

BANKING REGULATION AND SUSTAINABILITY

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Introduction

The 2030 United Nations Sustainable Development Goals place climate action and environmental challenges as central to the required transformation of the global economy to “end poverty, protect the planet and ensure prosperity for all”. Following the landmark commitment to limit global warming, made by the world’s governments meeting at COP21 in Paris in 2015, the G20 and its Financial Stability Board (FSB) have expressed concerns that climate change represents a major threat to the future stability of the global economy. The G20 set up a Sustainable Finance Study Group and the FSB commissioned the Task Force on Climate Related Financial Disclosures (TCFD). This paper seeks to answer the question of how banks, and banking regulation in particular, can contribute to sustainability objectives.

Most governments seek to smooth economic growth as far as possible, at the highest rate, in order to maximize living standards. Monetary and fiscal policy objectives are generally set to dampen the business cycle (5-7 years) and the credit cycle (10+ years) so as to deliver monetary and financial stability. Sustainability risks can be defined as those which might crystalize over the longer-term horizon of a generation or more (25 years). As governments become more aware of such risks, policy is shifting to mitigate them. Growth which continually raises global temperatures and over-uses the world’s resources, for example, will eventually risk a global economic catastrophe, not just an environmental one. If there is a trade-off and hence a policy choice here, it is not between growth and social outcomes. Rather it is between short-term unsustainable growth and longer-term sustainable growth.

Mark Carney, Governor of the Bank of England and FSB Chair, called this ‘The tragedy of the horizon’² since the costs of taking action are borne in the short-run but the benefits accrue to future generations. The interaction of that observation with the political cycle in most countries means that the appropriate actions for achieving long-term sustainability may be delayed, making the eventual actions to avoid disaster – or in dealing with it once it happens - much more costly.

Many studies have demonstrated the links between environmental sustainability challenges and economic and financial risks.³ Environmental and social risks are becoming systemic and a potential threat to financial stability.⁴ The main environmental sustainability risks – physical, transition and liability risks – can represent negative externalities for the banking sector and the broader economy. For most countries,

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² M. Carney, ‘Breaking the Tragedy of the horizon – climate change and financial stability’, speech to Lloyd’s of London, September 2015.

³ See Bank of England, ‘The impact of climate change on the UK insurance sector, a climate change adaptation report by the Prudential Regulation Authority’, London, September 2015 <<https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/publication/impact-of-climate-change-on-the-uk-insurance-sector.pdf>> 33, 34, 45, 46 and 48. See also Bank of England Prudential Regulation Authority, ‘Transition in thinking: The impact of climate change on the UK banking sector’, London, September 2018 <<https://www.bankofengland.co.uk/-/media/boe/files/prudential-regulation/report/transition-in-thinking-the-impact-of-climate-change-on-the-uk-banking-sector.pdf?la=en&hash=A0C99529978C94AC8E1C6B4CE1EECD8C05CBF40D>>

⁴ The World Bank, ‘World Development Report 2014 – Risk and Opportunity – Managing Risk for Development’, Washington, 2013.

banks play a crucial role in providing credit and allocating investment capital that can be used to mitigate these risks whilst enabling the economy to grow and become more resilient to sustainability challenges.

This paper discusses how, within this wider policy context, prudential regulation and supervision can help to direct, incentivize or encourage banks to support sustainability. In particular, how they can address the financial risks associated with sustainability issues. The focus is mostly on climate change and environmental risks, but the analysis generally carries over to the broader sustainability agenda. Our view is that the existing global regime for prudential regulation – the Basel rules – already has sufficient provisions to enable supervisory authorities to assess whether banks are managing sustainability risks properly. And since the risks are financially material, both the authorities and authorized firms have a legal duty to manage them. Nonetheless, international regulation may need to play a larger role in developing harmonized standards for bank risk governance and business model assessment. This would be justified by the proposition that, where such risks are material for firms they can create systemic risks to the banking sector as a whole, which may not be factored into the decisions of individual firms. As banks are the largest providers of credit in many economies, how they manage these risks collectively is an important policy and regulatory concern.

This paper consists of four further sections and a conclusion. Section 1 discusses the crossover between the banking sector and environmental sustainability. Section 2 considers some of the main regulatory standards and supervisory approaches that are emerging from best practice to address environmental sustainability challenges. Section 3 considers some specific recent international and regional initiatives which address how financial regulation and environmental, social and governance (ESG) factors can be incorporated into financial regulatory and policy frameworks. Section 4 considers some common challenges in developing more effective regulatory approaches for supervising banks in the context of the challenges and financial risks posed by environmental sustainability.

2. The Banking Sector and Environmental Sustainability

The financial system plays a crucial role in supporting economic growth, by providing credit and allocating investment capital. In many countries, most notably Europe (including the UK) the banks dominate credit provision and creation.⁵ Despite borrowing short and lending long, banks have a tendency to exhibit relatively short-term behavior when it comes to risk management, capital and liquidity and the role of banking regulation has in part been to ensure that banks can withstand medium-term pressures, so as to protect the system as a whole. To make growth resilient to longer-term sustainability risks, the banking system can and should be adapted further by taking an even longer-term view.

Most experts agree that the main environmental sustainability risks – physical, transition and liability risks – potentially create negative externalities for the banking sector and broader economy. Prudential regulation and supervision is ultimately about maintaining financial stability and it is now being recognized that these sustainability risks could be systemic and that regulators therefore have a duty to ensure that they are properly being taken account of.

Under pressure from customers and investors, as well as regulators, banks are already moving to recognise these risks and support the transition to a more sustainable economy by incorporating or mainstreaming sustainability factors into their risk management models and governance frameworks. Risk management is perhaps the key mechanism which enables banks to mobilise and reallocate capital away

⁵ Banks have the unique ability to create deposits when lending and so expand their balance sheets *ex ante* without additional funding. So, unlike other credit institutions, they are not just intermediating between savings and investment. See M McLeay, A Radia, and R Thomas, ‘Money creation in the modern economy’ (March 2014) Bank of England Quarterly Bulletin Q1, 14-27.

from unsustainable activities to more sustainable sectors of the economy, whilst still pursuing their commercial objectives. So it is also a key mechanism for prudential regulation and supervision to help drive sustainable outcomes.

As well as managing their own risks, banks also have an important role to play in supporting the broader economy's adaptation to environmental changes and building resilience. By reallocating credit to more sustainable sectors of the economy and managing credit and market risks, banks contribute, in particular, to (i) adapting to the consequences of environmental change over time, (ii) reducing the likelihood of environmental sustainability risks, (iii) mitigating the impact of these risks when they materialize and (iv) supporting recovery from any given impact.

Across many countries, banks have sought to address these risks by adopting different types of 'green' banking practices. Two distinct areas of banking practice have emerged: i) Development of ESG guidelines with a particular focus on risk management in the area of project finance and reallocating credit to renewable energy resources. The Equator Principles were established in 2003 to provide banks with voluntary guidance for incorporating environmental and social risks into a bank's assessment of credit and operational risks in large infrastructure investment projects. As a result, many large global banking institutions have mainstreamed environmental governance principles into project finance.

ii) Most banks primarily provide short-term credit to large corporates and small and medium-sized firms, and mortgage, savings and investment products to individuals. They are uniquely positioned to mobilise capital for the green economy, including renewable and clean energy projects, by making loans and investments to corporates, structuring specialized transactions and improving the energy efficiency of residential housing by offering differentiated credit terms through mortgage products and home improvement loans.

As economies adapt to evolving market structures in response to environmental sustainability challenges, there is likely to be volatility in asset prices, restricted availability of credit and borrower defaults in economic sectors that the market has determined to be environmentally unsustainable. These risks include:

i) Corporate credit risk in the banking book – companies that depend on carbon emissions, such as coal mining or petrol engine manufacturers could suddenly go out of business, perhaps through consumer demand changing, possibly encouraged by policy changes by the authorities (banning petrol and diesel cars by some future date for example). Climate events could also generate correlations of risk crystallisation – across sectors or locations – which are unprecedented and therefore not reflected in bank risk models⁶.

ii) Retail credit risk – most commercial banks will have large portfolios of mortgages (perhaps corporate as well as residential) secured on the underlying property. Those properties should be insured against environmental damage such as floods and storms. But banks do not know for sure whether home owners maintain their flood insurance. Hence, in a climate event there could be wrong-way risk when the borrower can't repay and their collateral is also wiped out.⁷

iii) Capital market risk – as the economy changes and policy takes new directions, asset prices will change. Banks will typically hold a variety of assets in their treasury portfolios that will be subject to market risk.⁸

⁶ Bank of England, 'Transition in Thinking: The impact of climate change on the UK banking sector', above n 3, 7-8, 22.

⁷ Ibid, 4-5, 39-42.

⁸ Ibid, 21-25.

iv) Sovereign risk – banks may try to limit their credit exposures by holding sovereign debt. But climate events could seriously undermine the credit of whole countries by damaging particular concentrations of industry. Such factors are not part of the methodologies used by credit rating agencies in assessing sovereign debt risk. Other examples include systemic crop failures in some African countries due to global warming; extensive flooding in low lying countries such as the Netherlands; or severe water shortages in countries that depend on tourist revenue.⁹

v) Policy and legal risk – countries such as Brazil and China are extending environmental protection legislation to include the providers of credit to firms that transgress environmental laws.¹⁰

In recent years, banks have begun to do more to address these risks by gradually incorporating or mainstreaming sustainability factors into their risk management models and business strategies. In doing so, banks can both improve their risk management and enhance shareholder value by developing more sustainable financial and investment products. This enables banks to mobilize and reallocate capital away from unsustainable economic activity to more sustainable sectors of the economy. To do so fully may require innovation. Value-at-Risk risk models, for example, rely on extrapolation of historical data sets to estimate future risks, the more advanced models using data from stressed periods. But climate risks have not yet fully materialised and they will increase with global temperatures and rising sea levels, and growing unpredictability in extreme weather conditions. Those risks cannot be fully reflected in current historical data sets. Addressing this may require ‘scenario analysis’ in which assumptions about climate and its impact on business are simulated, over a range of plausible parameter values, in order to assess future risk.

To generate the decisive shift away from fossil fuel energy and related physical capital that is needed to mitigate climate risks may require more than these voluntary initiatives. The role of financial regulation in supporting the transition to a more sustainable economic path has been deemed critical by many governments. In January 2014 World Bank President Jim Yong Kim, speaking at the World Economic Forum, recognised the regulatory gap in this area by stating that “financial regulators must take the lead in addressing climate change risks”, and that they should use pricing mechanisms to more effectively control negative externalities or systemic risks associated with global warming.¹¹

3. Regulatory Objectives and Tools

The overriding objective of banking regulation is to safeguard financial stability and build resilience to shocks, wherever the shocks may come from, thus providing for a sustainable source of credit, savings products and payment services to the broader economy. It is not to ensure that no bank fails, nor to protect the franchise value of a firm. Banking regulation – which we take to include supervisory activities – can play an important role in mitigating the institutional and market impediments to the banking sector’s ability to provide adequate capital and liquidity for the economy to meet environmental sustainability challenges. Evidence suggests that market discipline, on its own, cannot adequately control the externalities in financial markets associated with environmental sustainability challenges.¹² Accordingly, policy or regulatory intervention may be necessary to prevent a misallocation of resources. Policy intervention, however, if not calibrated properly, can also produce its own distortions in the market that

⁹ Ibid, 4, 24-25.

¹⁰ See K Alexander, ‘Stability and Sustainability in Banking Reform: Are Environmental Risks Missing in Basel III?’ (Cambridge/UNEP October 2014) <<https://www.cisl.cam.ac.uk/resources/publication-pdfs/stability-and-sustainability-basel-iii-final-repor.pdf>> 16-17.

¹¹ See World Bank Group President Jim Yong Kim Remarks at Davos Press Conference, 23 January 2014.

¹² See J. Landon-Lane, H .Rockoff, R.H. Steckel, (2011) ‘Droughts, Floods and Financial Distress in the United States’, in Libecap, G.D. and Steckel, R.H., *The Economics of Climate Change: Adaptations, Past and Present*, (Chicago: University of Chicago Press) pp 73-84, reviewing the literature.

can result in further externalities and misallocations of capital and investment. A careful combination of market innovation and policy frameworks that suit national circumstances may be needed.

The current global priority for banking regulation and financial policy is to complete implementation of the extensive financial sector reforms introduced following the global financial crisis.¹³ This does not just cover minimum capital and liquidity requirements. Sound legal and institutional frameworks, effective information dissemination, high standards for disclosure and transparency, regulation of business conduct, and consumer education can all support financial stability. But that priority is aligned with the sustainability agenda: policy makers can use a systemic approach to identifying, assessing and managing the potential risks that environmental sustainability challenges, such as climate change, could pose to financial stability.

In 2016, the European Systemic Risk Board (ESRB) published a paper¹⁴ that recommended policy action in response to the potential systemic risk involved in the transition to a more environmentally sustainable and green economy that could involve the use of both short-term and medium-term regulatory measures. A short-term regulatory response would heavily rely on a better understanding of (i) banks' and other connected financial firms' direct exposures to non-financial firms with immediate and emerging elevated environmental risks and (ii) the consequences of a disorderly transition to a low carbon economy. For example, enhanced disclosure of bank exposures to sustainability risks would facilitate a timely assessment of potential risks to financial stability and promote a "smooth rather than an abrupt transition towards a lower-carbon economy."¹⁵

Some countries have already begun to address these issues by engaging in a variety of regulatory and market practices to assess systemic environmental risks.¹⁶ In doing so, they have adopted some practices to reduce the banking sector's exposure to environmentally unsustainable activity. As discussed below, regulators in some countries are incorporating environmental sustainability factors into prudential banking regulation in the following areas: disclosure, bank governance, risk management and regulatory capital.

3.1 Disclosure

Bank disclosure of risks to investors is an important regulatory tool to support market discipline that can encourage banks to mainstream economically relevant environmental sustainability criteria into their business practices and to reallocate capital to more sustainable sectors of the economy. It is also a key element in ensuring financial stability: the more information is in the public domain, the more likely it is that assets will be correctly priced, and re-priced as risks materialise. So more information should limit the risks of a systemic change in asset prices.

In many countries, banks and other listed companies are already required to disclose to investors all material financial risks regarding their economic performance.¹⁷ Some environmental risks can be

¹³ G20, 'G20 Leaders Statement: The Pittsburgh Summit', G20 Research Group, University of Toronto: September, 2009. See also G20, 'The G20 Seoul Summit Leaders' Declaration', Seoul Summit, G20 Research Group, University of Toronto, November 2010.

¹⁴ ESRB Advisory Scientific Committee, 'Too late, too sudden: Transition to a low-carbon economy and systemic risk', Frankfurt, February 2016 15ff.

¹⁵ See FSB Task Force on Climate-Related Financial Disclosures, 'Recommendations of the Task Force on Climate-related Financial Disclosures', page iii, FSB, June 2017.

¹⁶ Sustainability Banking Network (SBN), 'Global Progress Report', Washington: IFC, February 2018.

¹⁷ Financial Conduct Authority, 'Climate Change and Green Finance, Discussion Paper' October 2018 <<https://www.fca.org.uk/publications/discussion-papers/dp18-8-climate-change-and-green-finance>> 7, 11. Capital market regulation and prudential bank regulation (pillar 3/Basel III) provides the legal basis requiring listed companies and banks to disclose 'material' risks to the market.

classified as material financial risks (i.e. lender liability for toxic waste clean-up) but most environmental and social risks have not hitherto been considered by regulators to be material financial risks, and therefore have not been required to be disclosed to the market. However, there is a growing demand by investors and other market participants for useful information on bank and other company exposures to such environmental sustainability challenges as materiality appears to be increasing.

Globally, over four hundred initiatives and voluntary disclosure frameworks have been identified to encourage companies and financial institutions to report environmental and social risk factors. But the information is not consistent across markets and countries, lacks comparability, and is often unreliable. Some countries already use the Basel III Pillar 3 market discipline disclosure regime that entails extensive disclosure obligations for banks covering quantitative and qualitative aspects of overall capital adequacy and capital allocation, as well as risk exposures and assessments. This disclosure regime was enhanced after the global financial crisis resulting in the adoption of stricter disclosure requirements and greater consistency and comparability across jurisdictions for bank disclosures.¹⁸

Industry sector groups and policymakers are considering whether further enhanced disclosures are necessary for banks and other financial institutions to assist investors in assessing the links between sustainability challenges and potential risks to financial stability.¹⁹ In June 2017, the FSB's industry-led Task Force on Climate-related Financial Disclosures (TCFD) published its final report containing recommendations for improving principles and practices for voluntary corporate disclosures that can promote a "smooth rather than an abrupt transition towards a lower-carbon economy." The TCFD consisted of representatives from the private sector including investors, information preparers and other market participants from a variety of industries and regions. They recommended that all listed companies, including banks and financial institutions, make certain disclosures to investors around: (i) The governance of climate risks within their institutions; (ii) Their strategy for dealing with it; (iii) Their risk management approach; and (iv) Their targets and metrics used.

The TCFD recommendations have been endorsed in many countries, including the UK and EU where specific proposals have been made for implementation by the financial sector.²⁰ In addition, European Union (EU) policymakers adopted the Disclosure Directive in 2014²¹ that requires member states to require listed companies, banks and certain financial groups to disclose to the market non-financial information, including environmental sustainability risks and related environmental sustainability information related to renewable and non-renewable energy, land use, water use, air pollution, greenhouse gas emissions and the use of hazardous materials. The obligation to disclose applies only to large listed credit institutions and large listed insurance companies which are parent undertakings of a large group, in each case having an average number of employees in excess of 500, in the case of a group on a consolidated basis. The legislation does not prevent EU states from requiring disclosure of non-financial information from undertakings and groups other than those subject to this requirement by the Directive.

¹⁸ See Basel Committee on Banking Supervision, Document on Disclosure, BIS Basel, 2014, and Basel Core Principles for Effective banking Supervision, Principles 27 & 28.

¹⁹ The G20 Energy Efficiency Investor Statement and a new Green Infrastructure Coalition, both launched in 2015, illustrate investors asking for supportive policy frameworks for green investment. See G20, 'G20 Energy Efficiency Investor Statement' [2015] UNEP Finance Initiative, and UN Principles for Responsible Investment, 'Green Infrastructure Investment Coalition launched at COP21' 10 December 2015 <<https://staging-web.unpri.org/news/green-infrastructure-investment-coalition-launched-at-COP21>>.

²⁰ UK Green Finance Task Force, 'Accelerating Green Finance', London, March 2018, 35-39 and EC High Level Experts Group on Sustainable Finance, 'Financing a Sustainable European Economy', Brussels, January 2018, 25-26.

²¹ Directive 2014/95/EU of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups [2014] OJ L330/1.

As a result, there is a wide diversity of institutions covered by this disclosure requirement across EU countries.

Some countries have implemented the minimum requirements, but others, implicitly or explicitly, have included a number of other entities such as investment companies, large non listed companies according to precise size criteria, state owned companies, pension funds, etc. France has adopted disclosure requirements that all listed companies (including listed banking companies) should disclose their carbon exposures as part of broader climate change reporting requirements. More and more firms in G20 countries are beginning to include environmental and social risk reporting in their company reporting requirements. For instance, Russia now requires that all listed companies (including listed banking companies) report environmental and social risk exposure to investors.²²

These national approaches can inform other countries regarding how disclosure of environmental sustainability risks can be applied flexibly in different countries and should accord with current best practices at the national level and in conformity with international reporting standards. Even if reporting on material non-financial matters is already required in many jurisdictions, how the reporting is to be structured and what metrics should be used might not be clear. Therefore, the comparability and consistency across sectors and countries could be a challenge to banks and supervisors. Whilst disclosure is an important regulatory tool to inform the market about the financial stability risks associated with climate change, other policy instruments to assess the risks associated with environmental sustainability challenges should be considered as well.

3.2 Bank Governance

International policymakers are considering the role of bank and financial institution governance as a medium term policy response to support enhanced financial sustainability business practices.²³ Indeed, bank governance mechanisms have been proved necessary to reduce the incentives for bank managements to take on excessive short-term financial risks more generally, as well as those that are environmentally unsustainable. Therefore, an effective prudential regulatory framework is necessary to oversee bank risk governance and this should also address environmental sustainability risks.

The main elements for designing bank governance frameworks that promote environmental and social sustainability are intrinsic to good corporate governance on two levels: First, good corporate governance calls on the use of ethical judgment of what is acceptable and what is not. Second, corporate governance has an important role in overseeing and ensuring effective risk management for the bank and ensuring sustainable returns for owners and shareholders. Recent studies suggest that there is a strong correlation between good bank corporate governance and effective environmental and social risk management.²⁴

Bank governance is also affected by stewardship codes and both formal and informal concepts of fiduciary duty. There have been legal opinions issued in both Australia for all firms²⁵ and the UK for

²² Sergey A Shvetsov, 'To joint-stock companies, state corporations and companies: On Corporate Governance Code' [2014] Letter of the First Deputy Governor of the Central Bank of the Russian Federation no 06-52/2463, Bank of Russia.

²³ See Directorate General, Financial Stability, Financial Services and Capital Markets Union (FISMA), 'Commission legislative proposals on sustainable finance' (2018).

²⁴ See Center for Sustainability Studies, Federacao Brasileira de Bancos (Febraban), 'The Brazilian Financial System and the Green Economy: Alignment with Sustainable Development', Sao Paulo, 2014, 34-35.

²⁵ N Hutley SC and S Hartford Davies 'Climate Change and Directors' Duties'. Memorandum of Opinion published by The Centre for Policy Development and the Future Business Council via Minter Ellison, Solicitors, Melbourne, October 2016 3ff.

pension funds²⁶ which conclude that boards, and others with fiduciary duties, must consider whether climate related risks are financially material and that failing to do so is a failure of fiduciary duty which could pave the way for legal challenge.

The concept of stewardship has been informed by the efforts of institutional investors to harmonise a global understanding of fiduciary duty.²⁷ For example, under article 69 of the Russian Code of Corporate Governance,²⁸ the board of directors of joint stock companies are required to assess the financial and non-financial risks that relate to environmental risks, as well as social, ethical, operational and other risks, and to establish tolerable levels of risk in these areas.²⁹ And the EU is proposing further clarification of governance requirements to ensure that sustainability is explicit, not just implicit, in the requirements and capabilities of boards.

The EU Disclosure Directive³⁰ can play a role in improving bank governance by improving bank transparency for investors – by making clear its involvement in unsustainable economic activity. Institutional investors are already beginning to ask banks about their efforts to mainstream sustainability challenges into their business models and their strategies to mobilize capital for sustainable economic activity.

Most countries do not yet require banks to incorporate environmental sustainability risks into the bank's risk governance and management strategy, but some countries have begun to do so. Both China and Brazil regulate bank corporate governance regarding environmental risks. China adopted 'Green Credit Guidelines' in 2012 that require banks to adopt green governance strategies. Brazil has incorporated green governance into its Basel III pillar 2 supervisory review assessments. Specifically, Brazil has adopted the principle of proportionality for individual banks to decide – based on the bank's particular risk exposures – to what extent environmental sustainability risks should be incorporated into the bank's governance and risk strategy.

3.3 Risk Management

Environmental sustainability poses a major challenge for banks in assessing how such risks will affect the banking business. Risk management practises are probably the key mechanism through which firms protect themselves from these risks. Because of that, oversight of risk management by supervisors is a natural way to ensure that best practice prevails.

The US Office of the Comptroller of the Currency (OCC) has issued guidelines for supervisors in connection with the supervision of banks in relation to their "Oil and Gas Exploration and Production Lending."³¹ These are guidelines on prudent credit, interest rate, liquidity, operational and reputational risks management. In Brazil, the industry body the Brazilian Banking Association (Febraban) has adopted voluntary standards to enhance bank assessments of environmental risks. Based on this, the Central Bank of Brazil published in 2014 a mandatory Resolution 4327 on the Social and Environmental Responsibility for Financial Institutions that requires banks to incorporate socio-economic factors into their risk

²⁶ K Bryant QC and J Rickards, 'The legal duties of pension fund trustees in relation to climate change'. Opinion commissioned and published by ClientEarth, London, 2016.

²⁷ R Sullivan, W Martindale E Feller and A Bordon, 'Fiduciary Duty in the 21st Century', UNEP and PRI project report, September 2015.

²⁸ Shvetsov, Central Bank of Russia (n 22).

²⁹ See K Alexander, 'Greening Banking Policy', Input paper in support of the G20 Green Finance Study Group 'Greening Banking Policy', September 2016.

³⁰ Directive 2014/95/EU of 22 October 2014 amending Directive 2013/34/EU as regards disclosure of non-financial and diversity information by certain large undertakings and groups [2014] OJ L330/1.

³¹ See Office of the Comptroller of the Currency 'Oil and Gas Exploration and Production Lending' OCC Comptroller's handbook booklet, Office of the Comptroller of the Currency, Washington, March 2016, 41ff.

governance frameworks. In doing so, each bank is required to do an assessment of its environmental risk exposure based on the principles of proportionality and relevance. Similarly, the China Banking Regulatory Commission (CBRC) 'Green Credit Guidelines' of 2012 encourage banks to conduct environmental and social risk assessments and to originate more green loans. By 2015, the majority of Chinese banks controlling over 80% of Chinese banking assets had adopted environmental and social risk management practices. France adopted legislation in 2015 that requires financial institutions to incorporate environmental sustainability risks into the institution's risk management strategy.³² The Russian Central Bank issued recommendations in 2014 to listed joint-stock companies that they take into account the environmental risks that they are exposed to. Indonesia has taken a step in this direction with its regulatory body – the Financial Services Authority – announcing a Sustainable Finance Roadmap in 2014 that would require all financial firms and banking institutions to develop business plans and risk management strategies to offer green financial products and lending guidelines. The Bank of England followed up its report on the insurance industry in 2015 with a wider report on its response to climate change (2017) which initiated a similar study on the banking sector.³³

3.4 Regulatory Capital

Minimum regulatory capital requirements, expressed through Pillar I of the Basel III regime, do not cover environmental risks explicitly. Nevertheless, the United Kingdom and Switzerland have followed policies which consider that Basel III does provide adequate flexibility for bank supervisors to work with banks in identifying sustainability risks that are material to the stability of the banking sector. Environmental risks, along with others not reflected in minimum requirements, are required to be included in the bank's own assessment of its capital needs - which may be higher than minimum requirements. Supervisors can also intervene on a firm-by-firm basis if they consider the risk management regime of a bank is inadequate for the risks it is facing, or that they have particular business model risks. This has teeth: supervisors can require temporary capital requirement add-ons until the problem is fixed and this is considered via the regular Supervisory Review Evaluation Process (SREP)³⁴ process that is usually undertaken at least once a year for major institutions. In the UK such add-ons can be large, with PRA publications indicating an order of magnitude of about 1% extra on the required capital ratio.

Although the Basel Accord does encourage banks to calculate regulatory capital for credit and operational risk exposures to borrowers who are in violation of environmental regulations,³⁵ there is no broader international recognition that regulatory capital risk weights should be adjusted to include environmental sustainability risks. More data and stress testing would be needed before most G20 countries would act in this area under their current approaches.

Pillar I capital risk weights, e.g. for credit risk, and bank internal models, are normally based on historical assessments of crystallised risk. It is not clear that a backward looking approach can allow climate or other long-term sustainability risks to be properly evaluated. As described above for VAR models, to capture risks that have never previously crystallised would require something more like scenario analysis, using a range of plausible distributions. It is unclear at this stage whether the Basel Committee on Banking Supervision would be prepared to change its methodology to properly accommodate future risks.

³² See '2015 Energy Transition Law' (Law nr 2015-992 of 17 August 2015 related to energy transition for a green growth, *Journal Officiel de la République Française*, Article 173, Paris, 2015.

³³ See Matthew Scott, Julia van Huizen and Carsten Jung, 'The Bank of England's response to climate change', *Quarterly Bulletin Q2*, 2017, 98-108.

³⁴ See EU Supervisory Review and Evaluation Process, <https://www.bankingsupervision.europa.eu/about/ssmexplained/html/srep.en.html>

³⁵ See Basel Capital Accord, pillar 1, para 510.

There are other issues. As it stands, there are no green or brown asset classes to apply differential risk weights to. The European Commission is, in 2018, embarking on establishing a taxonomy for green assets that rules and regulations could then draw on. That will take some years to prepare properly. Meanwhile, the risks may – or may not – be applicable to any or all of the various individual assets covered by the risk weight regime. Subject to the problem of a lack of historical data, it might be possible for a firm to assess the risks across its balance sheet by using an internal model. But the standardised approach for credit risk, for example, would not seem to be amenable to properly incorporating asset-specific risks.

Whilst it may seem attractive to encourage green lending through capital requirements, it is important that the prudential regime be risk-based, not based on other objectives. Otherwise the whole regime could be undermined, causing risks to financial stability that would undermine the longer term agenda. For example, it is not obvious that lending to green assets is any less risky than implied by existing risk weights. What is more likely is that the extra risk of lending to unsustainable activities – a risk not hitherto recognised – adds risk to the system overall and logically that would suggest that ‘brown’ assets justify a higher weight, not lower for green.

Despite these technical issues, there has been some desire to adjust capital weights. The Central Bank of Brazil has begun to investigate under Pillar 1 whether environmental and social risks can serve as proxies for credit and other types of financial risks. And the European Commission is considering if it is desirable to allow banks to take ad hoc regulatory capital deductions against assets (lending and trading book risk) that are classified as ‘green’ assets, on incentive grounds. But the EC has promised that any adjustment would be ‘risk-based’ so as to preserve the financial stability purpose of the capital regime.

Overall, it seems like supervisory intervention under Pillar II is the more likely approach to yield results, and to do so quickly. In addition to the UK and Switzerland, Brazil and China are also utilising Pillar 2 to require banks to assess whether additional capital is required for a bank because of its exposures to environmental sustainability risks. These assessments can involve forward-looking stress testing of bank portfolios against macroprudential or system-wide risks associated with unsustainable economic activity.

Based on the above, growing evidence suggests that environmental sustainability risks have important implications for financial stability in the banking sector, although the analysis of the complexity of the potential risks to the financial sector is still at an early stage. The banking sector is most immediately affected by the financial risks associated to the transition to a more sustainable economy (i.e. a low-carbon economy), which could affect banks’ exposure to systemic risk both via impaired GDP growth and via banks’ exposure to elevated environmental risk assets. Banks are slowly growing aware of these considerations.

In considering the above regulatory and supervisory practices, it appears that flexibility and coordination in designing regulatory frameworks to address the financial stability risks associated with environmental sustainability should be based on the application of international standards and principles in a manner tailored to national circumstances. For instance, China’s Green Credit Guidelines suggest a particular approach that involves a combination of ‘carrots’ and ‘sticks’ to induce banks to make more credit available to sustainable sectors of the Chinese economy. In contrast, Brazil’s regulatory approach reflects the growing recognition that environmental risks and sustainability challenges pose risk management and strategic business risks for banks but each bank is different and should assess its own particular risk exposures based on the principles of proportionality and relevance.

Many bank supervisors have the flexibility under the Basel Capital Accord and Core Principles for Effective Banking Supervision³⁶ to begin assessing the environmental risks that are material to their banking and financial sectors. The Core Principles could be considered an international platform from which to encourage bank supervisors to consider banking sector stability risks associated with the transition to a more environmentally sustainable economy and what regulatory tools and practices should be incorporated into banking regulatory frameworks to address these risks. Moreover, the Basel Committee adopted a revised set of bank corporate governance principles in 2014 which were subject to further consultation in 2015. For example, Basel Committee principles 6 to 8 emphasise the role of the board of directors in understanding the banking business and how financial risk affects the business, and in establishing clear lines of accountability from line managers to senior management and the board.³⁷

Flexibility is demonstrated by some advanced developed countries in the EU and the United States, which focus on creating sound market-based economic frameworks that promote the efficient pricing of assets and reducing fiscal subsidies for unsustainable economic activity. Other countries – mainly large emerging market countries – use state-owned banks and national development banks to take the lead in investing in renewable and clean energy projects. In addition, some countries have begun considering and using certain regulatory measures to encourage banks to address the institutional and market challenges to providing green finance.

Despite these considerations, it should be noted that the prudential regulatory regime must be allowed to serve its primary purpose job of maintaining financial stability. If it became a more general mechanism for politicians seeking to deliver wider social objectives, however desirable, it could potentially exacerbate sustainability risks. Financial stability is a pre-requisite for a long-term sustainable financial system. When there is a financial crisis such as 2007-9, political focus is purely on short-term risk mitigation – valuable longer-term policies such as the Sustainable Development Goals will almost always be sacrificed to fight a current economic fire. And a financial stability crisis hurts the poorest in society most. So any changes to the prudential regulation regime to support sustainability should be those which are also aligned to financial stability. Similar arguments apply to monetary stability and control of inflation.

4. Other International and Regional Initiatives

4.1 European Commission High Level Expert Group on Sustainable Finance

The European Commission appointed a High Level Expert Group (HLEG) on Sustainable Finance in 2016 to conduct a study and issue a report regarding the role of policies to support sustainable finance. The HLEG issued its final report in January 2018 making a series of recommendations about how financial policy and regulations can steer the European economy on to a more sustainable development track. The HLEG report³⁸ makes important recommendations for the banking sector regarding how bank lending and financing can be aligned more fully with the EU's sustainability objectives. The HLEG took the view that further development of best practice on ESG and longer-term sustainability risk assessments

³⁶ See Basel Committee on Banking Supervision, 'Core Principles for Effective Banking Supervision', Basel: BIS, 2012. The Basel Core Principles are used as a benchmark for assessing the quality of bank supervisory systems and for identifying future work to achieve a common ground of sound supervisory practices.

³⁷ See Basel Committee on Banking Supervision, 'Guidelines: Corporate Governance Principles for Banks' July 2015 <www.bis.org/bcbs/publ/d328.pdf>.

³⁸ European Commission High Level Experts Group on Sustainable Finance, 'Financing a Sustainable European Economy', Brussels, January 2018.

is still needed to ensure that sustainability is better integrated into the banking sector, while at the same time ensuring financial stability.

HLEG recommended that bank supervisors should ensure that banks appropriately include ESG risks in their risk management systems. This could be pursued under Pillar II of the Basel III regime, as implemented by European Directives. In some cases, this approach might lead to changes in an individual bank's capital requirements if risk management has not taken into account the financial risks associated with environmental sustainability. To coordinate such considerations across Europe, the Commission has already adopted one of the HLEG's recommendations which was to ensure that sustainability is explicitly written in to the remit of the European Supervisory Agencies (the ESAs). That includes the European Insurance and Occupational Pensions Authority (EIOPA), the European Securities and Markets Authority (ESMA) and the European Banking Authority (EBA). The latter is the relevant body for coordinating approaches to bank regulations across national authorities, although the Single Supervisory Mechanism of the ECB is clearly now the dominant supervisory body within Europe.

The HELG report observes that two issues are notable as potential constraints on long-term and sustainable bank financing. First, the current capital framework charges some 'traditional', non-complex lending operations and long-term exposures more than may be warranted by risk considerations.³⁹ Second, the complexity of EU banking regulation – the thrust of which has been designed for large banks and which, in the United States, is applied solely to the largest banks (about 20) – creates a burden for smaller banks.

The HLEG also debated the merits of proposals by the European Banking Federation (amongst others) to lower capital requirements for lending to the green or more sustainable sectors of the economy in order to create incentives for lenders to finance transactions involving green assets. The HLEG rejected an ad hoc reduction in risk weights, concluding that capital requirements must remain risk-based.

The European Commission had previously announced at the One Planet Summit in Paris in December 2017 that European regulators view positively the possible introduction of a 'green supporting factor' to boost lending and investments in low-carbon assets. The HLEG considered this and concluded that certain conditions for a green supporting factor should be in place for it to be used in banking regulation.

- i) Definitions of 'green' and, also 'brown,' asset classes are needed to which differential capital requirements could be applied. The definition of green assets eligible for lower potential capital charges will have to be set by official public bodies and not by banks themselves. Producing such a green taxonomy was a separate HLEG recommendation which has been accepted.
- ii) Evidence of significantly lower risk for lending and financing "green" assets at the micro-level is needed to justify any change in weights.
- iii) A cap on lower capital requirements on green assets, would be necessary to prevent the economy from any 'green bubble', undercapitalisation or encouragement of less prudent lenders.
- iv) It might well be that there is a valid risk differential between green and other (brown) assets that is not currently reflected in the capital framework, so differentiated capital requirements could be justified in principle.

More generally, HLEG concluded that banks need to ensure that their assessment of material risks covers financial and non-financial risks. In many banks, ESG issues are already a core part of the process of risk

³⁹ See D.P. Monteiro and R. Priftis, 'Bank Lending Constraints in the Euro Area', Brussels: European Commission, 2017

management; but other banks urgent improvement is needed. The HLEG report made the following recommendations:

- i) That the Commission supports the development, coordination and sharing of best practice on ESG and longer-term sustainability risk assessments for banks. Therefore all European supervisors should ensure that all national supervisors encourage their banks to have and use such instruments of risk management.
- ii) In relation to a green supporting factor, initially it should be investigated whether there is a risk-differential justifying such a factor (this investigation should include subsidies, taxes and public guarantees not covered by the HLEG). The Commission subsequently agreed that any changes would be risk-based.
- iii) With overall EU regulation, the HLEG recommended that the Commission explicitly consider the impact on (sustainability) lending in its impact assessment before transposing the Basel recommendations of December 2017.
- iv) The HLEG also urged the Commission to consider greater proportionality in applying the Basel III framework to different banks.

The potential for a “green supporting factor” has been criticised as creating regulatory arbitrage opportunities for banks to create complex financing structures involving “green” assets that could undermine regulatory capital objectives and financial stability. Further, it has been argued that “green” is not always prudentially safer than “brown”, and that, based on experience of the SME supporting factor, there is no evidence that lower capital requirements would encourage greater lending and investment. Also, a green supporting factor would have to be very large (i.e., involve a large a reduction in capital requirements for a “green” loan) in order to increase significantly credit for sustainable sectors of the economy.

Following its final report, in January 2018 the Commission acted quickly to publish an action plan in March 2018 and legislative proposals in May 2018⁴⁰ in order to make changes during the lifetime of the current European Parliament.⁴¹ The HLEG initiative suggests a number of regulatory measures and governance practices that could be explored by other countries including enhanced disclosure, risk management, bank governance, capital adequacy, and financing structures. The FSB and other international standard setting bodies can support national efforts in addressing the linkages between financial risks and environmental sustainability by encouraging the exchange of information between national supervisors and regulators and the development of common definitions of green finance and data registries for banks and bank supervisors to draw on to develop a better understanding of environmental and social risks in the banking sector. Brazil and China incorporate environmental risk assessments into prudential bank regulation and link-up regulatory practices with market-based reforms and government-supported finance for renewable and clean energy projects. Financial innovation and market developments will encourage countries to develop forward-looking strategies at assessing the financial risks related to environmental sustainability challenges and to adopt appropriate regulatory measures to control and mitigate these risks.

⁴⁰ Commission, ‘Action Plan: Financing Sustainable Growth’ COM (2018) 97 final; Commission, ‘Proposal for a Regulation of the European Parliament and of the Council on the Establishment of a Framework to Facilitate Sustainable Investment’ COM (2018) 353 final; Commission, ‘Proposal for a Regulation of the European Parliament and of the Council on Disclosure Relating to Sustainable Investments and Sustainability Risks and Amending Directive (EU) 2016/2341’ COM (2018) 354 final; Commission, ‘Proposal for a Regulation of the European Parliament and of the Council Amending Regulation (EU) 2016/1011 on Low Carbon Benchmarks and Positive Carbon Impact Benchmarks’ COM (2018) 355 final.

⁴¹ ‘MEPs back resolution on Sustainable Finance’ (News European Parliament, 29 May 2018) <<http://www.europarl.europa.eu/news/en/press-room/20180529IPR04517/meps-back-resolution-on-sustainable-finance>>.

4.2 Sustainability Banking Network

Some developing country central banks, regulators and global banks have formed an international body – the Sustainability Banking Network (SBN) – located at the International Finance Corporation of the World Bank to address issues of bank environmental and social governance (E&S governance) and to enhance banking regulation and governance to address the risks and challenges associated with environmental sustainability.⁴² The SBN consists of a group of 34 emerging market and developing countries and a group of financial market regulators and banking associations from emerging markets whose agenda and meetings are coordinated by the International Finance Corporation of the World Bank. It makes recommendations on national sustainability financial policies and regulatory principles in an effort to influence the environmental and social governance practices of banks and other financial institutions and to promote the recognition of environmental and sustainability risk in financial regulation. In most SBN-member countries, SBN policies and regulatory principles are not legally binding regulations but rather strategic and technical “how to” guidance to assist financial institutions in integrating sustainability considerations into business strategy and operations.

SBN guidance takes the form of three pillars: i) Mandatory policies (as adopted by China, Indonesia and Peru), ii) Voluntary industry principles (Malaysia, Columbia, Kenya) iii) Hybrid governmental and industry measures and initiatives (Brazil, South Africa).

The SBN recommends 15 mandatory policies or principles that include requirements for financial institutions to conduct E&S due diligence and to report E&S performance of individual institutions. The SBN encourages their member countries to adopt the 15 national policies or principles for financial institutions to perform E&S risk management and to assess the impact of E&S risk on the banking business and the bank’s ability to comply with regulatory standards. 11 countries have further required banks to conduct risk categorizations to guide credit decision making. Financial institutions should be required to improve further their E&S risk management practices and to monitor continuously E&S performance of their portfolios over time. Countries are assessed on outcomes. Most countries achieve good overall outcomes, except in the areas of climate strategy and clarity of climate risk management goals.

Almost all 15 existing sustainable finance policies or principles require banks to design and publish their E&S policies. Most specify the scope of projects or clients to which the E&S policy applies – mainly covering project finance or corporate finance where the greatest E&S impacts and risks exist. The SBN principles and policies recognise the importance of financial institutions Identifying, assessing, and mitigating risks that are critical components for any sustainable finance management strategy. The report recommends deploying third party experts and site visits are recommended to improve the quality of E&S risk assessment, which is required by some policies or principles (such as China) for the riskiest projects. Several policies or principles also provide guidelines and tools to help financial institutions assess these risks on their own without regulatory oversight.

The SBN’s Global Progress Report shows the current status of sustainable finance of the participating countries. The assessment was conducted on the basis of the SBN measurement framework, built upon three pillars:

i) The E&S Risk Management Pillar allows evaluating the extent to which national policies or principles provide financial institutions with comprehensive and detailed guidelines and requirements for the management of E&S risks, also in regard to climate risk, and the degree to which these guidelines are applied by financial market participants.

⁴² Sustainable Banking Network (SBN), ‘Global Progress Report’, Washington: IFC, February 2018.

ii) *The Green Finance Flows Pillar concerns the introduction of market infrastructures with the aim to encourage financial institutions to lend to projects and companies with a climate friendly effect and the impact on capital flows.*

iii) *The Enabling Environment Pillar assesses factors that have proved to be multiplying or undermining in achieving the first two pillars.*⁴³

The SBN found that all participating countries initiated programmes supporting sustainable finance, but they are at different stages of development. While 15 countries have already introduced policies or principles, the other 19 members, as of 2017, are at an early stage of initiation. The goal of the SBN Global Progress Report is to support its less advanced members in establishing or refining their sustainable finance policies and principles by synthesizing common barriers, good practice and recommendations.

The key findings regarding the E&S Management recommendations was that a policy needs to be accompanied by operational guidelines in the form of detailed application guides, key performance indicators or case studies. Also policies are most effective applied as broadly as possible in use of an adequate approach depending on the underlying risks.

Key recommendations include that countries should have institutional ‘[c]apacities as follows:

“Where policies or principles require specific governance of E&S issues to be established, they need to clearly define the institutional capacity to be developed and maintained, through training and the reporting line and authority of the ESRM function. The Guidelines on ESRM for Banks and FIs in Bangladesh, for instance, provide clear direction on the roles of E&S specialists, legal advisors, risk managers, and directors. China’s Green Credit Key Performance Indicators also define the FI Board’s role in setting an overarching strategy, and senior management’s role in implementation”

The report emphasises the importance that at project or client level, financial institutions must monitor E&S risks on an ongoing basis after disbursement. For instance, Bangladesh adopts a few policies and principles into their regulatory practices that demonstrate the importance of E&S considerations into prudential regulation and supervision. The report concludes that regulatory monitoring efforts must be commensurate with E&S risks associated with the borrowers and that a combination of legal and regulatory measures, on the one hand, and softer guidance and technical assistance on the other is necessary for an effective E&S regulatory and bank governance framework.

4.3 Network for Greening the Financial System

The Paris One Planet Summit in 2017 saw the launch of a new grouping of central banks and banking supervisors. The new network, known as the Network for Greening the Financial System (NGFS), will share experience of supervisory best practices and views on developing green finance, and echoes a similar global grouping of insurance supervisors (the Sustainable Insurance Forum (SIF)). The NGFS was formed by eight national supervisors (Mexico, Singapore, China, France, Germany, Netherlands, Sweden, and UK) and has rapidly expanded its membership. Several international organisations are observers, including the BIS, EBRD, OECD and the SIF. The NGFS has three workstreams: Supervision, Macrofinancial and Green Finance.

⁴³ Ibid., xi.

5. Banking Regulation and Sustainability Risks: the way forward

Countries have taken significant steps to develop banking policy instruments to address the environmental challenges associated with a more sustainable economy. However, no common definitions of key terms, such as ‘green assets’ or ‘green finance’, are yet accepted by countries or by banking associations.

Without basic definitions of green banking and sustainable economic activity, it will be very difficult – if not impossible – for policymakers, regulators and bankers to agree standards for measuring whether a country or individual banks and market sectors are progressing towards a more sustainable economic path. The European Commission commitment to complete the HLEG’s proposals for a Green Taxonomy could be an important first step that could be recognised and imported by others.

Through the new networks, national regulators can share data with one another on green finance and greening sectors of the economy; they could develop data registries providing information on how countries define certain terms such as green assets and to measure the impact of policy measures on a country’s transition to a more sustainable economy. Data registries could also contain surveys and industry indices to show baselines for measuring progress in achieving sustainability objectives. Although not standard setting bodies, these informal networks will be important in ensuring that best practice is spread across the globe and that the solutions to difficult challenges can be shared.

The FSB and international financial standard setting bodies such as the BCBS should continue further work in measuring financial risks associated with environmental sustainability challenges:

The variety of institutional approaches and policy levers used by countries to address sustainability challenges in banking suggests that policymakers and banking practitioners are in uncharted areas in a world of increasing environmental sustainability risks and their consequences for economic growth and development. Generally, these initiatives are aimed to reduce environmental risks, transform our economies to be environmentally sustainable, and build economic and financial resilience against the systemic risks caused by unsustainable economic activity. Regulators are given the important task of adopting guidelines and standards to encourage increased bank lending and funding for more sustainable sectors of the economy. However, it is vital that such regulatory initiatives avoid the potential for unintended consequences and market distortions which could undermine sustainability. Rather than direct intervention in the financial sector, banking policies should focus on providing an enabling environment for the system to mitigate climate and other environmental sustainability risks.

6. Conclusion

Sustainability challenges, such as complying with international environmental standards (i.e., the Paris Climate Change Agreement), and social inclusion are vital for ensuring that economies move to a more sustainable development path. Such changes will require adaptation to evolving market structures that may result in risks and dislocations that could threaten economic and financial stability. This has important implications for banking policy and regulation because banks are the largest providers of capital for most countries and how they manage these sustainability risks and support national economies in meeting environmental targets is an important policy concern.

The paper suggests that banking regulation has a useful role to play in identifying the financial risks associated with environmental sustainability challenges, and some countries are using regulatory tools to address these risks. Potential measures include enhanced disclosure, risk management, bank governance, capital adequacy. The existing Basel framework has enough relevant applications that it can be used to drive sustainability into the heart of risk management, if the authorities are willing to do so. That would

be a very positive step towards reallocation of capital and it does not require changes to capital risk weights, which would be time-consuming, technically demanding and ultimately difficult to justify.

The March 2018 Action Plan of the European Commission, and subsequent legislative proposals, in response to the recommendations of its High Level Experts Group, should ensure that banks in Europe do embody sustainability issues into risk management within the next few years. For some banks, ESG issues have already become core features of their risk management, but other banks have yet to incorporate or mainstream ESG factors into their risk management at all. The High Level Expert Group therefore recommended that the European Supervisory Agencies (EBA, EIOPA and ESMA) play a role in coordinating the efforts of national authorities, to bring everyone up to best practice. The Commission also agreed to assess whether the risk differential between green and brown assets should justify the adoption of a risk-based green supporting factor. And the Commission will need to consider in its impact assessment, before transposing international banking standards into EU banking regulation, the impact on sustainable lending of adopting the Basel standards of 2017 without adjusting them to take account of sustainability factors.

The FSB, BCBS the EBA and other international standard setting bodies can support national efforts in addressing the linkages between financial risks and environmental sustainability by encouraging the exchange of information between national supervisors and regulators and the development of common definitions of green finance and data registries for banks and bank supervisors to draw on to develop a better understanding of environmental and social risks in the banking sector. This is not just a first-world matter: among other emerging market economies, Brazil and China incorporate environmental risk assessments into prudential bank regulation and link-up regulatory practices with market-based reforms and government-supported finance for renewable and clean energy projects. Financial innovation and market developments will encourage countries to develop forward-looking strategies for assessing the financial risks related to environmental sustainability challenges and to adopt appropriate regulatory measures to control and mitigate these risks.