Why (and Why Not) Climate Finance?
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Finance and financial markets are a significant focus of actions and policies to address climate change. These actions and policies include the fossil fuel divestment movement, private standards, regulatory taxonomies for sustainable finance, rules regulating corporate disclosures about climate change, and banking and insurance regulators addressing issues of climate-related systemic risk. Both public and private institutions issue green and sustainable bonds and develop investment funds which emphasize sustainability.

A focus on finance as a component of climate change policy is inevitable. Climate change adaptation and mitigation are expensive and must be paid for somehow, through taxation, grants, or borrowing. Climate change related risks from wind, wildfires, and flooding are imposing significant costs on businesses and individuals, including those directly affected by the risks and their lenders, insurers, and investors. Some risks are uninsurable at manageable cost. When investors seek out ESG investments they risk being misled by greenwashing, or at least by the multiplicity of different standards for sustainable investment products. Regulatory action to target greenwashing risks reducing the number of sustainable investments available to investors.

When policy-makers act to regulate climate finance they encounter significant problems of definition (what is sustainable economic activity, what can be taken into account in making net-zero claims, what constitutes greenwashing) and issues relating to verifiability and/or availability of adequate or appropriate metrics and performance indicators. Critics argue that the rules are insufficiently rigorous or exceed the authority of the regulators. Structural features of the administrative state affect the viability and/or effectiveness of regulation to address climate change. Within and between countries, climate finance raises significant issues of equity and access to affordable financial services. And, fundamentally, finance is about achieving economic returns, and if markets and regulation welcome and accept economic activity that harms the climate, that activity will continue to occur.

1. Introduction

Climate finance includes green and sustainable loans and bonds, investment funds geared to sustainable or green investments, and transactions geared to funding climate change mitigation (including transactions to support net zero claims) and adaptation (for example, loans to flood-proof dwellings). Climate finance involves collaboration between public and private actors,[1] a

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[1] *See, e.g.*, Neil Gunningham, A Quiet Revolution, Central Banks, Financial Regulators and Climate Finance, 12(22) Sustainability (2020), https://doi.org/10.3390/su12229596; Christian Elliott, Amy Janzwood, Steven Bernstein & Matthew Hoffmann, *Rethinking Complementarity: the Co-evolution of Public and Private Governance*

collaboration governments and international organizations characterize as being essential.[2] Green banks use public funds to support clean energy investment,[3] and sovereign wealth funds have begun to adjust their investment processes to take account of ESG issues.[4]

To some, climate finance is an invaluable component of an essential public policy response to climate change. For policy-makers who are reluctant to propose tax increases to fund public policy objectives, adjusting incentives to encourage desirable behavior and discourage undesirable behavior is an attractive strategy. Encouraging firms to recognize the climate costs associated with their activities so that investors and others can take account of those costs may seem to be less problematic than imposing carbon taxes on businesses.[5] Although even requiring businesses to disclose climate-related financial information may be controversial.[6] And even the voluntary actions of businesses which choose to disclose climate-related information may be seen as problematic: either because they are seen as focusing on matters which are not relevant to economic decision-making (they are being "woke"), or their disclosures are misleading (they are "greenwashing").[7]

So, to some, financial firms that engage in climate finance are engaging in "woke" political behavior rather than staying in their own lane and financing all potentially profitable economic activity.[8] And, although some financial firms make claims relating to sustainability,

in Corporate Climate Disclosure, Regulation & Governance (2023) https://doi.org/10.1111/rego.12550.

[2] *See, e.g.*, The World Bank, Climate-Smart PPP Legal and Regulatory Framework at https://ppp.worldbank.org/public-private-partnership/climate-smart/climate-smart-clean-technology-ppps/climate-smart-ppp-legal-and-regulatory-framework.

[3] *See, e.g.*, https://greenbanknetwork.org/.

[4] *See, e.g.* International Forum of Sovereign Wealth Funds, Newton's Second Law: Sovereign Wealth Funds' Progress on Climate Change (Mar. 2023).

[5] *Cf.* Stefano Carattini, Maria Carvalho & Sam Fankhauser, Overcoming Public Resistance to Carbon Taxes, WIREs Clim Change (2018:9) https://doi.org/10.1002/wcc.531.

[6] *See, e.g.*, Maura Hodge, Sam Jeffery, and Julie Santoro, About the SEC's Climate Proposal (Sep. 14, 2022) at https://corpgov.law.harvard.edu/2022/09/14/about-the-secs-climate-proposal/ . The SEC adopted final rules in March 2024 and we will study these. See SEC Adopts Rules to Enhance and Standardize Climate-Related Disclosures for Investors (Mar. 6, 2024).

[7] *Cf.* Oliver Milman, Criticism Intensifies after Big Oil Admits 'Gaslighting' Public over Green Aims, The Guardian (Sep.17, 2022).

[8] *See, e.g.*, Gillian Tett, Republican Targeting of ESG Laws is Bad for Business, Financial Times (Sep. 1, 2022).

announcing plans to divest from fossil fuels and even implementing those plans,[9] other firms continue to invest in fossil fuels because of the attractive financial returns they can generate from these investments.[10]

To some financialization scholars, financialized capitalism increases instability,[11] raising questions about the risks of approaching an issue such as climate change, which itself creates significant risks and instabilities, through a financial lens. Insurance markets provide one example: relying on private insurance markets to manage climate-related risks means that property insurance becomes unaffordable for many people.[12] Beyond property insurance, climate change also has implications for health insurance.[13]

The issues raised by the relationship between climate change and finance are at the same time technocratic (what are the best regulatory solutions to an acknowledged problem), political (is there a problem at all and what, if anything, should governmental agencies do about it if there is), and legal (what legal authority do policy-makers have to make rules to respond to climate change). Whereas technocratic issues are able to be addressed through transnational co-ordination among regulators, political and legal issues are more localized.

Even more significantly, perhaps, financial market activity, with its tendency to generate ever more transactions and instruments, and a focus on what is financially rewarding rather than what is truly consistent with sustainability,[14] is in significant tension with the idea that climate

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[9] *Cf.* Kate Aronoff, The Deranged Demands of the "Anti-ESG" Movement, The New Republic (Aug. 29, 2022) (noting that banks and asset managers are continuing to invest in fossil fuel companies).

[10] *See, e.g.*, Private Equity Climate Risks Scorecard 2022 (Sep. 2022).

[11] *Cf.* Natascha van der Zwan, Making Sense of Financialization, 12 Socio-Economic Review 99–129, 105 (2014) doi:10.1093/ser/mwt020.

[12] *See, e.g.*, Deborah Acosta, *Home Insurance Is So High in This Florida Town, Residents Are Leaving*, Wall Street Journal (Oct. 17, 2023); Lois Parshley, *As Climate Risks Mount, the Insurance Safety Net Is Collapsing*, Mother Jones (Oct. 16, 2023), Alice C. Hill, Climate Change and U.S. Property Insurance: A Stormy Mix (Aug. 16, 2023) at https://www.cfr.org/article/climate-change-and-us-property-insurance-stormy-mix.

[13] *See, e.g.*, pwc, More than Property Is at Stake: the Impact of Climate Change on Life, Health and Long-term Insurance Liabilities, at https://www.pwc.com/us/en/industries/financial-services/library/climate-change-impact-insurance-industry.html.

[14] The UK Financial Services and Markets Act 2023, 2023 c. 29, §25, includes a new competitiveness and growth objective for the UK's financial regulator. ("The competitiveness and growth objective is: facilitating, subject to aligning with relevant international standards—(a) the international competitiveness of the economy of the United Kingdom (including in particular the financial services sector), and (b) its growth in the medium to long term.") The government announced the proposal to mandate tyhis objective in a press release. HM Treasury Press Release, Financial Services Bill to unlock growth and investment across the UK (Jul. 20, 2022). Another press release issued on the same day states that the "Bill will implement the government's vision for the sector to be open, green, technologically advanced and globally competitive – while maintaining high levels of consumer protection." HM

change requires moving away from a growth mindset.[15] The EU seeks to resolve this tension through the concept of double materiality, which involves focusing both on the impact of climate change on corporate bottom lines and the impact of corporate activity on the environment,[16] but regulators in other jurisdictions and international standard setters encounter opposition to this approach.[17]

2. The Problems of Climate Change

Climate change involves a wide range of issues for people and the planet, ranging from impacts on weather patterns, with increases in wildfires, storm damage and flooding to ocean warming and sea level rise. These developments have an impact on agriculture and aquaculture and also on migration within and between countries as climate refugees seek safer places to live, and in which to earn enough to survive.

Although climate change does not only involve financial costs, many aspects of climate change impose financial costs on businesses and citizens. Damage to physical assets from storms, wildfires, and flooding reduces their value, and remediation of the harm is costly. Commercial premises affected by weather-related damage may need to close for a period of time, resulting in a loss of income. Lenders and insurers are affected by any loss of value or income or by the need to pay for remediation. Investors in securities issued by businesses subject to serious physical risks from climate change may find that their investments lose value. As the effects of climate change intensify these issues become more salient for financial businesses and their regulators.[18]

2.1 The Costs of Climate Change

Climate change related risks from wind, wildfires, and flooding are already imposing significant costs on businesses and individuals, including those directly affected by the risks and their lenders, insurers and investors. These costs associated with physical risks have implications

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Treasury Press Release, Chancellor Nadhim Zahawi Sets out Post-Brexit Transformation of UK Financial Services (Jul. 20, 2022).

[15] *See, e.g.*, Livia Bizikova, Zakaria Zoundi & Robert Smith, Moving Beyond GDP to Achieve the SDGs, Report of Task Force 9 Global Cooperation for SDG Financing (Sep. 1, 2022).

[16] *See, e.g.*, IOSCO, Report on Sustainability-related Issuer Disclosures, Report of the Board of IOSCO FR04/21 (Jun. 28, 2021) at 24-25 (discussing financial and environmental and social materiality).

[17] *Cf.* Frances Schwartzkopff & Lisa Pham, *New Sustainability Rules Attacked for Protecting Profits Over Planet*, Bloomberg Law (Jul. 29, 2022).

[18] *See, e.g.*, Michael S. Barr, Vice Chair for Supervision, Federal Reserve Board, Making the Financial System Safer and Fairer, Speech at the Brookings Institution, Washington, D.C. (Sep. 7, 2022); Basel Committee on Banking Supervision, Principles for the Effective Management and Supervision of Climate-related Financial Risks (Jun. 2022); Financial Stability Board, Supervisory and Regulatory Approaches to Climate-related Risks Interim Report (Apr. 29, 2022); Financial Stability Board, Roadmap for Addressing Financial Risks from Climate Change: 2022 Progress Report (Jul. 14, 2022).

for the availability and affordability of insurance policies and other financial services.[19]

Businesses, particularly fossil fuel companies, also face transition risks associated with climate change as legal rules evolve to address issues of responsibility for and adaptation to climate change. The litigation environment for climate-related claims is evolving, and businesses face costs of defending climate-related lawsuits and potential damages.[20] Their exposure includes claims of legal responsibility for climate change, as well as challenges to decarbonization plans, and claims that securities disclosures are inadequate or misleading. Issuers of securities need to disclose litigation risks as a component of their securities disclosures. Non-profits such as Universities are also targets of complaints to state attorneys general, which claim that they have failed to comply with requirements of their charters.[21] Courts in some jurisdictions have recognized that rivers and mountains may have legal rights.[22]

However, the litigation picture is complicated. Whereas there are well funded groups, such as Our Children's Trust,[23] to support climate litigation, business trade groups such as the US Chamber of Commerce,[24] also work to limit the success of climate litigation.[25] And, although litigation risks for businesses are increasing, there has also been an increase in claims under the Energy Charter Treaty which protects foreign investments in energy.[26] This is an example of the conflict between the international investment regime and the ability of states to implement

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[19] *See, e.g.*, New York Department of Financial Services, Guidance for New York Domestic Insurers on Managing the Financial Risks of Climate Change (Nov. 15, 2021).

[20] *See, e.g.*, Standard & Poors, Climate Change Litigation: The Case For Better Disclosure And Targets (Oct. 6, 2021); Joana Setzer, Catherine Higham, Andrew Jackson & Javier Solana, Climate Change Litigation and Central Banks, ECB Legal Working Paper No. 21 (Dec. 2021); CSSN Research Report 2022:1: Climate-Washing Litigation: Legal Liability for Misleading Climate Communications, Policy Briefing (January 2022); Javier Solana, Climate litigation in financial markets: a typology, 9(1) Transnational Environmental Law 103-135 (2020).

[21] *See, e.g.*, Chris McGreal, Yale, Stanford and MIT's Fossil Fuel Investments Are Illegal, Students Say, The Guardian (Feb. 16, 2022); https://climatedefenseproject.org/resources/.

[22] *See, e.g.*, David Takacs, We Are the River 2021 U. Ill. L. Rev. 545.

[23] https://www.ourchildrenstrust.org/

[24] *See, e.g.*, Supplemental Brief of Amicus Curiae the Chamber of Commerce of the United States of America in State of Rhode Island v Shell Oil Products Company LLC (Jul. 28, 2021); Brief of Amicus Curiae the Chamber of Commerce of the United States of America in City of Hoboken v Exxon Mobil Corp. (Nov. 22, 2021).

[25] *See, e.g.*, City of Hoboken v Chevron (3rd Cir 2022) (no federal hook to justify removal of state tort law claims to federal court); State of Rhode Island v. Shell Oil Products Co., LLC (1st Cir 2022).

[26] *See, e.g.*, Arthur Neslen, Oil Firm Rockhopper Wins £210m Payout after Being Banned from Drilling, The Guardian (Aug. 24, 2022). *See also* https://www.energycharter.org/ .

socially desirable regulatory measures.[27] Proposed amendments to modernize the Energy Charter Treaty have been characterized as insufficient.[28]

Legislative and regulatory changes may also involve climate transition risks and costs as businesses need to adjust their compliance systems to new rules. Some objections to the SEC's proposed rules for climate-related disclosures[29] identified the significant costs of compliance as an issue.[30] In particular, the idea that issuers might be required to disclose scope 3 emissions (emissions throughout the value chain, both upstream and downstream) attracted some criticism.[31]

One consequence of the physical and transition risks we face as a result of climate change and that have an impact on individual financial and non-financial businesses is a broader set of risks to financial stability.[32] Financial stability generally is an area of financial regulation where technocrats and politicians come into conflict because a range of different issues, on which there are differing political views, from pandemics to migration to climate change, raise possible threats to financial stability.

As policy-makers seek to address climate change through financial regulation they are adopting different approaches. The EU has chosen to adopt a strategy which seeks to change the

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[27] Because of this conflict some states have recently withdrawn from the Energy Charter Treaty. *See, e.g.*, EU Commission, European Commission Proposes a Coordinated EU Withdrawal from the Energy Charter Treaty (Jul. 7, 2023) (" the European Commission has proposed that the EU, its Member States, and Euratom withdraw, in a coordinated manner, from the Energy Charter Treaty. This Treaty is largely unchanged since it was agreed in the 1990s, and is no longer compatible with the EU's enhanced climate ambition under the European Green Deal and the Paris Agreement.")

[28] International Institute for Sustainable Development, Deal for Modernized Energy Charter Treaty Insufficient for Ambitious Climate Action (Jun. 27, 2022).

[29] SEC Proposed Rule The Enhancement and Standardization of Climate-Related Disclosures for Investors, 87 Fed. Reg. 21334 (Apr. 11, 2022).

[30] *See, e.g.*, Shearman & Sterling LLP, The Enhancement and Standardization of Climate-Related Disclosures for Investors Release No. 33-11042; 34-94478 (Jun. 20, 2022) at p. 2 ("We do not believe that the significant burdens the proposed rules would impose on registrants and the extensive related investments in human capital, systems and management time were adequately considered.")

[31] *See, e.g.*, Hester Peirce, We are Not the Securities and Environment Commission – At Least Not Yet (Mar. 21, 2022) ("Scope 3 data is really about what other people do. The reporting company's long-term financial value is only tenuously at best connected to such third party emissions.")

[32] Financial Stability Board, The Implications of Climate Change for Financial Stability (Nov. 23, 2020); Patrick Bolton, Morgan Després, Luiz Awazu Pereira da Silva, Frédéric Samama and Romain Svartzman, The Green Swan: Central Banking and Financial Stability in the Age of Climate Change Jan. 20, 2020.

behavior of investors, rather than merely responding to investors' existing preferences.[33] Developing a sustainable financial system is seen as important to "improve the well-being and health of citizens, make Europe climate-neutral by 2050 and protect, conserve and enhance the EU's natural capital and biodiversity."[34] In the US, many commentators argue that a focus on ESG issues is a diversion from an appropriate focus on achieving the highest economic returns and that the function of securities regulation is to ensure investors get information that is truly material to their investment decisions, which should focus on financial rather than non-financial considerations.[35] And even actions to address climate change by private actors have resulted in pushback from politicians who see "woke" capital as a problem, rather than a normal component of debate in market-based economies.[36]

2.2 Financing Climate Mitigation and Adaptation

A focus on finance as a component of climate change policy is inevitable. Climate change adaptation and mitigation are expensive and must be paid for somehow, through taxation, grants or borrowing.

Public sector and private sector actors raise money to address climate change. For example, international Organizations, sovereigns, municipalities and corporates issue Green Bonds to finance climate change adaptation and mitigation.[37] The number of issuances of these bonds has increased significantly over time, and the market has also seen the development of

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[33] Sustainable Finance Disclosures Regulation, Regulation 2019/2088, OJ L. 317/1 (Dec. 9, 2019). Recital 19 of the Regulation states: "The consideration of sustainability factors in the investment decision-making and advisory processes can realise benefits beyond financial markets. It can increase the resilience of the real economy and the stability of the financial system. In so doing, it can ultimately impact on the risk-return of financial products. It is therefore essential that financial market participants and financial advisers provide the information necessary to enable end investors to make informed investment decisions."

[34] EU Commission Communication, EU Taxonomy, Corporate Sustainability Reporting, Sustainability Preferences and Fiduciary Duties: Directing finance towards the European Green Deal, COM (2021) 188 final (Apr.21, 2021) at p. 1.

[35] *See, e.g.*, Hester Peirce, We are Not the Securities and Environment Commission – At Least Not Yet (Mar. 21, 2022) ("Focusing on information that is material to a company's value proposition not only serves as a key mechanism to winnow out needless volumes of information, but also keeps us from exceeding the bounds of our statutory authorization. The further afield we are from financial materiality, the more probable it is that we have exceeded our statutory authority.")

[36] *See, e.g.*, Brooke Masters & Patrick Temple-West, Companies Attack Texas over 'Politicised' ESG Blacklist, Financial Times (Aug. 29, 2022).

[37] *See, e.g.*, https://treasury.worldbank.org/en/about/unit/treasury/ibrd/ibrd-green-bonds; https://betterbuildingssolutioncenter.energy.gov/financing-navigator/option/green-bonds. *Cf.* Quinn Curtis, Mark C.Weidemaier, & Mitu Gulati, *Green Bonds, Empty Promises*, 102 N. CAROLINA L. REV. 131 (2023).

green loans and sukuk,[38] and blue bonds, which are designed to protect the oceans.[39] But there are some questions about the extent to which bonds marketed as green or blue actually fund sustainable activities.[40]

The European Union has adopted a Regulation on Green Bonds which establishes criteria for bonds whose issuers want to describe them as European Green Bonds.[41] It is a voluntary standard, designed to harmonize approaches to green bonds across the EU to help investors and issuers and promote sustainability:

> "Diverging rules on the disclosure of information, on the transparency and accountability of external reviewers of environmentally sustainable bonds, and on the eligibility criteria for environmentally sustainable projects, impede the ability of investors to identify, trust and compare environmentally sustainable bonds, and the ability of issuers to use environmentally sustainable bonds to transition their activities towards more environmentally sustainable business models."[42]

The European Green Bonds Regulation is aligned with the EU's Taxonomy which specifies what activities are considered to be environmentally sustainable.[43] Issuers must meet general EU disclosure requirements for the issuance of securities under the Prospectus Directive and additional disclosure requirements applicable to green bonds, and they must appoint independent EU-regulated External Reviewers to ensure compliance with the standards. Thus, the EU rules are designed to try to ensure that where European Green Bonds are issued they do actually fund sustainable activities.

There are a number of different standards for green and sustainable financing, which have been developed by different groups,[44] such as the International Capital Market Association

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[38] *See, e.g.*, https://www.climatebonds.net/market/explaining-green-bonds.

[39] *See, e.g.*, https://unglobalcompact.org/take-action/ocean/communication/blue-bonds-accelerating-sustainable-ocean-business.

[40] *See, e.g.*, Kenza Bryan, 'Sustainable' Debt Pioneer Ditches Controversial 'Blue Bond' Label, Financial Times (Sep. 22, 2023).

[41] Regulation (EU) 2023/2631 European Green Bonds and Optional Disclosures for Bonds Marketed as Environmentally Sustainable and for Sustainability-linked Bonds, OJ L 2023/2631 (Nov. 30, 2023) (European Green Bonds Regulation).

[42] *Id.* at recital 5.

[43] Regulation (EU) 2020/852 on the Establishment of a Framework to Facilitate Sustainable Investment, OJ L198/13 (Jun. 22, 2020) (EU Taxonomy Regulation).

[44] *See, e.g.*, https://www.luxse.com/resources/standards-and-principles.

(ICMA),[45] and the Climate Bonds Initiative.[46]

2.3 Greenwashing

As investors seek out ESG investments they risk being misled by greenwashing,[47] when issuers or financial firms present their business activities or financial products as sustainable when they are not in fact sustainable.[48]

It is difficult to prevent misleading claims about the sustainability of a securities issuer's business. Firms often make claims relating to sustainability in corporate sustainability reports rather than in regulated securities disclosures, and less-concrete claims are, in any case, vulnerable to being characterized as puffery which will foreclose a remedy. Materially misleading statements can give rise to liability, and, because the materiality assessment is based on what the reasonable investor would want to know in making an investment decision, changes in how reasonable investors think about sustainability will affect the risks of liability.[49]

Investors who want to assess the sustainability of investment choices available to them also face a multiplicity of different standards for sustainable investment products.[50] Standardizing disclosure requirements for issuers of securities is a significant component of the responses of

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[45] *See* https://www.icmagroup.org/sustainable-finance/.

[46] *See* https://www.climatebonds.net/standard/the-standard.

[47] *See, e.g.*, Sebastião Vieira de Freitas Netto, Marcos Felipe Falcão Sobral, Ana Regina Bezerra Ribeiro & Gleibson Robert da Luz Soares, Concepts and Forms of Greenwashing: A Systematic Review, 20: 19 Environmental Sciences Europe (2020) https://doi.org/10.1186/s12302-020-0300-3.

[48] *See, e.g.*, Alliance for Corporate Transparency, 2019 Research Report: an Analysis of the Sustainability Reports of 1000 Companies Pursuant to the EU Non-financial Reporting Directive; Alessio M. Pacces, Will the EU Taxonomy Regulation Foster Sustainable Corporate Governance? 13 Sustainability (2021) 12316. https://doi.org/10.3390/su132112316. Greenwashing is an issue for consumers generally, and not just with respect to financial products and services, and consumers who seek sustainable products and services may be sceptical of green marketing. *See, e.g.*, Szerena Szabo & Jane Webster, Perceived Greenwashing: The Effects of Green Marketing on Environmental and Product Perceptions. 171 J Bus Ethics 719–739, 719 (2021), https://doi.org/10.1007/s10551-020-04461-0.

[49] *See, e.g.*, Hannah Vizcarra, The Reasonable Investor and Climate-Related Information: Changing Expectations for Financial Disclosures, 50 Environmental Law Reporter 10106 (2020).

[50] IOSCO, Retail Investor Education in the Context of Sustainable Finance Markets and Products Final Report, FR10/22 (Aug. 2022) at 1 ("Investors of all sizes are increasingly seeking out sustainable investments for a variety of reasons, such as to seize perceived opportunities for greater financial returns or to avoid risks they associate with various environmental, social, and governance issues, such as climate change or poor labor or governance practices. However, investors currently lack a consistent and comparable framework to enable their understanding of sustainable finance products.")

financial regulators to climate change,[51] and one which some commentators argue is very much needed.[52] Standardization of disclosure requirements, in particular where the requirements are specific rather than general, can help to address the risks that issuers will publish vague, general and misleading information, and can also improve investors' ability to compare the climate risks faced by different issuers. Investors need access to accurate and relevant information and they also need to be able to use the information effectively in making investment decisions.[53]

As industry groups and legislators and regulators in different jurisdictions have developed disclosure initiatives without any detailed harmonization so far,[54] there is a lack of effective transnational standardization. Within the EU there is a far-reaching and ambitious project to harmonize rules relating to sustainability and finance,[55] including ongoing work on an ESG taxonomy,[56] which is designed to allow distinctions to be made between sustainable economic activity and activities which are not sustainable. And the EU founded an International Platform on Sustainable Finance with the participation of a number of other jurisdictions to encourage the movement of private capital into environmentally sustainable investments.[57] The EU and China both participate in the work of the platform, and a working group has studied similarities and

[51] *See, e.g.*, SEC Proposed Rule The Enhancement and Standardization of Climate-Related Disclosures for Investors, 87 Fed. Reg. 21334 (Apr. 11, 2022); Directive (EU) 2022/2464 Amending Regulation (EU) No 537/2014, Directive 2004/109/EC, Directive 2006/43/EC and Directive 2013/34/EU, as Regards Corporate Sustainability Reporting, OJ. L 322/15 (Dec. 16, 2022) (Corporate Sustainability Reporting Directive).

[52] *See, e.g.*, CFA Institute, The Enhancement and Standardization of Climate-Related Disclosures for Investors (Jun. 30, 2022) at p 4 ("Investors now, rightly, are seeking the SEC's assistance—as the primary securities regulatory authority charged with their investor protection—in obtaining more standardized, consistent, relevant, and reliable information.")

[53] IOSCO, Retail Investor Education in the Context of Sustainable Finance Markets and Products, (Aug. 2022) (discussing the importance of financial education with respect to sustainable finance).

[54] IOSCO, Retail Investor Education in the Context of Sustainable Finance Markets and Products, (Aug. 2022) at 4 ("Despite the growth of ESG products and the increased availability of such products to retail investors, globally consistent terminology and common definitions in the area of sustainable finance are still in the process of development by industry and other groups, such as international standard-setters and regulatory authorities (although some efforts are under way, e.g., some regional initiatives and a European framework are in place or currently being developed). This lack of standard terminology may hinder the ability of retail investors to analyze and compare (purportedly) ESG products, including with respect to sustainability risk.")

[55] *See, e.g.*, EU Commission Communication, Strategy for Financing the Transition to a Sustainable Economy, COM (2021) 390 final (Jul. 6, 2021).

[56] Regulation 2020/852 on the establishment of a framework to facilitate sustainable investment, OJ L. 198/13 (Jun. 22, 2020) (EU Taxonomy Regulation). Detailed implementing rules are being developed.

[57] https://finance.ec.europa.eu/sustainable-finance/international-platform-sustainable-finance_en#main.

differences between the EU's and China's taxonomies.[58]

However, like other transnational projects to approximate rules of financial regulation, progress is slow and work is likely to be incremental. Transnational financial standard-setters have published a number of reports on climate change, and the Financial Stability Board has emphasized the significance of climate change for financial stability. The International Sustainability Standards Board (ISSB) has been developing a global framework for sustainability disclosures,[59] and IOSCO (the International Organization of Securities Commissions, a body that brings together national securities regulators) has endorsed the ISSB standards.[60] The EU Commission has adopted European Sustainability Reporting Standards (ESRS) for companies required to make disclosures under the EU's Corporate Sustainability Reporting Directive (CSRD) and which are designed to work with the international standards.[61]

Domestic regulators who participate in the work of these international groups, or who communicate with large transnational financial firms, or whose remit is particularly affected by climate risks may be more willing to address climate related issues than other domestic actors in their jurisdictions. Even during the Trump administration the CFTC established a sub-committee of its Market Risk Committee to focus on climate-related risks,[62] and the SEC Asset Management Advisory Committee focused on ESG issues.[63] Under the Biden administration, financial regulators in the US have published principles for climate-related financial risk management for large financial institutions,[64] which resemble the Basel Committee's principles

[58] International Platform on Sustainable Finance, Common Ground Taxonomy – Climate Change Mitigation, Instruction Report, IPSF Taxonomy Working Group (Jun. 3, 2022).

[59] *See* https://www.ifrs.org/groups/international-sustainability-standards-board/.

[60] IOSCO, IOSCO endorses the ISSB's Sustainability-related Financial Disclosures Standards (Jul. 25, 2023).

[61] Commission Delegated Regulation (EU) 2023/2772 supplementing Directive 2013/34/EU as Regards Sustainability Reporting Standards, OJ L 2023/2772 (Jul. 31, 2023). *See also* Directive (EU) 2022/2464 as Regards Corporate Sustainability Reporting, OJ L 322/15 (Dec. 16, 2022) (CSRD).

[62] Commodity Futures Trading Commission, Climate-Related Market Risk Subcommittee, Managing Climate Risk in the U.S. Financial System (Sep. 9, 2020).

[63] U.S. SEC Asset Management Advisory Committee, Potential Recommendations of ESG Subcommittee Discussion Draft (Dec. 1, 2020).

[64] Office of the Comptroller of the Currency (OCC), Treasury; Board of Governors of the Federal Reserve System (Board); and Federal Deposit Insurance Corporation (FDIC), Principles for Climate-Related Financial Risk Management for Large Financial Institutions, 88 Fed. Reg. 74183 (Oct. 30, 2023).

for climate-related financial risks.[65] The CFTC has asked for comments on proposed guidance on the listing of voluntary carbon credit derivative contracts.[66]

3. Problems of Measures to Address Climate Change

Identifying appropriate measures to address climate risks in the financial system as a whole is a very large and complex problem, affecting banking, insurance, securities markets, and asset management. Regulators must address issues for individual firms as well as systemic issues that may affect the financial system as a whole. The project involves many uncertainties and difficulties from translating climate science into economic and financial regulation to navigating the specifics of different political and legal environments. Problems include issues of definition, and issues of verification and accountability. More fundamentally, climate change does not affect all people equally and it threatens to have a greater negative impact on those who are already most vulnerable, and it is not clear that international institutions and governments are prepared to do what is necessary to support those in need of help.

3.1 The Problem of Definition

Issues of terminology, definition, and line-drawing are inherent in the drafting of legal rules. In the context of disclosure requirements, legislators and regulators need to identify what information must be disclosed, and how. Even where there are not specific regulatory requirements relating to climate disclosures, information must be disclosed if it is material in the sense that it is the sort of information the reasonable investor would want to know. Materiality in this sense is not a bright-line concept, although market participants have at times attempted to make it so, to avoid compliance and liability costs.[67] Moving to a system of specific required climate-related disclosures would provide more clarity to issuers and their advisers, although compliance might be more costly.

Taxonomy projects seek to draw distinctions between economic activity[68] that may be

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[65] Basel Committee on Banking Supervision, Principles for the Effective Management and Supervision of Climate-related Financial Risks (Jun. 2022). *Cf.* Celso Brunetti et al, Climate Change and Financial Stability (Mar. 19, 2021) at https://www.federalreserve.gov/econres/notes/feds-notes/climate-change-and-financial-stability-20210319.html ("Financial regulators, international organizations, market participants and others have directed significant attention in recent years towards developing an understanding of the implications of climate change for the financial sector and financial stability.")

[66] CFTC, Commission Guidance Regarding the Listing of Voluntary Carbon Credit Derivative Contracts; Request for Comment 88 Fed Reg 89410 (Dec. 27, 2023).

[67] *See, e.g.*, Matrixx Initiatives v Siracusano 563 U.S. 27 (2011) (declining to adopt a bright-line or categorical rule for materiality).

[68] Economic activity is defined according to the statistical classification of economic activities in the EU established by Regulation (EC) No 1893/2006, NACE.

described as sustainable and economic activity that is not sustainable, in order to encourage investment in sustainable activities.[69] The EU Taxonomy sets out performance standards or technical screening criteria for sustainable economic activity for many different categories of economic activity. In order to qualify as sustainable, economic activity must substantially contribute to at least one of six environmental objectives,[70] while doing no significant harm to any of the others, and comply with minimum safeguards and technical screening criteria defined in delegated legislation.[71] The project is one which relies on scientific evidence,[72] but some aspects of the taxonomy have been controversial, in particular the treatment of biofuels,[73] nuclear power,[74] and gas.[75]

Similar issues of definition also apply to the net-zero concept,[76] as businesses have often relied on carbon offsets, sometimes of doubtful effectiveness, to claim progress towards net zero.[77]

Related to issues of definition are issues of the scope of application of the rules. Should the same rules apply to smaller and larger businesses, or should all businesses be subject to the same rules? The SEC's proposed disclosure rules sought to limit the burden of the rules by

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[69] *Cf.* Alessio M. Pacces, Will the EU Taxonomy Regulation Foster Sustainable Corporate Governance? 13 Sustainability (2021) 12316. https://doi.org/10.3390/su132112316.

[70] These are: Climate change mitigation; Climate change adaptation; Sustainable use and protection of water and marine resources; Transition to a circular economy; Pollution prevention and control and Protection and restoration of biodiversity and ecosystems.

[71] *See, e.g.*, EU Commission, JRC Technical Report, Substantial Contribution to Climate Change Mitigation – a Framework to Define Technical Screening Criteria for the EU Taxonomy (Jan. 2021). The JRC is the EU's Joint Research Centre.

[72] *Id.* at 7.

[73] *See, e.g.*, Alice Hancock & Camilla Hodgson, EU Vote Exposes Tensions over Use of Forests for Fuel, Financial Times (Sep. 14, 2022).

[74] *See, e.g.*, Christoph Pistner & Matthias Englert, Nuclear Power and the "Do No Significant Harm" Criteria of the EU Taxonomy, Oeko-Institut Working Paper 4/2021 (analyzing the JRC's conclusions with respect to nuclear power and the do no significant harm criterion and concluding that key arguments in the analysis, for example relating to the risks of severe accidents, "do not hold at closer look").

[75] *See, e.g.*, Alice Hancock, Brussels Faces Legal Challenge over Labelling Gas and Nuclear 'Green', Financial Times (Sep. 18, 2022).

[76] *See, e.g.*, https://www.un.org/en/climatechange/net-zero-coalition.

[77] *See, e.g.*, Josh Gabbatiss, Analysis: How Some of the World's Largest Companies Rely on Carbon Offsets to 'Reach Net-zero' (Sep. 27, 2023) at https://interactive.carbonbrief.org/carbon-offsets-2023/companies.html.

reducing their impact on smaller issuers and by allowing for phase-in periods and safe harbors. When the FDIC and OCC sought comments on proposed principles for climate-related risk management for banks they focused on larger financial institutions.[78] Whereas it is not necessarily the case that larger financial institutions are more vulnerable to climate risks than smaller institutions, a significant impact of climate risks on larger institutions would have more of a systemic impact. In addition, larger institutions are likely to have a greater capacity for compliance with new standards than smaller institutions. In a response to the FDIC RFC, the American Bankers' Association, urged banking regulators not to move too quickly and in particular "not to expand the scope of the guidance to mid-size and community banks until more robust data is available, and the climate-related financial risks and opportunities are better understood."[79] The comment suggests a clear tension between the idea that quick action is essential to mitigate climate change and a desire to wait until the situation is better understood. But, rather than reflecting on a genuine concern to wait to regulate until climate issues are better understood, this may just be a classic example of a trade association making whatever arguments it can bring to bear to slow down regulatory change. Either way, the example illustrates that regulation to address climate change that focuses on financial institutions and markets is not easy, or quickly developed and implemented.

3.2 Metrics, Performance Indicators, Data Quality and Assurance

Fundamental questions relating to climate finance regulation include whether the relevant data are available, and whether available data are relevant. The International Capital Market Association (ICMA) has argued that the usefulness of the EU taxonomy is limited by the current lack of highly granular data,[80] and that the application of the EU's criteria in the context of an international market, where different countries are at different stages with respect to decarbonization, is problematic.

In a statement on the publication of the SEC's proposed rules, Commissioner Peirce expressed some scepticism about the value of the disclosures the proposal would encourage, arguing they would likely be based on faulty data, and faulty quantitative analyses, and would involve "stacking speculation on assumptions," resulting in apparent reliability but that would

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[78] FDIC, Request for Comment on Statement of Principles for Climate-Related Financial Risk Management for Large Financial Institutions, 87 Fed. Reg.19507 (Apr. 4, 2022) (the draft principles are targeted at largest financial institutions, with over $100 bn in assets, and the RFC notes (at 19509) that effective risk management should be appropriate to the size of the institution, and that the standards are particularly salient for the largest financial institutions.) The FDIC RFC reflects the Basel Committee on Banking Supervision, Principles for the Effective Management and Supervision of Climate-related Financial Risks (Nov. 2021)

[79] American Bankers' Association, Re: Statement of Principles for Climate-Related Financial Risk Management for Large Financial Institutions; RIN 3064-ZA32 (Jun. 3, 2022).

[80] International Capital Market Association, Ensuring the Usability of the EU Taxonomy (Feb. 2022).

leave investors worse off.[81]

For some time, accountants have been involved in discussions about climate change, initially because of the need to treat European carbon credits appropriately.[82] Financial regulators rely on accounting standards bodies to develop standards for implementing disclosure rules in financial statements. But this does not mean that accounting work is neutral.[83]

Technocratic experts argue that rules and processes should be based on expertise, but it can be problematic if an emphasis on technical standards disguises fundamental issues that are inherently political.[84]

Current thinking about climate-related disclosure involves a focus on greenhouse gas emissions, and the SEC's proposed rules relied on the GHG Protocol. But this reliance brings into focus the issues that many commentators have with the proposal: that it is about issuers' impact on climate, rather than on the climate's impact on issuers, and that the SEC does not therefore have the authority to require this sort of disclosure.[85]

In order for investors to be able to rely on disclosures the SEC recognizes that there need to be assurance or verification mechanisms. This will add to the costs of compliance, and will also be a source of revenue for firms that will provide these services. Commissioner Peirce argued that "[a]udit firms are likely to be the biggest winners, as they already have established assurance infrastructures and are familiar with SEC reporting and the proposed independence framework. The attestation mandate could be a new sinecure for the biggest audit firms, reminiscent of the one given them by section 404(b) of the Sarbanes-Oxley Act."[86]

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[81] Hester Peirce, We are Not the Securities and Environment Commission – At Least Not Yet (Mar. 21, 2022) ("Wanting to bring clarity in an area where there has been a lot of confusion and greenwashing is understandable, but the release mistakenly assumes that quantification can generate clarity even when the required data are, in large part, highly unreliable. Requiring companies to put these faulty quantitative analyses in an official filing will further enhance their apparent reliability, while in fact leaving investors worse off, as Commission-mandated disclosures will lull them into thinking that they understand companies' emissions better than they actually do.")

[82] Heather Lovell, Donald MacKenzie Accounting for Carbon: The Role of Accounting Professional Organisations in Governing Climate Change, 43 Antipode 704-730 (2011).

[83] *Id.* at 14.

[84] *Cf.* Philipp Golka & Natascha van der Zwan, *Experts Versus Representatives? Financialised Valuation and Institutional Change in Financial Governance*, 27 New Political Economy, 1017-1030 (2022) DOI: 10.1080/13563467.2022.2045927.

[85] Note that the proposal does state "our objective is to advance the Commission's mission to protect investors, maintain fair, orderly and efficient markets, and promote capital formation, not to address climate-related issues more generally."

[86] Hester Peirce, We are Not the Securities and Environment Commission – At Least Not Yet (Mar. 21, 2022).

ESG ratings, produced by commercial and non-profit entities— which have proliferated, and use different methodologies and definitions, often with little transparency about how the ratings are constructed— also concern regulators. IOSCO has recommended that ESG ratings and data products should be regulated.[87] Although IOSCO noted that "this part of the market does not currently fall within the typical remit of securities regulators,"[88] the concerns IOSCO identifies, relating to methodology, a lack of transparency and conflicts of interest, are similarv to issues that have previously been addressed with respect to credit rating agencies. ESMA issued a Call for Evidence on ESG ratings,[89] in order to gather information about the structure of the ESG ratings environment in the EU. ESMA found the market to be immature but growing, with a number of large providers based outside the EU, and with a market structure similar to that for credit ratings.[90] The EU Commission has proposed measures to regulate ESG ratings.[91]

Climate stress tests for banks designed to assess how climate change may affect banks' safety and soundness are also complicated by the lack of data.[92] The European Banking Authority has acknowledged these data gaps, which include a "[l]ack of relevant, high-quality and granular data: availability and accessibility of reliable and consistent environmental data... Lack of a common, standardised and complete classification system."[93] Moreover, binary classifications are not especially helpful for the purposes of risk differentiation, and the time horizon of environmental risks is different from the normal prudential risk time horizon.[94] Similar issues are faced by prudential regulators of other types of financial firm, such as insurance companies.[95]

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[87] IOSCO, Environmental, Social and Governance (ESG) Ratings and Data Products Providers, Final Report 09/21 (Nov. 2021)

[88] *Id.* at 1.

[89] ESMA, Call for Evidence On Market Characteristics for ESG Rating Providers in the EU, ESMA80-416-250 (Feb. 3, 2022).

[90] ESMA, ESMA publishes results of its Call for Evidence on ESG ratings (Jun. 27, 2022).

[91] EU Commission, Proposed Regulation on the Transparency and Integrity of Environmental, Social and Governance (ESG) Rating Activities, COM (2023) 314 final (Jun. 13, 2023).

[92] *See, e.g.*, Evan Weinberger, Bank Agencies' Climate Test Plans Face Uncertainties, Murky Data, Bloomberg Law (Sep. 19, 2022).

[93] EBA, Discussion Paper on the Role of Environmental Risks in the Prudential Framework, EBA/DP/2022/02 (May 2, 2022) at 19.

[94] *Id.*

[95] *Cf.* EIOPA, Opinion on Sustainability within Solvency II (EIOPA-BoS-19/241) (Sep. 30, 2019) at 6 (time horizon issues) ; EIOPA, Opinion on the Supervision of the Use of Climate Change Risk Scenarios in ORSA, EIOPA-BoS-21-127 (Apr. 19, 2021) at 9 ("Although important progress has been made in recent years in the

3.3 Weaknesses of the Administrative State

Climate finance regulation is a clear example of technical regulation which is politically contested. Structural features of the administrative state affect the viability and/or effectiveness of regulation to address climate change.

Different countries have developed different arrangements for their energy markets with different levels of dependence on coal, oil and gas, biofuels and nuclear power as well as wind and solar, and discussions about defining what is environmentally sustainable are inevitably affected by these facts. The EU has been able to adopt a number of measures of primary legislation on these issues, even if commentators critique some of the details and worry about effectiveness.

In the US, there are clear political differences that affect what is possible in terms of primary federal legislation.[96] During the Trump administration the Department of Labor introduced rules restricting the ability of pension funds to use ESG measures in making pension fund investment decisions.[97] The Biden administration proposed a new approach which would allow pension fund administrators to take account of ESG considerations, emphasizing that "climate change and other ESG factors are often material and that in many instances fiduciaries to should consider climate change and other ESG factors in the assessment of investment risks and returns."[98] In 2020 the OCC proposed a Fair Access to Financial Services rule which would protect businesses involved in politically controversial activities from being denied access to financial services.[99] Although the rule was finalized in January 2021, the final rule was not

development of scenarios, methodologies and guidance, challenges remain in conducting (scenario) analysis of climate change risks... For example, significant modelling expertise and expert judgement will be needed to translate carbon price pathways into transition impacts on assets of companies or economic sectors or to translate temperature pathways into physical impacts in relevant geographical areas. Climate scenarios available today will not contain all information on transition and physical impacts in a form and resolution relevant for the undertaking.")

[96] *Cf.* Inflation Reduction Act of 2022, Public Law 117–169 (2022).

[97] Department of Labor, Financial Factors in Selecting Plan Investments 85 FR 72846 (Nov. 13, 2020); Department of Labor, Fiduciary Duties Regarding Proxy Voting and Shareholder Rights 85 FR 81658 (Dec. 16, 2020).

[98] Department of Labor, Prudence and Loyalty in Selecting Plan Investments and Exercising Shareholder Rights 86 Fed. Reg. 57272, 57277 (Oct. 14, 2021). See also Department of Labor, Request for Information on Possible Agency Actions to Protect Life Savings and Pensions from Threats of Climate-Related Financial Risk, 87 Fed Reg 8289 (Feb. 14, 2022); Executive Order 14030, Executive Order on Climate-Related Financial Risk, 86 FR 27967 (May 25, 2021). A number of states have challenged the rule and are appealing the district court's decision upholding the rule to the 5th Circuit.

[99] Office of the Comptroller of the Currency, Fair Access to Financial Services, 85 Fed. Reg. 75261 (Nov. 25, 2020).

published in the Federal Register.[100]

The idea that the SEC would promulgate climate disclosure rules has attracted significant positive and negative commentary. Negative commentary has focused on the idea that the idea of climate related disclosure requirements is a concern of large institutional investors rather than the ordinary or Main Street investor the SEC is supposed to protect.[101] To the extent that the SEC's rules would be designed to limit environmental risk rather than financial risk to investors, they argue, the rules would be beyond the statutory authority of the SEC.[102]

It is likely that any climate disclosure rules proposed by the SEC will be challenged in court, based on the major questions doctrine,[103] and the First Amendment.[104]

3.4 Inequality and Access to Financial Services

Within and between countries, climate finance raises significant issues of equity and access to affordable financial services. In developed economies wealthier people are less likely to live in heat islands. The Southern US has the lowest per capita income in the US, but is predicted to suffer the greatest level of total direct damages from climate change.[105] Agricultural jobs, undertaken by the poor (when not mechanized) are threatened by climate change, and agricultural workers incur increased health risks from rising temperatures. Food price increases burden the poor more than those who are better off. Low income and minority communities have less access to insurance and credit than wealthier Americans. Poorer communities with a low tax base and lower credit ratings find it harder to finance infrastructure, with implications for resilience of those communities.

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[100] *See, e.g.*, Congressional Research Service, Office of the Comptroller of the Currency's Fair Access to Financial Services Rule (Feb. 5, 2021).

[101] *See, e.g.*, John C Coffee, Jr., The Future of Disclosure: ESG, Common Ownership, and Systematic Risk, Colum. Bus. L. Rev. 602 (2021) (asking whether retail investors and institutions have the same or different disclosure needs, given that large diversified institutional investors care more about systemic risk, and want to limit externalities that some companies impose on others, whereas other investors may have a greater taste for risk); Paul G. Mahoney & Julia D. Mahoney, The New Separation of Ownership and Control: Institutional Investors and ESG, Colum. Bus. L. Rev. 840 (2021).

[102] *Cf.* Alison Herren Lee, Shelter from the Storm: Helping Investors Navigate Climate Change Risk (Mar. 21, 2022) (arguing that the SEC has the power to require disclosure of information necessary and appropriate in the public interest and to protect investors).

[103] West Virginia v EPA, 597 U.S. — (2022).

[104] *See, e.g.*, Sean J. Griffith, What's "Controversial" About ESG? A Theory of Compelled Commercial Speech under the First Amendment (May 24, 2022). Fordham Law Legal Studies Research Paper No. 4118755, Available at SSRN: https://ssrn.com/abstract=4118755 or http://dx.doi.org/10.2139/ssrn.4118755

[105] Federal Reserve Bank of New York, Understanding the Linkages between Climate Change and Inequality in the United States, No. 991 (November 2021)

These issues of inequality are also evident between countries. Some of the countries most vulnerable to climate change are also least able to engage in measures to adapt to the change.[106] And whereas wealthier countries have made promises of financing to support adaptation, the funds are not flowing in accordance with those promises.[107] Fundamentally, finance is about achieving economic returns, and if markets and regulation welcome and accept economic activity that harms the climate, that activity will continue to occur.

4 Conclusions

Climate change has huge implications for financial and non-financial businesses and is already affecting insurance and the asset management industry. Finance, and the ways in which funds are invested and lent can also have a significant impact on climate change mitigation and adaptation. However, identifying and implementing good rules to manage these issues is a complex and slow process, raising difficult questions of definition, methodology, assurance, and equity.

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[106] *Cf.* Camilla Hodgson, Climate Change Intensified Pakistan Rains up to 50%, Report Indicates, Financial Times (Sep. 15, 2022) ("When the heads of state gather at the general assembly in New York next week, they are expected to be confronted by the issue of poorer nations bearing the consequences of climate change due to the industrialisation of rich nations.") But see also arguments about the current irrelevance of the UN General Assembly. Ryan Heath, UNGA Is Dead. It's the Sideshows That Really Matter, Politico (Sep. 19, 2022).

[107] *Cf.* Scott Morris, Rowan Rockafellow & Alan Cameron, Greening the US Sovereign Bond Guarantee Program: A Proposal to Boost Climate-Directed Sovereign Finance in Developing Countries, Center for Global Development Policy Paper 250 (Feb. 2022).