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2018 MARKETS AND RISK OUTLOOK



Risk and Trend
Mapping

AUTORITÉ
DES MARCHÉS FINANCIERS



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In the year since our last Risk Outlook, the financial markets have undergone significant change, be it in terms of their structure or in terms of their surrounding environment (economic, political).

The economic environment has been supportive, with steady, broad-based growth, while the interest rate increases in the United States have, for the moment, not had a negative impact on other geographic regions (traditionally emerging market countries have tended to react quite sharply to Fed decisions). Spikes in volatility, notably in February 2018, were short-lived, as were their accompanying corrections. International tension remains ever-present: in addition to geopolitical risks, the United States have triggered a trade war with measures that are reminiscent of the Smoot-Hawley Tariff Act of 1930, posing a threat to growth, inflation and foreign exchange. Monetary policies on either side of the Atlantic are out of step and the implementation of an unprecedented policy mix in the United States (fiscal stimulus at the peak of the cycle, with the simultaneous tightening of the Fed's monetary policy) have, for the time being, not weighed on the markets but they have contributed to an increase in risks given the uncertainty of their outcome.

Last year's developments do not call into question the main risks that had been identified in our last Risk Outlook— far from it. First, there is the risk of financial markets' re-pricing, at a time when valuations appear higher than ever based on numerous indicators (risk premia, term premia, spreads, etc.). The equity markets, in particular in the United States, and more generally the bond markets appear to be most vulnerable. Second, there is a risk stemming from issuers' solvency, given the debt levels reached and their dynamics which show no signs of abating, while interest rates are already trending upwards, with more ahead when monetary normalisation starts in the euro area.

At the same time, the financial system has become more robust and information drawn from regulatory reporting (EMIR, AIFM) has enabled us to downgrade certain risks: risks in the derivative markets and liquidity risks in our investment funds, for example.

European markets have been deeply changed by the implementation — which, it is worth noting, took place without a hitch — of new regulations, chief among them MiFID II. It is now time to turn our attention to actually achieving some of the objectives pursued, such as increased markets transparency, at a time when new methods of trading are emerging. We need to analyse these developments. We also need to consider the potential undesirable effects of certain rules, such as those imposed on the funding of research, which could lead to a lack of resources to analyse segments such as SMEs.

The year ahead will be marked by the risk of hard Brexit, if no agreement is reached to establish a transition period after 29 March 2019 (the date on which the United Kingdom must exit the European Union). The uncertainty surrounding the political negotiations underway between the United Kingdom and the EU, the risk of an unsuccessful outcome or lack of ultimate approval by the relevant parliaments, should prompt financial market participants to prepare for all possible eventualities. Market access and derivative products (cleared in the United Kingdom, or not cleared but involving a UK participant) appear to be the most highly exposed. With the deadline nine months away and at a time when the review of certain European texts is still being negotiated, we need to consider practical solutions for participants. In the longer term, it is the risk of market fragmentation, regulatory divergence or even regulatory competition, that would pose a threat to the financial markets, leading to a watering down of the protections created after the 2007 crisis. Not as a result of Brexit alone, but due mainly to an international context which is leaning towards deregulation.

Robert Ophèle,
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SUMMARY

An apparently favourable economic environment with record economic activity and momentum in the markets...

The current macro-financial environment seems reassuring with increased economic activity around the world. For example, the euro area has enjoyed its strongest growth since the 2007 crisis (+2.4% in 2017, according to Eurostat), and GDP growth is geographically well distributed. Financial market valuations are high, with low volatility, and historical records were broken again on US equity markets (on 26 January 2018 the S&P 500 stood at 2873 points). Primary markets proved dynamic and innovative with the boom in alternative financing such as Initial Coin Offerings (ICOs), unfortunately accompanied by the emergence of abusive practices suffered by households lured by crypto-assets. Private debt issuance also reached record highs in 2017. The asset management sector also saw record-high inflows, both globally (2 517 billion dollars according to EFAMA) and in France for equity, bond, and diversified funds. Geopolitical tensions did not alter the markets' overall vitality, even though they displayed some signs of weakness, such as during the volatility peak of February 2018,. The monetary normalisation initiated by the Fed did not alter the trend in US activity or the financial markets, with long-term yields growing only moderately (3.0% for the US 10-year Note in June 2018, compared with 2.4% in June 2017 when we published our previous risk outlook; by way of comparison, in the euro area, where monetary normalisation is not yet on the agenda, the German 10-year Bund yield moved from 0.5% to 0.4% over the same period). The currency war rhetoric temporarily faded away, in a context where the dollar appreciated. However, it was replaced by the recent onset of trade war rhetoric: the protectionist rhetoric of the United States has resulted in unilaterally increased tariffs (on European steel, for example), with the risk of escalation through countermeasures by the major trading partners involved. The G7 meeting in June 2018 failed to diminish this threat, the effects of which would weigh on economic growth and increase inflation.

...without masking the risk of a sharp, rapid re-pricing of financial assets

An asset price correction is always the primary risk for financial markets. Objectively, valuation levels reached seem high from a historical perspective but also in terms of fundamentals across a whole range of indicators, starting with US equity markets. However, any correction in this segment would most likely spread to the rest of the equity markets. In addition, volatility in equity markets, which had reached a record low in 2017, has certainly recovered, but it remains low and largely disconnected from the uncertainty weighing on the market environment, as demonstrated by their minimal reaction to multiple political shocks. For example, the VIX moved between 12 and 18 in June 2018, compared with an average of 20 over the past decade, and reached a low point of 9 in November 2017. A revaluation of risk premia would result in a significant correction, and numerous trigger factors have appeared. For example: geopolitical risks that are still prevalent (Russia, North Korea, Brexit, or – for the euro area – the situation in Italy...), difficulties specific to an emerging market country, slowdown in euro area activity, effect of the unprecedented policy mix in the United States (unusual fiscal stimulus at the top of the cycle while tightening monetary policy), US inflation (which could surprise on the upside), trends in US long-term yields, and the spreading of such an increase worldwide. It would be particularly problematic for this to spread to the euro area, where inflation remains low and still disappoints despite strong growth.

Faced with record debt levels, the rise in interest rates (pace and magnitude) is the second identified risk, while monetary policies diverge on both sides of the Atlantic

Despite the current monetary normalisation and successive increases in the Fed's key interest rates, the rise in US long-term yields has been tightly contained so far, resulting in a flattening of the yield curve in the United States (often an early sign of economic downturn). The inflationary nature of Donald Trump's programme (protectionism, lower taxes, etc.), its negative impact on US public finances, and the sharp rise in oil prices could have effects on US inflation (an indicator that markets watch like hawks) and lead participants to further value the term premium and the risk premium on bond markets where spreads began to widen in early 2018. However, the world has never been in such a state of indebtedness, as the IMF has pointed out¹, even more so than before the 2007 crisis broke out (the ratio of government debt to GDP is at its highest level since 1890), and this debt has never been so risky. Expansionary monetary policies have encouraged investors to seek returns by buying higher-yielding securities from lower-rated issuers - issuers whose solvency could be quickly called into question if rates were to increase or the macroeconomic environment to deteriorate. A notable exception comes from French investors, who made record placements in 2017 on bank deposits and sight deposits (preference for risk-free products), whereas directly held listed equities saw a slight outflow, and the percentage of households holding equities stabilised at 7.5% in France after its rebound last year. Growth in speculative debt issuance and in the leveraged loans market, together with the deterioration of protection through covenant-lite loan conditions, illustrate this heightened increase in risk taken by investors. In France, the debt dynamics of private-sector agents led the High Council for Financial Stability (HCSF) to limit the exposure of French banks to the debt of French non-financial companies and then mobilise the countercyclical capital buffer (which increased from 0.00% to 0.25%). French funds would appear to bear limited risk related to this type of debt, given their level of exposure (up to 11% of assets, with no upward trend over time).

Market transformations are changing the risks, particularly for the pricing process

These developments come at a time of implementation of major structural changes for the European financial markets (MiFID2, PRIIPs regulation, reform of money market funds to introduce new constraints on maturity or liquidity risks, etc.). Brexit could also lead to profound, long-lasting changes, with issues of transition and continuity requiring stakeholders to prepare for scenarios of abrupt change, given the environment of marked political uncertainty (see Box 1). Specifically, although the MiFID2 tick size reform has had the desired effect on equity markets (improvement of depth, etc.) and although investor protection has been strengthened (information on fees, etc.), other objectives, such as that of transparency or of the enhancement of the pricing mechanism

¹ IMF (2018); "Global Financial Stability Report: A Bumpy Road Ahead"; April.

have yet to be reached : for example, a sharp increase in systematic internalisation, means of circumventing the double volume cap via pre-arranged transactions or periodic auctions, or the still embryonic implementation of bond market transparency requirements (for the moment, just 11 securities in France are affected out of 22,000 in total). As for the new rules governing the funding of research, these seem to have a detrimental impact on SME coverage, penalising both analysts and SMEs. On a similar note, orders at the fix have continued to develop on French markets, to the detriment of those placed during the continuous trading session, which may raise concerns about the quality of the pricing process, especially in an environment for development of fund administration and ETFs. Turning to the Benchmark Regulation, this should contribute and lead to the construction of fitting alternatives to current critical benchmark indices, enabling the prevention of manipulation of such indices .Nevertheless, transition to alternatives does carry a risk of contract discontinuity for contracts which refer to such indices. For its part, PRIIPs aims to facilitate comparison between different financial investment vehicles. However, without a methodology that is suitably adapted to all situations, the current regulation sometimes struggle to achieve this objective with information that is difficult to interpret, in turn hindering the investor's comprehension. The extension of the implementation of EMIR is playing a positive role, and risks linked to the derivatives markets would appear to be on the decrease (lower exposures, higher margin calls, etc.). Lastly, the development of reports enabled by the new regulations (EMIR, AIFM, MiFID2, etc.) and better data sharing between institutions (HCSF's work on interconnections between funds, banks, and insurers, for example), allow risks to be better assessed, even though there is ample room for data quality to be improved. As an example, AIFM reporting data make it possible to verify the adequacy between asset liquidity of French alternative investment funds (AIF) and their liability constraint to ensure that massive investor redemption requests do not put jeopardise these funds. In addition, in accordance with international recommendations, the French legal framework now provides for a whole range of liquidity management tools to deal with such situations. It is now up to asset managers to on-board them. The development of stress tests also makes it possible to assess the financial system's stability when faced with operational shocks (cyber-risks, for example) and macro-financial or even environmental shocks, as illustrated by climate change risk (see Box 2).

Box 1: BREXIT: high degree of political uncertainty and the risk, without an agreement, of Hard Brexit on 29 March 2019

Political negotiations: slow progress, with extreme uncertainty regarding the outcome

The United Kingdom will leave the European Union on 29 March 2019: beyond this date, the future of activity flows between the United Kingdom and the European Union in financial services is characterised by a high level of uncertainty associated with the on-going negotiations on the terms of exit. In view of this, the negotiations between the British government and the European Union currently involve finalising the withdrawal agreement, including the establishment of a transitional phase, and defining a framework for future relations between the EU and the United Kingdom. This phase of negotiations started on 14 December 2017, when the European Council found that sufficient progress had been made on the three key issues relating to the rights of EU and British nationals, the border between the Republic of Ireland and Northern Ireland, and the United Kingdom's financial obligations to the EU. At its meeting on 28 and 29 June, the European Council has revisited the remaining issues concerning the withdrawal agreement and the framework for future relations.

Subject to the implementation of the withdrawal agreement, the transition period is expected to last from the UK's exit until 31 December 2020. All EU rules would apply to the United Kingdom during this period, but it would not participate in EU decision-making bodies, except in specific, restricted cases. In particular, EU approvals and passports would remain in effect during this period. With regard to the future relationship between the United Kingdom and the European Union, the Council specified in guidelines adopted in March 2018 that any future framework will have to preserve financial stability in the EU and respect the EU's regulatory and supervisory regime, as well as its standards and their application.

The adoption of the withdrawal agreement remains conditional on the final vote of the British Parliament and the European Parliament. The negotiations' outcome is likely to remain uncertain until the last moment. Actors must therefore prepare for a no-agreement scenario, in other words, a Hard Brexit scenario on 29 March 2019, and develop contingency plans to that end. On several occasions, the European supervisory authorities have alerted financial players of the need to prepare for all possible eventualities.

Cross-market access to the United Kingdom/EU27 markets and preparation by players

The main players concerned include investment fund managers, investment firms, market operators, reporting service providers, clearing houses, and central securities depositories.

The loss of the European passport for British players (on 29 March 2019 in the case of Hard Brexit or on 31 December 2020 if the withdrawal agreement is ultimately ratified) will deprive them of freedom to provide services and freedom of establishment within the EU. To gain access to the European market, they will need to establish a subsidiary in the EU27 which will in turn be subject to gain the required authorisation depending on its business sector, or establish a branch in a Member State of the EU and comply with EU rules regarding third countries where appropriate. In parallel, those in the EU will be deprived of passports to the UK, but the UK intends to propose a temporary authorisation scheme, with conditions which have yet to be set, that will allow these companies to continue their operations, at least initially.

Market players' contingency plans, which are very much encouraged by European authorities and regulators given the continuing uncertainty of the outcome of the political negotiations, must ensure business continuity in case of Hard Brexit. Therefore, there should be no significant risk of global destabilisation of EU27 markets, since the players would generally have the tools ready to prepare for the various scenarios and the EU27 already has a complete ecosystem of financial service providers and market infrastructures. This applies to both wholesale and retail financial activities (particularly with regard to means of payment). However, there are still some issues that may require intervention, temporarily if appropriate, to ensure an orderly transition, such as the clearing of euro derivatives.

Beyond 29 March 2019 (or the end date of the transition period), equivalence mechanisms provided for in the European sectorial texts may be set in motion on a case-by-case basis with regard to the United Kingdom. This does not mean that certain schemes won't be reviewed in the short term in the light of *Brexit* (for example, those provided for in EMIR and MiFIR), since none were based on a notion that the Europe's primary financial centre could be located outside the EU. The necessary adjustments, in particular the introduction of the monitoring of equivalence decisions over time by ESMA, should be made possible during the review by the European Supervisory Authorities (ESA) and on a case-by-case basis in texts undergoing negotiation or revision.

Lastly, in the longer term, it will be necessary to re-assess the European thresholds triggering certain regulatory obligations, which were originally designed for a 28-member European market: liquid assets subject to the trading obligation for derivatives, calibration of transparency thresholds for non-equity instruments, etc.

Contract continuity, derivatives clearing, and access to UK clearing houses

For the derivatives market, the loss of the European passport by British players would be problematic when signing new contracts, but also for the life of legacy contracts. Although Brexit does not call into question the general capacity to perform a contract entered into beforehand, this issue arises when events triggering the provision of an investment service occur in the life of these contracts: novation, position roll, compression, etc., and the British counterparty no longer has the necessary approval in the European Union. In addition, new instruments will become available offering the choice of new country laws for these contracts. Financial actors will have the choice of placing their on-going relations in the secure environment of a European Union member state. The International Swaps and Derivatives Association (ISDA), whose agreements govern derivative

contracts, has announced it would soon propose, in addition to the existing laws, French law and Irish law as the applicable laws (currently limited to English law and the law of New York State).

The application of certain requirements provided for by EMIR (central clearing requirement, need for approval or recognition to provide central clearing services, etc.) would also be problematic, with British clearing houses losing their EMIR approval and not necessarily recognized as third-country clearing houses. The implementation of a second version of EMIR (the ECON Committee of the European Parliament adopted the EMIR 2.0 and EMIR REFIT reports in May 2018) could resolve many of these issues, but the date of entry into force of EMIR 2.0 is uncertain and may make temporary alternatives necessary. Lastly, central data depositories in the UK are also a source of concern, since their activity would no longer be recognised in the EU.

The risk of presence of significant clearing activities denominated in euros outside the EU

It is essential to ensure that the continuation of significant activities in British clearing houses does not create a risk for the financial stability of the European Union as a whole. After Brexit, UK clearing houses will become third-country clearing houses that (i) will no longer be subject to the prudential requirements of the EMIR or the collegial supervision provided for in this regulation, involving authorities of the entire European Union and (ii) will remain under the primary supervision of their national authority, whose mandate is preservation of the financial stability of their jurisdiction. The proposed revision of EMIR, which recognises that all third-country clearing houses do not have the same impact on the European Union's financial stability, makes it possible to introduce proportionality into the equivalence regime for these clearing houses, reinforcing ESMA's role in the supervision of those that will be deemed to have systemic importance and potentially requiring those considered to pose a risk of financial stability to the EU, to locate all or part of their clearing services within the EU. This revision, in its current draft form, also schedules a transition period to avoid any sudden or hasty relocation or transfer of clearing, and to limit the potential costs for clearing members and their clients.

Box 2: Financial markets and climate risks

An increase in the frequency and severity of natural disasters caused by global warming, as well as a disorderly transition to a lower greenhouse gas-emitting economy, can have a significant impact on the financial sector through increased costs of damages (insurance, catastrophe bonds, etc.) or write-offs of assets, in credit and investment portfolios, in the balance sheets of the various players: insurers, banks, investment funds, etc. Beyond the sector-specific effects on a particular asset class or type of player, these risks may be systemic in nature, as illustrated by the Advisory Scientific Committee of the European Systemic Risk Board (ESRB) in a report published in February 2016². The worst-case scenario, according to the ESRB, would be a transition to a low-carbon economy that would arrive too late and abruptly, which would (1) have a strong impact on economic activity, because of the overly rapid change in allocation among the various energy sources, (2) lead to brutal repricing of fossil-fuelled assets, and (3) not prevent an increase in natural disasters.

The ESRB concluded that there is a need for public policies that promote the dissemination of information on carbon intensity of non-financial sector activities, which would then allow for stress tests of financial institutions, taking into account their exposure to these activities. In its action plan for sustainable finance, which was published in March 2018 and is part of its more general initiative of the Capital Markets Union, the European Commission proposes incorporating sustainability issues into financial decision-making. The aim is to redirect capital flows towards sustainable investments, to incorporate sustainability into risk management (especially for asset managers), and to encourage transparency and a long-term approach. The ten measures envisaged by the end of 2019 include, as a priority, a taxonomy of activities related to climate change, as this type of classification determines most of the other envisaged measures.

Increasing transparency on climate risks and facilitating the consideration of the long term are in line with the effectiveness of financial markets, which must precisely attribute a price to risk and time. However, some of the ideas currently being discussed could themselves have adverse effects for these markets if their interactions with existing law are not sufficiently integrated. For example, for the sake of the environment, the treatment of green investments could be favoured in the current regulation, which limits risk-taking by financial stakeholders (green supporting factor, which would reduce the capital requirement for banks). However, the intrinsic risks that these investments present may not justify such loosening of prudential constraints. The definition of the tools to be used to support orderly transition to a more environmentally friendly economy must therefore be carried out with caution and take into account the ability to mobilise dedicated measures directly targeting the green objective (subsidies, taxes, tradable permits, etc.) and not disrupting a regulation that is justified by itself to specifically fight against other risks.

Most of the actions envisaged by the European Commission directly concern the regulation of financial markets through measures aimed at issuers of financial securities, asset managers, the production of indices, rating agencies, public dissemination of information, etc. The AMF has also made this one of its priorities for 2018 in the implementation of its strategic plan. Within the European framework, current French law appears to be relatively well advanced. For example, Article 173 of the French energy transition law of 2015 creates reporting obligations on non-financial criteria as well as the implementation of tests of banks' resistance to climate change.

² Reports of the Advisory Scientific Committee No. 6 / February 2016, "Too late, too sudden: Transition to a low-carbon economy and systemic risk".

	Description of risks	Level at mid-2018	2018-2017	Outlook for 2019
Financial stability	1. Increased risk premia, weakening indebted firms or those with assets whose prices do not reflect their fundamentals and could correct sharply <i>Observation of high valuations, low risk premia, and low volatility.</i>		→	→
	2. Lack of coordination in policies (monetary, fiscal etc.) or in regulatory changes for the financial sector <i>Potential regulatory competition (Brexit, new regulatory policy in the United States). Protectionism, trade wars. Monetary policies out of step (United States, Euro area). Balance between macro-prudential and monetary policy in the euro area (increased risk-taking due to search for yield).</i>		↗	→
	3. Credit risk, unsustainable debt trajectories, non-performing loans <i>Observation of high debt levels and debt dynamics showing no sign of abating. Potential global proliferation of an interest rate snapback in the United States. Risk of economic downturn.</i>		↗	→
Market organisation and functioning	4. Volatility, sharp fluctuations in liquidity conditions, large-scale shifts by investors from one asset class to another. <i>Market resistance despite sudden swings (February 2018).</i>		→	→
	5. Increasing needs for high-quality collateral, with an ill-controlled reuse and transformation risk, in the light of a potentially scarce supply of local collateral in a stress scenario <i>Disappearance of 2017 repo market problems.</i>		↘	→
	6. Functioning of market and post-market infrastructures <i>Implementation of MiFID2 and Benchmark Regulation. Considered revisions for EMIR. Cyber risks in a tense geopolitical context. Continuity of operations in March 2019 if negotiations over a transitional period for Brexit fail (in particular, clearing houses, derivatives markets).</i>		→	↗
Financing economic activity	7. Profitability of financial institutions in a low interest rate environment and a still-fragile economic environment <i>Improvement of the macroeconomic environment. Slow and moderate rise in interest rates for now. (But increased competition from new players using disruptive technologies).</i>		↘	→
	8. Challenges facing companies, particularly SMEs, that wish to access the financial markets		→	→
	9. Lack of investor protection when there is little information about the risks associated with certain investments or distribution channels <i>Build-up of new waves of fraud (crypto-assets). Difficulties in applying PRIIPs.</i>		↗	→

	Systemic
	High
	Material
	Low

IN BLUE: major new information that changes the diagnosis

↘	Lower
→	Stable
↗	Higher

CHAPTER 1: FINANCING ECONOMIC ACTIVITY

The trends observed since the second half of 2016 confirm the significant improvement in the global macro-financial environment, characterised in particular by an acceleration of economic activity in all geographical areas. Coupled with monetary policies that have remained accommodative in developed countries, this acceleration has also helped keep risk premia low and driven equity market valuations to record levels.

This overall progress has contributed to the dynamism in primary markets. In particular, the return of volatility to historically low levels, after the instability episodes observed in 2016, allowed speculative bond issues and initial public offerings to rebound in 2017. However, this rebound remains uncertain, as evidenced by the slowdown observed in first quarter 2018, linked with a marked increase in volatility, under the pressure of uncertainties and renewed political and geopolitical tensions.

As a result, the main risk is a sharp rise in interest rates. In the United States in particular, the rise in short-term yields, the upward revision of inflation expectations, and the increase in the public debt brought about by tax reform could result in a sharp rise in long-term interest rates, which would be likely to:

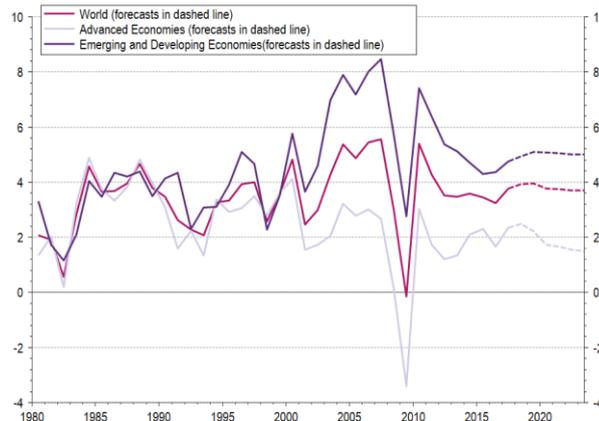
- spread to other geographical areas, including the euro area, thereby undermining the economic recovery and weakening the situation of non-financial agents;
- lead to a sudden re-pricing of assets and renewed volatility on the markets and thus weigh on the activity of primary markets.

1.1 THE MACRO-FINANCIAL ENVIRONMENT IMPROVED IN 2017, BUT UNCERTAINTIES INCREASED AT THE END OF THE YEAR

1.1.1 Dynamic growth in all regions of the world

2017 saw dynamic growth, despite many uncertainties, particularly political and geopolitical. According to the IMF, global activity grew by 3.8%, the fastest pace since 2011. All regions of the world benefited from this acceleration: growth in emerging countries increased from 4.4% to 4.8% in 2017, supported notably by China and India with growth rates approaching 7%. As for Brazil and Russia, they emerged from recession, taking advantage of the good performance of their domestic demand, supported by a relaxation of their monetary policy and, in the case of Russia, the rebound in oil prices.

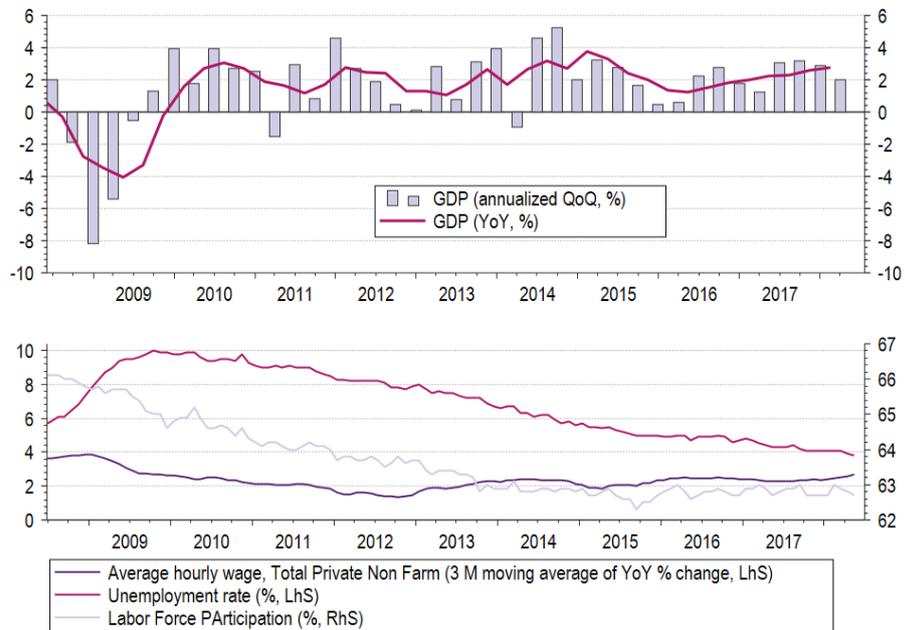
Figure 1: Change in GDP volume (%) , change compared with the previous year)



Source: IMF

Growth in developed countries also accelerated in 2017. In the United States, it was 2.3% according to the Bureau of Economic Analysis (BEA). Household consumption helped sustain activity thanks to an ever-lower unemployment rate and a slight rise in wages. In the coming years, US growth should also benefit from tax reform, which could, according to estimates by the US Congressional Budget Office, contribute an average of 0.7% per year to GDP growth from 2018 to 2028. Although the labour force participation rate is stable, this acceleration of activity could foster an increase in wages and inflation.

Figure 2: Activity and employment in the United States



Sources: BEA, Bureau of Labor Statistics, Thomson Reuters Datastream

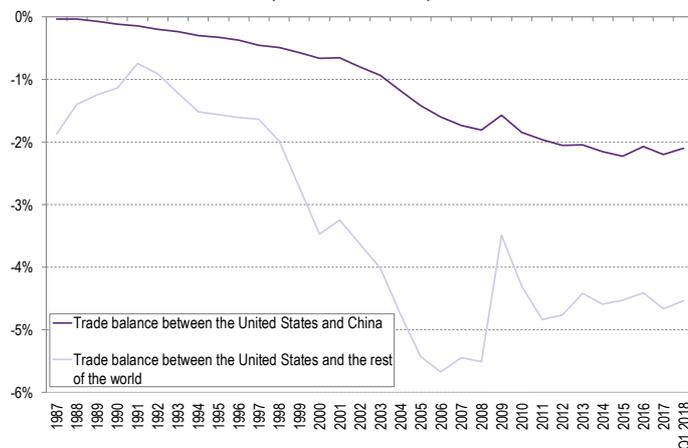
**In the United States,
the unprecedented
policy mix could
prove risky**

Such fiscal stimulus occurring in a US economy that already appears at the top of the cycle is an unprecedented situation. The surplus of activity can only be partially covered by domestic production. It should therefore benefit the rest of the world through foreign trade, which undoubtedly explains the simultaneous announcement of protectionist measures. The United States has announced a series of border taxes on certain imports

such as steel, aluminium, and products with high technological content. These measures particularly target China, as nearly half of the US trade deficit (46%) comes from this country (Figure 3), as well as the European Union.

The Chinese retaliatory measures announced in the wake, as well as those decided by the European Union to counter the US steel and aluminium taxes, have resurrected fears of a global trade war, likely to eventually weigh on growth and lead to higher inflation. From a microeconomic perspective, the losses and gains of the various stakeholders remain uncertain. Border taxes on Chinese imports may ultimately weigh more heavily on US firms than on Chinese firms, according to a Standard & Poor's analysis³.

Figure 3: US trade balance of goods
(as % of US GDP)

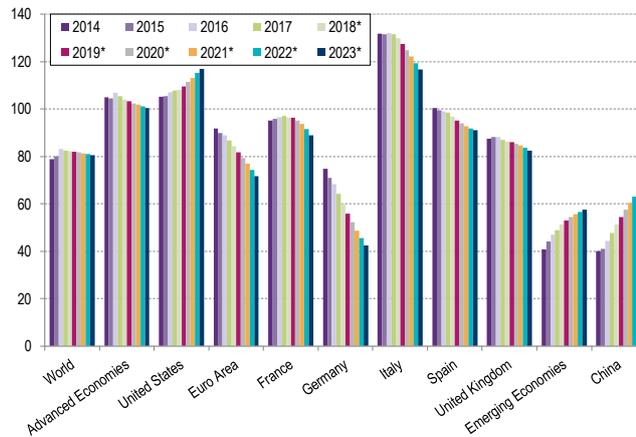


Source: Census Bureau, BEA.

Fiscal stimulus in the United States will also come at a cost. The US Congressional Budget Office anticipates an increase in the primary deficit of 1,843 billion dollars over the next 11 years and 1,272 billion dollars after taking into account the positive effects of tax reform on the economy. Public debt, which was close to 108% of GDP in 2017, could reach 117% by 2023, according to IMF estimates. This situation contrasts with the general trend observed in most developed countries, particularly in the euro area, where deleveraging efforts are at work. However, it should be noted that in Europe's most indebted countries, this movement is happening in a context of growth. It could therefore change direction in the event of a slowdown in activity.

³ S&P global "Companies and Sectors Most Impacted by U.S.-Chinese Tariffs".

Figure 4: Government debt/GDP (%)

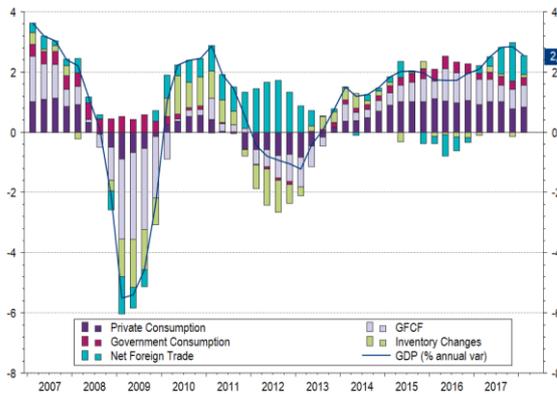


Source: IMF; *: Forecasts

Growth in the euro area seems close to its potential

In the euro area, GDP growth was 2.4% for 2017 overall according to Eurostat data. It was supported by foreign trade and domestic demand, stimulated by very favourable monetary conditions and falling unemployment (it stood at 8.4% in May 2018 according to Eurostat, the lowest level since December 2008). However, it should be noted that the pace of growth slowed in first quarter 2018. Business climate surveys suggest that a slowdown in activity is at work (Figure 6), bringing growth closer to its potential. According to the European Commission’s forecasts, GDP will increase by 2.3% in 2018 and by 2% in 2019 for an estimated potential growth of 1.5% over the same period.

Figure 5: GDP and its components in the euro area (yoy % change)



Source: Eurostat, Thomson Reuters Datastream

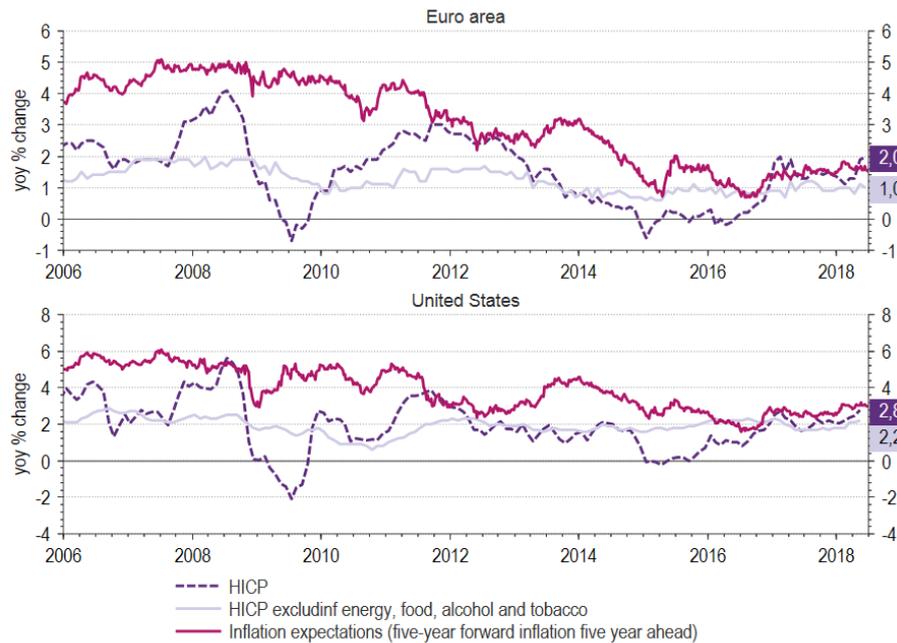
Figure 6: Euro area composite PMI index



Source: Markit

Despite renewed activity, monetary policy support, and wage acceleration⁴, inflation in the euro area has only recently moved closer to its target⁵. For its part, underlying inflation⁶ remains stable at around 1%. By contrast, inflation in the United States is above the desired level of 2%.

Figure 7: Change in consumer prices (yoy % change)



Source: Thomson Reuters Datastream

However, inflation could increase more significantly as a result of the rise in oil prices observed since the agreement among the Organization of the Petroleum Exporting Countries (OPEC) to curb oil production when the price per barrel hit a low at the end of 2016. This movement has recently accelerated. The price of a barrel of Brent crude rose from 45 dollars on 15 June 2017 to almost 80 dollars at the end of June 2018, an increase of nearly 80% in one year. This trend is explained simultaneously by a strong global demand, and from a supply side, by the difficulties encountered by some exporting countries, like Venezuela which is experiencing since 2014 a deep economic and political crisis, or more recently Iran, whose exports could suffer from the US sanctions against Iranian oil buyers. As a consequence, the OPEC decided late June to increase the production. If the supply is to remain insufficient, the lasting increase in oil prices could result in a rise of inflation, likely to weigh on the growth of importing countries and lead to an increase of interest rates.

⁴ Wages in the euro area rose by 1.8% in 2017 according to the European Central Bank, compared with 1.4% in 2016.

⁵ The European Central Bank's primary objective is to ensure price stability, which is defined as maintaining a lower inflation rate but close to 2% in the medium term.

⁶ The underlying inflation considered here is inflation excluding energy, food products, alcoholic beverages, and tobacco.

Figure 8: Brent oil price
(dollars per barrel)



Source: Thomson Reuters Datastream

1.1.2 Monetary policies are diverging more and more on both sides of the Atlantic...

The difference in the economic cycle of the US and the euro area explains the difference in monetary policies between the two regions. In the United States, monetary normalisation continues. The Federal Reserve began the gradual reduction of its balance sheet⁷ in autumn 2017 by not reinvesting the repayment of matured debt securities⁸. It has also increased its federal funds rate by 25 basis points since the beginning of 2017 to 2% in June 2018 and could gradually increase it two more times by the end of the year. However, the Federal Reserve remains exposed to the risk of market overreaction to possible inflation surprises, given its current level (2.8% in May 2018), higher than the central bank's target of 2%.

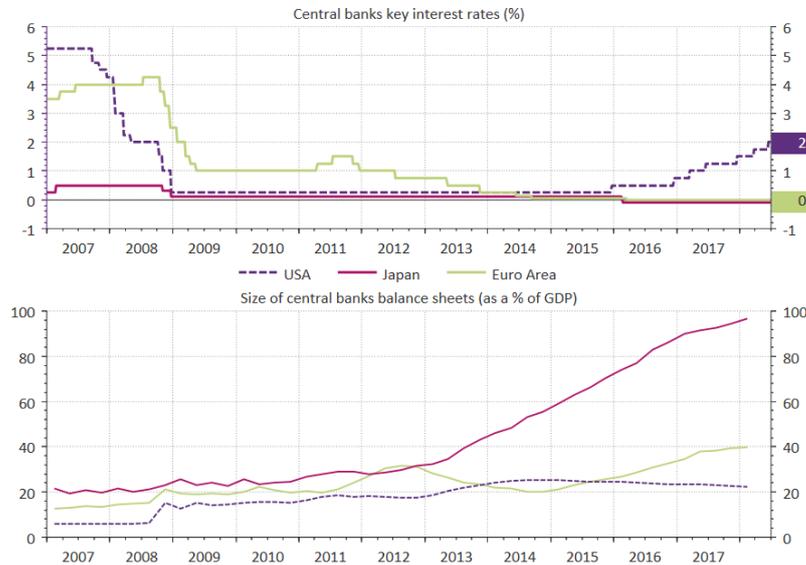
On the other hand, in the euro area, unconventional monetary policies are still at work. Certainly, the European Central Bank (ECB) announced that it wants to end its net asset purchases at the end of 2018⁹. Beyond this term, however, the ECB will continue to reinvest the repayment of maturing securities. In addition, the ECB plans to keep its key rates unchanged, at least until summer 2019.

⁷ It was 4,305 billion dollars in June 2018.

⁸ The Federal Reserve mainly holds US treasury bills and mortgage-backed securities.

⁹ Already cut in half in January 2018, net asset purchases are expected to be reduced from 30 billion euros to 15 billion euros by September 2018 (*ECB monetary policy decisions, news release, 14 June 2018*).

Figure 9: Key interest rates and size of central banks balance sheets



Sources: Eurostat, BoJ, Federal Reserve, Thomson Reuters Datastream

1.1.3 ...with repercussions on bond markets

In the euro area, the Central Bank's interventions combined with low inflation kept sovereign yields low and the yield curve relatively stable. The 10-year yields of the main European countries changed little in 2017, with the exception of Portugal, whose yield decreased by 176 basis points, with the emergence from the excessive deficit procedure and an improvement in its rating by international agencies.

Figure 10: 10-year government bond yields (as %)

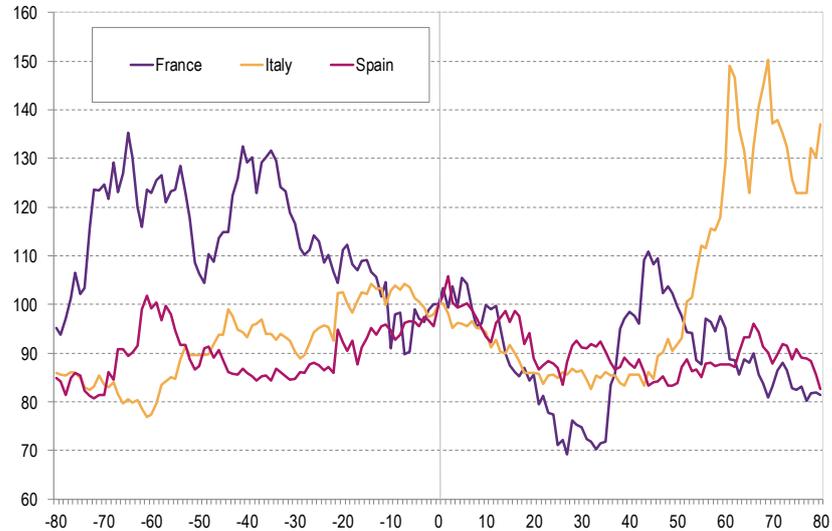


Source: Thomson Reuters Datastream

Sovereign yields in the euro area seem insensitive to political risk overall...

European yields thus seemed unresponsive to political risks, as evidenced by the behaviour of the Spanish yield during Catalonia's independence referendum and the changes in Italian yields after the elections in March 2018 (Figure 11). However, there was a belated reassessment of political risk in Italy in May 2018 following the difficulties encountered in establishing the new government.

Figure 11: Changes in interest rates on 10-year government bonds before and after political events* (base 100 on day of event)



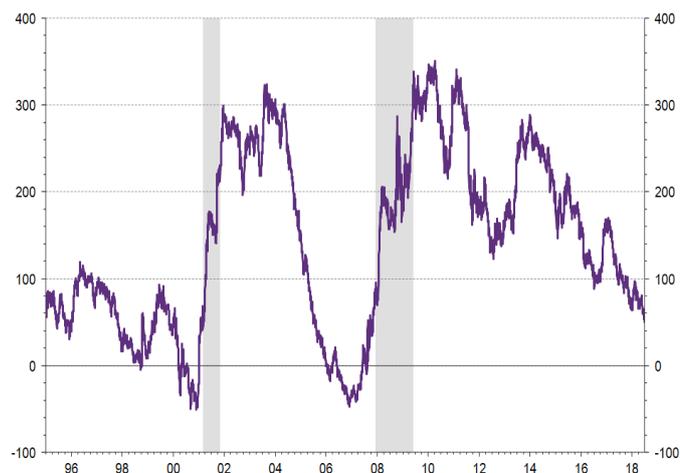
Source: Thomson Reuters Datastream

(*) Date 0 corresponds to the event date (8 May 2017 for the French elections, 2 October 2017 for the Catalan referendum, and 5 March 2018 for the Italian elections).

...but could become tense under the influence of US sovereign yields

US 10-year sovereign yields tightened significantly in 2017, then more sharply in early 2018 (increase of 39 basis points between the beginning of the year and the end of June 2018), supported by a dynamic economy and increasing growth prospects. It was accompanied by a very clear flattening of the yield curve. The spread between the 10-year yield and the 1-year yield decreased sharply in the United States to 53 basis points at the end of June 2018. However, in the past, yield curve flattening periods have been the sign of the end of an economic cycle.

Figure 12: Yield spread (10-year / 1-year) on US sovereign bonds (%) (basis points)



Source: Thomson Reuters Datastream

Note: The shaded bands represent recession periods.

The rise in long-term yields could continue, in connection with the rise in key rates, wages, or inflation. In addition, the tax reform passed at the end of 2017 will worsen the US deficit and help increase the supply of treasury bills. The market's ability to absorb this increase in supply will therefore be essential for the determination of US sovereign yields.

A central issue will be the spreading of the rise in US long-term yields to other geographical areas, including the euro area, thus undermining the ongoing economic recovery. Monetary normalisation in the United States has already resulted, since the beginning of the year, in a reassessment of risks in emerging countries (Figure 13), some of which saw their currencies depreciate against the dollar, like Turkey and Argentina. However, the combination of these two phenomena poses a risk for countries highly indebted in US currency and, consequently, for investors exposed to them.

Figure 13: Emerging Markets Bond Index
(spread relative to US sovereign debt, in basis points)



Source: Bloomberg

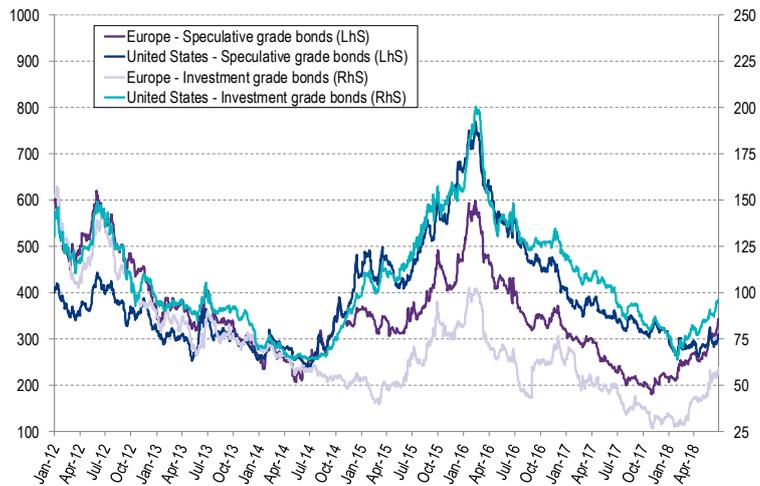
Corporate spreads in euros up since the beginning of 2018

With regard to corporate debt securities, 2017 was marked by a further decline in spreads in Europe and the United States, both in the investment category and in the speculative category. However, at the end of the year, corporate¹⁰ spreads in Europe increased at the same time as the reduction in the asset purchase programme. A rise in corporate spreads in the US investment segment has also been observed since the beginning of 2018. US corporate spreads on the speculative category seem to have stabilised since the beginning of 2018 after a sharp decline following the rise in oil prices in early 2016¹¹. More generally, the US High-Yield sector has been in great demand over the last two years among investors looking for returns, as the interest rates offered by this sector remain attractive.

¹⁰ The corporate spreads used are OAS (option-adjusted spreads), which take into account the options attached to the bond and calculate the spread relative to euro-denominated interest rate swaps for European spreads and relative to dollar-denominated interest rate swaps for US spreads.

¹¹ The US High-Yield bond market is very sensitive to oil price fluctuations, given the significant weight occupied by companies in the energy sector in this market segment.

Figure 14: Corporate spread in Europe and the United States by rating category

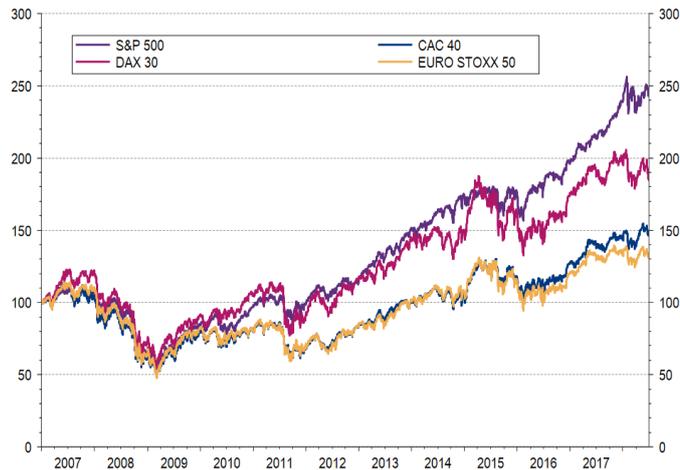


Source: Bloomberg

1.1.4 Valuation levels continue to be high

Equity markets were still very dynamic in 2017 and early 2018. Many indices, such as the S&P 500 in the United States and the DAX 30 in Germany, reached their all-time high in January 2018. In that month, the S&P 500 achieved its longest period without a decline of more than 5% over a six-month period since 1929.

Figure 15: Change in the main equity market indices, dividends reinvested (in local currencies, base 100 on 01/01/2007)



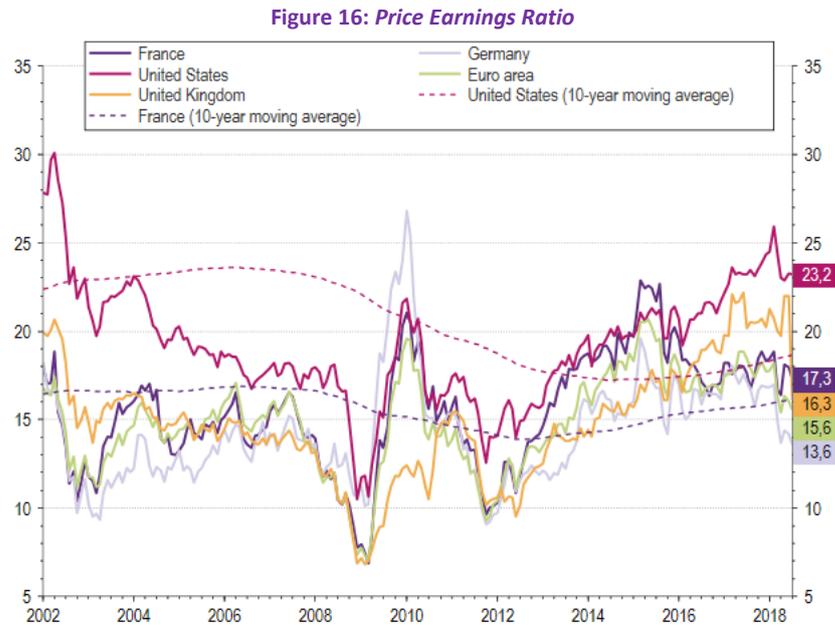
Source: Thomson Reuters Datastream

In addition to equity market gains, dividend distribution policies are more generous than last year. Dividend payments¹² rose 7.7% in 2017 globally, compared with 0.1% in 2016. They rose to 1,252 billion in 2017, according to Henderson Global Investors. All sectors,

¹² Total dividends.

except telecommunications, saw their underlying dividends¹³ rise in 2017, proof that economic momentum was widespread.

In addition, despite the decline observed in early 2018, historical price earnings ratios (PER) remain high and above their long-term average, particularly in the United States. We must go back to June 2002 to find PER levels higher than those seen in February 2018.

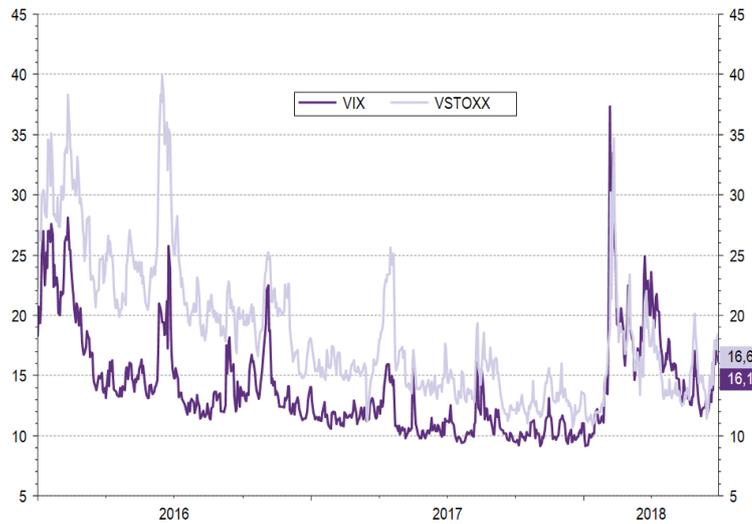


Source: Thomson Reuters Datastream

Equity markets experienced a re-pricing phase in February 2018 triggered by fears of a faster-than-expected rise in US inflation following the acceleration of wages in January 2018 (+2.9% year on year). However, a rise in inflation could result in more pronounced monetary tightening than expected, putting investors under pressure. US equity markets then lost 6% in 2 days. This setback was accompanied by a sharp rise in volatility on both sides of the Atlantic, while the VIX and VSTOXX reached record lows at the end of 2017 (9.1 on 3 November 2017 for the VIX and 10.7 on 18 December 2017 for the VSTOXX index). The VIX index, which fluctuated in the preceding months between 10 and 15 points, saw a spectacular rise on 6 February 2018, climbing to 37 points before falling back, but without returning to its level of the beginning of the year.

¹³ Adjusted for exceptional dividends and currency effects.

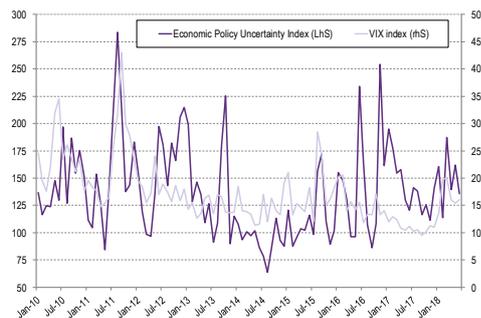
Figure 17: Implied volatility indexes (as %)



Source: Thomson Reuters Datastream

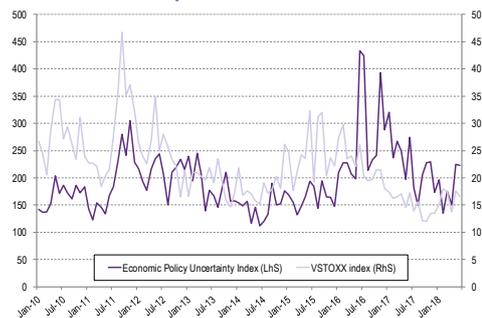
In a study published in April 2018, the AMF sought to analyse the mechanisms at work during the days of 5 and 6 February 2018¹⁴. Products that bet on volatility have become more popular in recent years in a context of investors seeking returns. However, these products may amplify shocks, which contributed to the jump in volatility observed in early February 2018¹⁵ (Box 3). Volatility on equity markets now appears to be less uncorrelated with signs of political uncertainty following their decline and the recent increase in volatility indices.

Figure 18: Economic policy uncertainty index in the US and VIX



Source: Chicago Board Options Exchange, Economic Policy Uncertainty

Figure 19: Economic policy uncertainty index in Europe and VSTOXX



Source: STOXX, Economic Policy Uncertainty

¹⁴ AMF (2018), Heightened volatility in early February 2018: the impact of VIX products, 19 April.

¹⁵ The analysis indicates that short volatility products have a pro-cyclical strategy, which consists in buying VIX futures when the VIX index rises in order to maintain a constant target exposure. The increased demand for VIX futures led to a rise in prices of VIX futures that spread to S&P futures and thus to the VIX index, which amplified the initial shock.

Box 3: The impact of products on VIX: analysis of the high volatility episode in early February 2018

Ahead of the spectacular increase in volatility in early February, the AMF wished to propose an analysis of the main products in question and their performance during this episode, through a study whose main results are presented here¹⁶.

Following the publication on 2 February of economic statistics likely to fuel expectations of an interest rate hike in the United States, the markets experienced a strong increase in volatility. The S&P 500 index fell 4.2% on 5 February. The VIX index, which measures the implied volatility of options on the S&P 500 index and allows the market risk perceived by investors to be assessed, rose to 37 points in a few days, far from its range of 10 to 15 points in previous months. The VSTOXX and VCAC indices, which measure volatility on European (Eurostoxx 50) and French (CAC40) markets respectively followed the same trend and decreased from 15 and 14 points respectively at 31 January 2018 to 35 on 9 February 2018 and 30 points at 8 February 2018 respectively. These indices have since returned to lower levels: the VIX posted 13 points at 25 May 2018, the VSTOXX posted 16 points, and the VCAC posted 14 points.

The magnitude and suddenness of this volatility spike surprised the market. It appears to have resulted less from fundamental causes than technical factors linked to derivatives indexed to the VIX, notably through the impact of products betting on a drop in this index. Although these products have relatively low assets, they played a self-amplifying role on the increase in the VIX through two mechanisms: (i) the rebalancing mechanism of these products at the end of the day, which created a feedback loop with the index itself¹⁷; (ii) the role of other participants, which pushed up prices of VIX futures, in anticipation of (i). In addition, these products had a real but insignificant impact on the decline in US equities on 5 February at the end of the session¹⁸. Despite the abrupt movements observed in their prices (sometimes leading to their early liquidation), products indexed to the VIX benefited from significant new inflows following this episode, in a context of lower volatility¹⁹.

In view of suspicions over VIX futures in the United States, the study also reviews the issue of possible market manipulations on volatility indices in Europe. A manipulatory scheme on European volatility indices such as the VCAC and VSTOXX appears unlikely.

Lastly, the analysis shows that French investors in collective investment schemes were not significantly exposed to strategies involving the VIX and therefore were not significantly impacted. As for European funds playing on volatility, they are very marginal in Europe. However, the large number of funds with strategies using volatility targets or volatility products more generally calls for vigilance. In the event of a market reversal, these strategies may serve to heighten existing price trends, as was the case for the VIX in February.

Fears of a recurrence of this type of event thus appear to be high, primarily for fundamental reasons: the diagnosis of high valuations of financial assets carries the risk of a correction on the markets with probably an increase in volatility that would be accentuated because of the mechanical effects of volatility-indexed products. Beyond these products alone, protection mechanisms such as circuit breakers can be useful to limit the most aberrant price fluctuations.

The role of VIX products in this episode has also been highlighted in other analyses. In its quarterly report published in March 2018²⁰, the Bank for International Settlements (BIS) states that "market developments on 5 February were another illustration of how synthetic leveraged structures can create and amplify market jumps, even if the core players themselves are relatively small". In its *Financial Stability Review* of May 2018, the ECB²¹ also provides an analysis of behaviours of redemptions net of subscriptions for volatility-indexed products: investors were not very pro-cyclical during the event of 5 February 2018; it is the logic of hedging the risks internal to these products that generated a self-amplifying effect.

¹⁶ See C. Le Moign, F. Raillon (April 2018), "Heightened volatility in early February 2018: the impact of VIX products", AMF.

¹⁷ Their risk coverage is pro-cyclical by nature: if VIX futures are up, the rebalancing of their coverage at the end of the day requires buying futures at the closing price (and conversely selling futures if the future drops). Therefore, although their aggregate positions on these instruments are relatively small, even a small change in the price of the future may have a significant market impact.

¹⁸ Under normal market conditions, given the amounts traded on the S&P, the spread of the observed movements generally seems to be from S&P futures towards VIX futures, whereas this relationship appeared to have inverted at the very end of the day on 5 February. All in all, during the day of 5 February, the impact of VIX futures on the decline of S&P 500 futures is estimated at 0.7%, or 13% of the decline in S&P 500 futures observed during the day (-5.5%).

¹⁹ For example, three days after the announcement of the liquidation of the XIV fund, which suffered a 96% discount between 2 and 5 February 2018, the competing ETF SVXY experienced a record influx of capital:

²⁰ "Volatility is back", BIS, quarterly report, March 2018.

²¹ "Financial Stability Review", ECB, May 2018.

1.2 THE ECONOMIC UPTURN HAS CONTRIBUTED TO THE RESURGENCE OF ACTIVITY ON PRIMARY MARKETS

In 2017, the improvement of the macro-financial environment was an important factor in supporting primary equity and bond markets. Notably, the collapse of volatility to record lows undoubtedly contributed to the rebound in speculative debt issues and initial public offerings. However, the renewed financial instability in first quarter 2018 weakened this movement, which was the case in 2016. Another troubling factor, the increase in indebtedness of non-financial companies in France, but also in the United States, continued, reviving fears about their sustainability.

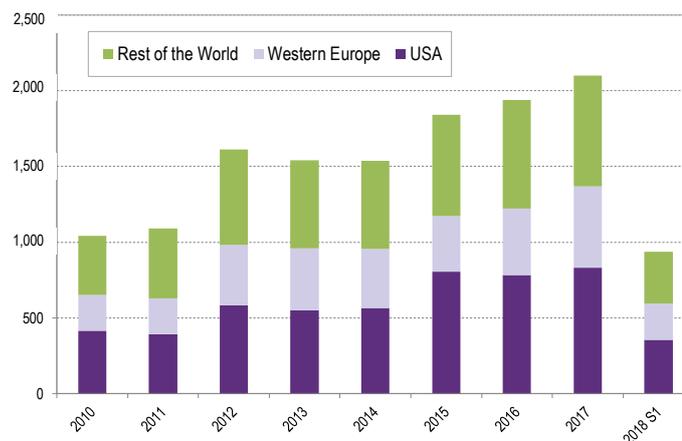
1.2.1 Primary bond markets and, more generally, private debt markets are setting new records

Bond issues set new records in 2017. At the global level, they represented around 4,300 billion euros, a 5% increase compared with 2016. The primary markets benefited from strong support factors, including continued low interest rates, the acceleration of activity, and low stock market volatility. Against this backdrop, issuers continued to benefit from these extremely favourable conditions to optimise their debt structure in view of a less favourable monetary environment.

- The momentum of bond issues by non-financial companies (NFC) raises fears about the sustainability of their debt

Bond issues by non-financial companies remained dynamic in 2017. The market remained boosted by mergers and acquisitions in the sector as well as the low-rate environment. Globally, gross issues exceeded the threshold of 2,000 billion euros, up 5% over one year. France is part of this overall movement. Issues in France remained dynamic in 2017 but with a significant drop during the year. However, they rebounded in the first months of 2018, near 40 billion euros over the first four months, versus 80 billion for 2017 overall.

Figure 20: Gross issues of bonds of non-financial companies globally
(in billions of euros)



Source: Bloomberg

Net issues, although still positive, fell sharply until the beginning of 2018, in France and in the euro area (Figure 21).

Figure 21: Net bond issues of non-financial companies in France and the euro area (yoy cumulative, in billions of euros)

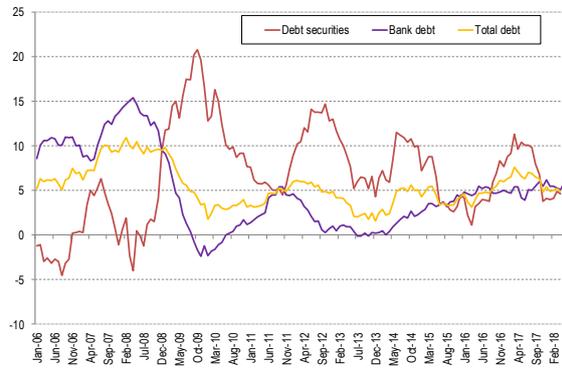


Source: ECB

Beyond issues of securities alone, the total indebtedness of all non-financial companies continued to rise in France, with a significant acceleration of granted bank loans starting in the second half of 2017 (with an annual growth rate of 5.8% in May 2018), which distinguishes France from most other countries in the euro area. This increase in indebtedness, mainly attributable to large firms, reflects an investment effort and increased liquidity holdings²². There has been a limited increase in net corporate debt (which measures indebtedness net of cash) since 2007. This particular situation in France has raised concerns. The High Council for Financial Stability thus decided to cap the exposure of systemic banks to the most indebted large firms at 5% of their capital. This decision came into force in July 2018. Banks will also be imposed a surcharge of 0.25% in capital for their credit activities in France from July 2018. Established as a preventive measure, this counter-cyclical buffer is intended to be used as a capital reserve in order to allow banks to maintain their credit offer in the event of a cyclical downturn.

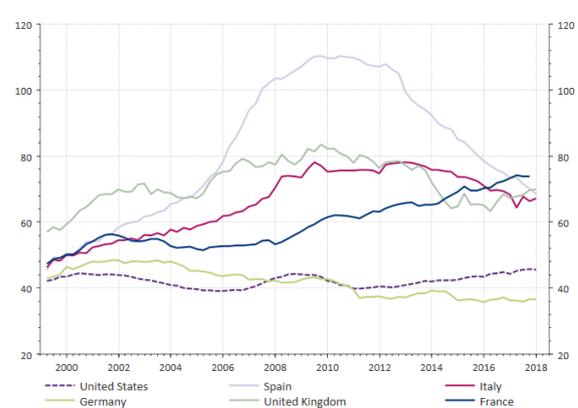
²² See in particular M-B Khder and Rousset C. (2017): "Is the increase in French firms' indebtedness a cause for concern?", INSEE, Economic report, December and HSCF (2017): "État des lieux de l'endettement des agents privés non financiers", Sept.

Figure 22: NFC debt in France (annual growth rates, as %)



Source: Banque de France.

Figure 23: Gross debt rate of NFC²³ (as % of GDP)



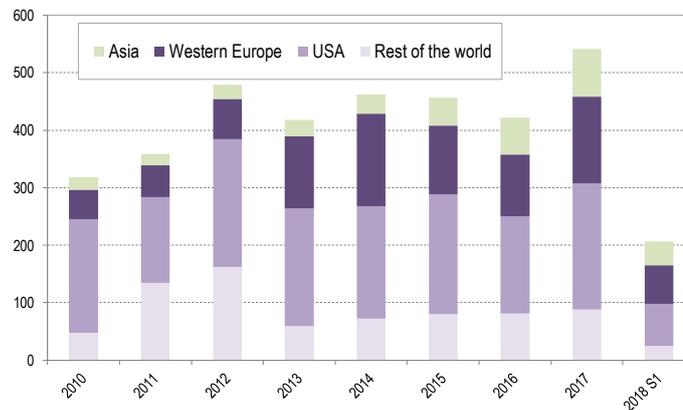
Source: Banque de France.

- The momentum of the speculative debt market could lead to major corrections in the event of a cyclical downturn

Speculative bond issues suffered from moments of instability in early 2018

The improvement of the macro-financial environment led to the rebound of speculative bond issues in 2017, which rose by 30% for the year overall. Nevertheless, this movement did not continue during the first months of 2018. The volatility episodes observed during first quarter 2018 then weighed on primary market activity, particularly in the United States.

Figure 24: Gross speculative bond issues by non-financial companies, by issuer nationality (in billions of euros)



Source: Bloomberg

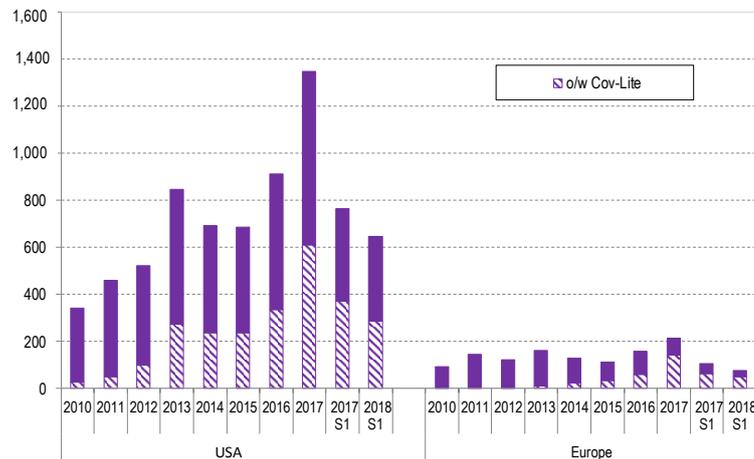
The momentum of leveraged loans would be a source of weakness in the event of a cyclical downturn

Continuing a trend that began in 2016, the leveraged loan market remained very dynamic in 2017. The search for returns by investors and the needs of companies to finance external growth transactions have been important factors in supporting this market segment. Notably, this movement was particularly pronounced for loans with covenant-

²³ NFC debt comprises loans from French and foreign financial intermediaries and debt securities (primarily bonds) issued on the financial markets, but it does not include lending/borrowing transactions between companies belonging to the same group. It is booked at nominal value, i.e., the repayment value of the borrowed funds.

lite loans, particularly in Europe, where volumes doubled over the year and accounted for two-thirds of all granted leveraged loans (compared with just under half in the United States). Although a significant inflection was noticeable in the first months of 2018, this dynamic observed since 2016 is a source of weakness in the event of a downturn of the credit cycle.

Figure 25: Leveraged loan volumes (in billions of euros)



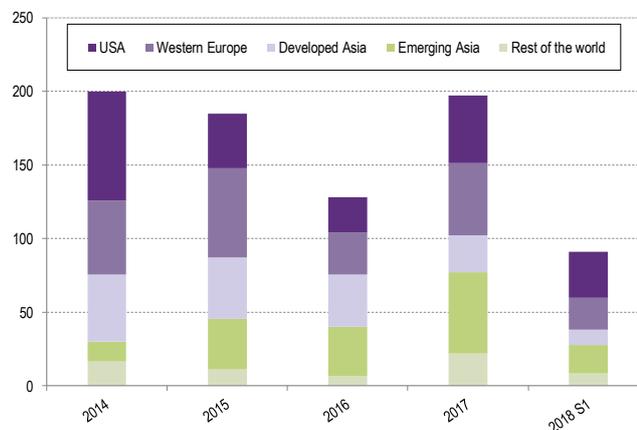
Source: Bloomberg

1.2.2 Primary equity markets have benefited from the improved macro-financial environment

- Initial public offerings are reconnecting with growth

Good global growth performance, low volatility, and high market valuation levels have supported the activity of initial public offerings, which, after a difficult 2016, rebounded in 2017 in all geographical areas. At the global level, the volumes of capital raised during these operations increased by 54% to nearly 200 billion euros. This trend continued in the first months of 2018, despite a somewhat less favourable financial environment.

Figure 26: Capital raised through IPOs (in billions of euros)



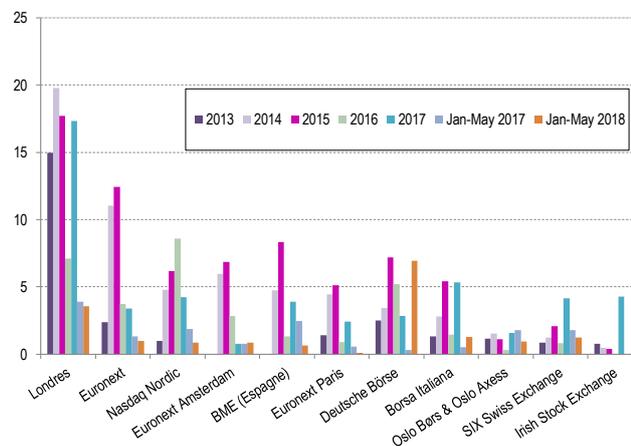
Source: Bloomberg.

After years of steady decline, the initial public offering market started back up in the US

Activity appeared particularly dynamic in the United States, where the amounts raised nearly doubled compared with 2016, breaking with the steady decline observed since 2014. Notably, a quarter of the raised capital came from foreign firms, particularly Chinese and, to a lesser extent, European and Brazilian firms. This strong rebound has thus mitigated the legitimate fears expressed in recent years about the scarcity of IPOs on US markets²⁴.

In Europe, activity also appeared very dynamic in most financial centres. The large rise in amounts raised is largely due to the occurrence of large-scale transactions, such as the initial public offering of Siemens Healthcare AG in first quarter 2018 (3.7 billion euros) on Deutsche Börse. At the same time, uncertainties surrounding the outcome of the Brexit negotiations had only a limited impact on UK activity, as did the political instability in Italy.

Figure 27: Capital raised through IPOs in Europe, by listing market
(in billions of euros)



Source: Bloomberg.

□ Already listed companies have increasingly turned to the markets

Companies that are already listed stepped up their calls to equity markets in 2017, a trend confirmed in early 2018. The good direction of the economic and financial climate and the momentum of mergers and acquisitions largely explain this rebound. At the global level, gross issues of equity securities increased by more than 10% in 2017. This trend was particularly pronounced in Europe, where issues nearly doubled (+46%). That was the case in France, where the amount of capital raised reached 14 billion euros, compared with 6 billion euros the previous year. In the United States, while the amounts raised stagnated, the number of transactions rose sharply by around 20%.

□ Share buy-backs no longer as common

After reaching record highs in 2016, share buy-backs have significantly declined in the United States. They represented around 520 billion euros for the S&P 500 index in 2017, a 3.2% decrease. Several factors contributed to this consolidation movement. First, in a context of rising interest rates, US companies have been less inclined to take on debt to

²⁴ Doidge, Craig, G. Andrew Karolyi, and René M. Stulz, 2013, The U.S. Left Behind? Financial Globalization and The Rise of IPOs Outside the U.S., Journal of Financial Economics 110(3), 546–573; Doidge, Craig, G. Andrew Karolyi, and René M. Stulz, 2017, The U.S. Listing Gap, Journal of Financial Economics 123(3), 464–487.

buy back their shares than in previous years, especially since the valuation of securities has reached historically high levels. Moreover, it is likely that in view of the tax reform, finally passed at the end of the year, firms have shown a wait-and-see attitude. The decrease in the corporate tax and the tax exemption for repatriated capital could revive interest in share buy-backs in 2018.

In France, share buy-backs amounted to around 17 billion euros for CAC 40 companies, compared with 25 billion in 2016²⁵. Unlike in the previous year, the net balance of equity issues therefore appeared slightly positive in 2017. Unlike in 2016, the financial markets made positive contributions to the financing of the economy, on both the debt segment and the corporate capital segment.

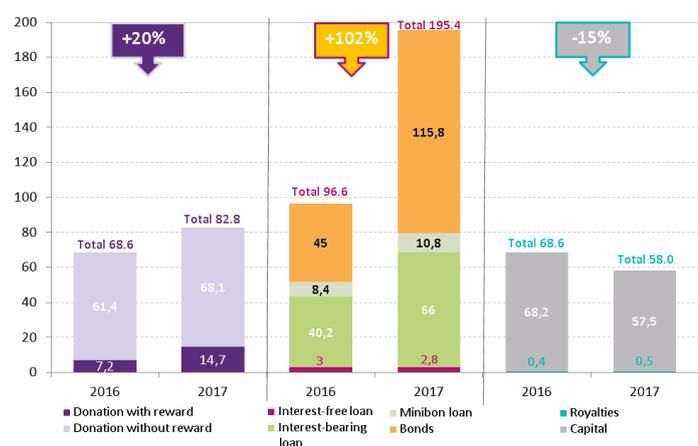
1.2.3 Alternative financing methods are struggling to develop

The low interest rate environment and the abundant liquidity have been important levers through traditional bank and bond financing but have contributed little to alternative financing methods. Of course, the amounts raised on the crowdfunding and private placement markets have continued to grow but remain at low development stages. More structurally, regulatory hurdles could negatively affect small caps in their search for financing.

- The introduction of a European system could contribute to the development of crowdfunding, provided that amendments to the draft regulation are made

The amounts raised through crowdfunding platforms continued to increase in 2017 in France but are still low. According to KPMG, these amounts were close to 340 million euros, a 44% increase in one year, mainly in the form of bonds and, to a lesser extent, loans and equity investments.

Figure 28: Funds raised through crowdfunding platforms in France by type of operation (in millions of euros)



Source: KPMG

²⁵ Source: AMF.

The introduction of a European regulatory framework could help develop this market segment, particularly by expanding the investor base. This is the objective of the proposed European regulation on crowdfunding published on 8 March 2018. It aims to broaden and facilitate access to financing for innovative firms, start-ups, and unlisted SMEs. In addition to a harmonised information document, it provides for the possibility of making cross-border offers throughout the European Union. This measure would be a significant step forward. However, the chosen cap level of 1 million euros per crowdfunding offer over 12 months seems too low to justify access to a savings pool as broad as that of the EU, thus calling into question the attractiveness of the future regime, if it is implemented according to the proposed format.

- Adversely affected by the low interest rate environment, the Euro-PP market could see its development slowed down by regulatory obstacles

Whereas they had previously moved in parallel, the growth trajectories between the two main private placement markets in Europe, *Schuldschein* and *Euro Private Placement* (Euro-PP), saw a very significant divergence starting in 2016²⁶. Dynamic since its creation in 2012, the Euro-PP slowed down considerably, while the German *Schuldschein* market enjoyed robust growth²⁷. The amount of capital issued on the Euro-PP market fell by almost 40% (from 9 billion to 5.5 billion euros) between 2015 and 2016, whereas the amounts borrowed on the *Schuldschein* market gained more than 20% during the same period (from 20 billion to 26 billion euros).

The divergent evolution between the two European markets can largely be explained by less favourable financing conditions on the Euro-PP market, competing with the *Schuldschein* market and the traditional debt markets, since the ECB's implementation of its unconventional monetary policy. After one or more transactions on the Euro-PP market, certain issuers of significant size thus took advantage of this experience and particularly favourable market conditions to gain access to conventional bond markets²⁸. Moreover, in a context of abundant liquidity, banks have generally relaxed their lending policies, just as they have been able to offer spreads at low levels on the *Schuldschein* market, where they are predominant as investors. Conversely, investors on the Euro-PP market, namely management companies and insurance companies, faced with a decrease in the average size of transactions, then reached a breakeven point in terms of profitability on these transactions, explaining the relative rigidity of the spreads observed on this market segment.

Nevertheless, since summer 2017, a recovery in activity on the Euro-PP market has been noticeable, with the return to the market of historical issuers, which could anticipate a rise in interest rates and the arrival of the first refinancing requirements. However, this strengthening could be affected by increased constraints on issuers and their advisers since the entry into force of the Market Abuse Regulation, such as the application of the market survey regime to Euro-PP.

²⁶ The Euro PP and *Schuldschein* both allow firms that do not necessarily have access to the international bond market to obtain medium-term disintermediated financing from a very limited number of professional investors, based on a contract negotiated directly between the parties. However, they differ in particular in the nature of the financing instrument. The Euro PP can take the form of a loan or a listed or unlisted bond issue. The establishment of the *Schuldschein* results in the issue by the issuer of a bearer certificate to which the loan contract governed by German law is attached.

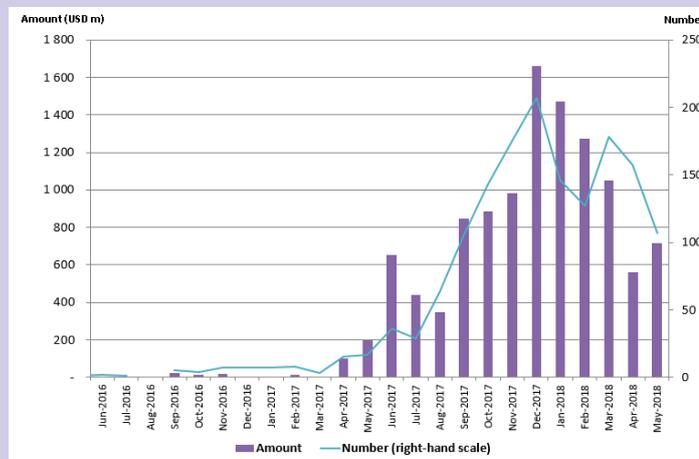
²⁷ It should be noted that Euro-PP market data should be treated with caution, as a significant proportion of such data are not made public.

²⁸ For example, Fromageries Bel.

Box 4: The rapid growth of Initial Coin Offerings (ICO)

2017 was marked by the increase in ICOs. At the global level, despite a significant slowdown since the beginning of 2018, the raised funds exceeded 5 billion dollars over the first five months of the year, after 6 billion dollars for 2017 overall, according to ICOData estimates. In France, this market segment is in its infancy, with 21 transactions identified at the beginning of 2018 from the outset for an amount of capital raised of around 350 million euros (Source: AMF). These fundraising operations carried out in exchange for token issues have many advantages for the project leaders resorting to them. ICOs can thus meet financing needs at very early stages of development. They can also be carried out in very short time periods, much shorter than those observed in more traditional financing circuits (initial public offering or private equity, for example). Lastly, they provide access to the broadest possible investor base worldwide.

Figure 29: Number of ICOs and amounts raised globally (USD million)



Source: ICOData

ICOs have so far developed outside any regulatory framework. However, given the challenges in terms of investor protection and market integrity, market regulators quickly initiated discussions and analyses to assess the economic impacts of this new type of financing and to define the most appropriate regulation that would be applicable to it, i.e., able to allow these operations to develop within a secure framework. The cross-border nature of ICOs makes a coordinated approach at the international level necessary, but in the meantime, the development of national approaches is essential in the short term to allow these new instruments to develop in a secure framework. It is underway in certain countries, including France²⁹, with regulatory paradigms that appear to be relatively divergent at this stage (a pessimistic and critical view emphasising the circumvention of current regulations and the financing of illegal activities, a more open view that proposes restricting and developing transparency). While the adoption of national approaches should provide investors with better protection, this possible lack of supervisory convergence carries the risk of creating arbitrages in favour of the least stringent jurisdictions.

²⁹ See section 4.3.2.

- SMEs could suffer from the new rules imposed by MiFID2 on research funding

Since the beginning of 2018, the MiFID2 regulation has required financial intermediaries to cover research costs on their own resources or to charge the client for research independently of that generated by transaction activities. This measure, originally designed to prevent potential conflicts of interest and to protect investors, could have an unwanted negative impact on corporate financing, particularly for small and mid-cap companies. The first risk that has been identified concerns the future of independent research, an activity that by definition does not bring about conflict of interest associated with trade execution. Business models of independent research could be undermined by an increase in price competition and in concentration of research providers. The second risk is that of a decrease in the number of securities followed by analysts. Studies show that lower coverage of companies by analysts is harmful to their financing, as it reinforces the asymmetry of information, especially for SMEs³⁰. In fact, concerns have been expressed by many industry players, but also by regulators, including the AMF, as well as by the Commission's group of experts on the bond market³¹. But SME's coverage had begun to decline before the reform has come into force. The impacts of this measure still need to be assessed though. That is the goal of the MiFID Vision market initiative in which the AMF is participating, through notably the creation of a barometer in order to analyse trends.

³⁰ See in particular Derrien and Kecskès (2013): "The Real Effects of Financial Shocks: Evidence from Exogenous Changes in Analyst Coverage", *Journal of Finance*, August, pp. 1407-1440.

³¹ Analysis of European corporate bond market. Analytical report supporting the main report from the Commission Expert Group on Corporate Bonds, November 2017

CHAPTER 2: MARKET ORGANISATION AND INTERMEDIATION

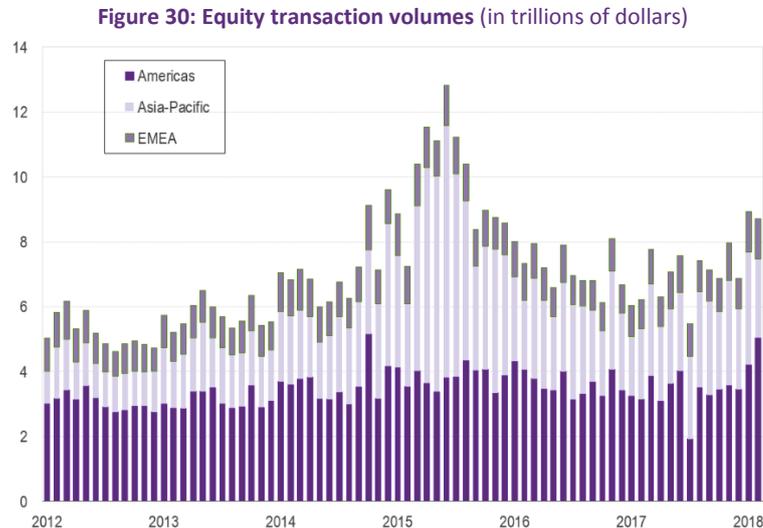
2.1. EQUITY MARKETS

2.1.1 Asset growth but declining trading volumes

In 2017, annual growth of 17.9% brought global capitalisation to 82.512 trillion dollars. This was driven by Asian equity markets, whose capitalisation rose by 22.1% to 31.296 trillion dollars, according to statistics from the World Federation of Exchanges. At more than double that of the European markets³² (14.728 trillion, +11.1%³³), it moved closer to that of North America (36.486 trillion, +17.4%).

On the Euronext equity markets³⁴, the 11.2% growth in market capitalisation (to 3.641 trillion euros) was in line with the performance of the market indices (+10.6% for the Euronext 100).

On a global scale, transaction volumes completed in 2017 in the order books (Figure 30) were down (-4.7%) compared with 2016. In general, this trend characterises a pressure on the unit income of equity market venue operators. However, it conceals regional differences: contrary to what was seen in 2016, the drop in 2017 came mainly from North American markets (-8.4%), with European markets posting a slight increase (+2.5%) due to the strengthening of the exchange rate of the euro against the dollar. Expressed in euros, equity trading volumes in Euronext's electronic order books rose by 6.7% to 1.643 trillion euros, which is still far below the levels observed before the crisis (3.302 trillion in 2007).



Source: WFE, AMF.

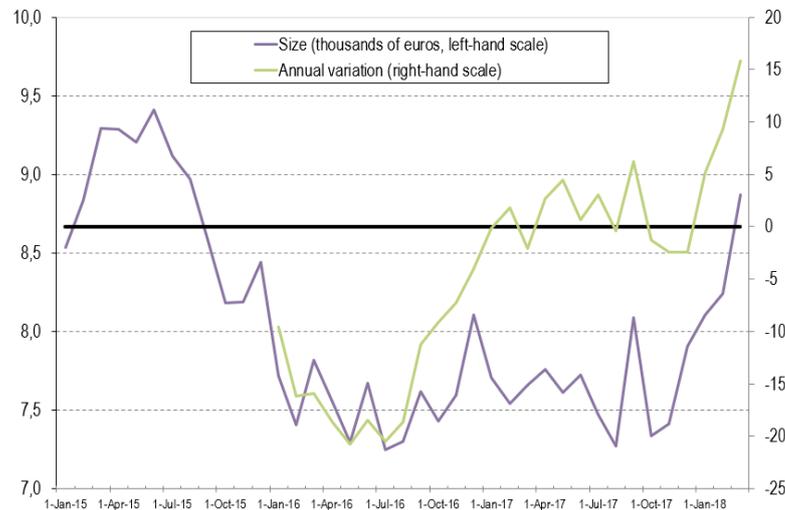
³² 74% of the Europe-Middle East-Africa aggregate comes from European markets. It also does not cover the London Stock Exchange Group (LSEG), which includes the London Stock Exchange (LSE) and *Borsa Italiana*. At the end of 2017, the capitalisation of the LSE was 3.719 trillion euros, and the capitalisation of *Borsa Italiana* was 634.4 billion euros.

³³ Adjusted for the appreciation of the euro against the US dollar (+12.1%), growth is greater in Europe.

³⁴ Covering the Amsterdam, Brussels, Lisbon, and Paris markets, but not the Dublin market.

In this context, the decline in the size of transactions observed until 2016 on Euronext Paris (Figure 31) was interrupted and then reversed. The average size of transactions in the books thus increased by 0.8% between 2016 and 2017, a trend that extended to Q1 2018, during which there was an annual increase of 10.1% compared with Q1 2017. The downward trend in transaction size has generally characterised the development of algorithmic trading, in a context where the fragmentation of the order flow and the implementation of high-frequency trading (HFT) strategies make it possible to benefit from lower trading gains opportunities. While the upward trend remains to be confirmed, its recent acceleration appears to be related to the introduction of a new tick size regime (see 2.1.2 below). In addition to the benefits of a reduction in the number of transactions for the resilience of trading systems and the “readability” of the order flow, this change could, in the future, help to mitigate the effects of competition exerted by platforms exempted from pre-trade transparency requirements (“dark pools”) on markets subject to such requirements (“lit” markets) (see 2.1.3 below).

Figure 31: Euronext Paris: Size of order book transactions



Source: Euronext, AMF.

2.1.2 A significant change in the structure of equity markets once MiFID2 comes into effect

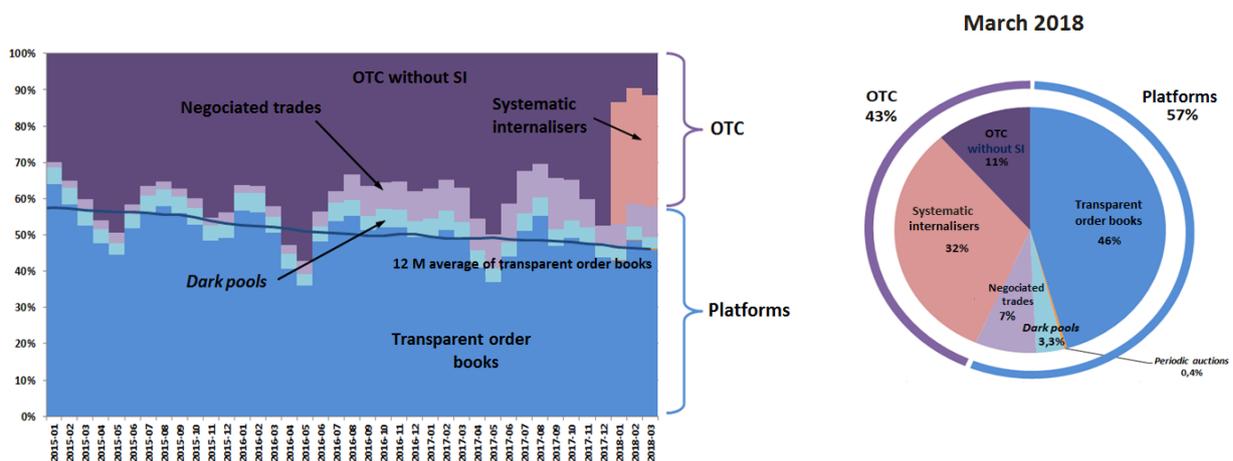
After a one-year postponement, MiFID2 came into effect on 3 January 2018. In the absence of any major implementation problems, it was accompanied by an immediate and significant change in the structure of the equity market with the development of trading methods whose potential impact may not be in line with the initial objectives of the directive.

The new directive and its associated regulations aimed to improve the equity market’s pricing mechanism through a few flagship measures:

- **the trading obligation** on a regulated market (RM), a multilateral trading facility (MTF), or through a systematic internaliser (SI)³⁵, which aims in particular to bring the maximum volume back to execution venues offering pre-trade transparency;
- **the double volume cap (DVC)**, whose objective is to limit the share of trading that, even when it is carried out on a platform, does not contribute to pricing. This mechanism provides that if a platform exceeds a threshold of 4% market share on one instrument or 8% for all European platforms, this results in the suspension of pre-trade transparency exemptions for the next six months on this instrument respectively for the platform or all the platforms;
- **the harmonised tick size regime**, which seeks to reduce noise and to balance the ecosystem of participants on platforms where the price is formed.

The figure below shows the historical change in the structure of the French equity market and its status in March 2018, three months after the entry into force of MiFID2.

Figure 32: Evolution of the French equity market structure
(Market share in traded amounts)



Source: Thomson Reuters

A trading requirement that benefits systematic internalisers and not platforms

Since the entry into force of MiFID2, there has been an explosion in the SI market share: whereas in 2017, there were 14 SIs active on French securities for a cumulative market share of less than 1%, there are now 28, accounting for one-third of total volumes (and three-quarters of OTC volumes). SIs constitute an intermediate category between pure OTC and trading venues in terms of transparency: they are subject to the requirement of ongoing publication of prices offered on liquid equities for a standard minimum size of 10,000 euros (comparable to the average transaction size).

The use of an SI has several advantages for market participants:

- lower execution costs than platforms, whether explicit costs (SIs do not charge trading fees) or implicit costs (no price impact for the executed trade);
- the possibility of offering price improvements not subject to the harmonised tick size regime³⁶;

³⁵ Systematic internalisers operate over the counter (OTC). The regulation permits OTC trading without an SI on an exceptional basis (non-systematic, ad-hoc, irregular, and infrequent) and for orders not contributing to pricing (defined in Article 2 of RTS1).

³⁶ It turns out that 58% of transactions on so-called standard size (€ 10,000) are carried out on a thinner tick than that of platforms subject to the new harmonized tick size regime. This bias should be corrected in the near future: in late March 2018, the ESMA proposed an amendment to RTS 1 to clarify that the minimum price improvements proposed by the SI must be identical to those applicable to platforms.

- a trade with a known and duly selected counterparty in order to avoid being traded off by high-frequency traders known to be very active on the platforms;
- a response to the demand of clients, who can, where appropriate, offload post-trade transparency requirements on the SI.

Although MiFID2 only requires investment services providers to adopt SI status if their own-account activity with respect to their client exceeds a certain level and starting from September 2018 only, most major brokers have already adopted this status voluntarily. At the end of April 2018, there were 103 SIs in Europe in the register of the European Securities and Markets Authority (ESMA)³⁷.

The pronounced, rapid development of the market share of systematic internalisers following the introduction of the requirement of trading on platforms or SI raises a question about the functioning of markets: is there really an improvement in the pricing mechanism when traded volumes move from pure OTC to systematic internalisers?

This question is all the more important since the second measure to have come into force, which also aims to improve the market transparency and the process of price discovery through the limitation of activity on dark platforms, does not seem to favour *lit* markets either.

The transfer of dark volumes to lit markets is not observed

After a period of postponement, the double cap volume came into effect on 12 March 2018. As part of this measure, 1,487 shares, including 71 French securities, were exempted from transparency. Following this implementation, dark volumes decreased over first quarter 2018 from 4.4% of total volumes at the end of 2017 to 3.3% at the end of March 2018. This decline is also observed on other European markets: Tabb Forum estimates that the dark market share decreased from 8.1% of platform-traded volumes in February 2018 to 6.4% at the end of March 2018 in Europe.

Lit markets overall do not seem to have benefited from the attrition of darks pools. The market share of transparent platforms has remained almost unchanged after the implementation of the DVC. In March 2018, this share was 46%. This goes against the initial ambition of the legislators and the forecasts of participants, who anticipated a resurgence of transparent platforms.

On the other hand, two trading methods seem to have benefited from this decline:

- **Negotiated trades** reported to platforms and therefore deemed to be executed on a platform despite their bilateral negotiation. They totalled 7% of total volumes on French securities at the end of March 2018. On securities directly concerned by the DVC measure, this proportion increases from 4.9% of volumes before suspension to 9.6% afterwards;
- and, to a lesser extent, **periodic auctions** (0.4% of total volumes), the growth of which is now the subject of intense controversy. While this trading protocol theoretically offers pre-trade transparency, it actually appears to be below the transparency level of *lit* platforms and could constitute a circumvention of the DVC ban (see box for detailed description).

³⁷ On 1 August 2018, the ESMA is expected to publish data on the overall volume traded in Europe during the first half of 2018. This will give investment firms one month to verify whether they exceed the activity thresholds requiring them to adopt the status of systematic internaliser. It is therefore to be expected that new systematic internalisers will be forced to take on the SI status on 1 September 2018.

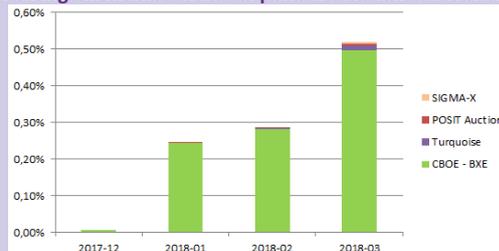
Lastly, questions are weighing on the **development of large-in-scale (LIS) transactions**. The DVC measure does not apply to large-in-scale orders, which may continue to be traded on dark platforms, including for securities affected by the suspension of the pre-trade transparency exemption. It would appear that some participants are waiting to aggregate enough small orders to maintain their ability to trade on dark platforms once the LIS size is reached. However, while the market share of LIS transactions has been steadily increasing for two years, the entry into force of the DVC has resulted in an acceleration of this trend. Tabb Forum thus estimates that LIS in Europe represented 36% of dark platform volumes at the end of March 2018 for an average daily amount of 1.2 billion euros, compared with an average of 20% for 2017.

This behaviour of postponing the execution of a client order in order to reach an LIS size that bypasses the DVC could directly harm the execution quality of client orders and violate the best execution obligation.

Box 5: Description of the periodic auction mechanism

Periodic auctions have existed for several years, but their activity has truly only taken off since the entry into force of the double volume cap. Currently, CBOE BXE (formerly BATS) enjoys near-exclusivity on this trading protocol (at 96% of volumes carried out in periodic auctions on French securities), but many platforms are planning to launch a similar service in the coming weeks.

Figure 33: Change in market shares of periodic auctions on French securities



Note: Market share as % of total amounts traded on French equities, source: Thomson Reuters

CBOE BXE periodic auctions take place within a dedicated platform (i.e., where only orders of this type interact), distinct from the many other platforms of the group (CXE and BXE transparent book, dark pools, etc.) and take place as follows:

- A participant enters an order with the usual characteristics: (limit order, market order, etc.), minimum executable size, period of validity, etc. The entry of a first order triggers the launch of a short call phase (up to approximately 100 milliseconds for the most liquid securities);
- No pre-trade information is published until the order meets another opposite order. The entry of the first order is therefore not public;
- At the end of the call phase, if the order remains unexecuted and authorises it, a new call phase may be automatically triggered;
- If a second opposite order is encountered (if its characteristics permit it), the platform broadcasts the quantity and the theoretical executable price. Other members can therefore theoretically participate, but they do not know when the call phase will end (it started with the arrival of the first order);
- At the end of the call phase, an uncrossing executes the orders according to rules of priority that may differ between platforms. For the CBOE BXE, it is the price/size/time priority that takes precedence in order to favour large executions. Other platforms offer a price/member/time priority, which raises one of the questions below.

This trading protocol is considerably controversial:

- In terms of pre-trade transparency, the information published by these systems is much poorer than the information disseminated by the transparent books during the usual fixing phases: here, as long as two orders are unlikely to encounter each other, no information is published.
- Moreover, the impossibility for participants to know the end of the call phase discourages attempts to guess the status of the book. The price discovery mechanism is hardly possible (other than through post-trade transparency).

- CBOE BXE orders can only be executed within the EBBO³⁸. This characteristic brings periodic auctions closer to dark pools.
- Given their limited transparency and their functioning, periodic auctions can be used by participants to try to negotiate pre-arranged orders in the spread and thus bypass the double volume cap. In this respect, the price/member/time priority granted by certain platforms further facilitates this type of pre-arranged order.

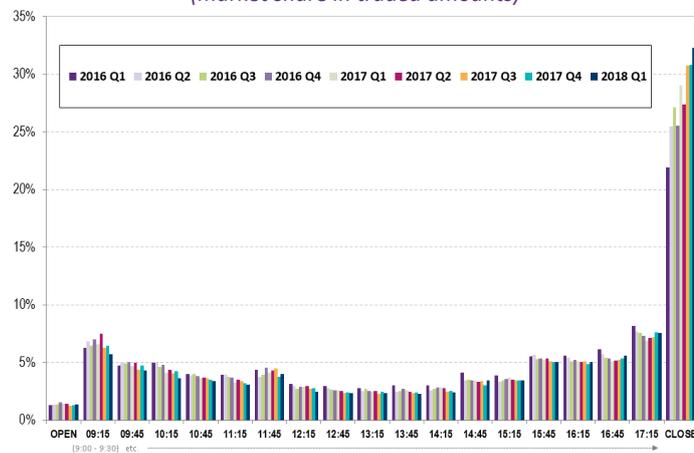
Because of the very limited level of pre-trade transparency that they offer, periodic auctions appear to be a trading method struggling to promote the objectives of MiFID2, which sought in particular more transparency for price discovery.

On 10 April 2018, MEP Marcus Ferber wrote to the ESMA to share his concerns about periodic auctions as a possible way around the DVC and to demand a thorough analysis of these trading mechanisms and their compliance with the regulation.

Increasing concentration of volumes during fixings

In addition to these changes related to the entry into force of MiFID2, it appears that the increasing concentration of daily trading volumes executed at the fixing of closing, a trend observed over the last several years, was significantly extended in 2017. For CAC 40 securities on Euronext Paris, Figure 34 represents, for each hour of the daily trading session, the change in proportions of daily volumes executed between first quarter 2016 and first quarter 2018. The market share of volumes traded during the closing auction (fixing) rose from 22% in first quarter 2016 to 32% in first quarter 2018 and is done especially to the detriment of volumes traded in the first half of the day (until 1:00 p.m.). Given that trade volumes that refer to the fixing have informational content (for example, not corresponding exclusively to mechanical rebalancing of index portfolios), the quality of the trade pricing of the fixing could therefore improve at the expense of the quality continuous trades.

Figure 34: Evolution of the French equity market structure (market share in traded amounts)



Source: AMF

³⁸ EBBO: European Best Bid and Offer, the range consisting of the best bid price and the best offer price for a given security across all European platforms.

The new tick size regime seems to have had the desired effect

In recent years, trading venues have been engaged in a race to the bottom of their tick size with the aim of offering tighter prices and thus gaining market shares. This general trend has had adverse effects on the quality of the market: an overly small tick size generates negligible and incessant price improvements, not based on any fundamental information and resulting in an increase in noise in the order book and a deterioration of the price formation process. To correct these stumbling blocks, MiFID2 has introduced a harmonised minimum tick size regime taking into account the profile of each instrument (liquidity, spread, price level) and applicable to all European platforms.

An initial analysis of the impact of this measure on French securities³⁹ reveals that, on large and mid-cap stocks, this regime has increased the tick size of 74% of instruments and has kept it constant for the remaining 26%, whereas on small caps, the regime has reduced the tick size of 15% of instruments, increased it for 21%, and kept it constant for 64%.

This results in a more relevant tick size considering the spread on all securities and an overall improvement in the quality of the market: significant increase in depth and reduction of the number of messages. At the same time, the new regime does not disrupt levels of traded volumes or volatility.

However, the increase in the tick size slightly widens the spread for the most liquid securities. The outcome for market participants is a slight additional cost that is offset by the benefits of noise reduction and the increase in the quantity available at the best limits (44% decrease in the number of spread updates on CAC 40 securities).

For SMEs, the implementation of an adapted tick size, although it was constant and equal to €0.01 previously, has significantly increased the traded volumes.

By changing the tick sizes of securities through a modification of liquidity bands, the new regime is a tool that positively influences the quality of the market.

2.2 BOND MARKETS

Secondary market trading volumes down in 2017

The volumes traded on the French secondary corporate market totalled nearly 290 billion euros in 2017, down for the third year in a row. This drop is at odds with the pattern seen on the primary markets, where issues saw exceptional growth under the effect of the ECB's Corporate Sector Purchase Programme (see Chapter 1).

The downward trend in spreads in 2016 continued in 2017, as risk premia continued to be squeezed by an accommodative monetary policy. However, at the end of the year, corporate spreads in Europe increased, potentially under the effect of the reduction in the asset purchase programme. (see Chapter 1).

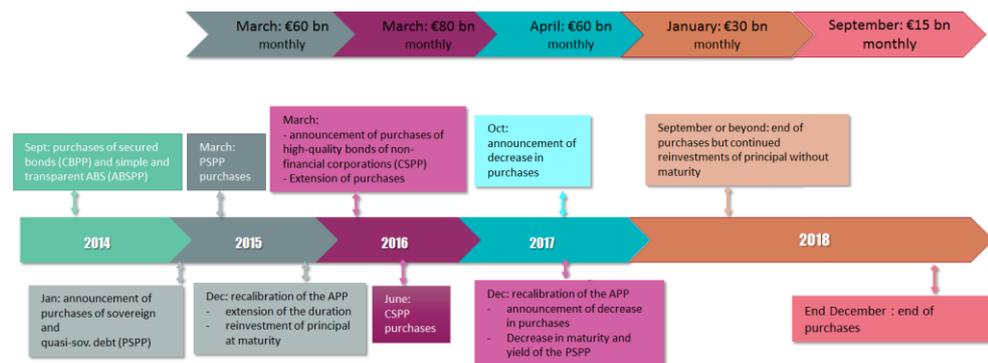
³⁹ AMF, "MiFID II: Impact of the New Tick Size Regime", Risks and Trends, March 2018.

2.2.1 2017: a year characterised by an escalation of the securities purchase programme of the European Central Bank (ECB)

The ECB's quantitative easing (QE) programme, which was announced on 22 January 2015, began in March 2015 with the acquisition of sovereign debt (Public Sector Purchase Programme, or PSPP). The QE programme was extended in December 2015 and expanded on 11 March 2016 to include corporate bonds in the form of the corporate sector purchase programme (CSPP). The CSPP⁴⁰ began on 8 June 2016, taking the total monthly purchasing objective (of sovereign and corporate bonds) to 80 billion euros. Other central banks have also engaged in asset purchasing⁴¹, but only the ECB and the Bank of England have purchased corporate bonds.

As shown in the diagram below, the programme has been gradually reduced since April 2017 to 15 billion euros as of September 2018. The ECB has also announced on June 14, 2018 that it will end its asset purchases at the end of December 2018.

Diagram 1: Calendar of decisions of the various programmes included in the ECB's asset purchase programme



Source: AMF

The ECB has purchased nearly 2.500 trillion euros of European bonds since March 2015

2017 was marked by a significant acceleration of ECB purchases in favour of the corporate segment: if the amounts invested in sovereign bonds increased by 50% between the end of 2016 and the end of 2017, the increase exceeded 150% for corporate bonds.

As of June 15, 2018, the total amount purchased by the ECB amounted 2.003 trillion euros of sovereign bonds and 159 billion euros of corporate bonds (nearly 18% of the corporate bond purchases were carried out on the primary market)⁴².

All in all, the ECB's balance sheet grew from 2.156 trillion euros in March 2015 to 4.577 trillion euros as of June, 10 2018 (see Chapter 1).

⁴⁰ The securities involved in central bank purchases are euro bonds of non-bank firms incorporated in the euro area, with a remaining maturity of between 6 months and 31 years at the time of purchase and a rating higher than BBB- or equivalent (investment grade). There is no minimum issue floor criterion, in order to ensure purchases for the smallest firms, but there is a cap for the purchase of available volumes, limited to 70% per ISIN

⁴¹ Japan was the first country to introduce a QE policy in 2001, followed by the UK and the US (2008) and eventually the euro area (2014).

⁴² Running parallel to these purchases are two asset purchasing schemes launched in September 2014 involving secured bonds (249 billion euros of covered bonds purchased in total in March 2018) and the asset-backed securities programme (26 billion euros).

Table 1: Breakdown of purchases (in billions of euros, as of June,15 2018)

Programme	Holding	%
Public sector purchase programme	2 002.53	82%
Covered bond purchase programme	254.38	10%
Corporate sector purchase programme	159.28	7%
Asset-backed securities purchase programme	27.61	1%
Total Purchase programme	2 443.79	100%

Source: ECB

2.2.2 Limited impact on liquidity of corporate secondary markets

Initiated to respond to growing concerns about the possibility of low inflation lasting too long, these programmes, through the massive purchases involved, carry a liquidity risk for the targeted segments⁴³. This concern especially pertains to the corporate segment, in which the ECB was particularly active in 2017. To assess this impact, an analysis was conducted on the French secondary bond market

Risk premia down sharply since the launch of QE

Since the announcement of the extension of unconventional monetary policies to corporate bonds, risk premia have clearly declined, as evidenced by the evolution of the asset swap spread⁴⁴ of French securities eligible for the purchase programme.

Figure 35: Evolution of the asset swap spread of French securities eligible for the purchase programme
(basis points)



Source: Bloomberg

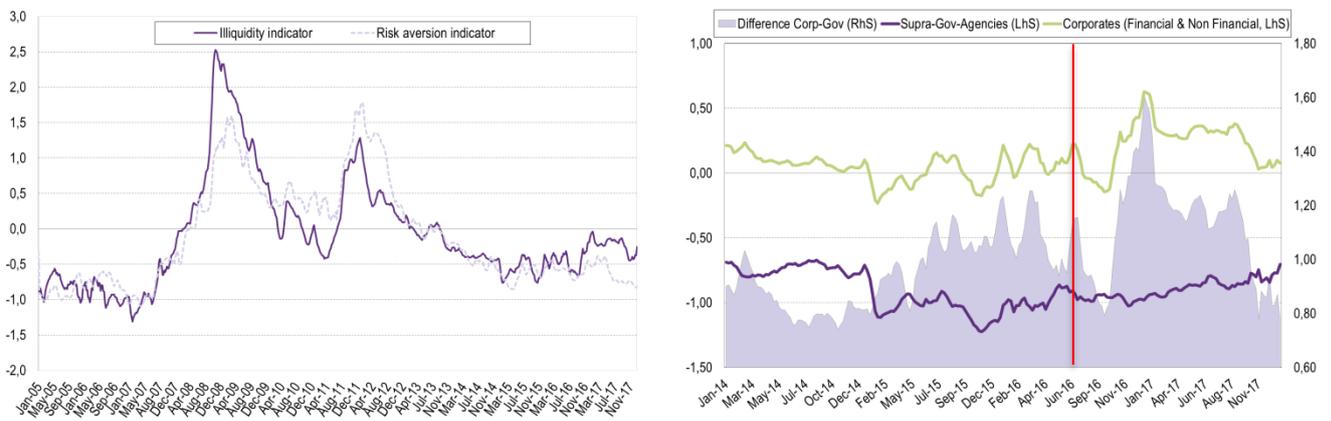
⁴³ Although the securities cannot be resold, they can be lent by Eurosystem central banks under the same conditions as the securities from other asset purchase programmes, through several channels (bilateral or agent-based or central securities depositories).

⁴⁴ The asset swap spread measures the credit risk of a bond and corresponds to the difference between the yield of this bond and the Euribor rate.

**Liquidity not
negatively
impacted by QE**

The composite indicator tracking the liquidity of French bond markets⁴⁵ has shown a slight deterioration in this liquidity since 2014, in line with the developments observed on other European markets⁴⁶. A detailed analysis shows that this deterioration is observed both on the sovereign bonds segment and on the financial and non-financial companies segment, but with a more pronounced trend on the second one for 2016. In 2017, liquidity recovered significantly from January to the end of April. This improvement paradoxically corresponds to a period characterised by a mistrust of French debt (sovereign and corporate) ahead of the elections. This mistrust resulted in the presence of large selling blocks on the market, which particularly helped to ease the buying pressure exerted by the European purchase programme and therefore ultimately improve the liquidity of French debt (public and private). Since third quarter 2017, a further improvement in liquidity has been observed in favour of financial and non-financial companies.

Figure 36: Change in the French bond market liquidity indicator



The liquidity indicator is a proprietary indicator calculated using data on French bonds. It takes the average of the following three standard scores: bid-ask spreads (Bloomberg), zero returns (% of bonds for which the price remains unchanged over a given period), and price impact (dividing intraday price volatility by the square root of trading volumes). An increase in the indicator reflects a deterioration in liquidity.

The risk aversion indicator is the average of several of the following normalised variables: credit spreads (*Main and Xover*), slope of long-term (2/10 French) and short-term (Euribor 3m/Eonia) yields, France-Germany spread.

Source: AMF

While the level of liquidity of bond markets remains satisfactory and does not seem to have been negatively impacted by the ECB's purchase programme, it is nevertheless important to remain vigilant in a context where the risk of re-pricing remains high and the effects of the entry into force of the new MiFID2 rules on the structure of the French bond market remain to be seen.

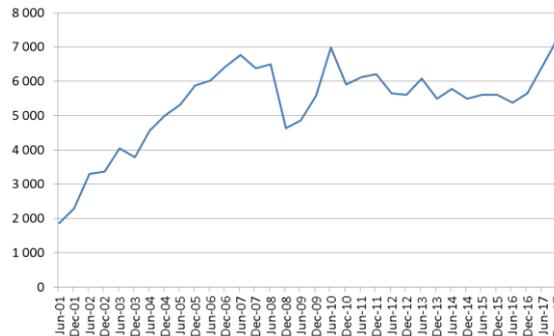
⁴⁵ See AMF, 2015, "Study of liquidity in French bond markets" for a detailed description of the methodology.

⁴⁶ See the EMSA study (2016) on the liquidity of European sovereign and corporate bond markets, for example.

2.2.3 The repo market: tensions that remain but are disproportionate with those experienced in 2016

The European repo market⁴⁷ experienced a significant increase in activity in 2017 with total assets increasing from 5.600 trillion euros at the end of 2016 to 7.250 trillion euros at the end of 2017.

Figure 37: The repo market in Europe
(in billions of euros)



Source: ICMA

This market experienced unprecedented volatility in December 2016⁴⁸. Although lending rates once again experienced a sharp decline at the end of 2017, this decline was not proportionate with the decline observed at the end of December 2016: on the general collateral (GC) segment⁴⁹, lending rates on German bonds averaged -4.18% on 28 December 2017 (versus -0.50/-0.55% for the rest of the year), and lending rates on French bonds averaged -3.35% on the same date (versus -0.45/-0.50%). Not only were these levels not as extreme as those at the end of 2016 (when these same rates reached -8%), but the market was better organised, with better supply⁵⁰.

Figure 38: Securities lending by Eurosystem banks (in billions of euros (left-hand scale), as % of amounts purchased under the PSPP (right-hand scale))



Source: ECB

Among the reasons for this improvement, in addition to better anticipation by market participants, the measures put in place to facilitate the lending of securities acquired by the national central banks appear central. The Governing Council decided that the

⁴⁷ Source: ICMA. The repo market permits short-term (anything from overnight to one year) borrowing of cash in exchange for securities, particularly the safest government debt, which act as collateral.

⁴⁸ See the AMF's "2017 Risk Outlook" for a detailed description.

⁴⁹ GC (General Collateral) is guaranteed by an indefinite bond belonging to a predefined basket, and SC (Specific Collateral) is guaranteed by a predetermined individual bond. In principle, the former is a liquidity market, whereas the latter is "collateral-driven" because it is usually the market on which market participants borrow specific bonds and therefore, in a sense, determine the price of the scarcity of bonds.

⁵⁰ Source: ICMA survey.

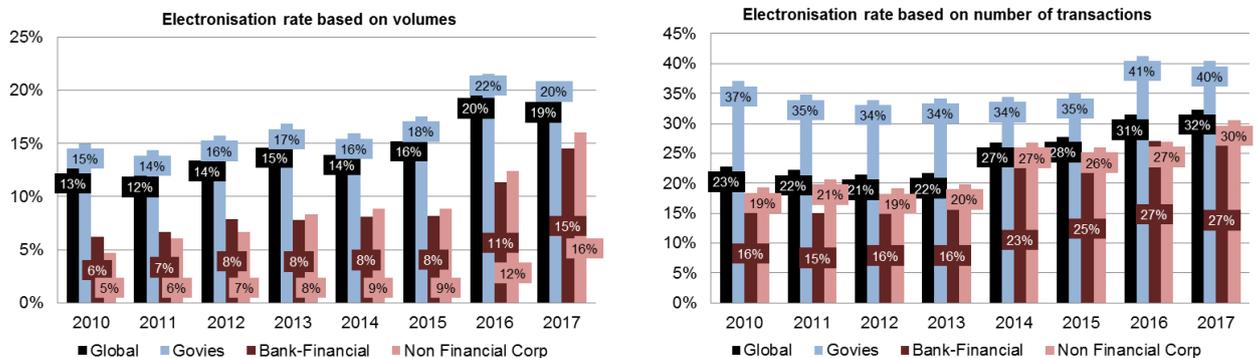
Eurosystem central banks would also be able to accept cash as collateral for their securities loans under the PSPP. Thus, in December 2017, nearly 68 billion euros of bonds (i.e., 4% of amounts held under the PSPP compared with 2% in December 2016 when tensions were very high) were lent by national central banks.

2.2.4 A changing bond market structure

*An
electronification of
bond markets that
stabilised in 2017*

An analysis of the data received as part of regulatory reports shows that the electronification of bond markets seems to be stabilising overall while continuing its rise on corporates in 2017. Although most of the volumes are still traded over the counter, the rate of electronification, which is defined as the proportion of trades done on an execution platform⁵¹, increased by 7 points between 2010 and 2017. This proportion increased significantly in 2016 with a rise of 4 points, then stabilised in 2017.

Figures 39: Evolution of the rate of electronification by segment



Source: AMF, transaction reporting

On the sovereign bond segment, for which the proportion of volumes traded electronically is the highest, the rate stood at 20% in amounts traded in 2017 (40% in number of transactions), i.e., increase of 4 points in 2016 and a stabilisation in 2017. On the corporate bond segment, the increase is even more pronounced: the rate of electronification is 15% for financial bonds and 16% for non-financial bonds in 2017, a respective increase of 7 points over the last two years.

MiFID2, which establishes pre- and post-trade transparency rules for non-equity instruments for the first time (Box 7), should play the role of accelerating the development of trades through electronic platforms, while the industrial economics of platforms are undergoing profound changes (Box 6).

⁵¹ Volumes traded on a system such as Bloomberg, which is not an execution platform as defined in MiFID1, cannot be included because they are reported as OTC volumes.

Box 6: Consolidation and strategies of platforms

■ The consolidation of platforms presents trans-Atlantic issues

Despite the failure of the deal between the London Stock Exchange and Deutsche Börse, M&A transactions among trading venue operators resumed in 2017, particularly the takeover of the Irish Stock Exchange by Euronext. These deals were characterised by a trans-Atlantic aspect. In February 2017, the CBOE bought out BATS in the United States, extending its scope to Europe, through the subsidiary BATS Europe, which had absorbed the equity trading venue Chi-x in 2012. In 2018, the CME initiated steps to acquire the British bond and derivatives brokerage service providers NEX (formerly ICAP) for 3.9 billion pounds sterling. Several types of reasoning, in part complementary, characterise the trends in this area: on the one hand, the continuation of the long-term trend (especially since the formation of Euronext in 2000) towards consolidation, with the technological content of infrastructures favouring the realisation of economies of scale; on the other hand, a specialisation and search for differentiation, where the share of income of market operators directly tied to the execution of trades represents only a secondary share of their income sources. This leads to the development of more stable income sources, arising from complementary aspects upstream (supply of data, financial indices, etc.) and downstream (publication and reporting services, TCA, etc.) of the chain of market intermediary services.

■ Bond and derivatives trading venues could be strategic issues

The strategies of participants trading in products traditionally traded over the counter (Fixed Income Commodities and Currencies – FICC) will have effects on the structure of the platforms concerned, as MiFID2 expands the requirement of trading on platforms to liquid bonds and derivatives and introduces a category of platforms for this purpose (organised trading facilities or OTF⁵²). While income from FICC activities of banking groups has been under pressure in recent years, declining from 61% of income of the 10 largest global banks in 2010 to 46% in 2015, two factors now affect their strategies in this area: on the one hand, the context (recapitalisation of banks, likely emergence from a historically low volatility regime, etc.), in markets that remain structurally fragmented, favourable to facilitation and market-making; on the other hand, the increasing automation of bond trading, which enables to optimise the capital required by market-making strategies by rotating positions rapidly (like HFTs). While it helps to partially streamline the FICC activity of banks (reducing costs), this automation requires the development of specific capabilities and exposes banks to the competition of non-banking own-account operators and other investment funds. Against this backdrop, there could be a polarisation between market structures that are still highly intermediated (segmented between wholesale/dealer-to-dealer and retail/dealer-to-client) and centralised structures (all-to-all) closer to those of equity market order books.

The main fear regarding the electronification of trades on bond markets is the associated risk of developing high-frequency trading (HFT) activities with potentially negative consequences, such as the increase in the number of flash events, just like the one observed on US *treasury bills* on 15 October 2014. This activity and all the changes brought about by the new regulation should therefore be monitored in order to evaluate their impact on the quality of the market.

Transparency that is slow in coming

However, since the entry into force of MiFID2 on 3 January 2018, the expected changes on bond markets have seemed to take longer than on equity markets. At stake is the very small number of securities ultimately subject to transparency requirements: the list of liquid bonds issued at the beginning of May by the ESMA has only 227 securities for the entire European Union, including only 11 for France (for a number of French securities potentially concerned of 22,000).

⁵² OTFs are characterised in particular by: i) the interaction of at least three clients (not members), hence, in particular, the application of best execution rules; ii) discretionary execution policies that allow the OTF operator to place, withdraw, or not match a specific client order with other orders available in the systems at any given time; iii) the matching authorisation with interposition of the own account, if the client consents to this (matched principal trading); iv) the authorisation to trade on own account on sovereign illiquid bonds

In order for a bond to be considered liquid, it must meet three criteria evaluated each quarter on the basis of the data reported to the ESMA:

- a daily average executed amount of at least 100,000 euros;
- at least 80% of trading days;
- an average daily transaction count of at least 15.

While the gradual relaxation of this last criterion (which will decrease to 10 in July 2018, then gradually decrease to 2) is expected to lead to a significant increase in the number of bonds qualified as liquid and benefiting from transparency, the obtained results reflect the difficulty of having data useful for calculating the three criteria and stress the importance of the good quality of the data transmitted to regulators and the market.

Box 7: MiFID2 transparency regimes

Regulation No. 600/2014 of the European Parliament and of the Council of 15 May 2014 on Markets in Financial Instruments ("MiFIR") establishes the principle of pre- and post-trade transparency of financial instruments subject to MiFID2 (i.e., equities and equivalent securities and bonds and derivatives).

These provisions are applicable to trading venue managers (i.e., a market firm or investment firm operating an MTF or an OTF), systematic internalisers (SI), and, only for post-trading transparency obligations, ISPs trading OTC.

However, exemptions are provided for by the texts:

	Equity and equity-like instruments		Other instruments (<i>non-equity</i>)	
	On platforms	Outside platforms	On platforms	Outside platforms
Pre-trade transparency	YES with some exemptions <ul style="list-style-type: none"> - reference price - negotiated orders - large sizes - order management systems (stop orders, iceberg, etc.) 	Only for SIs on liquid instruments	YES with some exemptions <ul style="list-style-type: none"> - large sizes - sizes specific to instruments (SSTI) for RFQ and verbal order management systems - derivatives subject to the clearing requirement but not to trading on a platform - non-liquid instruments - Package orders and Exchange for Physical 	Only for SIs on liquid instruments
Post-trade transparency	YES, immediately, except deferred in case of <ul style="list-style-type: none"> - large sizes and proprietary trading for one of the counterparties 		YES, in 15 minutes, except deferred in case of <ul style="list-style-type: none"> - large size - sizes specific to instruments (SSTI) for RFQ systems or verbal trading and proprietary trading of a counterparty - non-liquid instruments - Package transactions (including Exchange for Physical) 	

■ Exemption from pre-trade transparency requirements applicable to platforms

■ Equities and equity-like instruments

There are four types of exemptions to pre-trade transparency for equities and equivalent securities. These relate to: (i) orders carried out at the reference price, (ii) negotiated orders, (iii) large orders relative to the normal market size (large in scale), and (iv) orders placed in an order management facility (OMF) pending a stop or iceberg disclosure.

■ Non-equity instruments

The following may be exempted from pre-trade transparency requirements: (i) large orders relative to normal market size (LIS), (ii) orders above the size specific to the instrument (SSTI) for price inquiry or auction trading systems, (iii) orders placed in an order management facility (OMF) pending stop or iceberg disclosure, (iv) derivatives subject to clearing but not subject to the requirement to trade on a platform, (v) financial instruments for which there is no liquid market, (vi) Exchange For Physical (EFP3) instruments, and (vii) certain order bundles.

■ Exemption from post-trade transparency requirements applicable to platforms

■ Equities and equity-like instruments

The competent authorities may authorise trading venue managers to delay the publication of details of orders according to the type or size of the orders.

The general principle of application of these publication delays remains largely the same as under MiFID1: a competent authority may authorise a publication delay if the size of the transaction exceeds a certain threshold (determined according to the average turnover of the security), provided that it involves an investment firm operating for its own account, in order to protect its hedging transactions.

However, the maximum authorised delay is shorter than that permitted under MiFID1, since the publication will have to be done no later than the end of the next day, whereas this publication currently must take place no later than the end of the third day following the trade date.

In any case, nothing prevents a platform or an ISP from applying a shorter delay.

■ **Non-equity instruments**

For instruments other than equities and equivalent securities, MiFIR provides for the possibility of delayed publication, not only for transactions above certain thresholds (LIS and SSTI), but also for those on non-liquid instruments and order bundles.

However, in these situations where a delay is possible, the texts leave the choice to each competent national authority for the platform to decide between several possible schemes. The various possible schemes include:

- a publication delayed to two days later;
- different schemes combining the aggregated publication of volumes over a day or a week (with the average price and the corresponding number of transactions), before the possible publication of the details of each individual transaction;
- for instruments other than sovereign debt, the publication of individual details is mandatory in all cases. It occurs no later than 4 weeks after the transaction or the publication of aggregated volumes for the week, this aggregated publication taking place on the Tuesday following the week of the trades;
- for sovereign debt instruments, different schemes dispense with publishing individual details, with volumes that can only be published aggregated, up to 4 weeks after the week of observation, as before.

■ **Exemption from post-trade transparency requirements applicable outside platforms**

For their OTC trades, ISPs (including SIs) are subject to the post-trading transparency requirement. This requirement applies to over-the-counter trades involving instruments admitted to trading on platforms.

The provisions in this regard provide for the same set of delays as that applicable to platform trades.

2.3 BENCHMARKS

Although the European Benchmark Regulation has come into force, the adoption of alternative benchmarks brings about transition risks

The manipulations of IBOR reference rates, notably LIBOR⁵³, revealed during the financial crisis have been legally and criminally punished⁵⁴. As these rates, particularly for short maturity (day-to-day, 1, 2, or 3 months), constitute the main reference of several hundreds of trillions in notional value of swaps, bank loans, financial instruments, and investment funds (Box 8), the authorities have developed a new regime applicable to benchmarks.

The Benchmark Regulation (BMR), which came into force on 1 January 2018, regulates price contribution⁵⁵ and the supply and use of benchmark indices Europe. It defines a scheme for index administrators, underlying data contributors, users, and supervisors and defines three categories of benchmark indices (“critical”, “significant”, or “insignificant”).

⁵³ Interbank Offered Rates are, for various generally short maturities, the rates of the riskiest interbank loans, i.e., unsecured. London Interbank Offered Rate refers to IBORs of the London money market denominated in different currencies, primarily the US dollar.

⁵⁴ Globally, banks have been fined more than 7.6 billion euros. Criminal sanctions have been imposed, including long prison sentences.

⁵⁵ Under BMR Recital 12 “All contributors of input data to benchmarks can exercise discretion (...). Therefore, this Regulation imposes certain obligations on supervised contributors. When a benchmark is determined on the basis of readily available data, the source of such data should not be considered to be a contributor”.

**Entry into force of
the Benchmark
Regulation...**

The IBORs are designated as critical. Within this framework, providing a new benchmark – the marketing of financial instruments or contracts using it as an underlying or benchmark – requires, depending on the category, a registration or approval of its administrator with the national competent authority⁵⁶ or the ESMA for benchmarks or indices administered in third countries to the European Union. The ESMA is designated here to implement a European equivalence scheme and to establish within this framework cooperation agreements with the competent authorities of the third countries concerned⁵⁷. As the transition period of implementation of the BMR expires at the end of 2019, on 1 January 2020, the administrator approval requirement will be extended to benchmarks created before 2018.

In particular, compliance with the new regulatory standards requires strengthening the reliability of the underlyings and the calculation of critical benchmarks. The quality of the indices - their ability to accurately and reliably represent the market and the underlying economic reality - depends on the number and quality of contributions that are useful for their calculation⁵⁸ and therefore on the liquidity of the underlying market. However, it is clear that there has been a notable decline in the activity of the underlying interbank unsecured financing markets, hence the usefulness of reforming the calculation method.

**...brings about
initiatives to adopt
alternative RFRs**

Several jurisdictions are thus reforming IBOR calculation methods to adopt alternative RFRs (Near Risk Free Reference Rates⁵⁹):

- In the United States, the New York Fed’s publication of the Secured Overnight Funding Rate (SOFR), a benchmark based on repo transactions cleared in dollars, has been effective since 10 April 2018. Other countries, including Japan and Australia, also have projects underway.
- Eliminating the requirements of contribution to the LIBOR Panel at the end of 2021, the British Financial Conduct Authority (FCA) introduced on 23 April 2018 a new version of SONIA (Sterling OverNight Index Average)⁶⁰ based on rates posted by brokers and now also interest rates on unsecured bilateral transactions (effective deposits). Published by the Bank of England, SONIA is formally designated as an alternative RFR to the LIBOR.
- At the end of 2017, the SARON (Swiss Average Rate OverNight), launched in 2009 by the Swiss National Bank (SNB) in cooperation with the Swiss stock exchange, SIX, and referenced on the yields of the overnight swap market on LCH and Eurex was designated to replace the CHF Libor interbank reference rate and the TOIS Fixing (TOm-next Index Swap).

⁵⁶ “Sapin 2” Law No. 2016-1691 of 9 December 2016 designates the AMF as the competent authority in France.

⁵⁷ Alternatively, administrators authorised in the EU can approve third-country indices.

⁵⁸ The scarcity of contributions of banks forming the basis for calculating reference rates

The work of identifying alternative benchmarks favours in particular the contribution of actual transaction prices over the contribution of posted prices, indicative of transactional interests.

⁵⁹ Regarding (near) risk free reference rates, see BIS (2013); “Towards better reference rates: a central bank perspective”; Report of a working group of the Economic Consultative Committee (ECC) of the BIS.

⁶⁰ See Bank of England news release “SONIA reform implemented” of 23 April 2018.

In the euro area, the ECB, the Belgian Financial Services and Markets Authority (FSMA), the ESMA, and the European Commission helped launch an industry working group - coordinated by the ECB, where they serve as observers - to identify and adopt euro-denominated RFRs that are alternatives to EONIA (unsecured overnight money market rate) and EURIBOR⁶¹. At this stage, a publication in 2019 of alternative RFRs based on bilateral transactions – not just interbank transactions – of the 52 credit firms subject to the reporting obligations of MMSR⁶² is envisaged. The reference instruments would therefore be bank deposits, i.e., standardised transactions constituting a frequent means of transaction, not resulting from competitive rating procedures of banks, and likely to limit the idiosyncratic factors likely to bring about excessive volatility of the index.

A risk of discontinuity in a short horizon

A risk of discontinuity is identified⁶³ for significant amounts (Box 8). On the one hand, the legal validity of existing financial instruments and contracts, referenced on these RFRs⁶⁴, could be called into question by changes in methodology. On the other hand, changes in reference could lead to significant portfolio reallocations. In addition to the difficulties of developing alternative methods compliant with the Benchmark Regulation, there is the constraint of minimising the possible effects of such discontinuities. Ideally, reliable alternative RFRs would be proposed and spontaneously adopted by users during a transition period that would allow for the natural extinction of the use of the old references. In the euro area, the end-of-2019 horizon for transitioning to alternative RFRs is therefore becoming short.

The issue of timing is also linked to the possibility of competition between financial centres. The issue of products referenced to SONIA, for example FRN issued by the European Investment Bank in March 2010⁶⁵, attests to the use of alternative indices even before the adoption of reforms by revising the method. The new version of the index is now promoted: ICE launched futures with a 3-month maturity on SONIA on 1 June 2018. The working group that reformed and designated SONIA as the benchmark is currently examining the interest of institutional investors (pension funds, insurers, etc.), including for indices of the same maturity as the 1-month, 3-month, and 6-month LIBOR.

⁶¹ EONIA and EURIBOR are administered by the EMMI (European Money Markets Institute), an international non-profit association created under Belgian law when the euro was launched (1999). Its members are the national banking associations of EU Member States.

⁶² ECB Regulation 1333/2014 of 26 November 2014 on Money Market Statistical Reporting.

⁶³ The new reference rates are not exactly the same as the old rates. For example, a contract paying 3M LIBOR USD +100bp is not equivalent to a contract on SONIA with the same terms: according to Oliver Wyman (2018), the difference between LIBOR and SONIA 3M is about 30bp, and this difference varies (on 10 years, its maximum is 398bp, and its minimum is negative, when the yield curve is reversed).

⁶⁴ For example, according to Oliver Wyman's report "Libor transition-Changing the world's most important number" of February 2018: "shifting from LIBOR to the proposed alternative reference rates will (...) require (...) to arrive at an economically equivalent contract. New contracts and products, using the new reference rates, will not be economically identical to the old ones based on LIBOR".

⁶⁵ See the EIB news release of 12 March 2010 and related article in Financial Times Alphaville of 15 March 2010 "Innovating on GBP liquidity requirements".

Box 8: Estimated amounts of contracts and instruments referenced on European IBORs

Indications of the amounts of contracts and instruments referenced on the IBOR indices are provided by the industry and the competent authorities.

LIBOR

An exercise by Oliver Wyman⁶⁶ assesses the overall notional amount of contracts and instruments referenced to the LIBOR (deposits, syndicated and commercial loans, indexed bonds, securitisations, derivatives traded over the counter and on the market, etc.) in excess of 240 trillion dollars, including around 180 on the LIBOR in US dollars (especially 1-month and 3-month). It also estimates that more than 15 million individuals are exposed to products referenced on the LIBOR. About 70% of these contracts are estimated to expire within 5 years.

EONIA/EURIBOR

In the euro area, valuations of amounts referenced to EONIA and EURIBOR are also proposed:

- The data collected as part of EMIR⁶⁷ reveal that the notional amount of interest rate derivative contracts is close to 100trn euros, 25% of these assets being referenced to the EURIBOR, 10.8% to the LIBOR USD, 3.9% to the LIBOR JPY, 2.9% to the LIBOR GBP, and 1.5% on EONIA. The vast majority of EURIBOR contract amounts correspond to maturities of 6 months (56% of notional amounts) and 3 months (36%).

Figure 40: Interest rate derivatives – by type of underlying benchmark of the floating rate applied

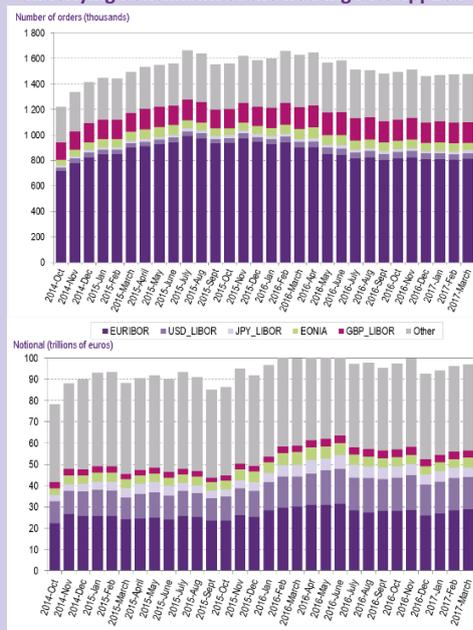


Figure 41: Euribor-referenced interest rate derivatives – by maturity of the underlying (March 2017)



Source: Ascolese et al. (2017) based on EMIR DDRL confidential data, BCE calculations

- In addition, Neuhaus (2018)⁶⁸ states that:
 - The Money Market Statistical Reporting (MMSR) shows that:
 - 10.9 trillion euros in notional value of overnight interest rate swaps (OIS) are EONIA-indexed, 73% of which relate to contracts expiring before the end of 2019;
 - 56.1 billion euros of unsecured demand deposits are linked to EONIA (33% of total demand deposits), plus 89 billion in other unsecured deposits (i.e., 14% of total other deposits and short-term securities); these contracts expire within one year, therefore before the end of 2019;
 - 400 billion (out of 1.9 trillion) in secured loans are referenced to EONIA; these contracts expire within one year, therefore before the end of 2019.

⁶⁶ Oliver Wyman (Feb 2018); “Changing the World’s most important Number - Libor Transition”.
⁶⁷ Ascolese, Cerniauskas, Molino, Pérez-Duarte, Skrzypczynski (Dec 2017), “Euro-area derivatives markets: structure, dynamics and challenges”.
⁶⁸ Neuhaus (20 April 2018) “Update on quantitative mapping exercise; Working Group on Euro Risk-Free Rates”, ECB.

- It is difficult to identify loans to households and non-financial firms tied to EURIBOR within the total of 9.7 trillion euros. However, 30% of this amount will expire after 2019, and the flows from February 2017 to February 2018 indicate a proportion of variable-rate loans of 22% for new loans to households (57% of the total) and 82% for new loans to firms (43%). Reference is usually made to the 3-month and 6-month EURIBOR.
- Market sources (Dealogic, AFME) show that 565 billion euros (86% of the 657 billion of variable-rate bonds) is EURIBOR-indexed, 45% of which expires before the end of 2019.

	Outstandings		Reference rate most frequent
	Current	1 Jan 2020	
Money market – unsecured transactions	EUR 89 bn	-	EONIA
Money market – secured transactions	EUR 0.4 trn	-	EONIA
Money Market - OIS	EUR 10.9 trn	EUR 2.9 trn	EONIA
Syndicated loans	EUR 9.7 trn	EUR 2.9 trn	EURIBOR
Euribor	EUR 1.2 trn	EUR 0.8 trn	EURIBOR
Debt securities	EUR 657 bn	EUR 361 bn	EURIBOR
Sovereigns & supnationals	EUR 249 bn	EUR 162 bn	EURIBOR
Issued by financial institutions	EUR 260 bn	EUR 138 bn	EURIBOR
Corporate (non-financial companies)	EUR 148 bn	EUR 64 bn	EURIBOR

Note: The outstandings refer to financial instruments based on reference rates with the exception of syndicated loans, which include both fixed-rate and variable-rate loans.
Source: Neuhaus (2018).

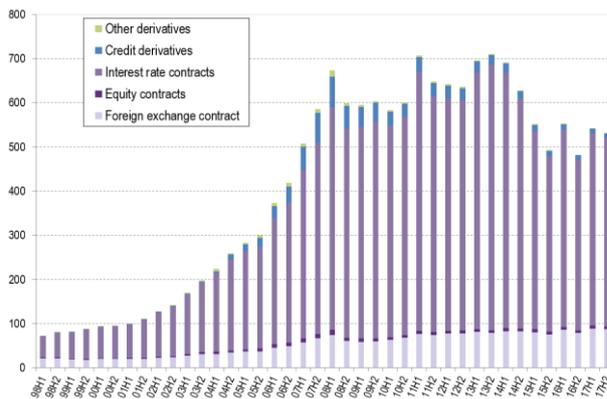
2.4 DERIVATIVES MARKETS

2.4.1 A reduction in risks related to activities on derivatives

Stable notional amounts in 2017

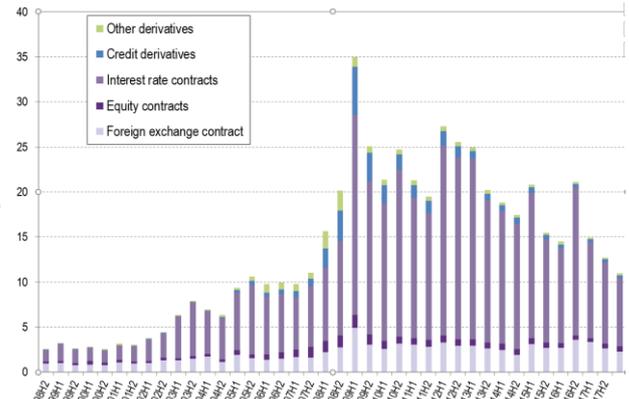
According to the Bank for International Settlements (BIS), the total gross notional amounts⁶⁹ of OTC derivatives have fluctuated between 480 trillion dollars and 550 trillion dollars since 2015. The amounts for 2017 fall in this range at 532 trillion dollars in December 2017 (Figure 42).

Figure 42: OTC derivatives – global notional amount (in trillions of dollars)



Source: BIS

Figure 43: Gross market values (in trillions of dollars)



Source: BIS

⁶⁹ The notional amount of a derivative corresponds to the value of the asset underlying the derivative contract.

But gross market values at their lowest since 2007

The gross market values of derivative contracts⁷⁰ continued to decline in 2017 to reach a low since 2007 of 11 trillion dollars, a 48% contraction compared with the end of 2016 (Figure 43). This contraction is mainly driven by interest rate derivatives, which account for 80% of the derivatives market and could be explained by the reduction in interest rate spreads between the date on which the contracts were entered into and their reporting date.

And the risk measured by gross credit exposure decreased by 19% in 2017

Gross credit exposure⁷¹, which adjusts gross market values for cross-exposures between financial institutions, is used to measure aggregate exposure to counterparty risk before consideration of their collateralisation generated by positions taken on derivatives. They decreased by 19% in one year from 3.300 trillion dollars in December 2016 to 2.700 trillion in December 2017 (Figure 44). This change occurred mainly in the first half of 2017.

Figure 44: Gross credit exposure
(in trillions of dollars)



Source: BIS

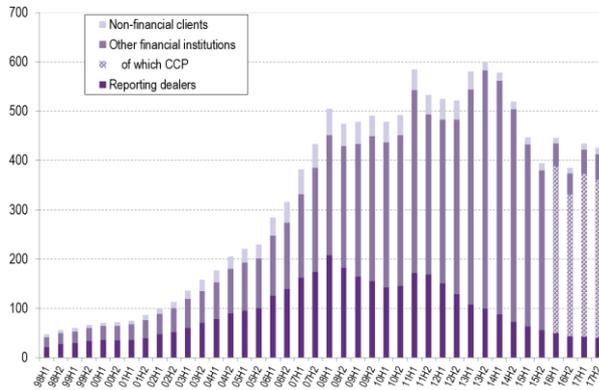
All in all, in 2017, the relative stability of the gross notional amounts was accompanied by a significant drop in gross market values as well as gross market exposures, thus reinforcing a reduction in risks related to derivatives activities of financial institutions.

This reduction in risks also greatly benefited from the increasing use of clearing under the influence of the new regulatory requirements (of the EMIR derivatives regulation in Europe). Interest rate derivatives thus posted 320 trillion dollars cleared, or 75% of assets in this class (Figure 45). On the credit default swaps (CDS) segment, which is much smaller than the credit derivatives segment, the proportion of cleared assets increased from 43% at the end of 2016 to 55% at the end of 2017, to reach 5.100 trillion dollars (Figure 46).

⁷⁰ In other words, the market values of the derivatives for each reporting entity (which is an approximation of the aggregate net asset value of the derivatives).

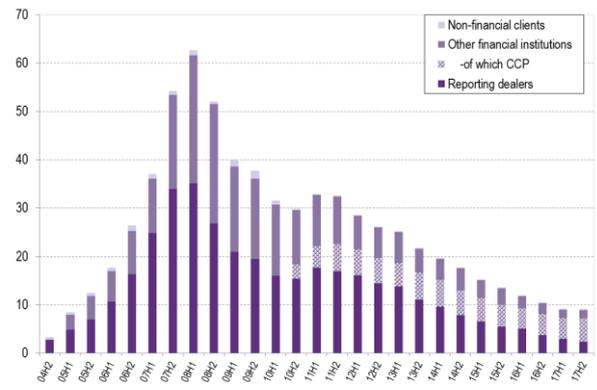
⁷¹ Here, "gross" means that the collateralised or non-collateralised nature of the exposure is not taken into account.

Figure 45: Global (notional) interest rate derivative outstandings by type of counterparty (in trillions of dollars)



Source: BIS

Figure 46: Global (notional) credit derivative outstandings by type of counterparty (in trillions of dollars)



Source: BIS

This increasing use of clearing raises the issue of the resilience of CCPs. To that end, the European regulation provided for the implementation of regular stress testing by the ESMA. The first, conducted in 2016, demonstrated the resilience of European CCPs to the simultaneous default of the two largest European clearing members, including under difficult market conditions. In early February 2018, the ESMA published the results of its second stress test. In addition to the resistance of European CCPs to the simultaneous default of several clearing members, the proposed scenarios also considered their resistance to liquidity risk. The results showed that the resources of the 16 tested CCPs⁷², representing approximately 270 billion euros, were sufficient to cover the default of several European clearing members, even under difficult market conditions. In addition, the testing did not reveal any systemic risk for liquidity stress tests, as there was no particular deficiency in the management of liquidity risks by the CCPs. The ESMA therefore considers that these results confirm the robustness of European CCPs.

2.4.2 Initial margins up 22% as requirements for non-cleared derivatives come into effect

The margin requirements for non-cleared contracts entered into force in Europe during 2017:

- the variation margins, since March 2017, for all the counterparties concerned⁷³;
- the initial margin, sequentially, according to the amounts of the positions concerned, over a period ranging from February 2017 for the biggest exposures (over 3.000 trillion euros) to September 2020 for the smallest exposures (less than 750 billion euros).

As part of its Margin Survey, the International Swaps and Derivatives Association (ISDA) estimates that the total amount of margins collected by the 20 largest market players⁷⁴, for their non-cleared derivative transactions, was 1.020 trillion dollars at the end of 2017.

⁷² Which total 900 clearing members in Europe.

⁷³ These requirements apply to financial entities that deal with derivatives and also to non-financial companies, as long as their positions in derivatives are above the mandatory clearing threshold

⁷⁴ These entities are subject to the requirements on variation margins since 1 September 2016 and the requirements on initial margins since 1 March 2017 in the United States, Canada, and Japan and the requirements on variable and initial margins since 1 February 2017 in Europe.

In particular, the received initial margins increased significantly to 130.6 billion dollars at the end of 2017, up 22% compared with Q1 2017, which marks the beginning of the effective entry into force of the requirement⁷⁵. The amounts received under this obligation thus increased by 66% over this period. The initial margins posted follow the same trend with an increase of 29%.

For their part, the variation margins have a less pronounced and asymmetrical evolution: variation margins received increased by 3% between Q1 2014 and Q4 2017 to 893.7 billion dollars when the posted ones decreased by 3% to 631.7 billion dollars over the same period.

The margins (initial or variation) consist mainly of cash (76%) and sovereign securities (20%).

Table 2: Amounts of margins posted and received
(in billions of dollars, all jurisdictions combined)

Margin type	Contribution origin	Direction	Q1 2017	Q4 2017
Initial margins	Regulatory obligation	posted	47.2	75.2 ¹
		received	46.6	73.7 ¹
	Discretionary contribution	posted	16.3	6.4
		received	60.5	56.9 ¹
Total initial margins		posted	63.5	81.6 ¹
		received	107.1	130.6 ¹
Total variation margins		posted	685.0	631.7 ¹
		received	870.4	893.7 ¹
Total		posted	748.5	713.3
		received	977.5	1024.3

Source: ISDA

The entry into force of these requirements for smaller exposures is expected to continue this trend and ultimately contribute to the reduction of systemic risk.

2.4.3 Progress in data mining and a review of EMIR nearing completion

The EMIR, which came into force in August 2012, is part of the European regulatory response to the financial crisis. In particular, it introduces central clearing of standardised OTC derivatives as well as requirements on margin and mitigation of operational risks for OTC derivatives that are not cleared centrally.

The regulation also institutes a collection of granular data⁷⁶ and has created, for the purposes of this collection, a new category of market infrastructures: Trade Repositories (TR). The adopted provisions have required major adjustments, in particular to ensure the standardisation of reporting fields (in particular identifiers of transactions, products, counterparties, and relating to the valuation of contracts), comparability within and across TRs, develop data quality controls (validation procedures), and develop a single point of entry to EMIR transaction data⁷⁷ (TRACE XML reporting project), as well as big data processing infrastructures. Advances in data collection have thus made it possible to draw the first lessons on the European derivatives market (see 2.3.4.).

⁷⁵ It should be noted that over the first 6 months following their entry into force, a certain level of tolerance was accepted in the effective implementation of the initial margins by the entities concerned in the United States and Europe.

⁷⁶ Article 9 of Regulation 648/2012 of the European Parliament and of the Council of 4 July 2012 on OTC derivatives, central counterparties, and trade repositories distinguishes four types of declarations: on non-cleared OTCs and the number of unconfirmed OTCs; reconciliation of non-cleared OTCs; reporting of all OTCs to the TRs and reporting to the TR of all listed derivatives.

⁷⁷ https://www.esma.europa.eu/sites/default/files/library/esma-2016-1144_annex_3.3_-_sla_trade_repositories_trace_project.pdf

The regulation also underwent an in-depth review between 2015 and 2016 within the framework of the REFIT programme aimed at making EU legislation simpler and less costly.

Thus, on 4 May 2017, the European Commission published a draft regulation (EMIR REFIT) aimed at amending the EMIR regulation. This project contains only technical amendments, the aim of which is to increase proportionality and to remedy certain shortcomings of the regulation⁷⁸. The text is currently under discussion as part of a trilogue between the Commission, the Parliament, and the Council and should be finalised soon.

In parallel with this project, the European Commission also published on 13 June 2017 a draft amendment to the EMIR for its provisions concerning the governance of the supervision of clearing houses (CCP) as well as the treatment of third-country CCPs⁷⁹. The text was adopted by the Parliament's Committee on Economic Affairs on 16 May 2018. However, although the third-country treatment provisions are consensus-based and would allow for a repatriation of euro-denominated derivative clearing activities after Brexit, those relating to strengthening the role of the European Securities and Markets Authority (ESMA) are still largely debated.

2.4.4 First lessons from the EMIR data analysis

Three types of work are schematically distinguished:

- Work on the sizing of derivatives markets, particularly on the initiative of the European Systemic Risk Board (ESRB⁸⁰), the basis for future risk monitoring:
 - Ascolese et al. (2017)⁸¹ propose an overall sizing of European markets at the end of March 2017 and, for certain market segments, a description of the structure of the counterparty networks:
 - Interest rate derivatives include swaps (86%), options (5%), and FRA (4%), contracts primarily based on EURIBOR (25%), LIBOR USD (11%) and LIBOR JPY (4%). At more than 100 trillion euros in notional amounts (down slightly since 2016), they account for 25% of the overall aggregate measured by the BIS. Over the observation period (from October 2014 to February 2017), their high clearing rates are up to around 45% of the number of transactions, 60% of notional amounts. The examination of the network of counterparties of swaps on EURIBOR 6M confirms the central role of CCPs but also shows the strong intermediation ("clearing delegation") by the 16 main banks (G16 dealers⁸²) within a sparse network of many small participants.
 - Credit derivatives consist primarily of swaps (95%) on sovereign (40%), non-financial (30%) and banking (10%) issuers, with an increasing significance of index-linked products (20% of trades, 60% of notional amounts). The market size

⁷⁸ See the AMF's "2017 Risk Mapping" for a detailed description.

⁷⁹ See the AMF's "2017 Risk Mapping" for a detailed description.

⁸⁰ To extend its work in this area, the ESRB has instituted a BRIDGE research programme on EMIR data <https://www.esrb.europa.eu/pub/bridge/html/index.en.html>.

⁸¹ Ascolese, Cerniauskas, Molino, Pérez-Duarte, Skrzypczynski (2017), "Euro-area derivatives markets: structure, dynamics and challenges", BIS IFC-National Bank of Belgium Workshop on "Data needs and Statistics compilation for macroprudential analysis" Brussels, Belgium, 18-19 May 2017.

⁸² G16 refers to the group of the world's leading intermediaries on derivatives: Bank of America, Barclays, BNP Paribas, Citigroup, Crédit Agricole, Credit Suisse, Deutsche Bank, Goldman Sachs, HSBC, JPMorgan Chase, Morgan Stanley, Nomura, Royal Bank of Scotland, Société Générale, UBS, and Wells Fargo.

(notional) is 7.000 trillion euros. The low clearing rate (20% of trades, 40% of notional amounts) is up for both index-linked contracts (which are subject to clearing requirements) and derivatives involving an individual issuer (single name), resulting in a slight decline in the size of the market. The increase in the density and strength of the network reflects the increase in the significance of central counterparties, but the G16 banks remain the core of this high-density network (each network node negotiates with many other nodes).

- Foreign exchange contracts: the main products here are futures (80%) and options (15%), the main currency pairs being EUR/USD (37%) and USD/JPY (10%). In expansion, the market's notional amount is 20 trillion euros, or about 25% of the overall aggregate of the BIS. The average notional amount of contracts is lower than for interest rate derivatives on this more dynamic market where short-term contracts cover specific currency risks. In the absence of a clearing requirement, the G16 banks and other financial institutions play an increasing role at the heart of a less dense, more diversified network in which non-financial counterparties participate more.
- The ESMA (2017)⁸³ establishes congruent results and also considers commodity and equity derivatives. The lower notional amounts on these market segments reflect different uses and risks, distinct from those of interest rate derivatives. On the other hand, for these products, the market structure is characterised, for both equity and commodity contracts, by the prevalence of trading on organised markets.

This work will contribute to form the basis for a systematic monitoring by competent authorities of the markets covered by the reporting requirements.

- Analyses of the efficiency, resilience, and risks of derivatives markets for financial stability:
 - Particular attention is paid to the use of central clearing, especially where the EMIR stipulates requirements in this area. In particular:
 - Noting the theoretical possibility of significantly increasing the clearing rate of German, Italian, and French sovereign CDSs, Bellia et al. (2017)⁸⁴ examine incentives in this area. The study generally shows the importance of taking into account credit risk but also the differences between the three jurisdictions considered according to the trade-offs between capital and margin costs and the desire to minimise overall exposures to clearing houses;
 - On the interest rate derivatives market, Fiedor et al. (2017)⁸⁵ underscore the interest, beyond transactions of CCP members, of considering the transactions of their clients to assess market interconnections. Their clients are resorting to clearing much less, as their practices in the area are more diverse (geographically and according to the sector) and more variable over time.
 - Abad et al. (2016) assess risk transfers on the CDS and interest rate derivatives markets. The network structures are highly concentrated and intermediated by a limited number of dealers (whose gross positions are high but low in net terms). On CDS markets, "other financial institutions" (including hedge funds and mutual

⁸³ See "EU derivatives markets – a first overview" in ESMA (2017) Report on Trends, Risks and Vulnerabilities no. 2.

⁸⁴ Bellia, Panzica, Pelizzon, Peltonen (2017); "The demand for central clearing: to clear or not to clear, that is the question"; ESRB Working Paper 62.

⁸⁵ Fiedor, Lapschies, Országhová (2017); "Networks of counterparties in the centrally cleared interest rate derivatives market"; ESRB Working Paper 54.

funds), non-financial companies, insurance companies, and pension funds are generally net purchasers of protection. On the interest rate derivatives markets, banks are borrowing rather short and lending in the long term, unlike insurers and pension funds. Banks' derivatives portfolios therefore have a positive sensitivity to interest rate increases, unlike those of insurers and pension funds.

- D'Errico and Roukny (2017)⁸⁶ also show the theoretical possibility of significantly reducing notional amounts of CDS through compression of contracts but note that the "intermediation" of these markets by dealers probably reduces the incentives in this area.

□ Analyses useful for the individual supervision of market intermediaries

Among the highly diverse work under review:

- The AMF proposes a review of the implementation of EMIR provisions by AMF investment fund managers (2015)⁸⁷.
- Central Bank of Ireland (Kenny et al. (2016)⁸⁸) shows the importance of SPVs in the Irish CDS market and the strong interconnection and concentration of their exposures. They are net sellers of protection and have significant bilateral exposures with regard to non-domestic financial institutions, which would justify developing risk monitoring.
- The ECB⁸⁹ examines the exposures of the 11 leading commodity trading firms (783 billion euros in assets), representing more than 25% of the euro area's commodity derivatives markets. 95% of orders are not cleared. The notional exposures of 9 groups account for 40% of their assets, whereas those of the 2 smallest represent more than 10 times their total assets.
- Multiple studies are looking at the use of derivatives by banks. Aldasoro, Barth (2017)⁹⁰ examines their credit risk management and does not identify any use of CDS to circumvent regulatory capital requirements. Banks tend to hedge their exposure to risky borrowers and sell fewer CDS to domestic firms. Lead arrangers tend to buy more protection, which exacerbates the effect of information asymmetries. Examining the management of the interest rate risk of 104 large euro area banks, Hoffmann et al. (2017)⁹¹ show the aggregate weakness but also the heterogeneity (in a cross-sectional comparison) of exposures. The fixed or variable nature of the rates to which they offer credit is decisive in this respect. Banks are reducing their risk exposures by 25% on average. Interest rate changes have redistributive effects between banks.

⁸⁶ D'Errico, Roukny (2017); "Compressing OTC markets"; ESRB Working Paper 44-May.

⁸⁷ AMF (2015), "Study of Implementation by Asset Management Companies of EMIR Regulation on Derivatives"; Mar.

⁸⁸ Kenny, Killeen, Moloney (2015); "Network analysis using EMIR CDS data: Micro-level evidence from Irish domiciled special purpose vehicles (SPVs)"; Central Bank of Ireland Quarterly Bulletin, Q3.

⁸⁹ European Central Bank (2017), "Can commodity trading firms create systemic risk via derivatives markets?"; Financial Stability Review; Box 7; Nov.

⁹⁰ Aldasoro, Barth (2017); "Syndicated loans and CDS positioning"; ESRB Working Paper.

⁹¹ Hoffmann et al. (2017); "Who bears interest rate risk?"; unpubl.

CHAPTER 3: ASSET MANAGEMENT

3.1 THE STATE OF ASSET MANAGEMENT: INFLOWS AND RISK PROFILE

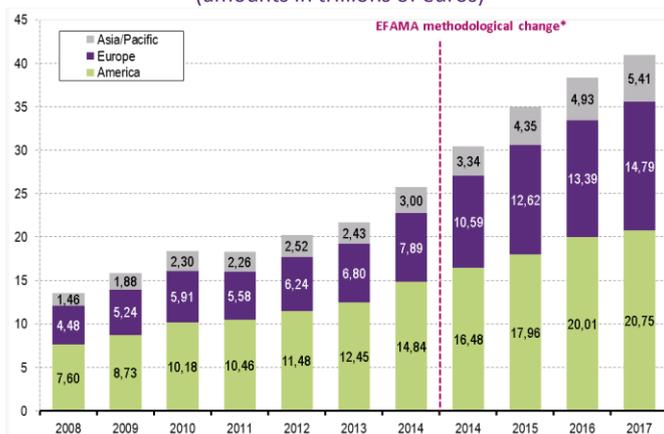
3.1.1 Lower asset growth, despite record inflows in 2017

At the global level, assets under collective management (including money market funds but excluding fund of funds) grew by 7% in 2017, compared with 10% in 2016 and 15% in 2015. The decrease in growth observed last year therefore seems to be continuing. It appears mainly explained by the United States, whose asset growth rose from 9.8% in 2016 to 3.2% in 2017. In total, the industry accounts for 41,102 billion euros in assets under management, including 18,467 for the United States alone and 12,070 for the euro area.

After a sharp decline in 2016, global net inflows for collective management rebounded sharply in 2017, reaching a record amount of 2,517 billion euros, or 6.7% of assets (including funds of funds)⁹². In Europe, the inflows are concentrated on Luxembourg (308 billion euros), Ireland (298 billion euros), and Germany (111 billion euros). With 49 billion euros, France ranks fifth, behind the United Kingdom (64 billion euros).

While for the other countries mentioned, the annual inflows are spread over the four quarters fairly evenly, France is characterised by very volatile inflows (+55 billion in the first quarter, -13 billion in Q2, +25 billion in Q3; -18 billion in Q4), on both money market funds and non-money market investment funds.

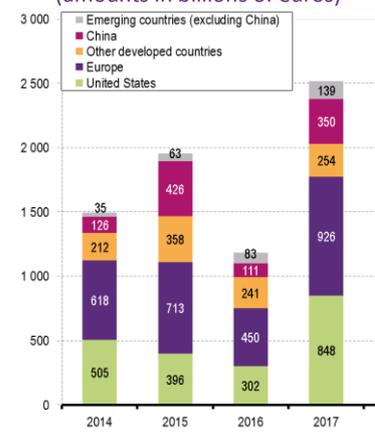
Figure 47: Assets in collective management (excluding funds of funds)
Geographical grouping according to fund domiciliation
(amounts in trillions of euros)



Source: EFAMA – International Quarterly Statistical Release, AMF calculations

* Methodological note: Until 2014, the data published by the EFAMA exclude funds of funds, except for France, Germany, Italy, and Luxembourg. In addition, the countries correspond to the place where the funds are domiciled, with the exception of Hong Kong, Trinidad and Tobago, and New Zealand. Since 2015 (with a reassessment in 2014), the EFAMA has published two datasets (with and without funds of funds). However, certain jurisdictions (Italy, Japan, Luxembourg, the Netherlands, Norway, Romania, Slovakia, Spain, and Switzerland) have failed to exclude funds of funds from total assets. In addition, ETFs and institutional funds are included in the total. The change in methodology and classification of funds has resulted in a statistical jump of about 4.7 trillion euros for the transition year (2014), including 1.65 trillion euros for the United States, 1.23 trillion euros for Germany, 450 billion euros for France, 390 billion euros for Ireland, 320 billion euros for Japan, 260 billion euros for the United Kingdom, and 260 billion euros for Luxembourg.

Figure 48: Net inflows into funds (including funds of funds)
(amounts in billions of euros)



⁹² By deduction, the effect of valuation of outstanding amounts, or “performance” effect, would be 302 billion euros, i.e., 0.7% of outstanding amounts at the end of 2016.

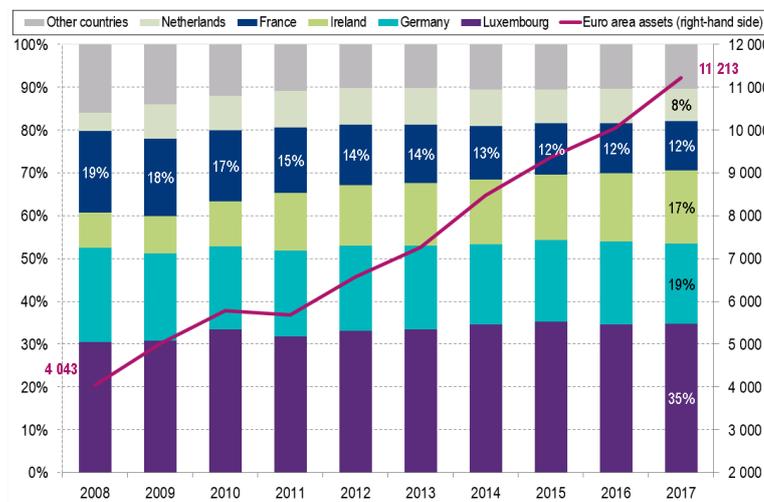
Exchange Traded Funds (ETFs) remain very dynamic. Globally, these passively managed funds reached net assets of 3,870 billion euros at the end of 2017 (including 2,836 billion for the United States and 614 billion for Europe⁹³). Over one year, growth of assets represented +23.4%, +18.4%, and +25.1% respectively. In 2017, these funds received net inflows of 434 billion euros worldwide.

3.1.2 Euro area: a concentrated market

According to data from the European Central Bank (ECB), assets of investment funds (excluding money market funds) domiciled in the euro area have grown more than 2.7 times in ten years. They reached 11,213 billion euros at the end of 2017, an 11.6% increase compared with 2016 (10,051 billion euros). The net inflow over 2017 represents 867 billion euros, or three-quarters of the change in assets.

The distribution of the market among the main countries where the funds are domiciled remains virtually unchanged, with more than one-third of assets (34.7%) for Luxembourg, 18.8% for Germany, and 17.0% for Ireland. However, Ireland gains a percentage point of market share over its competitors compared with 2016. With 1.302 trillion euros, France comes in fourth (11.6%).

Figure 49: Structure of the euro area investment fund market (excluding money market funds) (as a % of total assets under management in the euro area)



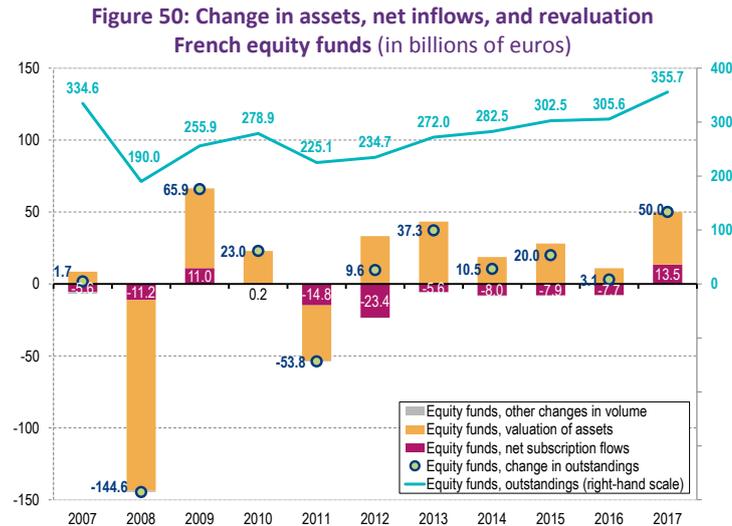
Source: BCE – Investment Funds Balance Sheet Statistics, AMF calculations

⁹³ French ETFs represent 82 billion euros.

3.1.3 Closer look at French funds: record inflows for several categories

3.1.3.1 A powerful comeback of inflows on French equity funds

After six years of continued net outflows, French equity funds received record positive inflows of 13.5 billion euros in 2017 (including 4.5 billion in December alone).



Source: Banque de France – Financial Overview of Investment Funds, AMF calculations

Methodological note: Other changes in volume concern fund reclassifications, formations and liquidations.

The market valuation effect played a positive role for the sixth year in a row. The combination of these two factors increased net assets of French equity funds by 50 billion euros, 16.4% more than at the end of 2016.

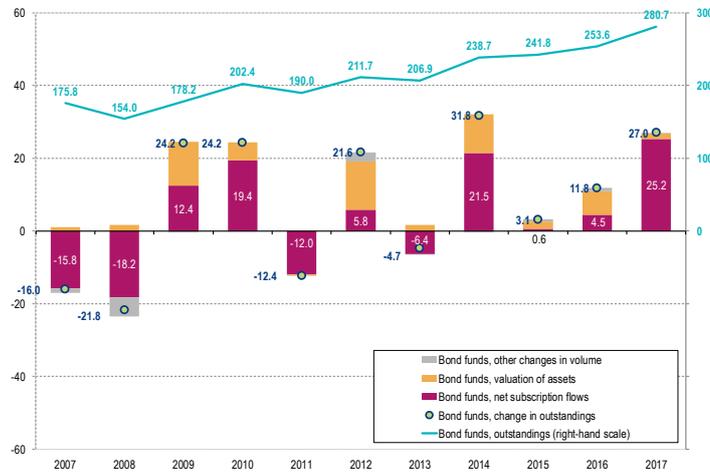
The gap observed between the valuation and outflow effects could give rise to fears that investors would invest too late in the cycle, in other words that they would invest in funds at the top of the cycle and exit during a performance contraction phase⁹⁴.

3.1.3.2 Record inflows on French bond funds in 2017

Inflows on French bond funds reached +25.2 billion euros in 2017, its highest level since 2007. It was concentrated in the first half of the year, with positive net inflows over each of the first eight months of the year, followed by net outflows between September and November for a total of -5.8 billion euros. The asset valuation effect was very moderate (+1.6 billion euros, compared with +6.5 billion in 2016).

⁹⁴ The studies are not totally conclusive on this point, especially in Europe. In the United States, the procyclicality of equity funds is linked to the manager's incentives to outperform (Chevallier, Ellison (1997), Sirri, Tufano (1998), Brown, Harley, Starks (1996)), whereas the procyclicality of bond funds is linked to the sensitivity of the holders to negative performance (Goldstein, Jiang, Ng (2016)), or even to the tendency of managers to increase their liquidity in anticipation of redemption shocks (cash hoarding, Morris, Shim, Shin (2017)). In Europe, Grillet-Aubert, Sow (2009) does not identify a stable relationship across fund categories and jurisdictions. However, Bellando, Ringuédé (2009) identifies the presence of French equity managers' incentives to take risks. Regarding the macroprudential implications, see Grillet-Aubert (2018) and 3.2 below on regulatory work on market illiquidity risk management tools in asset management.

**Figure 51: Change in assets, net inflows and revaluation
French bond funds**



Source: Banque de France – Financial Overview of Investment Funds, AMF calculations

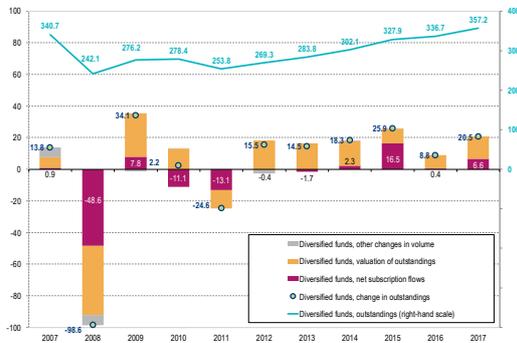
3.1.3.3 Inflows rebound on French diversified funds in 2017

After net inflows of almost zero in 2016, diversified funds recorded positive net flows of 6.6 billion euros in 2017. However, the net outflows of 6.9 billion euros in December 2017 qualifies this observation. Thanks to an asset valuation effect of more than 14 billion in euros over 2017, French diversified funds accounted for more than 357 billion euros in assets under management at the end of 2017.

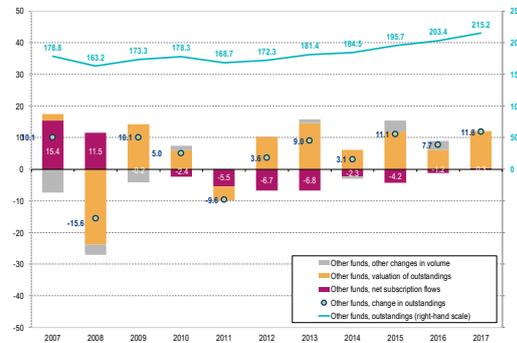
Banque de France’s “other” category includes a disparate set of funds, including employee savings funds, some hedge funds⁹⁵, structured funds, and private equity funds. In aggregate, these funds posted marginal net inflows (+300 million euros) but positive for the first time since 2008. In 2017, only February then April to June enjoyed positive flows, which corresponds to the months of profit-sharing and incentive contributions to employee savings (+6.8 billion euros of inflows over these four months). Like the other categories of French investment funds, the residual category of “other” funds has had a positive valuation effect since 2012.

⁹⁵ Hedge funds are identified on a declarative basis. In addition, hedge funds that are domiciled offshore and marketed in France are not captured by these statistics.

**Figure 52: Change in assets, net inflows, and revaluation
French diversified funds (billions of euros)**



**Figure 53: Change in assets, net inflows, and revaluation
French "other" funds (billions of euros)**

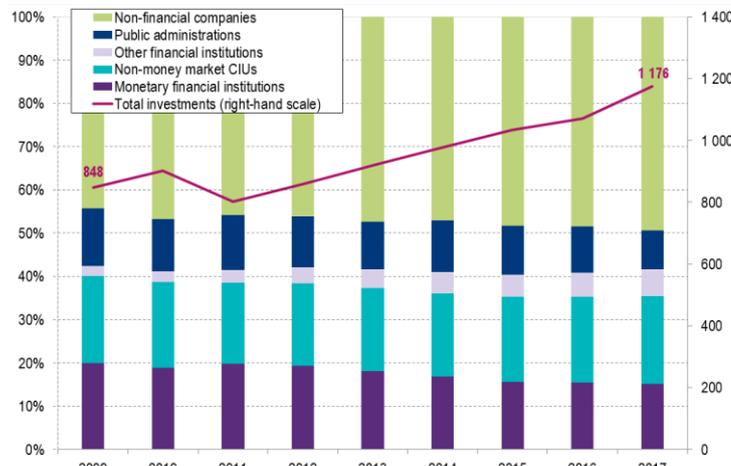


Source: Banque de France – Financial Overview of Investment Funds, AMF calculations

3.1.3.4 French investment funds increasingly exposed to non-financial companies

The aggregated data of assets of investment funds make it possible to highlight the uptrend in the exposure of French funds to non-financial companies (NFC). At the end of 2017, NFC securities (mainly equity securities) accounted for almost half of the value of the assets of funds.

Figure 54: Aggregate structure of the portfolio of French investment funds



Source: Banque de France – Financial Overview of Investment Funds, AMF calculations

3.1.3.5 Discretionary management

Collective management, which has been discussed so far, is only part of the asset management business. Investment services providers (ISP) and asset management companies (AMC) can also offer discretionary management services to their clients (mostly institutional). By signing a management mandate, investors give their representative the power to manage their portfolio of financial instruments on their behalf, according to their objectives and situation. In 2016 (the latest figure available to date), discretionary management represented in France 1,618 billion euros in assets, an amount of the same order of magnitude as collective management. For Europe, the European Fund and Asset Management Association (EFAMA) estimated assets under a

management mandate at 11,000 billion euros at the end of 2016, which is again about the same as the total under collective management.

Summary table for France (assets at the end of 2017):

Collective management (excluding money market):	1,209 billion euros
Of which equity funds:	356 billion euros
Of which bond funds:	281 billion euros
Of which diversified funds:	357 billion euros
Of which other funds:	215 billion euros
Money market funds:	345 billion euros
Discretionary management:	1,618 billion euros

3.2 LIQUIDITY RISK MANAGEMENT AND LEVERAGE

3.2.1 International recommendations in line with the measures implemented in France

International work on shadow banking is refocusing on market activities...

Continued overall growth in assets under third-party asset management, particularly open collective investment vehicles, and the rise in recent years in a context of expansive monetary policies, fund exposures to debt products and certain illiquid assets (notably real estate) have led the competent authorities to question the implications for financial stability⁹⁶. International debates have crystallised on the qualification of risks. Initially attached, using macro-financial data, to identifying the relevant shadow banking entities⁹⁷ and to generally measuring their volume of activity, the methodologies have gradually refocused on the assessment of risks related to their market activities⁹⁸ and take into account activities defined less specifically by reference to bank credit intermediation. Considering market-based finance more generally, including beyond credit and debt financing, they broaden the scope of market risk questions (D’Hoir, Ophèle (2018), Grillet-Aubert (2018), Adrian (2018)⁹⁹), where appropriate, on the sector’s capacity to absorb shocks and increase the structural resilience of the financial system.

⁹⁶ See FSB’s “Shadow Banking Monitor” and the international work of the FSB and IOSCO on asset management. The FSB stresses the importance of credit intermediation by investment funds, but also that “aspects of shadow banking considered to have contributed to the financial crisis have declined significantly and generally no longer pose financial stability risks” (news release of 02/07/17).

⁹⁷ Non-banking and non-insurable entities conducting credit intermediation activities are identified in the national accounts data in a disparate and residual “Other financial institutions” category (S.12) excluding credit firms, insurance companies, and pension funds. They include money market investment funds (S.123) and non-money market investment funds (S.124), and “Other financial intermediaries” (S.125): securitisation vehicles, financial securities dealers, financial companies granting loans or specialised financial companies (leasing, etc.). However, note that certain entities in this category are outside of the scope in question, such as clearing houses. For data gaps relating to certain entities, see Grillet-Aubert, Haquin, Jackson, Killeen, Weistroffer (2016). D’Hoir, Ophèle (2018); “Comment dépasser le concept de ‘shadow banking’ ?” [How to go beyond the concept of shadow banking], Review of Financial Stability, Banque de France, April, highlights the need for an approach to market risks in general and shadow banking in particular. The FSB assesses risks on the basis of 5 economic functions. The first concerns collective investment vehicles exposed to the risk of redemptions, the third concerns market intermediation dependent on short-term or secured financing, therefore reflecting the ability to provide liquidity to the market in general and to investment funds in particular.

⁹⁹ D’Hoir, Ophèle (2018) see previous footnote. Grillet-Aubert (2018); “Macro-stress tests: What do they mean for the markets and for the asset management industry?”, Risks and Trends, AMF, June, Adrian (2018); “Shadow Banking and Market-Based Finance” in “Shadow Banking: Financial intermediation beyond banks”; SUERF-The European Money and Finance Forum, 2018/1 ed. by E. Jokivuolle

*...in favour of more
risk-based approaches*

Against this backdrop, the work undertaken to address the risks related to asset management, in particular liquidity risks of assets of open-ended funds and leverage risks of open-ended alternative funds, is progressing with two main focuses, in line with the FSB's initiatives at the international level¹⁰⁰. On the one hand, the data collection, risk assessment, and stress testing work underscores the need to eventually develop a framework for analysing own systemic risks, separate from the framework applicable to bank liquidity and leverage¹⁰¹. On the other hand, various regulatory and supervisory work has already aimed at making operational the management of potential risks, as evidenced, at the global level, by the work in progress on the leverage of investment funds¹⁰² and the recommendations published by the IOSCO in February 2018 on their management of liquidity risks.

*New IOSCO
recommendations and
national rules are
strengthening the
liquidity risk
management systems*

On the basis of a review of current practices in the various jurisdictions, the recommendations made by the IOSCO in 2018¹⁰³ reinforce the overall liquidity risk management framework according to four main focuses: coherence of the management of asset-liability imbalances (liquidity of assets to deal with redemptions), transparency with holders and authorities on the liquidity profile of funds, use of liquidity stress tests by portfolio managers to increase resilience to extreme market conditions, and the establishment by the authorities of a framework allowing management companies to use liquidity risk management tools. These recommendations generally aim to preserve the diversity of tools available to managers to adapt their management of liquidity risks to the specific characteristics of the funds under management (strategies implemented, nature and structure of asset and liability exposures, etc.). The recommendations therefore provide the national authorities with relative discretion regarding the range of management tools proposed, and their publication is accompanied by a guide to good practices¹⁰⁴ illustrating the concrete use that can be made of the various tools. This work has been accompanied by legislative changes in several countries, particularly in the United States¹⁰⁵ and France¹⁰⁶, which reinforce the compliance of national systems with IOSCO recommendations. The French system, which came into force at the beginning of 2018, specifically aims, for many types of funds¹⁰⁷, to clarify the conditions for implementation or to introduce: (i) subscription and/or redemption notices, (ii) redemptions in kind, and (iii) partial or total closing of subscriptions.

*The ESRB
recommendations aim
to supplement the
European scheme...*

In addition, five recommendations, addressed by the ESRB to the European Commission and the ESMA in December 2017, aim to strengthen the liquidity and leverage risk management system within the European Economic Area.

The first three relate specifically to the management of liquidity risk. The first aims to increase the availability within the EU of liquidity management tools by including

¹⁰⁰ see "Policy Recommendations to address structural vulnerabilities from asset management activities", 12/01/17.

¹⁰¹ The Basel system notably introduces a framework for bank exposures through liquidity and leverage ratios (see BIS).

¹⁰² FSB recommendation 10 (2017) op. cit. mandates IOSCO to define relevant leverage indicators for investment funds. Subsequent recommendations (11 and 12) call for data collection – respectively by the national authorities and IOSCO – on these bases.

¹⁰³ see "Recommendations for liquidity risk management for collective investment schemes", 01/02/18.

¹⁰⁴ see "Open-ended Fund Liquidity and Risk Management. Good Practices and Issues for Consideration", 01/02/18.

¹⁰⁵ The framework adopted in the United States is characterised in particular by the requirement for fund managers to set up a liquidity risk management programme focusing on three rules: the classification of portfolio assets according to their degree of liquidity, a minimum investment in the most liquid assets, and an investment cap in the least liquid assets.

¹⁰⁶ See order no. 2017-1432 of 04/10/2017 modernising the legal framework for asset management and debt financing.

¹⁰⁷ UCITS, retail investment funds (FIVG), funds of alternative funds (FFA), general professional funds (FPVG), and employee savings funds (FES).

additional tools that may round out, in certain jurisdictions, the range of available tools¹⁰⁸. Furthermore, it authorises the ESMA to develop good practices to harmonise the use of tools by industry and to ensure, which could be of particular importance in times of stress, good coordination of the authorities when they use suspensions of redemptions of fund units that may have cross-border implications in the EU. The second recommendation aims to limit the liquidity transformation risks of open-ended alternative investment funds (AIF) investing significantly in structurally illiquid asset classes (the ESMA has a mandate to prepare a list that will include at least real estate, unlisted securities, loans, and other alternative assets) by reinforcing their supervision. The third recommendation is for the ESMA to publish guidelines on liquidity stress tests to make practices converge within the existing legislative framework of the UCITS and AIFM directives (Box 9).

...and call for a collection of data on UCITS

At the European level, as UCITS funds are not the subject of specific regulatory collection of market authorities¹⁰⁹, the ESRB's fourth recommendation is to institute a collection of data for, in particular, a better assessment of the liquidity and leverage of funds. As regards alternative funds, such a collection is already instituted by the AIFM Directive. Its data are the subject of preliminary analyses¹¹⁰. In France, the first exploitations of the data collected within this framework provide information on the liquidity profile of the reporting AIFs (see 3.2.2.).

The European work on macro-prudential management of leverage remains exploratory

The ESRB's latest recommendation concerns the leverage of alternative investment funds. It aims to clarify the implementation of the provisions of Article 25 of the AIFM Directive, which provide for the possibility for the authorities to impose a leverage cap on the funds contributing to the increase (the use of the term "build-up" would indicate a notion of accumulation) of systemic risk. This primarily involves establishing a commonly accepted assessment of systemic risk associated with leveraged exposures and, to that end, capitalising on the IOSCO's work mentioned above.

3.2.2 First lessons from the collection of AIFM on the liquidity of French funds

The data collected under requirements of the AIFM Directive now permit regular monitoring of AIFs and their risks. In France, at the end of 2017, there were 7,082 funds representing 767 billion euros in assets, or 47% of assets under French collective management. However, the work intended to ensure the quality of such data, the collection of which has been implemented since 2014, needs to be extended to increase the scope of analytical work and risk monitoring¹¹¹.

For example, the strategies reported by the managers emphasise a large majority of "Other" strategies, which limits the scope of the interpretations and the assessment of the

¹⁰⁸ This recommendation is addressed to the European Commission to address possible needs to amend national laws to this end. Here, the AMF considers that the applicable level 1 texts (UCITS, AIFMD) provide the necessary legislative framework and advocate for level 2 treatment of ESMA standards. In any case, the assessment (see table in appendix II to the recommendations) shows the completeness of the system in France.

¹⁰⁹ UCITS are covered by the statistics on investment funds in the national accounts, and information is provided by professional and market sources. Central bank collections also incorporate new granular information on investment funds – see, for example, references to RIAD (Register of Institutions and Affiliates Database) in the June 2017 report "Euro area monetary and financial statistics; 2016 quality report" of June 2017 of the European Central Bank and "Who holds what? New information on securities holdings", in ECB (2015); Economic Bulletin 2015-2 for information on the ECB's SHS (Securities Holding Statistics) database.

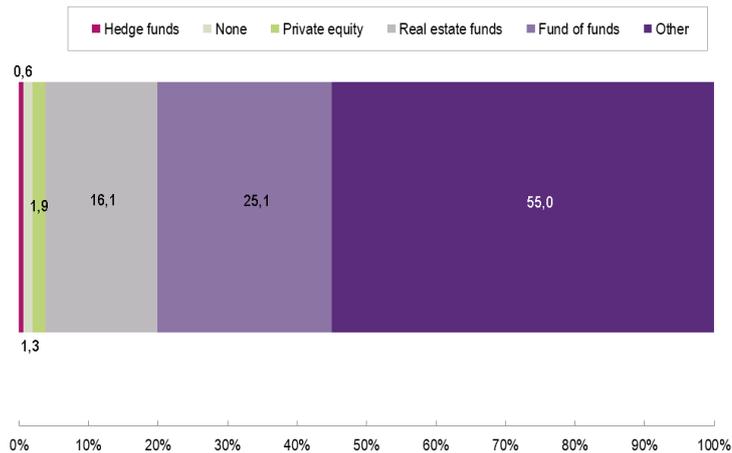
¹¹⁰ See article entitled "AIFMD – a framework for risk monitoring", ESMA Report on Trends, Risks, and Vulnerabilities of February 2018.

¹¹¹ The data presented here cover all AIF funds registered or approved in France, which report quarterly (the quarterly reporting threshold is 1 billion euros). They represent 87% of AIF assets at the end of 2017.

The initial analyses of the AIFM reporting highlight the limits of interpretation due to the nature of the questions asked

diversity of the implemented strategies (Figure 55). At the European level, the “Other” strategy accounted for 67% of assets at the end of 2017¹¹². The AIFM directive, which mainly aimed at improving hedge fund supervision, captures many other more general funds (within the “Other” strategy), which it would be useful to better qualify in the future.

Figure 55 – Breakdown of assets by AIF category (net assets at the end of 2017, as % of total assets)



*Note: Here, managers choose the main strategy that best describes the fund’s strategy.
Source: AMF*

The adequacy between assets and liabilities of AIFs seems appropriate

This collection aims in particular to assess funds’ exposure to liquidity risk. In this respect, it requires managers to assess the assets of their funds according to their liquidation duration, as well as the assumed redemption behaviour of investors, in order to assess their ability to cope with shocks by disposing of liquid assets. On the asset side, depending on the strategy, there are categories of liquid funds, such as hedge funds, where 84% of assets are deemed by managers as able to be liquidated within one day, and more illiquid funds such as private equity and real estate funds, whose proportion of assets can be liquidated within one day is only 16% and 5% respectively.

This asset structure should be looked at in relation to the liability structure and managers’ assessment of their ability to meet investor redemption requests (Figure 56 and Figure 57), depending on the exit restrictions that may have been put in place. At the level of the categories of funds considered, the commitments appear here systematically (at all maturities, for all categories) smaller than the asset liquidation periods, showing the capacity in general¹¹³ to cover redemptions of investors’ units. Although it represents only an average, since managers model according to their own liquidation criteria, the presented outlook shows that the liabilities structure – in particular, the commitments to be met for short-term redemptions – is adapted overall to that of the assets of funds. For example, the proportion of holders who can redeem their units of “Other” funds within one day is 29%, whereas it is almost zero for real estate funds (Figure 57). In both cases, the manager’s assessment is that the funds have on average a significant surplus of liquid assets to deal with redemptions.

¹¹² ESMA data from Trends, Risks, and Vulnerabilities, issue 1, 2018, *ibid*.

¹¹³ This average observation for the fund categories considered does not prejudge the individual situations of the funds under review. In addition, it appears that certain managers take into account in this horizon the time required for settlement, while others do not.

Structure by terms of portfolio assets and liabilities

Figure 56: Other funds (estimated as a cumulative % of net assets)

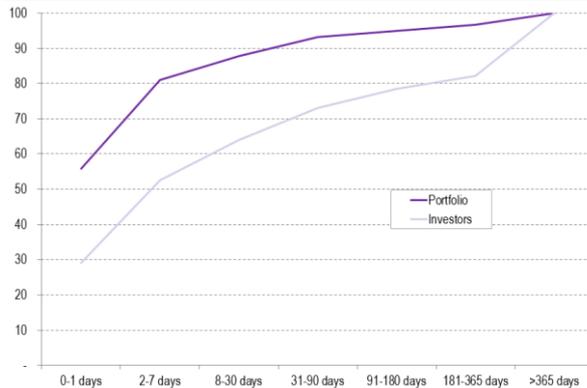
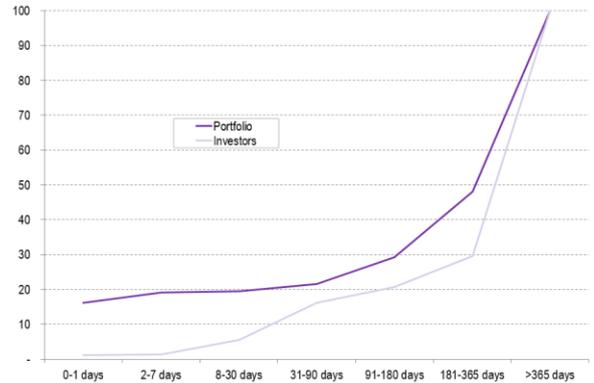


Figure 57: Real estate funds (estimated as a cumulative % of net assets)



Reading: for the 'real estate funds' strategy (16% of net assets), the managers estimate that 16% of their portfolio can be sold within one day and that 1% of investors can receive redemption payments within this horizon.

Source: AMF

However, the knowledge of AIF liabilities can be improved

In order to supplement this analysis of liquidity by the managers, they are also asked to report on their ability to identify their clients on the liabilities side. Above all, it shows that individuals are generally in the minority in the holding of alternative funds (38% weighted average by assets at the end of 2017). At 39%, the proportion of individual holders of real estate funds, which are therefore exposed to particularly illiquid assets, nevertheless seems significant (see part 4.1.4).

A more detailed classification of holders as assessed by the manager is also requested (Figure 59). Consistency with the preceding figure still remains to be established in part due to (i) the limited knowledge of managers of their liabilities, in a context where the reporting categories do not always correspond to the commercial information available to the managers, and (ii) the possibility of selling to retail clients through bank or insurance investors. This is confirmed by the large share of "unknown" investors (57% for "Other" funds, 25% for real estate funds). Institutional investors make up the main category of French alternative fund unitholders, foremost insurance companies, which hold 57%, 54%, and 25% of assets of the "Other", "Funds of funds", and "Real estate" fund categories respectively. The perception of a relatively low weight of banks in the liabilities of hedge funds is also confirmed: 3% for the "Other" category, 5% for funds of funds, 10% for real estate funds, and 12% for private equity funds (this last category representing only 1.9% of total assets). Lastly, households also represent a small share of assets: 5% of the "Other" category, 9% of the funds of funds, but a more significant share of assets of real estate funds (15%).

Structure of investors in hedge funds

Figure 58: Professionals and individuals (%)

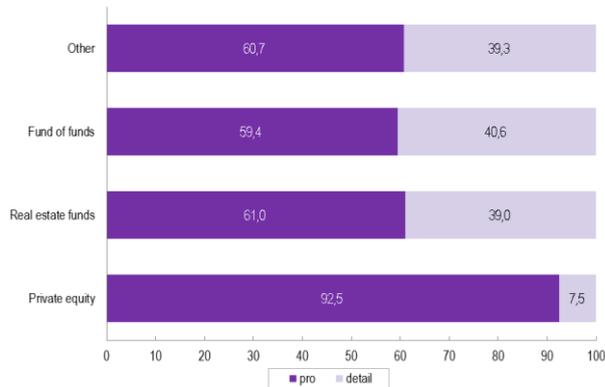
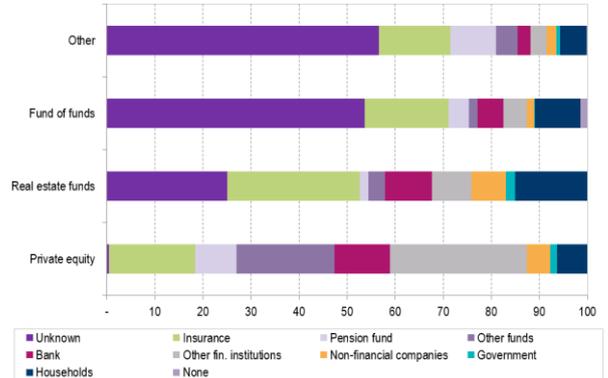


Figure 59: Detailed investor categories (%)



Strategies whose assets represent less than 2% of French assets are not represented.

Source: AMF

Box 9: Stress tests of investment funds and macro stress tests

The following is intended to clarify the distinction between two types of stress tests, conducted by asset managers for the purposes of risk management of their investment funds and, in a more exploratory way, by the authorities, in particular with objectives of financial stability. The statement is based in particular on Grillet-Aubert (2018)¹¹⁴.

1) Stress tests of investment funds: the UCITS and AIFM directives and the MMF regulation establish requirements for stress tests of investment funds by management companies. The requirements of the UCITS directive focus on the management of liquidity risk. The requirements of the AIFM directive also require reporting to the regulator. On the ESRB's recommendation, guidelines will be proposed by the ESMA to ensure a European convergence, where AMF¹¹⁵ and Bafin guides already harmonise and promote good practices at the national level. For its part, the Money Market Funds Regulation (MMFR) is more prescriptive: crisis simulation scenarios will be tested on the basis of common reference parameters set by the ESMA (relating to the degree of liquidity of the assets held, the risk of these assets, interest and exchange rates, redemption assumptions, spreads between indices to which the interest rates of portfolio securities are tied, and macrosystem shocks that may affect the economy)¹¹⁶. These simulations will be reported to the regulator. The regulator's ability to sample and aggregate the results of these stress tests, in addition to those conducted by the managers for the purposes of managing their specific risks, therefore constitutes the stress tests prescribed by MMFR also in bottom-up macro stress tests – a concept specified as follows.

2) Macro stress tests: the concerns of macro-prudential authorities as to the vulnerability of investment funds to market liquidity shocks¹¹⁷ have led the authorities with a financial stability mandate to conduct exercises to assess the aggregate impact of shocks on market(s) or market segments - of exercises distinct from those conducted by the managers for the purpose of managing risks specific to each of their funds. A useful distinction is made here between two main types of exercises: top-down overall simulation exercises aimed at integrating interactions and market dynamics ("second-round" effects) and bottom-up exercises aggregating risk indicators through the tested entities. These generally lead the authorities to call upon the entities concerned by the test (submission of scenarios, requests for data, etc.).

¹¹⁴ Grillet-Aubert (2018); "Macro stress-tests: What do they mean for the markets and for the asset management industry?"; AMF Risks and Trends, June.

¹¹⁵ "Instructional guide to the use of stress tests as part of the risk management of asset management companies"; AMF; 23 February 2018. "Liquidity stress testing by German asset management companies"; BaFin; 8 December 2017.

¹¹⁶ These provisions of Article 28 of the Directive are being transposed by ESMA.

¹¹⁷ See, in particular, recommendation 9 of "system-wide stress testing" by FSB (2016); "Proposed policy recommendations to address structural vulnerabilities from asset management activities"; 22 June 2016.

To model the market dynamics, top-down liquidity stress tests¹¹⁸ require the consideration of relevant market counterparties and therefore, in principle, are not intended to apply solely to investment funds. Highly influenced by the data and assumptions, particularly concerning the modelling of “fire sales”, these exercises have an operational scope that is still limited in terms of risk management but are useful in many other respects, particularly in the development of market monitoring indicators.

Bottom-up¹¹⁹ exercises can be specific to asset management. Based on the authorities’ cross-fund assessment of risk management indicators, they are often based on practices in the area of the funds themselves. They are therefore more suitable for making recommendations on this point, even though their measurement of market dynamics (contagion, fire sales) often remains limited. Exercises that, like the HCSF’s exercise on commercial real estate, target markets: i) whose vulnerability is well established, ii) precisely taking into account the risk management strategies and practices of participants, and iii) conducted across all the financial entities likely to be affected by the shock under review – notwithstanding their financial sector (banks, insurance companies, etc.) - make a useful contribution to the assessment and management of risks for financial stability. The stress tests prescribed by MMFR mentioned above can therefore also be considered, in this respect, as bottom-up macro stress tests.

3.3 THE INTERCONNECTIONS OF FRENCH MANAGEMENT: A NETWORK THAT IS NOT VERY DENSE BUT CONCENTRATED AROUND PILLAR ENTITIES

Although the microprudential risks related to the characteristics of the funds or their management (liquidity risks, risks associated with the use of leverage, risks related to the assets held, operational risks, etc.) are already at the heart of the regulatory action, the overall risks related to the sector’s structure and its interconnections, more macroprudential, need to be assessed to identify the links between stakeholders.

For more in-depth knowledge of the financial stability issues associated with asset management, the High Council for Financial Stability (HCSF) proposes, through a publication¹²⁰, to shed light on interconnections of the French financial system, using data received by Banque de France, the ACPR (French prudential control and resolution authority), and the AMF in the context of regulatory reporting between 2008 and 2016. This original database permits an analysis of the French financial network, constituted at the level of individual entities domiciled in France (banks, insurance, and funds)¹²¹. The main results are presented here.

¹¹⁸ See, in particular Baranova, Coen, Lowe, Noss Silvestri (2017); “Simulating stress across the financial system- Resilience of corporate bond markets and the role of investment funds”; Bank of England FSP 42; Cetorelli, Duarte, Eisenbach (2016); “Are Asset Managers Vulnerable to Fire Sales?”; Liberty Street Economics; -NY Fed; Fricke, Fricke (2017); “Vulnerable Asset Management: The Case of Mutual Funds”; Deutsche Bundesbank Discussion Paper 32-2017.

¹¹⁹ Several IMF FSAPs (particularly in the United States (2015), Ireland (2016), and Luxembourg (2017)) have implemented stress tests of this type (see Bouveret (2017); “Liquidity stress tests for investment funds: A practical guide”; IMF Working Paper 17-226). In France, the original exercise conducted under the authority of the HCSF on commercial real estate focused on the investment fund, bank, and insurance sectors (see HCSF (2017); “Commercial real estate memo; Updated analysis and results of dedicated stress tests”; March).

¹²⁰ High Council for Financial Stability (2018), “Interconnections between the French asset management sector and the rest of the French financial system”, XX.

¹²¹ The relationship between asset management and the banking and insurance sectors is assessed in fund assets by the holding of securities (equities or bonds) issued by banks and insurers and in fund liabilities by the holding of fund units by banks and insurers. Financial relationships other than those involving the holding of securities or units (credit, contingent credit lines, use of derivatives) are not captured in the analysis.

3.3.1 Knowing the links of investment funds with the rest of the financial system makes it possible to better understand the risks

Measuring interconnections is a key prerequisite for a concrete assessment of the risks to financial stability

The theoretical analysis of interconnections within financial networks highlights their dual nature: they can have both stabilising effects, resulting from the diversification of financial risks, but also amplifying effects, for example from additional channels for the spread of a shock¹²².

The empirical analysis proposed here is a first step towards the analysis of direct and indirect risks arising from the interconnections of asset management with financial stability¹²³. Direct risks arise primarily from the nature of fund exposures to assets: fund behaviours can affect the functioning of a market segment and therefore affect the other players in this market (investors, intermediaries, issuers). This is particularly the case in times of stress where the simultaneous and massive attempt to sell assets by funds could generate significant price drops on the markets of the sold assets. The risks associated with the interconnections then result from these funds' liabilities, affecting the counterparties who have invested in these funds but also the counterparties exposed by other means to these funds (through the provision of lines of credit or other financial services, counterparties on repo or derivatives markets, etc.) if the portfolio loses value. In addition, when the redemption request management tools are not available or properly used, the counterparty risk can be amplified by the first-mover advantage, i.e., the exit of certain investors before or at the beginning of a stressed market situation, leaving the remaining investors to bear the negative consequences. This risk may have an impact on the volume and speed of redemptions requested by investors and may accelerate or amplify the above risks.

Lastly, these risks may result from more indirect links (ownership relationships, sponsorship) that may lead a financial institution to provide support to a fund in difficulty because of a risk (for example, reputation risk) that it would face in case of the fund's liquidation.

3.3.2 At the macroeconomic level, French funds are highly interconnected with the rest of the French financial system, in particular money market funds

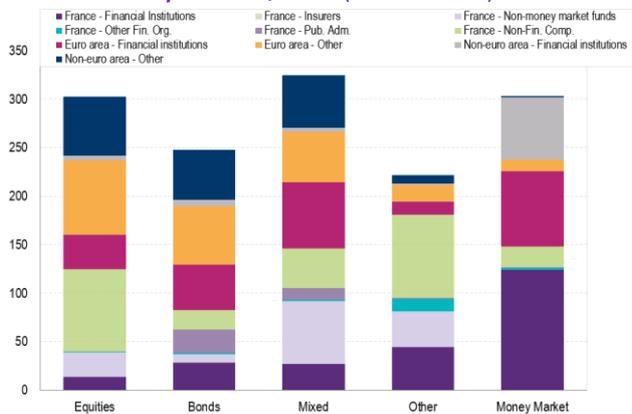
Exposure to the rest of the financial system of 51% in assets and 63% in liabilities

Examining the global exposure data of French funds makes it possible to show their exposure to the entire financial system: as of the end of 2016, 51% of assets of French funds (712 billion euros) are invested in securities issued by entities in the financial sector as a whole, including 28% by entities domiciled in France (390 billion euros), 17% in the euro area excluding France, and 6% outside the euro area. Exposure to the financial system is greater in liabilities, where 63% of fund assets (915 billion euros) are held by financial entities of the euro area, including 53% by French entities (770 billion euros) and 10% by entities located in the euro area excluding France. On the assets side, the French entities concerned are mainly banks (17% of assets) but also other financial entities for 10%. The liabilities are 33 % held by French insurers, 14 % by other financial institutions, and 6 % by French banks.

¹²² The existing models, focused on the banking sector, highlight the non-linear nature of the impact of the increase in the diversification of counterparties on the resilience of the system: when the number of connections increases, the effect is first positive on the decrease in the probability of a liquidity crisis (diversification), then negative (contagion). See Allen, F., and D. Gale (2000), "Financial contagion", *Journal of political economy*, 108(1), 1-33 or Gai, P., A. Haldane and S. Kapadia (2011), "Complexity, Concentration and Contagion", *Journal of Monetary Economics* 58 (5): 453-70.

¹²³ Note that financial relationships other than those involving the holding of securities or units (credit, contingent credit lines, use of derivatives) are not captured in the analysis.

Figure 60: Exposure of fund assets to the rest of the financial system in Q4 2016 (in billions of €)



Sources: Data from Banque de France, AMF, ACPR, data for Q4 2016

Figure 61: Exposure of fund liabilities to the rest of the financial system in Q4 2016 (in billions of €)



The exposure of French funds to the French financial sector is the highest: for money market funds (assets side); for equity funds (liabilities side)

On the asset side, money market funds are, unsurprisingly, the most exposed to the financial system (88% of their invested assets, i.e., 270 billion euros), 47% of which are on securities issued by French financial counterparties. Exposures of other classes range from 20% for equity funds (80 billion euros) to 51% for mixed funds (165 billion euros)¹²⁴. On the liabilities side, the exposure appears less mixed: subscriptions of equity fund units by financial counterparties amount to 73% of their liabilities (225 billion euros, including 190 billion euros by French entities). They reach almost the same proportion for bond funds at 180 billion euros (including 133 billion euros held by French entities). The exposure of money market funds is 230 billion euros (including 190 billion euros to French entities). Only the “Other” category stands out with a 28% exposure to the financial system, including 26% to the French financial system, in connection with the high proportion of employee savings funds in this category.

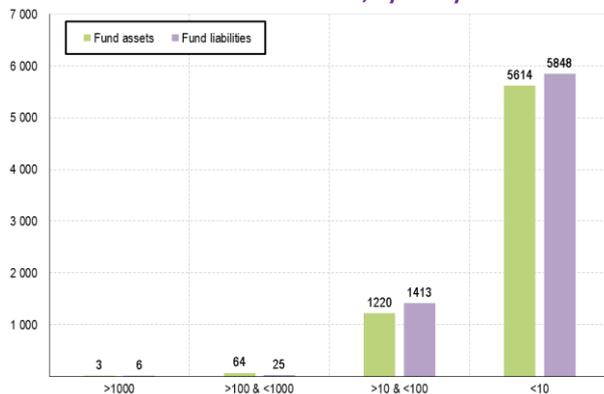
3.3.3 The network linked to French asset management is sparse, in a “small world”

The detailed interconnection analysis highlights the existence of a vast but relatively sparse network with 9,943 entities (funds, banks, and insurance companies) with 61,117 links (involving funds)¹²⁵. This number appears to be limited compared with the 98 million potential links: the network’s density (or connectivity), which is equal to the ratio between the number of network links and the number of possible links, thus appears to be very low, with a level of 0.06%. In addition, the number of links has decreased significantly since 2010, when it stood at 77,900. These links are essentially unidirectional, i.e., the links are made either to assets or to liabilities of funds, and the proportion of bidirectional links is very low at 0.48%.

¹²⁴ It is reduced to 13% for equity funds and 29% for mixed funds, when only French financial institutions are considered.

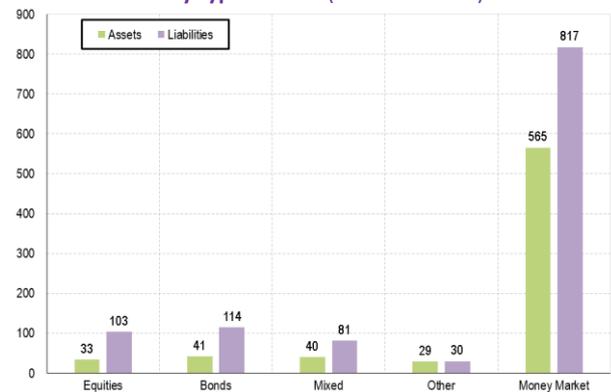
¹²⁵ They are materialised (i) in fund assets, by the equities and/or bonds of credit institutions or insurers held by funds domiciled in France, as well as holdings of funds domiciled in France by funds domiciled in France and (ii) in fund liabilities, by fund units held by credit institutions, insurers, or funds domiciled in France.

Figure 62: Distribution of the number of links to assets and to liabilities of funds, by entity



Sources: Data from Banque de France, AMF, ACPR, data for Q4 2016

Figure 63: Average total value of links in assets and in liabilities, by type of fund (in millions of €)



The existing links are distributed very unevenly across entities: the vast majority of network entities (which are mainly funds) have fewer than 10 links on either their assets or liabilities side (Figure 62). Only 6 entities (insurance companies) have more than 1,000 links with funds, by holding units of funds on their assets side, and 3 banks are invested by more than 1,000 funds. This network structure indicates the presence of a few entities very connected with the rest of the system, and this finding is verified over the entire studied period. Money market funds have the highest intensity of interconnection with the rest of the network, with an average of 8 links in their assets and 38 links in their liabilities. In amount, the total value of these links per fund averages 565 million euros on their assets side and 817 million on their liabilities side (Figure 63). Other types of funds (bonds, mixed, money market, and others) have a significantly smaller number of links, particularly on their liabilities side. The difference is even greater when the average amounts of links are considered. However, it is difficult to conclude on the nature of the risk resulting from the number of these links or their amounts: are they likely to increase the risk of contagion or reduce it through diversification? A degree of vigilance must be paid to funds that have little diversification of their interconnections on their assets and liabilities sides, as well as those whose interconnections are correlated.

Low density around a few pillar entities, which would therefore play a key role in a possible contagion

The network thus has the characteristics of a “small world” structure, where network participants tend to form small groups among each other, while being accessible through a small number of links (3.24 on average)¹²⁶. This can be explained by the existence of hubs, that are hyper-connected between them, and to which small entities in the network will tend to be connected¹²⁷. On the fund assets side, these entities are banks but also money market funds. On the liabilities side, these are mainly insurers: this characteristic of the network is confirmed by the reading of Figure 64 and Figure 65.

This characterisation of the network may result in an increased risk of contagion in the event of a shock, once a pillar entity is affected.

¹²⁶ These levels are relatively low given the number of entities that make up the network. For example, Boss et al. (2004) find that the average shortest path is equal to 2.6 links for 883 banks in the Austrian banking system. See Boss et al. (2004), “Network topology of the interbank market”, Quantitative finance, Volume 4, 2004 - Issue 6.

¹²⁷ This characteristic of the network is measured by the assortativity – i.e., the propensity of two entities with a large number of links to be connected to each other – which shows in our network a negative value of -0.20, decreasing since 2010. The network is therefore increasingly disassortative: entities with few connections will tend to be connected to entities that have a more developed network.

3.3.4 Funds are more exposed to hubs on their liabilities side

Figure 64: Top 10 entities in fund liabilities

(In €M (left-hand scale) and in number of links (right-hand scale))

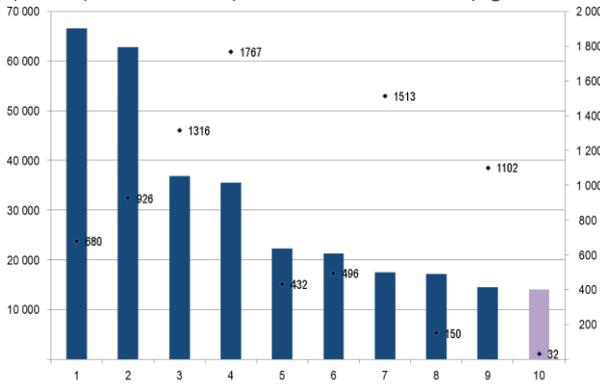
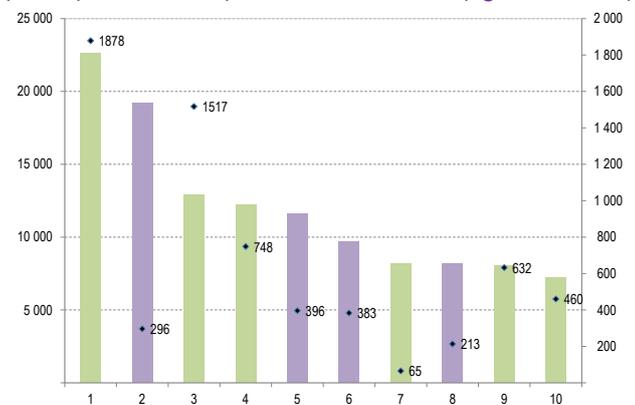


Figure 65: Top 10 entities in fund assets

(In €M (left-hand scale) and in number of links (right-hand scale))



Source: data from Banque de France, AMF, ACPR, data for Q4 2016

Note: The navy blue colour corresponds to insurers, the green colour to banks, and the mauve colour corresponds to money market funds. The largest network entity in liabilities invested 67 billion euros in the French asset management sector through 680 links. French funds hold 23 billion euros in assets of the top banking entity through 1,878 links.

The results suggest that the risk of concentration of investors or investments remains limited. The top ten entities (the ten largest investors in the liabilities of French funds) total 310 billion euros, less than 22% of their total liabilities. Apart from one money market fund, these entities are exclusively insurance companies. On the assets side, the ten largest holdings of French funds account for a total of nearly 120 billion euros (only 9% of total assets). These are banks (60% of total amounts) but also money market funds (40% of amounts).

Fund liabilities are more exposed to “pillar entities”, reflecting a concentration of investors

To support these results, an analysis of the concentrations of assets and liabilities of the funds shows which funds are significantly exposed to the French financial system¹²⁸. Only 491 funds representing 35 billion euros of assets under management (2.4% of total assets) have significant levels of exposure to the French financial system on their assets side. There are only 232 funds that are significantly exposed on their liabilities side (assets under management of 38 billion euros, or 2.6% of total assets).

3.3.5 At the level of financial groups, the interconnections are not very daunting

Lastly, the HCSF’s study focuses on indirect risks arising from potential links between management companies and banks or insurance companies belonging to the same group. During the 2007–2008 financial crisis, it appeared that several financial institutions (in particular, banks) supported troubled entities, particularly asset management firms, and that in a number of cases, these interventions (“step-in”) even took place when no contractual commitment required them to do so.¹²⁹ The analysis of interconnections, by considering them at the management company level, shows that their asset exposures do not give rise to an imbalance in favour of entities of their group. It is no surprise since this

¹²⁸ Analysis conducted by the calculation of the Herfindahl concentration index, with the strong assumption that a fund is highly exposed to the French financial sector when its assets are more than 50% invested in securities issued by entities of the French financial sector (or its liabilities are more than 50% owned by French financial entities).

¹²⁹ Moody’s estimates that around 60 analysed money market funds (out of 1,091 money market funds) received support worldwide. See Moody’s Investors service (2016), “Basel Committee Seeks To Capture ‘Step-In’ Risk Involved In Asset Management Activities, More Capital Charges Ahead”, April.

*No step-in risk on
the assets side, and
small exposure on
the liabilities side*

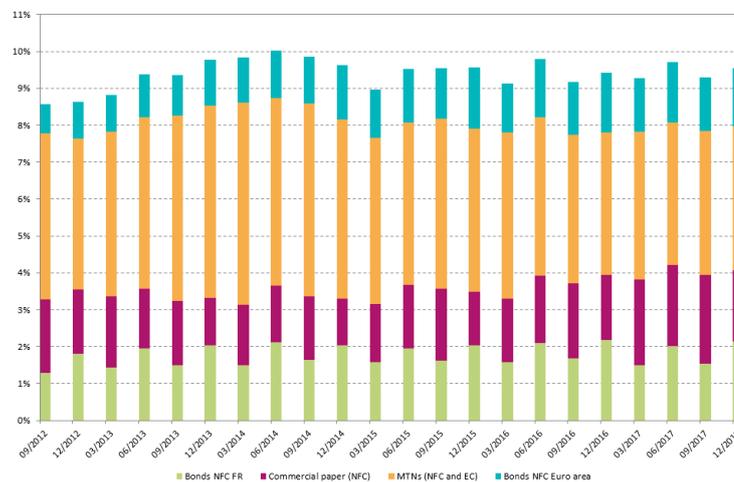
diversification stems from the micro-prudential diversification and management rules imposed on funds¹³⁰. On the other hand, on the liabilities side, a large majority of the amounts invested by banks and insurance companies in French funds are invested with funds of the same group. Nevertheless, the step-in risk seems low because of the amounts invested, which represent only 1% to 6% of total assets of French banking or insurance groups¹³¹. The largest exposure in a group is 60 billion euros, less than 4% of the assets of the entity concerned. The most exposed entity (an insurance company) has an exposure of 6% of its assets, representing 18 billion euros.

The detailed characterisation of the interconnections resulting from asset management in the French system presented in this study is an important contribution, which could be extended to other countries, for example to better characterise the European financial system. Although this analysis does not yet make it possible to apprehend the risk of the French system, the results could be incorporated into shock propagation models to assess how a shock can be amplified or otherwise mitigated through exposure to investment funds (Box 9).

3.3.6 The increase in indebtedness of French NFCs does not translate into an increase in the exposure of French funds to NFCs

The prolonged period of low interest rates has led many firms to borrow on the markets, and the HCSF was concerned not only about the risk of over-indebtedness of French non-financial companies (NFCs), but also about the vulnerabilities that excess debt could weigh on the asset management industry. The AMF therefore wishes to assess the exposure of French funds to the debt of French NFCs.

Figure 66: Structure of exposure of French funds to NFC debt



Source: Banque de France/AMF (CLA01)

¹³⁰ An undertaking for collective investment in transferable securities (UCITS), an employee savings fund, or a fund of alternative funds may not invest more than 10% of its assets in securities or money market instruments issued by the same entity. For retail investment funds or general professional funds, the investment ratio per issuer is increased to 20% and 35% respectively.

¹³¹ To assess the significance of these exposures, we report them in the consolidated assets of these groups.

*Fund exposure to
debt of French and
euro area NFCs
stable since 2013,
below 11%*

Two sources of data were used: one considers the aggregate assets of French funds by major family of securities and the other details the assets of funds line by line. Despite some differences in terms of scope and granularity, the results are consistent. It appears that the direct exposure of the assets of French funds to the debt of French non-financial companies has been relatively stable since 2012 (it represents around 8% of total assets)¹³². Adding euro area NFC bonds, the exposure remains below 10% of their assets. On an outstanding amount of French NFC debt securities equaling 620 billion euros at the end of 2017, it is estimated that French funds directly hold less than 120 billion euros. The indirect holding of NFC securities can also be estimated (through other funds) at around 1% of fund assets, which would imply a total exposure (direct and indirect) of French funds to debt of NFCs (French and euro area) of less than 11% of assets.

Of course, direct exposure is variable depending on the fund category, the most exposed being money market funds (20.1% for short-term money market, 15.7% for conventional money market), bond funds (13.6% for euro bond funds), and venture capital funds (15.9%).

3.4 THE EUROPEAN MONEY MARKET FUND MARKET IS AWAITING THE APPLICATION OF THE NEW REGULATION

3.4.1 A market polarisation by region, which raises fears of a geographical concentration of risk

The money market fund market is internationally concentrated around three main hubs representing 89% of the 4.919 trillion euros in global assets (excluding funds of funds)¹³³: United States, Europe (Ireland, France, and Luxembourg), and China. In 2018, each hub now has a regulation to meet the international recommendations of 2012¹³⁴, by strengthening the liquidity management requirements of these vehicles.

US money market funds continue to account for the majority of global assets (48%, with 2.374 trillion euros of assets), but their market share and assets were down at the end of 2017 (-6% and -8% annually respectively). Following the implementation of the US money market fund reform in October 2016¹³⁵, the rapid transformation of prime money market funds (funds with variable net asset value and targeted at institutional investors) into government funds (money market fund with constant net asset value, which benefit from fewer constraints in terms of liquidity management and exit restrictions) seems to have stabilised: in February 2018, US money market funds with constant net asset value, which remain more vulnerable to the risk of simultaneous redemptions, represent 74% of assets.

At the same time, the dazzling growth of the Chinese market is notable, with an increase in assets under management of 47% in 2017, driven by a record inflow of 368 billion euros¹³⁶. Chinese money market funds now account for 17.5% of global assets, with 863 billion euros. Lastly, the European hub, made up of Ireland, Luxembourg, and France,

¹³² The direct exposure of funds to NFC debt takes into account bonds (long-term receivables), commercial paper (short-term debt), and medium-term negotiable notes (MTNs). The figures mentioned here are upper bounds, as the available data do not distinguish between the MTNs issued by credit institutions (CI) and those issued by NFCs.

¹³³ EFAMA *International Statistical Report Q4 2017*.

¹³⁴ IOSCO (2012), "*Policy Recommendations for Money Market Funds*".

¹³⁵ See SEC (2014), "Amendments to Securities and Exchange Commission (SEC) rule 2a-7" and box 9 of the 2017 AMF risk mapping for an analysis of market developments following this reform.

¹³⁶ In December 2015, China also introduced new liquidity management constraints for Chinese money market funds, which include a supervision of the weighted average maturity, weighted average life, and portfolio diversification, as well as the introduction of liquidity fees and exit restrictions.

accounted for 23% of global assets under management with 1.143 trillion euros at the end of 2017. This polarisation by economic region may raise a double risk. First of all, the sector's concentration within funds with large assets: in first quarter 2018, a Chinese money market fund exceeded 200 billion euros in assets under management, and two US money market funds each account for more than 100 billion euros of assets¹³⁷. However, this risk is reduced by the existing constraints, in each region, in terms of diversification and portfolio holdings. The second risk is seeing money market funds concentrate the service of short-term financing needs of other geographical areas, accompanied by a consolidation of assets in very large funds highly interconnected with the rest of the financial system (see previous part). This risk seems mainly European, and limited for France. While most Irish and Luxembourg money market funds are sold to investors domiciled outside the euro area (82% and 68% respectively at the end of 2017, stable figures since 2010), because of their offer of money market funds denominated in foreign currencies, French money market funds are mainly invested by euro area residents (98%). Among these, there was a change in the proportion of holdings of French investors, which was stable at around 95% on average since 2006. In two years, holdings by domestic investors fell by ten points in favour of holdings of financial institutions of the euro area, which reached 12% at the end of 2017 (4% at end-2014)¹³⁸. Given the decline of other money market funds denominated in euros, the attractiveness of French money market funds seems to have strengthened with investors in the euro area.

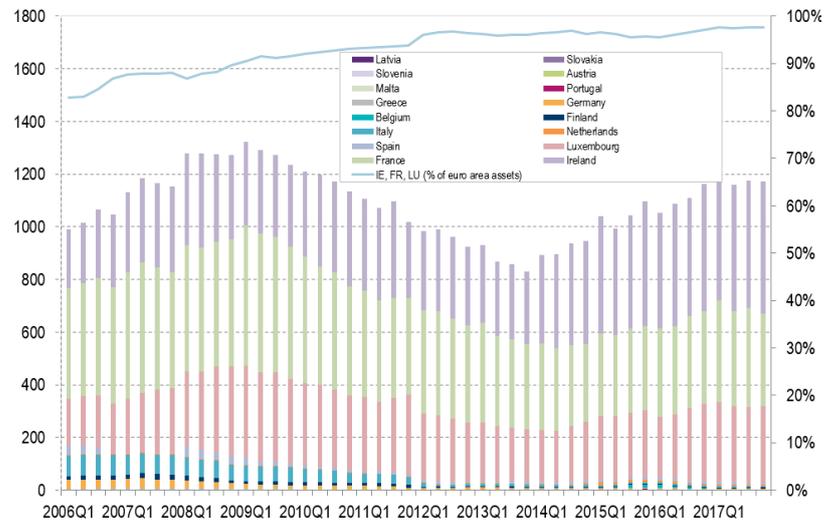
3.4.2 In Europe, a wait-and-see attitude among managers before the entry into force of the new regulation

The concentration of the European market around the three Irish, Luxembourg, and French markets has reached a new high point: their money market funds represent 98% of the euro area assets at the end of 2017 (Figure 67). The other euro area countries that had developed this activity saw their market decline gradually: only the Netherlands, Spain, and Italy (7.1, 6.3, and 4.2 billion euros of assets at the end of 2017 respectively) maintain a national market - together representing 1.5% of euro area assets, although all decreasing in 2017.

¹³⁷ In first quarter 2018, a Chinese money market fund (Yue Bao Money market, 205 billion euros of assets), and two US money market funds (JP Morgan US Government Money market fund and Fidelity Government cash reserves, respectively 110 billion euros each). The top European fund is number 10 in terms of assets under management, the Luxembourg JP Morgan Liquidity Funds, a fund in dollars with 74 billion euros of assets.

¹³⁸ Holdings by investors outside the euro area remain marginal, 2% at the end of 2017.

Figure 67: Evolution of assets of euro area money market funds, by country (in billions of euros) and share of the top three markets (as % of total assets)



Source: Banque de France

After three years of growth, euro area assets stagnated in 2017 (+0.6% growth over the year): while Irish funds continued to grow (+3.2%), French and Luxembourg funds saw their assets decline (-0.2% and -0.4% respectively). The interest rate environment, which remains very low, continues to weigh on the profitability of money market funds, whose European annual performances reached the low point of -0.3% at the end of 2017. Added to this context is the expectation of the implementation of the new European regulation, which will reinforce the strength of the sector, by the establishment of new constraints in terms of diversification and ownership limits on their assets side, management of liquidity and credit risk¹³⁹, supplemented by stress tests that could result in an action plan in the event of observed vulnerability, as well as regular, comprehensive reporting to the regulator¹⁴⁰. However, some of them may be expensive for managers (new reporting, knowledge of liabilities, independent assessment of credit risk, for example). It is therefore plausible that the market concentration, geographically but also within funds with large assets, will continue in Europe in order to benefit from economies of scale.

**A European
regulation that will
transform in depth
the money market
funds market**

The full implementation of the European regulation is scheduled for January 2019 at the latest¹⁴¹, with a change of market to be expected. Although the regulation wished to conserve the existing types of money market funds (CNAV and VNAV)¹⁴², funds wishing to use the amortised cost method, allowing them to report a constant value (formerly CNAV) now must either invest 99.5% of their assets in European or third-country public debt

¹³⁹ The funds will have to implement internal assessments of the credit quality of the portfolio securities and be able to anticipate the redemption behaviour of the fund's holders. Liquidity risk is also regulated through the implementation of liquidity ratios requiring that funds hold assets with a residual maturity of one day (at least 7.5% for V-NAV funds, at least 10% for CNAV and LVNAV funds) and one week (at least 15% for VNAV funds, at least 30% for the others). For CNAV and LVNAV funds, failure to comply with these ratios leads to exit penalties and the suspension of redemptions.

¹⁴⁰ See Regulation (EU) No. 2017/1131 of the European Parliament and of the Council of 14 June 2017 on money market funds, OJ L 169 of 30.6.2017, p. 8–45. For a more in-depth presentation of the new regulatory requirements, see the 2017 risk mapping, section 3.2.

¹⁴¹ Any new money market fund created since the regulation came into effect in July 2017 will need to comply with it as of 21 July 2018, and the funds that previously existed will need to comply no later than 21 January 2019.

¹⁴² Until implementation of the new European regulation, the two money market fund types are variable net asset value (VNAV) funds, which fluctuate each day based on the value of the securities in the portfolio, and CNAV funds, which have a constant NAV (USD 1 or EUR 1), as income is redistributed and straight-line accounting is used to smooth performance over time.

(public debt CNAV) or convert into a “low-volatility” hybrid fund (LVNAV), a new model introduced by the regulation¹⁴³. In all cases, the LVNAV and CNAV public debt funds must meet the conditions of short-term money market funds¹⁴⁴.

The finalisation of the delegated acts clarifies certain provisions of the regulation¹⁴⁵. While certain points of these delegated acts are likely to reduce the risks of the new European money market funds, several provisions require some vigilance.

*Stress tests allowing
for better risk
assessment at the
micro level, but not
macro*

Firstly, the collection of a new complete reporting, put in place starting in autumn 2019, may be an opportunity to better monitor these funds, using new information about their liabilities, their portfolio, their assessment of liquidity, or credit risk. Imposing new constraints of knowledge of their investors and anticipation of their redemption and subscription movements should lead to a decrease in the concentration risk of investors and unanticipated redemption movements. This improvement in the understanding of the evolution of the fund in the event of an adverse movement will also be supplemented by at least half-yearly stress tests, which must take into account changes in the level of liquidity, credit of assets held, but also redemption movements or other macroeconomic shocks. Their results should lead to an action plan in case of vulnerability observed if necessary. Already imposed by the UCITS or AIFM directives (governing previous money market funds)¹⁴⁶, these simulations imposed on the money market funds are now defined at the European level, and the results will have to be transmitted to the regulators. However, although the guidelines are defined by the ESMA on an annual basis¹⁴⁷, it is unfortunate that the proposed scenarios do not yet include one or more similar simulations for all European funds, to allow for a simultaneous exploitation of the results of these stress tests at the level of the entire market, in a logic of bottom-up macro stress tests (Box 9).

*European vigilance on
the use of destruction
of units for CNAVs*

Another point of vigilance concerns the destruction of units of constant net asset value funds. Unlike variable net asset funds, where the fund constantly reflects the performance of the fund, CNAV funds keep their value per unit stable. To keep the unit value at an unchanged level, they distribute to their investors all net income and gains generated by the fund and also use accounting techniques to smooth out their performance. However, in the event of a fall in the market value of the fund’s assets or massive withdrawals, as soon as the linearisation mechanism reaches its limits, the fund value may abruptly fall, a mechanism observed during the financial crisis. If the constant value per unit moves away materially from the market value per unit, then the constant value funds must switch to variable net asset value funds (the LVNAV funds will have to, for example, switch to VNAV funds, if this difference is 20 basis points). However, it appears that in recent years, many CNAV funds, denominated in currencies characterised by negative money market rates, have begun to resort to the destruction of units to offset these negative rates. This practice involves eliminating units to reflect a destruction of value in the portfolio’s assets. The lack of transparency of this practice, for the supervision of this market segment but

¹⁴³ They are considered hybrids because they can be converted, if their CNAV per unit repeatedly diverges from their shadow NAV, to a VNAV fund.

¹⁴⁴ Short-term funds have additional constraints regarding weighted average maturity (WAM), which must be less than 60 days, and weighted average life (WAL), which must be less than 120 days.

¹⁴⁵ The delegated acts concern the criteria for validation of credit risk assessment methods, which will now be internalised and carried out by the management company; the liquidity and credit risk requirements of the collateral used in reverse purchase agreements; the quarterly reporting model and the parameters and scenarios of the stress tests. See ESMA (2017), “Final Report - Technical advice, draft implementing technical standards and guidelines under the MMF Regulation”, November.

¹⁴⁶ See Directive 2009/65/EC and Directive 2011/61/EU, which impose the establishment of stress tests on a regular basis, but the definition of assumptions and variables of interest remain in the hands of the manager.

¹⁴⁷ See ESMA (2018), “Guidelines – Guidelines on stress tests scenarios under Article 28 of the MMF Regulation”, March.

also for investors who have no vision on the conversion value of their unit, is destabilising. It also maintains a first-mover advantage, which the monetary market regulation now constrains. It also permits circumvention of the LVNAV mechanism or the investor information requirement. This practice has been denounced by the European Commission, which considers it non-compliant with the European regulation¹⁴⁸. At the European level, funds' compliance with this prohibition will thus have to be monitored as it ensures disclosure and equal treatment of investors and allows for an appropriate risk assessment.

3.4.3 A French model for short-term financing of the economy under pressure

Following the entry into force of the regulation, the French market, which included only VNAV funds, will open up to constant net asset value funds, which, despite the European regulation, will remain more exposed to the risk of simultaneous redemptions than money market funds with variable net asset value¹⁴⁹. The extent of this development and its impact on investor protection are difficult to assess at this time. However, it is possible to anticipate a transformation of the market financing model.

A short-term financing market at risk of destabilisation

The French model is characterised by a strong financing of the national and European economy by money market funds (36% of the securities portfolio is invested in France, 25% in the rest of the euro area), unlike Irish and Luxembourg money market funds, invested 70% and 61% respectively outside the euro area at the end of 2017. This characteristic is also linked to the significant development of the French market of marketable securities in the short and medium term, which makes it possible to diversify the sources of financing of issuers¹⁵⁰. The French market has 365 issuers¹⁵¹, with outstanding issues of 281 billion euros in the short term (less than one year) and 55 billion euros in the medium term at the end of March 2018. The French market accounts for 80% of short-term and medium-term assets within the euro area, with issues mainly done by issuers domiciled in France (82%). These assets highlight the importance of this financing mechanism for bank issuers (77% of assets), for which the current balance of financing requirements is ensured, on the demand side, by French money market funds. Any market developments that would have an impact on purchases of money market funds could therefore affect the financing of the French economy in the short term.

French money market funds are suffering from investors' wait-and-see attitude and negative performance in 2017

In 2017, French funds underwent this period of transition towards the application of the new regulation (Figure 68). The need for new approval (for new funds) or obtaining additional approval (for existing funds) has generated a wait-and-see attitude on the part of managers. The slightly negative inflow (-251 M euros), added to a negative valuation (-787 M euros), translates into a fall in the net assets of French money market funds to 345 billion euros at the end of 2017. Their performance, which has been negative since February 2017, has also steadily declined to reach the low point of -0.25 year on year in February 2018, which may partly explain investors' hesitation.

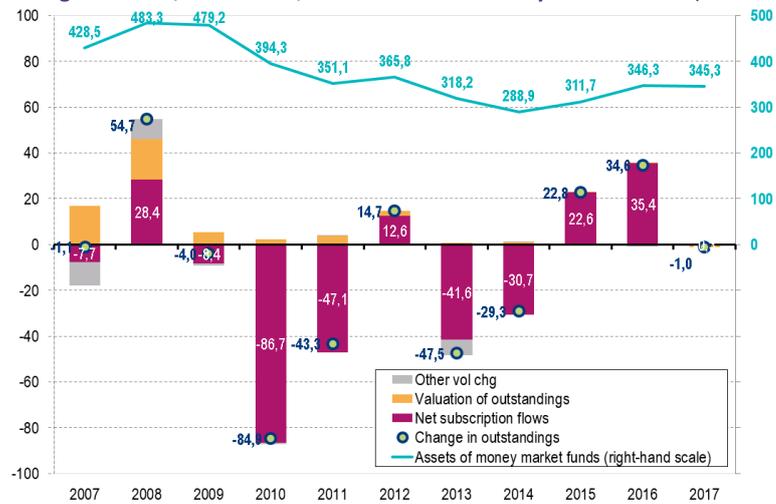
¹⁴⁸ Official letter from the European Commission to the Chairman of the ESMA available on the ESMA website and the European Commission. See <https://www.esma.europa.eu/press-news/esma-news/european-commission-letter-money-market-fund-regulation>

¹⁴⁹ In particular, in a recent publication, the ESRB points out that CNAVs remain more exposed to liquidity transformation risk. See ESRB (2017), "EU Shadow banking monitor no. 2", May. In addition, the ESRB's recommendations following the financial crisis called for legislation to require money market funds to have a variable net asset value – see ESRB (2013), "Recommendation of the European Systemic Risk Board of 20 December 2012 on money market funds", 2013/C 146/01.

¹⁵⁰ The advantage of this market over other short securities markets is that it allows securities to be created in real time, which can be accepted as collateral for Eurosystem refinancing operations transparently (dissemination of issuers' financial documents, statistics, and periodical studies on market developments).

¹⁵¹ At the end of April 2018, there were 216 financial issuers, 120 non-financial issuers, and 29 public issuers. The list is available on the Banque de France website. See <https://www.banque-france.fr/politique-monetaire.html>

Figure 68: Change in assets, net inflows, and valuation of money market funds (in billions of euros)

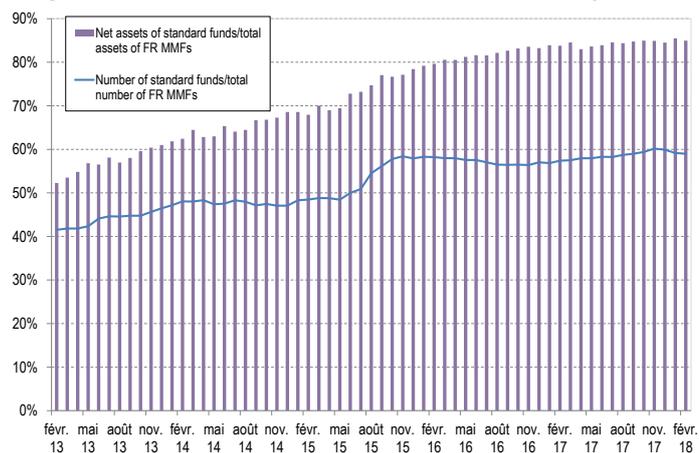


Source: Banque de France

A smaller search for yield and therefore less risk taking, despite negative performances

The second phase of falling interest rates since 2012 has led to a drastic reduction in the number of short-term money market funds, which have more difficulty obtaining yields when rates are low. The number of money market funds has been cut in half since the end of 2012, partly driven by a 64% decline in the number of short-term money market funds (Figure 69)¹⁵². During this period, while the assets of French money market funds have returned to the same point (-2%), assets of short-term money market funds fell by 71% (54 billion euros in February 2018), while those of standard funds increased by 67% (304 billion euros, or 85% of assets of French money market funds). This movement also led to the concentration of money market funds, only driven by standard funds, which rose from 1.1 to 2.37 billion euros of average net assets from the end of 2012 to February 2018¹⁵³.

Figure 69: Change in the share of standard funds in total French money market funds (as %)



Source: Banque de France.

This market movement also coincides with the rapid increase in the initial duration of short-term bank issues, rising from an average maturity of 24.5 days between 2007 and

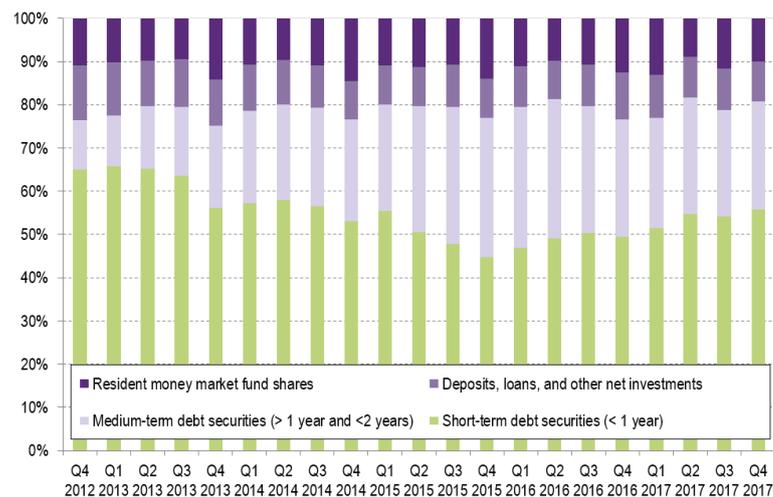
¹⁵² Short-term funds have additional constraints regarding weighted average maturity (WAM), which must not exceed 60 days (6 months for standard money market funds) and weighted average life (WAL), which must be less than 120 days (12 months for standard funds). Their requirements in terms of maturity of eligible securities in the portfolio's assets are therefore different.

¹⁵³ At the same time, short-term money market funds decreased from 740k to 600k euros in average net assets.

2012 to 94 days since then (112 days in 2017), because of the impact of prudential regulation. This offering of securities with a greater maturity had led to an increase in the holding of debt securities with a maturity of more than one year (while remaining below 2 years, given the regulatory constraints), reaching a high of 33% of the portfolio of French money market funds in first quarter 2016, while securities with a maturity of less than one year accounted for 47% of their portfolio.

However, in 2017, French funds returned to a strategy of lower maturities in their portfolio, with a rise in debt securities of less than one year to 56% of their portfolio (+7 pts over one year) and a decline in long-term securities to 25% (-2 pts). Despite the prevalence of standard funds, this lower risk is surprising in the context of negative yields and rates¹⁵⁴. Recent modelling of the behaviour of money market funds under a low interest rate scheme indicates a path of explanation: when interest rates decline, rather than seeking yield, all money market funds reduce their holdings of risky assets in order to maintain a cushion of secure assets that are safe, in order to keep their probability of default at a level of equilibrium¹⁵⁵.

Figure 70: Change in securities holdings of French money market funds based on the maturity of the securities held (as %)



Source: Banque de France.

¹⁵⁴ The 6-month Euribor index has been negative since November 2015, averaging -0.27 over first quarter 2018.

¹⁵⁵ Empirical and theoretical analysis performed on all US money market funds during the period from 2002 to 2008. A 1% decrease in the risk-free rate reduces the holding of risky assets by 0.25%. However, a rise in interest rates leads to a bifurcation of the behaviours according to their cost of default, i.e., their propensity to have an impact on the other funds held by the management company (assets of the money market fund out of total assets of the management company). Those with low default costs take more risks, whereas those with high default costs take fewer risks. G. La Spada (2015) "Competition, Reach for Yield, and Money Market Funds", Federal Reserve Bank of New York Staff Report 753, December, revision in January 2017.

CHAPTER 4: FRENCH HOUSEHOLD SAVINGS

4.1 REVIEW OF SAVINGS AND ASSET STRUCTURE

4.1.1 A relatively stable wealth structure since 2010...

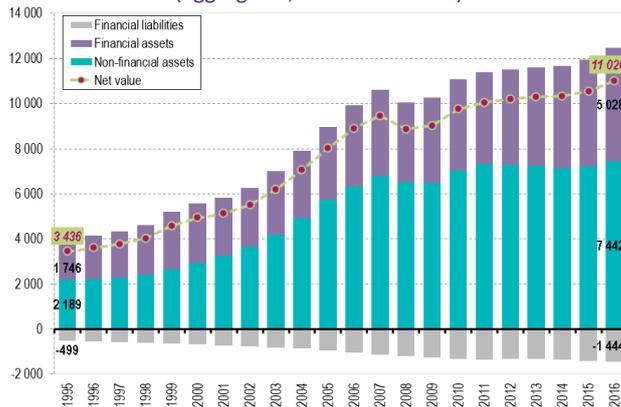
Broadly speaking, household net worth comprises three items:

- financial assets (such as bank accounts, life insurance, securities accounts, etc.);
- non-financial assets (such as land, buildings, artwork, etc.);
- financial liabilities (such as loans, on the minus side).

Financial assets fluctuate around 40% of gross household assets since 2001

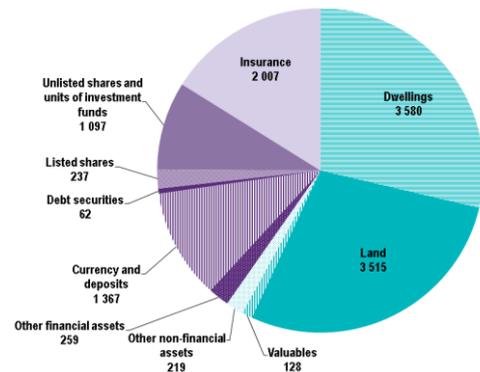
The French national statistical agency (INSEE) establishes the balance sheets of French households with a lag of one year. The latest published data correspond to the wealth structure at the end of 2016. Household assets represented 12,470 billion euros (+4.3% compared with 2015), for estimated liabilities of 1,444 billion euros (+1.7% compared with 2015).

Figure 71: Decomposition of household wealth¹⁵⁶
(aggregates, billions of euros)



Source: Insee, household balance sheet accounts (22/12/2017)

Figure 72: Structure of household assets at end-2016 (in billions of euros)



At the end of 2016, households' (gross) financial assets reached 5,028 billion euros, up 5.9% from 2015. Non-financial assets have increased by only 3.1% since 2015.¹⁵⁷

¹⁵⁶ Households include self-employed individuals but not non-profit institutions serving households (NPISH).

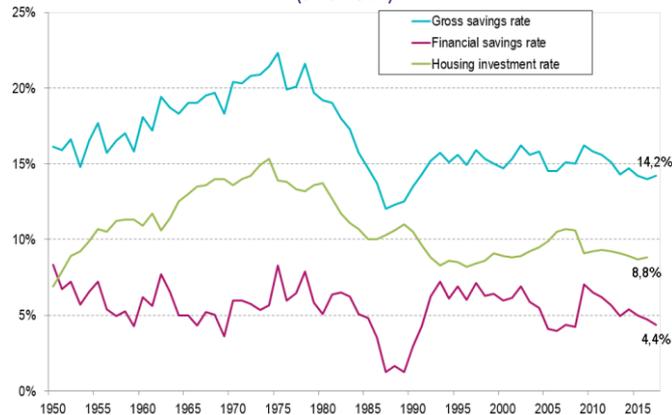
¹⁵⁷ The latest available data for an international comparison of gross financial and non-financial assets of European households are from 2014 (Household Finance and Consumption Survey). The study by Arrondel et al. (2016) presents the corresponding descriptive statistics: real estate (primary or secondary residence) represents 61% of the wealth of German households, versus 77% for Spanish and Italian households and more than 80% for Luxembourg households. According to this source, the proportion of real estate in the wealth of French households is two-thirds. see Arrondel, Luc, Laura Bartiloro, Pirmin Fessler, Peter Lindner, Thomas Y. Mathä, Cristiana Rampazzi, Frédérique Savignac, Tobias Schmidt, Martin Schürz and Philip Vermeulen (2016). How Do Households Allocate Their Assets? Stylized Facts from the Eurosystem Household Finance and Consumption Survey. *International Journal of Central Banking*, 12(2): 129-220

4.1.2 ...but a financial savings rate below the average of the last 20 years

In 2017, the savings rate for French households¹⁵⁸ was 14.2% of gross disposable income (GDI)¹⁵⁹, a slight rebound compared with 2016, but still below the average observed since the 1990s (see Figure 73). In 2017, the household financial saving rate¹⁶⁰ edged down to 4.4%, near the low points observed between 2005 and 2008.

In 2016, the financial saving rate was the around its lowest point since 1992

Figure 73: Household gross savings rate and financial savings rate
(% of GDI)



Source: Insee, Datastream

Note: The most recent value of the housing investment rate corresponds to 2016 (INSEE), while the other series are available on Datastream until 2017

4.1.3 Financial savings held by households

4.1.3.1. Overall structure of financial savings

The national financial accounts (established by the Banque de France) make it possible to specifically study French households, to the exclusion of self-employed individuals.¹⁶¹ The rest of the chapter focuses on this perimeter. It is also possible since 2018 to distinguish life insurance strictly speaking from pension rights and other pension funds.

Household financial savings flows into the main types of vehicles¹⁶² amounted to 97 billion euros in 2017 (up 10 billion euros from 2016, Figure 74).

¹⁵⁸ Including self-employed individuals.

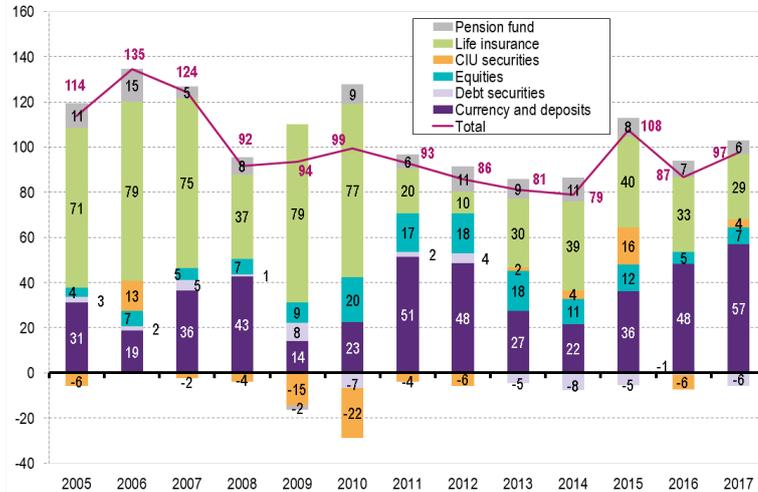
¹⁵⁹ Households' gross disposable income (GDI) includes "all income from activity, investments, and social benefits less direct taxes and social security charges" (INSEE).

¹⁶⁰ The financial savings rate is the ratio of household cash flow (savings plus net capital transfers less outlays for capital accumulation) to GDI.

¹⁶¹ The figures in the Banque de France's publications generally consider a broader definition of households, including households, self-employed individuals, and non-profit institutions serving households (NPISH). This difference in scope explains any differences with the figures presented here.

¹⁶² Loans granted by households, accounts receivable/payable, and premium and claims reserves (property & casualty insurance) are not included in the analysis. When all financial assets and liabilities are considered, households' net financial savings (flows) totalled 57.3 billion euros in 2017.

Figure 74: Households' main financial investment flows
(net annual flows, in billions of euros)



Source: Banque de France¹⁶³, national financial accounts, base year 2010, AMF calculations

Bank savings (at a record high) and life insurance continue to capture household savings flows

In 2017, French households invested 57.1 billion euros in cash and bank deposits. The marked trend towards concentration of savings flows on bank investments continues. This is the strongest inflow on this type of vehicle since 1995. Life insurance remains the second-most popular destination for household financial savings, with net inflows of 28.8 billion euros in 2017, even though there has been a steady decline since 2015.

Directly held listed equities undergo net outflows.

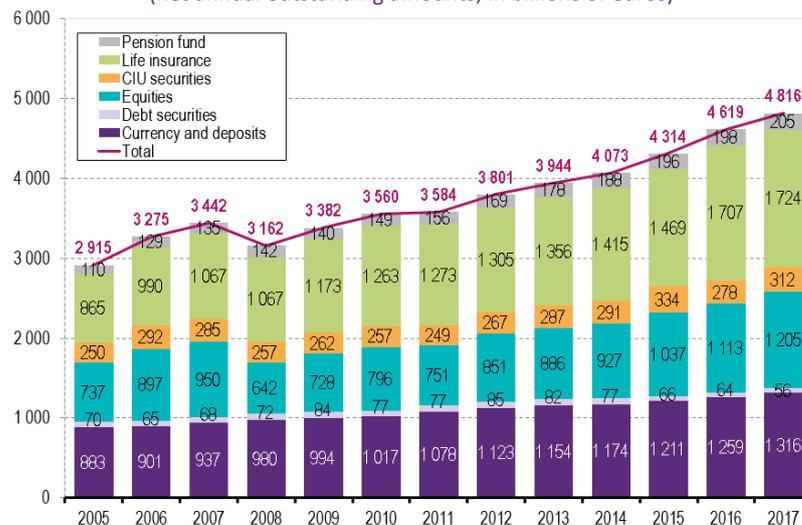
The direct holding of equities is 7.5% based on the Kantar TNS survey conducted in March 2018¹⁶⁴. This rate confirms the increase observed in 2017 compared with 2016 (7.6% versus 6.2%). Savings flows on equities held directly were generally positive in 2017 (+7.3 billion euros), but this aggregate result hides in fact a net outflow of 4.1 billion euros on listed shares and positive flows on unlisted shares (+4.1 billion euros) and on other investments (+7.3 billion euros), these two items corresponding almost entirely to family business shares held by households. However, the Banque de France notes an increase in the number of equity savings plans (PEA) in fourth quarter 2017 (+167,490 plans), after an almost continuous decline since fourth quarter 2014 (beginning of the series). The assets in these plans reached 92.8 billion euros at the end of 2017. However, there may be fears that products deemed risky, such as equities, will be sold less in the future. To be offered a product, the client must present a profile in line with the target market defined in the regulatory documentation since the introduction of MiFID2. Too strict a reading of the texts could lead to excluding some new investors, in search of diversification for example, from investing in shares. A particular attention should be paid to avoid this undesirable understanding of the regulation.

¹⁶³ The data on household financial wealth are taken from the national financial accounts published by the Banque de France and are regularly revised: in year n+1, the data for the previous year (n) are published provisionally, those pertaining to year n-1 are revised and considered semi-final, while the data for year n-2 are revised for the last time before being considered final. These revisions explain the differences observed with regard to the Risk Outlooks issued in previous years.

¹⁶⁴ Annual survey conducted by post of a panellised sample of more than 12,000 French people aged 15 and over about their holdings of financial products.

The cumulative assets of the main financial assets held by households represented 4,816 billion euros at the end of 2017, or 197 billion euros more than last year. In 2017, the valuation effect led to an increase in household assets of 92.3 billion euros, mainly due to collective investment undertakings (CIU) and equities (+28.2 billion for non-money market CIU, +27.6 billion for listed equities, +47.3 billion for unlisted equities). However, life insurance (euro and unit-linked funds) suffered from a negative valuation effect (-12.6 billion euros) (Figure 75).

Figure 75: Households' main net financial assets
(net annual outstanding amounts, in billions of euros)



Source: Banque de France, national financial accounts, base year 2010, AMF calculations

4.1.3.2. A powerful comeback of sight deposits

Household bank savings flows have been rising steadily since 2014. Four years ago, bank vehicles benefited from a net inflow of 21.6 billion euros, compared with 57.6 billion euros in 2017 (Figure 76).

Fiat money (banknotes and coins) has represented a relatively stable savings flow since 2005, ranging between 2.6 and 5.3 billion euros per year.

Transferable deposits (deposits that can be immediately converted into cash or are transferable by cheque, transfer, debit, or other means without significant fees or major restrictions) posted a record inflow in 2017 (+30.5 billion euros).

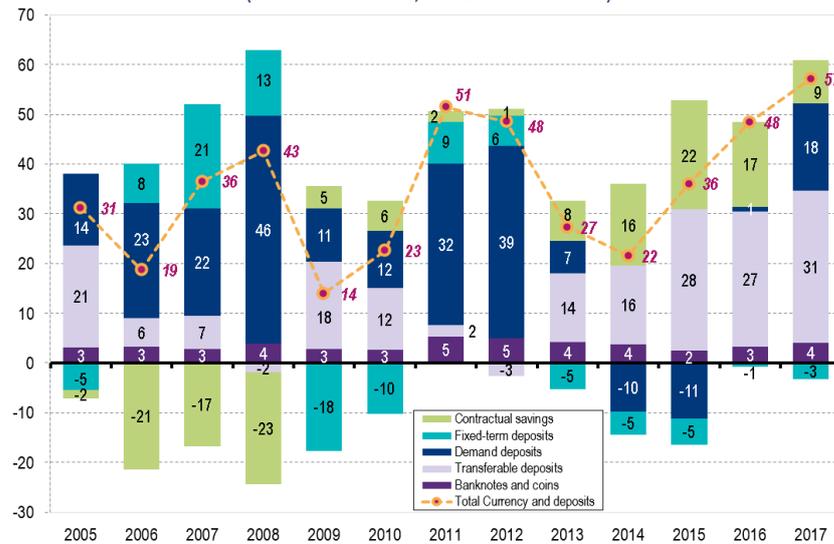
Sight deposits (Livret A passbooks, etc.) are enjoying a renewed appeal

Households paid 17.5 billion euros on sight deposits (*Livret A* passbooks, *Livret Bleu* passbooks, LDDS (sustainable development and solidarity) passbooks, popular savings passbooks, youth savings passbooks, home-savings and taxable passbook accounts). These vehicles had net outflows in 2014 and 2015 and captured only 0.9 billion euros in 2016. This was the most significant development on banking vehicles.

In the face of eroding returns on capital-guaranteed life insurance (euro funds), totally tax-free savings products have seen renewed interest.

Contractual savings (housing savings plans (PEL), business savings passbooks, popular savings plan (PEP), PEA cash account) captured 8.8 billion euros in 2017, a figure down significantly from 17.1 billion one year earlier.

Figure 76: Decomposition of savings flows into cash and deposits
(net annual flows, in billions of euros)



Source: Banque de France, national financial accounts, base year 2010, AMF calculations

4.1.4 Closer look at real estate funds and employee savings

In past years, many households have turned to real estate funds to invest their savings¹⁶⁵. It is therefore interesting to look at whether the previously observed trends are confirmed in 2017.

The increase in assets continues on real estate funds and employee savings

The estimated market value at the end of 2017 for the net assets of real estate funds – collective investment undertakings in real estate (OPCI), collective profession investment undertakings in real estate (OPPCI), and real estate investment companies (SCPI) – reached 100 billion euros, up 17 billion from the end of 2016.

In one year, the net assets of OPCI/OPPCI grew by 24%, from 45 billion euros at the end of 2016 to 56 billion euros at the end of 2017 (+11 billion euros). For their part, SCPIs saw their net assets increase by 6 billion euros, from 43 to 49 billion euros (+16%).¹⁶⁶

According to preliminary data from the ASPIM (French association of real estate investment companies)¹⁶⁷, the net inflow was also dynamic for real estate funds in 2017. It amounted to 4.21 billion euros for “general public” OPCIs, a 5.5% increase compared with 2016.

¹⁶⁵ 2017 Risk Outlook, AMF, July 2017.

¹⁶⁶ See Banque de France (2017). Financial overview of French CIUs, 4th quarter 2016, *Stat Info*, 24 February 2017 and Banque de France (2018). Financial overview of French CIUs, 4th quarter 2017, *Stat Info*, 28 February 2018

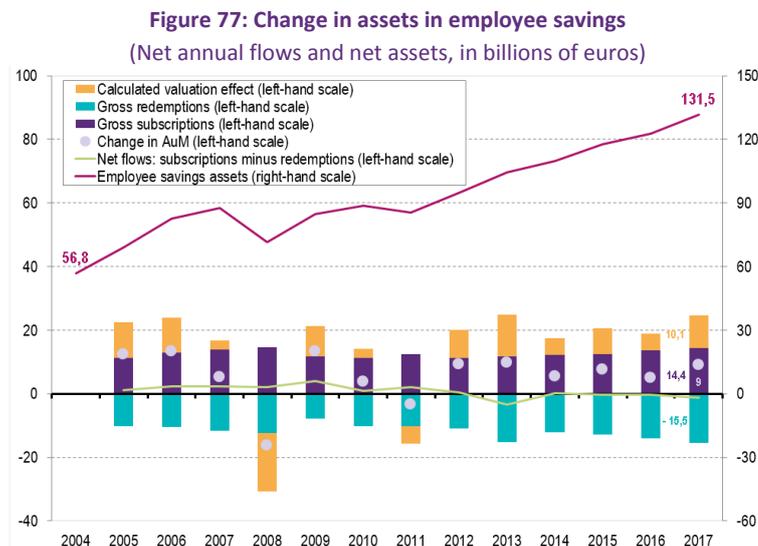
¹⁶⁷ Les SCPI et les OPCI en 2017: encore une année record, ASPIM news release, February 2018 (in French).

On the liabilities side of funds, Banque de France notes that households account for 36% of unitholders, and insurance companies account for 56% (mainly for households through life insurance).

However, given the significant share of physical real estate in the wealth of French households, it may be wondered whether the popularity of real estate funds does not pose a risk of concentration and does not further expose households to the potential market downturn.

Lastly, an analysis limited to the scope of employee savings – employee savings plans (PEE), employee share ownership funds (FAS), group retirement savings plans (PERCO) – supplements the study on savings of French households. In the statistics previously addressed, employee savings schemes were included in the CIU shares (“other funds” category of the national accounts).

According to the AFG (French asset management association), employee savings schemes represented an asset of 57 billion euros in 2004 and 132 billion euros at the end of 2017. Over the entire period, gross redemptions and gross subscriptions offset each other almost exactly every year. The change in assets would therefore almost exclusively be the result of valuation effects. However, the use of these data shows that the average annual return of employee savings would then be approximately 6% over the period, which seems high.¹⁶⁸ The increase in assets therefore undoubtedly reflects an improvement in the coverage of data collection.



Source: AFG, Six Financial, Europerformance.

It should also be noted that employee savings could be boosted by the PACTE law, which aims to increase access to these mechanisms.

¹⁶⁸ According to the performance indices published by the AFG and Europerformance for employee funds (FCPE), the average annual performance of the bond funds between December 2004 and December 2017 was 2.6%, with that of equity funds reaching 5.2% and that of the diversified funds amounting to 3.6%. The performance of money market funds is not indicated.

4.1.5 Household behaviour impacted by the reform of savings taxation in France?

The 2018 finance act¹⁶⁹ provides for the establishment of a single flat-rate levy of 30% (including social security charges - SSC) on financial capital gains and income (article 28). Previously, the income tax on movable capital (interest and dividends) as well as capital gains was calculated on the basis of the progressive income tax schedule: the applicable taxation therefore depended on the taxpayer's overall income. However, the new scheme provides that households may opt for taxation according to the income tax schedule where it would be more advantageous than the flat-rate levy scheme.

Within the new tax framework, regulated passbooks (*Livret A*, sustainable development and solidarity passbook, popular savings passbook, youth savings passbook) remain exempt from all taxes. However, the income from the new housing savings plans and accounts become fully taxed and therefore subject to the 30% flat-rate levy (these vehicles were previously subject only to social security charges).

Lastly, the 30% flat-rate levy does not apply to life insurance policies of less than 150,000 euros, PEAs, and PEA-PMEs, which continue to be eligible for declining taxation with the age of the policy (while paying social security charges).

Table 3: New taxation applicable on income from capital (according to holding duration, noted d)

	PEA			Securities account	Life insurance: case of a policy taken out after 26 September 1997											
	Tax rate	Social security charge rate	Final rate		premia paid after 27 September 2017			premia paid before 27 September 2017								
					Tax rate	Social security charge rate	Final rate	Tax rate	Social security charge rate	Final rate						
d < 1 year	22.50%	17.20%	39.70%	30.00%	12.80%	17.20%	30.00%	35.00%	17.20%	52.20%						
d < 2 years																
d < 3 years																
d < 4 years	19.00%	17.20%	36.20%								15.00%	17.20%	32.20%			
d < 5 years																
d < 6 years	0.00%	17.20%	17.20%								< €150 k: 7.50%	17.20%	24.70%	7.50%	17.20%	24.70%
d < 7 years											> €150 k: 12.80%	17.20%	30.00%			
d < 8 years											Annual allowance of €4600 (€9200 for a couple) after 8 years					
d > 8 years																

in green: possibility of choosing "SSC + individual income tax" taxation instead of the fixed rate

Source: Service-Public.fr, AMF calculations.

Since 1 January 2018, the social security charge rate has been 17.2% (it had been 15.5% since 1 January 2012). The 30% single flat-rate deduction therefore actually corresponds to a 12.8% cap for the income tax rate.

The difference in taxation between a PEA and a conventional securities account is reduced by the reform: PEAs would be even more taxed than conventional securities accounts before five years of holding. This may reduce incentives to invest in PEA-eligible vehicles relative to others (i.e., securities outside the European Union).

In addition, the 2018 finance act eliminated the ISF wealth tax to introduce the IFI real estate wealth tax, thus reducing taxes on the movable assets.

All these measures aim to harmonise the taxation of savings and encourage investment in corporate securities. They aim to correct the fiscal bias disfavouring investment in equities.

¹⁶⁹ Finance act no. 2017-1837 of 30 December 2017 for 2018

Article 28: https://www.legifrance.gouv.fr/eli/loi/2017/12/30/CPAX1723900L/jo/article_28

Article 31: https://www.legifrance.gouv.fr/eli/loi/2017/12/30/CPAX1723900L/jo/article_31

4.2 TRANSPARENCY AND INFORMATION PROVIDED TO INVESTORS

In order to protect the savings invested in financial products, the AMF ensures that the information provided to investors is clear, accurate, and not misleading, enabling investors to make informed choices about their investments. This transparency of the provided information is notably required for investment funds sold to individuals and may relate to the management objective, the fees charged, or the scope of investment.

4.2.1 The existence of closet index funds, if proven, would call into question the non-misleading nature of the information given to investors

Since the mid-2000s, many academic studies have sought to measure the active nature of the management of savings invested in investment funds, in particular to analyse whether the level of activity could predict the future performance of the investment fund. Measures of fund activity were sometimes later used to test whether actively managed funds were actually actively managed. Empirical studies have revealed the existence of closet index funds or closet trackers. These are funds that declare to be actively managed, although they actually perform similarly to their benchmarks, in terms of risk/return profile, while charging fees close to that billed by funds implementing truly active management. The harm is then twofold for investors who received inaccurate and misleading information and were charged unjustified management fees. Although the definition of a closet index fund seems rather simple, the detection of such funds is not so easy in practice. At what point is a fund deemed too close to its index? Which metric should be used to compare the fund's performance with the index's performance? What about funds not reporting a benchmark? The complexity of the notion of closet index funds is reflected in the diversity of methods proposed by the academic literature to identify them.

The presence of closet index funds would adversely harm investors: in terms of fees charged and in terms of misleading information

Among the empirical studies that attempt to quantify fund's activity, the study by Cremers and Petajisto (2009)¹⁷⁰ is the reference. The authors assess the active nature of management through two metrics. The first, called "active share", calculates the deviation of the composition of the fund's portfolio relative to the fund's benchmark index. The active share varies between 0% and 100%. The higher it is, the more a fund's management will be considered active. The second metric is the tracking error and measures the deviation between the fund's return and its benchmark index's return. A high tracking error may be indicative of active management.

Given the potential damage to investors, some financial regulators have taken an interest in the subject. Some of them have taken measures against funds suspected of being closet index funds. This is the case for the Norwegian regulator, which in 2015 demanded that DNB Bank, the largest Norwegian bank in terms of capitalisation, take corrective actions¹⁷¹. In the United Kingdom, an initial analysis by the Financial Conduct Authority (FCA)¹⁷² conducted on 23 investment funds presented as active shows that 5 of them in fact had a closet fund profile. More recently, in March 2018, the UK regulator announced that 34 million pounds in compensation has been paid to investors¹⁷³.

¹⁷⁰ Cremers, M., & Petajisto, A. (2009): "How active is your fund manager? A new measure that predicts performance", *Review of Financial Studies*, 22(9), 3329-3365.

¹⁷¹ Finanstilsynet (2015): "Management of equity funds-Corrective order 14/5784", 2 March.

¹⁷² Financial Conduct Authority (2016): "Meeting investors' expectations Thematic Review TR16/3", April

¹⁷³ FCA press release of 14/03/2018, <https://www.fca.org.uk/firms/authorised-and-recognised-funds/closet-trackers>

The ESMA also conducted a quantitative study to identify potentially closet index funds among European equity funds using the Cremers and Petajisto method. The results published in February 2016 estimate the proportion of dubious funds at between 5% and 15%, depending on the criteria applied¹⁷⁴. The identified funds were then analysed by each jurisdiction with more qualitative criteria. Regarding the identified French funds, after a quantitative and qualitative analysis, the AMF considered that they could not be considered closet index funds. However, this study does not give an opinion on the absence of closet index funds within the French management. The subject is still relevant for the ESMA, which is now seeking to move closer to national regulators in order to take stock of individual initiatives.

However, the active share indicator, developed by Cremers and Petajisto and used by ESMA, has many limitations, particularly when applied to European funds. This is why the AMF wanted to test an alternative method in a study published in July 2018¹⁷⁵. This method is based on the four-factor model by Fama, French, and Carhart. The estimation of the model provides three indicators to measure a fund's activity. This study highlights the diversity of methods that can be used to measure the active nature of an investment fund. However, no purely quantitative method is sufficient to assess the degree of activity of a fund and does not make it possible to go without a more qualitative analysis on a case-by-case basis.

4.2.2 The PRIIPs regulation aimed at better comparability of products but has faced difficulties in application

The EU regulation on key information documents for retail packaged investment products based on insurance called "PRIIPs regulation" came into force in January 2018¹⁷⁶. It defines the pre-contractual information to be provided to retail investors before the availability of an investment product, so that they can easily compare the product offering and assess its main features in relation to their objectives and needs. To do this, the regulation puts in place a key information document (KID), in a standardised format. The PRIIPs regulation applies to all investment products made available to retail investors, as long as their performance directly or indirectly, partially or totally, depends on market fluctuations. Its scope is therefore very broad and includes, in particular, investment funds (UCITS or AIF), banking products, or unit-linked life insurance policies.

The KID was born from a strong idea: bringing together the information necessary for investors into a single summary document common to a multitude of products that are sometimes very different. It therefore aims to harmonise the information provided to investors and to allow for better comparability between different products, particularly in terms of risks, costs, and performance. It must also be written in non-technical language to make it easier for investors to understand. The PRIIPs regulation therefore contributes to improving the information and understanding of investors about the products offered to them.

¹⁷⁴ Several thresholds and indicators were tested by ESMA. For an active share below 60% and a tracking error below 4%, the proportion of potential closet index funds is 15%. With an active share below 50% and a tracking error below 3%, this proportion is 7%. Lastly, for an active Share below 50%, a tracking error below 3%, and a R^2 above 95%, the proportion of potential closet trackers falls to 5%.

¹⁷⁵ Closet index funds: a contribution to the debate in Europe, Anne Demartini and Natacha Mosson, AMF Risks & Trends, June 2018.

¹⁷⁶ The PRIIPs regulation came into effect on 1 January 2018, except for UCITSs already producing a KIID (key investor information document) that have a transitional period until 31 December 2019 during which they must continue to issue a UCITS KIID.

In some cases, future performance scenarios show abnormally high or even absurd results

However, implementation difficulties have been noted. Such has been the case particularly for future performance scenarios, which could be misinterpreted by investors. The KID provides four future performance scenarios: favourable, moderate, unfavourable, and stress. These four performance scenarios serve to illustrate the behaviour of the proposed product according to different market configurations. However, there is concern that these performance scenarios will be interpreted by investors as an expectation of future performance or even a commitment on the part of the manager. The interpretation of these scenarios can therefore prove to be complicated, and their informational content may be limited. This is especially true given that these future performance scenarios can generate results that are difficult to interpret. For example, a warrant call whose underlying is the CAC 40 posts an average annual return of nearly -29,000% in case of the unfavourable scenario and an average annual return of more than 21,000% for the favourable scenario (Table 4).

Table 4: Performance scenarios of a warrant call having the CAC 40 as its underlying

Investment of 10,000.00 euros		
Scenarios		Reference period (1 calendar day)
Stress scenario	What you might get back after costs	0.00 euros
	Average return each year	-36,500.00 %
Unfavourable scenario	What you might get back after costs	2,021.55 euros
	Average return each year	-29,121.33 %
Moderate scenario	What you might get back after costs	5,896.39 euros
	Average return each year	-14,978.17 %
Favourable scenario	What you might get back after costs	15,775.63 euros
	Average return each year	21,081.05 %

In addition, in order to provide greater transparency to investors, all charges borne by them are now presented. Costs borne by investors are classified into three categories: one-off costs (including entry and exit fees), recurring costs (including transaction costs and other management fees) and incidental costs (including performance commissions in particular). The detailed presentation of all charges borne by investors is a step forward and allows investors to be better informed. However, the method used to calculate transaction costs may result in a misleading result. One of the methods of calculating transaction costs corresponds, for a purchase order, to the difference expressed as a percentage between the execution price and the price at the time of the transmission of the order (arrival price) and, for a sell order, the difference between the price at the time of transmission of the order (arrival price) and the execution price. However, the execution price and the arrival price may differ, which may be the case when orders on the same security for a significant amount are placed by other participants. This therefore amounts to calculating and posting a cost over which the manager has no influence and which does not reflect the quality of the management implemented. In addition, in certain cases, the calculation method may lead to negative transaction costs¹⁷⁷, which is not understandable for an investor. Lastly, given that transaction costs are reduced to the recommended holding period, transaction costs for short-term products appear disproportionate, which makes it difficult to compare products.

Similarly, one of the methods used to calculate transaction costs may lead to negative transaction costs

¹⁷⁷ For multi-vehicle or unit-linked life insurance, the insurer has the option, until 31 December 2019, to use the UCITS KIID to provide information about the underlying investment options. In this case, the fund must also provide certain information in PRIIPs format, including the transaction costs calculated according to the methodology applicable to PRIIPs products of less than 3 years and which is based on the value of the bid-ask spread of the instruments held by the fund. In a joint letter dated 13 April 2017, the FFA (French insurance federation) and the AFG (French financial management association) urged their members to use this option, which cannot lead to negative transaction costs.

Lastly, a risk indicator makes it easy to compare the risk of different products. This indicator is obtained by combining a market risk indicator and a credit risk indicator, on an increasing scale from 1 to 7. However, the risk indicator does not provide any information in absolute terms; in particular, it does not provide information about the potential capital loss.

Faced with the risk that investors will misunderstand or not understand, the AMF wishes to support investors to ensure that the provided information is intelligible, and it is calling for a review of the regulation.

4.2.3 Are investment fund fees always transparent?

4.2.3.1 Performance fees

Investment funds may choose whether to establish performance fees. These are fees that are additional to ongoing charges and are variable: they will be levied only if the manager exceeds a fixed performance target. To date¹⁷⁸, this commission is the subject of a separate presentation in the KIID: the commission rate, the target to be achieved to trigger the levy, the period over which the target must to be achieved, and the rate levied for the previous period must be clearly indicated.

In 2016, these performance fees averaged 5% of the turnover of French asset management companies¹⁷⁹. In principle, the existence of performance fees should allow for an alignment of the manager's interests with those of its investors. However, no common regulation currently exists, at the European or national level, to establish the procedures for charging these fees. The IOSCO issued in 2004¹⁸⁰, then recalled in 2016¹⁸¹ recommendations about the establishment and deduction of performance fees. In particular, they called for performance fees to be calculated on a history of at least one year.

It is clear that these recommendations are not always respected in the European Union, whereas in France, the AMF has decided to enforce the IOSCO recommendations for all French UCITS approved by it¹⁸² to guarantee better investor protection. The AMF noted that certain foreign funds marketed in France deducted performance fees on a quarterly or half-yearly basis or according to a triggering threshold that was not consistent with the fund's risk/return profile. This is the case, for example, for certain equity funds that collected performance fees when their performance was positive or the fund outperformed the EONIA (which is currently negative). For these funds, it is clear that the trigger for the performance fee is not in line with the management objective and that the alignment of interests with investors is not ensured¹⁸³. Investors then see their

The terms for deduction of performance fees in certain funds are contrary to the interest of investors

¹⁷⁸ The KIID format currently used, implemented by the UCITS Directive 2009/65/EC and its implementing regulations, will be transformed in 2019 with the entry into force of the PRIIPs regulation 1286/2014.

¹⁷⁹ The study scope covers 590 asset management companies. For more details, refer to the AMF's "Chiffres clés 2016 de la gestion d'actifs" published in December 2017 (in French only).

¹⁸⁰ OICV (Nov. 2004), *Final Report On Elements Of International Regulatory Standards On Fees And Expenses Of Investment Funds*.

¹⁸¹ OICV (August 2016), *Good Practice for Fees and Expenses of Collective Investment Schemes Final Report*.

¹⁸² Incorporated into Article 314-78 of the AMF General Regulation, clarified in AMF Position DOC-2012-12.

¹⁸³ The AMF's Enforcement Committee also sentenced Trecento Asset Management for having caused harm to the holders' interests, treated the holders unfairly and provided insufficient information to the holders, as a result of 1) the method adopted to calculate the funds' performance fees and 2) through the removal of the cap set to the performance fees. For further details, see the decision n°12 of the AMF's Enforcement Committee dated 13th December 2017 (in French only).

performance decreased by performance commissions that could not have been deducted if the fund had complied with the IOSCO recommendations of good practices.

4.2.3.2 Turnover fees

Some funds may also choose to charge turnover fees on buy and sell transactions on the portfolios. These fees could appear legitimate if the portfolio movements are justified and reasonable and the amount of these fees is consistent with the strategy pursued (for example, some difficult-to-access markets, such as emerging markets, may result in additional costs for the manager, reflected in the turnover fees). However, these fees are not presented separately in the UCITS KIID; they are included in the ongoing charges, which raises a concern in terms of transparency with regard to investors. This is why the AMF remains vigilant about the weight of these fees in the revenue of management companies.

4.2.4 The increased transparency of SRI (socially responsible investment) funds provide a better understanding for investors

Many SRI products coexist with practices that are sometimes very different, which can lead to confusion for investors

Investors are increasingly interested in the consideration of environmental, social, and governance (ESG) criteria in their investments. The survey conducted for Vigeo Eiris and the French social investment forum (FIR) by Ipsos Mori in 2017¹⁸⁴ shows that nearly one in two French people considers environmental and social impacts to be important in their investment decisions. However, the survey also shows that SRI products are not widely offered by distributors, since 66% of respondents reported that they have never heard of this concept. However, it seems that SRI products will grow in the future given the interest among investors. In addition, SRI products could encourage investors looking for diversification to turn to the financial markets more, as the same survey showed that 41% of respondents believe that SRI products would enhance their confidence in the management of their savings.

In December 2017, the AMF published a report on responsible investment in collective management¹⁸⁵ in which it shows the diversity of practices and concepts with regard to SRI funds. There is currently no single definition, at the European or national level, of an SRI product or the criteria that it must meet. Many products therefore coexist with practices that are sometimes very different, which can lead to confusion for investors. Two market labels were recently created to start the harmonisation of these products: the “transition énergétique et écologique pour le climat” [energy and ecological transition for the climate] (TEEC) label was created in late 2015, and the SRI label was created in January 2016. These labels are awarded subject to respecting a number of criteria that contribute to the transparency of the French market. However, not all funds claiming SRI have obtained the SRI label, which may be misleading for investors if a fund that has not obtained the label uses the same terminology as the funds that have received the label. The AMF has also found very different practices between SRI funds, particularly in terms of tools used to assess non-financial criteria or human resources dedicated to implementing SRI management. It is not always easy for investors to see concretely how the fund’s management contributes to sustainable development and influences the governance and behaviour of financial players. The AMF therefore urges management

¹⁸⁴ For more details, refer to the website at: <http://www.vigeo-eiris.com/fr/les-francais-et-lisr-resultats-de-la-8eme-enquete-ipsos-pour-vigeo-eiris-et-le-fir/>

¹⁸² For more details, refer to the full report: http://www.amf-france.org/en_US/Publications/Rapports-etudes-et-analyses/Epargne-et-prestataires?docId=workspace%3A%2F%2FSpacesStore%2F2e257eee-d2e0-4a99-9264-4b3311073060&langSwitch=true

companies to provide more educational information in their communications with investors.

Despite a clear improvement in the information provided to investors, there is still progress to be made. In its first report from 2015, the AMF highlighted the lack of information from SRI funds, which did not always allow investors to understand the concrete impact of the SRI concept on the fund's management. In 2015, the AMF found that out of a sample of 102 CIUs advertising SRI characteristics, information was missing in 74% of cases. This percentage dropped significantly in 2017 to 29%, but improvements can still be made. However, it should be noted that Article 173 of the LTECV (French energy transition for green growth act) requires management companies and institutional investors to present their approach for taking ESG criteria into account, which should foster greater transparency.

4.2.5 The harmonisation of the eligibility rules of financial assets for UCITS assets will make it possible to achieve full European regulatory convergence

Management companies are subject to European regulations allowing them, in particular, to carry on their activities throughout the European Union provided that they obtain approval from the authority of their country of origin, thanks to the passport system. The eligibility of financial assets for UCITS assets is also subject to a regulation: the Eligible Assets Directive (2007/16/EC) and the UCITS IV Directive (2009/65/EC). However, national regulators sometimes have differing interpretations as to the eligibility of certain assets. This is particularly the case for cat bonds or delta-one certificates.

Cat bonds (catastrophe bonds) are market-based insurance instruments issued by insurance or reinsurance companies through a special-purpose vehicle to cover large-scale claims (drought, earthquake, storm, etc.) in a given area. If the loss does not occur, these securities behave like bonds and pay a high coupon. Otherwise, the holder of the bond loses all or part of the interest, or even the nominal amount (the corresponding funds are used by the insurers to compensate the insured). According to the Eligible Assets Directive, a financial asset must meet liquidity, transparency, and valuation conditions in order to be considered eligible. However, some European regulators consider cat bonds to satisfy these three eligibility criteria. Certain funds approved in the European Union can therefore hold up to 100% of their assets in cat bonds and be sold to French investors through the European passport.

A similar situation is found in the case of delta-one certificates. A delta-one certificate is a bond instrument whose performance is tied to that of an underlying instrument with a delta of 1: a 1% change in the value of the underlying instrument results in a 1% change in the value of the certificate. A delta-one certificate can take many forms (Exchange Traded Commodity, Euro Medium Term Note, Exchange Traded Note). The Eligible Assets Directive specifies that if an instrument is tied to the underlying through a derivative embedded in the instrument, the underlying must be eligible in order for the instrument to be eligible. However, the AMF considers delta-one certificates to incorporate a derivative. Their eligibility for the assets of a UCITS therefore depends on the eligibility of the underlying. This is not the view of some European regulators for whom delta-one certificates do not incorporate derivatives and can therefore be eligible (under certain liquidity conditions) even if the underlyings are not. It is therefore possible for certain European funds to have 100% of their net assets exposed to delta-one certificates backed by the same non-eligible asset, such as commodities.

Funds invested mainly in products that are sometimes illiquid and may be difficult for an investor to understand can therefore be sold to French investors through the passport,

which raises the issue of investor protection, especially for individual investors. That is why the AMF is pushing for harmonisation of the eligibility rules within the European Union.

4.3 UNUSUAL INVESTMENT OFFERS

4.3.1 Short sales cycles come in succession for speculative or unusual products

Thanks to its “Épargne Info Service” (EIS), the AMF has noticed a decreased number of information requests, complaints, and reports received regarding trading on forex markets or highly speculative products, such as contracts for difference (CFD) and binary options, since 2015.

Figure 78: Annual number of information requests, complaints, and reports received by the AMF



Source: AMF

The ESMA’s product intervention measure will strengthen protection for European investors

The Sapin 2 law (promulgated on 9 December 2016) greatly contributed to the decrease in requests starting in first quarter 2017 by banning the advertising¹⁸⁶ of these products (and facilitating the closing of offending sites)¹⁸⁷. In order to guarantee a minimum level of protection for all investors in the European Union, the ESMA decided at its Board of Supervisors meeting of 23 March 2018 to take product intervention measures¹⁸⁸ to prohibit or restrict access for individuals to highly speculative products such as CFDs and binary options. As such, the marketing, distribution, and sale of binary options to individuals will be prohibited starting in July 2018 for binary options and August 2018 for CFDs. With regard to CFDs, their marketing, distribution, and sale to individuals is permitted provided that the following exist for these products:

- a leverage limit (different according to asset class);
- automatic closing of positions once losses reach 50%;
- protection against a negative balance per account;
- communication of certain alerts by the investment services providers about the risks involved; and

¹⁸⁶ More specifically, the Sapin 2 law prohibits electronic advertising for binary options and CFDs without intrinsic protection.

¹⁸⁷ Over the past three years, a total of 138 illegal websites offering forex and binary options have been closed.

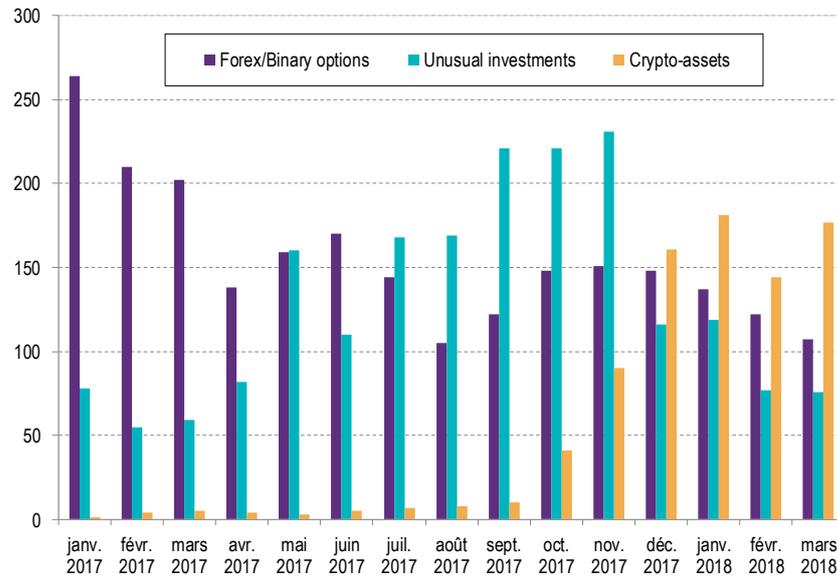
http://www.amf-france.org/en_US/Actualites/Communiqués-de-presse/AMF/annee-2018?docId=workspace%3A%2F%2FspacesStore%2Faae2d833-ac96-4eb0-b2a7-4d0b445cf7c7&langSwitch=true

¹⁸⁸ MiFID2 provides this new power for the ESMA and the competent national authorities in specific cases, such as a threat to investor protection.

- a ban on providing monetary or non-money market benefits in connection with the supply of CFDs.

At the same time, new investment offerings in unusual investments have emerged, particularly for diamonds, and more recently on crypto-assets. In fact, out of the 1,670 information requests, complaints, and reports received by the AMF in 2017 regarding unusual investments, 1,467 concerned investment diamond platforms. Since the Sapin 2 law, these players, who fall under the intermediation of miscellaneous assets scheme, are required to submit an information document to the AMF and obtain a registration number prior to any commercial communication and any direct marketing campaign. However, to date, no provider offering to invest in diamonds has been issued this registration number. This led the AMF to publish a new blacklist of websites that violate the intermediation of miscellaneous assets scheme starting on 24 July 2017, and this list is updated on an ongoing basis. The EIS platform has therefore seen a decrease in information requests, complaints, and reports received on investment diamonds since the end of 2017 (Figure 79).

Figure 79: Monthly number of information requests, complaints, and reports received by the AMF



Source: AMF

There are concerns that certain players in forex and binary options are redeploying on other products

Following the intensification of the regulator's pressure on illegal websites offering trading in forex or binary options, the players quickly turned to investment diamonds and miscellaneous assets. The regulator was able to react quickly to contain this new wave thanks to the tools made available by the Sapin 2 Law. However, the end of 2017 was marked by the emergence of investment offers on crypto-assets, such as Bitcoin, suggesting that fraudulent players have been able to shift their focus to this trendy asset. Nevertheless, the current legal and regulatory framework is not adapted to these new products, which strongly constrains the AMF's ability to act.

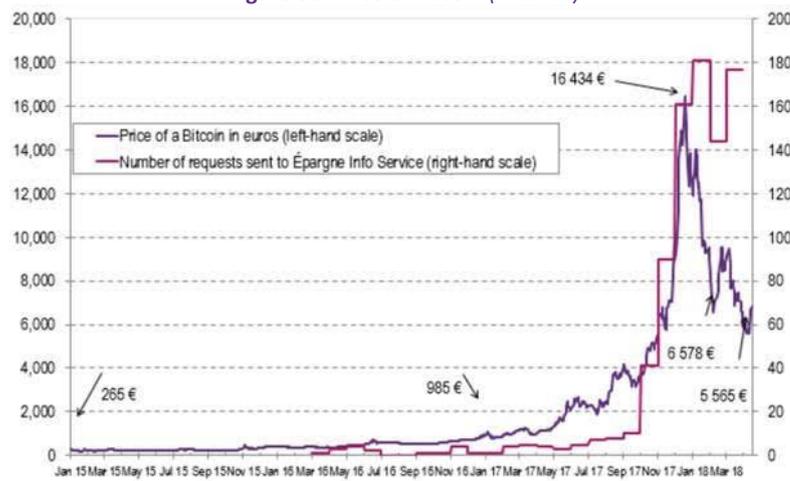
4.3.2 Crypto-asset investment offers are booming

Crypto-assets seem to be conducive to the development of a speculative bubble. High volatility in valuation poses significant risks for investors

Crypto-assets are suspected of promoting money laundering and tax evasion

On 18 December 2017, the price of Bitcoin reached a value of 16,434 euros, compared with only 985 euros on 2 January of the same year. Bitcoin's spectacular rise and the media's interest around blockchain technology have attracted the attention of many retail investors looking for better returns for their savings and easy gains. For investors who entered to market in late 2016, their stake was multiplied by nearly 18 in less than a year, representing a return of around 1,560%. However, investors who entered in December 2017 saw their portfolio lose more than half of its value starting in February 2018. The three European financial supervisory authorities (ESMA, EBA, EIOPA) issued a warning to households on 12 February 2018 to remind them of the risks associated with crypto-assets, in particular the extreme volatility, the risk of a bubble, and the lack of protection.¹⁸⁹ Moreover, although the G20 finance ministers and governors acknowledged, in their March 2018¹⁹⁰ news release, the benefits that crypto-assets and distributed ledger technologies (DLTs) were likely to bring to the financial system and, more broadly, to the economy, they did highlight the risks regarding investor protection, market integrity, tax evasion, money laundering¹⁹¹, and terrorist financing that could be associated with them. They therefore called on international standard setters to monitor the development of crypto-assets and the associated risks as well as to consider the appropriateness of international responses.

Figure 80: Price of Bitcoin (in euros)



Source: Thomson Reuters Datastream, AMF

¹⁸⁹ <https://www.esma.europa.eu/press-news/esma-news/esas-warn-consumers-risks-in-buying-virtual-currencies>

¹⁹⁰ https://g20.org/sites/default/files/media/communiqué_fmcbg_march_2018.pdf

¹⁹¹ Despite the "transparent" nature claimed by public blockchains (all transactions can be freely consulted online), anonymity is the rule for crypto-asset transactions.

Apart from its holder, no one can link an account number to a natural person or legal entity.

Despite what their name may suggest, crypto-currencies and other crypto-assets are not covered by the legal definition of a currency or even, in most cases to date, a financial instrument under French law, which raises the issue of the competence of the various authorities. However, an in-depth legal analysis conducted by the AMF¹⁹² led to the conclusion that crypto-asset derivatives (regardless of the legal nature of the underlying) could qualify as financial contracts and should therefore be subject to the regulation applicable to the offer of financial instruments in France and in particular to the rules of the Monetary and Financial Code concerning approval, good conduct, and the ban on advertising.

Public issues of tokens, initial coin offerings (ICO), have also grown. ICOs are fundraising efforts carried out through a distributed ledger technology by entrepreneurs. This new mode of financing allows developers to have potential future users fund the development of their projects at a very early stage. These transactions are carried out within a much shorter period of time than conventional private equity transactions, for amounts that are higher than those that could be raised through bank debt, and avoids the dilution of the company's capital.

The legal nature of tokens can be highly variable from one transaction to another. The rights conferred on their holders are described in an information document whose quality and degree of precision remain highly variable. Some tokens can be treated as equity securities, giving rights to any future profits from the project, or even rights to the governance of the company behind the project. In most cases, though, they simply give a right to the future use of the service proposed by the entrepreneur, at a preferred rate (utility tokens).

*Towards a
regulatory
framework
combining financing
of the economy,
support for
innovation, and
investor protection*

The initial valuation of the token during its issue ("primary market") remains questionable. In some cases, tokens can be traded on a "secondary market" at a price determined by the interaction between supply and demand at a given moment. Investors are thus betting on the project's success and the future appreciation of the token's value (if it is actually traded on a "secondary market").

Like other crypto-assets, tokens generally do not have the characteristics that qualify them as financial instruments in France¹⁹³. Nevertheless, as long as a promise of a return is made in the advertising of these offers or if the issuer offers a buy-back option to the investor, the "intermediation in miscellaneous assets" regime must apply, and the advertising documents must be approved by the AMF. Unless they indeed qualify as financial instruments or fall within the intermediation in miscellaneous assets regime (which is rare), ICOs, and other investment transactions on crypto-assets are currently outside the scope of the regulation.

In order to develop a legal framework that would combine support for innovation with investor protection, the AMF conducted a public consultation on ICOs at the end of 2017¹⁹⁴ and intends to continue the work of defining a regime specific to ICOs. The PACTE act, in preparation, could give the AMF a legal framework to support its action.

¹⁹² Analysis of the legal qualification of cryptocurrency derivatives, AMF, February 2018.

¹⁹³ see the definition of the French monetary and financial code (Art. L 211-1)

¹⁹⁴ The consultation took place between 26 October and 22 December. For more details, refer to the publication: <http://www.amf-france.org/Actualites/Communiqués-de-presse/AMF/annee-2018?docId=workspace%3A%2F%2FSpacesStore%2F57711a6c-4494-4215-993b-716870ffb182>

LIST OF ACRONYMS

ACPR	<i>Autorité du contrôle prudentiel et de résolution / French prudential control and resolution authority</i>	FED	United States Federal Reserve
EIOPA	European Insurance and Occupational Pensions Authority	FES	<i>Fonds d'épargne salariale / Employee savings fund</i>
AEMF	<i>Autorité européenne des marchés financiers (ESMA)</i>	AIF	Alternative investment fund
AFME	Association for Financial Markets in Europe	FICC	Fixed Income Commodities and Currencies
AFG	<i>Association française de la gestion / French asset management association</i>	FIR	<i>Forum pour l'investissement responsable / French social investment forum</i>
AIFM	Alternative Investments Funds Managers	FIVG	<i>Fonds d'investissement à vocation générale / Retail investment fund</i>
AMF	<i>Autorité des marchés financiers</i>	IMF	International Monetary Fund
ANC	<i>Autorité des normes comptables</i>	FOMC	Federal Open Market Committee
ASPIM	<i>Association française des sociétés de placement immobilier / French association of real estate investment companies</i>	FRN	Floating Rate Notes
ECB	European Central Bank	FSAP	Financial Sector Assessment Program
BEA	Bureau of Economic Analysis	FSB	Financial Stability Board
BIS	Bank for International Settlements	FSMA	Financial Services and Markets Authority
BMR	Benchmark Regulation	GC	General collateral
MTN	Medium-term negotiable notes	HCSF	<i>Haut conseil de stabilité financière / High Council for Financial Stability</i>
BIS	Bank for International Settlements	HFT	High Frequency Trading
CCP	Central Counterparty Clearing	ICO	Initial Coin Offerings
CDS	Credit default swap	ICMA	International Capital Market Association
ESRB	European Systemic Risk Board	IFC	Irving Fisher Committee
CFTC	Commodity Futures Trading Commission	IFI	<i>Impôt sur la fortune immobilière / Real estate wealth tax</i>
CME	Chicago Mercantile Exchange	IMF	International Monetary Fund
CNAV	Constant net asset value	INSEE	<i>Institut national de la statistique et des études / French national institute of statistics and economic studies</i>
CSPP	Corporate Sector Purchase Programme	IOSCO	International Organisation of Securities Commission
KID	Key Information Document	IPO	Initial Public Offering
KIID	Key Investor Information Document	SI	Systematic internaliser
<i>DNB</i>		SRI	Socially Responsible Investment
DVC	Double volume cap	ISBLSM	<i>Institutions sans but lucrative au service des ménages / Non-profit institutions serving households</i>
EBBO	European Best Bid and Offer	ISF	<i>Impôt de solidarité sur la fortune / Wealth tax</i>
ECC	Economic Consultative Committee	LIBOR	London Interbank Offered Rate
ECB	European Central Bank	LIS	Large in Scale
EFAMA	European Fund and Asset Management Association	LSEG	London Stock Exchange Group
EIB	European Investment Bank	LTECV	<i>La transition énergétique pour la croissance verte / Energy transition for green growth</i>
EIS	<i>Épargne Info Service</i>	LTRO	Long-term Refinancing Operations
EMIR	European Market Infrastructures Regulation	LVNAV	Low-Volatility Net Asset Value
EMMI	European Money Markets Institute	MIF	<i>Directive sur les Marchés d'Instruments Financiers</i>
EONIA	Euro OverNight Index Average	MiFID	Markets in Financial Instruments Directive
ESG	Environmental, Social, and Governance Criteria	MMSR	<i>Money Market Statistical Reporting</i>
ESMA	European Securities and Markets Authority	RM	Regulated market
ESRB	European Systemic Risk Board	NAV	<i>Net asset value</i>
ETF	Exchange Traded Fund	NCAAs	<i>National Competent Authorities</i>
EU	European Union	NIS	<i>Network Information and Security</i>
EURIBOR	Euro Interbank Offered Rate	NT	<i>Negotiated Traded</i>
FAS	<i>Fonds d'actionnariat salarié / Employee share ownership fund</i>	OAS	<i>Option-adjusted spread</i>
FCA	Financial Conduct Authority	OICV	<i>Organisation internationale des commissions de valeurs (IOSCO)</i>
FCPE	<i>Fonds commun de placement d'entreprise / Employee mutual fund</i>	OMF	Order Management Facility
		CIU	Collective investment undertaking
		OPCI	<i>Organisme de placement collectif immobilier / Real estate collective investment undertaking</i>
		UCITS	Undertaking for Collective Investment in Transferable Securities
		OPEC	Organization of the Petroleum Exporting Countries

OPCI	<i>Organisme de placement collectif immobilier / Professional real estate collective investment undertaking</i>
OTC	Over the counter
OTF	Organised Trading Facility
PEA	<i>Plan épargne en actions / Share savings plan</i>
PEE	<i>Plan épargne entreprise / Company savings plan</i>
PEL	<i>Plan épargne logement / Housing savings plan</i>
PEP	<i>Plan épargne populaire / Popular saving plan</i>
PER	<i>Price Earnings Ratio</i>
PERCO	<i>Plan d'épargne retraite collectif / Collective retirement savings plan</i>
GDP	Gross domestic product
SME	Small and medium-sized enterprises
ISP	Investment services provider
PSPP	Public Sector Purchase Programme
GDI	Gross disposable income
RFQ	Request For Quotes
RFR	Risk Free Rates
RTS	Regulatory Technical Standards
SARON	Swiss Average Rate OverNight
SC	Specific Collateral
SCPI	<i>Société civile de placement immobilier / Real estate investment company</i>
SEC	Securities and Exchange Commission
AMC	Asset Management Company
SHS	Securities Holding Statistics
MTF	Multilateral Trading Facility
SNB	Swiss National Bank
NFC	Non-Financial Company
SOFR	Secured Overnight Funding Rate
SONIA	Sterling OverNight Index Average
SPV	Special Purpose Vehicle
TEEC	<i>Transition énergétique et écologique pour le climat / Energy and Ecological Transition for the Climate</i>
HFT	High Frequency Trading
TOIS	TOm-next Index Swap
TR	Trade Repositories
EU	European Union
VNAV	Variable net asset value
WAM	Weighted Average Maturity
WAL	Weighted Average Life
WFE	World Federation of Exchanges

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