

## Box A

# International Banks' Response to Climate Risk

Climate change can pose significant financial risks to banks and the broader financial system if left unmanaged.<sup>[1]</sup> This is because more frequent and intense extreme weather events and higher average temperatures will reduce the value of certain assets and income streams of borrowers. As a result, banking regulators and banks have been increasingly focusing on climate risks.

However, assessing climate risks is complicated by the uncertainty of how climate change will affect banks. This box discusses how climate-related risks are being incorporated into regulatory frameworks and large banks' risk management practices in advanced economies.

## Banks' exposure to climate-related risks

Climate risks are typically categorised as either transition risks or physical risks:<sup>[2]</sup>

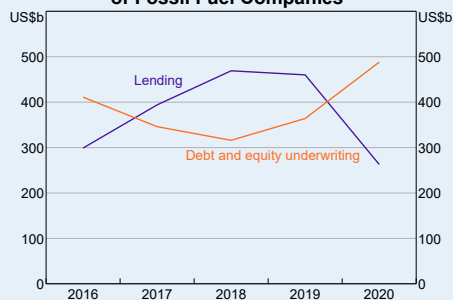
- **Transition risks** relate to potential losses that arise from the implementation of policies to address climate change, and from changes in technology, pricing and behaviours as a result of moving to a less emissions-intensive economy. These changes may occur via an 'orderly transition', allowing time for banks and firms to adapt, or they may occur rapidly in a 'disorderly transition', such that carbon-related assets could lose value quickly with some of these assets becoming economically unviable.
- **Physical risks** relate to financial losses from the direct physical effects of climate change – for example, where the

collateral underlying a loan is exposed to natural hazards intensified by climate change. Physical risks will intensify over time if limited transition takes place. Losses could be magnified if borrowers have inadequate insurance protection, including if climate change makes it prohibitively expensive or impossible to insure certain assets.

In advanced economies, banks' exposures to emissions-intensive industries are estimated to be 5–15 per cent of their total balance sheet assets.<sup>[3]</sup> Globally, large banks' financing to fossil fuel companies (both direct lending and through facilitating capital raising in debt and equity markets) has been broadly flat since 2016 (Graph A.1).<sup>[4]</sup> While debt and equity underwriting activities may not increase banks' climate-related exposures directly, they expose banks to reputational risks as a result of rising investor and public focus on climate change.

**Graph A.1**

### Large Banks' Financing of Fossil Fuel Companies\*



\* Over 2,300 companies financed by 60 banks in Australia, Canada, China, Europe, India, Japan, South Korea and the United States. Funding scaled by fossil fuel intensity.

Sources: BankTrack; Indigenous Environmental Network; Oil Change International; Rainforest Action Network; Reclaim Finance; Sierra Club

Banks are also exposed to climate risks via their interconnections (especially lending) with non-bank financial institutions (NBFIs), such as asset managers. Banks' assessment of these risks can be obscured as some NBFIs provide limited disclosures on the emissions intensity of their investments.<sup>[5]</sup> As such, climate risk on banks' balance sheets could be realised rapidly, for example, if investors reprice climate risks because they become more certain about future policy and technology outcomes (which could lead to abrupt market adjustments) or if some of the physical effects of climate change are non-linear.

### Regulators are taking steps to ensure banks manage climate risks

There are three aspects to how banking regulators have sought to manage climate-related risks to date: by seeking to understand the effects of climate change on banks; by strengthening disclosure and management requirements; and by addressing climate-related risks in regulatory policy and capital frameworks.

### Understanding and assessing the effects of climate change on banks

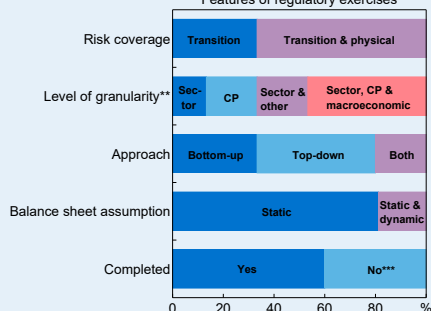
Regulators have started to quantify (and to assess banks' own ability to quantify) climate risks. This work has a range of different objectives, from sectoral climate risk analysis to economy-wide climate vulnerability assessments, and employs a variety of methodologies (Graph A.2).<sup>[6]</sup> For example, the approach may be top-down and/or bottom-up (which directly involves the financial institutions in the exercise), and may use varying assumptions about whether financial institutions' balance sheets are static or change over time. Authorities have

acknowledged that assessments conducted so far have limitations, but they provide useful starting points to understand the risks of climate change for banks.<sup>[7]</sup> Regulators are working to refine their assessments for future tests in order to capture more aspects of climate risk.

Regulators in Canada, the euro area, France, Germany and the Netherlands have published the results of their pilot climate scenario analyses. Their results generally indicate that banks experience lower credit losses in orderly transition scenarios than in disorderly scenarios, because of smaller negative effects on banks' counterparties (e.g. companies) of an orderly transition. For example, the European Central Bank (ECB) found that the average increase in the probability of default for corporate loans with high climate risks by 2050 is much less in an orderly transition scenario than in a disorderly transition scenario, or in a 'current policies' scenario (that has no further action to mitigate climate change).<sup>[8]</sup> Likewise, transition scenario analysis conducted by Canadian regulators highlighted that a

**Graph A.2**

**Climate Scenario Analysis\***  
Features of regulatory exercises



\* Based on analyses conducted by regulators from Australia, Canada, China, euro area, France, Finland, Germany, Hong Kong, Japan, Netherlands, Singapore, Spain, Switzerland and the United Kingdom.

\*\* Level at which risks are considered. CP refers to counterparty, and sector & other refers to either sector and counterparty or sector and macroeconomic.

\*\*\* Some regulators have completed the initial phase and are working on the next phase.

Sources: Network for Greening the Financial System; RBA

delayed or sudden shift in climate policy poses greater risks of financial market dislocation and a larger overall impact on credit risks than an orderly transition.<sup>[9]</sup> Regulators in the United Kingdom are in the midst of conducting a full bottom-up climate vulnerability assessment and intend to publish results later this year, while the US Federal Reserve is developing tools to conduct its own analysis.

In Asia, the People's Bank of China (PBC) carried out a climate analysis covering three emissions-intensive sectors under scenarios with varying levels of carbon prices. Overall, participating banks were found to be resilient to the increase in defaults, given banks' exposure to the three sectors comprised a relatively small share of total loans. The PBC intends to conduct further climate analysis covering more sectors and macroeconomic scenarios in the future.<sup>[10]</sup> Results from the Hong Kong Monetary Authority's climate analysis found that banks faced higher costs under a disorderly transition relative to an orderly transition scenario, but were resilient overall. Banks were also found to face substantial losses linked to residential mortgages in Hong Kong in a separate physical risk scenario.<sup>[11]</sup> The Monetary Authority of Singapore (MAS) indicated that a considerable share of Singaporean banks' lending could be exposed to transition risks.<sup>[12]</sup> The MAS intends to incorporate scenarios with climate risks as part of its annual Industry-wide Stress Test in the near future. Japanese regulators have started to work on climate-related assessments and intend to complete their pilot scenario analysis on major banks in 2022.

### **Strengthening requirements around banks' disclosure and management of climate-related risks**

Some regulators have issued (or plan to issue) supervisory expectations for banks to disclose, manage and incorporate sustainability and/or climate-related risks – including Canada, the euro area, France, Germany, Hong Kong, the Netherlands, Singapore, Spain and the United Kingdom.

Regulators in China have also published guidelines on climate-related disclosures for banks, and indicated their intention to set up a mandatory disclosure system with uniform standards for financial institutions and companies to promote information-sharing. Moreover, the euro area, Hong Kong, New Zealand, Singapore, Switzerland and the United Kingdom have announced mandatory disclosure requirements for large companies and financial institutions, based on recommendations by the Task Force on Climate-related Financial Disclosures (TCFD).<sup>[13]</sup> The TCFD was established by the Financial Stability Board in 2015 to improve and encourage consistent reporting of climate-related financial information.

### **Addressing climate-related risks in regulatory policy and capital frameworks**

The PBC intends to gradually incorporate climate risks into its macroprudential policy framework and could also consider calibrating risk weights based on its assessment of banks' 'green' and 'brown' assets (although the taxonomy on green and brown assets is still evolving).<sup>[14]</sup> The United Kingdom's Prudential Regulation Authority stated that banks could face increased scrutiny and supervisory actions, including (Pillar 2) capital add-ons, if their responses to climate change are deemed insufficient.<sup>[15]</sup>

Similarly, the ECB stated that Pillar 2 capital requirements could be used to address the climate risk exposures of individual banks.<sup>[16]</sup>

Domestically, the Australian Prudential Regulation Authority (APRA) is working with Australia's largest five banks to gain a better understanding of their potential exposure to climate-related risks. As part of this work, APRA is leading a Climate Vulnerability Assessment (CVA) – a bottom-up exercise featuring two climate scenarios: a delayed transition scenario with high transition risks; and a current policies scenario with more severe physical risks due to limited climate action. Results from the CVA are expected to be released in the second half of 2022 (see 'Chapter 3: The Australian Financial System').<sup>[17]</sup> In November 2021, APRA finalised a TCFD-aligned prudential practice guide on disclosing and managing climate-related financial risks for regulated entities. In March 2022, APRA commenced a survey of medium-to-large APRA-regulated entities that asks them to self-assess how their current practices align with APRA's prudential practice guide on climate risk.

### Large banks are responding to climate risks on their balance sheets

Large banks in advanced economies are responding to climate-related risks via improved risk management, disclosure and governance, public commitments to reduce emissions and supporting the green economy.

#### Risk management

The 31 largest banks across major advanced economies have added climate-related risks to their risk management frameworks.<sup>[18]</sup> For example, all of these large banks have carried out some materiality assessments, most

monitor climate-related risks on parts of their outstanding loans and over two-thirds have stated that they formally incorporate climate-related risks in their risk appetite statements. However, these frameworks are generally not comprehensive and remain mostly qualitative and selective, and banks often rely on loan officer or management opinions for climate-related considerations in credit decisions. Nonetheless, large banks increasingly report an intention to quantify emissions linked to their investment and lending portfolios, and to reduce their holding of emissions-intensive assets as part of managing their transition risks (Figure A.1). These banks have also communicated that they will increase financing and support for 'clean' energy sectors, including through the use of more renewable energy in their own operations.

All of the large banks analysed here have communicated that they are exploring methods to better quantify climate-related risks or are in the process of refining methods and improving data coverage and quality. Most have conducted at least a couple of climate scenario assessments apart from regulatory exercises; many have used scenarios developed by their regulators or international bodies. However, most assessments have covered only segments of their balance sheets and over two-fifths of these banks did not disclose their results. The area in which banks have made more progress is in embedding climate-related risks in credit risk management. This includes collecting climate-related information and emissions data from new and existing counterparties for risk assessments. The emphasis on credit risk over other types of risks is likely to reflect the concentration of climate-related vulnerabilities in – and the



securities are shorter dated and/or could be readily sold in financial markets. However, abrupt price adjustments could result from changes in investors' risk appetite or climate policies. Banks are also less progressed in considering how climate-related risks could affect their ability to access funding. In managing credit risks, banks have focussed less on incorporating climate-related risks in collateral valuation and loan pricing, particularly for the management of physical risks (Graph A.3). This leads to the possibility of vulnerabilities building up, such as for properties exposed to the impacts of climate change. Smaller banks are also generally less advanced than large banks in recognising the materiality and management of climate-related risks.

### Disclosure and governance

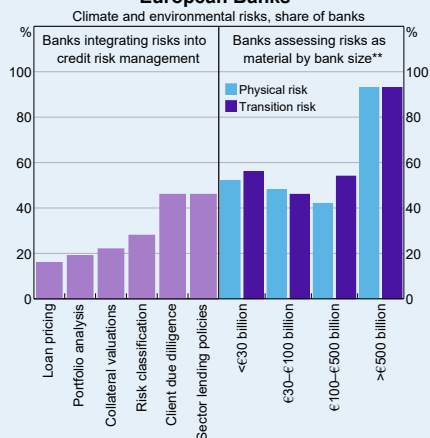
Most banks are increasingly aligning their climate reporting with TCFD recommendations, with large European banks providing relatively more detailed climate reporting than banks in other

jurisdictions. The banking sector as a whole was below average in the implementation of over half of the TCFD recommendations relative to other industries covered by the 2021 TCFD status report, such as for metrics and targets (although they were slightly above average for disclosing risk management practices).<sup>[20]</sup> Moreover, disclosures remain largely qualitative with more emphasis on green financing or related topics. Disclosures also vary considerably in the level of detail between banks. Nonetheless, an increasing number of large banks have started to disclose emissions linked to their lending since late 2021, though mostly only for a small part of their corporate loan portfolio.

Almost all large banks in major advanced jurisdictions have improved their internal governance around climate-related issues, including through explicitly assigning responsibility to manage climate-related opportunities and risks. However, not many banks include specific climate-related metrics beyond operational emissions or sustainable financing targets in executives' variable payments, which could lead to selective and narrowly focused responses.

**Graph A.3**

#### European Banks\*



\* Based on 112 banks directly supervised by the ECB.  
 \*\* Bank size by assets.  
 Source: ECB

### Public commitments and funding the green economy

The largest 31 banks in major advanced jurisdictions have all joined the Net-Zero Banking Alliance (NZBA), publicly committing to achieving net zero emissions in their operations, lending and investment activities by 2050. However, only three of these banks have so far committed to halve overall emissions linked to their financing activities by 2030. To date, around three-fifths of large banks have published some emissions-based interim targets or transition roadmaps for

shifting lending away from emissions-intensive sectors, and a small share have started tracking their performance against these commitments.

Banks also play a role in funding green activities and facilitating capital flows to these activities, both of which could be a source of significant revenue as countries work to mitigate climate change. For example, the value of green bonds that banks have helped bring to market globally has grown significantly over the past several years. Some banks offer discounted lending rates for energy-efficient homes and electric or hybrid cars (green mortgages and car loans). Regulators globally have actively supported the provision of sustainable finance, through improving the taxonomy on green finance and/or providing incentives to banks (e.g. the Bank of Japan and the PBC provide low-cost funding for green loans made by banks).

### **Banks need to do more to meet regulators' expectations**

Major international banks have increased their efforts to improve governance and risk management practices regarding climate risks, and have made public commitments to reduce investing and lending in companies and activities that generate emissions. Nevertheless, regulators (including in the euro area,

Germany, the Netherlands and the United Kingdom) have indicated that banks need to further accelerate their response in order to meet supervisory expectations.<sup>[21]</sup> For example, banks must disclose and assess exposures to climate risk more comprehensively and be more transparent about the methods and assumptions underlying their risk assessments, criteria and metrics.

A smooth transition to a less emissions-intensive global economy will require effective and comprehensive risk identification and management frameworks so that banks can correctly price credit and market risks. Effective assessment and market pricing of climate risk also require the banking system to have consistent and transparent disclosures. Standardised sustainability disclosures and metrics are emerging, including through the efforts of regulators, international bodies and private initiatives. For example, the newly established International Sustainability Standards Board recently launched a consultation on proposed standards. The ongoing work of the TCFD as well as private sector initiatives such as the NZBA will also encourage better and more standardised climate risk disclosures. ✎

### **Endnotes**

[1] For further discussion of the financial risks posed by climate change, see Financial Stability Board (2020), 'The Implications of Climate Change for Financial Stability', 23 November.

[2] Climate-related risks will generally manifest for banks in the form of higher credit, market, liquidity and operational risks. Litigation risk is also emerging as a discrete risk category arising from

climate change, given the rapid increase in climate-related legal actions over the past years. See Kearns J (2021), 'Evolving Bank and Systemic Risk', Speech at the 34th Australasian Finance and Banking Conference, 16 December.

[3] See Financial Stability Board, n 1; Bank of Canada and the Office of the Superintendent of Financial Institutions (2021), 'Using Scenario Analysis to

- Assess Climate Transition Risk', November; European Central Bank (2021), 'Climate-related Risk and Financial Stability', July; other climate-related reports from large banks in advanced economies. Industries included in these calculations vary between sources.
- [4] See Rainforest Action Network, BankTrack, Indigenous Environmental Network, Oil Change International, Reclaim Finance, Sierra Club and Urgewald (2022), 'Banking on Climate Chaos: Fossil Fuel Finance Report 2022', 30 March.
- [5] The share of asset managers reporting on Scope 1, 2 and 3 emissions is low, at 8 per cent. For more details, see Financial Stability Board (2021), 'Task Force on Climate-related Financial Disclosures 2021 Status Report', 14 October.
- [6] For more information, see Network for Greening the Financial System (2021), 'Scenarios in Action: A Progress Report on Global Supervisory and Central Bank Climate Scenario Exercises', October.
- [7] For example, static balance sheet assumptions may overestimate climate impacts resulting from shorter-dated assets. Conversely, some exclusions of exposures (e.g. to households) in these assessments are likely to underestimate climate impacts for banks.
- [8] See European Central Bank (2021), 'ECB Economy-wide Climate Stress Test', September.
- [9] See Bank of Canada and the Office of the Superintendent of Financial Institutions, n 3.
- [10] See People's Bank of China (2022), 'Box 5: Exploring Climate Risk Stress Testing', PBC *Monetary Policy Report*, 11 February. The climate scenario analysis covered thermal power, cement and steel sectors.
- [11] See Hong Kong Monetary Authority (2021), 'Pilot Banking Sector Climate Risk Stress Test', December.
- [12] The MAS also estimated emissions linked to activities and sectors financed by these loans with higher transition risks, and found around half of them are lent to the housing (building and construction) sector with relatively lower emissions intensity (emission per million dollars). See Monetary Authority of Singapore (2021), *Financial Stability Review*, December.
- [13] The US Securities and Exchange Commission also recently released draft climate disclosure rules for public comment. See US Securities and Exchange Commission (2022), 'SEC Proposes Rules to Enhance and Standardize Climate-Related Disclosures for Investors', Press Release, March.
- [14] Yi Gang (2021), 'Green Finance and Climate Policy', Opening Remarks at a High-Level Seminar on Green Finance and Climate Policy, 15 April; Yi Gang (2021), 'Central Banks and Climate Change: How to Manage Expectations, Balance Actions and Communication and Contribute to Coordinate with Other Important Actors?', Concluding Panel Speaker at the Green Swan Conference, 4 June.
- [15] Bank of England (2021), 'PRA Climate Change Adaptation Report 2021', 28 October.
- [16] Baranović I, I Busies, W Coussens, M Grill and H Hempell (2021), 'The Challenge of Capturing Climate Risks in the Banking Regulatory Framework: Is there a Need for a Macroprudential Response?', ECB *Macroprudential Bulletin*, 19 October.
- [17] See also RBA (2021), 'Box A: Australian Financial Regulators' Actions on Climate Change-related Risks', *Financial Stability Review*, October.
- [18] The assessments of banks in this section are mainly based on latest available climate or sustainability reports from 31 large banks in Canada, the euro area, Japan, Switzerland, the United Kingdom and the United States at the time of writing.
- [19] For example, the ECB estimates that 52 per cent of corporate loans in the euro area are in climate policy sensitive sectors, compared with 39 per cent in securities holdings: European Central Bank, n 3.
- [20] The TCFD status report presents the share of companies across eight industries that disclosed climate-related financial information aligning with the TCFD recommendations in 2020. See Financial Stability Board, n 5.
- [21] For more information, see BaFin (2021), 'Sustainability Risks – Executive Summary of BaFin's Status Survey', 18 November; Bank of England, n 15; European Central Bank (2021), 'The State of Climate and Environmental Risk



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