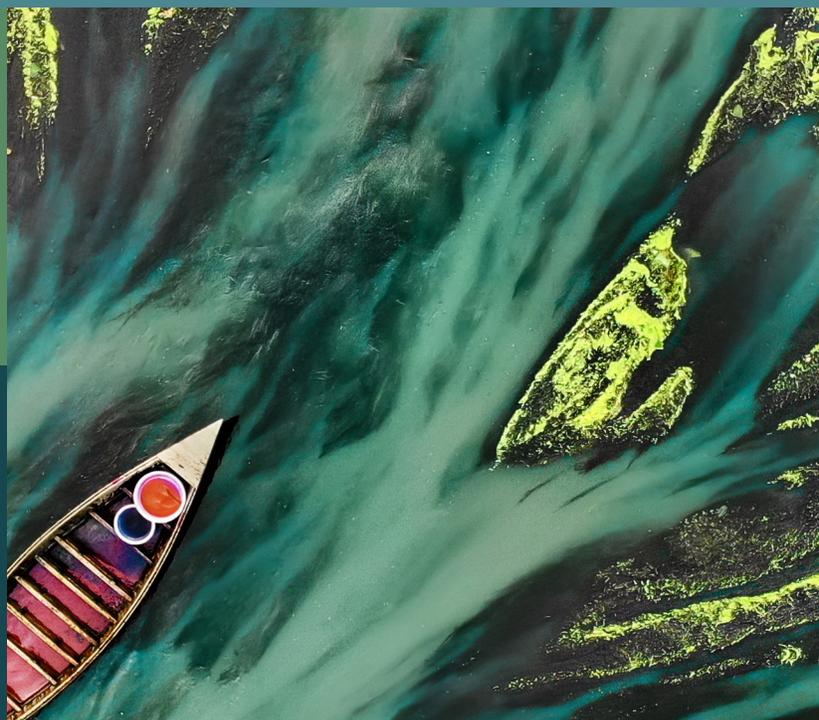


Challenges of Green Finance

*Private Sector
Perspectives
from Emerging
Markets*



NOVEMBER 2023

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Executive Summary

Pivate financial firms in emerging market and developing economies (EMDEs) have started taking initiatives in the area of green and sustainable finance but face a number of challenges. The findings of a survey of private financial firms from a sample of EMDEs undertaken for this paper suggest that these initiatives are responding less to new regulatory requirements—which are still at an incipient stage in most EMDEs—and more to pressures from parent companies of local subsidiaries, foreign investors, other parts of the global financial industry (for example, re-insurers), and development finance institutions (DFIs). However, in the absence of common strategies and standards, these initiatives create an uneven operating environment within and across EMDEs. Firms that would like to adopt more ambitious green and sustainable finance goals are hampered by the fear of losing market share to those

that continue business-as-usual. This “first mover disadvantage” risks holding back the wider adoption of sustainable finance practices.

Data and capacity gaps hinder the effective application of sustainable finance taxonomies and disclosure requirements. Respondents to the survey indicated that many EMDEs have adopted (or are in the process of developing) green or sustainable taxonomies, but these often have limited coverage, are not sufficiently granular, or require data and know-how that are not always available. As a result, individual financial firms have considerable discretion in assessing and reporting climate-related exposures and risks. The inevitable inconsistencies in disclosures create scope for “greenwashing” and aggravate the uneven playing field.

Gaps in the regulatory environment pose a separate set of challenges. In most EMDEs, central banks and financial regulators lag their advanced economy counterparts in developing and disseminating risk assessment models for climate-related risks. In many cases, this is mainly due to lack of data and expertise. As a result, individual financial firms are often left to their own devices in monitoring and managing these risks. Against this background, and given the already-overloaded regulatory agenda in many EMDEs, private financial firms would need careful preparation and consultations, staff training, as well as appropriate transition periods, to be able to implement effectively any new regulatory initiatives in the area of green or sustainable finance.

The perceived absence of a comprehensive, long-term energy transition strategy by governments is perhaps the most significant challenge for the financial

industry. Steps toward green and sustainable finance may achieve little if the incentives of investors and economic actors are not aligned, alternative assets and needed technologies are not available, or government policies are not consistent. The best course of action would be for governments to establish transition strategies with multi-year emissions targets; carbon tax and pricing policies consistent with these targets; appropriate taxonomies with disclosure requirements for financial and non-financial companies; and measures to address the data and capacity gaps so as to make these classifications and disclosures meaningful. Only with such strategies in place can the financial industry begin to advance the long-term reallocation of capital needed for the transition to a low-carbon economy.

Introduction

Climate change and the challenge of the transition to a low-carbon economy have manifold implications for the financial industry. From an economic perspective, climate change is a negative externality of the production and consumption of carbon-intensive goods, while climate mitigation is a public good. The market would therefore not reflect the social price of carbon and, at the same time, the private return of investments in decarbonization would be lower than their social return.¹ In addition, climate change creates risks for the economy and the financial system. The energy transition agenda involves getting carbon prices right through carbon taxes (or emissions trading systems

with equivalent effect); investing in climate adaptation and mitigation; and managing the risks both from the effects of climate change and from the process of the transition itself (“physical” and “transition” risk) for the economy.² This agenda implies evolving risks—as well as opportunities—for financial firms, and will require a major reorientation of capital and financial flows over the coming decades. Some of these effects are already evident, but the process of transition to a low-carbon economy has only just started.

These are daunting challenges for financial institutions in developing countries. EMDEs are more exposed to physical climate risk than advanced economies, while insurance coverage of these risks is much lower. At

¹ An extensive literature has explored the factors behind the market and government failures that prevent an optimal response to the climate challenge. These include the lack of historical precedent, extreme uncertainty, non-linearities, and tipping points of climate pathways (Stern, N. (2008), “The Economics of Climate Change,” *American Economic Review* 98(2)); the conceptual difficulties associated with fat-tailed distributions and catastrophic outcomes (Dasgupta, P. (2008), “Discounting Climate Change,” *Journal of Risk and Uncertainty* 37; Weitzman, M. (2014), “Fat-Tailed Uncertainty in the Economics of Catastrophic Climate Change,” *Review of Environmental Economics and Policy* 5(2)); the endogeneity of technical change (Acemoglu, D. et al. (2012), “The Environment and Directed Technical Change,” *American Economic Review* 102(1)); time inconsistency or the ‘tragedy of the horizon’ (Carney, M. (2015), “Breaking the Tragedy of the Horizon – Climate Change and Financial Stability,” Speech by the Governor of the Bank of England at Lloyd’s of London, 29 September 2015); and collective action and free rider problems.

² Stern, N. et al. (2006), *The Economics of Climate Change: The Stern Review*, Cambridge University Press; Parry, I. et al. (2014), *Getting Energy Prices Right: From Principle to Practice*, Washington DC: International Monetary Fund; IMF (2019), *Fiscal Monitor: How to Mitigate Climate Change*, October 2019, Washington DC: International Monetary Fund.

the same time, they tend to rely more on fossil fuels for domestic energy consumption. EMDEs also have, to varying degrees, financial, institutional, and capacity gaps vis-à-vis advanced economies. These factors mean that financial firms face higher hurdles in moving toward green and sustainable finance,³ while climate policy frameworks are generally less advanced. In addition, EMDE financial sectors share certain characteristics that pose special challenges for financial firms—as well as for regulators—in relation to green and sustainable finance.

This paper aims to bring the perspectives of private financial firms in EMDEs to bear on these challenges. This is crucial for two reasons. First, the characteristics of financial sectors in EMDEs are not always given due consideration by advanced economy policymakers and transnational regulatory networks, whose initiatives largely shape the global green and sustainable finance universe. Second, even when advanced economy and EMDE regulators

BOX 1

The Survey of Financial Firms in EMDEs

The survey of financial firms involved structured interviews with 57 participants from 29 private financial institutions in a sample of 15 EMDEs, as the group is defined by the IMF and commonly used by market participants. These interviews took place in late 2021 and 2022, on the basis of a list of topics for discussion circulated in advance (see Annex).

The 15 EMDEs included in the survey were Bangladesh, Brazil, Colombia, Côte d'Ivoire, Egypt, Indonesia, Kenya, Mexico, Morocco, the Philippines, Poland, Serbia, South Africa, Türkiye, and Viet Nam. In the World Bank classification, these are all middle-income countries except for Poland, which is classified as high-income. These countries were selected on the basis of two criteria: regional diversification and the potential for further IFC engagement. The latter was in turn determined through a combination of two factors: (i) climate investment opportunities, based on a list of 21 countries compiled by IFC's Climate Business Department, where green investment opportunities are estimated to amount to a combined \$10 trillion; and (ii) the country selection framework used by the Joint Capital Market Program of IFC and the World Bank, which focuses on local currency capital market development.

The financial institutions surveyed from this sample of countries included universal, cooperative, and investment banks, insurance companies, and banking associations. The participating banks, in particular, had combined assets of \$2.7 trillion, representing about 40 percent of total banking assets in these countries. About one third of the financial institutions participating in the survey were foreign-owned subsidiaries or branches of foreign financial firms.

Individual interview participants had a wide range of responsibilities within their companies. Almost one third held positions in risk management, such as credit risk officers and heads of underwriting and portfolio analysis. Another third had roles related to strategic management, such as corporate strategy, product development, and investor relations. The rest included sustainable finance or Environmental, Social, and Governance leads, regulatory affairs officers, and a number of CEOs. Figure 1 shows the geographical distribution of interview participants, as well as their roles within their companies.

³ Although the terms are often used interchangeably, "green finance" strictly speaking refers to financing projects or investments with environmental benefits, and "sustainable finance" to activities supporting sustainable development goals more broadly.

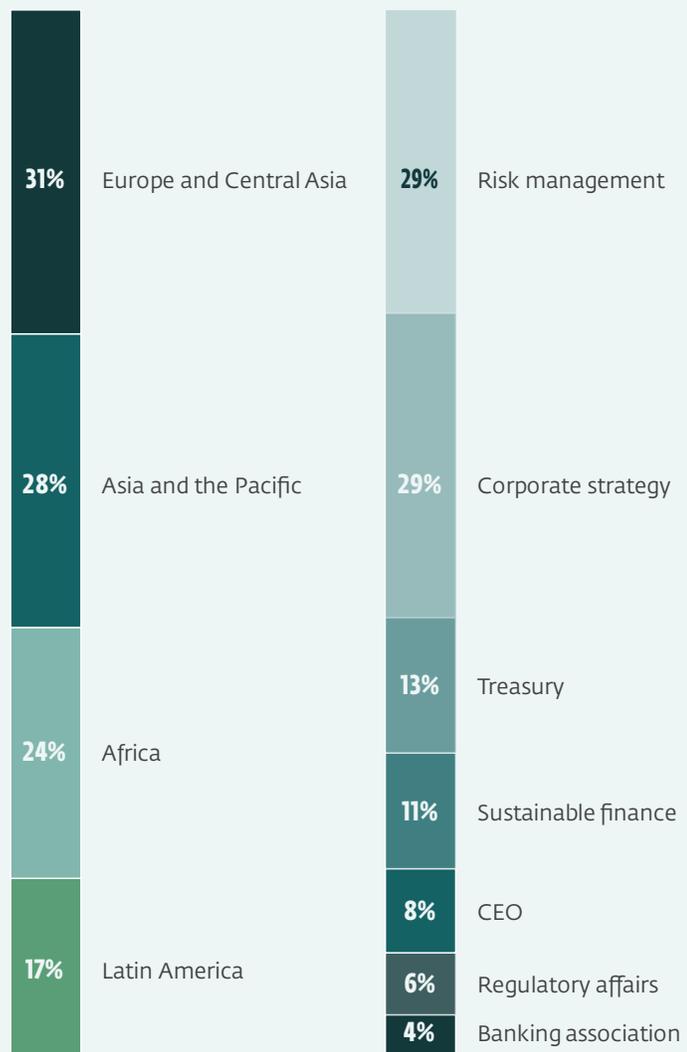
talk with each other and share experiences, for example through the Network for Greening the Financial System and the Sustainable Banking and Finance Network, the concerns of the private sector do not always come to the forefront.

These perspectives are based on a survey of private financial firms in a sample of EMDEs undertaken for this purpose. The sample selection process, methodology, and participants in the survey are presented in Box 1. Although the total number of financial firms that participated is small relative to the universe of financial firms in EMDEs, the findings suggest a number of emerging patterns and shared concerns that are worth highlighting.

The paper is organized as follows: Section 2 summarizes certain features of EMDE financial systems that determine the context in which their green and sustainable finance efforts are unfolding. Section 3 discusses challenges for green and sustainable finance related to the operating environment for financial firms in EMDEs, reflecting market forces and the broader political and economic context. Section 4

FIGURE 1

Participation in the Survey of Financial Firms



Source: Authors' calculations.

reviews the role of taxonomies and disclosures and the experiences of EMDEs in this regard. Section 5 discusses the challenges arising from the regulatory environment EMDE financial firms are facing in relation to climate risk and green finance. Section 6 discusses the risks related to green and sustainable finance as seen by private financial firms in EMDEs. Each of these sections is informed by the findings of the survey and, where relevant, the economic literature, and the lessons learned from the experience of advanced economies. The final section summarizes the key takeaways from the survey about the possible role of IFC going forward.

I. Context:

Common Characteristics of Financial Sectors

Financial sectors in EMDEs share certain characteristics that are different than those in advanced economies. Some of these differences can have a major impact on the success of efforts to introduce climate-related considerations in business decisions and, more broadly, on the design of green and sustainable finance policy frameworks in these countries. In addition to gaps in human and financial resources, expertise, and data infrastructure vis-à-vis advanced economies, there are five specific characteristics of EMDE economies and financial systems that are directly relevant to the issue at hand:

Vulnerability to climate-related risks.

EMDEs are relatively more vulnerable to the impacts of climate change than developed countries.⁴ For EMDEs as a group, the frequency of climate-related disasters has increased threefold since 1980 (Figure 2). This

makes the task of estimating and mitigating climate-related financial risks more urgent but also more complex, given the data and capacity gaps.

Limited insurance coverage for climate-related losses.

In addition to the greater vulnerability to climate-related risks, the penetration rate of non-life insurance remains low in many EMDEs, leaving significant gaps in protection for losses related to natural catastrophes (Figure 3).

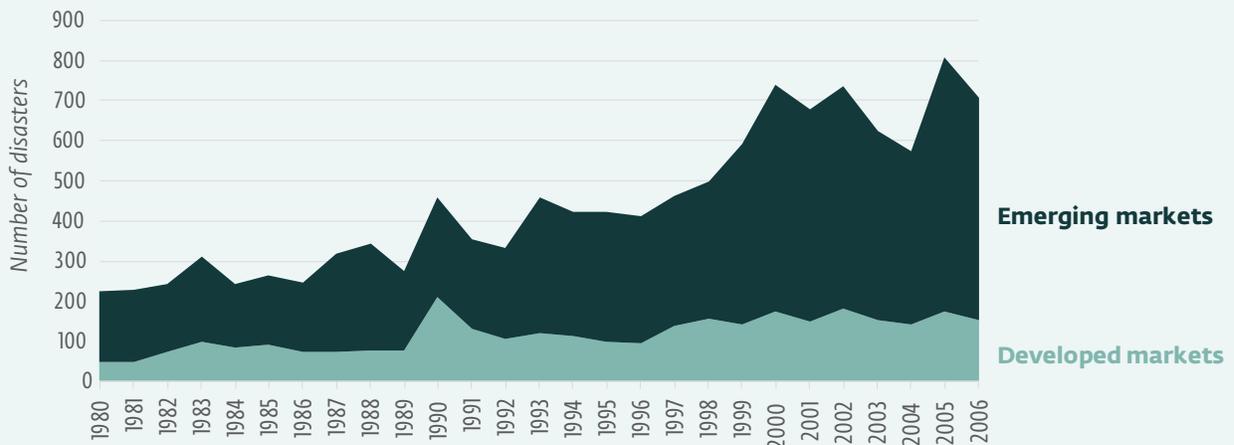
Bank-dominated financial sectors, shallow financial markets.

In most EMDEs, banks tend to dominate financial systems, with both the public and private sectors relying mainly on banks for credit. Capital market depth and liquidity are limited, in part reflecting

⁴ See Intergovernmental Panel on Climate Change (2022) Climate Change 2022: Impacts, Adaptation and Vulnerability, Summary for Policymakers.

FIGURE 2

Frequency of Climate-Related Natural Disasters



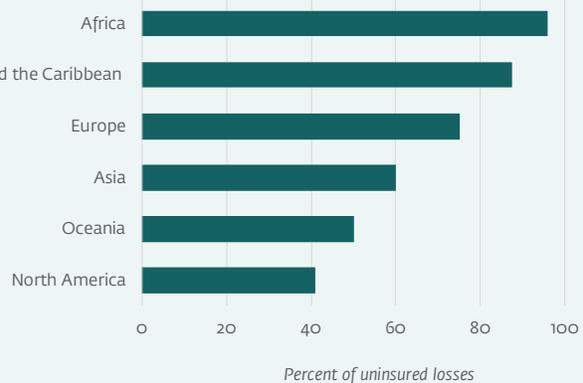
Source: Emergency Events Database (EM-DAT), CRED/UCLouvain.

the lack of adequate market infrastructure (Figure 4).⁵ Although this limits the available financing channels for the private sector, including for energy transition projects, it facilitates the task of central banks and financial regulators: in contrast to their counterparts in advanced economies and some EMDEs with more diversified financial sectors, they can worry less—at least in the short term—about the role of

FIGURE 3

Natural Catastrophe Protection Gaps by Region

Uninsured losses as a share of total losses related to natural catastrophes, 2018



Source: SwissRe.

⁵ Rojas-Suarez, L. (2014) Towards Strong and Stable Capital Markets in Emerging Market Economies, BIS Paper No. 75c, Basel: Bank for International Settlements.

FIGURE 4

Financial Sector Structure in EMDEs, 2021



Note: Regions are those defined by the World Bank, excluding high-income economies in those regions. Aggregate data are not available for stock market capitalization in Sub-Saharan Africa.

Source: Authors' calculations based on World Bank data.

less regulated non-bank financial intermediaries.

Significant presence of foreign banks.

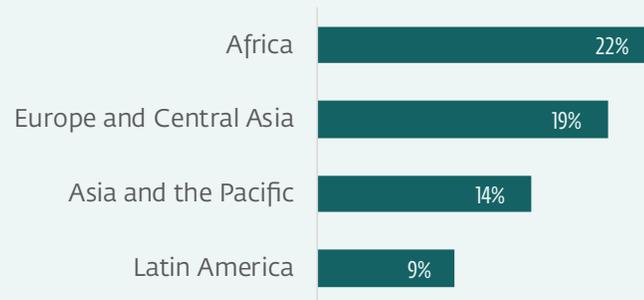
The large presence of foreign bank branches and subsidiaries in many EMDEs (Figure 5) is often a positive factor for competition in the provision of financial services and for the process of financial deepening. At the same time, it creates an uneven playing field and a challenge for regulators. Foreign banks often have to follow policies and priorities determined by their parent company without regard to the circumstances in the host jurisdiction or the priorities of the host regulator. This creates a two-speed banking system, with important effects on the adoption of environmental, social and governance (ESG) considerations, including climate, in bank business practices.

Greater dependence on fossil fuels.

EMDEs rely more heavily on fossil fuels than developed markets (Figure 6). Coal, oil, and natural gas account for almost 90 percent of both energy production and consumption in EMDEs. This reliance complicates the political and economic incentives for these countries to transition to low-carbon energy sources.

FIGURE 5

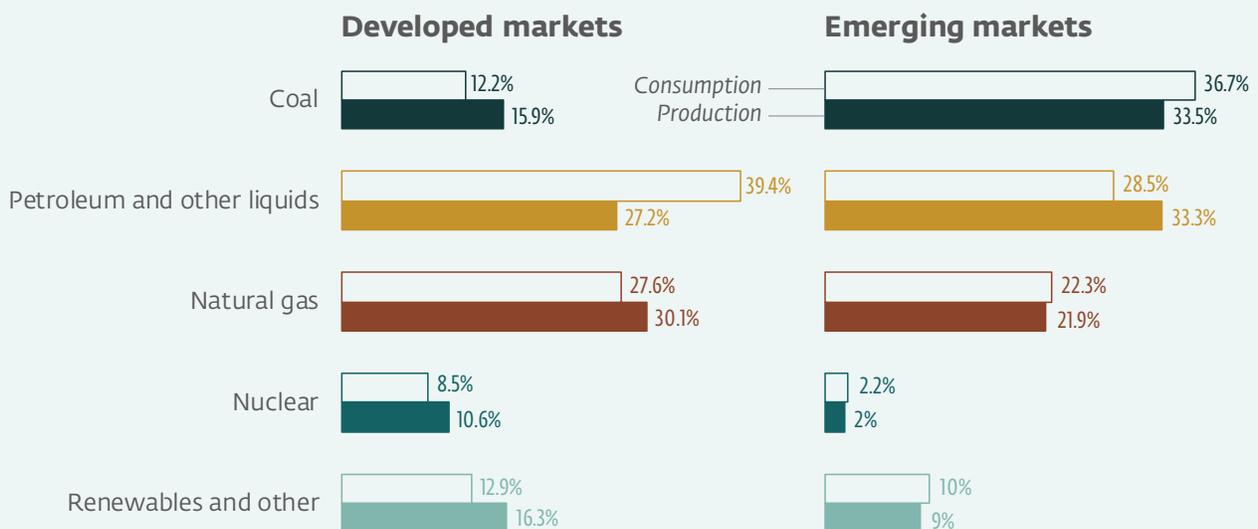
Foreign Bank Penetration in EMDEs, 2020



Note: Based on the sample of countries in the survey.
Source: Fitch.

FIGURE 6

Composition of Energy Production and Consumption, 2019



Source: World Bank, US Energy Information Administration.

II. Challenges of the Operating Environment

The context in which financial firms operate has a major influence on their strategic priorities and business practices, including the ways they approach green and sustainable finance. Like all companies, financial firms must adapt to their environment in order to maximize value. In addition to the “hard constraints” posed by legislation and regulation, this places “soft constraints” on financial firms, including market conditions, capacity constraints, competitors’ actions, and pressures coming from shareholders, funding providers, and other stakeholders, as well as from the broader social and political trends. These “soft” factors are crucial determinants of the way financial firms approach green and sustainable finance, the speed with which they are able to move, and the limitations they face. This section reviews the evidence provided by participants in the survey regarding such “soft” factors in EMDEs as they relate to climate-related risk and

green finance. The role of regulation is discussed separately.

The operating environment in EMDEs is fragmenting, with some financial firms coming under much greater pressure than others to incorporate climate-related considerations in their business. This pressure does not, as a rule, appear to come from the regulators, whose efforts in this area are still at a preparatory stage in many EMDEs,⁶ but from sources mainly within the industry. The result is an increasingly uneven playing field, which holds back many financial firms from adopting green and, more broadly, sustainable finance practices.

Pressures on sustainability are coming from diverse sources.

For foreign-owned subsidiaries or branches of foreign financial firms headquartered in advanced

⁶ For a survey of regulatory initiatives in EMDEs in this area, see SBFN (2021), Accelerating Sustainable Finance Together, Global Progress Report, October 2021, Sustainable Banking and Finance Network.

economies, the parent company is the biggest source of pressure to adapt business practices to meet climate and broader sustainability objectives. As the representatives of a Serbian subsidiary of an EU bank put it, there was “huge pressure from the parent company to build local capacity [for assessing the environmental impact of potential clients], create sustainability-related KPIs, and incorporate sustainability considerations in the credit approval process.” Parent companies are training local staff, helping build local capacity for climate-related modeling, and in many cases simply forcing local companies to adopt and use ESG-related classification criteria developed by the parent (even though these are not always practical in the local context). This experience was reported time and again by respondents in subsidiaries of foreign financial firms across all regions. In some cases, broader environmental policies or targets adopted by the parent group are expected to be followed by branches and subsidiaries everywhere. Representatives of one multinational bank in Asia, for example, reported that the group as a whole had decided to stop financing coal-fired energy generation and logging throughout its area of operations regardless of individual country circumstances. On the other hand, foreign subsidiaries or branches of banks headquartered in other EMDEs, like China, were not under similar pressure from their parent.

Pressure to adapt business practices also comes from Development Finance Institutions (DFIs), including IFC, in their capacity as investors or sources of financing. A number of survey participants, however, noted that this effect was blunted because each DFI seemed to follow its own standards and policies, and expressed

the hope that DFIs could improve coordination among themselves.

For insurance companies, in particular, the role of re-insurance is critical. As one insurer in Côte d’Ivoire mentioned, “their influence is greater than that of our regulator.” The first steps in their adapting business practices to reflect climate risks were likely to be taken in response to pressure from re-insurers.

In some cases, developments in the local market, notably actions by a market leader, are creating pressures on other firms to adapt. In Brazil, for example, the adoption of “Agenda 2030” by giant state-owned development bank BNDES was a major contributing factor in pushing other financial firms to introduce sustainability aspects to their business.

In contrast, little pressure was reported from shareholders (other than parent companies), although this appeared to vary with the level of market development. In EMDEs in Africa, in particular, respondents indicated that climate did not appear to be important for domestic shareholders. In more financially advanced EMDEs, on the other hand, notably in Latin America, current or potential shareholders were described as more sensitive to climate-related issues. The representatives of one Brazilian insurer, for example, reported that the decision to take the company public had forced management to develop an ESG agenda in order to attract investors.

Survey participants also reported not feeling strong pressure from civil society or from the broader social and political environment in their countries to accelerate their move toward green finance.

Activists and NGOs, although present everywhere, do not appear to have a noticeable influence on EMDE financial firms' climate and sustainability agendas. This assessment was uniform across all respondents. Awareness of climate issues among other economic actors and society more broadly varied widely across the sample of countries. Some respondents, particularly in Africa, mentioned that the issue was not high on the political agenda and was even seen by some as an attempt to impose "advanced economy standards on developing countries." A majority of participants across all regions expressed the view that it was important to adapt this global agenda to local needs and capabilities, and that policy changes needed to be "digestible" by the financial industry and by society at large.

An uneven playing field is putting some firms at a competitive disadvantage.

These unequal pressures open a rift between two types of approaches to climate-related issues within many EMDEs. On one side are financial firms that feel pressure from parent companies, investors, re-insurers, or other stakeholders to green their activities; on the other, are smaller, mainly local firms that are under little or no such pressure. This creates an uneven playing field, providing a competitive advantage to the latter group of firms. This was stressed by representatives of foreign subsidiaries, whose parent companies had imposed strict sustainability standards that had started affecting negatively the bottom line. Their competitors, including local firms and foreign subsidiaries whose parents had less demanding environmental standards, continued to do business with clients that the first group could not access. The same point was also underscored by some

representatives of local financial firms, who were concerned that incorporating strong sustainability standards might begin to erode their market share. As the representatives of an Egyptian insurer put it, "competitors are waiting to take the business we reject." Similar concerns were expressed by a West African banking group about local competitors who were "happy to take coal mining and palm oil clients" that the group was considering dropping.

This uneven playing field creates a "first mover disadvantage" that can hold back the adoption of green or sustainable financing practices. Many firms reported feeling caught between two opposing forces: their desire to move faster toward sustainable finance and their concern about losing market share. Survey participants felt that this conundrum could only be resolved by regulators taking steps to level the playing field.

III. The Role of Taxonomies and Disclosures

Taxonomies and the associated disclosure requirements are key elements of any green or transition-focused policy framework and can, at least in theory, help direct capital toward climate goals.⁷ The disclosure of certain characteristics—for instance, greenhouse gas emissions—provides investors with better information on which to make informed decisions in line with their preferences. There is also an indirect benefit, since transparency of the climate impact of a borrower's activities would help financial firms improve the assessment of their climate exposures, thereby enabling them to limit future climate-related risks to financial stability. These effects would, in theory, induce a shift in capital toward green activities.

In practice, however, the magnitude and speed of this capital shift depend on a number of factors. These include how quickly heterogeneous investor preferences translate into aggregate demand for green assets; whether issuers are able to respond to this demand; and—since most real-world investment transactions involve financial intermediaries—how effectively these large, complex organizations move to incorporate such considerations into their business practices.

Two additional complications limit the effectiveness of taxonomies and disclosures:⁸

- They can be applied to two different types of information: unevaluated quantitative or qualitative information (“raw data”) and summary

⁷ For the standard economic analysis on dealing with activities that entail environmental externalities, see Baumol, W. (1972), “On Taxation and the Control of Externalities,” *American Economic Review*, 62(3): 307–322; Deewes, D. N. (1983), “Instrument Choice in Environmental Policy,” *Economic Inquiry*, 21(1): 53–71; and Deewes, D. N., F. Mathewson, and M. Trebilcock (1983), “The Rationale for Government Regulations of Quality and Policy Alternatives in Quality Regulation,” in: Deewes, D. N. (ed.), *Markets for Insurance: A Selective Survey of Economic Issues*, Butterworth.

⁸ Steuer, S. and T. H. Tröger (2022), “The Role of Disclosure in Green Finance,” *Journal of Financial Regulation*, 8: 1–50.

assessments (“labels”). In ideal, frictionless markets, where rational agents can process information costlessly, disclosure of raw data would be sufficient; in real-world markets, limited resources and transaction costs mean that labels are generally more useful. However, to be effective as tools to reallocate capital to more sustainable activities, labels must be accurate, consistent, and credible, which in turn depends on the availability of high-quality data and on rigorous, transparent, and auditable assessment processes.

- They can be applied to three different levels of economic activity: an individual product or activity (e.g., electric car production); a company seeking financing (issuer); or an asset portfolio that combines instruments from different issuers. Applying taxonomies to an individual product or activity is the most coherent and transparent approach. Unfortunately, doing so is fraught with data and measurement problems (coverage of supply chains, impact over the product life cycle, estimate of recyclability, etc.). Applying taxonomies to companies or issuers (as, for example, with green bond taxonomies) has the problem that money is fungible and, in line with standard corporate finance theory, debt instruments are issuer-level financing devices and do not fund a specific activity.⁹ And applying taxonomies to an entire portfolio (e.g., an investment fund) further obscures the real environmental impact

of the multitude of different underlying economic activities.

Taxonomies and disclosures have spread rapidly in advanced economies, but the experience has highlighted their limitations.

Voluntary green taxonomies and disclosure standards proliferated during the last decade in response to increasing investor interest in ESG issues. Most were developed by industry groups, environmental advocates, ESG advisers, or international organizations. The International Organization of Securities Commissions has identified more than 45 such initiatives (Table 1).

Most of these initiatives have major shortcomings in the areas of transparency, governance, and auditability. Many products are labeled by their issuers (or by ESG advisers) as “green” or “sustainable” without a clear link to the ways in which the product may be contributing to climate or sustainability goals, and there is no external evaluation of compliance. As a result, different providers often come up with different ratings for the same companies.¹⁰ The lack of consistency and rigor in defining and applying these criteria, as well as extensive evidence of “greenwashing,”¹¹ risk undermining the credibility of these classifications.¹²

⁹ Asset-backed securitizations may be an exception to this rule, but they are not widely used in many EMDEs.

¹⁰ Murray, S., “Navigating the thicket of ESG metrics,” *Financial Times*, October 24, 2021.

¹¹ Amenc, N., F. Goltz, and V. Liu (2021), *Doing Good or Feeling Good? Detecting Greenwashing in Climate Investing*, Paris: EDHEC Business School.

¹² NGFS (2021), *Sustainable Finance Market Dynamics*, NGFS Technical Document, Network for Greening the Financial System; OECD (2020), *ESG Investing: Practices, Progress and Challenges*, Paris: Organization for Economic Cooperation and Development.

TABLE 1

ESG-Related Initiatives and Guidelines

	Categories	Quantity
Disclosure and reporting principles and frameworks used by companies and issuers		12
Principles and frameworks applicable to asset managers		4
Green bond principles and taxonomies		7
Coalitions and alliances related to ESG		17
Other initiatives		8

Source: IOSCO, Sustainable Finance and the Role of Securities Regulators and IOSCO, Final Report, April 2020, International Organization of Securities Commissions.

Since the various standards are not consistent, it is not clear that they can direct capital effectively to sustainable investments. To address this problem, the International Financial Reporting Standards (IFRS) Foundation announced at COP26 in 2021 the formation of an International Sustainability Standards Board (ISSB).¹³ The ISSB is meant to build on the work of existing reporting initiatives¹⁴ to become the global standard setter for sustainability disclosures. In June 2023, the ISSB issued IFRS S1, General Requirements for Disclosure of Sustainability-related Financial Information.

Based on this experience, researchers at the Bank for International Settlements have put forward the following five principles for the design of effective sustainable finance taxonomies:¹⁵

1. Alignment not only with the high-level policy objective but also with measurable interim targets, since the high-level objective (e.g., achieving net zero) may be beyond the time horizon of investors.
2. Focus on one single objective (“one taxonomy, one objective”), otherwise investors would be uncertain about exactly what information the “label” conveys.
3. Focus on outcome-based, simple, and measurable KPIs, rather than on abstract principles. This would

¹³ “IFRS Foundation announces International Sustainability Standards Board, consolidation with CDSB and VRF, and publication of prototype disclosure requirements,” Press Release, November 3, 2021.

¹⁴ These include the work of the Climate Disclosure Standards Board (CDSB), the recommendations of the Task Force on Financial Disclosures (TCFD), the Value Reporting Foundation’s Integrated Reporting Framework, the Sustainability Accounting Standards Board (SASB) standards, and the World Economic Forum’s Stakeholder Capitalism Metrics.

¹⁵ Ehlers, T., D. Gao, and F. Packer (2021), “A taxonomy of sustainable finance taxonomies,” BIS Papers No. 118, October 2021, Basel: Bank for International Settlements.

allow low-cost, independent verification of the process and the certification.

4. Incorporation of both activity-level and company-level information, to avoid the potential for “greenwashing” in case of classification of issuer-based instruments.
5. Sufficient granularity, covering both high and low sustainability performance, to allow differentiated (“shaded”), rather than just binary (“green-brown”) classifications.

The survey findings suggest that taxonomies are increasingly used in EMDEs but fall well short of the principles required for effectiveness. In many of the countries in the sample, green taxonomies or other sustainability-related classification systems for economic activities or real assets (e.g., buildings) have been introduced or are under consideration. These taxonomies are typically the responsibility of legislatures, not financial regulators, and are primarily focused on real sectors, especially energy generation, construction, agriculture, and transportation. In some cases, countries have simply imported a ready-made taxonomy from another jurisdiction, while in others, countries have devised their own, reflecting domestic priorities. Participants noted that these taxonomies are typically very high-level, binary (“green-brown” or “clean-dirty”), and vary widely in their coverage (in some cases, covering only “priority sectors”). They do not always specify the data required to set KPIs and assess compliance or, in cases where they do, the required data are not always available. As a result, individual financial institutions typically have substantial discretion when it comes to assessing their compliance with the taxonomy. One banking association noted that while banks in its jurisdiction

collect the same data and indicators on the climate impact of their assets, each bank applies a different methodology in assessing their compliance. This problem was exacerbated for multinational financial firms that are facing different approaches and requirements across the jurisdictions where they operate, as was reported by representatives of a Morocco-based insurer active in a number of in Sub-Saharan African countries and a multinational bank active in Asia.

The key limitation for effective application of taxonomies in EMDEs, according to participants, is data availability. The data needs vary from country to country and are often sector specific. The representatives of a Serbian insurer, for example, mentioned the need to collect detailed data on rainfall by region to enable insurance companies to assess drought risk, while a Mexican bank mentioned the need for data on coastal erosion to assess the risk for loans to tourism establishments. Such data were beyond what could be collected by individual financial firms: coordinated efforts were needed instead. Several participants also mentioned that the lack of know-how and tools for using these data to assess climate-related risk were major obstacles, underscoring the need for more training and capacity building in the industry. Representatives of subsidiaries or branches of foreign financial firms felt that this was less of a constraint. Finally, some participants, such as a Philippine bank, cautioned against a “one-size-fits-all” approach, noting that importing standards developed in advanced economies might not fit the financial landscape in EMDEs.

IV. Challenges Related to the Regulatory Environment

The experience of advanced economies with climate-related financial regulation holds important lessons for EMDEs. Following the Paris Agreement, the G20 Finance Ministers and Central Bank Governors tasked the Financial Stability Board in 2015 to “convene public- and private-sector participants to review how the financial sector can take account of climate-related issues.”¹⁶ Since then, a number of regulators, mainly in advanced economies, have been working on two parallel tracks: trying to measure the magnitude of climate-related risks for the financial system, and considering the appropriate regulatory response.¹⁷

Significant progress has been made in developing tools for assessing climate-related financial risks but, at the same time, the experience has revealed a number of

analytical and conceptual challenges. The interactions between climate and economic systems have been studied for decades but it was not until the middle of the last decade that central banks and regulators began attempting more systematic stress-testing exercises to capture climate-related risks for banks and other segments of the financial system. Despite the increasing sophistication of these exercises, however, their scope for guiding policy remains limited. First, the scenarios need to incorporate drastic simplifying assumptions in order to overcome the modeling challenges stemming from the complexity and radical uncertainty about the possible climate pathways, as well as from the decades-long time horizons. This increases model risk: minor technical decisions about functional forms and parameter values can dominate the results. Second, the restrictive

¹⁶ G20 Finance Ministers and Central Bank Governors' Communiqué, Washington DC, 17 April 2015.

¹⁷ There is an extensive literature on the theoretical and practical aspects of climate-related financial regulation drawing on the experience of advanced economies, which lies beyond the scope of this paper. A comprehensive survey can be found in Demekas, D.G. and P. Grippa (2022), “Walking a Tightrope: Financial Regulation, Climate Change, and the Transition to a Low-Carbon Economy,” *Journal of Financial Regulation*, 8: 203-229.

assumptions routinely made in stress tests (notably, constant balance sheets) tend to overestimate losses since, in reality, over such long time horizons, banks would be able to adjust their balance sheets and even business models toward less climate-risky assets. Third, in the exercises that have been completed so far, the estimates of the potential losses and capital needs related to climate risk fall within a very wide range, from negligible to severe.¹⁸ Such a wide range of results does not provide a firm basis for policy action today.

In addition, the existing prudential toolkit may not be well suited for addressing climate-related risks. One proposal that initially gained some popularity was to encourage the allocation of bank lending to green sectors by adjusting risk weights through a “Green Supporting Factor” (GSF) and a “Brown Penalizing Factor” (BPF).¹⁹ Further consideration, however, led to a number of objections. Since the empirical evidence that green assets are less risky is at best weak,²⁰ the GSF might result in an unwarranted weakening of total capital. Moreover, adjusting risk weights is unlikely to achieve the sizeable shift in credit required for decarbonization. The evidence shows that the European Union’s “SME supporting factor”—a similar

type of incentive—has had no material influence on lending to small- and medium-sized enterprises.²¹ In addition, recent estimates show that even a massive GSF (effectively halving the capital requirement for green projects) would have a very small impact on overall credit growth and on financing for green projects.²² Another proposal—using macroprudential instruments to address climate-related risk—is hampered by the fact that standard macroprudential instruments (such as systemic buffers or capital additions) may not be effective when deployed to address the systemic implications of climate risk while, at the same time, creating difficult trade-offs.²³ Last but not least, since it took regulators decades to agree on a common standard for risk-based prudential requirements, ad hoc departures from this standard risk increasing fragmentation and hampering supervisory cooperation.

Against this background and given the current limitations of available data and modeling uncertainties, advanced economy regulators are proceeding cautiously. None have yet taken action to address future losses estimated in climate-related stress tests, although they have underscored that these exercises can still be useful as they raise

¹⁸ One such exercise concluded that “between 3.8 percent to 29.9 percent of the Common Equity Tier 1 capital of the banking system is wiped out in first-round losses” (Reinders, H., Schoenmaker, D., and Van Dijk, M. (2020), *A Finance Approach to Climate Stress Testing*, London: Centre for Economic Policy Research. An ECB exercise concluded that in the most severe scenario, the increase in probabilities of default for banks’ portfolios would range from 5 to 30 percent over a 30-year horizon (Alogoskoufis, S., et al. (2021), *ECB Economy-wide Stress Test*, Occasional Paper No. 281, September 2021, European Central Bank).

¹⁹ EU policymakers seem to have considered this step. See Dombrovskis, V. (2017) ‘Greening finance for sustainable business,’ Speech by the Vice President of the European Commission, 12 December 2017, Brussels: European Commission.

²⁰ See Giglio, S., Kelly, B.T., and Stroebe, J. (2020), *Climate Finance*, NBER Working Paper 28226, National Bureau of Economic Research. Overall, there is limited evidence that broader market prices incorporate risk premia commensurate with the scale and nature of climate-related risks across different sectors (see IMF (2020), “Physical Risk and Equity Prices,” *Global Financial Stability Report* April 2020, Washington DC: International Monetary Fund). In addition, risk reductions that may appear linked to the “green” nature of an exposure could be the result of other factors, such as government subsidies or tax advantages.

²¹ EBA (2016), *EBA Report on SMEs and SME Supporting Factor*, Report 2016/04, European Banking Authority.

²² Chamberlin, B. and Evain, J. (2021), *Indexing Capital Requirements on Climate: What Impacts Can Be Expected*, Paris: Institute for Climate Economics (I4CE).

²³ Coelho, R. and Restoy, F. (2023), “Macroprudential policies for addressing climate-related financial risks: challenges and tradeoffs,” FSI Brief No. 18, Basel: Bank for International Settlements.

awareness of climate risks and provide incentives for improving risk management in financial firms. Instead of introducing specific climate-related prudential requirements, some regulators have issued as a first step supervisory guidance (guidelines or interpretations of existing rules, which amount to recommendations that fall short of a regulatory requirement) on how financial firms should monitor and manage climate-related risks.²⁴ On the whole, advanced economy regulators seem to have concluded that they should focus on the consequences of climate change for financial firms (in terms of increased physical and transition risk), while steering clear of climate policy-making that is supposed to address the causes of climate change.²⁵

The survey suggests that the regulatory environment in EMDEs is evolving in the same direction as in advanced economies but is facing greater challenges, particularly as regards the development of tools for assessing and managing climate-related risks.

In almost all cases, respondents indicated that their regulator is aware of climate-related challenges and has engaged in some sort of outreach with the industry. This often takes the form of surveys of how individual financial firms were assessing and managing climate-related risks and roundtable discussions or other events designed to raise awareness of the issues. In some cases, these initiatives are undertaken jointly with (or exclusively by) industry associations. More often than not, the regulator seems to be in “learning”

or “listening” mode in such events.

In some cases, financial regulators have gone a step further and recommended or required financial firms to disclose the environmental footprint/impact of their exposures. However, the scope and coverage of such disclosures vary widely across countries. In some cases, such as Viet Nam, disclosures are expected to cover not only the environmental but also the social impact of loans. In several cases, the regulator expects banks to assess and report the climate/environmental footprint of their exposures but does not provide detailed guidance or classification criteria on how to do so. Even in the cases where guidance is provided, most respondents felt that it is too high-level, general, or otherwise inadequate. Without detailed guidance from the regulator, many respondents felt that such disclosures may be misleading. A number of representatives of foreign subsidiaries, whose parent companies had introduced detailed methodologies for calculating the environmental impact of their exposures, felt that the lack of a uniform and rigorous methodology in their jurisdiction indirectly favors domestic competitors applying less strict standards.

There is so far little progress toward developing a systematic quantitative scenario analysis of climate-related risk in the jurisdictions covered by the survey. Lack of data and lack of expertise with quantitative tools, such as the climate stress tests used in some advanced economies, are the key reasons behind this, according to respondents.

²⁴ The ECB and the Bank of England have set out supervisory expectations for banks to analyze climate-related risks, incorporate them into their risk appetite framework, report data that reflect their exposures to climate-related risks, and take them into account in the credit-granting process and the operational risk management framework (PRA (2019), *Enhancing Banks' and Insurers' Approaches to Managing the Financial Risks from Climate Change*, PRA Supervisory Statement SS3/19, London: Bank of England; ECB (2020), *Guide on Climate-Related and Environmental Risks: Supervisory Expectations Relating to Risk Management and Disclosure*, Frankfurt: European Central Bank).

²⁵ PRA (2021), *Climate-related Financial Risk Management and the Role of Capital Requirements*, PRA Climate Adaptation Report, London: Bank of England Prudential Regulation Authority. See also the recent statement by Fed Chair Powell (“Powell Says Fed Will Not Become a ‘Climate Policy Maker,’” WSJ, January 10, 2023).

When asked about the possible scope for additional climate-related regulatory action in their jurisdictions, survey respondents expressed diverse views. Opinions generally fell into two groups—albeit with exceptions. Respondents from relatively more advanced and sophisticated financial sectors, such as in South Africa, Latin America, and some Eastern European countries, saw little need for additional regulatory action (other than implementing more uniform taxonomies), arguing that shareholder, investor, and market pressures would be sufficient to steer financial firms toward sustainable finance. Respondents from parts of Africa and Asia, on the other hand, saw scope for more active intervention to guide the financial sector in the transition to a low-carbon economy. Among those who favored additional action, many were against using the capital framework—for example, imposing capital surcharges on “brown” exposures or using GSF/BPF to adjust risk weights—noting, in line with the evidence in advanced economies, that there is no indication that green loans or assets are less risky. Others felt that reducing capital charges (through a GSF) for green projects would be appropriate but were against increasing charges for “brown” projects. Echoing the lessons learned in advanced economies, a Turkish bank representative mentioned that financing costs are a small part of the total cost of polluting activities, and a carbon tax would be much more effective than any tweaking of capital requirements. Others favored using public subsidies or guarantees, rather than regulatory tools, to encourage green and sustainable finance. Only one respondent favored using administrative tools to direct credit, such as setting quantitative credit targets or floors for certain sectors.

A point of unanimous agreement was the need for the regulator to assist financial firms with data, knowhow, and tools to assess climate-related risks and to ensure a level playing field. All respondents emphasized that regulators should play a more active role in enforcing “comparability and completeness” of climate-related disclosures to eliminate the “first mover disadvantage” for firms considering applying stricter standards. This would involve, at a minimum, a uniform ESG taxonomy, detailed guidance on classification and disclosures, clear regulatory expectations, and close follow up. Moreover, in countries where the government had a national climate transition strategy, the regulator should ensure that all financial firms were subject to the same compliance requirements.

V. Looking Forward: Risks from the Perspective of the Private Sector

Participants were aware that the move toward green and sustainable finance would create opportunities, as well as risks for the industry. With respect to the latter, however, their preoccupations were somewhat different than those in advanced economies, with most participants in the survey taking the view that the most significant risks in EMDEs relate to the policy and regulatory environment.

The main concern was the risk of a sudden or rushed move by their national regulator, perhaps under pressure from international standard setters. Respondents almost unanimously underscored the need for extensive consultation with the industry and sufficiently long transition periods for any regulatory measures relating to climate or sustainability objectives. This was particularly relevant given the dearth of relevant and sufficiently granular data

on which to base compliance, as well as the lack of staff in financial firms with the right skills to monitor and manage climate-related risks. In many cases, regulatory approaches and tools are developed with data from advanced economies rather than EMDEs. As the representative on an Indonesian bank put it, climate-related regulatory changes should be part of a “long-term road map for sustainable finance, not one-shot measures.”

A related concern was overloading the regulatory agenda. A South African insurer mentioned that with IFRS and Solvency II [a European Union Directive], the agenda was already “overcrowded.” The representatives of an African bank noted that digital finance, micro finance, and financial inclusion initiatives were already at the top of the priority list for many African countries. In Mexico, the recent introduction of the Total Loss Absorption Capacity—

or TLAC—regulation may have been too rushed,²⁶ according to the representatives of a local bank, and both the supervisor and the banks are now under pressure to adjust to the new requirements. In these conditions, adding another regulatory priority would not only increase compliance costs for financial firms but would also stretch the resources of the supervisor.

The perceived lack of policy coordination with the government also troubled respondents. Notwithstanding the different views about the role financial regulation could play in the green transition, all respondents stressed that regulatory initiatives should be closely coordinated with government policies. This would not only guarantee their effectiveness but would also lower the risk of unnecessary volatility during the transition. Respondents also underscored that limiting finance flows to greenhouse gas-intensive sectors—notably energy generation in economies still relying on coal—before alternative sustainable energy sources are in place risks jeopardizing support for the transition, and called for comprehensive and credible long-term transition plans that take this into account.

Participants also noted risks unrelated to the policy and regulatory environment. One concern similar to those in advanced economies was that, given the scarcity of investable projects, a rushed move toward green and sustainable finance could create a severe demand-supply imbalance and destabilize the market. The representatives of a Kenyan bank, as well as other respondents, noted that the lack of green assets in EMDEs could fuel a bubble and stimulate further

“greenwashing” if all investors and financial firms—in anticipation of or prompted by regulators—sought at the same time to increase their green exposures.

Only a handful of respondents expressed concern about the activities of non-bank financial intermediaries, like asset managers and private equity, which are generally less tightly regulated. These concerns were expressed by firms in the more developed financial sectors in the sample, such as Brazil and Poland. In most other countries covered by the survey, respondents did not seem to consider this an issue, probably because banks are still the dominant source of finance.

²⁶ The Total Loss Absorption Capacity (TLAC) standard is part of the post-GFC regulatory reforms. It requires systemically important banks (SIBs)—as determined by the regulator in each jurisdiction and, for global SIBs, by the FSB—to hold, in addition to minimum capital requirements, a certain level of financial instruments to enable them to continue functioning during resolution and facilitate their recapitalization. The TLAC requirement can be met by instruments that are eligible for the minimum regulatory capital requirement.

VI: Key Takeaways

The survey of financial firms undertaken for the purposes of this paper sheds useful light on the shifting environment for green and sustainable finance in EMDEs, as well as on the concerns and risks as seen by the private sector. To be sure, the number of participants in the survey is small relative to the universe of financial firms in EMDEs, but the findings suggest common patterns and shared perspectives that are valuable for policymakers and market participants alike.

Private financial firms in EMDEs face a number of challenges in moving toward green and sustainable finance. Some stem from knowledge and capacity gaps, especially as regards tools and techniques for assessing climate-related exposures and associated risks, while others reflect the operating and regulatory environment.

Nevertheless, many have already started taking initiatives to adapt their business models and practices to address climate and sustainability concerns. These include efforts to assess the climate or environmental impact of exposures or potential investments, establish and monitor sustainability-related KPIs, incorporate climate considerations in the credit approval process and, in a few cases, withdraw from certain sectors altogether. These initiatives are not undertaken in response to new regulatory requirements but rather to pressures coming from multiple directions:

parent companies of local subsidiaries, foreign major shareholders and investors, other parts of the global financial industry (for example, re-insurers), and DFIs.

The extent and depth of these individual initiatives vary widely within and across jurisdictions, distorting incentives and resulting in a patchy and uneven playing field. Financial firms that would like to adopt more ambitious climate or sustainability goals face a “first mover disadvantage” as a result of the fear of losing market share to firms that continue business-as-usual. Absent regulatory intervention to enforce a common strategy and a uniform set of standards for green and sustainable finance, this may hold back the wider adoption of sustainable finance practices by EMDE financial firms.

This problem is compounded by data and capacity gaps that hamper the effective application of green and sustainable finance taxonomies and disclosure requirements. Although most EMDEs in the sample have adopted some kind of a green or sustainable taxonomy, these often have limited sectoral coverage, are not sufficiently granular, or require data and knowhow that are not always available. The problem is worse in EMDEs that have imported a taxonomy developed in advanced economies without adapting it to domestic circumstances, including the existing data infrastructure. As a result, individual financial firms are often left to their own devices in assessing

and reporting climate-related exposures and risks. The inevitable inconsistencies in disclosures reduce the benefits of having a taxonomy, create room for “greenwashing,” and aggravate the unevenness of the competitive playing field.

Another set of challenges arises from the regulatory environment. Central banks and regulators in EMDEs are cognizant of climate-related financial risks, and many of them have launched initiatives to raise awareness in the industry. But in most cases, they are behind their advanced economy counterparts in incorporating climate-related considerations into their risk assessment models and supervisory practices, as well as in disseminating tools and guidelines that would allow financial firms to strengthen their own management of climate-related risk. There is little progress toward developing system-wide quantitative scenario analyses of climate-related risk in the jurisdictions covered by the survey. According to survey participants, this primarily reflects lack of data and expertise with quantitative tools, such as the climate stress tests that were used in some advanced economies.

Against this background, survey participants cautioned that, to be successful, any regulatory initiatives should involve extensive consultations with the industry and appropriate transition periods. There was widespread concern that regulators, perhaps prompted by international standard-setters, might try to close the gap with advanced economies without making adequate preparations, particularly in addressing the gaps in data infrastructure and knowhow. There was also concern that regulators might adopt rules or standards developed in advanced economies without adapting them to local circumstances.

An overarching long-term transition strategy by the government was seen as a key pre-condition for the successful implementation of green and sustainable finance initiatives. Respondents stressed that the ultimate objective should be to “green” the whole economy, not just the financial system. Divesting from carbon-intensive assets and industries may help some financial firms “green” their balance sheets but would do little to aid the transition to a low-carbon economy if incentives are not aligned, alternative assets and sustainable technologies are not available, or various government policies are not coherent and consistent with each other. Survey participants agreed that it is the government’s responsibility to establish a national transition strategy with realistic multi-year targets for economy-wide greenhouse gas reductions; appropriate carbon tax and pricing policies consistent with these targets; bespoke national taxonomies with disclosure requirements for financial and non-financial companies; and steps to generate and disseminate the data required to make these classifications and disclosures meaningful. Participants stressed that only once such a strategy is credibly in place can the financial industry play its role in the long-term process of reallocation of capital needed to support the transition.

As regards the role of IFC, a majority of respondents reported that IFC is already providing significant support to their institutions in assessing climate-related financial risks. This includes guidance on data collection, analysis, and reporting based on international standards, as well as guidance on risk management through dissemination of best practices regarding climate-related scenario analysis and stress tests. IFC is also helping more generally in building awareness and sharing knowledge. Some respondents

thought that their own firms were ahead of others in their jurisdiction in terms of their ability to incorporate climate-related risks into their strategy and decision making, due in part to ongoing collaboration with IFC or other DFIs. Others noted, however, that although they initially had quite a bit of interaction with IFC, this had waned after initial deals were signed²⁷.

Looking forward, respondents felt that IFC could provide the most value added in the following areas:

- Advisory support for financial institutions to incorporate climate-related financial risks. This role would include guidance on data collection, analysis, and reporting based on international standards as well as guidance on risk management and business strategy through dissemination of best practices regarding climate-related scenario analysis and stress tests.
- Training on international best practices and new developments. For many respondents, building internal capacity in these areas was a key priority. IFC could contribute through engaging in staff training activities with individual financial firms, banking associations, the ongoing work with the Sustainable Banking and Finance Network, and in conjunction with financial regulators.
- Data and tools. Several respondents reported that their institutions would benefit from upgraded tools to incorporate climate risks and opportunities. These would include tools to assess climate risks in exposures, sector-level data that would facilitate identifying funding needs in priority sectors, and macroeconomic scenarios. Also important would be help in understanding disclosure requirements and modeling analysis (e.g., agricultural insurance models).
- Knowledge gaps. Some respondents expressed uncertainty about how IFC's approach to alignment with the Paris Agreement would affect their firms. Others noted confusion among various standards and reporting requirements from DFIs.
- Instruments, pricing, and streamlined processes. On the funding side, some respondents seemed unclear about what types of instruments are available through IFC. Others expressed the view that blended finance instruments from IFC and other DFIs would benefit from more streamlined processes to enable greater traction and scaling up of investment in green priority sectors. A few respondents mentioned that IFC's lengthy internal processes (without more competitive pricing) had led them to seek funding elsewhere.

²⁷ These interviews to survey financial firms were conducted in FY22. IFC's "Strategy and Business Outlook, FY24-26: Extending Our Ambition" details how innovations put in place under IFC 3.0, including a greater focus on development impact and streamlining operations, have been bearing fruit. The near-term outlook will be shaped by growing client needs and the opportunity to pioneer new approaches, technologies, and business models. See <https://www.ifc.org/content/dam/ifc/doclink/2023/ifc-strategy-and-business-outlook-fy24-26.pdf>.

Annex:

Topics for Discussion in Survey Interviews

This is an indicative list of topics, not an exhaustive inventory of issues. We welcome any input on any topic, even if not covered directly by the questions below. Mentions of the “financial regulator” below refer to the agency or agencies responsible for macro- and micro-prudential supervision and financial stability policy in your jurisdiction. Responses to this survey will be treated confidentially.

Climate change impacts:

What are the impacts of climate change (‘physical risk’, such as severe weather events, flooding, etc.) or of climate mitigation policies (‘transition risk’, such as the effects of taxes on emissions, carbon pricing, etc.) on your company? How do these factors affect your business model (e.g., credit origination and credit risk for a bank, or underwriting policies for an insurer)? Will there be new business opportunities as a result of these factors?

Financial regulator engagement:

Is the financial regulator in your jurisdiction aware of the global climate-related regulatory initiatives? Has it engaged in any type of outreach to financial

institutions and market participants (conferences, meetings with industry associations, etc.) to discuss how climate-related issues might affect the financial sector? Has it initiated consultations on possible future changes in regulations in response to climate-related concerns? Has your company (or other companies in your sector) begun the process of adjusting your portfolio or your operations as a result of changes (or expected changes) in national climate policy and financial regulations?

Regulatory and policy measures:

Has the financial regulator in your jurisdiction introduced requirements or supervisory expectations for financial firms to collect and analyze data on

climate-related risks on their balance sheets? Has the financial regulator taken measures to incorporate climate-related considerations in the supervisory process for financial firms? If so, do these apply to all financial firms or a subset (e.g., larger or systemic firms)? What has been the impact of these actions on the business model of supervised firms? How large are the compliance costs? Are there other policy measures to align with Paris Agreement commitments or to promote green finance strategies that currently or will soon affect your company or sector?

Green taxonomies and standards:

Are there environmental or 'green' taxonomies or standards in your jurisdiction that financial companies, issuers, or investors use to classify 'green' or sustainable investments or assets? If so, are these mandatory or voluntary? In your view, how successful is the application of these standards in directing credit and investment flows to environmentally sustainable projects? Are there improvements that can be made? If not, what benefits might such standards provide, and what challenges might you foresee?

Role of regulators:

What are your views about the appropriate role of financial policy and regulation in the transition to a low-carbon economy? What would be the key benefits and risks of a more 'active' role for central banks and regulators in promoting decarbonization? How is the financial sector in your country(ies) of operations likely to be affected?

Role of IFC:

What role could IFC play in helping your company (or others in your sector) to deal with the consequences

from the transition to a low-carbon economy? (this could, for example, include improving climate risk analysis; help in restructuring your portfolio to lower climate-related risks; expertise to identify climate-neutral investments; assistance in issuing green bonds; improving data collection, CO₂ tracking, and carbon credit management; etc.)



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