

GREENING BANKING POLICY



In support of the G20 Green Finance Study Group

This input paper has been prepared by the authors for consideration by the G20 Green Finance Study Group (GFSG) but does not represent the official views or position of the GFSG or any of its members.

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Executive summary

Banking policy can play a supportive role in addressing the institutional and market challenges to the provision of bank credit and investment for the green economy. Although the banking sector is affected directly and indirectly by environmental sustainability challenges, it also plays an important role in building financial resilience and creating economic opportunities for adapting to and managing environmental risks. Most large international banks have environmental and social governance programmes, but these are generally not core features of bank management and business strategy. Banking policy can support the banking industry by promoting the mainstreaming of green banking practices and supporting banks in reallocating credit and investment capital to sustainable sectors of the economy.

This paper discusses key areas of banking policy that G20 countries have utilized so far to address some of the institutional obstacles and market challenges related to the transition to a more environmentally sustainable economy. It is based on a review of available literature as well as interviews with G20 banking authorities.

The 2030 United Nations Sustainable Development Goals (SDGs) place environmental sustainability challenges including climate change as a matter of major importance to the stability of the global economy. For most G20 countries, banks play a crucial role in providing credit and investment capital for the economy that can be used to mitigate the adverse effects of environmental sustainability risks while enabling the economy to grow and become more resilient to sustainability challenges. Most experts agree that the main environmental sustainability risks – physical, transition and liability risks – potentially create negative externalities for the banking sector and the broader economy. But banks are doing more to recognize 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. By doing so, banks are able to mobilize and reallocate capital away from unsustainable economic activity to more sustainable sectors of the economy.

To assist banks in mainstreaming and mobilizing green finance, G20 countries have utilized a variety of institutional approaches and policy levers. Most G20 countries provide stable policy frameworks that can encourage market-driven economic growth that creates a demand for green credit and investment. This enhances the capacity of banks to provide more green credit and savings products, and to facilitate investment while curbing negative environmental externalities that misallocate resources to unsustainable economic activity. However, it should be emphasized that there are no generally accepted definitions of green assets or green finance or accepted standards for determining which sectors of the economy are sustainable and which are not. Until there are robustly defined green finance standards in G20 countries, it could be difficult for policymakers to adopt meaningful policy and regulatory measures to support sustainable economic activity.

Some countries use state-owned or government-supported banks and/or national development banks to provide credit for renewable and clean energy projects. Some G20 countries have announced initiatives to limit governmental and tax subsidies and other fiscal distortions that support unsustainable economic activity. Other countries have begun using certain banking regulatory instruments as levers to support the transition to a more sustainable economy. The following bank regulatory measures have been discussed the most by G20 policymakers.

Disclosure. G20 countries require banks and companies to disclose all material risks regarding the firm's economic viability to investors in capital markets, including material climate change risks.

Banks are also subject to a growing number of specific sustainability disclosure requirements and voluntary frameworks, most of which apply to corporations as a whole. The European Union (EU) has adopted a Disclosure Directive in 2014 that requires EU states to require companies and financial institutions to disclose certain non-financial risks, such as environmental and social factors. Internationally, the Financial Stability Board (FSB), recognizing that inadequate information on climate risk exposure can lead to a mispricing of assets and misallocation of resources, appointed an industry-led Task Force on Climate-related Financial Disclosures in December 2015 to propose a set of principles and objectives for voluntary company financial disclosures that promote consistency, comparability and reliability across all countries. The FSB issued a first report on 31 March 2016, which will be followed by a final report late in 2016.

Risk Management. To date, most G20 countries have been hesitant to require banks to incorporate environmental *and* social risk factors into risk management models. Regarding prudential risk management, Brazil began in 2014 to ask banks to collect data on whether certain types of environmental and social risks can be used as proxies for credit, market and other types of financial risks. France's Energy Transition Law of 2015 requires the government to report by end 2016 on how to assess climate-related risks in the banking sector.

Governance. Some G20 countries – Brazil and China – use regulatory measures to require banks to include sustainability criteria in their bank governance and risk management frameworks, while Indonesia has published general guidelines for all financial sector firms to begin the process of analysing the relationship between financial risks and environmental sustainability concerns. In 2014, the Central Bank of Brazil adopted a regulation requiring banks to assess environmental risks as part of their Internal Capital Adequacy Assessment Program (ICAAP) that is part of the Basel III pillar 2 risk assessment framework. Similarly, the Chinese Banking Regulatory Commission issued the Green Credit Guidelines in 2012 that is a voluntary framework to encourage banks to adopt environmental and social risk governance standards into their risk management and governance frameworks. Bank governance is also affected by stewardship codes and international efforts to recognize whether bank boards have fiduciary duties to societal stakeholders regarding the bank's risk exposure and financing support for environmentally unsustainable economic activity. The EU Disclosure Directive can play a role in improving bank governance by improving company transparency for investors regarding its involvement in unsustainable economic activity. Institutional investors are already considering green issues across G20 countries and asset classes and are beginning to ask banks about their efforts to mainstream sustainability challenges into their business models and about how to mobilize more capital for sustainable sectors of the economy.

Regulatory Capital. G20 countries generally do not require banks to consider environmental risk factors as material risks for the calculation of regulatory capital requirements. Most G20 countries believe that Basel III provides adequate flexibility for bank supervisors to work with banks in identifying sustainability risks as they occur in the banking sector. Although the Basel Accord does encourage banks to calculate regulatory capital for lender liability exposure to customers in violation of environmental regulations, there is no recognition that regulatory capital risk weights should incorporate the financial risks associated with broader environmental sustainability risks. More data and stress testing are needed before G20 countries can act in this area. However, Brazil has begun to investigate whether environmental and social risks can serve as proxies for credit and other types of financial risks. China and Indonesia are exploring similar options. In the meantime, G20 countries generally do not believe that any revision of Basel III is necessary to take account of environmental and social risks.

Financing Structures. Innovative financing structures will be important for determining the availability and access to green credit and finance. Regulation will play an important role for ensuring that financing structures and savings products are available for savers and investors to invest in sustainable investment projects. European regulators have given recent attention to the benefits of using simple and transparent securitization structures to generate more investment for small and medium-sized businesses. The same rationale could apply to encourage more investment in businesses engaged in sustainable economic activity.

Finally, the report considers areas of convergence where G20 countries can voluntarily coordinate their banking policies and regulatory practices to address environmental sustainability risks in the following areas:

- Assess environmental risks and their increasing impact on financial stability and the sustainability of the economy and identify institutional and market challenges to achieving more durable links between the banking and other financial sectors and sustainable sectors of the economy.
- Enable bank regulators to explore the feasibility of incorporating forward-looking risk assessments into bank risk management of scenarios where environmental risks appear to have become embedded in the financial system and how they may affect bank performance and banking sector stability.
- Develop industry-led voluntary disclosure frameworks for environmental risks that are standardized across countries, possibly building on international financial reporting standards (IFRS).
- Encourage banks and regulators to work together to develop simple and transparent investment products to attract more stable investment in 'green' bank assets.
- Encourage banks to build capacity for mainstreaming green finance into bank business practices and strategies across G20 countries.
- Ensure effective transparency by banks in how they manage environmental sustainability challenges as part of their strategies for green banking.
- Utilize international platforms such as the WTO's Committee on Trade in Financial Services, the Basel Committee and the FSB for voluntary disclosure and information sharing of national green finance measures. This in turn will raise awareness and share best practices amongst and beyond the G20 membership.

The report nevertheless emphasizes that, although greater convergence and policy coordination is possible for G20 countries in these and other areas, different institutional and market structures make it desirable for G20 countries to move ahead voluntarily and to use a different combination of banking policy measures that aim to mainstream environmental sustainability challenges into bank business strategies and governance practices and to mobilize more green credit and savings products. In this way, banking policy can more effectively support the economy's adaptation and transition to a more environmentally sustainable path. Nevertheless enhanced discourse and exchange of information between global standard setting bodies, OECD members, and G20 policymakers and regulators is necessary for countries to understand optimal policy choices that depend on knowledge about practices in other countries. Such knowledge may also promote voluntary convergence that may reduce the regulatory cost of different regulatory regimes. The G20 should attempt to achieve more policy coordination in this area and explore the role of existing international fora – including the World Trade Organization - in promoting enhanced regulatory disclosure between countries on green banking policy, regulation and market practices.

1. Introduction

Banking policy can play a supportive role for the banking sector in overcoming the institutional obstacles and market challenges to allocating credit and investment to the green economy. The paper discusses some of the main environmental challenges and risks to the banking sector and what role banking policy can play to overcome these obstacles. It is based on a review of available literature as well as interviews with G20 banking authorities in which they were asked about the relevance of environmental sustainability challenges and risks for the banking sector and the extent to which they were using policy and regulatory measures to address these challenges and risks.

Part II reviews the recent evidence showing the relevance of environmental sustainability to economic and banking stability. Financial policymakers have classified environmental sustainability risks into physical, transition and liability risks. All three are significant factors for banks in determining how to allocate credit and investment to sustainable sectors of the economy. Part III discusses some of the main banking policy and regulatory approaches of G20 countries in addressing environmental sustainability challenges. G20 countries have followed different banking policy and regulatory approaches to support their diverse economies and societies in meeting sustainability challenges. Some countries rely on public sector banks to take the lead role in providing credit for renewable energy infrastructure projects while others use national development banks for green lending projects. Yet, others emphasize market reforms such as reducing governmental subsidies and other fiscal distortions and enforcing competition rules for a more efficient allocation of bank capital. Some countries have designated green investment banks to support market reforms.

Although all G20 countries have extensive bank regulatory regimes in conformity with international norms, only two – Brazil and China – have formally incorporated environmental risk and governance standards into prudential bank regulation. Nevertheless, international banking regulatory principles provide a flexible framework for countries to adapt their regulatory rules to evolving market risks. Based on these wide-ranging approaches, G20 countries have utilized a variety of bank regulatory and policy measures to support their economies in meeting sustainability objectives.

Part IV considers areas of convergence where G20 countries can voluntarily coordinate their banking policies and regulatory practices to address environmental sustainability risks from a global perspective. G20 countries have made important strides individually to use banking policy to address the institutional and market obstacles of meeting environmental sustainability challenges.

This paper discusses why environmental sustainability is relevant to banking policy and regulation and shows how G20 countries are using banking policy to meet sustainability challenges through a variety of institutional and financial policy approaches that reflect their own unique economic circumstances. The paper suggests that G20 countries have still further to go in using banking policy to promote the mobilization of green capital for investment and for mainstreaming environmental sustainability challenges into bank business strategies, governance and regulatory practices. In this way, banking policy can more effectively support the economy's adaptation and transition to a more environmentally sustainable path.

The paper suggests that international policy coordination can support countries in identifying optimal policy choices on green banking policy and regulation that depend on knowledge about practices in other countries. Such knowledge may also promote voluntary convergence that may reduce the regulatory cost of different regulatory regimes. An enhanced discourse and exchange of

information between global standard-setting bodies, OECD members, and G20 policymakers and regulators may make important contributions both to the work of regulators and the private sector. For voluntary information exchange existing regulatory platforms such as the Basel Committee, FSB and the WTO's Committee on Trade in Financial Services, could be useful starting points.

The paper is targeted at global standard-setting bodies, OECD members, and G20 policymakers and regulators to show why environmental challenges are relevant to banking policy and to what extent G20 countries are utilizing banking policy and regulatory measures to support sustainable sectors of the economy.

2. Why Environmental Sustainability Challenges Are Relevant for Banking Policy

Environmental sustainability challenges including climate change are at the core of the 2030 United Nations Sustainable Development Goals.¹ The 2016 World Economic Forum Global Risks Report demonstrates the links between environmental sustainability risks and economic and financial risks.² The WEF report identified the failure of climate change mitigation and adaptation, along with fresh water availability and diminishing biodiversity, as the most significant environmental sustainability risks. The report also emphasized the second order or ‘cascading’ risks arising from climate change and other environmental sustainability challenges and how they impact political conflicts, forced migration, food security and economic and financial stability. These challenges will, in turn, have implications for financial institutions in terms of changing risk assessments that will affect the availability and terms of credit and long-term investment returns.³

2.1. The Role of the Banking Sector

The United Nations estimates that by 2030, the world economy will spend an additional US\$36-135 billion each year to address environmental sustainability challenges, including climate change.⁴ The banking sector holds over US\$135 trillion in assets globally and is the primary source of credit for households, private enterprises and the public sector.⁵ Banks perform a core intermediation function (savings-credit-lending) in the economy, and they play a major capital market role (equity/bond issuance) as well as other vital functions, notably in terms of offering investment products, payment services, trading and research. For most countries, they provide the crucial source of credit and investment capital which can be used to mitigate the adverse effects of environmental sustainability risks while enabling the economy to grow and develop on a sustainable path.⁶

While the banking sector is affected by environmental sustainability challenges directly and indirectly, it also plays an important role in supporting the economy’s adaptation to environmental changes and building financial resilience to environmental risks.⁷ By reallocating credit to more sustainable sectors of the economy and managing credit and market risks, banks contribute, in particular, to (1) reducing environmental sustainability risks, (2) mitigating the impact of these risks when they materialize, (3) adapting to the consequences of environmental change, and (4) supporting recovery when adverse environmental events cause massive disruptions.

Across the G20, banks have sought to address these risks by adopting different types of green banking practices. Two distinct areas of banking practice have emerged:

1) Development of environmental and social governance guidelines with a particular focus on risk management in the area of project finance and reallocating credit to renewable energy resources.⁸ The Equator Principles were established in 2003 to provide banks with voluntary guidance for incorporating environmental and social risks into the 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.

2) Most G20 banks primarily provide short-term credit to large corporates and small and medium-sized firms and savings and investment products to individuals. They are uniquely positioned to mobilize capital to the green economy, including renewable and clean energy projects by making loans and investments, and structuring specialized transactions.⁹

The banking sector will play a key role in providing credit and investment for countries as their economies adapt to evolving market structures in response to environmental sustainability challenges. These adaptations may result in volatility in asset prices and in the availability of credit and borrower defaults in economic sectors that the market has determined to be environmentally unsustainable. Where such transition risks are material, they may pose systemic risks to the banking sector. These financial risks associated with environmental sustainability have important implications for the banking sector, as banks are the largest providers of capital for most economies: how they manage the financial risks associated with the economy's transition to a more sustainable development path is an important policy concern.

2.2. The Materiality of Environmental Challenges for Banking Performance

The transition of the global economy to a more sustainable footing may result in market volatility and disruptions in the flow of capital that could introduce systemic financial risks that potentially threaten banking sector and economic stability.¹⁰ Many experts suggest that environmental factors can affect financial stability through three broad channels, namely: Physical risks (e.g. floods/storms that damage property and disrupt trade); Liability risks (from parties that have suffered loss or damage and seek compensation); Transition risks (i.e. financial risks that could result from the process of adjustment towards a lower-carbon economy), specifically the transition to a low-carbon economy will likely come with financial risks and that, therefore, financial policymakers have a clear interest in ensuring the financial system is resilient to any transition.

Transition risks have attracted particular attention from G20 policymakers especially as they relate to the performance of the banking sector. Banks have exposure to large investment projects, particularly infrastructure projects that require environmental impact studies and assessments. If environmental requirements are not met, these projects can be cancelled or curtailed, resulting in substantial direct and indirect losses for banks and investors. Similarly, in Brazil and Mexico, banks are potentially liable indirectly for environmental damages caused by companies that become insolvent or otherwise incapable of fulfilling environmental regulatory obligations. In Mexico and India, although the private banking sector adheres to the Equator Principles and environmental and social responsibility reporting guidelines, most large environmental infrastructure and renewable energy projects are financed either by national development banks in the case of Brazil, Mexico and Turkey and/or by state-owned or public sector banks in the case of India.

In most countries, institutional and market challenges hinder the provision of bank credit and investment for environmentally sustainable sectors of the economy. In Mexico and India, there are concerns that substantial governmental subsidies for unsustainable agricultural practices have led to a misallocation of capital away from sustainable agricultural and energy sources to unsustainable practices involving, for example, excessive use of fresh water and diesel fuel.

Also, information asymmetries limit the ability of banks to analyse the costs and benefits of environmentally sustainable projects. As a result, banks in most G20 countries have a disproportionately low level of exposure – around 10% of their lending portfolios – to environmentally sustainable projects. This suggests that banks in these countries are not internalizing the full costs of socially risky investments and thereby are investing far too much in unsustainable sectors of the economy. Some countries, such as Mexico, have sought to address these inefficiencies through fiscal reforms and a carbon tax policy. On the other hand, other countries, such as Egypt, have not been confronted with the same types of challenges and have instead relied on large private banks to take the lead in identifying sustainable sectors of the economy and developing a risk management strategy for allocating capital to emerging sustainable

sectors. This approach has had the effect of influencing other banking institutions – both state-owned and private – to follow suit.

Based on these countries' experiences, it is clear that more incentives are needed, both market-based and regulatory/fiscal, for banks to address the institutional and market challenges to mobilizing more capital and investment for sustainable economic activity. Similarly, enhanced market and policy-based incentives may be needed for banks to mainstream environmental factors across their business strategies, risk management and governance practices. Indeed, the mobilization of green credit and mainstreaming of environmental factors into banking practice are part of a growing trend to support sustainable banking practices that involve banks in managing the environmental and social risks associated with their financial activities. The overriding objective is to avoid or mitigate financial losses and reputation risks arising from bank exposure to unsustainable economic activity. The question for policymakers is to what extent governmental or regulatory intervention is necessary to guide the banking sector in allocating more credit and investment to sustainable activity and in protecting the economy against the related financial risks. Because G20 countries have different institutional and market structures, they use different combinations of market-based, regulatory and official sector guidance for the banking sector in supporting the economy's transition to a more sustainable path.

3. How Do G20 Banking Policies Support Environmental Sustainability Objectives?

The overriding objective of banking policy is to safeguard financial stability, build resilience to shocks, wherever the shocks may come from, and provide a sustainable source of credit, savings products and payment services to the broader economy. Banking policy and regulation 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 in meeting environmental sustainability challenges. Economic theory holds that policy and regulatory intervention in the banking sector is justified by market failures, which can arise from negative externalities resulting from asymmetric information, and competitive distortions.¹¹ Some 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 to unsustainable economic activity and to support a reallocation of capital to sustainable sectors of the economy. Policy intervention, however, if not calibrated properly, can also produce market distortions that 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 desirable for some G20 countries in using banking policy to support the integration of environmental factors into banking practice. In this way, banking policy can support the efficient operation of the economy by encouraging banks to harness more credit and investment for profitable and sustainable economic activity.

G20 countries are taking a number of banking policy measures to support the greening of the banking sector. These measures fall into three categories: 1) facilitating market reform, 2) public finance and government-supported institutions, and 3) banking regulation. However, before discussing these three categories it is necessary to address one of the common challenges for G20 policymakers in respect of green banking: the challenge of developing generally accepted definitions and standardized data on sustainable banking.

3.1. Common Definitions and Data

Inadequate data on sustainable economic activity and company environmental practices pose a major challenge to policymakers and regulators in measuring economic performance in sustainable sectors of the economy. Moreover, there is no generally accepted definition of green credit or standards for determining sustainable economic activity, with considerable variation between countries and within economic sectors regarding how to measure what economic activity is sustainable and what is not. With no accepted definition of green lending, regulators and policymakers have difficulties in analysing and measuring whether their economies are becoming more or less sustainable and whether policy measures that promote sustainability are achieving their goals. Although some definitions of green or sustainable lending are available in some G20 countries, they vary widely between countries.

This creates legal and regulatory challenges, because in most G20 jurisdictions there are legal obligations to disclose all material risks – including environmental sustainability risks (e.g., climate-related risks) – in financial reports. The absence of a standardized framework for disclosing sustainability risks that is comparable between markets and jurisdictions makes it difficult for report preparers to determine what information should be included in disclosure reports and how it should be presented. Enhanced data collection and analysis are necessary for developing meaningful metrics of environmental sustainability risks for different economic sectors and jurisdictions.

The Financial Stability Board Task Force on Climate-related Financial Disclosures issued the first phase of its Report in March 2016 that recommends a set of fundamental disclosure principles for issuers, accountant and auditors, and market participants for companies and financial institutions in many industries and countries for reporting environmental risk data and in developing environmental risk analysis methodologies. The FSB recommendations are expected to encourage listed companies and financial institutions to agree on consistent, comparable and reliable metrics for defining and measure green assets and to strengthen environmental and social risk assessments. Other international bodies will likely publish data as well about how to define green assets and sustainable economic activity. This should enhance the capacity of banking institutions to conduct data and risk analysis.

Nevertheless, these classifications of economic sectors can result in a one-size-fits-all approach to measuring economic exposure to sustainability risks and could unduly penalize some countries whose economic structures are already heavily reliant on unsustainable economic sectors. To address this, countries at the Paris Climate Change negotiations in 2015 agreed to use market indices and surveys to measure a country's exposure to carbon risks and to show its progress in transitioning to more sustainable levels.

3.2. Facilitating Market Reform

Market reforms can involve regulatory measures to encourage banks to internalize the negative environmental externalities of bank lending and savings products so that the provision of unsustainable bank credit and investment is efficiently priced with the result that the costs for society are mitigated. Also, governmental subsidies that encourage excessive depletion of natural and energy resources should be curbed. Together, such measures provide a foundation for banks to develop a business strategy for providing an efficient level of green credit and investment.

In addition, some countries facilitate market reforms by providing stable long-term policy frameworks for important areas of the green banking system, such as renewable energy and energy efficiency. Switzerland uses a policy framework that aims to improve business conditions for the banking sector so that banks can flexibly assess environmental and social risks and determine if they are material. This policy was motivated in part by the experience of Credit Suisse involving negative publicity in 2014 arising from its involvement in a large deforestation project in Indonesia. This highlighted the importance for Swiss banks of conducting due diligence in assessing whether bank lending projects are considered based on sustainability criteria. Switzerland's long-term policy approach was developed further by the Swiss government's proposal in 2015 for a national energy strategy that would be implemented over the next 30 years; it aims to incorporate sustainability criteria into all areas of economic policy and regulation and to impose taxes on, and eliminate subsidies for, unsustainable economic activity.

3.3. Public Finance/Government-supported Institutions

In several G20 countries, national development banks play an important role in providing credit and long-term financing for large infrastructure projects for renewable and clean energy. For instance, Turkey and Mexico use national development banks to deploy savings and capital towards green investments, especially longer-term funding projects that do not receive adequate financial support from private banks.¹³ In contrast, India uses state-owned banks to provide long-term funding for sustainable energy projects and to assist large-scale agricultural businesses in using more sustainable practices. In China, the four largest banks are state-owned and provide a substantial source of credit and long-term funding for large sustainable energy infrastructure projects and for smaller businesses

engaged in sustainable economic activity (e.g., solar panel manufacturers). In these countries, national development banks and state-owned banks use financing from public sources to promote the greening of the banking system and to assist the development of new markets for green assets (i.e., green bonds). Publicly owned banks and development banks also support the provision of private bank credit and investment for sustainable economic activity by leveraging private bank capital through on-lending activities and providing credit guarantees. Moreover, several developed countries, including the United Kingdom and the United States, have established green investment banks for the purpose of providing financing for renewable energy projects.

In addition, the role of the World Bank Group has been important in providing much needed long-term infrastructure investment for renewable and clean energy projects while public sector regional investment banks have also been a source of shorter-term credits for energy efficiency programs and climate projects for small and medium-sized businesses. In 2013, the European Bank for Reconstruction and Development (EBRD) provided credit lines of €150 million for corporate energy efficiency projects in Russia and provided €75 million credit lines to promote more lending for energy-efficient consumer real estate.¹⁴ Similarly, the International Finance Corporation (IFC) has provided US\$242 million in credits for energy efficiency programs for small and medium-sized enterprises and housing programs in Russia. Also, the EBRD has provided €200 million in credits for four private Russian banks that are part of a Sustainable Energy and Carbon Finance facility.¹⁵ And the European Investment Bank (EIB) provided €953 in 2013 to support climate change projects for small and medium-sized private firms and for social infrastructure development.¹⁶ The World Bank Group, along with regional public sector investment banks such as the EIB, has provided important sources capital to leverage the financing efforts of local authorities and private banks in increasing the provision of green credit and investment.

3.4. Banking Regulation

An important objective of the banking policies of G20 member states has been to complete implementation of the extensive financial sector reforms introduced following the global financial crisis.¹⁷ The G20 Leaders Summit in Pittsburgh in 2009 identified the core aim of banking regulation to be "to generate strong, sustainable and balanced global growth".¹⁸ The Basel Committee revised the Core Principles for Effective Banking Supervision in 2012 to enhance the capacity of bank supervisors to monitor individual banking institutions and to take into account risks that threaten banking system stability.¹⁹ Although the Core Principles do not explicitly address the financial stability risks associated with environmental sustainability, they provide a flexible and voluntary framework for bank regulators to identify, assess, and manage the potential systemic risks for the banking sector that are related to sustainability challenges.²⁰ Moreover, the Basel Committee published in 2016 a range of good practices by banks and bank regulators about how to increase financial inclusion for economically and socially disadvantaged groups.²¹

As discussed below, regulators in some G20 countries are moving voluntarily in this direction by incorporating environmental sustainability factors into bank governance, capital and risk management, and market disclosure. The following areas of banking regulation are relevant for policymakers to consider in addressing environmental sustainability challenges.

3.4.1. 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. In G20

countries, banks and other listed companies are already required to disclose to investors all material financial risks regarding their economic performance. Some environmental risks can be classified as material financial risks (i.e., lender liability for toxic waste clean-up) but most environmental and social risks are not considered by regulators to be material financial risks, and therefore are not required to be disclosed to the market. However, investors and other market participants have a growing demand for useful information on bank and other company exposure to environmental sustainability challenges.²²

Globally, over four hundred initiatives and voluntary disclosure frameworks across countries encourage companies and financial institutions to report environmental and social risk factors.²³ But the information is not consistent across markets and countries, lacks comparability, and is often unreliable. G20 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 exposure 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.²⁴

International policymakers are considering however whether further enhanced disclosures are necessary for banks and other financial institutions regarding their exposure to environmental sustainability risks to assist investors in assessing the links between sustainability challenges and potential risks to financial stability and the FSB established an industry-led Task Force on 4 December 2015 to make recommendations for improving principles and practices for voluntary disclosure that can promote a “smooth rather than an abrupt transition towards a lower-carbon economy.”²⁵ The Task Force consists of representatives from the private sector, including investors, preparers and other market participants from a variety of industries and regions. They are considering what role that voluntary disclosure of climate change risks by banks and other financial institutions to regulators, investors and customers can play in promoting financial stability.²⁶ The Task Force is conducting its work in two phases: its first report issued on 31 March 2016 proposed some objectives including making bank and company climate change reporting more consistent, comparable, reliable and efficient across countries and markets and a set of principles to achieve these objectives.

In addition, EU policymakers adopted the Disclosure Directive²⁷ in 2014 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 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 that 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.²⁸ 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. As a result, this disclosure requirement covers a wide diversity of institutions 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. For instance, France has adopted disclosure requirements that all listed companies (including listed banking companies)

should disclose their carbon exposure as part of broader climate change reporting requirements. 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.²⁹

While 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.

3.4.2. Risk Management

Adequate risk management at the level of the bank is the first line of defence against risk in the financial system. The Basel Committee has identified an extensive but non-exhaustive list of significant risks confronting banks including: credit risk, liquidity risk, market risk, concentration risk, country risks, transfer risks, operational risk, and reputational risks.³⁰ The Core Principles contain principles on the risk management process (principle 15), concentration risk and large exposure limits (principle 19), and market risk (principle 22), interest rate risk in the banking book (principle 23), liquidity risk (principle 24), and operational risk (principle 25). These principles taken together allow bank regulators and risk officers to develop approaches that consider empirically what type of environmental sustainability measures can be used as proxies for recognized areas of financial risks, such as credit, market, liquidity and operational risks.

Most G20 bank supervisors use the Basel III pillar 2 *Internal Capital Adequacy Assessment Process* (ICAAP) as part of the Supervisory Review Evaluation Process (SREP) to assess the risk management and governance of banks.³¹ Under pillar 2, banks are required to identify material risks that affect the bank's stability, and describe their risk management controls in addressing material risks. In Brazil, the Brazilian Banking Association (FEBRABAN) has adopted voluntary standards based on the pillar 2 framework to enhance bank assessments of environmental risks. Based on this, the Brazilian Central Bank published a mandatory Resolution 4327 in 2014 on the Social and Environmental Responsibility for Financial Institutions that requires banks to incorporate socio-economic factors into their risk 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) adopted the 'Green Credit Guidelines' in 2012 to 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 have 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 recommendations³³ 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.

Most G20 countries, however, do not require banks to assess the risks associated with environmentally unsustainable economic activity on their loan and bond portfolios.³⁴ Switzerland does not explicitly require banks to incorporate environmental and social risks into their prudential risk assessments, but the Swiss regulator (Finma) follows a principles-based approach that requires the bank to identify material risks. Over time, as markets and risks evolve, Finma's principles-based approach allows the regulator discretion to ask the bank to integrate other risks – for instance,

environmental risks – into their risk management models. The flexibility may exist for G20 countries to ask banks about their risk models and whether they should include environmental sustainability risks. In the EU, the determination that environmental risks should be incorporated into bank risk models must be approved by the European Banking Authority that has discretion to adopt regulatory technical standards that are applied by EU national competent authorities. But as the case with France shows, EU member states have discretion to adopt legislation that requires environmental risk assessments to be incorporated into bank risk assessments.

In addition, IFRS reporting standards require detailed data relating to the income statement and balance sheet, including the breakdown of loan advances to non-financial firms. However, these reporting standards generally do not allow for detailed information of credit exposure to sectors with immediate, emerging or elevated environmental sustainability risks.

3.4.3. Governance

Enhanced corporate governance mechanisms are necessary to reduce the incentives for banks to take on excessive risks that can threaten the stability of the banking sector.³⁵ 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. It is widely recognized that the correlation between good corporate governance and effective environmental and social risk management is strong.

Bank governance is also affected by stewardship codes and international efforts to recognize whether bank boards should consider environmental and social governance issues in reviewing bank management and whether failing to do so is a failure of the board's fiduciary duty to the bank and investors.³⁶ For instance, under article 69 of the Russian Code of Corporate Governance, 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.³⁷

The EU Disclosure Directive can play a role in improving bank governance by improving bank transparency for investors regarding 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.

The Basel Committee's revised Corporate Governance Guidelines for Banks adopted in 2015 include a number of key concepts that are directly aligned with the consideration and management of environmental and social issues, namely:

- a recognition of the impact of banks on the broader setting in which they operate
- a recognition of banks' accountability to a broad array of stakeholders
- an emphasis on the need for an enhanced risk culture
- the call for ethical and responsible behaviour

The revised guidelines provide a set of principles for banks to incorporate environmental sustainability objectives into their management strategies and risk frameworks.

As mentioned above, China and Brazil are the only two G20 countries that require banks to incorporate environmental sustainability risks into risk governance and management strategy. Brazil adopts the principle of proportionality for individual banks to decide – based on the bank’s particular risk exposure – to what extent environmental sustainability risks should be incorporated into the bank’s governance and risk strategy. Nevertheless, more and more G20 countries are beginning to incorporate environmental and social risk reporting into 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.

Box 1: Brazil – A Case Study in Green Banking Policy

Brazil provides an interesting case study of a large G20 country that has used banking policy and regulation to support the banking sector in mainstreaming environmental factors into bank governance and management practices and in mobilizing capital for emerging sustainable sectors of the economy. Brazil’s banking policy has traditionally relied on a national development bank – the Brazilian Development Bank (BNDES) – as the main financing agent for sustainable socio-environmental development in Brazil. Since its establishment in 1952, BNDES has played a fundamental role in stimulating the expansion of industry and infrastructure in the country, and its role has evolved to take on new financing activities, especially in providing substantial funding for large-scale infrastructure investment in support of renewable and clean energy projects. Brazil has also relied on public sector banks to provide significant credit and other financing support for sustainable sectors of the economy, such as sustainable agricultural farming. Brazil’s first Green Protocol was adopted in 1995 with a declaration of intent by public banks for increased attention to environmental and social concerns in credit decisions.

Brazil’s private banking sector has also taken the initiative in setting responsible standards for its member banks in the areas of environmental and social governance and also adhering to the Equator Principles. Private banks have traditionally had strong incentives to adopt industry standards to mitigate environmental risks, as Brazil has had national legislation in place that imposes liability on banks for direct or indirect responsibility for its customers’ violations of environmental regulations. In 2009, the Green Protocol was broadened through an initiative led by FEBRABAN to include private financial institutions committing to use environmental and social (E&S) standards in their lending decisions.

In 2014, Brazil’s Central Bank, partnering with FEBRABAN, resolved to set up a voluntary and compulsory mechanism to regulate environmental and social risk assessments in the credit process. Banks are encouraged to have environmental and social policies in place that are “relevant” and “proportionate to their activities” based on the bank’s size and position in the banking sector and its business model. Each bank’s E&S system is designed to identify, quantify, evaluate, monitor and mitigate risk; and to establish a data registry on effective losses due to environmental and social damage, impact assessments before new forms of products and services are launched and governance structures at board or senior management level with one director responsible for these issues.³⁸

In 2014 the Central Bank of Brazil adopted a Resolution 4327 that is based on pillar 2 of Basel III requiring Brazilian banks to assess their environmental sustainability risks under the Internal Capital Adequacy and Assessment Program and to increase the capital charge for the bank if it cannot demonstrate adequate capacity to manage E&S risks. The bank is also required to undertake forward-looking risks assessments based on stress testing its E&S exposure under the Supervisory

Review and Evaluation Process.

Brazil places important emphasis on partnering the Central Bank with FEBRABAN in finding flexible ways of using banking policy and regulation to address environmental sustainability challenges and for enhancing the banking industry's capacity to manage and measure environmental sustainability risks.

3.4.4. Capital Requirements

G20 countries generally do not require banks to incorporate environmental sustainability risks into their regulatory capital calculations. Most G20 countries and Switzerland believe that Basel III provides adequate flexibility for bank supervisors to work with banks in identifying sustainability risks as they occur in the banking sector. Although the Basel Accord does encourage banks to calculate regulatory capital for credit and operational risk exposure to borrowers who are in violation of environmental regulations,³⁹ there is no broader recognition that regulatory capital risk weights should be adjusted to include environmental sustainability risks.⁴⁰ More data and stress testing are needed before most G20 countries will act in this area.

The Central Bank of Brazil, however, has begun to investigate under pillar 1 of Basel III whether environmental and social risks can serve as proxies for credit and other types of financial risks. Brazil and China are also utilizing pillar 2 of Basel III to require banks to assess whether additional capital is required for a bank because of its exposure 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. Most G20 countries, however, do not believe that Basel III should be used to assess environmental and social risks.⁴¹

3.4.5. Financing Structures

Financial innovation in products and investments will play an important role in stimulating more demand for 'green' investment assets and providing more liquidity for green assets. However, G20 countries with the exception of China have not begun assessing which financing structures for banks might be conducive to providing more credit to sustainable sectors of the economy. Banking policy and regulation can play an important role in facilitating the creation of new financial products and investments that will attract capital to more sustainable sectors of the economy. For example, the use of simple and transparent financial instruments and investment structures, such as sustainable asset-backed securities, to facilitate more investment in 'green' assets could stimulate increased investment in 'green' credit and other sustainable assets.⁴²

Central banks may also have a role to play by developing new instruments of monetary policy that can encourage banks to bundle loans together into transparent asset classes that can issue highly rated securities that can be used by banks as collateral for central bank funding. National authorities should have discretion to experiment with innovative financing structures that incentivize more investment in green assets and thus provide an impetus for further development of a sustainable economy.

In applying the above criteria, G20 country approaches demonstrate that successful banking policy should be 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.⁴³ 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 exposure based on the principles of proportionality and relevance.⁴⁴

The variety of institutional approaches and policy levers used by G20 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 into environmentally sustainable ones, 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 unintended consequences and market distortions. 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.

4. The G20 and the Way Forward

G20 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 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 on standards for measuring whether a country or individual banks and market sectors are progressing towards a more sustainable economic path.

G20 countries 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.

The G20 could also support the exchange of information on green banking policy and regulatory initiatives and market practices between countries based on existing principles of transparency and disclosure in international trade regimes. The value of transparency and accessibility of national regulation is already an important legal principle in the World Trade Organisation's General Agreement on Trade in Services (GATS) Article III and article VI disciplines on transparency in domestic regulatory requirements and practices. Where WTO member states have made commitments to liberalize their financial services sectors, they have an obligation to act in a transparent manner regarding all domestic regulatory requirements that cover liberalized financial and other economic sectors. WTO members are required to inform the Council for Trade in Services at least annually of the introduction of any new, or any changes to existing laws or regulations which significantly affect trade in financial services commitments that have been undertaken.⁴⁵ The GATS article VI on domestic regulation requires members to administer in a reasonable, objective and impartial manner all measures relating to financial services commitments undertaken.⁴⁶

Most G20 countries have made full liberalization commitments for cross-border trade in financial services and related capital flows and therefore would be subject to the GATS transparency obligation. The GATS transparency obligation that relates to trade in financial services could potentially serve as a basis to support countries in exchanging information about regulatory and market practices about green banking policy. Indeed, optimal policy choices depend on knowledge about practices in other countries. Such knowledge may also promote voluntary convergence that may reduce the regulatory cost of different regulatory regimes. An enhanced discourse and exchange between global standard-setting bodies, WTO members, and G20 policymakers and regulators may make important contributions both to the work of regulators and the private sector.

The WTO's Committee on Trade in Financial Services (CTFS) monitors developments in the financial markets including more recently post financial crisis regulatory developments, Islamic banking and e-banking. Since green banking is a new kind of financial service, discussions on its design, application and information exchange could be placed before the CTFS. The CTFS could provide therefore a good voluntary forum for the exchange of information and disclosure on green banking measures that G20 and other WTO members are currently undertaking.

The G20 could also mandate that the FSB and international financial standard-setting bodies continue further work in measuring financial risks associated with environmental sustainability challenges and adopt voluntary frameworks in the following areas:

- Assess environmental risks and their increasing impact on financial stability and the sustainability of the economy and identify institutional and market challenges to achieving more durable links between the banking and other financial sectors and sustainable sectors of the economy.
- Enable bank regulators to explore the feasibility of incorporating forward-looking risk assessments into bank risk management of scenarios where environmental risks appear to have become embedded in the financial system and how they may affect bank performance and banking sector stability.
- Develop industry-led voluntary disclosure frameworks for environmental risks that are standardized across countries, possibly building on international financial reporting standards.
- Encourage banks and regulators to work together to develop simple and transparent investment products to attract more stable investment in 'green' bank assets.
- Encourage banks to build capacity for mainstreaming green finance into bank business practices and strategies across G20 countries.
- Ensure effective transparency by banks in how they manage environmental sustainability challenges as part of their strategies for green banking.

5. Summing up and Conclusion

The G20 countries have utilized flexible institutional approaches and policy levers to use banking policy and regulation to support the economy in achieving sustainable outcomes. Recent reports demonstrate the linkages between environmental sustainability challenges and banking and financial market risks and the relevance of environmental and social risks to banking policy. The experiences of G20 countries suggests that banking policy can play an important role in reducing the institutional and market obstacles to providing more bank credit for the green economy. Most G20 bank supervisors have the flexibility under the Basel Capital Accord and Core Principles for Banking Supervision to begin assessing the environmental risks that are material to their banking and financial sectors. Advanced developed countries such as Japan and the United States focus on creating sound market-based economic frameworks that promote the efficient pricing of assets and reducing fiscal subsidies for unsustainable economic activity. Other G20 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, G20 countries have begun considering and using certain regulatory measures to encourage banks to address the institutional and market challenges to providing green finance. The paper suggests that G20 countries can utilize the following areas of regulation on a voluntary basis to determine their efficacy: 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 G20 countries to develop forward-looking strategies at assessing the financial risks related to environmental sustainability challenges.

The G20 has in several of its communiqués highlighted the importance of achieving environmentally sustainable economic growth as well as a stable financial system.⁴⁷ G20 countries use a variety of institutional approaches and policy levers to mainstream environmental sustainability criteria into banking management and governance and to mobilize green credit and investment across economic sectors and asset classes. The banking sector plays an important role in reallocating credit and investment away from unsustainable economic sectors to more sustainable economic activity.

National authorities have adopted a variety of financial policy and regulatory initiatives to mitigate the financial risks associated with the transition to a more sustainable economy. Country practices range from introducing environmental sustainability factors into bank risk management practices and stress testing (China's Green Credit Guidelines 2012), to more debatable calls for re-considering how to apply certain Basel III rules, such as the Central Bank of Brazil requiring environmental risk assessments to be included in the Basel III Internal Capital Adequacy Assessment Program. Moreover, China's Central Bank is exploring the use of central bank financing operations to make short-term liquidity available to banks to fund green projects.

These policy and regulatory initiatives are aimed at reducing environmental risks by mainstreaming green banking practices into bank risk management and governance and mobilizing capital to

transform G20 countries' economies into sustainable ones. However, the uncertainty and lack of clearly defined terms and standards for measuring progress in becoming more sustainable suggests that policymakers and practitioners need more economic data on sustainable economic activity and empirical evidence regarding how green credit and investment practices will affect economic growth and development. This paper offers regulatory options for policymakers to encourage increased bank lending and funding for more sustainable economic activity, while ensuring the banking sector's resilience to environmental risks. However, it is vital that such regulatory initiatives avoid unintended consequences and significant market distortions. 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.

International policy coordination can assist G20 countries in achieving green banking policy objectives, in particular the need for more disclosure of green banking regulatory and market practices. Optimal policy choices depend on knowledge about practices in other countries. Such knowledge may also promote voluntary convergence that may reduce the regulatory cost of different regulatory regimes. The value of transparency and accessibility of national regulation is already an important tenet of international trade law, particularly in the WTO GATS article III principle of transparency and article VI disciplines on domestic regulation that require transparency and disclosure of regulatory and related market practices. An enhanced discourse and exchange between global standard-setting bodies, OECD members, WTO members, and G20 policymakers and regulators may make important contributions both to the work of regulators and the private sector.

Appendix A – The Basel Core Principles for Banking Supervision’s Relevance for Green Banking

Area of Banking Policy	Principle	Green Finance Dimension
Governance	Core Principle 5 – Licensing criteria	Ensuring that bank’s strategic and operating plan takes into consideration the transition towards a low-carbon economy and that internal controls, risk management and projected financial condition is based on proper assessment of environmental risks.
	Core Principle 7 – Major acquisitions	The supervisor has the power to approve or reject (or recommend to the responsible authority the approval or rejection of), and impose prudential conditions on, major acquisitions or investments by a bank, including the establishment of cross-border operations, and to determine that corporate affiliations or structures do not expose the bank to undue risks to environmentally unsustainable assets/projects or hinder effective cross-border supervision of bank’s exposure to sustainability risks.
	Core Principle 8 – Supervisor approach	An effective system of banking supervision requires the supervisor to develop and maintain a forward-looking assessment of the risk profile of individual banks and banking groups, proportionate to their systemic importance; identify, assess and address risks emanating from banks and the banking system as a whole including the systemic risks of an abrupt transition to a low-carbon economy; have a framework in place for early intervention; and have plans in place, in partnership with other relevant authorities, to take action to resolve banks in an orderly manner if they become non-viable.
	Core Principle 9 – Supervisory techniques and tools	The supervisor uses an appropriate range of techniques and tools to implement the supervisory approach and deploys supervisory resources on a proportionate basis, taking into account the risk profile and systemic importance of banks. These tools can be used to assess environmental risk exposure and the systemic risks associated to a late and abrupt transition to a low-carbon economy.

	<p>Core Principle 10 – Supervisory reporting</p>	<p>The supervisor collects reviews and analyses prudential reports and statistical returns from banks on both a solo and a consolidated basis, and independently verifies these reports through either on-site examinations or use of external experts.</p> <p>The supervisor has the power to require banks to submit information, on both a solo and a consolidated basis, on their financial condition, performance, and risks including environmental risks, on demand and at regular intervals. These reports provide information such as on- and off-balance sheet assets (including exposure to sectors with high environmental risks) and liabilities, profit and loss, capital adequacy, liquidity, large exposure, risk concentrations (including by economic sector exposed to environmental risks, geography and currency), asset quality, loan loss provisioning, related party transactions, interest rate risk, and market risk. The supervisor has a means of enforcing compliance with the requirement that the information be submitted on a timely and accurate basis including sufficient level of detail to assess environmental risk including systemic risks.</p>
	<p>Core Principle 11 – Corrective and sanctioning powers of Supervisors</p>	<p>The supervisor acts at an early stage to address unsafe and unsound practices or activities that could pose risks to banks or to the banking system such as exposure to sectors with immediate and elevated exposure to environmental risks. The supervisor has at its disposal an adequate range of supervisory tools to bring about timely corrective actions.</p>
	<p>Core Principle 13 – Home-host relationship</p>	<p>Home and host supervisors of cross-border banking groups share information and cooperate for effective supervision of the group and group entities regarding exposure to sectors with high environmental risks as well as and, in general, the risks associated with the transition to a low-carbon economy. Supervisors require the local operations of foreign banks to be conducted to the same standards as those required of domestic banks.</p>
	<p>Core Principle 14 – Corporate governance</p>	<p>The supervisor determines that banks and banking groups have robust corporate governance policies and processes covering, for example, strategic direction, group and organizational structure, control environment, responsibilities of the banks’ boards and senior management, and how these factors relate to the bank’s strategy towards an orderly transition to a low-carbon economy.</p>

Greening Banking Policy

	Core Principle 15 – Risk management process	The supervisor determines that banks have a comprehensive risk management process (including effective board and senior management oversight) to identify, measure, evaluate, monitor, report and control or mitigate all material risks including those related to the disorderly transition to a green economy on a timely basis and to assess the adequacy of their capital and liquidity in relation to their risk profile and market and macroeconomic conditions. Such comprehensive risk management process includes data collection for environmental risk exposure, including classifying data according to the level of environmental risk and conduct stress testing.
	Core Principle 26 – Internal control and audit	The supervisor determines that banks have adequate internal control frameworks to establish and maintain a properly controlled operating environment for the conduct of their business including its environmental impact. The supervisor determines that banks have an adequately staffed, permanent and independent compliance function that assists senior management in managing effectively the compliance risks faced by the bank including environmental guidelines. The supervisor determines that staff within the compliance function is suitably trained, have relevant experience and have sufficient authority within the bank to perform their role effectively. The supervisor determines that the bank’s board exercises oversight of the management of the compliance function.

Area of Banking Policy	Principle	Green Finance Dimension
Capital Adequacy	Core Principle 16 – Capital Adequacy	The supervisor sets prudent and appropriate capital adequacy requirements for banks that reflect the risks undertaken by, and presented by, a bank in the context of the markets and macroeconomic conditions in which it operates. This takes into consideration the systemic risks associated with the transition to a low-carbon economy. The supervisor defines the components of capital, bearing in mind their ability to absorb losses. At least for internationally active banks, capital requirements are not less than the applicable Basel standards.

Greening Banking Policy

	Basel Capital Accord (Basel III) – Pillar 1 – Capital/Liquidity	To be completed after our analysis of prudential requirements
	Basel Capital Accord (Basel III) – Pillar 2 – Bank governance and risk and management	<p>The supervisor has the power to require banks to adopt a forward-looking approach to capital management (including the conduct of appropriate “carbon stress testing” of risks associated with a disorderly transition to a low-carbon economy). The supervisor has the power to require banks:</p> <p>(a) to set capital levels and manage available capital in anticipation of possible events or changes in market conditions that could have an adverse effect; and</p> <p>(b) to have in place feasible contingency arrangements to maintain or strengthen capital positions in times of stress, as appropriate in the light of the risk profile and systemic importance of the bank.</p>
	Basel Capital Accord (Basel III) – Pillar 3 – market discipline/ disclosure to market	<p>Recognition of environmental systemic risks as material financial risks, stress testing for sustainability shocks, and bank business strategies consistent with a gradual transition to a low-carbon economy.</p> <p>Standardized disclosure for environmental risks across countries</p>

Greening Banking Policy

Area of Banking Policy	Principle	Green Finance Dimension
Risk Management	Core Principle 15 – Risk management process	The supervisor determines that the bank has comprehensive risk management process that identifies, measures, evaluate, monitor, report and control or mitigate all material risks including environmental risks on a timely basis and to assess the adequacy of their capital and liquidity in relation to their risk profile and market and macroeconomic conditions.
	Core principle 17 – Credit risk	The supervisor determines that banks have an adequate credit risk management process that takes into account loan exposure to sectors with immediate or emerging elevated environmental risks. This includes prudent policies and processes to identify, measure, evaluate, monitor, report and control or mitigate credit risk that relate to environmental risk exposure.
	Core Principle 19 – Concentration risk and large exposure limits	The supervisor determines that banks have adequate policies and processes to identify, measure, evaluate, monitor, report and control or mitigate concentrations of risk including risks related to the transition to a low-carbon economy on a timely basis. Supervisors set prudential limits to restrict bank exposure to single counterparties or groups of connected counterparties including exposure to immediate and emerging elevated environmental risks.
	Core Principle 21 – Country and transfer risks	The supervisor determines that banks have adequate policies and processes to identify, measure, evaluate, monitor, report and control or mitigate country risk and transfer risk in their international lending and investment activities on a timely basis. This could be crucial for countries with large exposure to environmentally unsustainable economic activity or heavily exposed to environmental hazards (e.g. natural disasters, pollution).
	Core Principle 22 – Market risks	The supervisor determines that banks have an adequate market risk management process that takes into account their risk appetite, risk profile, and market and macroeconomic conditions and the risk of a significant deterioration in market liquidity. The supervisor determines that banks hold appropriate levels of capital against unexpected losses and make appropriate valuation adjustments

Greening Banking Policy

		<p>for uncertainties in determining the fair value of assets and liabilities including the bond portfolio (e.g. bonds issued by firms exposed to immediate and elevated environmental risk exposure).</p> <p>The supervisor requires banks to include market risk exposure into their stress testing programmes, including “carbon stress test,” for risk management purposes.</p>
Financial Structures	Regulators encourage ‘simple, transparent and standardized’ (STC) securitization structures to generate more investment in green assets	Encourage banks to mitigate risks associated with the securitization of green assets by using STC.
	Central banks liquidity support structures	Everything else equal, encourage banks to provide green assets as collateral for central bank liquidity.
Disclosure	Core Principle 28 – Disclosure and transparency	The supervisor determines that banks and banking groups regularly publish information related to environmental risk exposure. Disclosures should reveal the financial condition, performance, risk exposure, risk management strategies and corporate governance policies and processes, including environmental risk assessments and business strategies to incorporate the adjustment costs to the transition to a low-carbon economy into management strategies.
	Core Principle 27 – Financial reporting and external audit	<p>Supervisory guidelines or local auditing standards determine that audits cover areas such as the loan portfolio, loan loss provisions, non-performing assets, asset valuations, trading and other securities activities, derivatives, asset securitizations, consolidation of and other involvement with off-balance sheet vehicles and the adequacy of internal controls over financial reporting including exposure to environmental risks.</p> <p>The supervisor requires the external auditor, directly or through the bank, to report to the supervisor matters of material significance, for example failure to comply with the licensing criteria or breaches of banking or other laws, significant deficiencies and control weaknesses in the bank’s financial reporting process or other matters that they believe are likely to be of material significance to the functions of the supervisor.</p>

Greening Banking Policy

International Coordination	Core Principle 3 – Cooperation and collaboration between domestic authorities and foreign supervisors	Laws, regulations or other arrangements provide a framework for cooperation and collaboration with relevant domestic authorities and foreign supervisors including the exchange of information on bank exposure to environmentally unsustainable assets. These arrangements reflect the need to protect confidential information.
	Core Principle 13 – Home-Host supervisory relationships	Home and host supervisors of cross-border banking groups share information and cooperate for effective supervision of the group and group entities, and effective handling of crisis situations. Supervisors require the local operations of foreign banks to be conducted to the same standards as those required of domestic banks. Such cooperation also encompasses home and host supervisors’ assessment of banks’ risks exposure to environmental risks as well as systemic risks related to the disorderly transition to a low-carbon economy.

Appendix B

In March 2016, Professor Alexander and the UNEP Secretariat distributed the 'Questionnaire on Banking Policy and Green Finance' to G20 Finance Ministries and/or Central Banks and to the Swiss Financial Market Regulator. During March and April 2016, the following countries/governmental bodies completed and returned the Questionnaire: China, Mexico, Turkey, France, Brazil, Russia, South Africa, India, and the European Commission and Switzerland.

Notes

¹ World Bank (2014), Risk and Opportunity: Managing Risk for Development, World Development Report, Washington, D.C

² The WEF defines a global risk as an uncertain event or condition that, if it occurs, can cause significant negative impact for several countries or industries within the next 10 years.

³ History suggests that extreme environmental phenomenon – both man-made and not – can have severe adverse effects on banking stability.

⁴ See note 1.

⁵ See note 1.

⁶ For instance, banks provide liquidity to support well-developed financial markets and instruments, access to credit and market insurance for more resilient homes and commercial buildings, and self-insurance through bank deposits, and provide capital for investment in infrastructure which can help mitigate the impact of environmental risks.

⁷ For instance, Mark Carney, Governor of the Bank of England and Chairman of the Financial Stability Board, observed that given the scientific evidence and the dynamics of the financial system, climate change could potentially threaten financial resilience in general and economic prosperity over the longer-term. See Bank of England (BoE), 'Breaking the Tragedy of the Horizon – Climate Change and Financial Stability' (Lloyd's of London, 29 September 2015) speech given by Governor Mark Carney <http://www.bankofengland.co.uk/publications/Documents/speeches/2015/speech844.pdf>.

⁸ See G20 Green Finance Study Group (GFSG) (2016), 'Greening the Banking System: Taking Stock of G20 Green Banking Market Practice', pp. 13, 18-19.

⁹ See GFSG, 'Synthesis Report' (March 2016), 12; in 2014, non-recourse bank lending for renewable energy project finance was approximately US\$54 billion. Ibid.

¹⁰ See BoE (note 7), according to Governor Carney, there are three broad channels through which climate change can affect financial stability, namely: Physical risks (e.g. floods/storms that damage property, disrupt trade); Liability risks (from parties that have suffered loss or damage and seek compensation); Transition risks (i.e. financial risks which could result from the process of adjustment towards a lower-carbon economy), specifically the transition to a low-carbon economy will likely come with financial risks and that, therefore, financial policymakers have a clear interest in ensuring the financial system is resilient to any transition.

¹¹ See Joint Forum (2010), Review of the Differential Nature and Scope of Financial Regulation – Key Issues and Recommendations, pp. 85-88.

¹² See Alexander, K. (2014), Stability and Sustainability in Banking Reform: Are Environmental Risks Missing in Basel III?, UNEP and Cambridge Institute for Sustainability Leadership, pp. 4-5.

¹³ Turkey and Mexico have established national development banks for this purpose. See Questionnaire on Banking Policy and Green Finance, Answers of the Central Bank of Turkey (March 2016) and the Central Bank of Mexico (March 2016).

¹⁴ Questionnaire on Banking Policy and Green Finance, Answers of the Central Bank of Russia (29 April 2016), pp. 2-3

¹⁵ Ibid, p. 3.

¹⁶ Ibid.

¹⁷ See 'G20 Leaders Statement: The Pittsburgh Summit' (24-25 September 2009); see also 'The G20 Seoul Summit Leaders' Declaration' (12 November 2010).

¹⁸ Ibid.

¹⁹ Basel Committee on Banking Supervision (BCBS), 'Core Principles for Effective Banking Supervision' (2012) Core Principle 1. Core Principle 1 states in relevant part that the primary objective for banking regulation 'is the soundness of banks and the banking system'.

²⁰ See Appendix A in which the relevant Core Principles are listed along with references to the Basel Capital Accord and how they might be relevant for policymakers and regulators in incorporating environmental sustainability standards.

²¹ See BCBS (2016), Range of practice in the regulation and supervision of institutions relevant to financial inclusion.

²² 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 <http://www.unepfi.org/fileadmin/documents/EnergyEfficiencyStatement.pdf> and <http://www.unpri.org/whatsnew/green-infrastructure-investment-coalition-launched-at-cop21/>

²³ Investors are stimulating more market action and disclosure, with 100 investors representing US\$10 trillion calling for 77 stock exchanges to provide ESG guidance for issuers by the end of 2016. Investors are also encouraging credit rating agencies integrate ESG factors into credit ratings formally.

²⁴ See BCBS (2014), Review of the Pillar 3 Disclosure Requirements Consultative Document. See also Core Principle 27 that provides that bank supervisors should ensure adequate requirements for financial reporting and external audit, and Core Principle 28 that provides that bank supervisors should mandate adequate disclosure and transparency to investors and the broader markets.

²⁵ See Financial Stability Board (2015) <http://www.fsb.org/what-we-do/policy-development/additional-policy-areas/developing-climate-related-financial-disclosures/> accessed 18 February 2016.

²⁶ See FSB Press Release (4 December 2015) announcing that it had established a task force to develop "voluntary, consistent climate-related financial risk disclosures for use by companies in providing information to lenders, insurers, investors and other stakeholders." The task force is headed by ex-New York mayor Michael Bloomberg. The EDTF will consider 'the physical, liability and transition risks associated with climate change and what constitutes effective financial disclosures in this area'.

²⁷ Directive 2014/95/EU of the European Parliament and of the Council 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) OJEU L330/1.

²⁸ Art. 29a Disclosure Directive.

²⁹ Union-based frameworks such as the Eco-Management and Audit Scheme (EMAS), or international frameworks such as the United Nations (UN) Global Compact, the Guiding Principles on Business and Human Rights implementing the UN 'Protect, Respect and Remedy' Framework, the Organisation for Economic Co-operation and Development (OECD) Guidelines for Multinational Enterprises, the International Organization for Standardisation's ISO 26000, the International Labour Organization's Tripartite Declaration of principles concerning multinational enterprises and social policy, the Global Reporting Initiative, or other recognized international frameworks.

³⁰ See BCBS (2009), Enhancement to the Basel II Framework, p.19 para 47.

³¹ See European Banking Authority (2015), Guidelines on ICAAP and ILAAP information collected for SREP purposes, EBA/CP/2015/26 <http://www.eba.europa.eu/documents/10180/1307235/EBA-CP-2015-26+%28CP+on+GL+on+ICAAP+and+ILAAP+Information%29.docx> accessed 23th February 2016.

³² See '2015 Energy Transition Act', art 173.

³³ Bank of Russia, Letter no 06-52/2463 (10 April 2014).

³⁴ See Interviews of India and Mexico, and Turkey's written answers to questionnaire. For example, these portfolios are not subject to stress testing simulations (e.g. sudden economic obsolescence of capital stocks, sudden revaluation of fossil fuel reserves) in which a banks' profits and credit risk exposure are impacted by a stressed portfolio.

³⁵ As shown in Appendix A, the Core Principles address bank governance in several principles, including major acquisitions (principle 7), corporate governance (principle 14), and internal control and audit (principle 26). In addition, the Basel Committee adopted a revised set of bank corporate governance principles in 2010 which were subject to further consultation in 2015. 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. See BCBS, 'Principles for Enhancing Corporate Governance' (2010) Principles 6 and 8.

³⁶ Investor efforts are also under way to harmonize a global understanding through a new international statement on fiduciary duty. *Fiduciary Duty in the 21st Century*, See <http://2xjmlj8428u1a2k5o34l1m71.wpengine.netdna-cdn.com/wp-content/uploads/Fiduciary-duty-21st-century.pdf>

³⁷ See 'Questionnaire of Banking Policy and Green Finance, Answer of the Central Bank of Russia' (29 April 2016), p. 4.

³⁸ See 'G20 GFSG Background Paper 9 on SBN Experiences' (IFC 2016).

³⁹ See BCBS (2006), International Convergence of Capital Measurements and Capital Standards, A Revised Framework, Comprehensive Version, para 510, requiring banks to "appropriately monitor risk of environmental liability arising in respect of the collateral, such as the presence of toxic material on a property".

⁴⁰ These transaction-specific risks are narrowly defined and do not constitute broader macroprudential or portfolio-wide environmental risks for the bank. See note 12.

⁴¹ See Interview with Mexico, Questionnaire with Turkey, Interview with South Africa and Questionnaire with Spain.

⁴² Ibid.

⁴³ See note 38.

⁴⁴ Brazil adopted the first Green Protocol in 1995 which was a declaration of intent by public banks for increased attention to environmental and social concerns in credit decisions. In 2009, the Green Protocol was broadened to include private financial institutions through the Federation of Brazilian Banks (FEBRABAN). See <https://portal.febraban.org.br/>.

⁴⁵ GATS Article III (3) states "Each Member shall promptly and at least annually inform the Council for Trade in Services of the introduction of any new, or any changes to existing, laws, regulations or administrative guidelines which significantly affect trade in services covered by its specific commitments under this Agreement."

⁴⁶ GATS Article VI (1) states "In sectors where specific commitments are undertaken, each Member shall ensure that all measures of general application affecting trade in services are administered in a reasonable, objective and impartial manner."

⁴⁷ See G20 Seoul Summit (note 17).