive impact on cost-to-income ratios.

Chart 22

Cost-to-income ratios of European banks in 2015/2016



Source: ACPR.

• Outsourcing

French banks are making extensive and increasing use of outsourcing, which may be described as an organisational approach whereby one or more functions essential to the bank's activity are delegated to outside service providers. Outsourcing is principally intended to lower costs (or improve the reliability of certain specialised activities) at a time when banks' profitability is under growing pressure because of competition and the low interest rate environment. It also entails risks, such as the risk of loss of control over outsourced services or the risk of concentration in relation to a single provider whose problems could have systemic consequences for the French banking system.

Box 5

Outsourcing of French banks' IT functions

Information technology (IT), broadly defined as all the technical and human resources devoted to information systems, is one of the main activities that banks outsource to external service providers. In 2016, the outsourced portion of the IT budget accounted for 35% of the total IT budgets of French banks. However, banks prefer to outsource to providers from within their group, with intragroup service delivery accounting for more than 50% of the value of such contracts. French banks also use cloud computing services, although cloud solutions still make up a marginal share (2%) of IT budgets. More generally, it is noteworthy that outsourcing of banking activities is on the rise, reflecting efforts to save money, notably in the low interest rate environment. This trend goes beyond IT alone and concerns payment activities and back office services, including for market transactions. One example of this is how some banks are pooling financial services.

While outsourcing offers banks many benefits in terms of cost reduction or improving reliability in certain specialised activities, it also entails risks, which are increased in a situation where the bank is reliant on certain specific service providers. To address this, the ACPR, makes sure that activities requiring authorisation are not transferred to unauthorised entities, which restricts the scope of outsourcing to technical support services rather than to banking transactions. Furthermore, the banking supervisor makes sure that banks maintain effective control over services that they outsource, for example by having the right to audit their service providers. The ACPR is also attentive to a bank's risk of concentration vis-à-vis a service provider to which it is linked to the point that it cannot freely discontinue the service or increase the expected service level. In France, the top-ten IT providers receive about one-third of total IT spending by French banks. The real level of risk depends however at individual level on the number of critical functions outsourced to a given provider.

The share of all the outsourcing contracts signed by the large banks devoted to critical activities, such as business continuity, information system security or all IT processes, is elevated in France. However, this is not a source of increased vulnerability insofar as the particular nature of some of these activities, such as business continuity or IS security, means that a bank that does not outsource such activities would not necessarily mitigate the risk. The challenge for banks lies not so much in the scope of activities covered as in having control of the legal clauses that enable them to manage their outsourcing policy, both overall and at the level of each contract.

f. The digital revolution and cyber-risk

• Impact of the digital revolution on business models

While some new players such as neobanks and digital native banks present themselves as direct rivals to established institutions and have adopted equivalent business models (ranging from customer relations to product design and risk management), **most new FinTech players focus on a narrow range of banking goods and services**, such as payments, credit in the case of alternative platforms, investment services and asset management in the case of robo-advisors.

However, the digital revolution is putting banks' commercial relations and distribution models under pressure through: (i) a downturn in branch traffic; (ii) swift increases in other channels (email, phone, internet, mobile applications); and (iii) the opening-up of payment data to aggregators.

The digital revolution represents an opportunity for French banks to lower their substantial operating costs, which are a drag on profitability. But it also creates new risks or exacerbates existing risks, including: (i) operational risks (control of third-party providers, cyber-risks, use of public cloud computing solutions); (ii) strategic and workforce risks relating to the execution of digital strategies; (iii) compliance risk (data and consumer protection, anti-money laundering and counter terrorist financing).

• Increased risk of cyberattacks

The banking sector is highly exposed to exponential growth in cyberattacks chiefly through advanced persistent threat (APT), phishing, denial of service and ransomware attacks.

The banks' detection systems foil many attacks, but several major incidents in the recent period and extending beyond the financial sector show how these threats are evolving, growing more sophisticated, taking a variety of shapes, and potentially even posing a systemic risk, as illustrated by the WannaCry ransomware attack in mid-May 2017.

International and European authorities are currently leading numerous initiatives aimed at preventing and mitigating the impact of these risks.

g. Regulatory developments

Work on revising the international and European regulatory frameworks has continued since December 2016. In terms of international initiatives, efforts to finalise the last remaining components of the Basel III framework have stalled and regulatory uncertainty persists. The Basel Committee, meanwhile, is currently holding a consultation on proposals to revise the framework for global systemically important banks (G-SIBs). Within the European Union, a full revision of the CRR/CRD framework, which is intended to round out reforms implemented within the Union after the 2008 financial crisis, is also underway and poses no particular risk to the French banking sector.

Amid this uncertainty, banks continued to bolster their balance sheets, stepped up efforts to adapt to the new framework introduced by the European Bank Recovery and Resolution Directive (BRRD) and readied themselves for the new IFRS 9 accounting standard.

- **Improved bank solvency and liquidity**

French banks are perfectly in synch with the regulatory requirements in terms of solvency and liquidity. The increase in solvency ratios in H2 2016, which was slightly larger than in the previous half-year period, was essentially attributable to retaining earnings. The aggregate leverage ratio also improved thanks to a substantial increase in Tier 1 own funds and a slight contraction in the ratio's denominator. Liquidity ratios, especially the NSFR, continue to increase well above regulatory requirements. The aggregate NSFR shortfall, meanwhile, has contracted substantially since December 2015, pointing to efforts by banks to adjust their balance sheets well ahead of the 2018 deadline. French banks also integrated the new Total Loss-Absorbing Capacity (TLAC) requirements.

Box 6

Solvency and liquidity of French banks

The aggregate CET1 ratio of France's five main banking groups increased by 0.4 percentage point in H2 2016 to 13.22%. This growth, which was on a par with that of H1 2016 (0.35 pp), was essentially attributable to active retained earnings policy, since the level of RWAs increased by 1% (compared with 0.7% in H1 2016). The overall aggregate ratio rose by 0.6 percentage point to 16.77%, chiefly reflecting an increase in issues of Tier 1 eligible super-subordinated securities and subordinated securities (EUR 4.4 billion), in addition to earnings retention.

At end-December 2016, the aggregate leverage ratio under fully loaded Basel III stood at 4.7%, up 0.2 pp compared with June 2016.

At 31 December 2016, the aggregate liquidity coverage ratio (LCR) for the sample of five banks came to 129.6%, unchanged during H2 2016.

The consolidated NSFR of the six largest French banks was 105.8%, up 3.5 pp on June 2016.

In the medium term, completion of the Basel III reforms and the ECB's review of internal models could still have an impact on banks' capital requirements. As regards internal models, the ECB has launched a targeted review (TRIM)³² of all the banks under its supervision. A major objective of TRIM is to reduce inconsistencies in internal models and unwarranted variability in risk-weighted assets (RWAs). The review is scheduled to be completed in 2019.

Box 7

Review of the Dodd-Frank Act (DFA), five years on

On 3 February 2017, US President Donald Trump signed a number of executive orders **to review the Dodd-Frank Act**. However, several factors may prevent a swift and comprehensive review:

- the Democratic minority in the Senate has the power to block such a move;
- it is hard to envisage major changes to financial regulations until the chairs of all five regulators (Fed, FDIC, Department of Treasury – including OCC, CFTC, SEC) have been replaced.

The DFA reform should be considered in the light of the Republicans' proposal to overhaul the financial system and relax requirements through the Financial CHOICE Act, which is currently under discussion in the House of Representatives.

Impact on international regulations

Given the widespread uncertainty concerning the implementation of financial regulation reforms in the United States and the deregulatory agenda that the Trump administration seems to be pursuing, there may appear to be limited value in continuing international negotiations, despite the vital nature of the reforms that have been undertaken. These reforms would become largely meaningless if the principle of level playing field at international level were not upheld.

Intermediate holding company

Among its various provisions relating to increased prudential requirements for systemically important institutions, DFA requires subsidiaries of foreign banks with total assets of USD 50 billion or more to set up an intermediate holding company (IHC). The IHC then becomes the sole lead institution in the United States, subject to supervision by US authorities. Currently, just three of the eight G-SIBs supervised within the framework of Europe's Single Supervisory Mechanism (SSM), including one French banking group (BNPP), have set up IHCs.

In response, in its draft BRRD/CRR/CRD IV reforms, the European Commission proposed introducing a requirement for subsidiaries of third country banks to set up an intermediate EU parent undertaking (IPU) where the banks in question: (i) are identified as non-European G-SIBs; (ii) or have at least two subsidiaries in the EU and total assets of more than EUR 30 billion (including branches).

Like the IHC, the IPU is intended to facilitate the supervision and resolution of third country entities in a jurisdiction. However, this new legal requirement could also be interpreted as a no-confidence measure toward home authorities and must not lead to less international cooperation as a result. Furthermore, work must be done to analyse and address any incompatibilities in terms of the organisation of activities (interaction with the Volcker rule in the United States, for example) and ensure the absence of level playing field issues in terms of prudential requirements for third country banks in Europe relative to what is imposed on third country banks in other jurisdictions.

³² The Targeted Review of Internal Models (TRIM) is a project to assess whether the internal models currently used by banks comply with regulatory requirements, and whether they are reliable and comparable.

• Resolution mechanisms

Since the FSB's final recommendation on TLAC was adopted in November 2015, it now has to be transposed into the European framework and articulated with the minimum requirement for own funds and eligible liabilities (MREL), which has been in force since 1 January 2016. The European Commission sent the European Parliament and the Council a report and a legislative proposal on this matter on 23 November 2016. The proposal has been the subject of trilogue discussions between the European Commission, Council and Parliament since early 2017 in the context of the package of reforms to the Capital Requirements Regulation (CRR), Capital Requirements Directive (CRD) and Bank Recovery and Resolution Directive (BRRD).

The main elements of the proposal are as follows:

TLAC is to be transposed into European law in the form of Pillar 1 MREL requirements with a level based on that of TLAC: from 1 January 2019, requirements will be set at 16% of RWAs and 6% of leverage ratio exposure and, from 2022, at 18% of RWAs and 6.75% of leverage ratio exposure.

The minimum requirement for own funds and eligible liabilities (MREL) comprises:

- for G-SIBs, a Pillar 1 requirement (TLAC) and a possible Pillar 2 requirement;
- for non-G-SIBs, a Pillar 2 requirement.

The requirement is supplemented, for all banks, by guidance determined on a case-by-case basis. Unlike with the requirement, however, non-compliance with the guidance does not entail consequences in terms of automatic restrictions on distributions.

Finally, the proposal to amend Article 108 of the BRRD on the harmonisation of the creditor hierarchy provides for the creation of a new class of non-preferred senior debt that would be eligible to meet TLAC/MREL requirements. The Commission rightly wants this proposal to be adopted quickly to ensure equal treatment within the EU and to enable banks to issue eligible debt. The adoption of this proposal will also make it possible to facilitate execution of bail-ins in cross-border settings and make it easier for G-SIBs to comply with TLAC subordination requirements. However, clarification is needed on the eligibility of these securities for ECB monetary policy operations, and any kind of retroactive effect for the reform on the existing stock of senior debt must be avoided.

• IFRS 9 and potential procyclical effects

In July 2014, the International Accounting Standards Board (IASB) completed IFRS 9, which was drawn up to address deficiencies in financial instrument accounting revealed during the crisis. Following its adoption by the European Parliament, it will come into effect on 1 January 2018.

The results of the first impact assessment of the transition to IFRS 9 for a sample of 50 European banks, including France's five main banking groups, launched by the European Banking Authority (EBA) in early 2016, found an average negative impact of 59 bps on the CET1 ratio, with French banks proving to be less affected on average (approximately 25 bps on average). A second exercise was begun at the end of 2016 to refine the results of the first assessment: EBA is expected to publish a report in summer 2017, which should confirm the relatively moderate impact on equity arising from the transition to IFRS 9, while shedding light on banks' readiness for the new standard. Note that this standard, which includes a substantial degree of judgement, may be applied in a non-uniform manner by European banks.

The model for provisioning against expected losses seeks to anticipate losses and make it possible to build stocks of provisions throughout the business cycle.

A point that requires particular attention from a financial stability perspective is the impact of using point-in-time data (not adjusted for the business cycle) to measure expected losses and credit risk provisions in IFRS 9. This methodology contrasts with the through-the-cycle approach used to estimate expected losses in prudential models and entails greater volatility in measures of expected losses. In a point-in-time approach, measures of counterparty default risk (which determine the amount of provisions) need to replicate the amplitude of cyclical movements, whereas a through-the-cycle approach seeks to eliminate the impact of these movements (the average level of default risk over the cycle needs to be considered at each accounting period end). IFRS 9 also promotes the principle of neutrality, which prohibits voluntarily setting aside reserves to cope with unforeseen circumstances, with banks required to show that provisions are proportionate to expected risks. This could make bank provisioning excessively reliant on the general consensus, creating the risk of amplifying the effects of business cycle conditions in banks' ex ante predictions (underestimating future losses in an upswing, overestimating them in a downswing).

Note also that at the European Parliament's request, the European Systemic Risk Board (ESRB) has undertaken work to assess the consequences of IFRS 9 for financial stability.

2. RISKS FOR INSURERS

The unprecedented low interest rate environment is eroding insurers' margins and returns, forcing them to rethink their traditional business models. Whether this environment continues or comes to an abrupt end, both scenarios represent a risk whose magnitude and consequences need to be anticipated as early as possible.

a. Insurers' resilience in a low interest rate environment³³

• Impact on profitability and the attractiveness of savings product returns

Insurers hold a substantial share of their investments in amortising bond securities, with amortising fixed rate bond investments, i.e. with a deterministic return, accounting for 68% of the investments of the top-15 life insurers at the end of 2013 and 64%

Table 3

Allocation at net book value of direct investments (excluding unit-linked investments) of France's top-15 life and mixed insurers

	End-2013	End-2014	End-2015
Share of fixed coupon securities governed by Article R. 343-9 of the Insurance Code (amortising assets with fixed coupons)	68%	65%	64%
Share of other securities governed by Article R. 343-9 of the Insurance Code (amortising assets chiefly with variable coupons)	6%	7%	6%
Share of securities governed by Article R. 343-10 of the Insurance Code (so-called "non-amortising assets", mainly equity type and similar assets, real estate)	26%	28%	29%

Source: ACPR.

³³ A more complete analysis of French life insurers in the low interest rate environment was published by the ACPR in May 2017: https://acpr.banque-france.fr/fileadmin/user_upload/acpr/publications/analyses-syntheses/201705_AS08_taux_bas.pdf (French only).

at the end of 2015 (Table 3). The downward trend in sovereign bond yields has thus directly impacted returns on their portfolios.³⁴ Accordingly, insurers have scaled back bond investments in recent years in favour of non-amortising assets (mainly equities, equity-like instruments and real estate), which offer potentially higher but more volatile revenues.

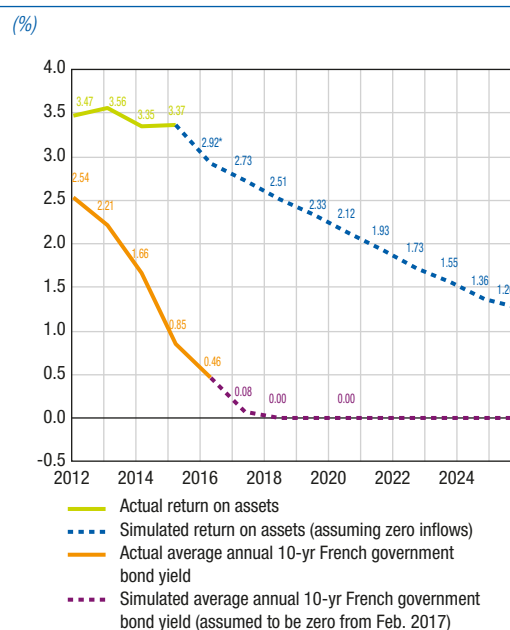
The ACPR conducted a forward-looking study on investment returns – excluding unit-linked contracts – for France’s top-15 life and mixed insurers. Using information contained in prudential filings, the study estimated the “deterministic” net financial income over the next decade from amortising fixed rate bond securities held as of 2015 year-end, and that will still be in the portfolio, at least in part, in the coming years, given their maturity dates and changes in net book value (making strong assumptions about the absence of a proven credit event affecting securities issuers and assuming that securities are held to maturity). The return on insurers’ assets was thus assessed assuming that insurers reinvest cash from maturing amortising fixed rate securities in ten-year zero coupon bonds at par.³⁵ Under these conditions, the return on assets would decline by approximately 20 bps per year until 2025, shrinking from 3.37% in 2015 to 1.26% in 2025 (Chart 23).

Dilution of the return on assets increases the risks incurred by insurers:

- **Risk of large-scale surrenders in the event of a sharp increase in interest rates:** this point is covered in detail in the following section;
- **Risk of financial losses for firms that guarantee high technical rates or whose immediate profit-sharing is too high** relative to the recurring return on their assets (Chart 24). An aggregate analysis of the French market conceals the substantial differences between individual institutions. Moreover, these (individual) differences themselves vary over time, slightly more significantly for the return on assets than for revaluation rates (Chart 25);
- **Cost-related risk** for firms whose loadings are insufficient to cover their expenses and that balance their results only through the share of financial income that they charge.

Chart 23

Projected return on assets of France’s top-15 life and mixed insurers through to 2025



Source: ACPR.

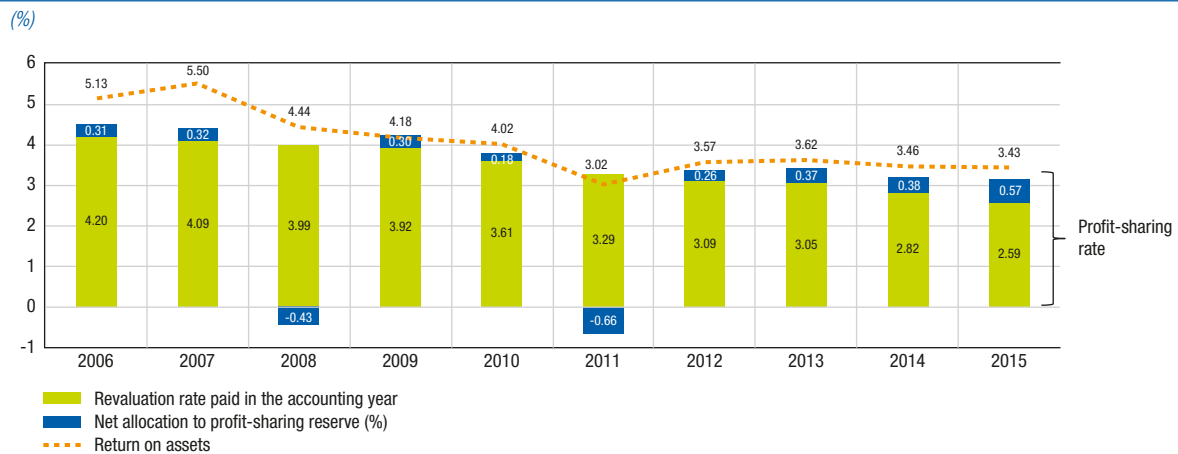
*A significant portion of the difference between 2015 and the first year of the projection stems from the assumption that no securities are sold and hence that no capital gains or losses are recorded, since such gains and losses accounted for 40 bps of the top-15's return on assets in 2015. Guide: the return on assets in years 2016 to 2025 is projected assuming that coupons and maturing bonds are reinvested at the average yield for French government bond issues in the current year.

³⁴ The return on the investments of life insurers is impacted by lower interest rates, notably when cash from maturing assets is reinvested and when cash linked to positive net inflows is invested. If the gap between the return on assets and the rates paid to policyholders narrows, profitability deteriorates and the risk of insolvency increases.

³⁵ For the purposes of the study, the following assumptions were made in order to project the rate of return over ten years: (i) annual net inflows of zero; (ii) constant asset allocation strategy; (iii) cash (coupons, redemptions, dividends, rents) from investments is reinvested to satisfy the previous assumption; (iv) cash reinvested in amortising fixed rate securities is put into ten-year zero coupon bonds at par; (v) annual income from other assets in the portfolio (variable rate bonds, equities, real estate) is 3% of their initial net book value; (vi) the net book value of other securities is unchanged (no allocations/reversals for depreciation) and none of these securities are sold; and (vii) the management expense rate for investments (excluding unit-linked) as a proportion of the average opening and closing net book values of investments is equal to the average ratios observed in 2014 and 2015 (-0.32%).

Chart 24

Comparison of the return on assets and profit-sharing of France's 12 main life and mixed insurers

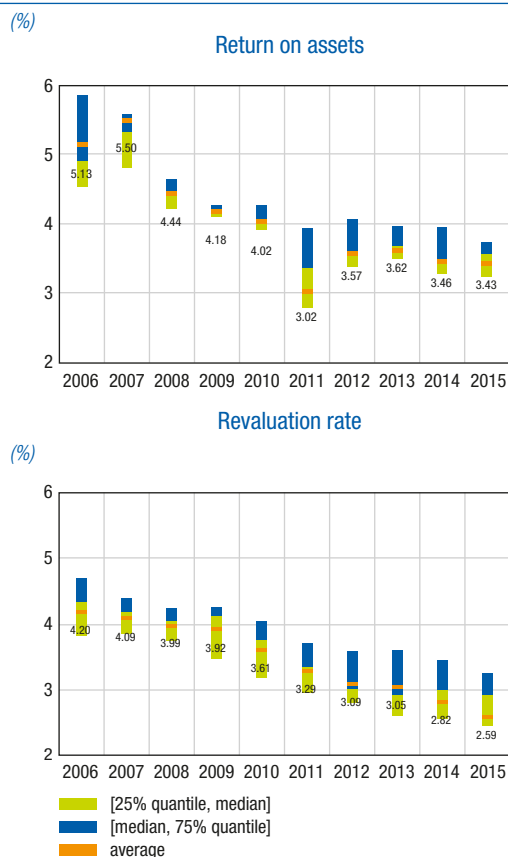


Source: ACPR.

Guide: the profit-sharing rate is made up of the revaluation rate paid plus the net allocation to the profit-sharing reserve. 2008 and 2011 were exceptional years with net reversals from the profit-sharing reserve.

Chart 25

Dispersal of the return on assets and revaluation rates paid in the accounting period



Source: ACPR.

Guide: the bar measures the interquartile interval, i.e. the interval containing 50% of the sample's values, 25% above and 25% below the median. The number below each bar shows the average.

- The low interest rate environment has had a relatively limited impact on asset allocations across broad investment classes

The European Insurance and Occupational Pensions Authority (EIOPA) organised an ad hoc information gathering exercise between December 2016 and February 2017 to measure the change in the investment portfolios of the largest European insurance groups.

According to information gathered from 13 French groups, the share of at-risk investment classes increased between 2011 and 2015, although such investments continued to occupy a minority share of the overall portfolio; 85% of insurance groups surveyed said that they had increased the share of the least liquid investments in their portfolios since 2011. However, the overall trend masks the differences in behaviour from group to group, be it in terms of the vehicles used (direct lending to the economy, financing for infrastructure projects, unlisted shares, hedge fund shares, real estate investments), the rationale (hunting for yield, adjusting asset liquidity to reflect liability constraints, diversifying portfolios) or the scale.

More generally, groups are showing reduced exposure to sovereign debt (down from 35.5% in 2011 to 33.8% of investments in 2015) and to the financial sector (down from 16.2% to 15.6%).

The rating of bond investments held by insurers since 2011 has declined from AA to AA-. However, this is mainly due to the decline of both the sovereign rating of France since 2012, to which French insurers are

heavily exposed, and of lower-rated euro area sovereigns (ratings around BBB). Insurers faced with these downgrades have mostly held on to their exposures.

Stress testing by EIOPA in 2016

In December 2016, EIOPA published the results of a round of stress tests on the risks borne by life insurers in an environment of persistently low interest rates. The impact of two instant shock scenarios to accounts as of 31 December 2015 was measured: firstly, a low-for-long yield (LY) scenario, corresponding to a flattening of the yield curve and signalling persistently low rates, and secondly a double hit (DH) scenario consisting of a simultaneous downside shock to the discount rate and an upside shock to credit spreads.

The findings of EIOPA's 2016 stress tests³⁶ show that the market is fairly resilient both at European level (236 insurers took part in the exercise) and within France (34 insurers). In the baseline situation, all of the insurance companies in the French sample had the necessary own funds to cover the solvency capital requirement (SCR), with an average eligible own funds/SCR ratio of 198%—slightly higher than that of the European sample (196%), which contained two insurers that did not cover their SCR.

EIOPA's published specifications, which did not require the SCR to be recalculated post-shock, make it impossible to measure the impact of the scenarios in the form of a change in the coverage ratio. The analysis of the shocks tested in the scenarios was in particular based on the ratio of assets to liabilities – which unlike the SCR does not incorporate a measure of risk – and on the change in the ratio. In the baseline situation, the average ratio for the French sample was lower than the European average (105.7% and 109.6% respectively). The absolute change in the ratio following the shocks simulated in the two scenarios was smaller for the French market than for the rest of Europe as a whole (1.61 pp for all French entities compared with 2.19 in the EU for the DH scenario, and 1.32 pp in France compared with 2.22 in the EU for the LY scenario).

b. Risks borne by insurers in the event of an increase in interest rates

Overall, a sudden and significant rise of 200 bps in long term interest rates would not move the return on assets of French life insurers to a level which would expose them to competition from new entrants.

The return on assets of France's top-15 life and mixed insurers was projected from the end of 2016,³⁷ assuming that ten-year government bond yields were 200 bps higher than those seen at the close of 2016³⁸ (Chart 26).

It was found that in the event of a 200 bps increase in long rates, insurers' rate of return would remain at a level that was relatively equivalent to the rate obtained by a new entrant. This is because of the substantial inertia present in the bond portfolios of companies in the sample, which are still largely composed of bonds that have high nominal yields, long durations and are generally held until maturity.

These conclusions need to be tempered in the event that the low rate environment persists for a longer period, by the end of which the bond portfolios held by insurers

³⁶ EIOPA published a detailed report on the results of these stress tests, which is available at:

<https://eiopa.europa.eu/Publications/Surveys/EIOPA-BOS-16-302%20Insurance%20stress%20test%202016%20report.pdf>

When considering the position of French insurers relative to the European market, it is important to note that the French market is more concentrated than the other markets and includes firms with very large financial bases, implying more effective risk pooling and greater diversification. The ACPR also published its own analysis of the results for French insurers:

https://acpr.banque-france.fr/fileadmin/user_upload/acpr/publications/analyses-syntheses/201703-AS77-stress-tests-eiopa.pdf

³⁷ Keeping the assumptions described in part 1.

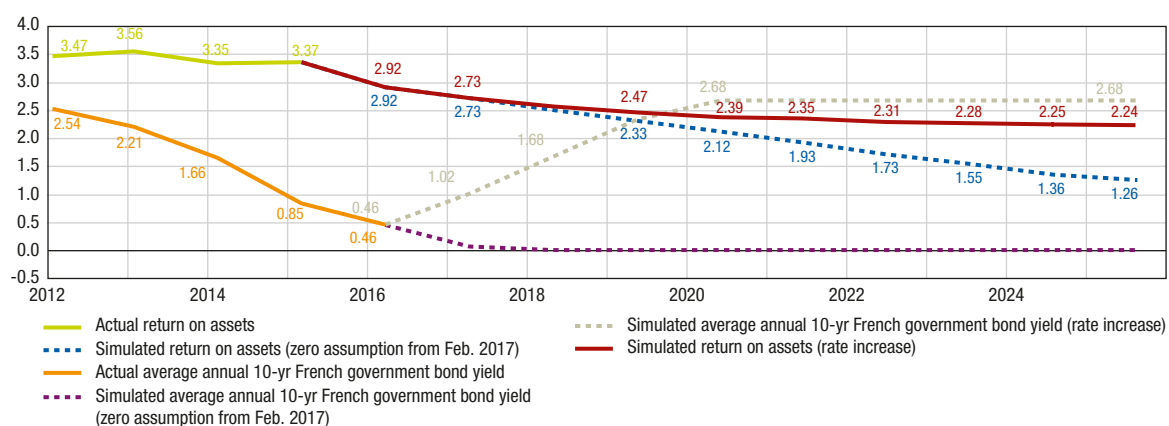
³⁸ The only assumption that is different from those of Chart 26 concerns reinvestments in ten-year bonds at par over the projection period for the simulated return on assets, whose curve is in red: each year, coupons and maturing bonds are reinvested in ten-year bonds whose coupon is equal to that of the corresponding ten-year government bond yield scenario.

Chart 26

Projected return on assets in the event of an increase in interest rates

(%)

Projected rate of return on all investments (excl. unit-linked) and corresponding interest rate scenarios



Source: ACPR.

Note: the rate of return for years 2016 to 2025 is projected assuming that coupons and maturing bonds are reinvested at the average yield for French government bond issues in the current year.

will have been entirely renewed with low-yielding bonds. At the end of such a period, a sudden increase in interest rates would be a commercial advantage to a new entrant, which could offer guaranteed returns that were more competitive than those available from incumbents and thus trigger switching.

Currently, incumbent insurers have profit-sharing reserves to maintain their attractiveness going forward, as well as capitalisation reserves and large stocks of capital gains. If interest rates suddenly rise, insurers will have to draw on these reserves to raise revaluation rates on guaranteed contracts; otherwise, policyholders may move out of non unit-linked contracts to invest in higher-earning or more liquid savings vehicles.

• Scenario of a sudden increase in interest rates

The prospective economic assessment of the impact of a sudden and significant increase in long-term interest rates (+200 bps) and steeper short-term rates reveals that the situation of insurers depends heavily on surrender behaviour.

The exercise consisted in applying instant shocks and measuring their impact on a representative prudential balance sheet for French life insurance companies, aggregating commitments in relation to guaranteed-principal savings products (non-unit linked vehicles). A 200 bps shock was applied to the risk-free zero-coupon curve for long-term maturities,³⁹ while shocks of -15% and -10% were applied to equity and real estate allocations respectively. The behavioural model used to estimate cyclical surrenders on policies in the baseline scenario was also replaced by a model that is more sensitive to the difference between the revaluation rate on outstandings paid by insurers and the alternative market rate. The impact of financial shocks is therefore amplified by policyholder exits.

³⁹ The shock applied to the yield curve corresponds to a 200 bps increase for long-term and liquid maturities (10 to 20 years) and a 50 bps increase for short-term rates, followed by a continuous adjustment between nine-year and ten-year rates. The risk-free yield curve for terms of more than 20 years was constructed in accordance with the regulations (ultimate forward rate equal of 4.2%) and the methodology published by EIOPA (extrapolation of the yield curve using the Smith-Wilson method).

The choice of surrender model has a significant influence on the portfolio's value in force (VIF),⁴⁰ which is integrated in the reconciliation reserve and thus included in prudential own funds: in the absence of financial shocks, VIF is halved when a more severe cyclical surrender model is used. An increase in interest rates combined with a shock to equities and real estate would cause the SCR coverage ratio to decline by 67 points when the more sensitive surrender model is applied. The use of a more severe model sees surrenders peak in the financial stress scenario around year five, at close to an average of 20% of the portfolio.

These results underline the sensitivity of prudential metrics to assumptions about policyholder behaviour. Insurers could test different sets of assumptions within the framework of the Own Risk and Solvency Assessment (ORSA), deviating from their experience tables, notably in the event of swift market changes.

These results, which were obtained by aggregating commitments, could be more unfavourable for individual companies with limited wealth reserves (unrealised capital gains, capitalisation reserve, profit-sharing reserve).

c. Insurance and regulatory risk

Implementation of Solvency II continues to be the subject of special attention on the part of supervisory authorities, which want to ensure compliance with the new regulatory framework. The new regulations require optimised risk management and enhanced transparency from insurers. French insurers are affected by several aspects of the regulatory developments both at the international level and within France.

First, at the international level, the first fine-tuning adjustments to the regulations have been adopted following the initial months of Solvency II's application. To ensure that economic reality is more accurately reflected, the calculation method for the ultimate forward rate (UFR) (ultimate one-year forward interest rate implicitly deductible from the risk-free yield curve), which is used to discount technical provisions, was recently revised. Under the new methodology, the UFR will be lowered from 4.2% to 4.05% on 1 January 2018, and eventually to 3.65%.

The delegated regulation implementing the Solvency II Directive provides for a revision of the standard SCR formula by 31 December 2018. With this in mind, EIOPA is working on proposals to modify the standard formula, which will be submitted to the European Commission by February 2018.

Within the French market, the establishment of the *accord national interprofessionnel* (ANI – national inter-professional agreement) has increased competition between health insurers; this situation therefore continues to require special attention. The Hamon Act has had similar effects in auto, home and creditor insurance by introducing new termination options to make policyholders more mobile. Lastly, the entry into force of the annual termination option – supplementing the Hamon Act's provisions concerning the first year of insurance – for creditor insurance contracts linked to a home loan from 1 January 2018 onwards could make the market more competitive and reduce margins.

⁴⁰ Current value of future profits on contracts in the portfolio.

4 Risks for financial markets

Financial markets demonstrated growing resilience in the face of potentially disruptive political events in 2016. The VIX index, which tracks implied volatility on US financial markets, has been steady at around 12% since the beginning of 2017, which is extremely low considering the elevated uncertainty surrounding the economic and financial system,⁴¹ the US economic policy stance and the finalisation of Brexit. The main risk thus concerns a reversal in expectations leading to an abrupt correction to asset prices, which have markedly high valuations.

1. POLICY RISK AND MARKET STABILITY

a. Markets remain serene despite policy uncertainty

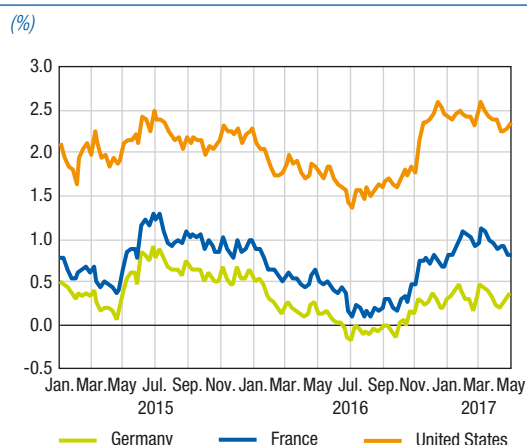
Global financial markets are currently characterised by historically low volatility and high valuations, especially on US equity markets, **despite persistent economic policy uncertainty**.

In early May 2017, the implied volatility of US equity markets, as measured by the VIX index, hit an all-time low since 1993, with a VIX below 10 points, well below the long-run average of 20 points (Chart 28). Volatility on forex and bond markets is also muted, reflecting market apathy.

Valuations are high on most financial markets, boosted by renewed bullishness among investors on the growth and inflation outlook and by the persistent and abundant liquidity provided by central banks, particularly in the euro area and Japan. The rise in the sovereign interest rates of advanced countries in the second half of 2016 (Chart 27) was exacerbated by the election of Donald Trump to the US presidency. The increase, which amounted to about 60 bps in the United States and 30 bps in Europe, broke off in early 2017. Nevertheless, interest rates continue to fluctuate around historically low levels and consequently valuations remain at high levels. In France, ten-year government bond yields rose steadily between February and

Chart 27

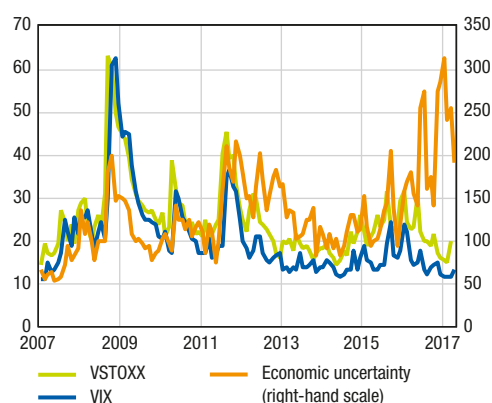
10-year sovereign interest rates



Source: Bloomberg.

Chart 28

Implied volatility on equity markets and index of overall economic policy uncertainty



Sources: Bloomberg, Economic Policy Uncertainty.

⁴¹ To put this in context, the VIX hit 80 during the 2008 crisis, exceeded 40 in summer 2010 and 2011, stood at 25 following the Brexit referendum in June 2016 and broke past 20 in November 2016 in connection with the US elections.

April 2017 as the presidential elections drew nearer, and the spread with Germany widened markedly before narrowing again after the second round of the elections.

Unlike the 2013 taper tantrum, this upward movement did not result in a major global rebalancing – or great rotation – of portfolios. After a few weeks of investment outflows from emerging markets and bond funds, the trend went into reverse, with an across-the-board influx into equities and bonds in emerging and advanced countries alike (Chart 29), in an unprecedented situation indicative of excess liquidity in the financial system. Credit spreads remain tight on corporate bond markets, corresponding to historically high valuations. Equity markets, meanwhile, have gained substantial ground on both sides of the Atlantic since November 2016 (Chart 30), with valuation indicators suggesting that US stocks may even be overvalued (see Box 8).

At the same time, economic policy risk remains high at the global level, in connection with uncertainty over the US administration's ability to implement its stated reforms, forthcoming elections in Europe and the pace of the Fed's monetary tightening.

The disconnect between policy risk and risk premia, apparent on US equity markets, is also illustrated by the factors underpinning European ten-year OIS rates.⁴² The 46 bps increase in ten-year OIS rates between July 2016 and April 2017 was essentially attributable to the prospects of a rise in short-term interest rates over the period, with the short-term component accounting for 38 bps, compared with 8 bps for the term premium component.⁴³ In other words, inflation and interest rate risk premia, which make up the term premium, remain low, despite persistently elevated policy risk in Europe over the period.

b. Risk of turbulence on financial markets

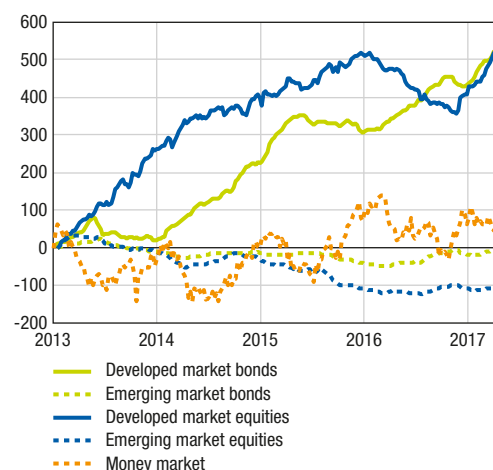
The disconnect between low volatility, high valuations and economic policy uncertainty appears to be reflective of a fragile equilibrium.

Accordingly, any hold-up in implementing the Trump administration's fiscal policy or a monetary tightening that catches market participants off-guard could cause **volatility to rebound, credit spreads to widen, or equity markets to correct**. By the same token,

Chart 29

Cumulative net investment flows by fund type and geographical region (USD billion)

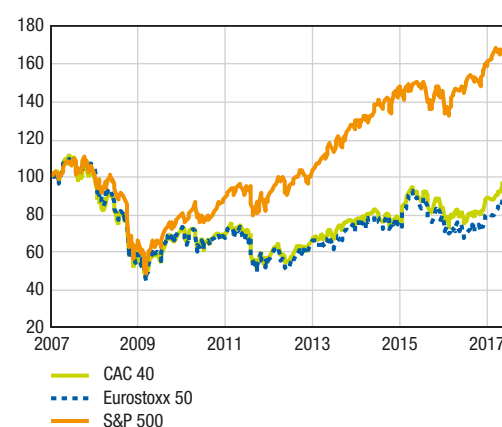
(USD billion)



Source: EPFR.

Chart 30

Stockmarket indices (January 2007 = 100)



Source: Bloomberg.

⁴² An overnight indexed swap is an interest rate swap where an overnight rate (Eonia) is exchanged for a fixed rate at a given maturity (in this case ten years).

⁴³ The decomposition is performed using a term structure model in which the short-term rate has the possibility of remaining at the lower bound for a prolonged period. The lower bound may vary over time (A. Monfort, F. Pegoraro and D. Sabes (2017): "Euro Area Affine Term Structure Model with Time-Varying Lower Bound").

a financial shock in emerging countries, particularly China, triggering a massive sell-off of their foreign reserves, a resurgence in policy risk (in Europe or the Middle East) or renewed fears over the soundness of banks in some European countries could cause volatility to go up and valuations to fall.

Regardless of the underlying scenario, an abrupt repricing of risk premia would mean substantial capital losses for the marked-to-market securities portfolios of French investors, especially since the low interest rate environment⁴⁴ and hunt-for-yield strategies have to some extent encouraged increased risk taking by financial institutions.

In Q2 2016, French insurance companies (life and mixed) held over EUR 2,000 billion in financial investments, including EUR 1,345 billion in bonds and other debt securities and EUR 72 billion in listed shares.⁴⁵ Excluding hedges, a 200 bps upside shock for the bond portfolio, coupled with a 10% downward shock to equities, would result in potential mark-to-market losses of approximately EUR 140 billion⁴⁶ for these two investment portfolios. A similar shock would result in a potential loss of EUR 55 billion for the market value of securities held by French banks. The portfolio held by individual investors resident in France, which was worth EUR 375 billion at end-2015, would also decline substantially in value. Owing to weak wealth effects, the potential impact on GDP in France would remain limited.

As far as potential aggravating factors are concerned, it is impossible to rule out the risk that low volatility may have encouraged some investors not to hedge their risk adequately, leaving them particularly exposed to a downturn in market conditions. Furthermore, a sudden increase in volatility could make it more costly for financial institutions to hedge risk.

Box 8

Is the US equity market overvalued?

The US equity market is at levels not seen since 2000, propelling the PER to 17.5x earnings (Chart A), well above the long-run average of 14x. The US market, which had already experienced very strong growth since 2011, accelerated sharply following the election of Donald Trump in November 2016, with the S&P500 increasing by 12% compared with 5% between January and October 2016. Financial stocks gained 20%, making them the biggest beneficiaries of the post-November 2016 rally.

The increase in the US index can be explained in real time by compression of the risk premium around its historical average.¹ Taking a forward-looking approach, it can be attributed to elevated future earnings expectations (15% growth per year over the next three years, compared with an average of 5% since 2006).

While the equity market rally is consistent with the bullish sentiment among companies and households, it looks to be disconnected from real economic growth. In practice, the liquidity provided by monetary policy since the 2008 financial crisis may have fuelled asset price inflation (Chart B). However, stockmarket prices could undergo a downside correction in the following circumstances:

- i) monetary policy is tightened faster than expected;

¹ Calculated from January 2006.

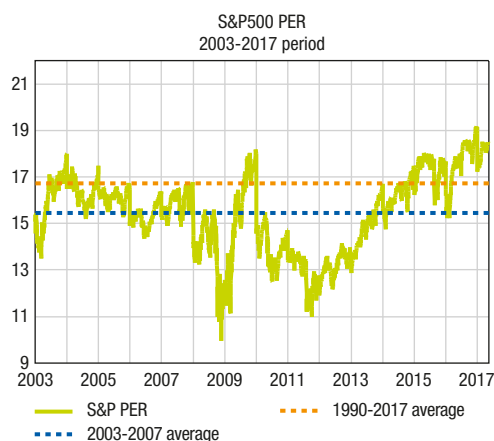
⁴⁴ The convexity of bonds means that their price is more sensitive to a change in interest rates in a low interest rate environment.

⁴⁵ Source: Webstat.

⁴⁶ Assuming a bond portfolio duration of five years.

Chart A

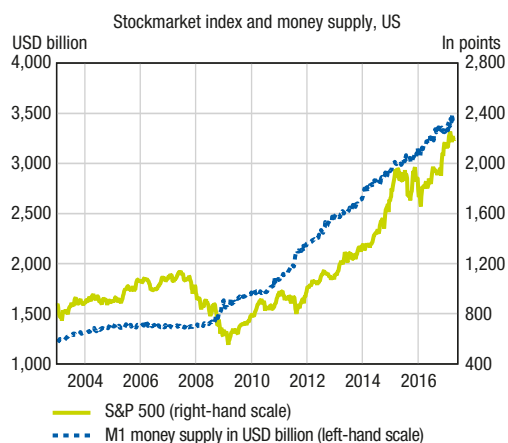
The US equity market PER is above its historical long-run average



Source: Bloomberg.

Chart B

Stockmarket valuation dynamics and money supply are linked in the United States

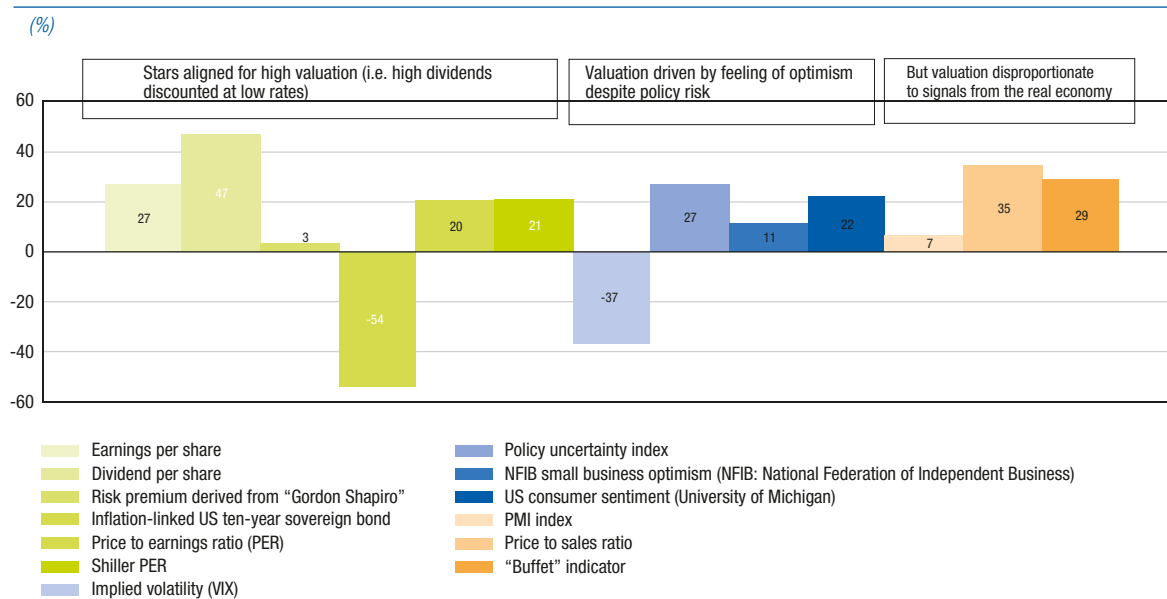


Sources: Bloomberg, Federal Reserve Bank of Saint Louis.

- ii) economic growth disappoints (the current level of the S&P500 is predicated on the notion that growth will beat the current consensus view of 2.2%);
- iii) buybacks decrease significantly in the event that the tax reforms announced by Donald Trump (corporate income tax cut to 15% and amnesty for cash held overseas) stall.

Chart C

Factors underlying US equity valuations: comparison
for each indicator of its average since November 2016 versus its average since January 2006



Sources: Bloomberg, www.policyuncertainty.com, NFIB, University of Michigan. The "Buffet" indicator is obtained by dividing the Wilshire 5000 index by nominal GDP.

2. INCREASING STRAIN ON THE REPO MARKET

a. Impact of regulations on the repo market: a stock-taking

The new rules applicable to banks are regularly cited as one of the main factors in repo market developments.⁴⁷ The biggest changes in this regard concern the leverage ratio, the short-term liquidity coverage ratio (LCR) and the medium-term net stable funding ratio (NSFR).

The LCR has entered into force as a Pillar 1 standard⁴⁸ on 1 January 2015, with a transition phase until 2018, when it must be fully met by banks. The NSFR, meanwhile, is a Pillar 2 standard⁴⁹ and subject to a disclosure requirement by banks. On 23 November 2016, the European Commission published a legislative proposal aimed at establishing the leverage ratio and NSFR within Europe as Pillar 1 standards alongside the solvency ratio.

The leverage ratio supplements the solvency ratio with a non-risk based measure. Accordingly, all on and off-balance sheet items are integrated in the denominator of the ratio at book value, subject to a few adjustments, and are not risk-weighted, in contrast with the denominator of the solvency ratio. In addition, unlike the solvency ratio, the leverage ratio does not take account of credit risk mitigation techniques, aside from a few very specific exceptions. For example, under the standard method, a sovereign bond from a euro area country would carry a smaller capital charge than a corporate bond under the solvency ratio, but the two exposures would incur the same capital charge under the leverage ratio.

Specifically regarding repos, which consume a lot of capital because of their volume, but are low-risk as they are equivalent to a collateralised loan, the leverage ratio is more restrictive than the solvency ratio. This is because a repo (borrowing cash against securities) increases the size of the balance sheet (cash increases while securities continue to be held on the balance sheet), which will, all other things being equal, degrade the leverage ratio, which offers fewer netting options than the solvency ratio. However, banks have found a way to address this mechanical effect by stepping up their use of clearing houses, which makes it easier for them to net repo/reverse repo trades when determining their leverage ratio.

For the LCR, banks must hold sufficient high quality liquid assets (HQLA) to cover their cash outflows for 30 days, based on a prudent assessment. This has the direct consequence of making short-term financing (under 30 days) less attractive and holding HQLAs more attractive. In this setting, demand for longer-term financing structures (such as evergreen transactions, i.e. automatically renewing fixed term repos) is on the rise. Similarly, some banks are engaging in collateral upgrade transactions in which they repo lower-quality securities for HQLAs.

The NSFR, meanwhile, gives banks an incentive to reduce their reliance on short-term financing and to increase the share of their financing that is made up of stable resources. The NSFR is a ratio comprising (i) a numerator composed of available stable funding (ASF), made up of liabilities (e.g. capital, deposits and loans) weighted by their level of stability and residual maturity, and (ii) a denominator composed of required stable funding (RSF), which corresponds to all on and off-balance sheet assets weighted by

⁴⁷ See BIS report published in April 2017 entitled "Repo market functioning", CGFS Papers, No 59 <http://www.bis.org/publ/cgfs59.pdf>

⁴⁸ Binding standard, with the same level set for all banks.

⁴⁹ Here, the level is determined by the supervisor on an individual basis for each bank.

counterparty type and residual maturity. Accordingly, repo/reverse repo transactions with a financial counterparty represent both a source of stable funding (repo) and a stable financing requirement (reverse repo) for the purpose of calculating the NSFR. These two transactions are however treated asymmetrically if they have a maturity of under six months, with an ASF factor of 0% for the repo, but an RSF factor of 10% or 15% for the reverse repo (Basel standard).

b. Unusually severe strain at the end of the year

The effect of the regulations is especially pronounced at quarter and year-ends, when banks have to produce their regulatory reports. At these times, banks may have an incentive to sharply reduce exposures, notably to ensure that they are more comfortably above their leverage ratio requirements. This is one of the reasons for the sharp decline in repo rates and the marked contraction in trading volumes observed at period ends. Non-banking repo market participants, particularly money market funds, which want to lend cash in exchange for securities might therefore be forced to place their cash at considerably more negative rates than at other times in the year.

Although these quarter-end tensions are typical, they reached unprecedented levels at the end of 2016. Some French, Dutch and German sovereign securities were being traded at levels of close to -5% to -6% over the year-end period, i.e. well below the rates observed in preceding weeks and the Eurosystem deposit facility rate (-0.40%). Furthermore, the notion of “general collateral” lost much of its meaning, with securities lending and borrowing transactions generally being traded at very different levels. Rates for cleared and non-cleared repos also diverged.

However, the scope of these year-end developments needs to be put into context:

- **the strain was very short-lived:** the market came under pressure at the very end of the year before normalising quickly. Trading volumes were fairly low, indicating that the market was relatively well prepared for the year-end transition. The market continued to operate; although it certainly experienced friction, this did not lead to a significant increase in the volume of delivery incidents;
- only securities issued by the jurisdictions most sought after by investors were affected by the stress;
- similar pressures were not seen at the end of the first quarter of 2017. Admittedly, general collateral became slightly more expensive in France and Germany, as well as in Italy to a lesser extent, but overall, repo rates stayed at contained levels. Reduced stress in some jurisdictions may reflect the fact that the market is getting used to the Eurosystem’s securities lending facilities (Box 9). It is worth noting in this context that the Eurosystem continues to comply with the principle of neutrality in executing its quantitative easing programme, in order to avoid creating market distortions (Box 10).

Box 9

Adjustments to Eurosystem securities lending facilities

To promote smoother access to the Eurosystem's securities lending facilities, the Governing Council announced on 8 December 2016 that it would authorise loans of securities acquired within the framework of the Public Sector Purchase Programme (PSPP) against cash collateral. Beginning on 15 December 2016, a number of Eurosystem central banks made use of the new option, in addition to existing facilities for lending securities against securities as collateral.

The ability to post cash as collateral in transactions with the Eurosystem elicited growing interest among market participants, especially at year-end and at the end of Q1 2017, which helped to relieve pressure, especially on the most in demand securities (in Germany, France and the Netherlands in particular).

Data published by the ECB thus revealed a pronounced increase in outstanding amounts for the cash collateral facility and the securities lending activity more generally. In April 2017, Eurosystem average outstanding securities lending exceeded EUR 52 billion, of which EUR 18 billion against cash.

Box 10

Consequences of quantitative easing (QE) on the markets

"Price impact of bond supply shocks: Evidence from the Eurosystem's asset purchase program", William Arrata, Benoît Nguyen (2017), Banque de France Working Paper, Series No. 623¹

This article considers the consequences of the Eurosystem's asset purchase programme on euro area bond markets, taking as its base the first year of implementation. Three potential price impacts are examined, including a stock effect, a flow effect and an expected stock effect.

The stock effect is the impact of cumulative past purchases on prices. The authors highlight the fact that **one year after the purchases began, securities prices moved in a way that was correlated with the quantities purchased:** the purchase of 1% of a bond outstanding correlates with an average decrease in its yield of 1.3 to 2.5 bps.

This impact is within the range of estimates for other programmes, such as those by Joyce and Tong (2012) for the Bank of England's QE programme or by D'Amico and King (2013) for the Fed's programme. The impact is greater for index-linked bonds and securities with longer maturities. The stock effect is also less pronounced at one year than at three or six months, suggesting declining profitability for Public Sector Purchase Programme (PSPP) purchases.

The flow effect is the impact of transactions on securities prices at the moment when the transactions are carried out. It takes the form of a local distortion in the yield curve. In the first year of the PSPP, **the authors could not detect any effect, except where very specific circumstances apply** (first day of purchase, etc.). Andrade et al. (2016) find the same with the PSPP.

The operating approach of the PSPP provides an explanation for this. Unlike other purchase programmes, the PSPP seeks to limit market disruption by complying with the principle of market neutrality. In particular, as regards this programme, the distribution of the central bank purchase ratio is infinitely more restrained than the ratios for the Fed or Bank of England programmes (Chart A).

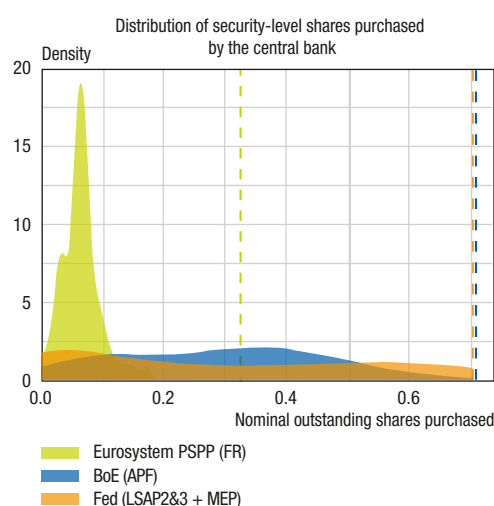
Finally, the expected stock effect is the impact of expected total purchases on yields. The authors looked at the correlation between the level of the ten-year yield at which the French government borrows and the expected total size of the Asset Purchase Programme (APP) for French debt over the April-July 2015 period, when sovereign yields increased by 80 bps.

¹ <https://publications.banque-france.fr/en/price-impact-bond-supply-shocks-evidence-eurosystems-asset-purchase-program>

The authors show that between April and July 2015, median market expectations of the total size of securities purchases fell from EUR 1.15 billion to EUR 1.01 billion, which may explain the increase in bond yields (Chart B).

Chart A

Distribution of central bank purchase ratio

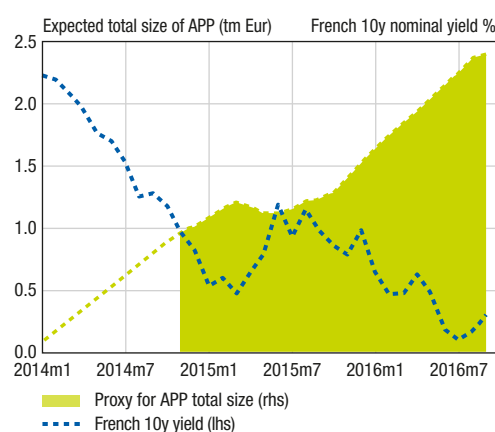


Sources: Bloomberg, BOE, FRB, Banque de France.

Notes: Vertical dashed lines: issue limit 33% (Eurosystem) 70% (BoE and Fed). Eurosystem PSPP data as of 9 March 2016.

Chart B

French 10y yield and expected total size of APP



Sources: Bloomberg, Reuters, authors' calculations.

c. Outlook: the market adjusts to stricter regulations

In a stricter regulatory environment, the market may adjust its practices by:

- **Turning to new types of transactions.** Some market participants are reporting an increase in transactions with no exchange of cash, such as unsecured securities loans, which is already extremely widespread in Japan. Whereas a repo consists in lending securities in exchange for cash (with interest paid when the transaction is settled), an unsecured loan of securities consists in lending securities without cash being provided in return (although interest is still paid when the transaction is settled). Such unsecured loans may take place between a non-financial company (the lender of the securities) and a bank (the borrower), or sometimes between two banks.
 - The transaction allows the bank borrowing the securities to increase its LCR (provided the operational requirements are satisfied), but without financing the securities as with a repo or reverse repo.
 - If the bank is lending the securities, the lack of a cash exchange is beneficial compared with a repo in terms of leverage ratio.
- **Standardising maturity dates to facilitate netting.** A key aspect for commercial banks is the ability to net transactions in order to reduce balance sheet cost and hence the regulatory cost of repo transactions. Traded rates over quarter-end periods for cleared repos and prices outside CCPs have become very different. Standardising traded maturities could make it easier for commercial banks to net transactions: since only transactions with the same maturity date can be offset, concentrating

transactions on the same date would facilitate netting. Market participants have thus reported that an increasingly common practice is to use the first business day of the following quarter as a maturity date.

- **Possibly developing transactions between end clients.** End investors that have to place or borrow securities during these periods are penalised by higher bid/offer spreads from banks, reflecting recognition of their balance sheet costs over these periods. One possibility is that end investors might deal directly amongst themselves, although limited use is made of this practice to date.

Box 11

Brexit's consequences for market infrastructures

The United Kingdom is home to numerous market infrastructures with systemic importance for the rest of the European Union (EU), and notably for the euro area. In particular, two UK central counterparties (CCPs) clear the lion's share of transactions on OTC derivatives markets, including in euro: LCH Ltd clears over 95% of interest rate swaps, while ICE Clear Europe handles 80% of CDS cleared in the EU. These two CCPs are also present on key markets for financial stability and monetary policy, such as repos (LCH Ltd clears 30% of euro-denominated repos) and short-term interest rate futures, almost all of which are cleared by ICE Clear Europe (including futures on Euribor). Europe's two main multilateral trading facilities (MTFs) are based in the United Kingdom and handle 30% of EU equity trading. And four of the six trade repositories to which banks report derivatives trades are located in the United Kingdom.

Maintaining significant euro-denominated clearing activities with UK-based CCPs creates a risk for EU financial stability. CCPs in the United Kingdom will no longer be subject to EMIR's prudential requirements or to the oversight by supervisory colleges provided for by the regulation, which involves authorities from across the entire EU. Yet supervisory cooperation cannot properly substitute for direct supervision of activities established on European soil: in the crisis situations that CCPs may be required to manage on financial markets, CCP actions may create a risk of contagion (procyclicality of margin calls, spillover of losses to European banks), which only national supervisors are capable of reducing. In addition to the risk of undermining the regulatory framework, these critically important activities generate a major liquidity risk in euro, estimated at several tens of billions of euros. This creates substantial moral hazard for the Eurosystem, insofar as it could be forced to provide emergency liquidity in the event of a crisis.

For this reason, the Banque de France is advocating a policy of locating clearing activities denominated in EU currencies within the European Union. As part of a future ad hoc revision of EMIR, steps should be taken so that third country CCPs cannot be allowed to provide services in the EU if they clear transactions in these currencies beyond certain predetermined thresholds, since these services should be provided within the EU. Furthermore, clearing activities of third country CCPs in non-Union currencies but with systemic importance to the EU given the exposures of European banks should be directly supervised by European authorities to ensure that they comply with EMIR. This will entail revising the regulation to strengthen the arrangements for supervising third country CCPs.

Given London's major share of clearing euro-denominated financial transactions, the United Kingdom's exit creates a risk for financial stability in the EU-27. The combination of a CCP location policy and the development of alternatives within the EU-27 to ensure the continued supply of these services is the only way to properly achieve the overarching goal of maintaining financial stability. Obviously, adequate relocation procedures will have to be planned to limit the operational risk linked to transferring positions.

3. ASSET MANAGEMENT: FOCUS ON MONEY MARKET FUNDS

Money market funds (MMFs) play a key role in the short-term financing of the economy, particularly for financial institutions, and enable institutional investors to place their excess cash in the short term while benefiting from overnight liquidity. However, the 2008 financial crisis showed that MMF behaviour could pose a threat to financial stability.

a. Risks are exacerbated by the low interest rate environment

- **The low interest rate environment is a challenge for MMFs**

There are two main types of MMF, differentiated by the method used to calculate net asset value (NAV): (i) variable net asset value (VNAV) funds, whose NAV fluctuates daily according to the value of the underlying securities and (ii) constant net asset value (CNAV) funds, whose NAV is constant (1 dollar or 1 euro). Constant value is artificially ensured by means of amortised cost accounting to smooth returns. While **all French funds are based on the VNAV model with daily mark-to-market valuation**, the CNAV model persists in four of the five main markets (the United States, China, Ireland and Luxembourg). At end-2014, **CNAV funds accounted for more than 60% of the assets of European MMFs**.⁵⁰

However, the financial crisis revealed that the **CNAV model could create systemic risk**: in September 2008, following the Lehman Brothers bankruptcy, the Reserve Primary Fund, a US MMF fund with USD 62.5 billion in assets under management, was no longer able to keep its NAV at 1 dollar and was forced to “break the buck”, i.e. the difference between the nominal NAV (1 dollar) and the value of the underlying securities in the portfolio had become too great to bear and the fund had to “break” below the 1 dollar threshold. This triggered massive redemptions of units, putting the US money market under tremendous strain and causing US authorities to intervene.

Another risk relating to MMFs involves the fact that investors may mistakenly have seen these vehicles as a risk-free alternative to bank deposits. Unlike deposits, however, they are not covered by any insurance schemes.

- **Despite poor returns, MMFs continue to benefit from positive inflows of investments**

These risks are especially prevalent in the low interest rate environment seen in the euro area since the decrease in ECB policy rates, which anchors money market rates at a level close to that of the deposit facility (which is currently -0.40% and has been negative since June 2014). MMFs seek to deliver a performance close to that of money market rates by investing essentially in money market instruments and short-dated deposits, as required by regulation.

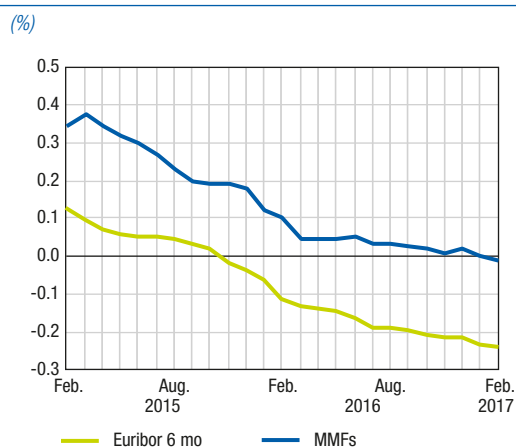
The Committee of European Securities Regulators⁵¹ created two classes of money market funds for Europe in 2010 based on maturity profile: “money market” and “short-term money market”. For funds in the first class, the residual maturity of each security in the portfolio may not exceed two years and the funds may not have a weighted

50 IOSCO, *Peer Review of Regulation of Money Market Funds: Final Report*, September 2015. Available at <https://www.iosco.org/library/pubdocs/pdf/IOSCOPD502.pdf>

51 CESR became the European Securities and Markets Authority (ESMA) in 2011.

Chart 31

MMF annual returns



Source: Banque de France.

average life (WAL)⁵² of more than 12 months and a weighted average maturity (WAM)⁵³ of more than 6 months. In the case of short-term MMFs, these requirements are set at 397 days, 120 days and 60 days respectively.

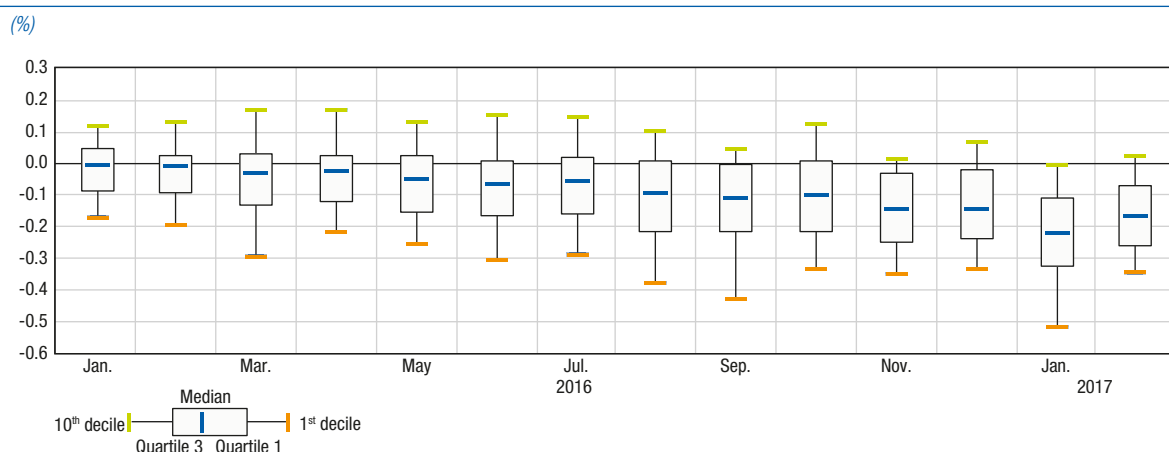
The **low interest rate environment is putting pressure on MMFs**, which cannot offset the decline in money market rates by investing in higher-yielding securities.

For the first time ever, in February 2017, MMFs posted a negative average 12-month return of -0.01% (Chart 31). More generally, in 2016 there was a sharp deterioration in MMF performances, accompanied by relatively narrow dispersal (Chart 32): in February 2017, 87% of funds were in negative territory, compared with 62% in February 2016.

Despite these very low and even negative returns, French MMFs began recording positive investment inflows again in mid-2015, with EUR 44 billion in inflows in March 2017 (rolling 12-month basis) for EUR 350 billion in total consolidated assets, which represents the largest increase since July 2009 (Chart 33). These positive inflows across all investor categories appear to reflect a wait-and-see allocation approach. The remaining WAL of portfolios declined in 2016 in France, but increased again in early 2017 in a setting of weak returns (Chart 34). The sector has also seen some concentration as well as a reduction in the assets of short-term MMFs, which accounted for 50% of the total assets under management of French MMFs at end-2012 but just 16% in February 2017.

Chart 32

MMFs: individual distribution of annualised monthly returns



Source: Banque de France.

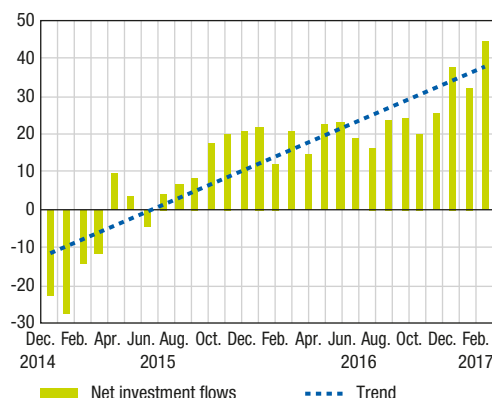
⁵² Weighted average life (WAL) is the weighted average of the final maturities of the securities held by the fund. It is a measure of liquidity risk.

⁵³ Weighted average maturity (WAM) is a measure of interest rate risk. It is determined in the same way as WAL except that the maturity of floating rate instruments is assumed to be the remaining time until the next interest rate reset.

Chart 33

Net investment flows, rolling 12-month basis

(EUR billion)

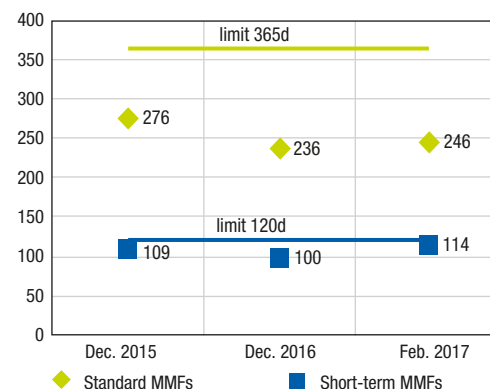


Source: Banque de France.

Chart 34

WAL of securities held in the portfolio for each type of MMF (number of days)

(number of days)



Source: Banque de France.

b. Challenges of the new European MMF regulations for the structure of France's money market

The rules governing MMFs are part of the action plan by Europe's authorities to regulate the shadow finance system. The initial aim was to prevent the risks of runs that could affect fund balance sheets, with the threat of contagion to other financial system participants, including the banks that provide liquidity to these funds. The final version of the regulation was voted in by the European Parliament on 5 April 2017, and the new rules are scheduled to apply from July 2018. Funds are required to comply by the start of 2019.

The main contribution of the new regulation lies in the **specific rules for CNAV funds**. CNAV funds must invest at least 99.5% of their assets in public debt. The regulation has also created a new class of low volatility NAV funds (**LVNAV funds**) whose NAV may vary provided it remains within 20 bps of the market NAV.

In general, **new requirements** will apply to all funds, including daily valuation, stricter rules for interest rate and liquidity risk,⁵⁴ stress testing, an obligation to provide evidence of the internal capacity to assess credit risk and increased transparency requirements for liabilities.

The new regulation is likely to have **consequences for the structure of France's money market**. The French market is going to have to adjust to accommodate CNAV funds. Furthermore, the scope of MMFs may change. Some funds used for cash management purposes will have to be reclassified because the assets in their portfolios mature in over two years or because investment restrictions are not complied with. Master-feeder and dedicated fund schemes may also be affected, since a restriction on fund liabilities (excluding employee savings schemes) prohibits ownership by a single investor with the capacity to influence the fund's liquidity profile. On a more general note, the regulation creates a paradoxical situation in which CNAV funds, which were the main cause of contagion during the 2008 crisis and which were previously banned in France, will be authorised.

⁵⁴ A double liquidity ratio has been introduced for all MMFs: VNAV funds must have a minimum ratio of 7.5% of assets for one-day liquidity and 15% for one-week liquidity. These minimums go up to 10% and 30% respectively for public debt CNAVs and LVNAVs. Note that the assets that may be taken into account for these ratios are defined by their residual maturity and not by their market liquidity as is the case for US regulations.

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