



Financial stability and financial system

### **Climate change: what are the risks for the French financial sector?**

Global warming is generating more frequent and extreme weather events, which will significantly weaken local economic activity and lead to the erosion of asset values. Policies implemented to fight global warming could also destabilise the financial system if the transition to a low-carbon economy were too sudden or too late; again impairing the value of financial assets. That is why supervisors and central banks are urging financial institutions to quickly implement the internal arrangements required to monitor and mitigate the risks. In April 2019, the Autorité de contrôle prudentiel et de résolution (ACPR – Prudential Supervision and Resolution Authority) published a survey of French banks and insurers' practices in this regard. It was found that, despite certain areas of progress, climate change is still only partially and inconsistently integrated into financial institutions' risk management processes.

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JEL codes G2, Q5

### 2050

the target date for carbon neutrality to comply with the Paris Agreement and its most ambitious scenarios: global temperature rise of well below 2°C by 2100

### EUR 862 billion

the exposure of French banks and insurers to the most carbon-intensive sectors

### Less than 2.5%

the proportion of institutions' assets located in geographical areas that are moderately or highly vulnerable to climate change

#### The exposure of French banks and insurers to transition risk

(proportions in %, outstanding amounts in EUR billion)

Proportion of total outstanding amounts exposed to transition risk (left-hand scale)



Source: ACPR, data at 31 December 2017. Note: See note to Chart 3 for methodological details.





# 1 Climate change as a challenge for financial stability

# Significant further efforts are required to limit global warming

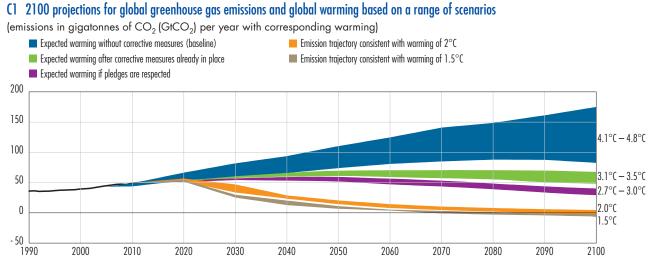
In its report published in October 2018, the Intergovernmental Panel on Climate Change (IPCC) showed that global warming of only 1.5°C could significantly increase the risks and impacts of extreme weather events, particularly droughts and wildfires, coastal flooding, heavy rainfall and heat waves. A rise of closer to 2°C above pre-industrial levels, which is twice the global warming observed so far (IPCC, 2018), would have even more severe consequences (Masson-Delmotte et al., 2019). However, without a significant intensification of policies to fight global warming, experts estimate that the rise in temperature will exceed 4°C by 2100 (see Chart 1).

# Physical risk could impact the financial sector through the assets it finances or insures

The above-mentioned changes mean that the increasing severity and frequency of natural disasters caused by global warming could affect the financial sector and financial stability. **Physical risk** reflects the direct impact of climate change on people and property. When that risk materialises, it can have three types of consequences for financial institutions: (i) an erosion of the value of assets and securities pledged as collateral in credit transactions, when they are linked to areas vulnerable to natural disasters; (ii) an increase in damages covered by the insurance sector; and (iii) a deterioration in local economic activity. Heightened physical risk would affect various parts of the world differently depending on the characteristics of the local ecosystem. For example, the same temperature rise across Europe would make droughts more severe and more frequent in Mediterranean Europe than in Northern Europe (see Chart 2, below).

# The transition to a low-carbon economy may also destabilise the financial sector

To mitigate the risks associated with global warming, the signatories to the Paris Agreement committed to limiting the global temperature increase to below 2°C by 2100. This objective also exposes the financial sector to **transition risk**. Indeed, the work of the IPCC (IPCC, 2018) shows that compliance with the Paris Agreement requires carbon-neutrality – net zero greenhouse gas (GHG) emissions – over a relatively short horizon (by 2050 for the most ambitious scenarios). Several pathways to



Source: Climate Action Tracker, Warming Projections Global Update, December 2018; Banque de France presentation for the Financial Stability Review, No. 23, June 2019, p. 5.

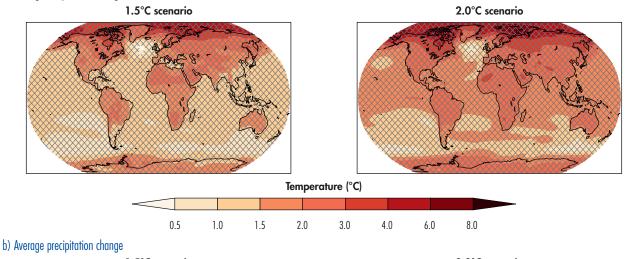


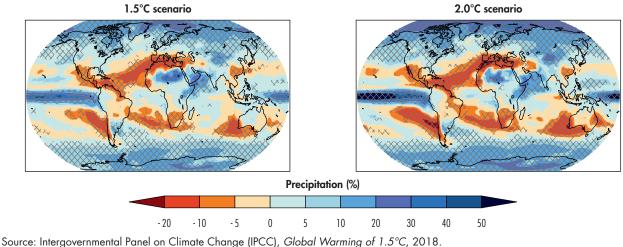


#### C2 Climate impacts of increases in the global mean surface temperature

(average change over the 2081-2100 horizon)

a) Average temperature change



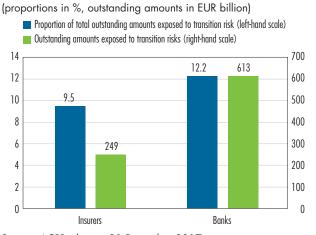


achieving this objective are possible: (i) strengthening policies to fight global warming; (ii) major technological progress, particularly in low-carbon energy generation; and (iii) changes in consumer behaviour. If these changes were to occur suddenly and financial institutions were unprepared, certain assets could rapidly lose their value due to the deterioration in the financial perspectives of counterparties that are high GHG emitters or fossil fuel producers. As a result, both market risk and credit risk would spike, particularly for banking institutions. This rupture would go hand in hand with a pro-cyclical financial market dynamic combining fire sales and liquidity issues (European Systemic Risk Board – ESRB, 2016). **Transition risk** covers banks' assets and insurers' investments. The most carbon-intensive sectors accounted for 12.2% of banks' net exposures to credit risk in 2017, down slightly from 12.7% in 2015 (see Chart 3 below). Meanwhile, approximately 10% of French insurers' investments were in transition-risk sensitive sectors; a proportion that is relatively stable over time. However, the data used to measure these exposures are generally collected at aggregate sectoral levels and lack the granularity needed to properly account for related risk exposures. In particular, firms within a given sector may exhibit very different degrees of vulnerability depending on their respective adaptive capacity.





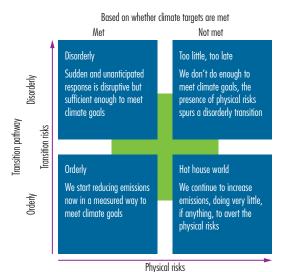
#### C3 The exposure of French banks and insurers to transition risk



Source: ACPR, data at 31 December 2017. Notes: (i) Exposure to credit risk for banks and investment risk for insurers (after applying the look-through approach to resident investment undertakings); (ii) the scopes correspond to the entire insurance sector and to six of the seven main French commercial banking institutions; (iii) exposure to transition risk is assessed on the basis of GHG-emission levels of a sector (defined using the European Community NACE rev2 classification) in proportion to value added.

Ultimately, with the materialisation of physical and transition risks, climate change could be a source of financial instability. The relative importance of these risks will depend on the magnitude of the measures adopted to limit global warming and the urgency of their implementation (see Diagram 1). Against this

#### D1 Physical risks versus transition risks and global warming pathways Strength of response



Source: Central Banks and Supervisors Network for Greening the Financial System (NGFS), *A call for action: Climate change as a source of financial risk*, April 2019.

backdrop, the Central Banks and Supervisors Network for Greening the Financial System (NGFS) emphasised in its progress report published in October 2018 (NGFS, 2018) that "climate-related risks are a source of financial risk. It is therefore within the mandates of Central Banks and Supervisors to ensure the financial system is resilient to these risks." One of the first recommendations made by the NGFS in April 2019 (NGFS, 2019) was notably the inclusion of climate-related risks within the scope of financial stability monitoring and micro-prudential supervision (see the Prudential Regulation Authority – PRA, 2019, for a first case study of its implementation in the UK).

#### 2 French financial institutions are gradually getting better organised to manage climate-related risks

In France, the ACPR continued the work it initially carried out in 2016 by establishing regular dialogue with French supervised entities (see Box 1). The findings from these discussions and the data collected were reported in two issues of *Analyses et synthèses* published in April 2019 (ACPR, 2019a and 2019b), and are summarised in the remainder of this article.

#### Banks and insurers are gradually adapting their governance to the challenges associated with climate change

Banks and insurers are gradually getting better organised in order to properly integrate climate-related risks. Two trends are particularly noteworthy: (i) regular reporting to high-level management bodies is being progressively implemented; and (ii) risks associated with climate change are being integrated into the existing risk management framework, with the development of internal expertise and dedicated tools, beyond simply taking into account the Corporate Social Responsibility (CSR) dimension. Since 2016, French banking institutions and insurance undertakings have tended to regard climate-related risks as an integral part of their financial risks.

Nevertheless, practices still vary across institutions. Two categories of institutions stand out.





• "Advanced" institutions, whose approaches are characterised by: (i) management bodies which have adopted a risk-based view in dealing with climate-related issues; and (ii) the integration of these issues into the internal risk management framework. These institutions generally include: (i) large groups with international financing and investment activities; and (ii) institutions with specific business models which, as a result, have a well-developed approach to one of the two major climate-related risks (physical or transition).

• "Wait-and-see" institutions, in which a CSR approach still takes precedence over a risk-based approach. These are mainly domestic retail institutions whose relative tardiness stems from a combination of factors, including: (i) the lack of internal resources allocated to climate-related issues, which are not yet considered a priority due to their lack of immediate materiality; and (ii) methodological and regulatory obstacles such as the absence of a shared taxonomy.

A particularity of the insurance sector is that climate risk not only affects the asset side of insurance undertakings but also their liabilities, i.e. the financial obligations that arise from the insurance contracts they sell. However, the effects of climate change are very rarely taken into account in either perspective. Life insurers have introduced tools and procedures to assess the impact of transition risk on their assets, while non-life insurers use methods developed for climate risk management to quantify the physical risk associated with their liabilities.

Despite the progress made by French banking institutions and insurance undertakings, climate strategies have not been operationally implemented at business line level while associated risk management frameworks are still incomplete.

# Significant differences in the appreciation of physical risks remain across institutions

Modest progress has been observed in the identification of physical risk, which is contained with respect to French banks and insurers' assets (see appendix). Indeed, related exposures are generally located in areas considered not vulnerable with regard to existing climate

#### BOX 1

#### Monitoring climate-related risks: action taken by the French financial authorities

Initial surveys were conducted in 2016 to identify French bank practices with regard to climate-related risk management (French Treasury, 2017). Later, in 2018, the Autorité de contrôle prudentiel et de résolution (ACPR – Prudential Supervision and Resolution Authority) carried out its initial analysis of risks arising from French insurers' investments. Some of this research was conducted in response to the adoption of the French Law on Energy Transition for Green Growth (LTECV).

In particular, the ACPR is responsible for overseeing insurance undertakings' implementation of the provisions of Article 173-VI of the LTECV. This requires institutional investors, and therefore insurance undertakings, to disclose how environmental, social and governance (ESG) criteria are taken into account in their investment policy, with a particular focus on climate change-related aspects. The framework for this non-financial reporting was set out in an implementing decree with the aim of encouraging private institutions to take ownership of climate-related issues (and more generally ESG concerns) and thus contribute to the development of best practices in a rapidly changing field (see also Box 2).<sup>1</sup>

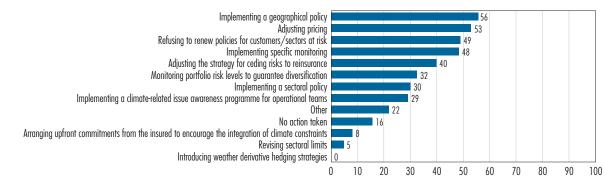
1 An assessment report on the implementation of the law by institutional investors was released on 2 July 2019 (joint publication from the French Treasury, the French Ministry for the Ecological and Solidary Transition, the ACPR and the Autorité des marchés financiers (AMF – the French Financial Markets Authority)).

change scenarios. Indeed, the lion's share of the exposures is located in France and the European Union, with a more modest proportion in the United States and Asia. In addition, banking institutions consider that their counterparties based in France benefit from extensive insurance coverage, which significantly softens any financial impact. However, in general the data collected by banks appears to lack the granularity required to carry out a comprehensive assessment of the physical risk. For example, the location of the assets they finance (household real estate and firms' production



#### C4 Measures taken to mitigate identified risks to liabilities

(as a % of technical provisions)



Source: ACPR, data at 31 December 2017.

assets) is not always available at a sufficiently granular level (physical risk may vary even within the same country). Ultimately, credit institutions and insurers do not regard physical risk as a potential threat, and have invested little effort into developing the analysis of the related potential impact on credit risk.

By contrast, to meet the needs of their business, non-life insurers and reinsurers have developed very detailed measures for locating insured persons and property. It follows that a vast majority of these insurers, accounting for 92% of the liabilities exposed to climate risk, use climate scenarios to measure the materiality of these risks on their liabilities. The risks associated with the increase in the frequency and cost of extreme weather events have direct consequences on the pricing of insurance contracts. This could ultimately raise doubts as to the insurability of certain risks, with potential implications for public policies and the credit risk of banking institutions (see Chart 4).

Thus, due to the nature of their activities (notably providing insurance against damages caused by natural disasters), non-life insurers - with their regular use of severe stress tests - are at the forefront when it comes to climate risk management. However, the time horizon for these tests is generally very short (five years on average) and well below the assumed materialisation horizon for physical risks (2030-50). Furthermore, the ongoing structural changes in climate patterns may partly make the historical data used to calibrate risk assessment models obsolete.

#### More significant progress by French banking institutions in the analysis of transition risk

French banking institutions have made significant progress in the analysis of transition risk, which is the result of a more significant exposure (see above). Accordingly, the majority of institutions have undertaken to develop tools to monitor and analyse transition risk, at least by mapping the sectors most at risk. Their work focuses on credit risk, given its significance to bank balance sheets. There are, however, depending on the business models and the size of institutions, considerable differences in the degree of sophistication of the tools tested. In some cases, these tools could in principle be used to enhance sectoral reviews or the general risk assessment of a given counterparty. The methodologies applied by French banks range from measuring the funded carbon footprint to analysing, often qualitatively, sectoral sensitivity based primarily on internal carbon pricing. Ultimately, these methods cannot yet be used to quantify the impact of energy transition scenarios on bank balance sheets.

Insurers analyse assets on their balance sheets more from a market and allocation risk perspective. In response to the loi sur la transition énergétique pour la croissance verte (LTECV – the French Law on Energy Transition for Green Growth) and particularly Article 173-VI (see Box 2) insurance undertakings have gradually introduced environmental, social and governance (ESG) ratings for their investments and carbon footprint assessments for their portfolios. Some firms are also trying to assess the

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extent to which the composition of their portfolio is aligned with a composition consistent with the objective of limiting global warming to 2°C (by comparing, for example, the energy mix that will be financed in both cases). However, insurance undertakings do not assess the impact on their portfolios of valuation shocks that may result from an energy transition scenario.

#### Liability risk is still poorly analysed

**Liability risk** corresponds to the financial obligations and fines that a legal entity would have to pay if it was found to be liable for global warming. French banking institutions and insurance undertakings do not consider liability risk to be potentially material. Nevertheless they are exposed to this risk, both directly and indirectly. They could be held directly liable for contributing to the consequences of climate change by providing financing or offering legal protection contracts to high GHG emitting entities. They could also be indirectly exposed to a deterioration in the credit and market risk associated with financing granted to firms that are the subject of a court ruling. The court could find them liable for the consequences of climate change and could therefore order them to pay damages and fines such that their financial solvency would be impaired. Lastly, liability risk can also trigger a transition risk, notably in the event that governments are enjoined to take significant additional measures to fight global warming. This risk should be assessed, particularly in light of the growing number of cases observed at international level.

#### BOX 2

The application of Article 173 of the French Law on Energy Transition for Green Growth (LTECV) differs from one insurance undertaking to another

The publication, in compliance with Article 173-VI of the French Law on Energy Transition for Green Growth (LTECV), of reports by 17 French insurance groups in 2018, representing 88% of market investments, has allowed an overview of insurers' practices.

- **Disclosure requirement**: 76% of the sample released a specific report, while the others integrated the required disclosures into a pre-existing report.
- Information on the investment policy: all the insurers describe their general approach to taking environmental, social and governance (ESG) criteria into account, as well as the charters and labels adopted. However, the level of detail of the information provided on their investment policy varies significantly from group to group and still falls short of the provisions of the decree implementing Article 173 of the LTECV.
- Integration of ESG criteria into the investment policy: virtually the whole sample has implemented an exclusion or disinvestment policy for firms that do not comply with ESG criteria, mainly on the basis of environmental criteria. However, only two-thirds of the groups surveyed assess the contribution of their actions to achieving the international goal of limiting global warming. Furthermore, in most cases insurers make their investment decisions based on the carbon intensity of assets at a given point in time. They do not take into consideration the measures taken by firms to reduce their carbon dioxide (CO<sub>2</sub>) emissions in the long term. Other sources of information cited by the sample are internal financial analyses, external rating agencies or public bodies (Organisation for Economic Co-operation and Development, United Nations, etc.). Some insurers have also introduced a green bond purchase programme.

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• Governance: some insurers report that they use their shareholder status to encourage the firms in which they invest to make more responsible choices, and have set up a team dedicated to socially responsible investment issues.

A key point in the implementation of a low-carbon investment strategy is the adoption of metrics and analyses. Drafting the report provides insurers with the opportunity to structure the initiatives taken in different divisions of the firm while strengthening the governance of climate-related risks that threaten both assets and liabilities. In particular, the report should not be prepared purely as a communication exercise, especially if it is outsourced to a specialised consulting firm.

Overall, the content of the reports published in 2018 has not significantly evolved since 2017. Generally, insurers did not describe their policy for the implementation of their long-term objectives. In addition, they do not quantify their progress from one year to the next, which would make it possible to measure the gap between what has been accomplished and what is yet to be achieved.

Lastly, the July 2019 report available on the French Treasury website provides a comprehensive overview of the application of the provisions of Decree 2015-1850 of 29 December 2015 by all the actors subject to its requirements.<sup>1</sup>

1 Bilan de l'application des dispositions du décret n° 2015-1850 du 29 décembre 2015 relatives au reporting extra-financier des investisseurs (Article 173-VI de la loi de transition énergétique pour la croissance verte), written jointly with the French Ministry for the Ecological and Solidary Transition – the Commissariat général au développement durable (French sustainable development commission), the Ministry of the Economy and Finance – the French Treasury, the Autorité des marchés financiers (AMF – the French Financial Markets Authority) and the Autorité de contrôle prudentiel et de résolution (ACPR – Prudential Supervision and Resolution Authority): https://www.tresor.economie.gouv.fr

#### 3 Initiatives at European and French levels to ensure that institutions take greater ownership of climate-related risks

The supervisory authorities have an essential role to play in hastening financial institutions' recognition of climate-related issues. To this end, they should gradually integrate climate change-related considerations into the various pillars of the prudential framework: (i) disclosure requirements on institutions' exposure to climate-related risks (pillar 3); and (ii) integration of climate-related risks in annual supervisory exercises, both in terms of governance and risk assessment (pillar 2). The supervisory authorities are also looking into the possibility of integrating risk differentials between "green" (carbon-friendly) assets and "brown" (highly carbon intensive) assets into pillar 1 capital requirements (subject to the taxonomy currently in development).

These avenues (set out in detail in Box 3) have now been widely adopted at the European level, in particular in the mandates of the European Insurance and Occupational Pensions Authority (EIOPA) and the European Banking Authority (EBA) as well as in the discussions of the Network for Greening the Financial System (NGFS) at the international level.

#### BOX 3

#### The integration of climate-related risks by international supervisory authorities: avenues for reflection

- **Reporting and publication**. The development of dedicated regulatory reporting would help to enhance the quantity and quality of information published on climate-related risks. This step mainly depends on the adoption of a taxonomy of sustainable activities<sup>1</sup> (to limit the risk of green washing) and "brown" activities (to assess the
- 1 A Technical Expert Group (TEG) presented its proposal for a taxonomy for sustainable activities to the European Commission on 18 June 2019. The status and use of this taxonomy in a draft regulation are currently under negotiation.





level of exposure to activities at risk with regard to the energy transition). The purpose of this regulatory reporting would be to foster transparency and market discipline (pillar 3 requirements).

- Governance. The risks associated with climate change should form an integral part of risk management frameworks in order to enhance ownership of these risks by financial institutions. For example, in August 2018, the European Commission requested an opinion from the European Insurance and Occupational Pensions Authority (EIOPA) on the possibility of integrating climate-related risks into Solvency II, the regulatory framework applicable to insurers. In April 2019, EIOPA proposed that this framework could be amended around four points to better account for sustainability risk, and therefore climate change: (i) the prudent person principle, which applies to all investment decisions; (ii) the compensation policy; (iii) the own risk and solvency assessment (ORSA); and (iv) the actuarial function.
- **Risk assessments and stress tests**. The supervisory authority can determine how the risks associated with climate change are taken into account in annual supervisory exercises. With regard to the banking sector, these risks feed into pillar 2 capital requirements and, for the insurance sector, they are partly covered by the ORSA. The European Banking Authority (EBA) has been mandated to prepare a report by June 2021 on proposed methods to include criteria (including governance) driven by climate-related risk in the annual supervisory exercises of national authorities. This requires the elaboration of stress tests to ensure that financial institutions hold sufficient capital to cover the risks associated with climate change. Building on the work of the Network for Greening the Financial System (NGFS), the Autorité de contrôle prudentiel et de résolution (ACPR Prudential Supervision and Resolution Authority) has launched industry-wide initiatives alongside both banking institutions and insurance undertakings aimed at developing crisis scenario analyses.
- Capital requirements. Lastly, if the relative performance of "green" and "brown" assets, defined on the basis of an official European taxonomy, showed that there was an intrinsic difference in terms of risk, the prudential framework could be adjusted. Different mechanisms are conceivable, including penalties for the least sustainable investments. So far, however, the European authorities have not yet come to a conclusion: on 30 September 2019, EIOPA issued an opinion on the integration of sustainability risk into capital requirements, which stressed the importance of monitoring this risk through dedicated stress-test exercises and risk management. The EBA has also been mandated to study this question and, given the time needed to collect the data and to come to sound conclusions, a report is only expected to be completed in 2025.

In parallel with these European initiatives, the national supervisor should play a facilitator role in the dissemination of existing best practices by participating in the creation and organisation of discussion forums bringing together French financial institutions. To this end, the ACPR has considered the risks associated with climate change a supervisory priority over the past two years. It has also launched initiatives with the financial industry to develop a guide on best practices, in particular in relation to the various possible improvements in terms of governance that were identified in the two studies carried out in 2018.





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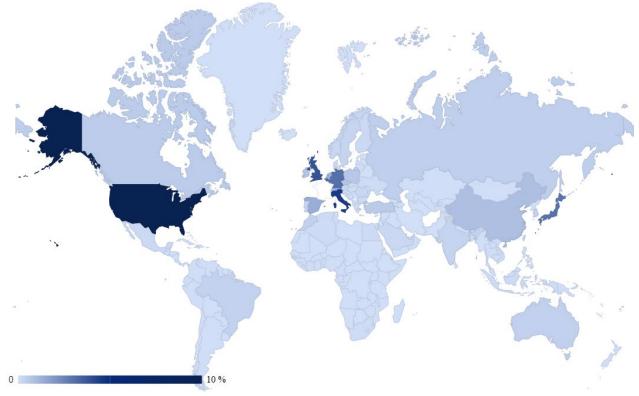




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### **Appendix** Breakdown of French banking institution and insurance undertaking assets by geographical region

CA.1 Breakdown of gross financial claims of banking institutions by country, excluding France (which accounts for 47% of outstanding amounts) (as a % of total outstanding amounts)



Source: ACPR, data at 30 June 2018 for the seven main banking groups located in France.

Note: Given their preponderance in French banking institution balance sheets, financial claims located in France are not included in the chart presented above. In the chart, a deeper colour represents a greater degree of exposure of French institutions to a country. The maximum observed exposure (and thus the deepest colour) is in the United States with 9.9% of gross financial claims.

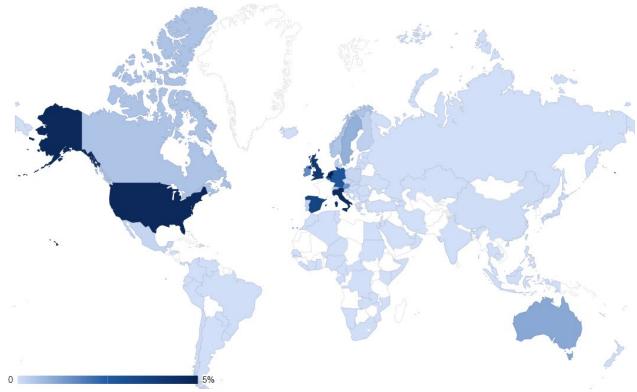




#### CA.2 Breakdown of outstanding amounts of insurance undertakings' assets by country, excluding France

(which accounts for 45% of outstanding amounts)

(as a % of total outstanding amounts)



Source: ACPR, data at 31 December 2017 for all insurers subject to Solvency II. Note: Given their preponderance in French insurers' balance sheets, assets located in France are not included in the chart presented above. In the chart, a deeper colour represents a greater degree of exposure of French insurers to a country. However, the maximum observed exposure is only 5% of assets.

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