

The role of prudential policy in addressing climate change*



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There is a clear case for prudential regulators to consider possible adjustments in the three pillars of the current prudential framework to incorporate, where appropriate, the impact of climate-related financial risks. At the same time, it would not be adequate to assign prudential authorities a prominent role in the direct public policy response to the climate emergency. This should be left to governments. Regulatory instruments have, at most, an uncertain impact on the actual transition path towards a more sustainable economy. Moreover, in delivering on their core mandate to preserve financial stability, prudential authorities need to consider trade-offs and adopt decisions that may not always be fully aligned with climate-related policy actions taken in other areas. There exists however a clear complementarity between different social goals that will be easier to achieve by respecting the adequate separation of the different policy domains.

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1. Introduction

There is now a broad agreement that climate change is driven by human behaviour, and proceeding faster than expected. According to the IPCC's sixth report, the average global surface temperature has increased by around 1°C in the first two decades of the 21st century, as compared with the period 1850–1900. Even in the best-case scenario of immediate, rapid and significant cuts in greenhouse gas emissions, the average surface temperature is estimated to increase by 1.5°C over pre-industrial levels in the next 20 years. Translating this into financial terms, a study² has shown that a 1.5°C temperature increase will shave 8% off global GDP by 2100. These developments pose potential challenges for nearly everybody and, most certainly for banks and the financial system.

As we all know, financial institutions are exposed to climate change mainly through two different sets of climate risk drivers.

First, banks are exposed to physical risks. In particular, banks may suffer the economic costs and financial losses resulting from the increasing frequency of extreme weather events (eg heatwaves, floods and wildfires); longer-term climatic shifts (eg changes in precipitation, ocean acidification and rising sea levels); and the indirect effects of climate change (eg soil degradation and drought).

Second, as jurisdictions seek to address climate change by reducing greenhouse gas emissions, their efforts may generate transition risks. This is because economic disruption could stem from the cumulative effects of changes in government policies, and in technology and consumer and investor behaviour. This, in turn could erode the value of banks' credit exposures or the corresponding collateral.

By and large, the climate-related risks faced by financial institutions broadly fall under the risk taxonomy used in prudential regulation. In particular, physical and transition risks manifest themselves in the form of credit, market and liquidity risks. In addition, climate-related developments can increase operational risk by affecting business continuity and by giving rise to litigation and reputational losses.³

Given the impact of climate change on “traditional” risk categories, the case has been made that prudential policy needs to be adjusted to account for the impact of climate-related risks on the safety and soundness of financial institutions as part of the core mandate of supervisory authorities (what we could call the financial motivation for regulatory action).⁴ Moreover, this adjustment has often been presented as a contribution by prudential regulation to facilitate the transition to a more sustainable economy by providing incentives for a more climate-friendly allocation of financial resources (that would be the economic motivation).

The financial motivation presents substantial technical complexities that supervisors need to assess if only to avoid unintended consequences. For its part, the economic motivation may not be as straightforward as it may seem, given the substantial trade-offs involved in prudential policy. The rest of the notes explore those challenges in more detail.

² [Interactive: The impacts of climate change at 1.5C, 2C and beyond | Carbon Brief](#).

³ BCBS (2021).

⁴ See eg Carney (2015), Weidman (2019), Bailey (2021) and Powell (2021).

2. The financial motivation

When considering possible regulatory adjustments, the first question is whether current rules already capture climate-related financial risks. If that were not the case, regulators would need to consider supplementary actions through modifications to Pillar 1 instruments (such as risk weights), Pillar 2 requirements (eg supervisory review processes and capital add-ons) or Pillar 3 disclosure obligations. Indeed, the BCBS, as the international standard-setting body for banks, has announced a roadmap to identify gaps in the Basel framework, so that they can develop measures to address them.

However, quantifying the potential impact of climate-related risks on banks' overall risk profile poses formidable challenges. First, physical risks may evolve over much longer time horizons than the 12-month time frame typically used to measure capital adequacy under the current Basel framework. Second, techniques used to translate climate scenarios into financial risks rely on a wide range of simplifying assumptions. The results of these projections are subject to uncertainties including the unpredictable course of future green technological developments and climate-related governmental policies.

Those two complexities make it challenging to use standard Pillar 1 instruments (such as risk weights) to address climate-related risks. Capital requirements are designed to ensure that banks have sufficient loss-absorption capacity to cover losses in the face of unexpected developments. Thus, risk weights should be calibrated with an implicit value-at-risk methodology. The idea is to measure losses for specific exposures in contingent scenarios occurring with a predetermined probability, over a specified time horizon – ie the tail risk. That means that, in principle, an adequate calibration of risk weights for climate-related risk-related exposures would require an estimate (at least a rough one) of the whole probability distribution of climate-related events and associated policy reactions.

In addition, given the long time horizon of the relevant risk scenarios, one would need to ask how banks might respond to emerging risks in these scenarios. Asking banks to set aside capital today to cover losses for risks that may only materialise long after the maturity of most of their current exposures and only if their investment strategy remains unchanged over long time horizons does not sit well with the underlying construct of regulatory capital requirements.

Pillar 2 offers more possibilities to deal with climate-related risks. Under the supervisory review processes, authorities have a larger variety of tools that can be deployed to ensure adequate management of climate-related risks. Supervisors could use their assessments of firms' exposure to such risks to seek – within a reasonable period of time – changes in how supervised firms identify, monitor, measure and control them. That is likely to prove more helpful than direct capital requirements to mitigate the impact of climate-related risks on banks' financial positions. Sectoral concentrations limits could also be used under Pillar 2 if deemed appropriate.

Beyond this, if additional loss-absorption capacity is considered appropriate, the imposition of capital add-ons under Pillar 2, based on suitable scenario analysis and stress testing, could be more effective than upward adjustments in risk weights under Pillar 1. Climate-stress tests allow, at least theoretically, the potential impact on banks to be considered in the light of different scenarios that combine specific climate developments and actions taken by policymakers and the banks themselves. Those exercises can therefore facilitate the derivation of scenario-contingent impact estimates of both physical and transition risks on banks within an internally consistent framework. Supervisors can then use those exercises to require either management actions or additional loss-absorption capacity or both.

As a starting point for any prudential measures, granular taxonomies are needed to support the assessment of banks' vulnerabilities, especially for corporate exposures. Moreover, these assessments need to be based on comprehensive scenarios including climate developments and the policy responses. In addition, standardised regulatory returns need to be developed that contain sufficiently detailed information on the relevant climate-related risk exposures.

Fortunately, the international community is already working to fill the current gaps in information and analysis. For example, some national authorities are seeking to develop practical taxonomies for evaluating risks for different sectors and classes of entities. The Network for the Greening of the Financial System (NGFS) has developed a suite of plausible scenarios. These are already in use by regulators to analyse the vulnerabilities of their supervised institutions.⁵

The FSB has also made progress in developing guidance for climate-related disclosures, which is now being adopted in many jurisdictions. These efforts are complemented by initiatives under way at the international accounting standard-setting bodies (eg the IFRS Foundation) to establish public financial disclosure standards on sustainability.

Those developments will certainly help regulators to adjust policy. However, it will be an enormous task to develop a sufficiently comprehensive information and analytical framework that can effectively support the prudential policy response to climate change. Taxonomies need to be highly granular if they are to adequately differentiate exposures in relation to sectors, geographic locations and even firms' business models. This will require a substantial overhaul of current data frameworks. Moreover, analytical tools to assess the actual impact of climate-related risks on banks' prospects will need to embed complex and often non-linear interactions between a wide array of climate scenarios and the behaviour of different types of economic agent and authority.

It is therefore quite reasonable that most prudential authorities have adopted a gradual approach. For now, they are focused on analysing the impact of the main climate risk drivers and on understanding the implications of climate-related risks for financial institutions. This may help banks to successfully navigate the transition. Yet, while incorporating that analysis into formal bank capital requirements seems at present hardly advisable, other forms of supervisory action may be warranted for banks with an excessive exposure to those climate-related risks that are more likely to materialise in a less distant future.

3. The economic motivation

Turning now to the economic motivation, promoting a swift transition to a more sustainable economy should be a primary objective of general government policies. It is true, however, that regulatory actions, such as the ones described above aiming at addressing banks' climate-related risks, could provide financial entities with incentives to reduce exposures to firms and sectors that are most vulnerable to physical and transition risks. Therefore, while not being its primary objective, prudential regulation could then, in principle, help facilitate a distribution of credit flows across sectors that might support the transition of the economy towards a less carbon-intensive productive structure.⁶ Yet it remains uncertain how far prudential policies can contribute to that social goal by themselves. Moreover, complex trade-offs may be generated by too great an emphasis on prudential tools with a direct climate-related macroeconomic objective.

⁵ NGFS (2020) and Baudino and Svoronos (2021).

⁶ Bolton et al (2020).

First, while regulatory penalisation of exposures to borrowers subject to physical risks (such as extreme weather events) may have a clear microprudential rationale, this does not directly help to mitigate those risks or to smooth the transition to a greener economy. If anything, it may even exacerbate the impact of climate risks on unprotected firms and households by reducing their access to bank financing.

With regard to transition risks, more stringent prudential requirements for exposures to agents holding significant amounts of stranded assets would strengthen banks' resilience. At the same time, though, it would also reduce the availability of funding for firms and sectors with a relatively large carbon footprint. This could possibly help with the required economic restructuring by making the most affected companies less viable. However, the quantitative impact of carbon-penalising prudential requirements on the actual credit supply may not be that significant unless it becomes really large.⁷ And, if this were to be the case, the affected companies would become even less capable of shifting to more sustainable production processes, thus hindering the transformation of the economy as a whole.

The impact of a more climate-sensitive prudential framework on the overall economic transition becomes even more uncertain if we consider possible frictions between climate-related microprudential actions and macroprudential policies – those that aim at preserving the stability of the financial system. The logic behind standard macroprudential policies is that regulation can be used not only to ensure banks' resilience, but also to steer their credit policies so as to safeguard systemic stability.

Among the factors that could endanger financial stability are transition risks, if they reach a systemic scale. Arguably, actions aimed at penalising firms and sectors that are dependent on fossil fuels might exacerbate transition risks by increasing the vulnerability of a potentially large and economically significant set of borrowers.⁸ In this light, macroprudential objectives may not always coincide with microprudential priorities. Moreover, macroprudential actions may not always be fully aligned with other policy developments that seek to accelerate the transition to a greener economy.

A putative green bubble is a more extreme example of tensions between policy objectives.⁹ Although this may look like a remote scenario, it cannot be fully excluded that policy actions and society's increased awareness of climate change could eventually lead to overinvestment in green assets and their overvaluation. Facing that situation, macroprudential authorities could respond by trying to moderate green exposures or green asset valuations in order to contain the risk of a disorderly correction.

4. The green-supporting factor

Applying a green-supporting factor (GSF), to alleviate prudential requirements for green exposures so as to facilitate the transition, is unlikely to mitigate frictions across policy objectives. By reducing capital requirements for green assets, the unexpected losses that could arise from those exposures would, by definition, be insufficiently covered by own resources. Moreover, such an approach would also encourage the overvaluation of green assets. These two factors would increase the risks for financial stability and also the scope for friction between the financial stability mandate of regulators and general policies aimed at favouring the transition to a more climate-friendly economy.

⁷ Chamberlain and Evain (2021).

⁸ Dafermos and Nikolaidi (2021).

⁹ Aramonte and Zabai (2021).

These trade-offs for prudential regulators are mainly associated with the treatment of transition risks. But they become much less significant if governments adopt a hands-on approach in shaping the transition to a more sustainable economy. Although a complex endeavour, a comprehensive and well defined policy programme containing the required mixture of taxes, subsidies and public guarantees for different activities could not only facilitate the achievement of the climate targets but also, very importantly, alleviate the transition risks. In this case, regulatory actions would be far more likely to be closely aligned with the general climate-oriented policy goals.

5. Conclusion

Few now doubt the urgency of public policy action to address climate-related risks.

In the area of financial regulation, it is now widely accepted that prudential regulators need to thoroughly analyse the financial impact of climate change on firms' safety and soundness and to consider adjustments in the current prudential framework, as warranted to protect the stability of the financial system. Achieving the right balance between disclosure obligations, supervisory action and, if needed, the adjustment of capital requirements would then be a key objective.

At the same time, it would not be appropriate to assign prudential authorities a prominent role in the direct public policy response to the climate emergency. This should be left to governments. Regulatory instruments have, at most, an uncertain impact on the actual transition path towards a more sustainable economy. Moreover, in delivering on their core mandate to preserve financial stability, prudential authorities need to consider trade-offs and adopt decisions that may not always be fully aligned with climate-related policy actions taken in other areas.

It is true that, by adjusting the prudential framework to the extent needed to rigorously incorporate the impact of climate-related risks, regulation can support broader government policies and societal expectations geared towards economic sustainability. At the same time, prudential authorities cannot work in a vacuum. Well designed general government policies that facilitate a sensible transition path would also help regulators to meet their core mandate by reducing the scope of policy trade-offs. There is therefore a clear complementarity between different social goals that will be easier to achieve by respecting the adequate separation of the different policy domains. ■

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Fernando Restoy became Chairman of the Financial Stability Institute on 1 January 2017. He had been Deputy Governor of the Bank of Spain since 2012. Previously, he held other senior positions at the Bank of Spain, which he joined in 1991. From 1995 to 1997 he was Economic Advisor and Head of the Monetary Framework Section at the European Monetary Institute in Frankfurt. Mr Restoy was Vice Chair of the Spanish Securities and Markets Commission (CNMV) from 2008 to 2012 and Vice Chair of IOSCO Technical Committee (now Board). He was the Chairman of the Spanish Executive Resolution Authority (FROB) from 2012 to 2015 and has been a Member of the Supervisory Board of the ECB's Single Supervisory Mechanism from 2014 to end 2016. Fernando Restoy holds an MSc in econometrics and mathematical economics from the London School of Economics and an MA and PhD in economics from Harvard.

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