

December 2018



PREFACE

The Banking Law of 26 July 2013 states that "the Banque de France shall work with the *Haut Conseil de Stabilité Financière* (HCSF – High Council for Financial Stability) to ensure the stability of the financial system". As part of this, the Banque de France publishes a semi-annual assessment of risks and vulnerabilities present in the French financial system, which brings together analyses prepared by staff of the Banque de France and *Autorité de contrôle prudentiel et de résolution* (ACPR - French Prudential Supervision and Resolution Authority). This offers a way for the Banque de France to share its analysis of France's current situation in terms of financial stability. The report is also used to support necessary macroprudential measures that the Governor of the Banque de France might recommend to the HCSF for adoption.

The assessment presents risks to the French financial system in three main categories: risks linked to the macroeconomic environment, financial market risks and risks to financial institutions. These various risks, which may be connected, are set against a low interest rate environment that presents the financial sector with structural challenges, including the quest for profitability and challenges relating to technological innovation.

François Villeroy de Galhau Governor of the Banque de France

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A more uncertain macroeconomic environment

The International Monetary Fund (IMF) expects global economic growth to stabilise in 2018 and 2019 at the 2017 growth rate of 3.7%, with the acceleration anticipated in the United States expected to be offset by a slowdown in the euro area, the United Kingdom and certain emerging countries.

French GDP (Gross Domestic Product) growth should remain above potential² at 1.5% in 2018 and in 2019 and then 1.6% in 2020, while the euro area growth rate is expected to amount to 1.9% in 2018 and 1.7% in 2019 and 2020.

Nevertheless, a combination of several factors originating from the major economic regions is causing uncertainty: protectionist trade policies and procyclical fiscal stimulus in the United States, structural vulnerabilities of some emerging countries, and the political situation in Europe (Italy, Brexit). Beyond the uncertainty stemming from recent events in France, all these elements combined pose a downward threat to economic activity, which could heighten the risks to financial stability in France.

In this more uncertain environment, the risks associated with financial markets have intensified while the size and continued growth in private sector debt remains a source of significant vulnerability for France's financial system.

Identified risks

1. Market risks: high valuations combined with growing uncertainty could lead to the repricing of financial assets

Vulnerabilities are building up in the global financial markets. Valuations remain high despite the recent corrections that sparked a return of market volatility, particularly linked to the resurgence of political risk. The risk of reassessing risk premia continues to be particularly serious for the equity and bond markets.

While valuations on the US and French equity markets remain high, indicators of relative returns do not point to the existence of a speculative bubble in equity markets in France. The almost uninterrupted upward trend since 2012 and the high valuations appear to be the result, among other drivers, of the low interest rate environment and of the high risk appetite of investors on the equity markets. Furthermore, the tax reform in the United States has short-term effects that temporarily boost US stock prices. The increase in valuations at the beginning of the year created greater potential for a correction on the US and European equity markets, which could arise following an uncertainty shock or a sudden and inadequately anticipated interest rate hike.

Investors' appetite for risk is still present in the least secure segments of the credit market (high-risk high-return bonds, lending to highly-leveraged companies – especially leveraged loans), which are also susceptible to a sudden exit by investors in the event of a market downturn. The expansion of low quality debt has been encouraged by strong demand as investors search for yield and by the low interest rate environment, and it has also coincided with an easing of non-financial lending conditions particularly in the leveraged loans segment.

The macroeconomic projections of the Banque de France were completed on 28 November and do not take account of the measures subsequently announced in France by the government. These projections are available at: https://www.banque-france.fr/en/economics/macroeconomic

Market structures are also evolving in such a way as to amplify the consequences of a downturn. For example, the increasing interconnectedness between financial markets at a global level could prove to be a source of vulnerability for France's financial system. The CAC 40 is primarily susceptible to foreign shocks from advanced economies but is resilient to shocks from emerging countries. Furthermore, greater herd behaviour, measured by the correlation between the returns of different asset classes, could make portfolio diversification strategies ineffective, prompting investors to take on more risk. Massive unilateral movements could also provoke a market liquidity shortage, worsening the fall in asset prices.

In Italy, political risk remains high, and the possibility of a contagion loop between bank risk and sovereign risk is heightening. Italian banks are particularly exposed to Italian sovereign risk, as sovereign bonds account for a little over 10% of their total assets. This share has been increasing since the beginning of the year, symmetrically with bulk sales by foreign investors, which contribute to the rise in Italian sovereign yields and wider spreads vis-à-vis other euro area countries. In the United Kingdom and the rest of the European Union (EU), the uncertainties surrounding the outcome of the negotiations with the EU on the conditions for Brexit continue to be a source of instability in the markets.

2. Risks linked to private sector debt: the indebtedness of the French private sector continues to rise and vigilance is still required

Although growth in France is slowing at the end of the year, given the favourable monetary and financial environment (low interest rates and cost of credit) it continues to slightly exceed the potential growth rate, and the positive credit momentum has given rise to substantial levels of debt among economic agents. This could lead to the development of financial imbalances that would amplify the effects of a shock or downturn in activity.

Private sector debt was equivalent to 132.2% of GDP in the second quarter of 2018 (12.3 percentage points higher than the euro area average), with non-financial corporation (NFC) debt accounting for 73.3 percentage points and household debt making up the remaining 58.8 percentage points. Contrary to the trends observed in the other major euro area countries, there has been no lasting reduction in the ratio of private sector debt to GDP in France since the great financial crisis of 2008. If public debt is taken into account, indebtedness of all economic agents (non-financial private sector and public sector) amounts to 231.2% of GDP, that is a 63 percentage point increase since 2008.

Concerning non-financial corporations (NFCs), October 2018's data confirm the robust growth in bank lending to NFCs, irrespective of their size. NFCs are particularly vulnerable to a sudden slump in the macroeconomic environment or a sharp hike in interest rates, as a large proportion of their outstanding debt (44%) is made up of floating rate loans and there has been no reduction in their debt burden despite persistently very low financing costs. Moreover, surveys confirm a rapid growth in leveraged financing combined with a clear easing of lending conditions.

Household debt³ reached EUR 1,373 billion in the second quarter of 2018. This increase in outstanding debt reflects strong growth in consumer credit, particularly car loans, and the accelerating real estate cycle observed since 2015. Consequently, property prices continue to rise steadily despite a slight slowdown in pace. However, wide geographical disparities remain, with prices up by 2.8% for France as a whole over the last 12 months compared with a 7.1% increase for Paris alone. The cost of debt continues to be extremely attractive for households: in October 2018, the average home loan interest rate fell to 1.51%, its lowest level since December 2016. However, lending conditions continue

³ Individuals, the self-employed and non-profit institutions serving households.

to ease (with increases in average loan amount, duration and debt-service-to-income and loan-to-value ratios), which calls for a certain degree of vigilance even though almost all home loans are at fixed rates and are supported by a guarantee.

3. Interest rate risks linked to fragmentation: in a context of persistent, historically low interest rates, the spread in risk premiums could widen, particularly in the euro-denominated sovereign debt market

Worldwide, and in Europe in particular, interest rates remain historically low. A sharp rise in interest rates, either through an increase in the risk-free rate or widening credit spreads, could impact the asset/liability equilibrium of financial institutions (banks and insurers), notably through the valuation of their securities portfolios.

The upward trajectory of interest rates in the United States that is increasingly out of step with interest rate trends in the rest of the world is likely to trigger massive capital movements as investors search for higher and safer yields at the expense of riskier asset classes. An early indication of the "Great Rotation" of assets can be seen in the fact that the currencies and stock indices of emerging countries with the most severe external vulnerabilities have fallen sharply in recent months while these countries were affected by capital outflows. Similarly in Europe, investors have shifted out of some market segments (particularly sovereign and corporate bond markets).

Greater investor risk discernment, which lies behind portfolio reallocations, could also lead to an increase in fragmentation in the euro area. For example, the political changes seen in Italy have come with significantly wider credit spreads vis-à-vis German sovereign bond yields, which for the moment have not prompted any notable contagion to other euro area countries, but could affect the financing conditions of Italian private investors.

4. Risks linked to structural changes in the financial sector: structural changes weigh on the profitability of French financial institutions but the risk of significant deterioration appears limited

The banking sector faces structural challenges, such as controlling costs in a low interest rate environment, improving profitability by diversifying business lines, legal risks and disputes, regulatory and compliance costs and competition from non-bank financial firms. While addressing those challenges, banks have seen their overhead costs increase more rapidly than their net banking income (NBI), mainly due to the impact of various programmes to transform business lines and investments in new technology. Banks are diversifying into specialised financial services, asset management and insurance, contributing significantly to their NBI growth, while retail bank revenues stagnate and continue to suffer from the impact of low rates on their interest income.

French banks appear resilient in the stress test scenarios conducted by the European Banking Authority (EBA). The results were published in November 2018 and indicate that the capital ratios of French banks should decline a little less than the European average. This robustness is evidenced by certain indicators in particular: the non-performing loan ratio is decreasing and below the European average, while the cost of risk has declined significantly over the year.

The low interest rate environment also continues to weigh on insurance balance sheets, particularly in the life insurance sector, as the medium-term sustainability of their business model depends on interest rate levels. For these undertakings, the search for yield has not yet led to increased risk taking. On the whole, insurance institutions remain resilient and, despite being extremely diverse, their solvency ratios show that capital requirements are well covered at an overall level.

Summary of the main risks to the French financial system in December 2018

Main risks to the French financial system in December 2018	Level and outlook
1. Market risk The risk of a sudden repricing of financial assets remains despite recent equity market corrections. Portfolio turnover phenomena have been observed. Valuations are still high on financial markets, for both equity and bonds, which reflects investors' appetite for risk. Nonetheless, investor confidence could be undermined by a combination of several factors of uncertainty originating from the United States (protectionism and economic policy), Europe (the political situation in Italy, Brexit) and emerging countries (financial vulnerabilities).	
2. Risks linked to private sector debt Non-financial corporation (NFC) and household indebtedness continues to rise in France, in contrast to trends observed in other European countries. NFC debt dynamics are notably a source of liquidity and default risks, which could intensify in the coming months. Growth in household lending remains sustained and calls for careful monitoring in the face of signs of an easing of lending conditions.	1
3. Interest rate risks linked to fragmentation The political situation in certain euro area countries has led to widening bond yield spreads and a risk of fragmentation in euro-denominated debt markets. This raises the fear of a resurgence of the contagion loop between sovereign risk and bank risk and higher interest rates for the private sector, particularly in Italy.	→
4. Risks linked to structural changes in the financial sector The financial system continues to face structural challenges (digitalisation, cutting costs, the search for new profit sources). Rising operating costs remain an area to watch, as banking institutions continue their efforts to adapt and transform their business models. However, in general the resulting risks are controlled and institutions remain resilient.	→
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 materialise and its potential systemic impact over the medium term. The outlook (shown by the direction of the arrow) indicates the likely change over the next six months.

1.1 A MORE UNCERTAIN MACROECONOMIC ENVIRONMENT

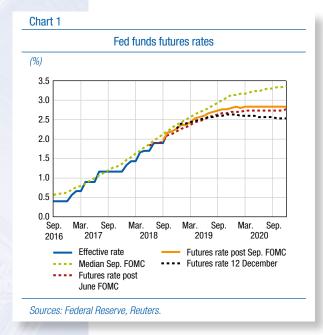
The IMF trimmed its global growth forecast for 2018 and 2019 to 3.7% in its October 2018 World Economic Outlook (WEO). Among other things, the revision reflected downside surprises that appeared in the first half in some advanced economies (the euro area, the UK and Japan) as well as a dimmer outlook for some emerging economies (Argentina, Turkey, Brazil), which have been weakened by tighter financial conditions and reduced access to international capital markets.

The euro area economy is set to continue expanding, but at a more moderate pace. In France, growth in gross domestic product (GDP) should remain above potential, coming in at 1.5% in 2018 and 2019 and 1.6% in 2020. Detailed macroeconomic projections can be found on the <u>Banque de France's website</u>.

Beyond the recent events in France, three downside risks could affect the stability of the financial system, either alone or especially together, resulting in potentially adverse effects for economic conditions. They are the imbalanced nature of the US policy mix, an adverse shock in emerging economies and further increased trade tensions.

a. The US policy mix is out of step with the global environment

The US fiscal stimulus is supporting growth in the short term and may help to prolong the current business cycle, but it also presents a risk of accelerated monetary tightening in the medium term. In late 2017 and early 2018, the US administration introduced stimulus measures on an unprecedented scale for a cyclical upswing, cutting household and business taxes and boosting public spending for 2018 and 2019. Overall, the measures are worth some 3.4 percentage points of GDP over two years and will have a substantial macroeconomic impact on the US economy, adding an extra 1.4 points of growth in 2018-2019.



Against this backdrop, where growth remains strong while unemployment is declining sharply, there is some uncertainty around the future path of inflation. The US monetary authorities may modify the interest rate trajectory that is currently expected by the markets (Chart 1).

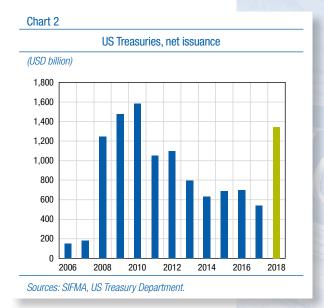
Aside from the matter of rate hikes by the Fed,⁴ the additional issuance of government securities to finance the budget deficit (bonds worth USD 1.340 trillion were issued in 2018, a 146% increase on 2017 – Chart 2), at a time when the Fed has said that it is curtailing its securities portfolio (USD 315 billion reduction in 2018), could put upside pressure on interest rates, especially for the medium and long term rates. Yield spreads with the rest of the world, and particularly with the euro area, which are already at historically high levels, could therefore widen further, triggering movements of capital seeking higher returns in the United States and affecting exchange rates.

⁴ United States Federal Reserve System, the US central bank

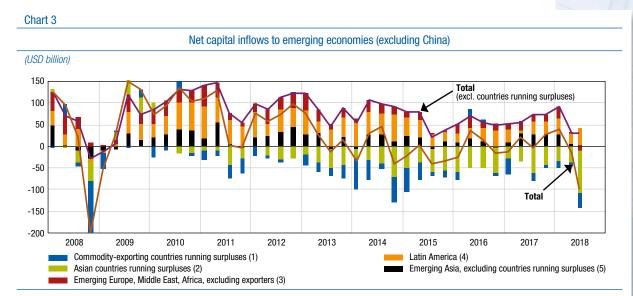
While the macroeconomic impact on France of US monetary tightening is expected *a priori* to be limited overall,⁵ the growing desynchronisation between the US cycle and that of the rest of the world could fuel asset reallocation and heighten volatility on financial markets.

b. Weaknesses in some emerging markets could affect other markets

Since last April, several emerging economies with pronounced external vulnerabilities (Argentina and Turkey especially) have seen sharp falls in their exchange rates and stock indices, as well as a deterioration in their market credit ratings. For the time being, these developments have been sharply differentiated, reflecting limited contagion between these economies and emerging markets as a whole.



Beyond this turbulence, the recent period has seen a contraction in net capital inflows to emerging economies (except China), with a downturn in portfolio and bank flows. The contraction can be seen in the global balance of payments for the second quarter, and an advanced estimation⁶ suggests that these flows could slow further in the third quarter, reaching levels on a par with those seen in late 2008 (Chart 3). Countries running surpluses, including oil exporters and Asian financial centres, are also making a significant contribution to the decline, reflecting, among other factors, the effects of currency depreciation (valuation effects, adjustment processes). The capital outflows



Sources: IMF, national sources, Banque de France calculations (estimate for Q3 2018).

Note: (1) Nigeria, Russia, Saudi Arabia; (2) Korea, Hong Kong, Taiwan, Singapore; (3) Hungary, Poland, Turkey, Egypt, South Africa; (4) Argentina, Brazil, Chile, Colombia, Mexico; (5) India, Indonesia, Malaysia, Philippines, Thailand.

⁵ Simulations by the Banque de France reported in the last risk assessment (see June 2018 Assessment of Risks to the French Financial System, Chapter 2.1) show that a 100 basis-point increase in the US term premium would have a moderate impact on the French economy, shaving 0.1% off GDP and inflation by 2020.

⁶ Our advanced estimator of capital flows is based on monthly data on foreign exchange reserves and the trade balance via the following accounting identity: Net capital inflows = − (trade balance − ∆ foreign exchange reserves).

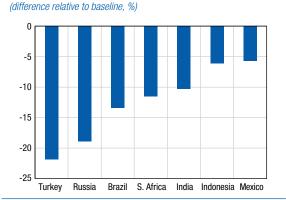
appear to be linked to a rebalancing of portfolios not just out of emerging countries and into advanced countries, but also among emerging countries⁷ (see Chapter 2.3 for a description of portfolio flows).

While the situation has stabilised since September, these movements look likely to continue and may gain momentum in the coming months. Tighter financial conditions could turn out to be a long-term trend for emerging economies, especially with advanced economies gradually normalising monetary policy.

A withdrawal by international investors from weakened emerging economies would have repercussions for the global economy. To illustrate this, a simultaneous tightening of external financing conditions in emerging economies⁸ (applying a shock similar to the one that affected Turkey between April and August 2018) would be felt to differing degrees by advanced economies (between 0.15 and 0.50 of a percentage point of GDP). This type of shock would be transmitted to the wider world economy chiefly through a substantial reduction in global trade (Chart 4). Advanced economies would be affected in this stressed scenario, but the effects of the shock would remain relatively contained compared to the size of the initial shock (Chart 5). The euro area would be more affected than the United States because it is more exposed to Turkey and Russia, which together account for approximately 6.5% of its external demand.

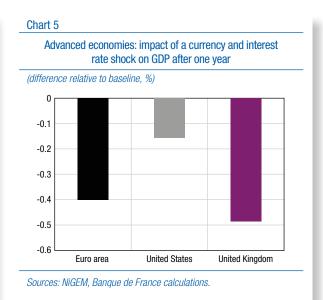
Chart 4

Emerging economies: impact of a currency and interest rate shock on imports of goods and services after one year



Sources: NiGEM, Banque de France calculations.

Note: Size of the shock: 40% depreciation in the exchange rate and 85% increase in the sovereign spread, i.e. similar to the shock experienced by Turkey between April and August 2018.



c. Heightened trade tensions

The risk of an escalation in protectionism adds up to this relatively vulnerable environment. Since the start of 2018, the US administration has adopted a series of protectionist measures, which applied to 3% of global trade as at the end of September 2018. Continued protectionism could threaten the global economy with a trade slowdown affecting all goods and trading partners. New measures are planned, including an additional 25% import tariff on USD 200 billion in US imports from China beginning in January 2019. If the measures are extended to the automotive

⁷ The discrimination between emerging countries is particularly apparent in the case of Mexico, where net capital inflows are expected to be strongly positive.

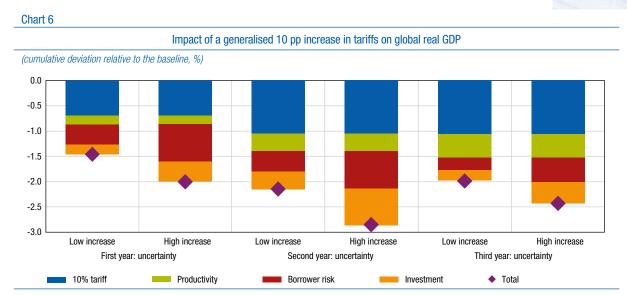
⁸ The countries used for the shock are Brazil, India, Indonesia, Mexico, Russia, South Africa and Turkey. China is excluded from this external stress scenario because its vulnerabilities are primarily domestic rather than external. The shock was simulated using the National Institute Global Econometric Model (NiGem) of the National Institute of Economic and Social Research (NIESR).

sector, around USD 1.3 trillion in global imports could be affected by increased tariffs, or around 10% of global trade.

According to research⁹ by the Banque de France, a permanent ten percentage point (pp) increase in tariffs¹⁰ on imports of intermediate and final goods would reduce global GDP by 0.7% in the first year and 1.0% after two years (Chart 6). In addition to the direct effect, several other factors associated with increased trade protectionism could amplify the decline in global GDP:

- a fall in productivity, as a result of inefficient reallocation of factors of production across firms;
- a rise in the cost of capital due to an increase in actual or perceived borrower risk;
- a decline in investment, caused by firms' wait-and-see attitude in a context of higher uncertainty about the future economic situation.

Including these amplifying factors, a generalised and global 10 pp increase in import tariffs could lower global GDP by 1.5% to 2.0% in the first year and by 2.2% to 2.9% in the second year, depending on the level of uncertainty.¹¹



Source: GIMF, Banque de France calculations.

Note: Effects of each corresponding shock taken in isolation. Results obtained using the Global Integrated Monetary and Fiscal Model (GIMF). A "low" ("high") increase in uncertainty corresponds to a one (two) standard-deviation shock to borrower riskiness and to uncertainty affecting investment.

d. A risky combination

Taken individually, these risks can be absorbed by Europe's economies and their impact on financial stability should remain limited. However, they are not mutually independent, and their simultaneous emergence would strengthen their effects, at a time when it seems to have become harder to coordinate economic policy responses.

⁹ Simulation made using the Global Integrated Monetary and Fiscal Model (GIMF), a multi-region dynamic stochastic general equilibrium model including the United States, the euro area and the rest of the world. See https://www.imf.org/external/pubs/ft/sdn/2013/sdn1519.pdf

¹⁰ The average import tariff applied in advanced economies is quite low (5.2% in the European Union, 3.5% in the United States), while it is much larger in emerging economies such as China (9.9%).

^{11 50} to 100 basis-point rise in the external finance premium and a one to two standard-deviation increase in the volatility index for the US financial market (VIX). A two standard-deviation increase in the VIX corresponds to a scenario of major financial stress, comparable to that seen during the 2009 financial crisis.

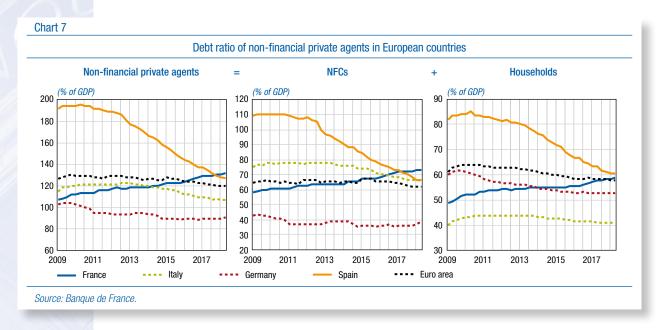
1.2 Debt of non-financial private agents: a continued upward trend

In France, a slightly above-potential growth is creating a buoyant environment for the financial sector. However, relatively high levels of public and private debt and, in the case of companies and households, the continued uptrend in debt, are a concern. The increase in the indebtedness of non-financial private agents remains a major risk.¹²

a. Private debt is reaching elevated levels

The debt of companies, households and the public sector is now equivalent to 231.2% of GDP, an increase of 63 pp of GDP in a decade.

While public debt has gone up in all of our main partner countries, although some are now registering perceptible reductions thanks to the recovery, in France, unlike in other countries, **private debt** has not seen a sustained decline since the 2008 crisis and **is now equivalent to 132.2% of GDP** (Chart 7).



In the second quarter of 2018, while it remained lower than in the United Kingdom (155%), the United States (149%) and Japan (147%), the debt ratio of French non-financial private agents was 12.3 pp above the euro area average (120%), mainly owing to the debt ratio of non-financial corporations, which was 11.2 pp higher than the euro area average.

b. NFC debt continued to increase in H2 2018...

The total debt of non-financial companies (NFCs) reached EUR 1.658 trillion in October 2018 (excluding loans from foreign banks), an increase of 5.6% over a year. This debt is divided into EUR 653 billion in debt securities issued on financial markets and EUR 1.004 trillion in loans from French banks.

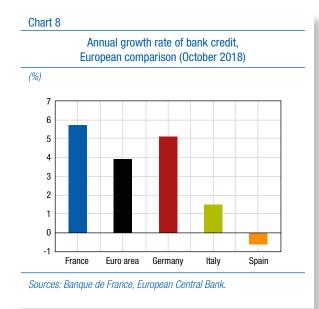
¹² For more information on credit and debt trends in France, see research by the Banque de France on the debt ratios of non-financial agents, the financing of non-financial companies (NFCs), lending to NFCs, loans by company size and loans to individuals; see also the ACPR's monthly monitoring of new residential lending.

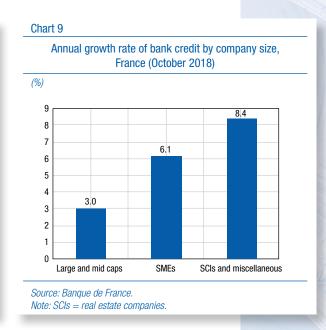
Market debt, which makes up 85% of the financing of large companies and 15% of the financing of medium-sized companies, climbed by 5.5%, in line with the overall increase in company debt, after experiencing several periods of marked rises (over 10% year-on-year in mid-2012, late 2014 and early 2017).

Since mid-2014, bank loans to NFCs have experienced stable and vigorous growth of between 4% and 6% a year. In October 2018, their growth rate stood at 5.7%, higher than the average in the euro area (3.9% growth in October) and our main European neighbours (Chart 8).

Growth in bank credit is mainly concentrated with small and medium-sized enterprises or SMEs (6.1% increase in the year to October, Chart 9), which also account for 42% of outstanding bank loans, as well as with real estate companies ("Sociétés Civiles Immobilières") and miscellaneous firms (up 8.4%). The increase in bank credit is driven by:

- investment, in the most buoyant macroeconomic environment since 2015, despite a softening in growth in 2018. Equipment loans grew by 7.4% in the year to October 2018 and accounted for 43% of outstanding bank loans to NFCs;
- cash loans (4.9% growth over one year), especially since low interest rates have prompted some NFCs to build up precautionary cash holdings;
- property loans (5.1% growth over one year).

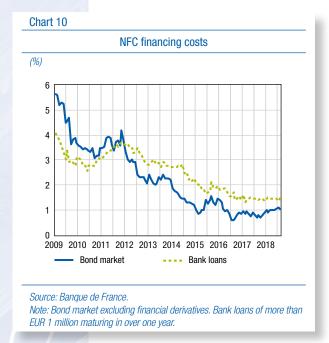


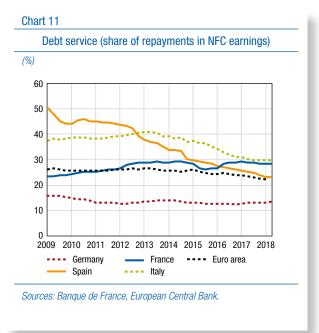


Current economic conditions remain favourable to debt, with financing costs still very low despite a slight increase in bond yields since the end of 2017 (Chart 10).

With the decline in financing costs, the NFC debt service ratio has stabilised but not decreased (Chart 11). Accordingly, companies remain exposed to a sudden deterioration in the macroeconomic environment or a substantial increase in interest rates, given that 44% of NFC debt is at floating rates¹³ (although a portion of this interest rate risk may be hedged using derivatives, especially by large companies).

¹³ See the June 2018 risk assessment for an analysis of the impact of higher interest rates on NFC repayment charges(https://publications.banque-france.fr/sites/default/files/medias/documents/ers 06 18 en ac 20180720.pdf).





c. ... as did household debt

Outstanding loans from French banks to resident individuals¹⁴stood at EUR 1.213 trillion in September 2018, including EUR 999 billion in property loans and EUR 178 billion in consumer credit.¹⁵

The steady increase in the household debt ratio and the gradual easing of property lending conditions over the last three years call for a close watch to be kept on future developments in lending conditions as well as on the consequences of a continued increase in household debt for the financial sector and the French economy as a whole.

Continued brisk growth in new residential lending

As regards property loans, beyond the trend in overall outstandings, three structural factors specific to the French market need to be underlined:

- since virtually all property loans are at fixed rates, an increase in interest rates would not have a direct impact on borrower solvency;
- virtually all property loans are protected in some way, either by a "cautionnement" guarantee (60% of loans), a mortgage (30%) or another type of guarantee (5%);
- borrower characteristics, including age, qualifications and type of employment contract, suggest weaker exposure to unemployment risk than the French average.

These characteristics help to mitigate credit risk and, in the event of difficulties, potential losses for the banking system. The non-performing loan ratio for property loans to households is historically very low (around 1.5%) and has risen little since the 2008 financial crisis.

In a context of relatively low credit risk, residential property prices have continued to grow at a sustained pace on average, i.e. 2.8% over 12 months for France as a whole in the second quarter of 2018 albeit with persistent substantial geographic disparities

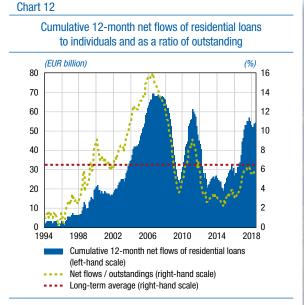
¹⁴ Total debt held by households as defined by the national accounts, i.e. individuals but also sole entrepreneurs and non-profit institutions serving households, from all lenders, stood at EUR 1.373 trillion in the second quarter of 2018.

¹⁵ Plus EUR 36 billion in other credits, such as non-performing loans, customer loans not counted under leases, etc.

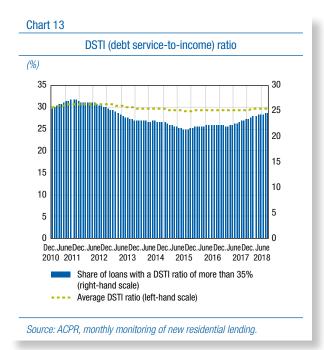
(7.1% increase for Paris). Outstanding home loans have continued to rise briskly (5.9% in the year to October 2018, Chart 12), far outpacing growth in incomes and contributing to the trend increase in the household debt ratio.

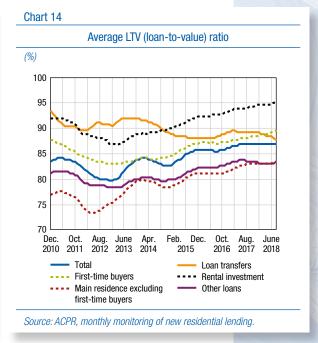
Whereas the average rate on home loans (fixed rate, maturing in over one year) remains close to its low point, at 1.53%, the change in outstanding home loans has stayed above the EUR 50 billion mark since May 2017 (EUR 54.3 billion in August 2018).

Lending conditions have eased further since the last assessment. The debt service to income (DSTI) ratio has continued to increase, rising to 30%, while the share of loans with a DSTI ratio of over 35% has reached 24.5% (Chart 13). Since 2015, the average maturity of loans has lengthened, climbing to 20.4 years in August 2018, while the loan-to-value (LTV) ratio has increased to 87% (Chart 14).



Source: Banque de France.





Rapid growth in consumer credit

Consumer credit, which increased by 6.6% in the year to October 2018, has accelerated since spring 2015, especially in connection with automobile financing, which accounts for two-thirds of its growth.

The increase in car financing is attributable to brisk car sales – new vehicle registrations have grown annually by between 5% and 6% since 2015^{16} – but also to the increase in leases with purchase options, which are now an established sales practice.

d. ... prompting macroprudential measures to be taken

In response to the risks linked to the continued increase in the debt of non-financial agents, France's Haut Conseil de Stabilité Financière (HCSF – High Council for Financial Stability) took macroprudential measures over the course of 2018. In December 2017, it announced a measure to curb the exposure of systemically important French banks to the most highly indebted French firms.¹⁷ The limit, which came into effect in July 2018, was calibrated to maintain bank resilience without causing excessive credit restrictions or other unwanted effects on economic growth. At the time of writing, this constraint remains non-binding and, against the general backdrop of a supportive financial cycle, it was decided in June 2018 to raise the rate of the countercyclical capital buffer (CCyB), a capital surcharge for European Union (EU) banks in relation to their exposures in France,¹⁸ to 0.25% (Box 1). The measure, which will enter into effect in June 2019, is intended to make the banking system more resilient. This will ensure that this latter is able to support credit supply in the event of a cyclical reversal, especially for PMEs, which are structurally reliant on it.

- 17 https://www.economie.gouv.fr/files/files/directions_services/hcsf/Decision_n_D-HCSF-2018-2.pdf
- 18 https://www.economie.gouv.fr/files/files/directions_services/hcsf/HCSF_20180611_Communique_de_presse.pdf

Box 1

The countercyclical capital buffer: an instrument designed to support the sustainable financing of the economy

The support provided by the countercyclical capital buffer, or CCyB, can be illustrated using the example of the four seasons. Broadly, the CCyB should be activated in the spring and before the summer, which symbolise, respectively, a cyclical upswing and over-confidence leading to an underestimation of risk. The CCyB activation phase thus accompanies an assessment signalling potentially excessive loan growth and creates additional loss-absorbing capacity through increased bank capital requirements. In the event of a cyclical reversal, represented by autumn and winter, the summer imbalances are reduced but come with a loss of confidence, the materialisation of risks and an increase in financing constraints for the economy. Because the CCyB was activated during the spring, a capital buffer has been set up to cushion the winter impact. Relaxing the buffer in the autumn will relieve the constraints on credit institutions, which can then absorb the potential losses while continuing to finance the economy.

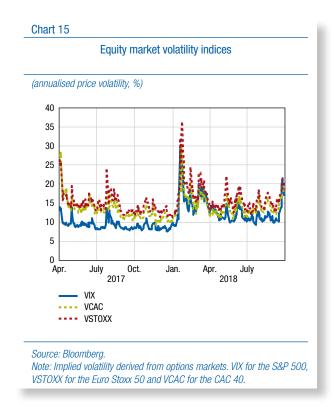
The four-season metaphor shows the **importance of the timetable for activating and relaxing the buffer**. The CCyB should be activated reasonably early to allow capital to build up during a period of confidence (hence at lower cost), while deactivating the mechanism should make it possible to sufficiently mitigate the impact of a cyclical reversal.

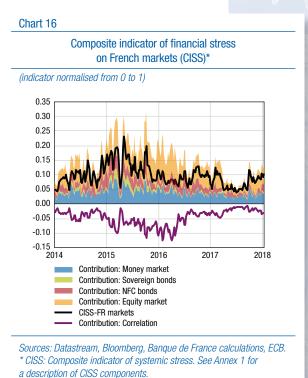
1 Cf. July 2018 post on the Eco Notepad blog: https://blocnotesdeleco.banque-france.fr/en/blog-entry/four-seasons-financial-cycle-and-countercyclical-capital-buffer.

2 Risks for financial markets

Global markets have seen a resurgence in volatility (Chart 15) and several sharp corrections since the start of 2018, in February, May and October. Despite these corrections, valuations in different asset classes remain at record high levels both in Europe and the United States. This trend needs to be considered in the context of persistently low interest rates and vulnerable liquidity, particularly in Europe.

The risk of a more significant correction in connection with a shift in investor sentiment is becoming more pronounced, as shown by the indicator of systemic risk on financial markets (Chart 16 and Annex 1), which has been heading upwards since early 2018.





2.1 RISKS FOR EQUITY MARKETS

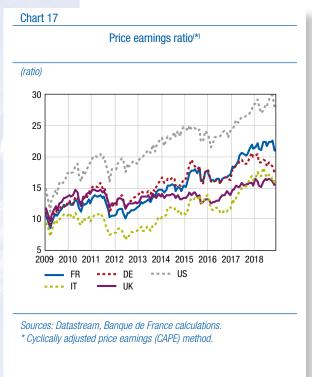
a. Market valuations remain elevated at first glance, especially in the United States...

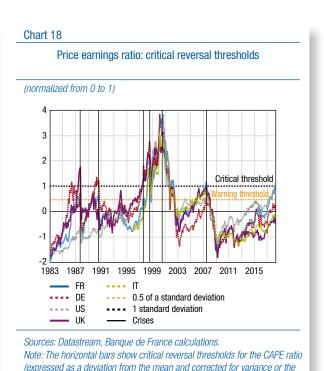
Global equity market valuations have been trending upwards since 2009 and, despite corrections in February and October 2018, the US, UK and French¹⁹ indices are at record levels (Annex 2). The European index has put in a somewhat meeker performance, held back especially by weaker increases for Italian and Spanish companies and by the steep fall in valuations since early 2018 in Germany and Italy (12% in each case).

With earnings growth being outpaced by the increase in share prices, the cyclically adjusted price earnings (CAPE) ratio (Chart 17, Annex 3) has been rising since 2009 in the United States and to a lesser extent in France, Germany, Italy and the United Kingdom.

The US ratio is at a high level (Annex 4) relative to its long-term average (28 vs. 18) despite the share price corrections in 2018, suggesting a risk of overvaluation (Annex 5). Likewise in France, the CAPE ratio was well above its long-term average at the start of November 2018²⁰ (21 vs. 17) and is hitting levels above which corrections are possible based on past observations.

Developments have been more measured in Germany, the United Kingdom and Italy (Chart 17). The overall European CAPE ratio, meanwhile, is below its long-term average (14 *vs.* 18), on a par with levels seen in 2014, and the intrinsic risk of a reversal looks more remote (Chart 18).





z-score). Guide: if the indicator is higher than 0, then the PER is above its

While valuations of financial companies are at historically low levels across Europe, those of industrial companies are pushing the national averages upwards. France's CAPE ratio is diverging from the ratios of other European countries because of the proportion of

companies operating in consumer cyclicals²¹ (20% of the index), which are growing

b. ... owing in particular to the environment of historically low interest rates...

relatively faster than in other countries.

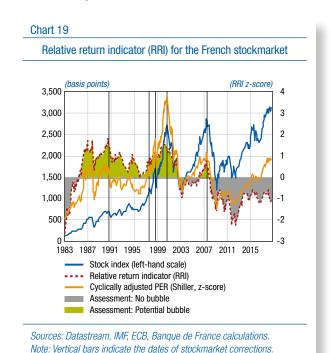
An assessment based solely on share prices has its limits: the CAPE ratio compares the index against its historical path but ignores the macroeconomic and financial environment (business conditions, growth expectations, level of interest rates, etc.) and other developments, such as tax reforms.

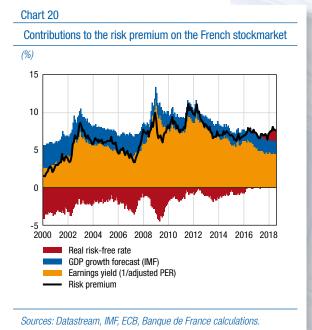
²⁰ Recent tax reforms and cuts to social security charges may impact dividend payments (or expected future payments) and consequently affect PER measurement.

²¹ Consumer cyclicals: goods with an income elasticity of more than 1. This category includes companies from the media, luxury, leisure and automotive sectors.

The risk premium, calculated using a relative return indicator (RRI, Chart 19 and Annex 6), which measures the difference between the return on equities and a risk-free rate, does not offer evidence that equity markets in France are abnormally valued based on current conditions.²² In fact, the indicator shows that the market is still relatively cheap compared with previous business cycles owing to the current level of interest rates.

Accordingly, elevated share prices do not appear to be the result of overly bullish growth expectations²³ (around 1.8%) or an unusually low risk premium as in 2000, when the real premium fell to 1.5% compared with an average value of between 5% and 6%. Rather, they look consistent with the current environment of rock-bottom real interest rates, which are automatically contributing to an increase in the risk premium (Chart 20 and Annex 7).





Still, current elevated valuations are exposed to an abrupt increase in interest rates or a reassessment of growth prospects. In France, notably, a reversal in the CAPE ratio towards its long-term average would cause equity market valuations to drop by 19% (assuming unchanged earnings).

Note also that, from a cyclical perspective, **equity buybacks** have lent support to US share prices. By the end of 2017, US multinationals had built up some USD 1 trillion abroad, mainly in US fixed income securities (Annex 8). The new tax system introduced in January 2018 imposed a one-off tax, payable over eight years, on existing stocks of securities held overseas, whether funds were repatriated or not, thereby eliminating the tax incentive to hold cash abroad.²⁴ Balance of payments data show that US companies repatriated just over USD 460 billion²⁵ in the first half of 2018 (Chart 21).

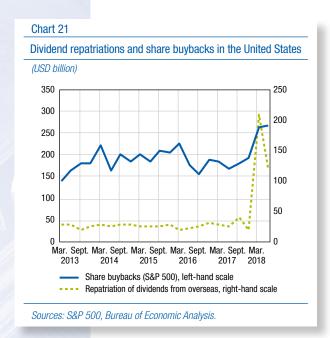
²² The risks appear to be more concentrated in the United States (Cf. Assessment of Risks to the French Financial System, June 2018) but the indicator was still in neutral territory in October 2018.

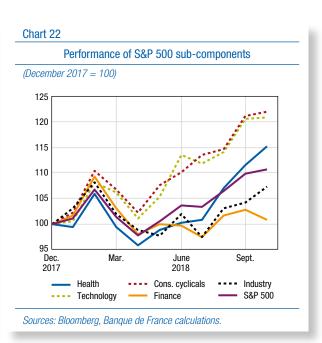
²³ IMF forecasts

²⁴ The tax rate is 15.5% for liquid assets and 8% for illiquid assets. The Tax Cuts and Jobs Act lowered the marginal rate of tax from 35% to 21%.

²⁵ By way of comparison, the 2004 tax holiday, which introduced a one-year reduction in the tax rate applied to repatriations, resulted in the repatriation of USD 312 billion in 2005 out of an estimated USD 750 billion held abroad.

The repatriated cash, which chiefly involved the 20 largest multinationals (50% of total buybacks), mainly went towards share buybacks, which totalled USD 380 billion in the first six months of the year, ²⁶ or USD 100 billion more than in previous halves (Chart 21). Buyback flows were essentially attributable to major IT firms (including GAFAM)²⁷ and health sector companies, and helped to support S&P 500 share prices. ²⁸ Recent corrections affecting tech firms have not wiped out the gains recorded since the beginning of the year. Conversely, valuations have stagnated in other sectors owing to the two correction episodes (Chart 22).





c. ... and are sensitive to external shocks

Furthermore, an analysis of CAC 40 corrections illustrates the index's sensitivity to shocks from advanced countries (see Diebold Yilmaz connectedness model, Annex 9). Chart 23 shows the extent to which shocks emanating from the stock markets of specific countries have affected the variance of the CAC 40 index since 2007.

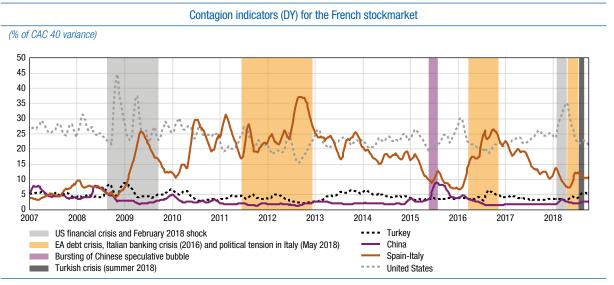
In spring 2018, 35% of the CAC 40's variance was attributable to shocks emanating from the US equity index. In May 2018, the effects on the Milan Stock Exchange of investor concerns over Italian debt had an impact – albeit limited – on the performance of the French stock market. Furthermore, despite the growing importance of emerging countries in the global economy and the recent stress that they have been under, the CAC 40 appears to be only mildly affected by shocks emanating from these countries. That said, the scale of contagion could significantly increase in the case of more severe shocks than those seen in 2018 (such as, for example, the bursting of the Chinese speculative bubble in 2015).

²⁶ Since 2013, half-yearly share buybacks have averaged USD 280 billion. In 2004, repatriated cash was also put towards buybacks (Watch What I Do, Not What I Say: The Unintended Consequences of the Homeland Investment Act, by Dharmapala, Foley & Forbes, NBER, 2009).

²⁷ Google, Amazon, Facebook, Apple, Microsoft.

²⁸ Companies from the IT and health sectors make up 41% of the S&P 500. Consumer cyclical firms also played a part in the S&P 500's strong performances but this was not due to additional share buybacks.





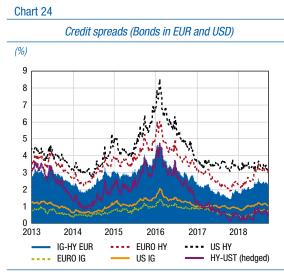
Sources: Bloomberg, Banque de France calculations.

Note: The levels of the curves show the extent to which shocks emanating from a specific country affected the variance of the CAC 40.

2.2 RISKS FOR THE BOND MARKET

a. Bond markets are relatively expensive compared with equity markets

In recent years, the search for yield by euro area investors has gone hand in hand with an increase in the relative share of lower-grade bonds (BBB+ and below, Chart 25) in the stock of debt. This risk appetite has had an impact on interest rates in the segment, which hit record lows in late 2017, with a 200 basis-point spread separating indices of high-yield euro corporate bonds and the yield on German government 7-10 year bonds



Source: Bank of America Merrill Lynch.

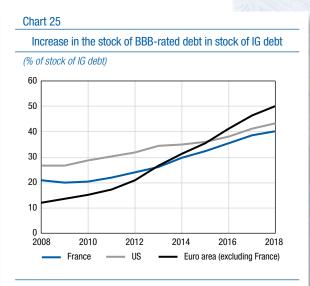
Note: IG: investment grade, HY: high yield, UST: US Treasury (1)

IG-HY EUR = spread IG vs. HY in EUR (2) EURO IG and EURO HY =

European IG and HY spreads vs. German Bunds (3) US IG and US HY =

US IG and HY spreads vs. US Treasury (4) HY-UST = European HY vs.

US Treasury, hedged by currency swaps.

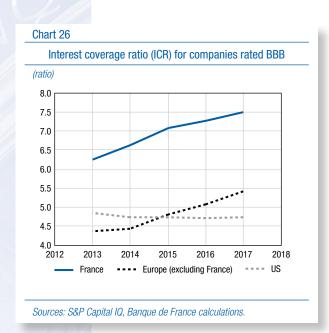


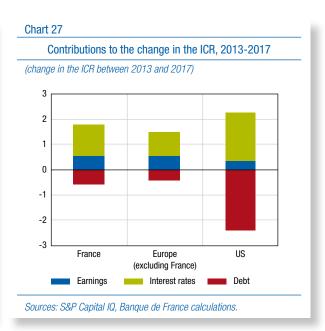
Sources: Dealogic, Banque de France calculations.

(Chart 24). Corporate yields have corrected since February 2018, however, with credit spreads approaching levels observable in the United States, partly reflecting the ECB's gradual winding down of its corporate sector purchase programme (CSPP).

b. Is credit risk correctly priced in the euro area and United States?

The interest coverage ratio (ICR)²⁹ of non-financial companies with a low average credit rating (BBB+ to BBB-) has been rising in France and Europe for the last five years (Chart 26). The improvement is largely attributable to the low level of interest rates in the euro area but also to improved corporate earnings (Chart 27). Conversely, in the United States, the ICR has fallen slightly owing partly to the sharp rise in debt. Thus, despite the correction in euro area spreads, interest rates on European corporate bonds remain low, reflecting weak returns on the risk taken by investors. The market is implicitly assuming that the monetary policy normalisation process will go without a hitch and that the turmoil linked to Brexit or the difficult budget talks in some euro area countries will have no major impact. But in the event of a sudden jump in interest rates, US and European firms could see their solvency compromised, at a time when they still have considerable financing and refinancing requirements, heralding an increase in credit risk and a possible migration by companies at the bottom end of investment grade category into the high yield category.





Lastly, pricing risk could also affect niche segments such as commercial real estate, which investors see as an alternative to equities and fixed income investments (Box 2).

Box 2

Could commercial real estate be the source of a financial bubble?¹

Since 2009, commercial real estate prices have risen at a sustained pace in France. The low interest rate environment has stimulated the relative appeal of the risk/reward trade-off for these assets compared with bond investments, leading to a sharp increase in the volume of deals. Prices are now above pre-crisis levels, especially in the office sector, and the market has been extremely brisk, with substantial increases in:

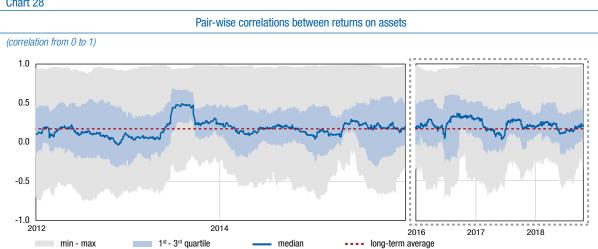
- prices: 3.1% over one year in the first half of 2018 (source MSCI);
- transactions: 48% over one year in the first half of 2018 (source BNP Real Estate);
- bank exposure to the sector in France: 1.9% between December 2017 and June 2018 (source ACPR). The situation on the commercial real estate market raises the question of a financial bubble. However, the high valuations observed, particularly for office prices, look broadly consistent with the economic fundamentals if we consider the low interest rate environment as well as how narrow supply is relative to demand on some market segments. Even so, these fundamentals are currently far from their historical values. There is therefore the potential for a downward price correction in the event of a sudden increase in interest rates or a downturn in economic prospects. The systemic effects of such a reversal should be limited, though, insofar as commercial real estate accounts for a small share of financial institutions' exposures.
- 1 See Banque de France Bulletin No. 219: pages 1 to 3.

RISKS LINKED TO A POTENTIAL ASSET ROTATION

Changes in correlations across asset classes suggest that the current period is unusual

Since mid-2015, average correlations between the returns on financial asset classes (bonds and equities) have been at relatively high levels based on a historical comparison, i.e. median pair-wise correlations are higher than the long-term average (Chart 28 and Annex 10). At the same time, the dispersal of these correlations has decreased over the recent period, particularly for the lowest correlations, leading to greater skewness in distribution.





Sources: Bank of America Merrill Lynch. National stock indices provided by Bloomberg, Banque de France calculations. Guide: a value of 1 means that the return on an asset is totally correlated with the return on another asset; 0 shows that there is no correlation, while -1 indicates perfect anti-correlation.

These developments may be a symptom of herd behaviour by investors. A negative shock could lead a large number of investors to try to sell the same assets simultaneously, causing market liquidity to dry up and potentially leading to an excessive downside adjustment to asset values.

b. Emerging markets and some euro area market segments are seeing outflows...

Expectations of a change in the economic and financial environment are promoting a large-scale reallocation of assets into market segments where returns are recovering. End investors, particularly investment fund clients, are starting to reallocate their portfolios into highly-rated US fixed income securities, at the expense of lower rated bond segments, both US and European. These reallocations are shown in the net subscription flows observed in the asset management industry, which plays a pivotal role as the interface between institutional investors and the main asset classes.

On the European³⁰ fixed income market, after net inflows into the investment grade (IG) segment in 2017, flows have turned negative since the start of 2018 (Chart 29), both for the *IG* segment (net outflows of USD 10 billion) and the high yield (HY) segment (net outflows of USD 15 billion). The sovereign segment saw net inflows of USD 6 billion in the early part of 2018, but political uncertainties generated by the Italian crisis and *Brexit* have resulted in substantial capital outflows from the segment since May 2018.

Flows of capital into US fixed income debt funds have been rising sharply since January 2017 in the sovereign and corporate IG segments alike. Conversely, the HY segment has seen net outflows since the beginning of 2018. This trend could be attributable to the search for safety by investors leaving the speculative segment amid a (moderate) increase in US long-term interest rates.

While investors seeking yield turned massively towards emerging countries during times of low interest rates in developed countries, capital began flowing out of these economies in 2018. In connection with developments observed at the macroeconomic level, fixed income and equity funds active in emerging markets have been hit by substantial withdrawals since the end of the first half of 2018.

Another asset reallocation factor has been the narrowing of the yield spread between non-US risky assets and US risk-free assets: for example, the spread between euro area HY corporates and US sovereign yields is extremely thin even taking account of exchange rate hedging via currency derivatives (purple line in Chart 24).

c. ... and changes to market structures could amplify the reversal

As they search for yield, investors might look to rebalance their portfolios in the same direction in a relatively synchronised manner. But changes to market structures have led liquidity to become concentrated in certain segments, making it harder to supply liquidity during times of stress and amplifying market movements. As a result, the illiquidity of certain markets could become a source of systemic risk by helping to magnify and spread shocks.

Aggregate measures of liquidity in equity markets suggest that market conditions have deteriorated in France and Europe (Box 3, Chart 30), particularly in the wake of the political tension surrounding Italy's budget trajectory at the end of May. The

³⁰ Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the United Kinadom.

Box 3

Composite illiquidity indicator

Brief volatility spikes since 2014 have underlined how seemingly plentiful liquidity can quickly evaporate during times of stress. Illiquidity may be the consequence of several factors, including the unwillingness of banks to perform their role as market makers or shifts in market microstructures. Moreover, while non-bank actors and high-frequency algorithmic trading tools are seen as good for market liquidity under normal conditions, they are not a stable source of liquidity when market conditions take a turn for the worse (see study published by the AMF in January 2017).¹

Since market liquidity is a hard concept to quantify, multiple aspects of liquidity need to be considered. In the case of stock market liquidity, the composite illiquidity indicator for the CAC 40 and Euro Stoxx 200, shown in Chart 30 and Annex 11, combines several measures, including the Amihud² ratio, an indicator of transaction costs (bid/ask spread), a market efficiency (or resilience) coefficient, trading volume, price spreads and the impact of extreme prices on the value of trading volumes. An increase in the index shows that liquidity is deteriorating. Illiquidity indicators are particularly useful on market segments that are considered to be less liquid than equity markets.

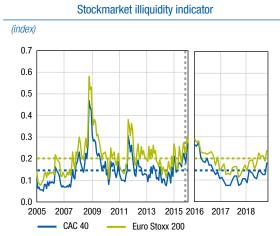
- 1 AMF, Newsletters & other publications, 26 January 2017: "Study of the behaviour of high-frequency traders on Euronext Paris".
- 2 The Amihud ratio is an indicator of market depth or price impact. It consists in calculating the average of the absolute values of the price differences between consecutive trades divided by the associated volume.

Chart 29

Cumulative net flows into/out of bond funds (% of total assets) 4 3 2 1 1 2 Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. 2018 Emerging ---- United States ---- W. Europe

Source: EPFR Global. Note: Western Europe: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Norway, Spain, Sweden, Switzerland and the United Kingdom.

Chart 30

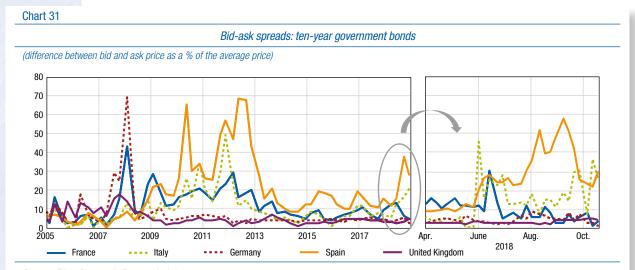


Sources: Bloomberg, Banque de France calculations.

Note: Monthly average of a composite illiquidity indicator. The indicator has a value between 0 (high liquidity) and 1 (low liquidity). The indicators presented here have been normalised, making differences between the CAC 40 and the Euro Stoxx 200 indices irrelevant. The dotted lines show long-term averages.

measure that tracks stock market illiquidity is now at its highest level since mid-2016. Taking a more structural view, illiquidity in French and European markets is now above its long-term average (calculated since 2005), but is still short of the levels seen during the financial and sovereign debt crises.

Market liquidity has deteriorated more significantly for the sovereign bonds of some euro area countries since May 2018 (Chart 31). Since the end of May, bid-ask spreads, which can be interpreted as indicators of the price of liquidity, have jumped for Italian and Spanish ten-year bonds following recent political events. The relative size of the debts of these two countries might explain why the impact of a price shock may diverge between the two markets in the event of stress. Since this episode, liquidity



Sources: Eikon, Banque de France calculations.

Note: An increase in bid-ask spreads points to a deterioration in liquidity. Quarterly averages using daily data (left-hand side). The right-hand panel is a close-up of the recent period and shows the latest developments since April 2018 (weekly basis).

has not been wholly restored to these markets and remains at levels not seen since the European sovereign debt crisis.

Conversely, liquidity has remained relatively resilient in the sovereign bond markets of the other main European countries (Germany, United Kingdom, France). German and UK bid-ask spreads are significantly below their crisis levels, while the French bid-ask spread spiked in June 2018 before normalising. These patterns suggest that political tensions in Italy spread only weakly to bond markets outside the periphery countries, but that market conditions remain exposed to a sudden deterioration.

Liquidity on secondary corporate bond markets has improved since 2016 partly due to the implementation of the Eurosystem's CSPP programme in June 2016, according to an ECB study.³¹ The Eurosystem's continued presence helped to stabilise the market, causing credit spreads (against swaps) to narrow. Research by the AMF also shows that bond market liquidity has remained at satisfactory levels overall in recent years.³² However, price/impact measures³³ since the start of 2018 have been offering a more nuanced assessment and appear to point to a decrease in liquidity. This assessment is backed up by calculations by the International Capital Market Association (ICMA) based on Intercontinental Exchange (ICE) data, which show that liquidity has diminished on US and European HY and IG segments since early 2018. With elevated political risk in the euro area acting as a drag on the market, these developments suggest that CSPP purchases helped to mitigate the negative impact on liquidity, but the end of the purchase programme could remove this buffer.

Against the backdrop of more bearish markets and monetary policy normalisation, portfolio composition changes could cause corrections to asset prices and/or risk premiums as well as shocks to market liquidity. Recent stress on emerging currencies linked to the dollar and fears created by political developments in Italy (Box 4) are an illustration of this situation.

³¹ De Santis et al., "The impact of the corporate sector purchase programme on corporate bond markets and the financing of euro area non-financial corporations", ECB Economic Bulletin, Issue 3/2018.

³² AMF, Risk and Trend Mapping, July 2018.

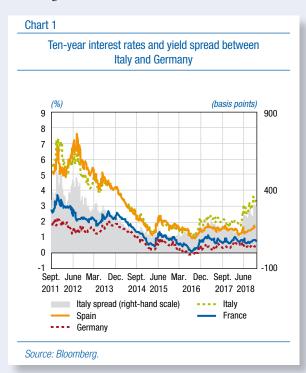
³³ Including the Amihud indicator, which divides the absolute value of the price change between two trades by the associated volume.

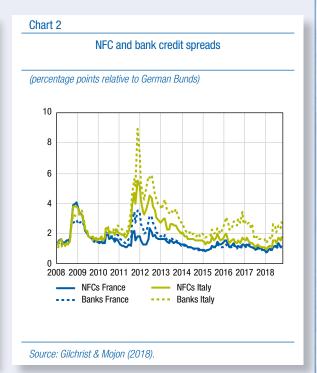
Box 4

Situation in Italy and impact on financial markets (at 03/12/2018)

The publication in May of a "contract for a government of change", followed in September by the preliminary forecast for the fiscal deficit, estimated at 2.4% of GDP in 2019, triggered upheaval on financial markets. Talks are currently underway between the European Commission and the Italian government.

Budgetary uncertainties translated into an increase in the cost of financing for the Italian government, with Italian spreads widening relative to German Bunds (Chart 1). This reassessment of the Italian risk premium reflects the risk associated with the unsustainability of public finances as well as the risk of debt conversion in the event of a euro exit, which is not covered by the European treaties (redenomination risk). Based on current market expectations, the Banca d'Italia, in its November 2018 financial stability report, estimates the additional debt service cost for the Italian Treasury at EUR 5 billion in 2019 and EUR 9 billion for 2020, with these effects also being felt in private sector financing (Chart 2).





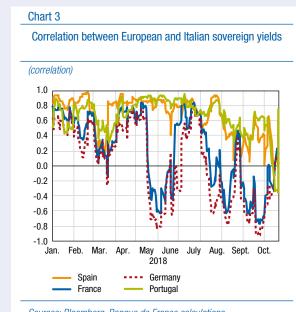
The interaction between sovereign and bank risk is particularly significant in Italy, where Italian sovereign securities make up over 10% of bank balance sheets. However, the current tensions have affected the wider European banking sector only moderately: (i) spreads for French bank bonds have held steady; (ii) the systemic risk presented by Italian banks for other European financial institutions, gauged here using the Delta CoVaR indicator, remains limited (Chart 4), while the decline in Italian stock indices, and particularly the bank index (20% for the overall Italian index and 37% for the Italian banking index since May 2018) has not fed through to other euro area banking indices.

Finally, while French banks still have substantial Italian exposures on their balance sheets (around EUR 260 billion),³ these consist chiefly of the **exposures of subsidiaries of French banks to the Italian economy** (around EUR 180 billion), while holdings of Italian sovereign debt stand at EUR 47 billion. **French insurers have exposures to Italy worth EUR 86 billion** (sovereign debt accounting for just over half of their holdings), equal to 3.4% of their total assets. Although limited, these exposures are among the insurers' largest international exposures.

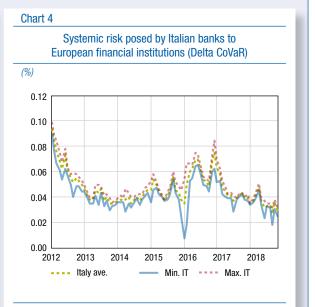
¹ See De Santis (2015), "A measure of redenomination risk", ECB Working Paper 1785, and Gros (2018), "Italian risk spreads: Fiscal versus redenomination risk", VOX CEPR Policy Portal (29 August).

² i.e. the additional interest expense burden; see Banca d'Italia, Financial Stability Report, November 2018, Box on page 14.

³ Including off-balance sheet transactions, total exposures to Italy amount to EUR 311 billion, including EUR 221 billion to non-financial companies and households, and EUR 51.5 billion to the sovereign and general government segment.







Sources: Bloomberg, Banque de France calculations. Guide: Delta CoVar seeks to assess the systemic risk of each bank. It gauges the impact that a bank would have on the financial system if it were to run into trouble (i.e. if it were to reach its Value at Risk level). A high Delta CoVaR for a bank implies that stress affecting the bank could have severe repercussions for the wider financial system.

3 Risks for financial institutions

Recent stress tests conducted by European prudential authorities confirmed the asset quality and solvency of European financial institutions. However, structural challenges persist in areas ranging from cost control and digitalisation to the search for profitability.

Rising operating costs remain a focus of attention, with financial institutions needing to pursue their efforts to adjust and transform themselves to address the new challenges posed by the digital revolution. The ongoing digitalisation process is highlighting the importance of cybersecurity for the financial system.

3.1 Risks for the French banking sector

a. Solvency and liquidity are at satisfactory levels

At the end of September 2018, the aggregate CET1 ratio without transitional arrangements ("full CRD IV" CET1 ratio) of the four main French groups was 13.3%, or virtually the same as in late 2017, as the 2.3% increase in core own funds matched the 2.1% growth in risk-weighted assets. Moreover, a stress-testing exercise performed jointly by the EBA and the ECB (Box 5), recently demonstrated the resilience of French banking groups.

TLAC ratios are rising and already exceed the minimum that will be required in 2019 for the three banks that report on the topic. For the most part, other regulatory ratios were slightly down in late 2018 compared with end-2017: full CRD IV leverage ratios were down for three main French banks and stable for the fourth, but still remained above 4% in all cases. Short-term liquidity coverage ratios (LCRs), meanwhile, were down for two banks and up for a third,³⁴ standing at least at 110%.

With IFRS9 coming into force in 2018, banks took steps to reclassify and change the accounting treatment of certain financial assets and liabilities. They also recast their models for calculating provisions. For the six main French institutions, the first-time application of the new standard resulted in an average decrease of 18 bps in their full CRD IV CET1 ratio, which was in line with the average outcome for major European banks (22 bps decline).³⁵ For now, however, the longer-term effects of implementing IFRS9 – and in particular the responsiveness of the standard to changes in the cycle and its impact on banks' new accounting models – are hard to value. Research is currently being done on the risk that IFRS9 could have a procyclical effect and the macroprudential measures potentially needed to mitigate it.

Box 5

2018 European stress test results

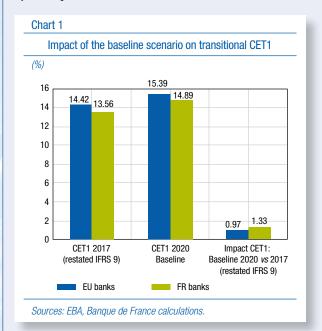
The adverse scenario used for the 2018 EU-wide stress test resulted in a decline in the solvency ratio of French banks, placing them slightly above the EU bank average.

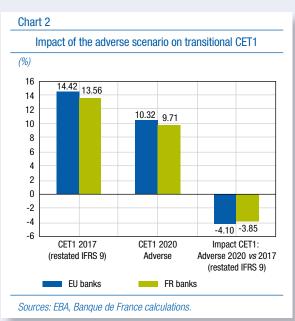
A total of 48 European banks, including the six major French banking groups, covering around 70% of total EU banking sector's assets, took part in the 2018 stress tests organised by the European Banking Authority (EBA) and the European Central Bank (ECB). Banks' resilience from a solvency perspective was assessed using two three-year scenarios (2018-2020), which were calibrated by the European Systemic Risk Board (ESRB): (i) a baseline scenario using ECB forecasts and (ii) an adverse scenario reflecting the risks most likely to threaten the stability of the

³⁴ The fourth bank has only provided an estimated ratio (>110%), making it impossible to gauge the change.

³⁵ Source: data published by EBA after the 2018 stress test.

European financial sector as identified at the end of 2017. For France, the adverse scenario included a cumulative GDP decrease of 1.5%, an unemployment rate of 10.2% at the end of 2020, a cumulative 16.9% fall in residential real estate prices, long-term interest rates of 2% in 2020 and a 32.2% drop in the CAC 40 index in 2018. An important feature of the 2018 exercise was the move to the IFRS 9 accounting framework, which came into force on the first of January 2018 and which led to a significant revision of credit risk assessment. The exercise showed that the weighted average CET1 ratio under the baseline scenario increased by 97 bps (excluding IFRS 9) for the European sample as a whole (Chart 1). French banks saw a larger increase (133 bps) from a lower starting point. The weighted average CET1 ratio under the adverse scenario was down by 410 bps³ (excluding IFRS 9) for the overall European sample and by 385 bps⁴ for France (Chart 2).





- BNPP, Crédit Agricole Group, BPCE, Société Générale, Crédit Mutuel and La Banque Postale.
- 2 Aggregate and individual results published on 2 November 2018, https://www.eba.europa.eu/-/eba-publishes-2018-eu-wide-stress-test-results. The ACPR is going to publish an accompanying paper focusing on the situation of French banks.
- 3 419 bps if the switch to IFRS 9 is included.
- 4 404 bps if the switch to IFRS 9 is included.

b. On the asset side, some exposures are sensitive to changes in the European and global macroeconomic environment

In a dynamic credit environment, lending conditions are tightening for loans to non-financial companies (NFCs) and easing for loans to households, especially mortgage loans, according to the ECB's quarterly bank lending survey.³⁶ This qualitative assessment is backed up by monthly data reported to the ACPR (see Debt section in Chapter 1). In an uncertain macroeconomic environment, the quality of banking book exposures in France and abroad as well as the risks to trading book exposures need to be monitored, given the relatively large size of these portfolios in the balance sheets of French banks.

• Improvement in non-performing loan ratios (NPLs) on non-financial companies (NFCs) and households

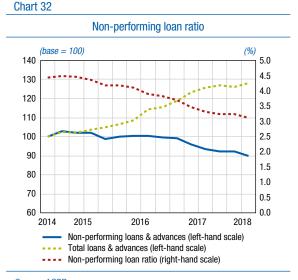
At end-June 2018, the overall NPL³⁷ ratio of the main French banks was down again, falling to 3.1% (Chart 32), compared with a European average of 3.6%. The

- 36 Quarterly Bank Lending Survey: https://www.ecb.europa.eu/stats/ecb_surveys/bank_lending_survey/html/index.en.html
- 37 The NPL ratio is the ratio of the total gross book value of NPL to the total gross book value of all loans.

decrease was attributable to the twin effects of a 4.3% year-on-year increase in outstanding loans (for a gross volume of EUR 4.053 trillion) and a 6.2% year-on-year drop in NPL amounts. This positive change was accompanied by an improvement in the cost of risk, which totalled EUR 3.5 billion at end-June 2018. NPL ratios also improved year-on-year in the NFC and household sectors, reaching 4.9% and 3.6% respectively, although the household NPL ratio did hit a 2014-2018 low of 3.3% at the end of 2017.

• Significant French exposures to the Italian economy, particularly for subsidiaries

Looking at the risks linked to international banking activities, Italy is the number-two country after the United States in terms of direct exposures of French banking groups through subsidiaries and branches.



Source: ACPR.

At end-June 2018, the international exposures on an immediate risk basis³⁸ of French main banking groups stood at EUR 260 billion³⁹, with approximately EUR 180 billion in exposures to households and NFCs. These exposures are primarily held by subsidiaries whose capital levels must meet the solvency regulatory requirements set and monitored by the European supervisor.

Over the last two years, NPL ratios have improved steadily for all counterparties resident in Italy (Table 2), owing to the twin effects of a 15.4% increase in loan volumes and a 13.4% decline in NPLs. These findings hold for different types of counterparty, including NFCs and households.

Table 2

NPL ratios for counterparties resident in Italy									
NPL ratio IT counterparties	June 2016	Dec. 2016	June 2017	Dec. 2017	June 2018	NPL ratios – June 2018 All counterparties			
Overall	14.5%	14.2%	12.5%	12.0%	10.9%	3.1%			
NFCs	22.4%	21.3%	20.2%	19.0%	16.9%	4.9%			
Households	11.2%	10.7%	9.4%	8.9%	8.7%	3.6%			

Exposures to Italian sovereign risk, while admittedly smaller, are still significant, at EUR 47 billion. ⁴⁰ As a result, French banks are the euro area credit institutions with the largest exposure to Italian public debt after Italian banks (EUR 380 billion in Q2 2018, source: ECB). These exposures increased by 12.6% over the first half of 2018, driven by the growth in trading book exposures, with a 45% increase in debt instruments and a 31% rise in off-balance sheet exposures.

Smaller exposures to emerging countries

At 30 June 2018, the main exposures of the five largest French banking groups to non-EU emerging countries totalled EUR 60.6 billion for China, EUR 38.1 billion

³⁸ The immediate risk principle considers the country of residence of the counterparty to which the loan is granted.

³⁹ Total exposures of EUR 311 billion including EUR 221 billion to NFCs and households respectively if off-balance sheet exposures are included.

⁴⁰ Plus EUR 4.5 billion in off-balance sheet exposures.

for Turkey and EUR 29.9 billion for Russia (7% quarter-on-quarter increase). These countries rank respectively as the 11th, 18th and 20th largest international exposures of the five largest French banking groups on an immediate risk basis and **make up 4% of total exposures.** Setting aside a scenario featuring a simultaneous shock to all these countries (see Chapter 1), their relative share is such that a shock affecting just one of them would not raise spillover concerns for France.

• The trading book is growing and is chiefly exposed to interest rate and credit spread risk

The trading book of the five largest French banking groups was worth EUR 2.853 trillion in fair value terms⁴² at 30 June 2018, 29% higher than at end-2017 and close to levels seen in 2016. The associated market risk-weighted assets have been rising more slowly and totalled EUR 62 billion at the same date, or 11.5% more than at end-2017. The risk profile is more or less unchanged since 2016, with over 55% of market risk-weighted assets attributable to interest rate and credit spread risk factors, 20% to the equity risk factor and 20% to the foreign exchange risk factor. Note that credit spread and interest rate risk factors resulted in the largest losses in the stress tests of EU banks conducted by EBA.

• Authorities are paying closer attention to leveraged finance, even though outstanding amounts on the balance sheets of French banks remain small

The leveraged finance segment, which is viewed as procyclical, covers three types of banking activity: (i) leveraged loans; (ii) issuance and holding of high-yield bonds; and (iii) structuring and holding of collateralised loan obligations (CLOs). Since early 2018, the SSM has collected quarterly data on this segment.⁴³ Among the four main French banking groups, ⁴⁴ total leveraged loan exposures in the banking book were stable overall in 2018, amounting to EUR 128 billion at end-June 2018 and accounting for between 7% and 12% of total corporate exposures for each group. In the second quarter of 2018, new lending in this area totalled EUR 13.5 billion, a sharp increase over the first three months of the year.

Three noteworthy trends are emerging and could be sources of vulnerability for financial stability in connection with the risk linked to the debt of private agents: (i) more than half of the recent loans have been granted to highly indebted companies (leverage⁴⁵ > 6); (ii) around 70% of loans have been granted with extremely limited protective clauses and low levels of financial documentation; (iii) the share of loans intended for distribution appears to be rising in proportion to the initial risk of the credit file (loans granted to companies with high leverage and/or very limited protective clauses).

- c. Limited increase in bank earnings and continued high operating costs are causing profitability to stagnate
- Net banking income, driven by growth in non-banking income, is rising more slowly than overheads

Over the first nine months, the four main French banks saw their net result fall to EUR 17 billion or 1% less than over the same period in 2017.

⁴¹ Total exposures of the five main French banking groups at 30 June came to EUR 3.242 trillion.

⁴² The size of the trading book is estimated by summing the absolute values of fair valued assets and liabilities held for trading purposes, as disclosed in FINREP reports.

⁴³ SSMguidancepublishedinMay2017:https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.leveraged_transactions_guidance_201705.en.pdf and HCSF communication.

⁴⁴ BNP Paribas, Crédit Agricole, Société Générale and Crédit Mutuel.

⁴⁵ Leverage here means the total debt/EBITDA ratio, which is the one used in the ECB's guidance on leveraged transactions: https://www.bankingsupervision.europa.eu/ecb/pub/pdf/ssm.leveraged_transactions_guidance_201705.en.pdf

After restating for the main non-recurring items (notably dispute settlements) and the cost of own debt revaluation, net banking income (NBI) rose by 1% (EUR 94.5 billion). Retail banking income fell by 1.4% as interest income continued to feel the effects of low rates, while investment banking NBI decreased by 2%; conversely, specialised financial services (+7.5% increase), asset management and insurance (+9.2% increase) made substantial contributions to NBI growth.

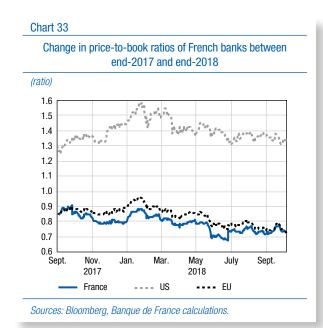
Bank overheads rose by 2.9%, outpacing the increase in NBI, mainly owing to the impact of business transformation plans and investments in new technologies. As a result, the cost-to-income ratio fell by 1.3 percentage point (pp) to 68.9%. However, the decrease in one-off expenses and the continuing fall in the cost of risk (-8.8%) meant that pre-tax earnings were steady at EUR 26.1 billion.

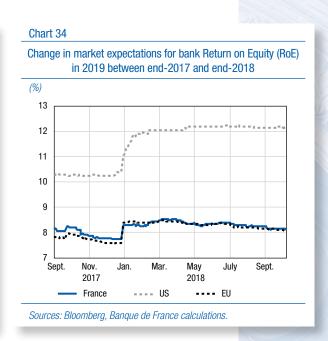
The ratio of the overall nine-month return to core equity fell by 0.2 of a percentage point (pp) year-on-year, for an average return on equity (RoE) of 7.2%.

French banks continue to be affected by their operating expenses and efforts to transform their businesses and to digitalise their processes, which are taking time to show up in the cost-to-income ratio. These structural factors are a drag on market expectations about future bank profitability.

Market valuations of French and European banks are still lower than those of US banks

Market valuations of French banking groups remain below their book values, with an average price-to-book ⁴⁶ ratio of 0.7 in October 2018, down by 8% over 12 months (Chart 33). What is more, the ratio for bank stocks looks decorrelated from the change for the CAC 40 index as a whole. However, the ratios of French banks, which were fairly volatile in 2018, have been less hard hit than those of other European banks, which have fallen by 18% due to uncertainties related to Brexit, tensions in the Italian and German banking sectors, some banks' exposure to emerging countries, ⁴⁷ and money





⁴⁶ Ratio between the market value of a company's equity, i.e. its market capitalisation, and its book value.

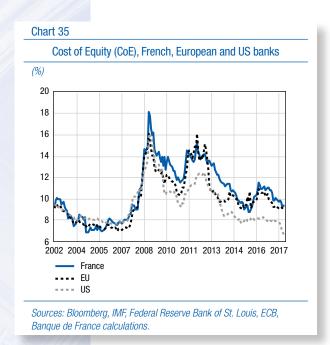
⁴⁷ According to data from the Bank for International Settlements, in the second quarter of 2018, European banks had total exposures to emerging countries of approximately USD 13.9 billion, broken out as follows: 48% for Germany with USD 6.7 billion, 21% for Spain with USD 2.9 billion, 14% for the United Kingdom with USD 1.9 billion and 12% for France with USD 1.7 billion.

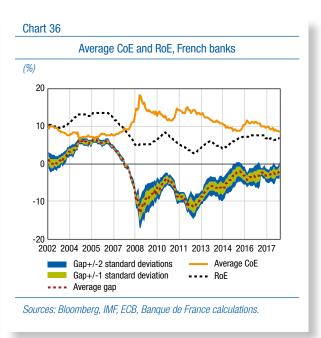
laundering scandals. Conversely, US banks have an average *price-to-book* ratio of 1.3, and the returns expected by investors are markedly better, with a forecast of RoE at 12% for the United States, compared with 8% in France and Europe (Chart 34).

• The market continues to demand high returns in the current conditions

The cost of equity (CoE) is a non-observable variable estimated by a theoretical framework based on forecasts of a share's future performance. The forward-looking nature of CoE and the structural modelling on which it is based mean that estimates are subject to considerable uncertainty and are sensitive to the parameters used, including the assumed level of dividends, the return expected by the market, and the assumed sensitivity of the sector or share price to the overall index (cf. Chart 35).

The decline in the CoE of French banks (average CoE⁴⁸ of 8.5% in October 2018, down more than 2.8 pp compared with summer 2016, Chart 36) has followed the downturn in risk premiums observed since 2016. That said, the CoE of French banks, which is on a par with that of their European peers, remains above the pre-crisis average (1.5 pp) and still much higher than that of US banks (6.4% in October 2018) – a gap that is essentially attributable to the difference in US and euro area interest rates towards the end of the period, since the sensitivity of bank share prices to the national stock market index is similar in the three cases. The gap⁴⁹ between average CoE (i.e. the return expected by investors) and average bank RoE has narrowed owing to the slight improvement in bank earnings and the decrease in CoE, although the gap was still slightly negative in October 2018 (Chart 36). The return expected by investors does however look high relative to the level of interest rates.





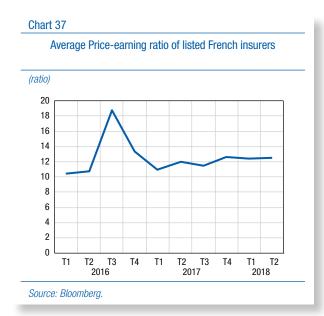
⁴⁸ Average CoE obtained from 130 estimates produced by a dividend discount model (Gordon Shapiro) using different assumptions: forecast dividend per share growth rate at 18 months, two years and three years; forecast GDP growth at three, four and five years; risk-free interest rate (ten-year government bond, one- and five-year Eonia), with a time horizon varying from three to ten years; Euro Stoxx 600 dividend yield and market beta (i.e. sensitivity of a bank's share price to the national stock index) calculated at one, two and three years.

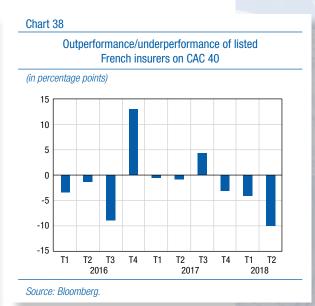
⁴⁹ Indicator used to gain information about banks' cost of financing on financial markets. Theoretically, if a bank's return is too low relative to the investment risk, its share price should fall as investors turn away. The price lowers until it adjusts to reflect the return required by shareholders. 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.

3.2 RISKS FOR INSURANCE COMPANIES

a. Perception of solid solvency confirmed by the market

External ratings of insurers' debt and valuations of their listed equity securities (notably PERs and insurance financial strength ratings) reflect the positive perception that financial markets have of the French insurance sector (Chart 37). While the relative stock market performances of French insurance indices compared with other sectors of the economy and European insurers have been declining since the fourth quarter of 2017 (Chart 38), it is nonetheless worth noting that listed insurance is not representative of the insurance sector in France.





Non-life insurance: a small risk to financial stability

The non-life insurance sector poses a small risk to financial stability. Moreover, despite a spread of performances by insurers, solvency ratios reveal that capital requirements remain well covered in the sector. At the end of the second quarter of 2018, the coverage ratio among non-life insurers stood at 265%. The quality of capital is reflected in the high proportion (97%) of Tier 1 capital. Revenue growth has been relatively steady at around 2% for several quarters. In terms of profitability, the combined ratio is returning to levels recorded before the natural disasters of late 2017.

• Life insurance: profitability is heavily dependent on financial income while potential liquidity risk has not yet materialised

The average solvency ratio of life insurers at the end of the second quarter of 2018 was below the non-life ratio, but capital requirements were again well covered, with a ratio of 218%. In addition, life insurance premiums began climbing again in 2018 after declining for several quarters.

Although the difference between insurers' investment returns and profit-sharing pay-outs to policyholders stabilised in 2017, the effects of the low interest rate environment remain the main threat to life insurers, whose technical and financial equilibrium has been impacted by six years of low interest rates. With investments highly concentrated in bonds and French government debt, life insurers are extremely sensitive to the level and volatility of long-term interest rates. More specifically, although the euro area is

gradually normalising monetary policy, a swifter-than-expected increase in interest rates could leave life insurers exposed in the event of a wave of contract surrenders since a large proportion of these contracts may be surrendered at any time. So far, the median surrender rate for French insurers has remained contained (5.4% in 2017), and insurers have sufficiently liquid assets.

• Assessing the impact of Solvency 2

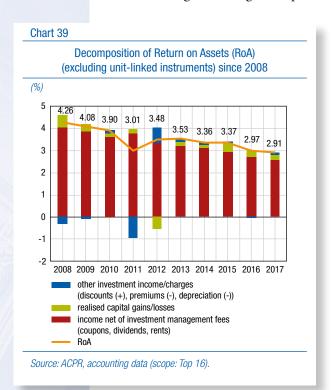
Taking stock after two years, implementation of Solvency 2 has led to not only quantitative but also qualitative changes, with sound governance principles whose contribution, applied in conjunction with a proportional approach, has been universally recognised. Insurers have markedly improved their risk and capital management, and the insurance market is now more resilient.

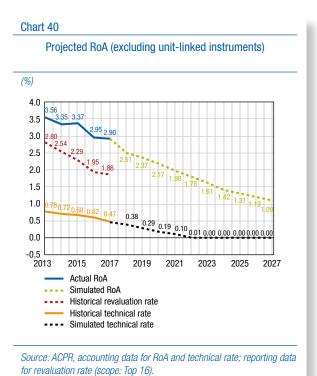
On the quantitative side, the expected benefits remain to be proven, with regard to the complexity and volatility introduced by Solvency 2, as well as its effects on long-term investment. These questions were anticipated by regulators and will be subject to two reviews, one of which is currently being finalised and another scheduled for 2020. The aim of the reviews is to refine the prudential treatment of risks and ensure that the rules are uniformly enforced in the European Economic Area (EEA).

b. The low interest rate environment is affecting life insurers' profitability

• Limited investment risk taking

Financial income accounts for the bulk of life insurers' earnings. However, despite making capital gains, insurers saw their income go down because their recurring income, which is mainly derived from bonds, is being adversely affected by the current level of interest rates. The average return on assets (RoA) fell from 3.5% to 2.9% between 2013 and 2017, chiefly owing to the trend decrease in recurring income, which was primarily attributable to bonds, from 3.2% to 2.6% over the same period (Chart 39). Making the strong assumption that maturing fixed income securities are reinvested in



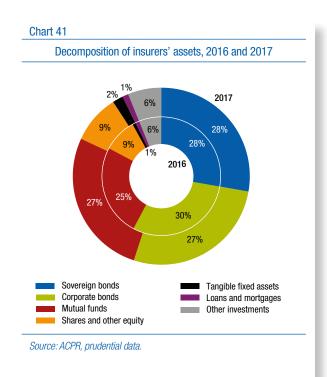


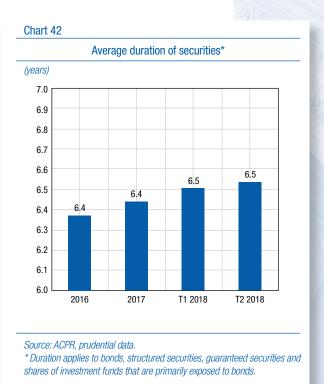
zero-coupon bonds and that net inflows into non-unit linked instruments are zero, RoA will continue to fall at a rate of about 20 bps per year (Chart 40). In addition, unrealised capital gains on bonds held in assets, which have been very high for four years and have enabled life insurance entities to improve their RoA, are gradually declining and would be wiped out if interest rates go up.

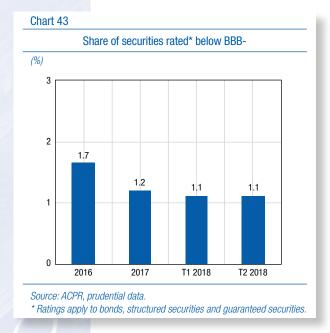
Against this background, life insurers could adjust their investment strategies to boost their RoA, especially the return on bonds (by lengthening maturity and increasing exposure to corporate bonds, for example) or to increase the share of other assets, such as equities, unlisted securities, real estate and infrastructure projects. They might also seek out better returns on riskier or less liquid securities, which could lead to a deterioration in the average rating on corporate bonds, or to geographical diversification, including into riskier countries. Such strategies might be deployed if low interest rates persist or if interest rates go up, so that insurers can continue to provide sufficient levels of return to their policyholders.

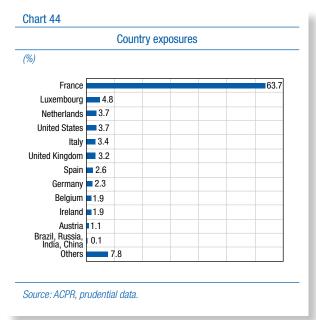
To date, however, the search for yield does not appear to be affecting overall asset allocations, be it in terms of duration, the nature of securities selected for investment, geographical allocation – the share invested in emerging countries remains low – and the quality of securities. The share of corporate bonds is virtually the same as that of sovereign bonds, but declined from 30% to 27% of investments between end-2016 and end-2017, while the share of collective investment schemes (CIS) rose from 25% to 27% (Chart 41). When a look-through approach is applied to CIS investments, however, corporate exposures are found to revert back more or less to their original share. The average duration of securities (bonds, structured securities, guaranteed securities and units of CIS that are primarily exposed to bonds) held by insurers is rising very gradually and climbed from 6.4 years at end-2016 to 6.5 years in mid-2018 (Chart 42).

The overall level of at-risk investments at the largest French groups remains low and fairly stable. The lowest-rated securities (below BBB-) account for around 1% of the securities portfolio, and their share does not appear to be increasing despite downgrades









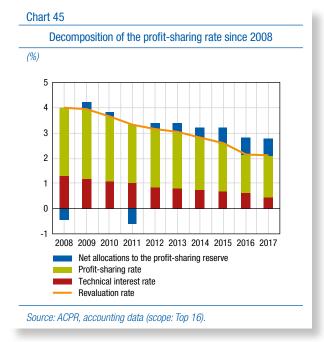
for a number of securities held by insurers (Chart 43). Similarly, exposure to emerging countries is extremely low, with Brazil, Russia, India and China together accounting for less than 0.1% of insurers' investments (Chart 44).

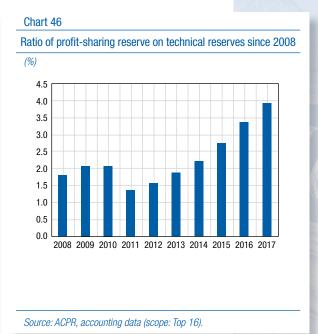
Despite the semblance of stability observed at each year-end, vigilance is still required. Some insurers could be tempted to make short-term investments to boost their financial income, leaving them exposed to increased default or liquidity risk in the event of major market stress.

 Pending a more supportive environment for life insurance, adjustments will involve directing more inflows towards unit-linked instruments and controlling costs

The French life insurance market is one of the biggest in Europe, with over EUR 1.637 trillion in statutory technical provisions at end-December 2017, including 66% for non-unit linked instruments, and EUR 137 billion in premiums in the same year. After a sluggish 2017, net inflows (premiums restated for surrenders) in France exceeded EUR 10 billion in the first half of 2018, equalling the 2016 performance. Over the same period, 32% of premiums went towards unit-linked contracts (up from 22% in 2016 and 30% in 2017), which transfer the market risk to investors. On the whole, insurers discouraged payments into non-unit linked funds by raising contractual charges or lowering capital guarantees. Although such strategies help insurers to maintain the sustainability of long-term guarantees, the duty to provide advice remains a key obligation for insurers when selling contracts.

The abovementioned downturn in RoA is being accompanied by various measures affecting insurers' exposures to non-unit linked products, particularly those offering capital guarantees. For one thing, the revaluation rates applied each year to policyholders' unit-linked products are going down. For the market as a whole, the revaluation rate was close to 2% on average at end-2017 compared with approximately 4% ten years previously (Chart 45). At the same time, entities are also ramping up allocations to profit-sharing reserves, which allow them to smooth policyholder profit-sharing over time. The overall reserve increased from 1.4% of outstanding life insurance at end-2011 to 3.9% at end-2017 (Chart 46).





The French life insurance sector, which reported EUR 6 billion in underwriting profit in 2017, therefore remains profitable. Non-unit linked savings contracts still make up the lion's share of revenues (54% of the total) and underwriting profit (55%). Unit-linked savings contracts generated 27% of revenues and contributed 11% of underwriting profit. As mentioned previously, however, insurers are promoting these contracts, for which policyholders bear the risk of capital loss, unlike in the case of non-unit linked products, (Box 6). Insurers are also using other non-savings segments to maintain their returns. Accordingly, although insurance in the event of death (death & disability contracts, particularly creditor insurance) generates just 9% of life insurers' revenues, this item generates 30% of the sector's underwriting profit. In fact, death insurance has a markedly higher underwriting result⁵¹ than other business lines.

Box 6

Unit-linked and non-unit linked funds: who bears the financial risk?

With **non-unit linked funds**, the invested capital, profit-sharing pay-outs and any interest income **are guaranteed** and locked-in for the investor unless, as with some recent types of contracts, the guarantee provided with the contract is net of management expenses charged each year. In the event of fluctuations on financial markets, **the risk of loss is therefore borne by the insurer. Unit-linked products** are vehicles for financial investments (e.g. investment funds, equities, bonds, units in common investment funds, shares in real estate and real estate investment companies), but unlike non-unit linked funds, the insurer does not guarantee the customer's investments, only the number of units. Unit-linked instruments offer higher prospective returns for customers when financial markets are doing well, but the risks of value fluctuations are also greater. Here, **the investor bears the risk**. Unit-linked products are particularly suited to long-term holdings and savings diversification. The way they are marketed – **and the related duty to provide advice** – must therefore be adapted to take these characteristics and the target clientele into account.

⁵⁰ Underwriting profitability is the portion of profit/loss that is directly related to the insurance business (pre-tax notably).

⁵¹ Written in simplified form, the underwriting result = premiums - claims.

3.3 Non-bank financial intermediation is playing a growing role in the financial system

a. Steady growth in outstanding assets under management since 2010 coupled with a strengthened regulatory framework

Over recent years, non-bank financial intermediation (NBFI)⁵² has **expanded steadily**, **outpacing growth in the banking sector**. Since 2010, it has increased in size by around 39% (compared with 8% for the banking sector) to reach EUR 45.160 trillion worth of assets at end-2016 (of which 3.1% in France), equivalent to 33.5% of the banking sector.⁵³ It should be borne in mind, however, that valuation effects accounted for half of the increase in outstanding assets.⁵⁴

Asset management, which is the main component of non-bank financing, accounting for 88% of the related outstanding amount in France, for example, may be exposed to three types of risk: **liquidity risk** (i.e. the risk that open-ended funds would be unable to deal with large-scale redemption requests from investors), **use of leverage** (generally understood to be the relationship between net debt and equity) and the risk arising from **interconnections and chains of interactions** with other financial actors.

European regulations for collective investment funds, namely the UCITS⁵⁵ and AIFM⁵⁶ directives, are ahead of international standards. Among other things, these directives make it possible not only to regulate leverage and liquidity risk monitoring but also to improve asset managers' identification of risks (through stress tests for example). At international level, regulatory frameworks have been strengthened at several levels, with money market fund reforms in the United States (2014) and in the European Union (2017), international standards on securitisation (2012), EU regulations on simple, transparent and standardised securitisation (2017), and measures to strengthen the operating framework for securities financing transactions (2013, 2014 and 2015). For the most part, these regulatory revisions have been carried out with a microprudential perspective in mind, placing the focus on mitigating risk and strengthening robustness at entity level, while also improving transparency and disclosure obligations towards regulators and investors.

b. Controlled development of NBFI requires more reliable data and an in-depth understanding of participants

At the domestic level, France's *Haut Conseil de Stabilité Financière* (HCSF – High Council for Financial Stability) has begun work on pooling data to prepare a **detailed mapping of the interconnections between asset management and the wider financial system**. The AMF, the *Banque de France* and the *Direction Générale du Trésor* are all taking part in this project.⁵⁷ At international level, major headways have been made in monitoring NBFI. The European Systemic Risk Board (ESRB) is drawing up an NBFI mapping report for Europe, while the Financial Stability Board (FSB) is collecting annual data to capture developments in the sector and identify the main associated risks to financial stability.⁵⁸ Progress in gathering data must not however overshadow the difficulties, including terminological issues, involved in preparing a clear and sufficiently comprehensive mapping of participants with their links and dependencies as well as a description and quantification of the risks associated with these developments.

⁵² The Financial Stability Board started using the term "non-bank financial intermediation" instead of "shadow banking" in 2018.

⁵³ FSB data taken from the Global Shadow Banking Monitoring Report (GSBMR) 2018.

⁵⁴ See Banque de France, Financial Stability Review, April 2018, article by Jennifer d'Hoir and Robert Ophèle, page 156.

⁵⁵ UCITS: Undertakings for Collective Investments in Transferable Securities

⁵⁶ AIFM: Alternative Investment Fund Manager.

⁵⁷ https://www.economie.gouv.fr/files/files/directions_services/hcsf/HCSF_20180611_-_5-2-1_Projet_de_publication_interconnexions_FR_vu_ AMF_remerciements.pdf

⁵⁸ Data are being gathered from the 25 FSB member countries, plus Belgium, Luxembourg and the Cayman Islands on a voluntary basis.

In 2017, the FSB published 14 recommendations to address structural vulnerabilities from asset management activities,⁵⁹ and asked the International Organization of Securities Commissions (IOSCO) to develop these recommendations into operational measures (see IOSCO best practices on liquidity risk management by open-ended funds published in 2018). As regards leverage, IOSCO published a consultation paper in November 2018 aimed at developing consistent measures of leverage⁶⁰ and designed to build on the previous recommendations. The objectives of the paper, which is non-binding at this stage, are to identify leveraged funds and define approaches that can be applied in all countries to limit leverage. However, these efforts are running into methodological challenges linked to the lack of data and metrics for some members, but also to differences in national regulatory approaches. At this point in time, the development of global risk-based analyses still looks to be a complicated undertaking. France has already implemented the IOSCO principles, following measures to strengthen the European regulatory framework in terms of defining and regulating leverage.

Finally, identifying the **risks linked to interconnections** between investment funds and financial entities (banks and insurers) is a critical challenge for macroprudential authorities working to detect vulnerabilities generated by interdependencies between participants. Designing macroprudential tools requires a detailed understanding of the two channels of relations between financial participants through a measurement of **the securities holdings recorded in the assets** of funds issued by these financial entities, and **on the liabilities side**, a measurement of the fund units held by institutional investors or other funds as well as the banking sector's exposures to these participants. Work being taken forward within the HCSF suggests at this stage that in France, the network of interconnections between asset management and the financial system is not sufficiently dense to pose a potential systemic risk by itself.

⁵⁹ https://www.iosco.org/library/pubdocs/pdf/IOSCOPD615.pdf

^{60 &}quot;10SCO should develop simple and consistent measure(s) of leverage in funds with due consideration of appropriate netting and hedging assumptions. This would enhance authorities' understanding of risks that leverage in funds may create, facilitate more meaningful monitoring of leverage, and help enable direct comparisons across funds and at a global level". IOSCO Report on Leverage, November 2018.

Focus: Brexit – Risks presented by a scenario in which the United Kingdom leaves the European Union without a deal (information available at 12/12/2018)

Notwithstanding the difficulties associated with the Irish backstop, the United Kingdom (UK) and the European Union (EU) came to an agreement on 14 November 2018⁶¹ on the country's withdrawal from the EU and a political declaration on the future UK/EU relationship. The withdrawal agreement has yet to be ratified by the UK Parliament, which remains extremely divided on the issue, and by the European Parliament. There is therefore still a possibility that the UK could leave the EU without a deal. In the absence of a transition period, UK financial firms will lose their European passporting rights and, consequently, theiraccess to the common market on 29 March 2019. This scenario has been widely identified and anticipated by European and national authorities. On 11 December 2018, France's National Assembly adopted a bill at first reading authorising the government to take measures by executive order to prepare for the UK's withdrawal in order to protect against the consequences of a variety of scenarios, including that of a no-deal Brexit. The European Commission has put forward several solutions to address the identified risks to financial stability. Meanwhile, EU financial institutions are being urged to implement contingency plans to ensure continuity of operations and services. Accordingly, and provided adequate measures are deployed, the Banque de France has not identified a significant risk to financial stability under a no-deal exit scenario.

The EU's chief Brexit negotiator, Michel Barnier, is responsible for conducting the talks, following guidelines set down by the European Council. In accordance with their own remits, the ACPR and the Banque de France are monitoring the two main sets of Brexit-related risks, namely those that could threaten financial stability and those that could interfere with customer protection.

The risks associated with a no-deal scenario and their mitigation measures are described below

• Ensure the access of EU counterparties to derivatives clearing

A no-deal scenario would see UK central counterparties (CCPs) lose their recognition under the European Market Infrastructure Regulation (EMIR). As a consequence, EU counterparties would not be able use these CCPs to clear financial instruments subject to the EMIR clearing obligation, including over-the-counter (OTC) derivatives. In the case of financial instruments not subject to the clearing requirement, such as equities and sale and repurchase agreements (REPOs), counterparties could continue clearing through UK CCPs by accessing them indirectly – as clients and non-members – but would face increased risk weightings under prudential rules. Three UK CCPs are currently recognised under EMIR. Alternative providers based in the EU27 or the United States cover virtually all products cleared in the UK and should make it possible to offer clearing solutions for most new transactions. However, some segments remain to be developed to cover all the services offered by UK CCPs.

In addition, the large stock of contracts associated with the activity of UK CCPs in the OTC interest rate swap (IRS) and credit default swap (CDS) segments, and the difficulties associated with transferring these stocks, mean that European authorities must take appropriate measures to ensure continued access to CCPs in the absence of a deal. UK CCPs have an extremely dominant position on these segments: LCH Ltd. is the CCP for 95% of IRS cleared in EUR, which have an average maturity of around seven years, while ICE Clear Europe handles 70% of clearing for CDS in EUR (Banque de France statistics).

While the validity of existing contracts may not be at risk initially, it would be called into question by lifecycle events requiring a new contract with the CCP. This would be impossible for

^{61 &}lt;a href="https://ec.europa.eu/commission/sites/beta-political/files/draft_withdrawal_agreement_0.pdf">https://ec.europa.eu/commission/sites/beta-political/files/draft_withdrawal_agreement_0.pdf

⁶² Provided that the European Capital Requirements Regulation (CRR), which concerns the prudential requirements for credit institutions and investment firms, is applied.

⁶³ LCH Ltd. for interest rate swaps (IRS), repos, listed derivatives & equities; ICE Clear Europe for credit default swaps (CDS), listed derivatives & commodities; LME Clear for commodities.

Focus: Brexit – Risks presented by a scenario in which the United Kingdom leaves the European Union without a deal (information available at 12/12/2018)

products subject to a clearing obligation, and possible but potentially costly in prudential terms for products not subject to clearing requirements. Likewise, new transactions might be necessary under a participant member's obligations towards the CCP, but would be either impossible or costly in the case of a non-recognised CCP. Such a situation might arise for example from a participant's obligation to participate in a default management auction organised by the CCP.

Accordingly, unilateral recognition of UK CCPs is going to be established. On 13 November 2018, the Commission said that in a no-deal situation, it would take a "conditional equivalence decision to ensure that there will be no disruption in central clearing and settlement". On 23 November, ESMA stated publicly that it would do everything in its power to recognise UK CCPs. The European Commission is expected to issue a formal decision in December 2018 on the temporary recognition of UK CCPs.

• Maintain the continuity of banking and insurance contracts

In a no-deal scenario, UK banks and insurers would lose the benefit of their European passporting rights and would no longer be able to do business in the EU. To continue operating in the EU, they would need to relocate, either by using an entity located in and authorised by an EEA Member State, such as a third country branch, subsidiary or European company, or by transferring their portfolios to an existing or newly authorised company. These relocation requirements apply in particular to the insurance sector as regards existing in-force contracts.

National and European authorities are working to ensure the smoothest possible transition while preserving customer protection and financial stability in the EU. First, they make sure that firms do not set up empty shell structures without proper governance arrangements or local risk management capabilities. Second, they support the implementation of contingency plans that address prudential issues (particularly the question of equivalence regimes in the banking sector), consumer protection (including the treatment of personal data) and business continuity (especially for existing insurance contracts). For its part, France's ACPR, working in conjunction with the ECB as regards banks, ensures that French institutions doing business in the United Kingdom roll out contingency plans.

• Guarantee the finality of transfer and payment orders in payment systems

The directive on settlement finality in payment and securities settlement systems guarantees that transfer and payment orders introduced in these systems are irrevocable, notably if a participant fails. But the directive will no longer apply to UK systems from 29 March 2019 in a no-deal scenario. UK systems will become third country systems and will no longer be protected against the failure of a European participant. As a result, they could decide to exclude European participants.

To protect finality in UK systems, France has decided to transpose recital 7 of the directive, which authorises Member States to extend protection to third country systems. Transposition will be conducted before 29 March 2019 either as part of the PACTE bill or as part of the bill adopted on 11 December by the National Assembly. Similar measures are being taken by Italy, Sweden, the Netherlands and Norway, which are the other four European countries alongside France and the United Kingdom that have not yet transposed recital 7.

Ensure transparency for markets in financial instruments

The MiFID 2 regulatory package, which was implemented in January 2018, includes exemptions from transparency requirements for securities transactions by participants in European markets, particularly when order size is significant or the market is not liquid. Limits to these exemptions were introduced as double volume caps to reduce trading in dark pools, but were set with UK platforms and participants included. Given London's importance in European markets, there is

Focus: *Brexit* – Risks presented by a scenario in which the United Kingdom leaves the European Union without a deal (information available at 12/12/2018)

a risk in the event of a no-deal exit that these thresholds might be too high for the EU27, to the detriment of market transparency.

Regulators are considering revising the thresholds for the EU27 in 2019 as a potential way to maintain MiFID 2's objectives.

Safeguard Europe's bank resolution mechanisms

European credit institutions must meet the minimum requirement for own funds and eligible liabilities (MREL) for use in bail-in resolution. Some MREL-eligible instruments were issued in the form of contracts governed by English law. In a no-deal scenario, they would no longer be considered to be eligible, which would prevent European institutions from complying with MREL rules.

Faced with this challenge, European authorities have stressed the importance of good preparation by private participants. EBA has called on banks to carry out an exhaustive analysis of issued contracts to identify the changes required to maintain MREL eligibility. ⁶⁴ The Single Resolution Board, meanwhile, has said, as regards institutions under its responsibility, that it will look on a case-by-case basis at liabilities issued under English law and that it might grant a period in which to establish compliance. ⁶⁵ Note that this risk is expected to decrease as the relevant debts are renewed, since some institutions have begun inserting contractual recognition of bail-in clauses.

Technical annexes

Annex 1 Composite Indicator of Systemic Stress (CISS) – Unlike the ECB's indicator, the CISS-Markets indicator used here focuses on three aspects – rather than five – of systemic risk, namely (i) the money market, (ii) the equity market and (iii) the bond market. It also differs from ESMA's version of the CISS in that it basically uses only French variables. In addition, the bond market contribution is decomposed into a "sovereign risk" portion and an "NFC" portion, based on the importance of these two components within the bond contribution.

Annex 2 For European countries, stock indices are calculated and provided by Datastream, which offers greater historical depth than the CAC 40 or Euro Stoxx indices. Accordingly, in the case of France, while the CAC 40 is below the two previous peaks (2000 and 2007), the index calculated by Datastream (which includes 249 listed companies) has been above its historical high since mid-2017. In real terms, i.e. corrected for domestic inflation, only the US stock index is well above its previous peaks; the French, German and UK indices, meanwhile, are close to but still off the highs reached in 2000 and 2007.

Also known as cyclically-adjusted price earnings (CAPE), the indicator developed by Campbell and Shiller in "Stock Prices, Earnings and Expected Dividends", Journal of Finance (July 1988, 43(3): 661-676) and calculated as the ratio of the share price corrected for inflation over earnings corrected for inflation and smoothed over ten years. We prefer this measure to PER or prospective PER (in which one-year forecast dividends replace dividend payments), which we see as too "cyclical", because this approach makes it possible to capture the long-term investment horizon for equities. Shiller showed that the average annual ten-year return declines with the level of the cyclically-adjusted PER. This indicator can be used to reflect the price change in net earnings over the course of the cycle and to have a relatively precise global view of stockmarket valuations over the long run. Nevertheless, we conducted measures of sensitivity to the length of the smoothing period and found that the five-year cyclicallyadjusted PER provides results that are markedly similar and even slightly higher for France. The shortcoming of this indicator is that it does not consider the macroeconomic environment, e.g. business conditions, growth expectations, level of interest rates, and so on.

Annex 4 According to our calculations, the US stock market may be less overvalued than is widely thought based on analyses using Shiller's cyclically adjusted PER (>30). The difference stems from the choice of earnings definition and reference period. Note also that taking into account the change to the dividend payout policy (share buyback instead of dividend pay out) affects the cyclically adjusted PER by altering the EPS growth rate (Bunn & Shiller (2014), Jivraj & Shiller (2017)). The bias is corrected by using a total return index that takes account of dividend reinvestment. In the end, the trend and conclusion stay the same.

Annex 5 The z-score consists in centring the variable around its average and dividing it by its standard deviation = [cyclically-adjusted PER – Average (cyclically-adjusted PER)]/Standard deviation. This measure makes it possible to take account of historical domestic characteristics and helps in interpreting the level of the cyclically-adjusted PER with regard to its long-term trend. It also enables us to identify thresholds indicating valuation correction risks, irrespective of any judgment about the valuation level. Obviously, the result depends on the size of the time window used for normalisation. Thus, for France, if the z-score is calculated over a ten-year rolling window and not over the entire period under analysis (1983-2018), the index breaches the two-standard-deviation threshold. Since 1983, whenever adjusted PERs have breached the 0.5 σ threshold, there has been a stockmarket correction (1987, 1990 and 1997), with an even larger correction in situations where the threshold of 1 was breached (1998, 2000 and 2007).

Annex 6 Cf. Box 7 of the June 2018 Assessment of Risks to the French Financial System: the relative return indicator (RRI), which draws on the work of Antonio Fatas (INSEAD), corrects the (cyclically-adjusted) PER using the real risk-free rate. The indicator is derived from the Gordon-Shapiro valuation model. We can thus define a share's earnings yield as the sum of three factors, two of which are linked to the macroeconomic environment (real growth expectations and the level of real interest rates) plus investor risk tolerance. We rearrange the equation by grouping the observable variables (risk-free rate and earnings yield) and unobservable variables (risk premium and investor dividend growth expectations) to obtain the relative return indicator: IRR=RF-E/P=g- π , where E denotes earnings, g indicates growth expectations, π stands for the risk premium, P for the share price and RF for the risk-free rate.

Annex 7 The risk premium is calculated using the Gordon-Shapiro formula: π =E/P-RF+G.

Annex 8 Prior to the US Tax Cuts and Jobs Act, profits were subject to US taxes but only once repatriated". This system encouraged companies to keep their earnings overseas. The Tax Cuts and Jobs Act (TCJA) is intended to move to a quasi-territorial tax system in which profits are taxed only where they are earned, subject to some minimum taxes. Accordingly, from now on, the overseas earnings of US multinationals will no longer be subject to US taxes when repatriated. The USD 1 trillion estimate was taken from the Fed and was prepared using Bloomberg data on NFCs in the S&P 500. In addition, Credit Suisse estimates that the majority of the cash is invested in USD fixed income securities (Credit Suisse research).

Annex 9 Diebold and Yilmaz (2009), similar in spirit to the index published in the June 2018 Assessment of Risks to the French Financial System, p. 47. The index is calculated using the *forecast error variance decomposition matrix*, which shows the extent to which shocks affecting one country affect the forecast error variance of another country. A disaggregated analysis of contagions at the level of France is made possible with the help of the SVAR-GARCH model presented in Boeckelmann and Stalla-Bourdillon (forthcoming). The indices used are the following: France, United Kingdom, Spain, Italy, United States, Germany, Brazil, Argentina, Turkey and China. Not all of them are shown on Chart 23.

Annex 10 Cf. June 2018 Assessment of Risks: Pairwise correlations were calculated over 90-day rolling windows for the following 21 asset classes, sorted by region: EA: Investment Grade (IG) and High Yield (HY) corporate bonds; EA (core): Sovereign bonds and equity indices; EA (periphery): Sovereign bonds and equity indices; US: IG and HY corporate bonds, sovereign bonds and equity indices; UK: IG and HY corporate bonds, sovereign bonds and equity indices; Japan: Corporate bonds, sovereign bonds and equity indices; oil price (Brent). For France, the findings are similar whether sovereign or corporate bonds are used. For the United States, the overvaluation is smaller when *corporate debt is considered*, by some 34% according to data from Bank of America Merrill Lynch (BoAML) or by 20% according to data from Moody's.

Annex 11 This indicator covers several aspects of stock market liquidity: narrowness of the market (the cost of closing a position in a limited time period), its depth, breadth (the size of order flow required to move the market price) and resilience (the speed with which prices revert to their mean after a random shock). These aspects are gauged respectively by the following indicators: Amihud ratio, bid-ask spreads, market efficiency coefficient, turnover, high-low price difference and high-low price impact. The indicator is calculated as a weighted average (by market capitalisation) of the first component (derived from a principal component analysis) of the six indicators for each share. The indicator also takes account of changes to the composition of stock indices.



Acronyms

ACPR	Autorité de contrôle prudentiel	EBITDA	Earnings before interest, taxes,
11011	et de résolution (Prudential		depreciation and amortisation
	Supervision and Resolution	EC	European Commission
	Authority)	ECB	European Central Bank
AFME	Association for Financial	EEA	European Economic Area
	Markets in Europe	EIOPA	European Insurance and
AIFM	Alternative investment fund		Occupational Pensions
	manager		Authority
AMF	Autorité des marchés financiers	EMI	Electronic money institution
	(French Financial Markets	EMIR	European Market
	Authority)		Infrastructure Regulation
ANC	Autorité des normes comptables	EMMI	European Money Markets
	(French Accounting Standards	FONHA	Institute
ADI	Authority)	EONIA	Euro OverNight Index
API	Application programming	EDED	Average
DAT	interface	EPFR	Emerging Portfolio Fund
BAT BIS	Baidu, Alibaba, Tencent Bank for International	ESMA	Research
D13	Settlements	ESIVIA	European Securities and
BLS	Bank Lending Survey	ESRB	Markets Authority European Systemic Risk
BoAML	Bank of America Merrill Lynch	LSIGD	Board
BoE	Bank of England	ESTER	Euro short-term rate
bps	Basis points	EU	European Union
CAPE	Cyclically adjusted price	EUR	Euro
	earnings		Euro interbank offered rate
CAPM	Capital asset pricing model	FDI	Foreign direct investment
CBO	Congressional Budget Office	Fed	Federal Reserve
CCP	Central counterparty	FIBEN	Fichier bancaire des entreprises
CCR	Caisse centrale de réassurance		(Banking database on
	(public reinsurance group)		companies)
CCyB	Countercyclical capital buffer	FINREP	Financial reporting
CET1	Common Equity Tier 1	FinTech	Financial technology
CGEDD	Conseil général de	FOMC	Federal Open Market
	l'environnement et du	ECD	Committee
	développement (General	FSB	Financial Stability Board
	Council for the environment	FSR CAEA(M)	Financial Stability Review
CIS	and sustainable development)	GAFA(M)	Google, Amazon, Facebook,
CISS	Collective investment scheme Composite Indicator of	GDI	Apple (Microsoft)
CISS	Systemic Stress	GDP	Gross disposable income Gross domestic product
CLO	Collateralized loan obligation	GFCF	Gross fixed capital formation
CoE	Cost of equity	GIMF	Global Integrated Monetary
COREP	Common solvency ratio	CIIVII	and Fiscal model
	reporting	GMRA	Global master repurchase
CRR	Capital Requirements		agreement
	Regulation	GHOS	Governors and Heads of
CSPP	Corporate Sector Purchase		Supervision
	Programme	G-SIB	Global systemically
CVA	Credit value adjustment		important bank
DSTI	Debt-service-to-income	HCSF	Haut Conseil de stabilité
DY	Dividend yield		financière (High Council for
EA	Euro area	****	Financial Stability)
EAD	Exposure at default	HICP	Harmonised index of
EBA	European Banking Authority		consumer prices

HY	High wield	NOCDD	Non qualifying CCD
ICE	High yield	NQCPP NSFR	Non-qualifying CCP Net stable funding ratio
ICMA	Intercontinental Exchange International Capital Market	OIS	Overnight index swap
ICIVIA	Association	OTC	Over-the-counter
ICO	Initial coin offering	PACTE	Plan d'action pour la croissance
ICR	Interest coverage ratio	TACIL	et la transformation des
IFRS	Interest coverage ratio		entreprises (Action Plan
1110	Reporting Standards		for Business Growth and
IG	Investment grade		Transformation)
ILO	International Labour	PD	Probability of default
ILO	Organization	PER	Price earnings ratio
IMF	International Monetary Fund	pp	Percentage point
IOSCO	International Organization of	PSR	Profit-sharing reserve
10000	Securities Commissions	TP	Term premium
IRC	International Relations	QCPP	Qualifying CCP
2200	Committee	REPO	Sale and repurchase
ISDA	International Swaps and		agreement
	Derivatives Association	RFR	Risk-free rate
LL	Leveraged loan	RoA	Return on assets
LBO	Leveraged buyout	RoE	Return on equity
LCR	Liquidity coverage ratio	RRI	Relative return indicator
LTV	Loan-to-value	RTGS	Real Time Gross Settlement
MiFID	Markets in Financial		System
	Instruments Directive	SCI	Société Civile Immobilière
MMSR	Money Market Statistical		(real estate company)
	Reporting	SCR	Solvency capital requirement
MREL	Minimum Requirement for	SIFMA	Securities Industry and
	Own Funds and Eligible		Financial Markets Association
	Liabilities	SME	Small and medium-sized
MSCI	Morgan Stanley Capital		enterprises
	International	SRB	Single Resolution Board
NA	Not available	SSM	Single Supervisory
NAFTA	North American Free Trade		Mechanism
	Agreement	TCJA	Tax Cuts and Jobs Act
NBI	Net banking income	TI	Technical interest
NEAP	Net external asset position	TLAC	Total loss-absorbing capacity
NEU CP	Negotiable European	UCITS	Undertaking for Collective
	Commercial Paper		Investments in Transferable
NEU MTN	Negotiable European	****	Securities
NEC	Medium Term Note	UK	United Kingdom
NFC	Non-financial company	US	United States
NIESR	National Institute of	USD	US dollar
NICEN	Economic and Social Research	UST	US Treasury
NiGEM	National Institute Global	VaR	Value at Risk
NITA #	Econometric Model	WEO	World Economic Outlook
NIM	Net interest margin	WTO	World Trade Organization
NPL	Non-performing loan	Z-Score	Standard score

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