

1. Key developments

The European economy remains in a recovery path amid favourable global conditions and improved economic sentiment. Despite the overall positive macroeconomic outlook and declining unemployment, inflation remains subdued and persistently below the ECB target, susceptible to energy prices. Therefore, a substantial degree of monetary stimulus with direct impacts on the real economy remains expected to foment underlying inflation pressures, with net asset purchases by the ECB currently at a monthly pace of EUR 30 billion since January 2018.¹

Fragilities in the financial market became evident after equity corrections occurred in the beginning of February 2018, which followed an increase of market volatility in the beginning of the year. Although the impact on European markets was relatively limited, the combination of a persistent low yield environment, high uncertainties involving elections in several countries and continued Brexit negotiations still contribute to the risk of a sudden yield spike scenario.

Climate related risks are considered top global risks in 2018. Weather related disasters are not only becoming more severe but are also occurring more frequently. The emerging climate risks pose threats in particular for the insurance industry, as insurers act simultaneously as investors and underwriters: on the one-hand, the transition towards a low-carbon economy could lead to the repricing of assets held in carbon-intensive industries (especially relevant for life insurers with large investment portfolios), while, on the other hand, non-life insurers could be confronted with unexpected losses due to more extreme weather events. Actions beyond innovations on risk management techniques, new analytical tools and development of loss prevention solutions are needed for a fundamental shift towards sustainable insurance in the face of climate related risks. In this respect, insurers have increasingly been incorporating green alternatives in their business and investment decisions. A close monitoring of this trend is warranted, however, to examine the risk of a possible green bubble developing.

While climate risks are challenging insurers, they also present business opportunities. Demand for weather hedging is growing, while technological advances bring better risk modelling techniques and improved data quality to assess the underlying risk. Several initiatives aimed at developing and promoting sustainable finance have been taken as well, such as the European Commission's Action Plan for a greener and cleaner economy. All those initiatives are drivers for new types of sustainable investments. Green bonds are emerging as one of the most prominent investment strategies to achieve these objectives. In this respect, the scope of the insurance sector is still limited to their portfolio investments rather than an active role on issuance of green bonds.

Concerning technological developments, the insurance industry faces similar challenges. On the one hand, the digital transformation makes insurers themselves increasingly susceptible to cyber attacks, with significant operational and reputational risk. This could affect business continuity, undermine confidence in the sector and threaten financial stability. On the other hand, demand for cyber insurance is growing, providing insurers with the opportunity to develop new products. So far, most cyber insurance is offered in the US, but the European cyber insurance market is expected to grow significantly over the coming years as well. Further monitoring of this relatively new market by supervisors remains crucial, as the high inherent volatility of

¹ Intended to be in place until the end of September 2018.

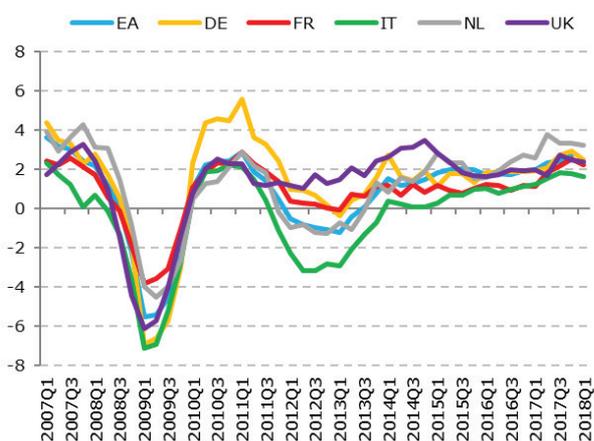
cyber risks and difficulties in assessing and pricing the underlying risk pose significant challenges. A lack of data and the scarcity of specialized cyber-underwriters exacerbates this problem.

Lastly, the rise of InsurTech also creates opportunities for insurers and new entrants, through improved customer interaction, risk modelling, streamlining of information systems and/or more efficient claims handling. Over time, this could lead to a more fragmented insurance sector, where specialized players increasingly take up a part of the insurance value chain. Ultimately, a more diversified insurance sector could strengthen financial stability, though close monitoring is needed to ensure an orderly transition process without interruption of key insurance services.

1.1. Low yields and signs of volatility

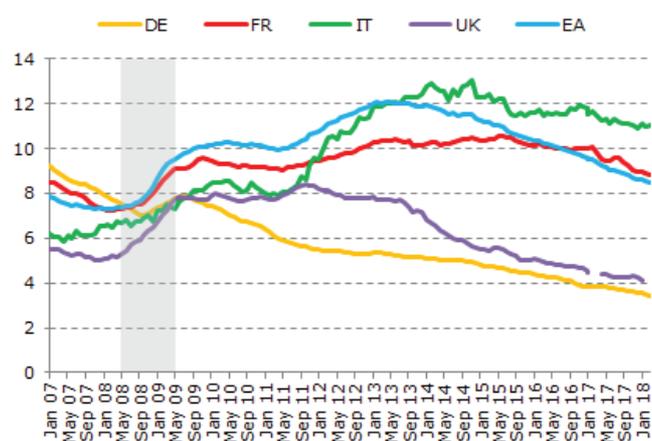
The euro area (EA) economy continues to experience positive economic growth despite global and domestic uncertainties (Figure 1.1 and Figure 1.2). Real GDP rose by 2.7 percent overall in 2017 (compared to 1.9 percent in 2016). The labour market continues to improve as well, which together with accessible financing conditions, helps boost private consumption (Figure 1.3).

Figure 1.1: Real GDP growth (%)



Source: Eurostat
Last observation: Q1 2018

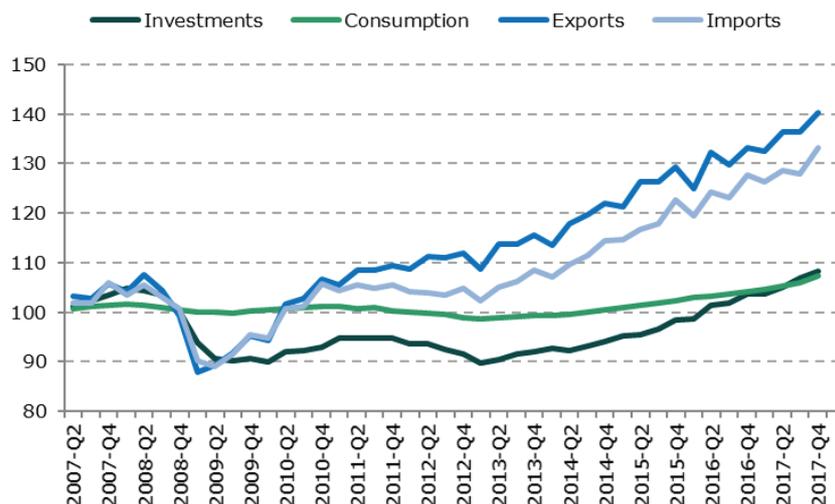
Figure 1.2: Unemployment rate (in %)



Source: Eurostat
Last observation: 31/03/2018

The positive economic development is mainly driven by higher investments, continued private consumption and robust exports steered by the current global expansion. The continuation of the strong trade momentum is, however, being challenged by the rise of protectionist trends around the globe, which increase uncertainties on the potential effects on exchange rates, on business and consumer confidence and on the consequences of possible retaliations.

Figure 1.3: Indexed GDP Components (2007Q1=100)

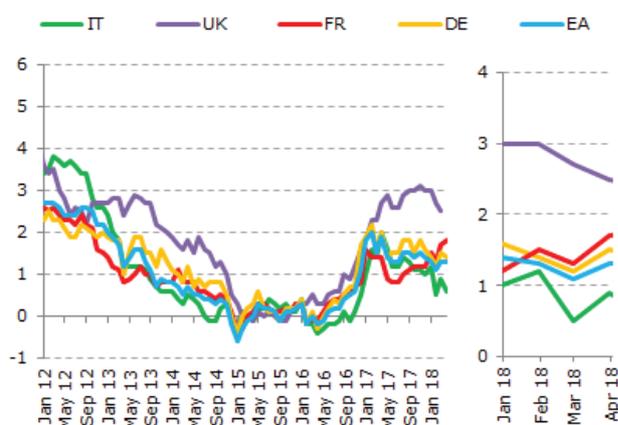


Source: ECB and Eurostat
Last observation: 2017 Q4

Inflation remained subdued and stable in recent months and is still well below the ECB target of 2% (Figure 1.4). At the end of 2017, the Harmonised Index of Consumer Prices (HICP) for the EA was 1.4 per cent. According to the forecasts of the European Commission, the HICP is expected to remain at 1.5 percent in 2018, but vulnerable to changes in energy prices.

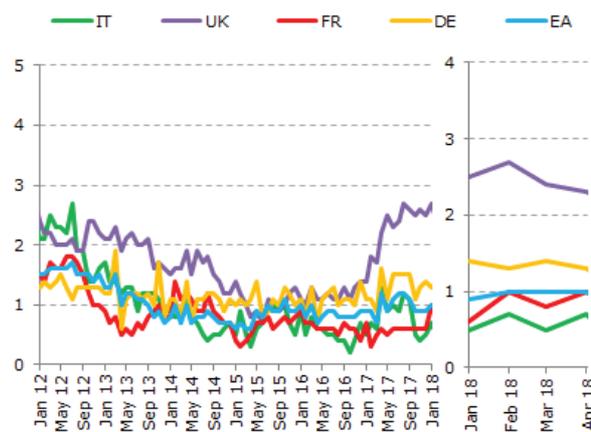
Core inflation² remained stable at about 1.0 percent in January 2018 in annual terms, though it varies substantially across countries (Figure 1.5). In particular, the UK has been facing inflationary pressures partly due to the depreciation of the GBP following the referendum on Brexit, which increased the cost of imported goods. While the Bank of England doubled its key interest rate for the first time in more than a decade from 0.25 percent to 0.5 percent, monetary policy is expected to remain expansionary in the EA area, with stimulus prolonged even beyond September 2018 if necessary.

Figure 1.4: Inflation: HICP – All items (annual rate of change in %)



Source: ECB and Eurostat
Last observation: April 2018

Figure 1.5: Inflation: Core (annual rate of change in %)



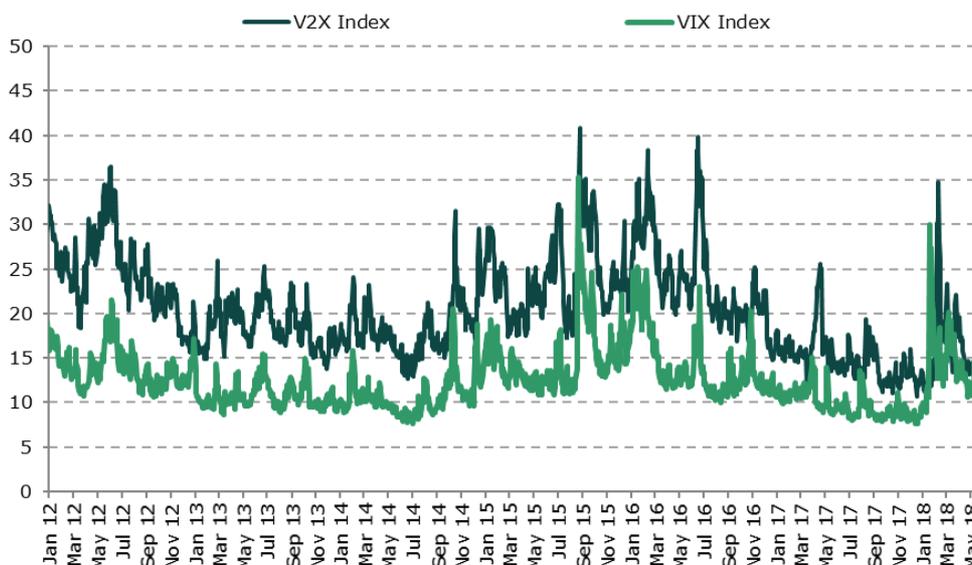
Source: ECB and Eurostat
Last observation: April 2018

²Core inflation is the most relevant measure to monitor the robustness of inflation convergence and excludes unprocessed food and energy prices, which are items with considerable price volatility.

Given the persistent low yield environment, high uncertainties and recent sharp market movements, risks of a sudden yield spike scenario emerge.

After a prolonged period of low volatility, equity corrections occurred in the beginning of February 2018 as markets reacted to news regarding the largest year-on-year rise in wages in the US since the financial crisis. This triggered implicit expectations of higher inflation and further US monetary policy tightening, lifting the VIX (Volatility Index) and V2X (Euro Stoxx 50 Volatility Index) to its highest level in two and a half years (Figure 1.6).

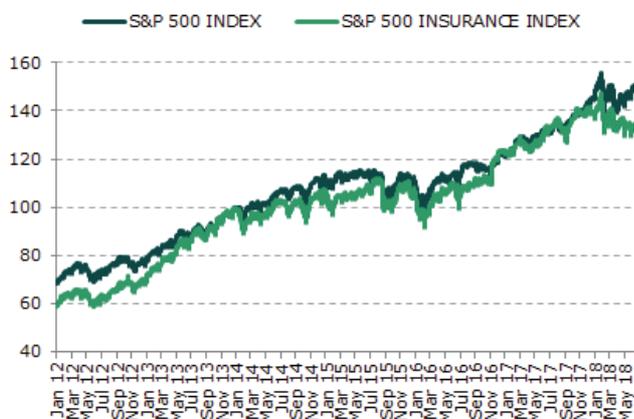
Figure 1.6: Market expectations of near-term up to long-term volatility



Source: Bloomberg
Last observation: 28/05/2018

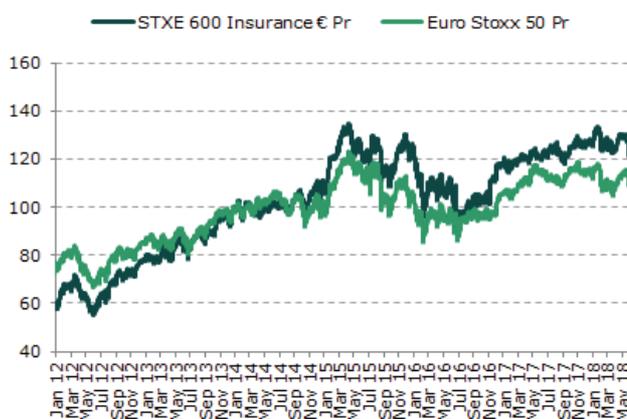
Both the American and European equity markets suffered losses as a consequence, with the Euro Stoxx 50 index still underperforming the S&P 500, which has been recovering from its post-correction losses (Figure 1.7 and Figure 1.8).

Figure 1.7: Equity market performance versus insurance sector performance (S&P 500)



Source: Bloomberg
Last observation: 12/06/2018

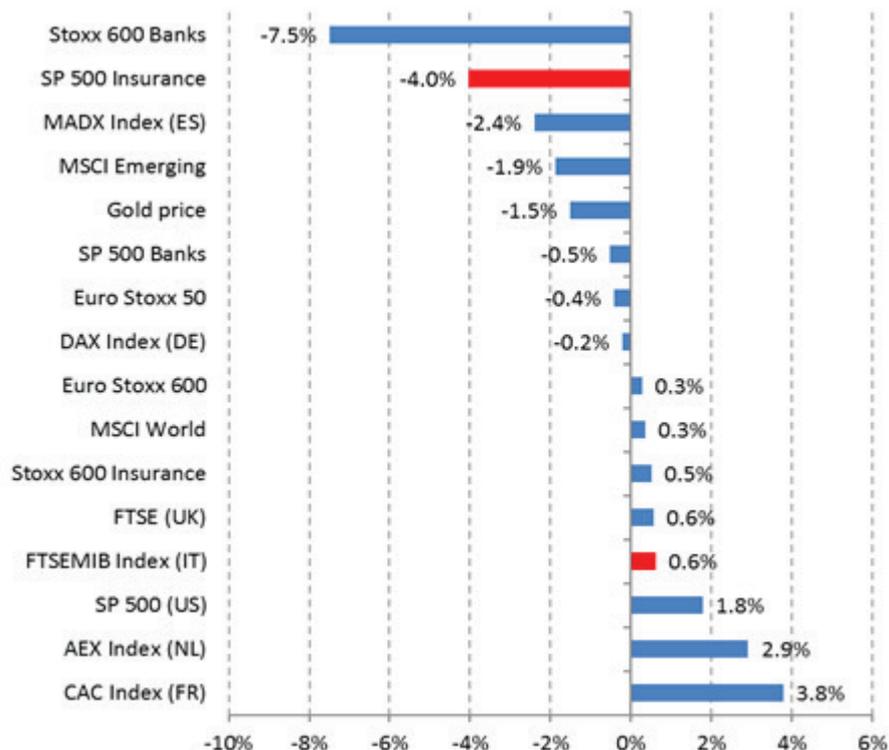
Figure 1.8: Equity market performance versus insurance sector performance (Euro Stoxx)



Source: Bloomberg
Last observation: 12/06/2018

In general, the insurance sector is aligned with the general trends in the market, with the European insurance sector outperforming the general market. Since the beginning of February 2018, given the recent correction in the equity markets, European insurers have suffered relatively small losses despite the low interest rate environment (Figure 1.9).

Figure 1.9: Year-to-date Performance

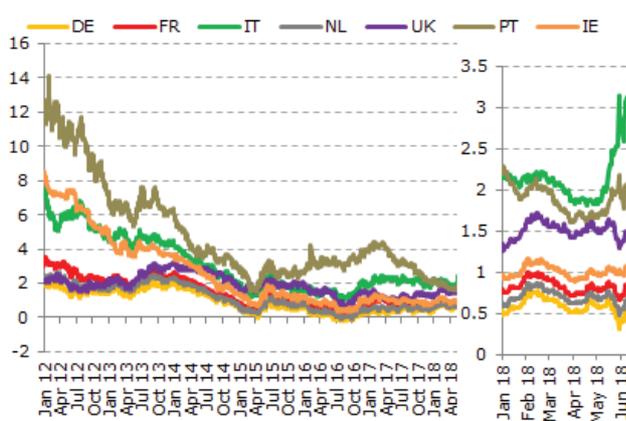


Source: Bloomberg, Last Observation 12/06/2018

While uncertainty remains on whether the recent developments were transitory or whether more volatility is yet to come, the overall impact on the European fixed income market has been limited. As the current European economic outlook differs from the US outlook on fundamental factors such as inflation expectations, contained wage pressures and on the monetary policy stance, the volatility seen in the US was not amplified with the same magnitude in Europe.

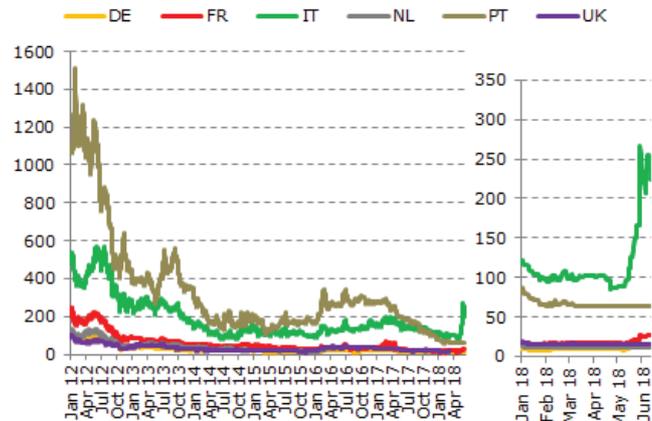
However, it is important to highlight that even an immediate correction in stock prices and, in particular, bond markets could have a significant impact on the insurance and pension sectors, which are major investors with large investment portfolios (Chapter 5). Given the recent negative market developments, increases are observed in the yields of sovereign bonds (Figure 1.10) since May due to the increase of geopolitical risks in Europe, which is also reflected in the price of sovereign credit default swaps (Figure 1.11).

Figure 1.10: 10-year government bond yields (in %)



Source: Bloomberg
Last observation: 12/06/2018

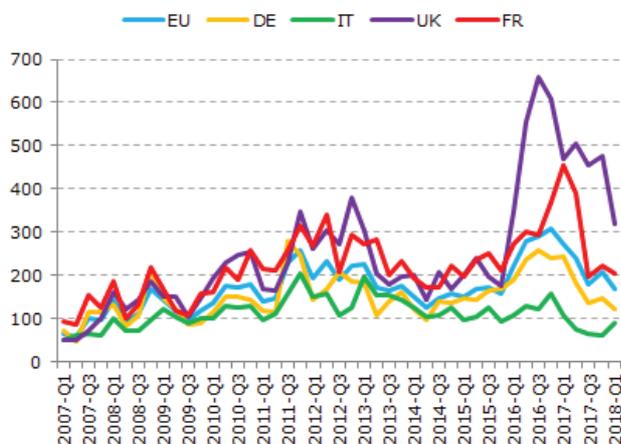
Figure 1.11: Sovereign Credit Default Swap



Source: Bloomberg
Last observation: 12/06/2018

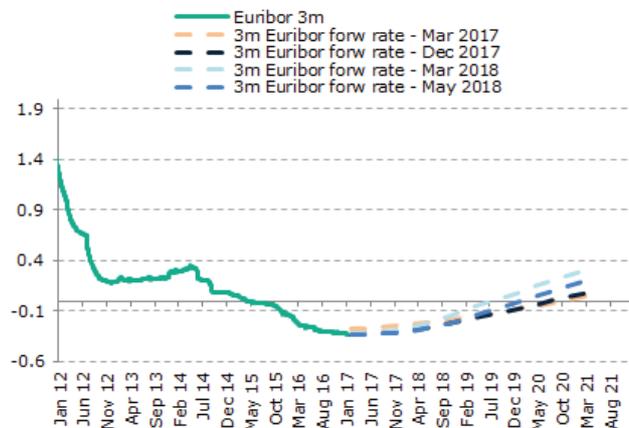
As the ECB keeps signalling that interest rates will remain low, and that any exit from stimulus would be very gradual, bond markets continue to have stretched valuations. However, substantial differences remain among countries amid policy uncertainties and also market expectations surrounding EURIBOR short-term forward rates remain volatile (Figure 1.12 and Figure 1.13).

Figure 1.12: Economic Policy Uncertainties by country



Source: Economic Policy Uncertainty
Last observation: 12/06/2018

Figure 1.13: 3M Euribor (%)



Source: Bloomberg
Last observation: 12/06/2018

In the current low yield environment the event of a major shock could trigger a reassessment of risk premia across the European market. The potential resulting sudden spike in yields would have a dual impact on insurers and pension funds, affecting both assets and liabilities. On the one hand, the rise in yields would directly affect asset prices in the fixed income market, having a major impact on insurance and pension markets' investment portfolios, which largely consist of fixed income securities (Chapter 5). The economic uncertainty stemming from an abrupt change in the level of yields need not be limited to the fixed income market either, and could also affect other financial market segments such as equities. On the other hand, the increase in yields also leads to lower technical provisions on the liability side, especially for long term obligations of life insurers and pension funds. This could compensate for the losses suffered on the asset side in the event of sudden yield

reversals, depending on the maturity mismatches and interest hedging of individual undertakings. Given that the duration of liabilities is generally longer than the duration of assets for insurers and pension funds, an increase in yields will typically have a positive overall impact.

However, insofar that the repricing of risk premia also negatively affects the economic welfare of private households, life insurers could be faced with a sudden increase in lapses. Moreover, in response to the sharp increase in yields, it could also become rational for a large share of policyholders to surrender their (traditional) life insurance contract, as other financial investments become more attractive (Chapter 2). As a result, life insurers could face an increase in both lapses and surrenders in the short term, leading to possible liquidity constraints. Although several legal implications could limit the direct impact of lapses and surrenders in some countries, its ramifications could add additional strains on insurers' solvency once yields start increasing.

In order to get a better view of the overall impact of rising yields in combination with an increase in lapses and surrenders, EIOPA will analyse the impact of such a sudden yield-up scenario in a European wide stress test in 2018.

1.2. Climate risk and sustainable insurance

Climate related risks are considered as top global risks in 2018.³ The three most prominent risks both in terms of likelihood and impact are respectively extreme weather events, natural disasters and failure of climate-change mitigation and adaptation. Weather related disasters are not only becoming more severe but also more frequent. Over the last twenty years 90 percent of disasters have been caused by weather-related events, mainly by storms and floods. Moreover, they have occurred twice more often in the period between 1995 and 2015 than just two decades ago.⁴ Last year, the series of major hurricanes and other natural disasters amounted to the highest insured losses recorded to date (Chapter 3).

The emerging climate risks pose threats in particular for the insurance industry, as insurers act both as investors and underwriters. Two types of risk categories can be identified in this regard: physical risks arising from extreme weather events, such as storm, hail and flooding, with damage to physical assets, possible disruptions of production processes and/or affecting resource availability and, second, transition risks in the investment portfolio resulting from the transition to a low-carbon economy.

Physical risks arise primarily from increased damage and losses from climate and/or weather related events and are especially relevant for non-life insurers acting as underwriters for these risks. Transition risks result from the transition to a more carbon-neutral economy, with potentially significant and disorderly write-downs in certain financial assets, for instance for exposures to carbon-intensive industries. These exposures could be in the form of loans or equity holdings in carbon-intensive industries, but also through commercial and residential real estate investments, which

³ The Global Risk Report 2018, World Economic Forum. <https://www.weforum.org/reports/the-global-risks-report-2018>. Also other publications highlight the costs and risks of climate related events for insurers, e.g. Sustainable Insurance. The emerging agenda for supervisors and regulators http://unepinquiry.org/wp-content/uploads/2017/08/Sustainable_Insurance_The_Emerging_Agenda.pdf, The human cost of weather related disasters 1995-2015, CRED https://www.unisdr.org/2015/docs/climatechange/COP21_WeatherDisastersReport_2015_FINAL.pdf

⁴ <https://www.un.org/sustainabledevelopment/blog/2015/11/un-report-finds-90-per-cent-of-disasters-are-weather-related/>

could be affected by tightened sustainability requirements. These transition risks are more pronounced for life insurers, with typically large investment exposures.

1.2.1 Physical risks

Climate related claims and losses have been on the rise recently and are likely to increase as a result of climate change. Natural disasters caused record costs for the insurance industry worldwide in 2017 (Chapter 3).

Costs that are not covered by insurance companies are often absorbed by the private sector and government-sponsored programs. This might become an increasing issue for the private sector and governments, as insurance companies might limit their exposure to areas prone to natural disasters in response to increased losses, either by not renewing policies at all or by stopping writing them entirely, which could ultimately lead to a supply crisis. Indeed, the insurance protection gap remains significant for natural disasters, with approximately 70 percent of losses uninsured globally.⁵ This might have several implications for public finances depending on the region and the scope of the institutions involved. In this sense, some new format of public-private partnership might arise, under improved business models and risk-sharing conditions. However, supervisors must pay close attention to this development to ensure the required level of expertise and risk management capabilities in the implementation of these new approaches.

While climate related physical risks pose a significant challenge for insurers, they could also provide business opportunities. Demand for weather hedging is growing, just as technological advances provide better risk modelling techniques and improved data quality. This could enable the development of new products and solutions to fulfil the growing demand for climate related insurance, while at the same time also allowing for a better assessment of the underlying risks. In particular, insurers could increasingly play a role in raising public awareness of climate related risks and give advice on prevention strategies.

Indeed, the increasing frequency of weather adversities is shifting the approach of corporations and households from acceptance of extreme events to understanding the implications and risks and taking initiatives to manage them, mitigating costs of potential business interruptions. Furthermore, companies that are susceptible to weather conditions and who do not proactively mitigate the related risks, could suffer from negative market reactions which might significantly impact their finances. This could further boost the demand for climate related insurance.

It is crucial that the insurance sector is aware of the physical risks involved with climate change, but also to be in a position to further explore the opportunities. Most importantly, the possibility that more frequent and severe natural catastrophes might be the “new normal” should be taken into consideration when envisioning new strategies and risk assessments. Scenario analyses and stress-testing can be important tools for risk management in this regard, for insurance undertakings and supervisors alike.

⁵ MunichRe NatCatSERVICE 2017

1.2.2 Transition risks

In the transition towards a low-carbon economy, insurers and financial institutions are increasingly exposed to transition risks in their investment exposures. A disorderly transition could significantly affect the value of certain financial assets, which could have repercussions across the financial system. Currently, the specific exposures of European insurers are hard to ascertain due to data quality and availability constraints, but recently there is growing pressure on improved disclosure by both financial and non-financial undertakings on climate related risks (Box 1.1).⁶ Improved reporting and disclosure is important for assessing the extent of transition risks for insurance companies and ultimately improve governance, risk management and decision-making by financial actors).

Box 1.1: The French case – a law to increase awareness and transparency on environmental issues

In the preparation of the COP21 in France, a law (the so-called “*Loi de transition énergétique*” – law for energy transition) related to energy transition was voted in August 2015. It provides incentives to financial institutions, and therefore insurers, to take into account environmental issues in their asset management strategy. In particular, Article 173 of this law requires insurers to annually publish how they integrate environmental issues in their current business. Insurers are requested to indicate how the environmental, social and quality of governance criteria are included in their investment policy. They are also required to detail how they contribute to energy and ecological transition, especially, the measurement of greenhouse gas emissions linked to their asset portfolio and the contribution to the international objectives of limiting global warming. This article had to be applied from 2017 onwards.

In this context, the ACPR is competent to verify that insurance companies correctly apply the regulation. ACPR’s supervisory teams are in charge to check French insurers’ disclosure on that topic in terms of good accessibility and visibility of the published information, comprehensiveness of the report and the overall transparency achieved through the publication.

In July 2017, market observers also look attentively to insurers’ first disclosure on environmental and social responsibility. Their assessment confirms ACPR’s preliminary analyses. The main conclusions underline the heterogeneity of the disclosure practices. Regarding the length of the reports, first, some reports being only a few lines long when others contain multiple pages; regarding the structure of the reports, some are integrated into existing publications (e.g. annual report), while others are ad hoc reports. Furthermore, independently of the form chosen for the report by the various undertakings, the content of the report was somehow disappointing as insurers mainly communicated on high principles of their general internal policy related to environment and social responsibility, while very little concrete information was provided in the reports on the integration of ESG (environmental, social and governance) criteria into investment policy. Even more disappointing, a non-negligible part of the market did not release any report on environmental issues at all. That could be due to the complexity of the law implementation. According to a study conducted by the French insurance federation (FFA), more than 60 percent of insurers highlighted the significant

⁶ See also the recommendations by the FSB Task Force on Climate-related Financial Disclosures (2017).

complexity of environmental criteria as a reason of the absence of integration (or the very limited integration) of ESG-climate criteria. No common method is developed to measure greenhouse gas and their impacts. Hence, dialogue among bankers and insurers is fostered to exchange findings and sharing of experience.

In order to improve the level of transparency required from French insurers in terms of environmental and social responsibility, the ACPR will carry on the work started in the previous years. In 2018, bilateral dialogues focused on climate risks will start and a survey on the topic will be launched. Through more intense exchanges between the authority and the French insurers, ACPR's objective is to increase climate change risk awareness of the market. This, in turn could lead to the organization of dedicated stress tests to climate change risk in the coming years.

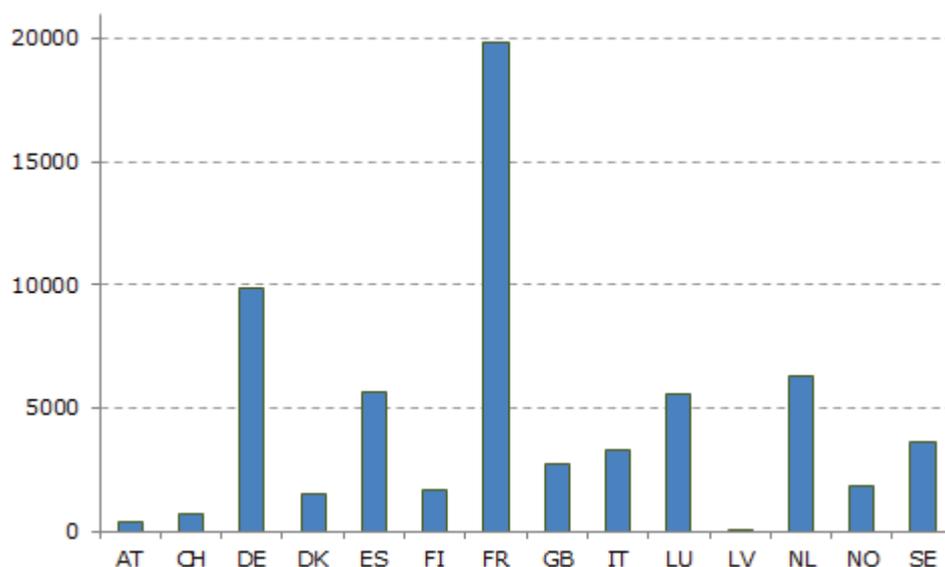
Following the Paris Agreement on Climate Change in 2015, investments in green finance and renewable energy have increased substantially.

Achieving an efficient transition to a low-carbon economy requires large-scale investments aligned with the Sustainable Development Goals and the Paris Agreement. Global investment in renewable energy has increased more than tenfold over twelve years, growing from USD 26bn in 2004 to USD 287bn in 2016. These include investments in biomass, wind farms, energy efficiency measures, and hydrogen technology and carbon emission markets. All these initiatives are drivers for new types of sustainable investments. Green bonds are emerging as one of the most prominent investment strategies to achieve these objectives, with the issuance of green bonds having doubled in 2017 to reach a record of USD 155.5bn. Further issuance is also expected as new entities are committing to be part of the market. So far, green bonds issuers tend to be highly rated, with only a small fraction rated below investment grade.⁷ Across Europe, most green bonds are currently issued in France, Germany and the Netherlands, while issuance is expanding from multilateral development banks to financial institutions, corporations and governments (Figure 1.14). The majority of the green bonds issued are asset-linked bonds. They range from earmarked for green projects (backed by the issuer's entire balance sheet) to securitised and revenue bonds.⁸

⁷ https://www.bis.org/publ/qtrpdf/r_qt1709h.htm

⁸ More information at: <https://www.climatebonds.net/market/explaining-green-bonds>

Figure 1.14: Green Bond Issuance By Country in 2017 (USD mn)



Source: Green Bond Evolution, Environmental Finance, January 2018

Insurance companies are also gradually shifting their investment portfolios towards green finance. Many insurance companies are now taking a more “active green” approach by exploring opportunities to invest in clean energy and by taking initiatives aimed at mitigating their carbon footprints. Some insurers are also ceasing to provide coverage for companies that have a considerable share of the revenues from non-clean energy sources such as coal. A similar trend can be observed in their investment strategy: away from carbon-intensive companies and sectors towards investments in green bonds, which are increasingly seen as useful investment opportunities to meet sustainability targets. Some insurance companies have also publicly announced clear targets and plans to increase the proportion of green bonds in their portfolio. However, the activities of the insurance sector are still mostly limited to investments, as the first green bond issuance by a life insurance company was only recently announced in November 2017.

However, clear and unambiguous standards towards green finance remain in their infancy. The lack of harmonised definitions for green bonds and clear risk profiles of green investments are drawbacks that need to be further addressed for a successful development of green financial markets. Some progress has been made such as the development of the Climate Bonds Standards, the launch of a working group by ISO to explore standards and also the inclusion of the development of taxonomy for sustainability in the European Commission Action Plan for a greener and cleaner economy, which will enable the creation of EU labels for green financial products, improve disclosure and allow investors to identify investments that comply with green or low-carbon criteria.

The rapid rise of green finance also carries the risk of a green bubble and greenwashing in the transition towards a low-carbon economy. As investors hoping to capitalize on the energy transition move their funds to new technologies collectively, green investments may become overvalued and unable to deliver on rosy profit forecasts. In addition, as clear standards and definitions for green finance are

still missing, certain investments may be presented as 'green' whereas the overall environmental benefits are doubtful. This so-called greenwashing of investments potentially carries significant reputational risks for investors in green finance. It is important that both insurers and supervisors monitor and manage these risks on a timely basis.

While green finance contributes to a more sustainable business model and investment portfolio, the associated risks should not be overlooked.

Increasingly, policymakers and regulators are looking at introducing a 'green supporting factor' in prudential regulation for banks and insurance companies.⁹ However, like all other types of investments, green finance involves risks. It is important that insurers manage these risks appropriately and that capital requirements adequately reflect risks in order to cover unexpected losses at all times. It is therefore imperative that the risk-based principle of capital standards remains intact, also for investments with possibly positive environmental and social benefits. Amending capital requirements could only be considered if and when data calibrations show that sustainable investments consistently involve lower risks.

1.2.3 Sustainable insurance

The potentially far-reaching consequences of climate change drive a fundamental shift towards sustainable insurance. It is increasingly recognized that actions beyond innovations on risk management techniques, new analytical tools and development of loss prevention solutions are necessary for a sustainable business model in the face of climate related risks. Sustainable insurance can be defined as a strategic approach where all activities in the insurance value chain, including interactions with stakeholders, are done in a responsible and forward-looking way by identifying, assessing, managing and monitoring risks and opportunities associated with environmental, social and governance issues. Sustainable insurance aims to reduce risk, develop innovative solutions, improve business performance, and contribute to environmental, social and economic sustainability.¹⁰

Several initiatives aiming at developing and promoting sustainable investments have also recently been taken involving the insurance industry directly or indirectly (Box 1.2). These initiatives could further stimulate the move towards a greener and more sustainable insurance industry, while at the same time improving transparency and accountability of climate related risks.

⁹ See for instance the European Commission's Action Plan on Sustainable Finance published in March 2018: https://ec.europa.eu/info/business-economy-euro/banking-and-finance/sustainable-finance_en#commission-action-plan-on-sustainable-finance

¹⁰ UNEP Finance Initiative. Principles for Sustainable Insurance (2012). http://www.unepfi.org/fileadmin/documents/PSI_document-en.pdf

Box 1.2: Initiatives on Sustainable Finance and Insurance

In 2012, the United Nations Environment Programme (UNEP) Finance Initiative published the Principles for Sustainable Insurance⁹, which seeks to align sustainability principles for the insurance industry worldwide. These principles represent the first global sustainability framework designed for the insurance industry. The publication provides a holistic approach to manage a wide range of global and emerging risks in the insurance business, including climate change and natural disasters.

In 2016, the Sustainable Insurance Forum (SIF) was founded. The SIF is a network of leading insurance supervisors and regulators seeking to strengthen their understanding of responses to sustainability issues for the business of insurance. It is a global platform for knowledge sharing, research and collective action.

In 2017, the FSB Task Force on Climate related Financial Disclosures published a report with final recommendations on improving transparency and accountability on environmental, social and governance issues, including climate related risks.

The G20 Green Finance Study Group, established in 2016, continues to work on a framework to promote the development of markets for green assets.

The European Commission, following recommendations by the High Level Expert Group on Sustainable Finance, presented its Action Plan on Sustainable Finance on March 8th 2018, with plans for an EU classification system for sustainable activities, labels for green financial products and enhanced ESG requirements and disclosures. The Action Plan would also require insurance and investment firms to advise clients on the basis of their preferences on sustainability.

Finally, several initiatives on Sustainable Development in general and tackling Climate Change are also likely to have repercussions for the insurance sector. Most notably the Paris Agreement on climate change, the UN 2030 Agenda for Sustainable Development, the EU 2030 Energy and Climate framework, the Energy Union, the Circular Economy Action Plan, the EU implementation of the 2030 Agenda for Sustainable Development and the further development of the Capital Markets Union (CMU).

1.3. Technological developments and the insurance sector

Technological innovation is increasingly seen as one of the major drivers of change in the insurance sector, carrying both risks and opportunities. Broadly, two different channels can be identified through which technological developments affect insurers. On the one hand, the digital transformation and the onset of cyber attacks makes companies increasingly susceptible to cyber risk, with growing demand for cyber insurance, while on the other hand, technological advances in general have led to the rise of InsurTech.

1.3.1 Cyber risk

Cyber attacks are increasingly considered a top global risk for institutions, households and the market. Cyber attacks have become more frequent, severe and sophisticated in recent years, with several high-profile incidents occurring last year.¹¹ Demand for and claims on cyber insurance are likely to increase as a consequence. Global premium is currently estimated to be around USD 3bn to USD 4bn, but is expected to grow significantly over the coming years. So far, explicit cyber insurance products have mostly been sold in the US, but European insurers are increasingly looking to offer cyber insurance as well as the market expands in response to tightened regulations and raised awareness of the risks involved.¹²

In addition, many insurers could also have significant 'silent' (non-affirmative) cyber risk exposures in the form of more general insurance coverage for business disruptions. So far, the specific exposures of insurers and the potential impact of cyber incidents and data breaches are not well understood, but the associated losses could potentially dwarf the economic costs of natural disasters, with estimates ranging from USD 57bn over USD 120bn to as much as USD 600bn on an annual basis.¹³

Moreover, insurers do not only act as underwriters of cyber risk, but they are also increasingly vulnerable to cyber risk themselves, leading to increased operational and reputational risk. Insurers possess considerable amounts of confidential, personal and privacy-sensitive data and are therefore likely to be targeted by cyber criminals for financial gain. Furthermore, the digitalization of financial services and the rise of InsurTech lead to an increased use of cloud services, outsourcing and interconnectedness within the insurance value chain and growing dependence on computer information systems.

As a consequence, insurers are increasingly at risk of suffering business disruptions and significant reputational damage in case of a data breach and/or cyber incidents. This could ultimately undermine confidence in the industry as a whole. It is therefore crucial that insurers continue to improve their data control, cyber resilience and operational risk management framework to safeguard critical business functions and information systems, while regulation and supervision on data security, cyber risk and operational risk should be further strengthened and coordinated across sectors and jurisdictions.

Finally, in order to get a better view of the exposures and approaches towards cyber risk in Europe, a separate questionnaire on cyber risk will be included in the upcoming EIOPA Stress Test for European insurers (Chapter 5).

¹¹ Cyber attacks now also rank 3rd in the list of risks most likely to occur in the next 10 years (up from rank 6 in 2017), according to The Global Risks Report 2018, World Economic Forum.

¹² The new EU General Data Protection Regulation, which came into force in May 2018 and tightens regulation on data security, is expected to act as an catalyst as well.

¹³ White House Report (2018), Lloyds Report (2017), McAfee and Center for Strategic and International Studies (2018)

A potential target for cyber attacks might be investments in cryptocurrencies. Although they are normally based on blockchain technology, which are considered extremely safe, they are still vulnerable to cyber attacks.¹⁴

The European insurance market is still very hesitant in offering coverages against cryptocurrency theft or crimes involving transactions with digital currencies. Very few companies have such coverages available, with the first initiatives being taken in Japan, UK and US.¹⁵

Transactions using cryptocurrencies are becoming more evident in the market only recently and its risks are not yet fully understood. This is a very challenging factor when it comes to issues such as how to price these products to cover risks for customers that might be using complex technologies, which makes the real dimension of the risks difficult to access. Furthermore, lack of data is another big challenge even for specialized cyber underwriters, which are also very scarce in the market.

The real potential for profitability of the cryptocurrency insurance business is still questioned and seen with skepticism from many companies, as the premiums might not be enough to cover possible losses, implying very high policy prices. Another crucial problem is the potential accumulation risk involved. Coverages involving cryptocurrencies should be seen with caution by the insurance sector. However, insurers might also play an important role in the maturing process of this emergent market which can become an important field of opportunities once the risks are better understood and new regulations take place.

1.3.2 InsurTech

Investments in InsurTech have significantly increased over the last year and insurers are increasingly reconsidering their business models in light of this development. Total InsurTech investment amounted to approximately USD 2.3bn in 2017, an increase of 36 percent compared to 2016.¹⁶ So far, most InsurTech investment and associated start-ups have focused on improving certain parts of the insurance value chain (as opposed to the full scale value chain disruption) and incumbent insurers are increasingly driving the rise in InsurTech investment as well. Indeed, there is growing recognition among insurers that InsurTech could potentially disrupt the insurance business and insurers are therefore increasingly looking at ways to enhance their business model, customer experience and/or operational efficiency – either through strategic partnerships with start-ups or through their own InsurTech investments (Chapter 5).

¹⁴ The reason for this apparent discrepancy on safety is the poor resilience of exchanges platforms, which do not use the same technology but still play a crucial role in increasing the amount of cryptotrading.

¹⁵ Some other emerging types of products in particular in the United States are limited to offer protection against employee extortions to companies that accept bitcoin payments, excluding other higher risks such as hacking.

¹⁶ Quarterly InsurTech Briefing Q4 2017 (January 2018), Willis Towers Watson.

The use of new technologies and big data allows for better risk assessment and pricing, fraud detection and prevention, in particular. One technology that is increasingly touted as changing the landscape of insurance is blockchain. The use of blockchain technology, together with improved data analytics, would allow the development of smart contracts, with improved risk assessment, fraud detection, information flows and claims handling. However, as with all new technologies, the introduction is fraught with operational risks, further compounded by complex legacy issues from outdated IT systems.

Insurers and new entrants increasingly use new technology to provide solutions for the sharing economy and the gig economy¹⁷ as well. The sharing economy is characterized by a trend in which people move from 'ownership' to 'usage' of a particular item (for instance car sharing). This also changes the needs for insurance, as users typically only want to be insured for the time they make use of certain services. Alternatively, risk-sharing among peer groups is increasingly becoming an alternative to traditional forms of insurance. The growing gig economy further stimulates the development of new types of insurance products, with coverage being offered/activated only for a short period of time when a gig worker is on the job.

The introduction of InsurTech could ultimately lead to a more fragmented insurance value chain and the blurring of traditional boundaries of the insurance industry. Currently, most insurance companies operate throughout the entire insurance value chain. However, as InsurTech players mature and specialize on certain parts of the value chain a more fragmented insurance industry seems likely in the medium to long-term, with different players focusing on different parts of the value chain. Furthermore, the onset of forward looking data analytics and the internet-of-things is expected to gradually change the role of insurers from risk carrier to risk or financial manager. As insurers increasingly look to harness their data, a shift towards advising clients on prevention strategies is therefore expected. While this potentially allows insurers to broaden their business models, it also leads to the blurring of traditional boundaries of the insurance industry, with tech companies increasingly offering their own insurance solutions. The rise of InsurTech and a more diversified insurance sector could ultimately enhance efficiency and financial stability in the long run, but it nevertheless carries the risk of business interruptions during the transition process.

¹⁷ The gig economy is characterized by a labour market with a growing prevalence of short-term contracts or freelance work rather than permanent jobs.