# ACCELERATING SUSTAINABLE FINANCE: A NETWORK PRODUCTION MODEL OF TRANSNATIONAL REGULATORY INNOVATION

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*Abstract:*

In the past few years, the focus of international organizations and governments on sustainable finance — the integration of environmental, social, and governance ("ESG") considerations into global financial systems — has intensified because of its potential to promote financial stability, better ESG risk assessment, and more efficient allocation of capital. The greening of globally integrated financial systems is among the many transnational policy challenges that will require complex coordination among private and public innovators around the world, much faster policy responses than most countries can achieve either domestically or multilaterally, and mechanisms for coordinating or harmonizing innovations by networks of public and private actors around the globe. Accelerating solutions to this and other emerging transnational problems therefore requires new thinking about how transnational legal innovation works.

This Article develops a "network production" theory of law and policy innovation, which views regulatory innovation as a transnational production process where new rules, norms, and institutions are sourced across globally networked "supply chains" that then stimulate new forms of innovation. Building on earlier work on new governance and transnational law formation, network production theory recognizes that the process of law and policy transmission is dynamic, recursive, and driven by evolving transnational public-private governance networks as well as by the need for domestic adaptation and implementation. This Article uses sustainable finance developments in China as a case study of the network production approach and suggests how lessons from its experience could stimulate policy innovations elsewhere. It concludes by identifying implications of this model for comparative law and transnational regulatory innovation.

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## INTRODUCTION

In recent years, international organizations, financial institutions, and governments around the world have intensified their efforts to promote sustainable finance — the integration of environmental, social, and governance ("ESG") considerations into global financial systems[1]. These efforts respond to growing concern that capital markets and the regulatory frameworks that govern them do not efficiently direct capital toward sustainable development or price positive and negative externalities, and that ignoring ESG factors creates hidden risk for companies, financial systems, and entire economies.[2] But achieving a sustainable finance transition is among the many transnational regulatory challenges that cannot be achieved by any one nation unilaterally, nor solved by governments alone.

Instead, solutions to transnational problems of this sort will require complex coordination among private and public innovators around the world, much faster policy responses than most countries can achieve either domestically or multilaterally, and mechanisms for coordinating or harmonizing innovations that emerge from diverse sources. Understanding how useful policy innovations can be stimulated, shared quickly and implemented efficiently in multiple jurisdictions with very different local contexts is therefore one of the most critical challenges for policymakers today.

The question of how regulatory innovations cross national borders and the potential paths to convergence or harmonization of legal rules have long been a focus of deep literatures in comparative law, political science, sociology, and public administration. Related worked in the burgeoning governance literature has also "broadened conceptions of the sources of transnational [innovation] to include the networks of private actors, from NGOs to corporations to activists and standard-setters, that create and transmit rules and norms across borders, augmenting and at times supplanting traditional regulation emanating from nation-states and intergovernmental organizations (IGOs)."[3] While these literatures offer useful starting points, accelerating solutions to emerging transnational problems like climate change, cybersecurity risk, or demand for sustainable finance, requires a new conception of how transnational legal innovation works.

This Article develops a "network production" theory of regulatory innovation where new rules, norms, and institutions are sourced across globally networked "supply chains" that can then stimulate new forms of innovation. Building on earlier work on new governance and transnational law formation, network production theory recognizes that the process of law and policy transmission is dynamic, recursive, and driven by evolving transnational public-private governance networks, as well as by the need for domestic adaptation and implementation. Conceptualizing transnational regulatory innovation in this way is, I argue, more consistent as a descriptive matter with how transnational law and policy formation actually works. It also offers new insights for how to stimulate institutional change across jurisdictions.

To illustrate the network production model in the policy context of sustainable finance, I draw on the past decade of China's green finance reforms as a case study, considering the sources of its reform

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[1] UNITED NATIONS ENVIRONMENT PROGRAM FINANCE INITIATIVE (UNEP-FI), ROADMAP FOR A SUSTAINABLE FINANCIAL SYSTEM 9 (2017), http://unepinquiry.org/publication/roadmap-for-a-sustainable-financial-system/

[2] *Id.* at 9.

[3] Jodi L. Short, *Transplanting law in a globalized world: private transnational regulation and the legal transplant paradigm, in* COMPARATIVE LAW & REGULATION: UNDERSTANDING THE GLOBAL REGULATORY PROCESS (Francesca Bignami & David Zaring, eds. 2016), 430, 430-31.

and how lessons from those reforms could spur innovation elsewhere. Despite (or because of) its poor environmental record, China has emerged as one of the most important global test sites for sustainable finance and its sustainable finance reforms raise novel questions about whether regulators elsewhere can draw lessons from its experience. Current theories of transnational regulatory reform offer little guidance for how regulatory innovations that arise in emerging markets outside the developed West might inspire solutions to global challenges. Yet ignoring "the Rest" as sources of innovation will impede progress toward a sustainable finance transition. A network production model points to new ways that governments, international organizations, and private actors can promote "innovation snowballing"[4] and encourages them to see historical importers of regulatory innovation as potential exporters as well.

Part I of this Article introduces sustainable finance as an emerging transnational policy space. It then introduces current theories of transnational regulatory formation and explains their limitations in explaining how transnational regulatory innovation occurs. Although I refer here to legal or regulatory innovation, the term "regulatory innovation" includes here as well informal policy innovations and normative shifts that may help countries around the world respond to shared global challenges. Part II introduces the network production model of legal innovation. Part III presents the case study of China's sustainable finance reforms, focusing on their origins and identifying innovations from the Chinese context that could stimulate regulatory innovation elsewhere. Part IV concludes by considering the implications of the network production model for comparative law and transnational regulatory innovation.

## I. TRANSNATIONAL REGULATORY INNOVATION & SUSTAINABLE FINANCE

According to the European Union's 2017 sustainable finance report,

> "sustainable finance is about two imperatives. The first is to improve the contribution of finance to sustainable and inclusive growth, . . . funding society's long-term needs for innovation and infrastructure, and accelerating the shift to a low-carbon and resource-efficient economy. The second is to strengthen financial stability and asset pricing, notably by improving the assessment and management of long-term material risks and intangible drivers of value creation – including those related to environmental, social, and governance (ESG) factors."[5]

Sustainable finance is therefore an important transnational policy arena and one that is linked to the broader transnational challenges of how to achieve a low-carbon transition and advance long-term economic development.[6] Governments, investors, and international organizations from the United

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[4] On this concept, see Zachary Liscow & Quentin Karpilow, *Innovation Snowballing and Climate Law,* 95 WASH. U. L. REV. 387 (2017).

[5] EU HIGH-LEVEL EXPERT GROUP ON SUSTAINABLE FINANCE, FINANCING A SUSTAINABLE EUROPEAN ECONOMY, July 2017, at 3. *See also* U.N. & WORLD BANK, ROADMAP FOR A SUSTAINABLE FINANCIAL SYSTEM, Nov. 2017.

[6] The United Nations estimates that between USD 5 and 7 trillion is needed to achieve its 2030 Sustainable Development Goals and that developing countries face a USD 2.5 trillion funding gap. Mara Niculescu, UNDP, Impact Investment to Close the SDG Funding Gap, July 13, 2017, http://www.undp.org/content/undp/en/home/blog/2017/7/13/What-kind-of-blender-do-we-need-to-finance-the-SDGs-.html.

Nations' Environmental Programme (UNEP) and the World Bank[7] to the Organisation for Economic Co-operation and Development (OECD)[8] and the G20,[9] have concluded that financial markets and related institutions do not adequately address ESG-related risk and are not aligned to direct capital toward more sustainable purposes. For example, the G20's Financial Stability Board Task Force on Climate-Related Financial Disclosure reported in 2017 that information on environmental or climate-related risks faced by non-financial companies and by financial institutions themselves is not widely available, nor is it readily integrated into financial systems.[10] As a result, capital markets may be subject to hidden risks and market-based solutions to the policy challenges associated with climate change or sustainable development will remain elusive.[11]

Achieving a sustainable finance transition is a contemporary transnational policy challenge where faster and more effective policy innovation is imperative. Accelerated policy innovation must be coupled with transnational coordination so that sustainable finance solutions developed in different markets are mutually reinforcing and compatible. However, current models of transnational regulatory innovation, including the foundational literatures on legal transplants, policy diffusion, new governance, institutional change, and concepts of "transnational law formation," present conceptual and practical limits in thinking of how transnational regulatory innovation occurs and how to better stimulate it.

### A. THE SUSTAINABLE FINANCE CHALLENGE/SUSTAINABLE FINANCE AS A TRANSNATIONAL CHALLENGE

Sustainable finance is an important policy arena in which to examine transnational regulatory formation because it presents matters of first impression for many governments. In fact, it is one of the rare areas where the gap between North and South or developed and developing countries is relatively narrow and in some cases, reversed. Sustainable finance innovators now include not only the U.K., the European Union, and other Western governments, but emerging markets, including

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[7] In January 2014, the United Nations Environment Programme (UNEP) began its initiative to facilitate and promote sustainable finance policies. UNITED NATIONS ENVIRONMENT PROGRAM FINANCE INITIATIVE (UNEP-FI), ROADMAP FOR A SUSTAINABLE FINANCIAL SYSTEM (2017), http://unepinquiry.org/publication/roadmap-for-a-sustainable-financial-system/ (presenting an annual review of sustainable finance policy instruments and their implementation).

[8] The OECD has numerous finance initiatives related to sustainable development. *See* OECD, "Financing for Sustainable Development," http://www.oecd.org/dac/financing-sustainable-development/.

[9] *See, e.g.* UNEP-FI G20 GREEN FINANCE SYNTHESIS REPORT (2017), www.unepinquiry.org/wp-content/uploads/2017/07/2017_GFSG_Synthesis_Report_EN.pdf (presenting the findings of the G20 Green Finance Study Group). In 2017, the Task Force on Climate-Related Financial Disclosure (TCFD) of the G20's Financial Stability Board produced its final report on the financial effects of climate risk and its framework for disclosure of climate-related risk by financial institutions and other corporations. *See generally* "TCFD Publications," https://www.fsb-tcfd.org/publications/ (2017) (identifying links between climate risk, financial performance, and systemic risk).

[10] *See generally* "TCFD Publications," https://www.fsb-tcfd.org/publications/ (2017) (identifying links between climate risk, financial performance, and systemic risk).

[11] *Id.*

Malaysia, South Africa, India, Singapore, and China.[12] Because modern financial systems are globally integrated and because financial regulation affects cross-border capital flows and international financial markets, the task of creating sustainable financial systems is also by definition transnational in nature.[13]

Like many areas of modern law and policy, sustainable finance has been promoted most visibly through private governance mechanisms and by private actors, and sustainable finance innovation requires commitment and capacity-building from governments, financial institutions, and the private sector.[14] Because sustainable finance reforms are being led by civil society, institutional investors, corporations and policy advocates, as well as by governments, regulatory innovation in any area of sustainable finance necessarily involves a broad range of actors and institutions. And carrying out sustainable finance reforms requires shifting the dominant norms of business conduct across the financial sector, including financial regulators, financial institutions, boards of directors, investment managers, and their advisors. Sustainable finance also requires financial institutions and regulators to work closely with experts in sustainability-related fields that may be beyond their traditional scope.

This vast range of actors may spur faster innovation, but it also increases the complexity and coordination challenges of transnational law formation. Because of the high demand for maximum efficiency and lower transaction costs in financial markets, international financial regulation is an area where the incentives toward international harmonization and convergence are expected to be the strongest, which bodes well for a sustainable finance transition. International finance is also an area in which the European Union, the United States, the U.K., and other leading capital markets exercise strong influence on transnational norms and formal rules.[15] Nonetheless, empirical research has shown continued divergence among jurisdictions, even in areas that have been the focus of sustained harmonization efforts.[16]

Adding further complexity to the task is the fact that sustainable finance spans many areas of formal law and regulation, including: the fiduciary duties of asset managers and corporate directors and officers; periodic reporting under stock exchange listing rules and securities regulation; credit ratings; accounting standards; specialized regulation of banks and insurance companies; liability and reporting rules under labor, employment, and environmental laws and regulations; government procurement; corporate governance; and risk management and compliance requirements across all of these areas. And because financial markets are built largely through private contract, market norms and industry standards are as important as regulatory guidance or administrative rules in considering how to advance sustainable finance globally.

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[12] Public and private sector movement in the United States lags behind.

[13] Related transnational challenges include cybersecurity threats, risks to financial market stability, and the financial effects of climate change.

[14] Governments are as likely to facilitate, support, or encourage sustainable finance innovation as to drive it. *See* UNEP-FI (2017).

[15] *See, e.g.* Michaels & Jansen, 2006; R. Daniel Kelemen, *Regulation in the European Union, in* COMPARATIVE LAW & REGULATION: UNDERSTANDING THE GLOBAL REGULATORY PROCESS (Francesca Bignami & David Zaring, eds. 2016) (discussing the strong global influence of EU regulation).

[16] *See, e.g.* Eroglu (2018) (regarding continued divergence in the implementation of IFRS within Europe).

### B. LEGAL TRANSPLANTS, POLICY DIFFUSION, & TRANSNATIONAL LAW FORMATION

Accelerating policy innovation requires that successful ideas can be readily shared across jurisdictions, a task to which comparative law offers important contributions. Indeed, a long-standing focus of comparative law scholarship is on legal transplants – that is, the question of how formal legal rules, institutions, or systems from one source jurisdiction may be transferred to the other.[17] Comparative law has also analyzed the factors that enable approaches that succeed in one jurisdiction function successfully in another, in other words, identifying the factors that make a transplant more likely to "take." The legal transplant literature has also usefully distinguished between formal and functional transplants, recognizing that transplanted rules or institutions may function very differently in different soil, that functionally equivalent results may be achieved through formally different means, and that most transplants must be adapted or indigenized before they can function effectively in their new environment.

In general, the focus of transplant theory is primarily on the agency and intentionality of the governments who coerce, transfer, or borrow the transplant.[18] The transplant literature has also tended to emphasize the role of state actors and the transfer of formal legal rules or institutions, such as the jury system or courts, even though norms, customs, and informal instruments are also commonly transmitted among jurisdictions.[19]

These understandings of how legal innovation is shared across jurisdictions have also evolved to address the increasing complexity of transnational law formation. Harold Koh and others have, for example, observed that international treaties and non-binding instruments at the international level are often inspired by domestic law.[20] Although legal transplants have often been analyzed as a unilateral, horizontal transfers from one state to another, legal transplants that inform or are transmitted through international law add a vertical dimension, involving the transfer of new policy ideas or rules from one or more states up to the international level and then potentially back down again to other states. In contrast to earlier legal transplant models, this approach also recognizes that transnational law formation may be bidirectional as well.

The literature on policy diffusion has further explored how behavioral norms and other rules and institutions spread across jurisdictional boundaries.[21] Policy diffusion has been defined as "the

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[17] Legal transplants may be both direct, as in the case of the adoption of England's common law system by the United States and Commonwealth countries, or indirect, as in the reception of European (primarily German) legal codes and institutions by Qing dynasty China via Japan.

[18] *See* David Marsh & J.C. Sharman, *Policy Diffusion and Policy Transfer*, 30 POL'Y STUD. 269, 274 (2009) (noting that the diffusion literature focuses more on structural explanations for policy transmission, while the agency literature focuses more heavily on agency).

[19] Short, *Transplanting Law* (2016).

[20] Harold Koh, *Why Transnational Law Matters,* 24 PENN. ST. L. REV. 745, 745-46 (2006) (describing the horizontal and vertical dimensions of transnational law as "uploaded, then downloaded"); *See also* Matthias Siems, *Comparative Law* (2014), at 251 (observing that "a particular transnational norm may have its origins in one of the domestic legal systems").

[21] *See generally* David Marsh & J.C. Sharman, *Policy Diffusion and Policy Transfer*, 30 POL'Y STUD. 269, 271 (2009); J. True & M. Mintrom, *Transnational Networks & Policy Diffusion: The Case of Gender Mainstreaming,*

process by which policy innovations are communicated in the international system and adopted voluntarily by an increasing number of countries over time."[22] The word "diffusion" implies a more passive, spontaneous, and organic process than "transplant" or "transfer," which imply active agency by the source (exporter) or the recipient (importer). Diffusion is understood to be "driven by information flows rather than hierarchical or collective decision making within international institutions."[23] Overlapping somewhat with the legal transplant literature, policy diffusion scholars observe that coercion, competition, learning, and acculturation or social construction, that is, a desire to gain legitimacy and international recognition, are all drivers of regulatory and policy diffusion.[24]

Both the legal transplant theory and studies on policy diffusion have been enriched by the new governance literature, which observes that regulation is no longer the sole domain of the state or of international organizations, but is defined, enforced, and transmitted by a wide range of private, public, and public-private actors, including global companies, NGOs, and various interest group networks.[25] Interactions among these private and public actors and institutions are also the means by which informal behavioral norms and other institutions spread across jurisdictional boundaries. It has also emphasized the potential for "soft law" governance tools such as codes of conduct, voluntary regimes, self-regulation, and peer influence to drive institutional change.[26] As Gunther Teubner has observed, "the new living law of the world is nourished not from stores of tradition but from the ongoing self-reproduction of highly technical, highly specialized, often formally organized and rather narrowly defined, global networks of an economic, cultural, academic, or technological nature."[27] The emergence of these networks broadens the mechanisms for policy diffusion, as well as the potential sources of regulatory innovation.

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45(1) INTL STUDIES Q. 27 (2001). On concepts of "network diffusion," *see also* [Davis 1991; Powell 1993; Davis & Greve 1997].

[22] Rogers (2003), at 5.

[23] Rogers (2003), 5.

[24] *See generally* Frank Dobbin et al., *The Global Diffusion of Public Policies: Social Construction, Coercion, Competition, or Learning?* 33 ANN. REV. SOC. 449 (2007); Marsh & Sharman (2009), *supra* note __, at 271-72, 281-285 (identifying learning, competition for investment capital, coercion, and mimicking the source jurisdiction as key diffusion mechanisms); Per-olof Busch & Helge Jörgens, *The International Sources of Policy Convergence: explaining the spread of environmental policy innovations,* 12 J. EUR. PUB. POL'Y 860 (2005); Goderis & Versteeg (2014).

[25] *See, e.g.* William T. Worster, *The Transformation of Quantity into Quality: Critical Mass in the Formation of Customary International Law,* 31 B. U. INT'L L. J. 1, 35-57 (2013) (discussing the role of networks in norm diffusion).

[26] ANNE-MARIE SLAUGHTER, A NEW WORLD ORDER (2005); Christopher Brummer, *Minilateralism: How Trade Alliances, Soft Law and Financial Engineering Are Redefining International Statecraft* (2014) (harmonization of intl finreg within the EU).

[27] Gunther Teubner, *Global Bukowina: Legal Pluralism in the World Society,"* in Gunter Teubner (ed.), *Global Law Without a State,* Dartmouth: Aldershot, pp. 3-28, at 7. A further insight from these studies is that the interactions among these transnational networks are not only means for law and policy diffusion but also determine the nature of *what is being transmitted,* which can give rise to new regulatory or policy innovations.

International law scholars have particularly highlighted the role of international institutions, such the WTO, the United Nations and the G20, in the post-World War II era, as a conduit for legal diffusion, as a primary situs for coordinating multilateral solutions to policy problems among sovereign states, and as a forum for the development of new formal legal frameworks to address common problems.[28] A prime example from international financial regulation is the diffusion of the CAMELS rating system developed by the U.S. Federal Reserve to guide risk-based regulation of financial institutions.[29] It was adopted by the Hong Kong Monetary Authority in 1998 and then by Australia, Canada, and others, before being adopted by the OECD, ESMA, and IOSCO and ultimately being incorporated in the Basel Principles for Banking Supervision in 2012.[30] Similarly, treaties and international norms have long been based on national experimentation. For example, international law has imported environmental law concepts from national law into the Rio and Kyoto climate change treaties.[31]

In the area of sustainable finance, a range of international institutions including the United Nations Environmental Programme Finance Initiative, the G20's Financial Stability Board (TCFD), the Worldwide Federation of Exchanges (WFE), and the International Organisation of Securities Commissions (IOSCO), have been actively involved in advocating a sustainable finance transition. These organizations also support and coordinate domestic regulatory initiatives, and bring together financial institutions, regulators, finance-sector professionals, and other interested parties to develop principles that can be implemented by governments and financial institutions around the globe.[32] These efforts have already led to the development of specific non-binding soft-law guidance related to climate risk disclosure[33] and ESG reporting[34] that seeks to influence market norms and future regulatory changes.

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[28] *See* PETER H. SAND, TRANSNATIONAL ENVIRONMENTAL LAW: LESSONS IN GLOBAL CHANGE 241 (1999) (applying diffusion theory to environmental law. *See also* William Twining, *Diffusion and Globalization Discourse,* 47 HARV. INT'L L. J. 507 (2006); David Westbrook, *Theorizing the Diffusion of Law: Conceptual Difficulties, Unstable Imaginations, and the Effort to Think Gracefully Nonetheless* , 47 HARV. INT'L L.J. 489 (2006)

[29] CAMELS stands for "capital, assets, management capability, earnings, liquidity, and sensitivity to market risk." This example comes from OXFORD HANDBOOK OF FINANCIAL REGULATION 241-243 & fn 143 (Niamh Moloney et al., eds.) (2014). *See also* Pierre-Hugues Verdier, *The Political Economy of International Financial Regulation,* 2013 88 IND. L.J. 1405.

[30] *Id.*

[31] Jonathan B. Wiener, *Something Borrowed For Something Blue: Legal Transplants and the Evolution of Global Environmental Law,* 27 ECOLOGY L. Q. 1296 (2001) (citing emissions trading and the comprehensive approach as two examples).

[32] Many of these organizations were also actively engaged in the developments that surrounded the Paris Accord.

[33] TCFD 2017 Report.

[34] *Sustainable Stock Exchange Initiative Model Guidance on Reporting ESG Information to Investors (*2017), http://www.sseinitiative.org/wp-content/uploads/2017/06/SSE-Model-Guidance-on-Reporting-ESG.pdf.

Another leading example of diffusion in the area of sustainable finance is the implementation of the Equator Principles by leading global banks.[35] The International Finance Corporation, the private development arm of the World Bank Group, initially developed its own standards for evaluating environmental and social risks in its own development and infrastructure projects under pressure from NGOs. These standards became the basis for the Equator Principles, a voluntary framework under which banks commit to apply environmental and social standards to project finance investments that they fund.

Both the diffusion literature and the legal transplant literature focus largely on the unidirectional transmission of norms, rules, and institutions. They have also largely focused on how legal and policy innovation has spread historically from powerful or "developed" states to less powerful, developing ones. One distinction is that the transplant literature focuses on innovation transfer from one source to a single recipient, while the diffusion literature focuses on the process by which concepts or institutions spread to multiple actors, institutions, and jurisdictions and across governance networks.

Other scholars have integrated these strands to explain how networked governance influences transnational law formation. In contrast to international law, which governs the rights and obligations of nation-states, "transnational law" has been defined as law that "focuses on the transnational production of legal norms and institutional forms and their migration across borders, regardless of whether they address transnational activities or purely national ones" [36] Drawing on new governance themes, this framework for transnational law formation rests on networks of actors beyond the nation state "that comprise not only international organizations, but also bureaucratic networks of public officials, hybrid public-private networks, and networks of purely private parties, creating hard and soft law rules and norms."[37] In this conception of transnational law construction and the flow or diffusion of legal norms, governance networks "play a role in constructing and diffusing legal norms, even if the legal norm is taken in large part from a national legal model, such as a powerful state like the United States."[38]

Shaffer et al.'s concept of transnational law formation emphasizes the recursivity of regulatory transmission, developed by Terence Halliday and Bruce Carruthers, a concept that is critical to the acceleration of transnational regulatory innovation.[39] Instead of seeing the process of transnational law formation as unidirectional, it is one "in which the transnational and local are held in tension, the actors engaged in transnational legal processes seek to influence local lawmaking and practice, and the national legal norms, adaptations, and resistances provide models for and feed back into transnational

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[35] Based on a broad survey of these banks, Ariel Meyerstein has studied the role of peer effects in driving banks to voluntarily accede to the Equator Principles and then to implement its environmental risk assessment and transparency principles in practice. Ariel Meyerstein, *Transational Private Financial Regulation and Sustainable Development: An Empirical Assessment of the Implementation of the Equator Principles,* 45 NYU J INTL L & POL'Y 487 (2012-2013) (discussing self-regulation, peer effects, institutional change literature).

[36] Gregory Shaffer, *Transnational Legal Process and State Change,* 37 LAW & SOC. INQUIRY 229, 234 (2012)

[37] Shaffer at p. 236 (citing Kingsbury, Krisch, and Stewart 2005).

[38] Shaffer (2012) at 235.

[39] Shaffer (2012) at 238 (citing Terence Halliday & Bruce Carruthers, *The Recursivity of Law: Global Norm-Making and National Lawmaking the Globalization of Corporate Insolvency Regimes,* 112 Am. J. Sociol. 1135 (2007)).

law."[40] As a result, transnational legal process is a "multidirectional, diachronic process of legal change."[41] An example of this more complex vision of transnational law formation is the United Nations' Guiding Principles for Business and Human Rights and the "Protect, Respect, and Remedy" Framework, which were the product of a multi-stage, multistakeholder dialogue and reflected existing international treaties, private governance codes, and the vast range of actors hat impact and are impacted by business operations.[42]

Shaffer et al.'s theory of transnational law formation is a useful account of the interplay between diverse sources of law and the dynamic nature of transnational law formation, but further work is needed to explore how the dynamics they observe can be harnessed to solve global policy problems. Shaffer et al. note that transnational law "is given force and effect when it becomes embedded in a national legal system," but the question remains – how can actors at the national and international level stimulate innovation that can be readily adopted nationally and also feed into a recursive "snowballing" of policy innovation?

In addition, because of historical patterns of legal transplant from developed source countries to less-developed recipients, the existing literature largely fails to consider the possibility of regulatory innovation from non-Western or developing countries diffusing toward Western jurisdictions.[43] This reinforces the normal biases of policymakers in favor of familiar models and those advanced by their self-identified peers. This bias is particularly problematic when China is emerging as a global leader and emerging markets around the world are experimenting in important regulatory arenas and when developing countries are those most directly impacted by climate change and other emerging global threats. Accordingly, conceptions of how regulatory innovation occurs must continue to evolve if we are to first identify and then facilitate, paths to transnational innovation that can meet global policy challenges. This task is the focus of Part II.

## II. A NETWORK PRODUCTION MODEL OF REGULATORY INNOVATION

Despite the public rethinking of the benefits of globalized production and free trade today, it is still difficult today to label many common consumer goods "Made in __" without obscuring the truly transnational nature of global production. Take, for example, the Apple iPhone. Its "Made in China" label belies the fact that the iPhone is assembled in China by Foxconn, a Taiwanese multinational, from Samsung screens sourced in South Korea, memory chips from South Korea and Japan, and

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[40] *Id.*

[41] *Id.*

[42] Guiding Principles for Business and Human Rights (2011), https://www.ohchr.org/Documents/Publications/GuidingPrinciplesBusinessHR_EN.pdf

[43] *See, e.g.* Shaffer, __, at 231: "The primary difference between the United States and the European Union and the countries studied in this volume lies in the general direction of transnational flows, with the United States and European Union more likely being producers of transnational legal norms, as opposed to being appropriators of them. In a globalized world, much of law is subject to transnational influences and pressures, but more powerful states are the primary exporters of legal norms.") There are rare exceptions. *See generally* Máximo Langer, *Revolution in Latin American Criminal Procedure: Diffusion of Legal Ideas from the Periphery,* 55 AM. J. COMP. L. 617 (2007) (exploring South-North diffusion of innovations in criminal procedure by Latin American legal entrepreneurs)

other components sourced from Taiwan, the U.S., and Europe.[44] The iPhone's core research and design is done in California.[45]

What if creating new transnational rules and institutions worked the same way? Perhaps it does. In fact, the modern globally integrated supply chain is a useful conceptual analogue for the processes by which new regulation and new institutions to address transnational problems can emerge in many jurisdictions and policy spaces. This Part introduces a "network production" model of regulatory innovation that goes beyond the foundations introduced in Part I to offer useful insights into the processes and products of transnational law formation.

### A. GLOBAL PRODUCTION & INNOVATION

One of the most dramatic successes of the twenty-first century has been the spread of economic development across the globe, diversifying global sources of innovation to include emerging markets like South Korea and China. Global trade and investment have also enabled many emerging markets to piggyback from third-world to first-world consumer products and technologies, such as cell phones and solar electricity, which has further fueled their productivity and the pace of home grown innovation. Most countries began to develop advanced manufacturing capabilities and local innovations with the help of foreign investment and access to new markets, in other words through foreign transplants, borrowing, and knowledge diffusion. These patterns of global production offer an intriguing roadmap for how to catalyze exponential innovation.

Another advantage of globally integrated production for multinational companies is that it allows them to capitalize on the comparative advantages and resources of different markets, including access to human capital. Many companies who have integrated their operations and their personnel around the globe have done so specifically to connect innovation hubs within their organization that may be based in different jurisdictions in order to drive future innovation and growth. Accelerating the pace of legal innovation and the degree to which it can be implemented across multiple jurisdictions will require similar processes.

Network production theory builds on these earlier theories of transnational law formation to consider how regulatory innovation can arise at the national and subnational levels through transnational networks and how these processes can generate diverse sources of innovation that can feed into transnational and international policy processes. The term networked "production," like "formation" or "construction" is a process of building and developing a complex outcome from multiple source "components" that may be sourced locally or may be transmitted from many other sources through dynamic, interconnected global networks of actors. In contrast to Shaffer et al.'s theory of transnational law formation, network production theory builds on these features to explore how transnational innovation in fact occurs.

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[44] Adam Jourdan, *Designed in California, Made in China: How the iPhone Skews the U.S. Trade Deficit,* REUTERS, Mar. 21, 2018, https://www.reuters.com/article/us-usa-trade-china-apple/designed-in-california-made-in-china-how-the-iphone-skews-u-s-trade-deficit-idUSKBN1GX1GZ.

[45] Jourdan, *id.*

Network production theory includes the following elements:

- *Scope*. Like the other theories explored here, regulatory innovation includes not only formal legal rules, institutions, or systems but also private governance or "soft law" norms and instruments.
- *Pluralistic, networked sources*. Regulatory innovation is produced by a "global supply chain" of private, public, and hybrid actors intersecting at multiple national, subnational, and transnational levels, across sectors, and across jurisdictions.[46]
- *Multidirectional, recursive & dynamic process*. Diffusion of regulatory innovation is not primarily unidirectional or even bilateral, but is more often multidirectional, transmitted through transnational networks of public and private actors both horizontally and vertically. It also diffuses recursively, such that all "sources" may also become "recipients," enhancing learning effects[47]
- *Voluntary*. Because innovation cannot be coerced, network production proceeds primarily through learning, knowledge transfer, and competition, drivers that are a subset of the forces that have been observed to drive legal transfer and policy diffusion.
- *Acceleration through Value-Added Innovation*. As Part B explains, network production emphasizes the potential for value-added innovation arising in multiple jurisdictions to accelerate complementary transnational regulatory reforms. It incorporates, rather than displaces, concepts of transfer and diffusion.
- *International Coordination*. Governments, intergovernmental organizations, and other transnational organizations play a coordinating role analogous to the role senior managers under the board of directors might coordinate sourcing and production for a modern multinational.

The theory developed here fills important gaps in earlier conceptual frameworks by explaining the process by which network regulatory innovation can occur. In addition, viewing regulatory innovation as a multifaceted production process raises heretofore overlooked questions about how to incentivize and coordinate innovation originating at various sites within the network. This Article therefore generates testable hypotheses about the elements that are necessary for transnational network regulatory production to succeed. And thinking of regulatory innovation in this way may also help policymakers and the public in countries that are historically "exporters" of regulatory innovation to consider solutions to global problems that they might otherwise reject. In other words, it may be easier for the West to learn from "the Rest" if policy innovations are no longer identifiably "theirs" but "ours."

### B. FORMS OF NETWORK PRODUCTION

The following discussion explores how network production works across four different forms of increasing complexity: (i) Export Model; (ii) Adaptive Export Model; (iii) Value-Added Export Model;

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[46] *See, e.g.* Slaughter (2003); Twining (2005); Shaffer et al. (2012), at 236; Kingsbury et al. (2005); Michaels (2006).

[47] As noted above, this dimension is one first emphasized by Halliday and Carruthers and later by Shaffer et al. Diffusion as part of network production occurs horizontally, by pluralistic networks of diverse actors, both public, private, and hybrid, as well as vertically, by linkages between horizontal networks that connect domestic actors transnationally, and international organizations and governance networks that operate among states.

and (iv) Transnational Network production. These forms are not necessarily sequential and could occur simultaneously through overlapping transnational networks, and with respect to different rules or norms. They do, however, move from the simplest output, an innovation sourced entirely in one (foreign) jurisdiction, to a more complex "product" requiring multinational coordination, sourcing, and distribution. Although the final product in each case is transnational, each will have a different degree of 'local" and "foreign-sourced" content.

1. *Form I: Export Model (The Pure Legal Transplant)*

The simplest form of international commercial transaction is the export of a product designed and manufactured wholly in one country to purchasers in another. Agricultural products, furniture, and raw materials may be produced or extracted entirely in one country and then exported without further modification to another country. Similarly, the legal rules, standards, and norms that emerge out of whole cloth in one jurisdiction may be borrowed or transferred to another as a direct bilateral export. Like exported products, these regulatory innovations by the source jurisdiction or actor will be applied by "consumers" in the importing country only if they satisfy needs of the new market. While unidirectional exports are important components of network production, transnational policy challenges cannot be solved solely in this fashion.

2. *Form II: Adaptive Export (Adapted Legal Transplant)*

To take the analogy one step further, a company that intends to reach a foreign market effectively often finds that products developed at home must be adapted to meet local consumer demand. Fast-food franchises have perfected this strategy, but most legal transplants also fit this model. As with localized menu items or other consumer goods, local experts may generate new regulatory innovations as they modify a foreign rule or principle to suit the local context.[48] For example, director independence standards for public companies that were developed in the United States have been adapted to fit into local company law and stock exchange listing rules around the world. Soft law standards too are often similarly adapted. For example, China's homegrown corporate social responsibility standards were developed with reference to the Global Reporting Initiative (GRI) framework and other international models, but were revised to suit the Chinese context.[49] Within the European Union, regulatory innovation is routinely adapted when Directives are transposed into national law.

This kind of adaptation can occur both formally and functionally, and can integrate both "soft law" and "hard law" inputs. For example, the Equator Principles were originally developed by the International Finance Corporation as a voluntary standard for international banks under which they would commit to apply environmental and social standards to a narrow subset of bank lending operations, namely large-scale infrastructure financing. In China, however, the Equator Principles have been adopted by both signatory and non-signatory banks and have been applied by some banks

[48] Of course, the exporter may also decide to produce a new version of the product at home for the foreign market, a choice that is less realistic in a post-colonial era where the source jurisdiction does not determine and often cannot know what adaptations a given rule or policy may require to succeed abroad.

[49] These include CASS CSR 3.0. Most Chinese state-owned enterprises and large multinationals use the GRI or other international standards, but Chinese CSR standards are seen as more attainable as a first step for smaller firms unfamiliar with these frameworks. Other examples include Japan's adaptation of the U.K.'s Investor Stewardship Guidelines.

to all lending of a certain scale, not just to project finance. The Equator Principles have also influenced emerging regulatory guidance and administrative rules that may soon be mandatory for all Chinese banks.[50] These adaptations represent a localized form of regulatory innovation that may be useful for other jurisdictions, but their "re-export" may also require further innovation in order to be applied in other contexts, as the following model describes.

3. *Form III: Value-Added Model*

The value-added model of network production is one where transnational innovation begins to pick up speed. Here, a manufacturer in one jurisdiction sources components from one or more other source countries, then processes or assembles them in a way that adds value or modifies the original components into a new product, for example, the Apple iPhone. The final product may be sold back to the (foreign) source countries, to local (recipient) consumers, or to other markets. The management of this process may be local or foreign or may be integrated. The value-added model is quite similar to the adaptive export model, except that the end "product" is intended for both domestic and foreign users.

Regulatory innovation, in this model, can emerge from local governments or thought leaders as they draw on foreign inputs, but innovation emerges in the process of developing a new policy solution that is not necessarily specific to the local context but is intended for or amenable to adoption elsewhere. For example, in 2010 the United Kingdom introduced voluntary guidelines for institutional investors to encourage greater transparency around asset management policies. These investor stewardship guidelines were imported by the Japanese government and made mandatory for certain asset managers and financial analysts. While initiated and adapted to the Japanese context, the transformation from a voluntary standard to a mandatory rule offers a ready model for other jurisdictions, but the final "product" bears clear imprints from both the U.K. and Japanese innovations.

4. *Form IV: Transnational Network Production*

In modern global supply chains, R&D, components sourcing, and assembly involve multiple jurisdictions before a product reaches the ultimate consumer. Similarly, Form IV is a fully fledged network production model where local innovation is globally integrated. That is to say, regulatory innovation is the product of transnational "research and development" involving multiple experimental sites, multiple jurisdictions, and a mix of both local and foreign or international innovations. Ideas developed in this way depend on global innovation networks but stimulate innovations at the national level that can be "globally competitive," meaning that they can be readily considered, transmitted, or adopted by institutions and actors beyond the national context. Just as innovations in cell phone technology and online payment platforms are advancing in many Asian markets at a speed that outpaces many of the Western countries that initially developed such technologies, so regulatory innovations can be developed through a transnational network production by actors and institutions in emerging markets that are pathbreaking and designed to offer global solutions.

As discussed below, the most common facilitators by which source inputs are transmitted into the national context and new innovations are shared are through inter-governmental organizations (IGOs), such as the United Nations' sustainable finance networks, or by governments themselves. Examples

[50] Concepts drawn from the Equator Principles' environmental and social risk evaluation principles have been incorporated into China's 2012 Green Credit Guidelines, which may become obligatory in the near future for China's leading banks.

of this kind of innovation include South Africa's integrated reporting reforms that were embraced by the International Integrated Reporting Council (IRRC), which has then developed, tested, and promoted an integrated reporting framework based on the South African experience.[51] This framework is being used on a voluntary basis by some of the largest corporations in the United States and Europe. However, the creation of integrated reporting, a transnational disclosure framework, is a South African innovation. An open question for the future is whether the South Africas of the world could become direct exporters of their own innovations or will continue to depend on intermediaries with stronger distribution networks and reputational capital to do so.

### C. COORDINATING INNOVATION

Accelerating innovation requires diverse policy experiments whose outcomes can be shared and adapted rapidly, but efficient innovation also requires transnational coordination. In a multinational enterprise, global production is coordinated by management teams under the strategic direction of central and regional headquarters. As Abbott and Snidal have observed in their seminal work on transnational new governance,[52] the proliferation of actors and policy tools that are now engaged in transnational regulatory innovation naturally exacerbates these coordination problems,[53] but there is no parallel in the international sphere to the corporate headquarters. In the absence of a central coordinating mechanism, Abbott and Snidal have highlighted the critical role of national governments and international organizations in resolving this "orchestration deficit."[54] The importance of the public sector and of intergovernmental organizations (IGOs) at the international level to coordinate and facilitate the work of transnational networks is a conclusion echoed throughout the new governance literature, as well as in studies of collaborative governance and transnational legal diffusion.[55]

The difference is that corporate managers have the ability to determine where the primary source of innovation for the organization will be developed and to allocate research and development resources accordingly, whereas IGOs and states cannot dictate where regulatory innovation arises. Indeed, it is this distinction that creates the prospect of new regulatory innovations arising from unexpected quarters. And, like multinational managers, they do have the ability to observe where innovation occurs and to facilitate its diffusion and translation globally.

Another critical contribution governments make to network production is to counter-balance private, corporate, and non-state innovation that may disadvantage public participation and give short shrift

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[51] The U.N. Business and Human Rights Project is another example. Both of these, however, involved transnational or foreign actors' participation to further develop the "product" for global consumption.

[52] Kenneth W. Abbott & Duncan Snidal, *Strengthening International Regulation Through Transnational New Governance: Overcoming the Orchestration Deficit,* 42 VAND. J. TRANSNAT'L L. 501 (2009).

[53] Abbott & Snidal (2009).

[54] Abbott & Snidal (2009).

[55] Steven Bernstein, *Legitimacy in Global Environmental Governance*, 1 J. INT'L L. & INTL REL. 139 & fn. 3 (2004) (identifying the following sources of legitimacy: *democratic legitimacy:* avenues for democratic participation by non-state actors, multistakeholder dialogue, public participation and transparency; *legal legitimacy;* and *sociological* legitimacy).

to important public policy concerns.[56] State participation also confers legal and democratic legitimacy that is missing when transnational regulation emerges through processes driven by non-state actors.

## III. SUSTAINABLE FINANCE IN CHINA: A CASE STUDY OF TRANSNATIONAL NETWORK PRODUCTION

For over a decade, China has been building policy frameworks for sustainable finance that incentivize environmental sustainability, "green development," and its transition toward a "green economy." [57] China also initiated strategic initiatives on green finance in 2016 as part of its presidency of the G20 and continues to promote green finance innovation.[58] The reasons for this policy push are pressures common to much of the Global South. China's rapid economic development has left in its wake serious environmental degradation and motivated the central government to prioritize sustainable development. Its growing energy demands will require new sources that include renewables, and its current economic priorities include achieving global leadership in emerging green technology sectors. China's highly visible sustainable finance initiatives are already raising questions about its ability to take global leadership on climate change and low-carbon transition issues.[59]

China therefore is a useful case study in which to consider the sources of its policies and standards and whether they can inspire useful regulatory innovations elsewhere. It is a particularly interesting example because China has borrowed extensively from other legal systems throughout the reform period[60] and because China's capital markets and financial institutions do not operate on solely market terms, are plagued by a lack of transparency, and have not been regarded as models of global best

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[56] Bernstein (2004), at 165. Commentators have observed that the rise of new governance "gives corporate voices a disproportionate say in policy development and implementation at the expense of state representatives and public participation." *Id.* Bernstein questions whether UNEP "participatory reforms," for example, can balance states and markets "absent the public authority of states." *Id.* at 165.

[57] PEOPLE'S BANK OF CHINA (PBOC), CHINA MINISTRY OF FINANCE (MOF), NATIONAL DEVELOPMENT AND REFORM COMMISSION (NDRC), CHINA MINISTRY OF ENVIRONMENTAL PROTECTION (MEP), CHINA BANKING REGULATORY COMMISSION (CBRC), CHINA SECURITIES REGULATORY COMMISSION (CSRC), CHINA INSURANCE REGULATORY COMMISSION (CIRC), GUIDING OPINION ON ESTABLISHING THE GREEN FINANCIAL SYSTEM [关于构建金融体系的指导意见], prom. 31 Aug. 2016; PEOPLE'S BANK OF CHINA, UNEP, ESTABLISHING CHINA'S GREEN FINANCIAL SYSTEM: FINAL REPORT OF THE GREEN FINANCE TASK FORCE (2015), http://www.unepfi.org/news/establishing-chinas-green-financial-system-report-of-the-green-finance-task-force/.

[58] G20 GREEN FINANCE SYNTHESIS REPORT (2017), at 3.

[59] Descamps, "Is China on the Road to Environmental Leadership?", http://isdp.eu/china-environmental-leadership/; Dominic Chiu, "The East is Green: China's Global Leadership in Renewable Energy," CSIS (2017?), https://www.csis.org/east-green-chinas-global-leadership-renewable-energy; Daniel de Oliveira Vasconcelos, "The Stumbling Blocks to China's Green Transition," Apr. 21, 2018, https://thediplomat.com/2018/04/the-stumbling-blocks-to-chinas-green-transition/

[60] The Xi administration has adopted policies, more recently, to discourage borrowing from the West and to encourage greater reliance on China's own resources, both for economic growth and in terms of law and policy.

practice. Whether innovations arising in such a context can aid the sustainable finance transition remains to be seen. This section explores the origins of China's sustainable finance reforms using a network production lens and also suggests elements of China's 2012 Green Credit Guidelines and related audit rules as emerging examples of value-added innovation.

A. ORIGINS OF SUSTAINABLE FINANCE IN CHINA

Over the past decade, the Chinese government has introduced an array of top-down mechanisms to more clearly define "green" investments, to encourage the development of green financial products, and to create an oversight framework for financial institutions in order to enforce the new policies.[61] These reforms are aligned and driven by the central government's economic development goals, as reflected in China's 12th (2011- 2015) and 13th (2016-2020) Five-Year Plans, which promote green and low-carbon development.[62] China's international commitments to address climate change are also spurring on these initiatives.[63]

Although China's green finance reforms have their roots in administrative guidance issued in the 1990s,[64] current initiatives trace most directly to the mid-2000s, which saw the introduction of policies to promote a "harmonious society" and address the environmental impact of China's breakneck development. Core policies introduced in 2006 and 2007 by the State Environmental Protection Agency (SEPA), predecessor to the MEP, in cooperation with the CBRC and the PBOC, represent the first phase of China's green finance reforms.

Between 2014 and 2016, financial regulators introduced a new second-generation green finance framework that signaled the central government's strong policy support for green finance. These policies were spurred on by China's 13th (2016-2020) Five-Year Plan, which explicitly requires the establishment of a green financial system and includes proposals to develop a green bond market, green credit policies, and green development funds. [65] At the end of 2015, an initial broad template for green finance policy was rolled out by the PBOC in cooperation with the United Nations' Environment Programme Finance Initiative (UNEP-FI) in a report entitled "Establishing China's Green Financial System."[66] It expands on the green finance programs introduced in 2007 to cover fourteen different initiatives: green credit, green listing, carbon trading, and mandatory green insurance programs, as well as plans to develop or expand green ratings, green indices, and mandatory environmental disclosures for listed firms and bond issuers. The report also considers the possibility

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[61] Much of this discussion draws on sources further explored in my prior work. *See generally* Virginia Harper Ho, *Sustainable Finance & China's Green Credit Reforms: A Test Case for Bank Monitoring of Environmental Risk,* 51 CORNELL INT'L L. J. __ (forthcoming 2018).

[62] The Thirteenth Five-Year Plan for Economic & Social Development of the PRC [中华人民共和国经济和社会发展第十三个五年规划纲要], Mar. 17, 2016. http://en.ndrc.gov.cn/newsrelease/201612/P020161207645765233498.pdf.

[63] NDRC, CHINA'S POLICIES AND ACTIONS FOR ADDRESSING CLIMATE CHANGE, Oct. 2017.

[64] *See* Aizawa & Yang, at 126 (discussing the PBOC's initial *Notice on Implementing Credit Policies and Enhancing Environmental Protection,* issued in 1995). This notice urged banks to "implement national environmental protection policy in credit activities." Zhang et al., at 1322.

[65] Thirteenth Five-Year Plan, *supra* note __.

[66] *See generally* PBOC, UENP, ESTABLISHING CHINA'S GREEN FINANCIAL SYSTEM: FINAL REPORT OF THE GREEN FINANCE TASK FORCE (2015).

of new incentives, such as preferential interest rates and eligibility requirements for green credit, to be administered through government finance departments, policy banks, and commercial banks.[67] The official roll-out of a definitive next-generation green finance framework came in August 2016, when seven central-level ministries jointly issued a new "Guiding Opinion for Establishing the Green Financial System," sending a unified message of backing for green finance policy.[68] The framework outlines central government plans to promote green credit, expand the green bond market, promote green development funds, expand green insurance, and implement other elements of the PBOC's 2015 template.[69] Many of these objectives are already being operationalized.[70]

What may not be obvious from a cursory review of these policy documents is that China's green finance innovations build heavily on outside sources and are the product of transnational cross-pollination across multiple overlapping transnational networks. To get a sense of the breadth of these networks, one only has to identify the seven ministries that are behind the 2016 Green Finance Guiding Opinion: the People's Bank of China, China Ministry of Finance, the National Development and Reform Commission, China Ministry of Environmental Protection (now the Ministry of Ecology and Environment), the China Banking Regulatory Commission (CBRC), the China Securities Regulatory Commission (CSRC), and the China Insurance Regulatory Commission (CIRC) (since consolidated with the CBRC). Of these, the primary regulators responsible for establishing green finance standards are the People's Bank of China (PBOC), China's central bank, China's bank regulator, and the China Banking and Insurance Regulatory Commission (CBIRC), which was reconstituted in 2018 by merging the CBRC and the CIRC. Green finance standards and practice are also influenced by guidance and voluntary standards created by international and domestic organizations, including the China Banking Association, other trade associations, and NGOs.[71] NGOs also play a monitoring role with respect to the environmental and social impacts of projects

[67] *Id.* at 36.

[68] People's Bank of China, China Ministry of Finance, National Development and Reform Commission, China Ministry of Environmental Protection, China Banking Regulatory Commission, China Securities Regulatory Commission, China Insurance Regulatory Commission (2016), *Guiding Opinion on Establishing the Green Financial System* [关于构建金融体系的指导意见], No. 228, 31 Aug. 2016.

[69] *Id.*

[70] *See generally* Harper Ho (2018).

[71] Corporate social responsibility guidelines for the banking sector have been introduced by the CBRC and the China Banking Association. CBRC OPINION ON STRENGTHENING THE SOCIAL RESPONSIBILITY OF THE BANKING SECTOR AND FINANCIAL INSTITUTIONS [中国银行监督会关于加强银行业金融机构社会责任的意见], No. 252, prom. Dec. 5, 2017; China Banking Association Corporate Social Responsibility Guidance for Financial Institutions [中国银行业金融机构企业社会责任指引], Jan. 12, 2009. NGOs who monitor the environmental impact of financial institutions include BankTrack and the World Wildlife Federation. *See* examples in Yunwen Bai, et al., *The Role of China's Banking Sector in Providing Green Finance,* 90 DUKE ENVTL. L. J. 89, 125 (2013).

funded at home or abroad by Chinese financial institutions, so civil society networks are also relevant to the diffusion of norms and policies both to and from China.[72]

International financial institutions, including the World Bank, the International Finance Corporation (IFC), and leading development banks contribute most directly to sustainable finance reform in China. These contributions range from capacity building, modeling best practices, and introducing technical tools to Chinese banks and regulators, to establishing new industry norms for ESG integration, risk management, and corporate governance. In many cases, these institutions serve as a transmission vehicle for institutional change by providing financing and by assuming direct risk associated with green finance investments involving local partners. One of the most important avenues for China to influence and to be influenced by emerging transnational norms is as a member of the G20 Financial Stability Board, which engages China's Ministry of Finance, the PBOC, and the CIBRC directly in international standard-setting and provides a forum for its experience to contribute to transnational learning around sustainable finance. The UNEP Inquiry into the Design of a Sustainable Financial System, founded in 2014, has been working directly with research institutions and policymakers across these agencies to support China's emerging sustainable finance frameworks and to share insights gleaned from the experience of China and over 40 countries with other interest groups and policymakers.[73] International financial institutions, NGOs, global accounting firms, and research from foreign academic institutions are all critical inputs into China's sustainable finance innovations. Chinese financial institutions themselves are also embedded in the global institutional context of modern capital markets and political and social structures, and China's green finance reforms have drawn heavily on international guidance, technical assistance, and investment support.

Eight of China's top commercial have had direct access to international expertise and investment with respect to green finance implementation.[74] The International Finance Corporation (IFC), in particular, has played a significant role in capacity building and direct lending to seven of these banks since the introduction of China's initial green credit reforms in the early and mid-2000s.[75] China Industrial Bank (CIB), Shanghai Pudong Development Bank, and the Bank of Beijing, are current or former clients of the IFC, and the IFC was a strategic investor in CIB when it first listed as a public company.[76] In addition, the IFC may serve as a guarantor for its clients' green loans, in which case the terms of the loan and environmental and social risk management are governed by the IFC's own environmental and social risk management standards.[77] The IFC was also instrumental in helping the PBOC develop its credit registration system and has advised other Chinese state agencies as they developed the infrastructure of China's current financial system.[78]

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[72] Interview, Bank C branch Chief Executive Officer, Hong Kong, July 2016; interview, senior CBRC official, Beijing, July 2017.

[73] *See* UNEP-Inquiry, "Countries" http://unepinquiry.org/countries/.

[74] This figure is based on direct references in these banks' public reports.

[75] *See generally* IFC, IFC'S ROLE IN CHINA'S FINANCIAL SECTOR TRANSFORMATION, Nov. 2012.

[76] *Id.* at 52.

[77] The International Finance Corporation (IFC) continues to serve as a guarantor on much of CIB's green credit financing. Interview, Bank C branch Chief Executive Officer, Hong Kong, July 2016.

[78] *Id.* at 6-7, 10-13, 40, 45.

Other factors also point to the deep influence of international standards on Chinese banks' capacity to implement green finance reforms. Five Chinese banks are members of the U.N. Environmental Program Finance Initiative (UNEP-FI), including China Merchant's Bank Co., Ltd. Two Chinese banks, CIB and the Bank of Jiangsu, are Equator Principles signatories, and ICBC, one of the market leaders in green credit lending, also applies the Equator Principles in its international investments, some of which may be counted within its green credit loan portfolio.[79] Other international financial institutions (IFIs) have also supported a number of China's commercial banks as guarantors or investors.[80] For example, Huaxia Bank has obtained funding from the World Bank and the Asian Development Bank (ADB) that enabled it to extend subloans that were governed by terms and conditions provided by the IFIs,[81] and Shanghai Pudong Development Bank has served as an on-lender for financing from the ADB and the French Development Agency.[82] The presence of IFIs in green credit finance reduces Chinese banks' risk, builds their capacity to evaluate green credit risk, and allows Chinese banks to rely on the IFIs' expertise in environmental due diligence. In the case of CIB, the program led the bank to develop its own guidelines and processes for energy- efficient lending.[83]

Most of China's leading banks are also publicly traded on the Hong Kong Stock Exchange and are therefore subject to its disclosure and governance requirements. As a result, nearly all produce sustainability reports based on the G4 standards developed by the Global Reporting Initiative, which are widely recognized as the international standard for sustainability reporting. All listed banks use international auditors, such as PWC and KPMG, for financial audits and most use the same firms to certify their sustainability reports as well.[84] These external reporting obligations create incentives for banks to improve their own environmental transparency and practice and to improve core corporate governance and risk management practices.

China is also looking to international and foreign models to source the components of its green finance system. Examples include the use of environmental stress testing, environmental credit risk management systems, and environmental and social reporting requirements for banks. Asset securitization tools and rules that might impose legal liability on lenders for environmental harms

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[79] *See* UNEP FI GUIDE TO BANKING AND SUSTAINABILITY (Oct. 2011), Annex II (Signatories), at 34-35. UNEP-FI members commit to abide by 19 voluntary principles related to sustainability risk management and transparency. *Id.* at Annex IB. CIB became the first mainland Chinese financial institution to sign onto the Equator Principles in 2008, but as of 2016, it remains the only one to do so. Equator Principles, "Members & Reporting," http://www.equator-principles.com/index.php/members-and-reporting (last visited Oct. 21, 2016). The U.S. signatories are ExIm Bank, JPMorgan Chase, Bank of America, Citigroup, and Wells Fargo. *Id.*

[80] For example, in 2015, the Bank of Beijing participated in a green finance training program sponsored by the IFC and remains an IFC green finance client. Bank of Beijing Sustainability Report (2016), at 40; interview, IFC senior operations & CHUEE program officer, Beijing, July 2017.

[81] HUAXIA BANK ANNUAL REPORT 41 (2016); HUAXIA BANK ANNUAL REPORT 23 (2014).

[82] SPD SUSTAINABILITY REPORT (2016).

[83] IFC, at 54.

[84] Because they are listed companies, all banks' financial reports are externally audited, typically by affiliates of the Big Four accounting firms.

caused by their clients are two other innovations that China is building based on Western practice.[85] One prime example is the Green Credit Guidelines issued by the CBRC in 2012. The Guidelines are designed specifically to aid banks in allocating capital toward firms and projects with better environmental and social risk management.[86] They also encourage financial institutions to adopt risk management across all stages of the lending process and to comprehensively "identify, measure, monitor and control environmental and social risks."[87] The Guidelines were developed in consultation with the IFC and with some of the banks who are considered leaders in green finance, incorporating the experience they have accumulated since the mid-2000s.[88] This experience, again, was heavily influenced by international standards and capacity-building efforts. The CBIRC instituted an audit framework for China's top commercial banks to track their compliance with the Guidelines and began moving in 2018 to develop regulations that might make certain elements of the Guidelines mandatory. At present, then, the Guidelines are an example of soft law formation based on a range of local and international inputs, which may soon form the basis of a new regulation at the national level.

As the above discussion shows, China's sustainable finance reforms offer ready examples of the first three phases of network production. For example, the initial adoption of the Equator Principles and the IFC environmental and social risk guidelines by some Chinese banks is an example of a direct transplant transmitted from a foreign source through both private and public transnational networks, including peer banks, local regulators, and domestic and foreign NGOs. Chinese banks have also adapted foreign innovations to the local context, as has occurred when banks apply the IFC's environmental and social risk management standards, the GRI sustainability reporting framework, or the UNEP Inquiry's Environmental Credit Risk Management Framework (2011). However, at each stage of its sustainable finance reforms, the CBIRC, the NDRC, and other ministries have also gone beyond adaptation of foreign imports and international standards to develop their own policies, guidelines, and regulations. For example, the PBOC and the CBRC have drawn on foreign sources in crafting the 2016 Guiding Opinion and the 2012 Green Credit Guidelines, but these also contain elements that reflect local innovation. Some of these "value-added" innovations may in fact stimulate new contributions to sustainable finance innovation transnationally, as contemplated in the final stage of the network production model.

An important contribution of the Guidelines is that they help to define green credit more consistently. Under the Guidelines, green credit is the extension of credit by financial institutions to firms based on a creditworthiness assessment that incorporates an evaluation of the environmental and social risks associated with the borrower.[89] Lenders may also establish environmental and social criteria for the

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[85] The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), § 107(a)(2), provides for liability for any defendant who "directs the workings of, manages, or conducts the affairs of a [polluting] facility." 42 U.S.C.A. § 9607(a)(2).

[86] Green Credit Guidelines, at art. 19.

[87] *Id.* at art. 4.

[88] Interview, Bank C branch Chief Executive Officer, Hong Kong, July 4, 2016; Interview, IFC green finance consultant, Beijing, July 2017.

[89] The Guidelines apply to "banking financial institutions," which includes "policy banks, commercial banks, rural cooperative banks, and rural credit cooperatives." *Id.* at art. 2.

use of the loan proceeds.[90] In contrast to definitions of environmental and social risk that focus only on the financial risks to the firm and its shareholders,[91] the Guidelines define environmental (and social) risks in terms of the negative impacts of bank clients and their affiliates on a range of stakeholders.[92]

The Guidelines urge financial institutions to adopt sound governance and internal management, and to ensure that capital allocation is based on environmental and social credit risk assessments.[93] They also contemplate a monitoring role for financial institutions. Under the Guidelines, banks must take steps to identify clients "with major environmental and social risks" and to establish separate credit approval guidelines "for restricted industries under state regulation and industries with major environmental and social risks."[94] Most critically, the Guidelines prohibit issuing credit to clients that "fail to comply with the relevant regulations on environmental and social performance."[95] Under the Guidelines, each bank has the flexibility to set its own strategies, policies, and internal oversight standards, including its own environmental and social risk appraisal standards.[96]

The Guidelines contemplate that lenders will also incorporate environmental and social analysis into post-loan monitoring and due diligence, at least for projects that present a major environmental and social risk.[97] Article 18 of the Guidelines explicitly directs banks to utilize contractual covenants to "strengthen [clients'] environmental and social risk management" and to require borrowers that present significant risks "to submit environmental and social risk reports," and to make representations and warranties regarding their environmental and social risk management and improvement. Because financial institutions may lack the capacity to effectively assess and monitor these risks, the Guidelines give banks the option to outsource client environmental and social risk

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[90] Green Credit Guidelines, at arts. 3-4.

[91] For example, the U.S. Securities and Exchange Commission (SEC)'s 2010 guidance on climate-related risk defines it only in terms of the potential financial impact on the company. Commission Guidance Regarding Disclosure Related to Climate Change, Exchange Act Release Nos. 33-9106, 34-61469 &FR-82 (Feb. 8, 2010), https://www.sec.gov/rules/interp/2010/33-9106.pdf.

[92] Green Credit Guidelines, at art. 4: "environmental and social risks . . . means the possible harm and relevant risks that may be caused to the environment and society in the construction, production, and business operations of [bank clients] and the important affiliates of such clients (重要关联方), including environmental and social issues relating to energy consumption, pollution, land, health, safety, migrant relocation, ecological protection, and climate change."

[93] *Id.* at art. 19 (urging financial institutions to "regard a client's management of environmental and social risks as an important basis for determining the allocation of credit funds").

[94] *Id.* at arts. 10-11. The CBRC provided additional guidance in its 2014 Audit Standards, discussed *infra* note 133 and accompanying text, that identifies these sectors.

[95] Green Credit Guidelines, at art. 17.

[96] *Id.* at art. 11. Article 15 also permits financial institutions to "define the scope of their own due diligence and credit risk assessments and determine whether third-party expertise is necessary to help evaluate environmental and social risk."

[97] *Id.* at art. 20.

auditing to third parties.[98] At the same time, the Guidelines encourage banks to identify third parties, such as guarantors, who can share the environmental and social risk associated with a project.

Finally, the Guidelines empower banks to impose explicit remedies for breach of environmental risk management and to require additional risk mitigation measures for clients the banks identify as presenting "major environmental and social risks."[99] They also encourage greater transparency from lenders themselves regarding their own environmental and social risk, their implementation of the green credit guidelines,[100] and "the impact of credit granting involving major environmental and social risks.[101] Although not formally required in the Guidelines, a Green Credit Statistical System (GCSS) established in 2013 and green credit audit standards, discussed below, require all twenty-one banks in this study to report annually to the CBRC on their implementation of the Guidelines and the level of green credit lending they provide.[102]

### C. CHINA-SOURCED REGULATORY INNOVATION & SUSTAINABLE FINANCE: NON-STARTER OR INDISPENSABLE?

For many, the prospect of developed countries learning from or borrowing regulatory innovations from China and other emerging markets raises immediate and strong objections. In China's case, caution or fear about China's rise has led to an environment that discourages cross-border collaboration and mutual learning. But despite the many objections that can be raised to *Western* learning from Chinese sustainable finance reform, the reality is that developing financial systems that foster a low-carbon transition will require China's contribution.[103]

#### *1. Barriers to China-Sourced Regulatory Innovation*

At first blush, the vast institutional and ideological differences between liberal, free-market oriented economies and authoritarian, socialist regimes where the state is deeply embedded in all aspects of the market appear to present insurmountable barriers to learning from China's green finance reforms. For example, the Chinese party-state maintains a controlling position in the corporate governance of most Chinese banks, including those who are leading its sustainable finance reforms.[104] State-owned

[98] *Id.* at art. 14.

[99] *Id.* at art. 10-11 (requiring banks to "classify . . . environmental and social risks," use them as the basis for credit ratings, loan pricing, lending determinations, and risk management, and to require high-risk clients to undertake risk mitigation measures).

[100] *See id.* at Ch. V (on internal control management and information disclosure), Arts. 25-28 (on implementation).

[101] *Id.* at art. 24.

[102] CBRC 2016 ANNUAL REPORT, at 59; Notes on the Green Credit Statistics System.

[103] Few objections have been raised about the vast differences in institutional starting points in periods when China or other emerging markets have been importing Western regulatory innovations, on the theory that these innovations would produce positive policy outcomes in light of Western implementation experience.

[104] The state remains the controlling shareholder for all of China's "Big Five" banks, the Bank of China (BOC), the Construction Bank of China (CBC), the Agricultural Bank of China (ABC), the Industrial and Commercial Bank of China (ICBC), and the Bank of Communications (BOC), and is the largest shareholder of all but three of the top-tier joint-stock commercial banks through the Ministry of Finance and its holding company, Central Huijin Company. JAMES STENT, CHINA'S BANKING

enterprises (SOEs) are also the core clients for China's largest banks,[105] and Chinese financial institutions must be responsive to state policy priorities.

Characteristics of the U.S. market are distinct from Europe and other Western economies, which have more in common with the Chinese system and may therefore be more able to exchange useful lessons from sustainable finance reform. For example, like much of Europe and the developing world, China's economy also relies heavily on bank finance, in contrast to the United Kingdom and the United States where equity markets dominate and where financial institutions have greater influence as shareholders.[106] Financial regulation and corporate law in the United States defers strongly to private ordering and market-led innovation, and has also been skeptical of stakeholder-oriented principles that are common in corporate governance elsewhere.[107]

There are other practical objections as well. It may well be too soon to tell what works and what doesn't, and there are plenty of examples to suggest that sustainable finance implementation is still not fully developed.[108] Measuring the success of China's policies is also difficult when information on the level of green finance policy implementation and its impact on credit risk mitigation, financial loss, access to capital, and companies' cost of borrowing is not publicly available. Most Chinese banks are also still working to adopt sound risk management, risk pricing, and credit assessment practices; in this context, suggesting that the teachers learn from the students may seem foolhardy. China is simply not yet trusted as a standard-setter for global business.

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TRANSFORMATION: THE UNTOLD STORY 156-57 (2017). *See also* Curtis Milhaupt & Liw-wen Lin, *We Are the (National) Champions* (exploring the state's pervasive influence within and beyond the state sector).

[105] NICHOLAS R. LARDY, MARKETS OVER MAO: THE RISE OF PRIVATE BUSINESSES IN CHINA 104-112 (2014) (citing evidence that as of 2012, state-sector credit accounted for about half of all commercial lending and credit to the private sector at 30-44 percent).

[106] MARTIN CIHIK ET AL., BENCHMARKING FINANCIAL SYSTEMS AROUND THE WORLD, World Bank WPS No. 6175, Aug. 2012, p. 22-23 (noting that the U.S. has a more (equity) market-based and less bank-centric financial system, in contrast to China and many European countries). Top-down regulatory approaches and a strong role for centralized planning is also out of step with

[107] IIGF, UNENVIRONMENT INQUIRY, ESTABLISHING CHINA'S GREEN FINANCIAL SYSTEM: PROGRESS REPORT 2017 [构建中国绿色金融体系：进展报告 2017], at 26 (hard copy) (discussing need for PRC government to promote better access to environmental data, develop disclosure and reporting standards, "guide systemically important financial institutions to conduct environmental risk analysis and management" and develop third-party green rating institutions and "strengthen [their] supervision". U.S. approach is to regulate only if clear evidence of market failure; innovation is market-led (i.e. development of rating agencies and standards, demand for ECRM, industry standards) cf. to China where all this is top-down.

[108] Green finance relies heavily on third-party certifications of "greenness", but there is an absence of consistent standards. There is also widespread skepticism about the reliability and accessibility of companies' public disclosures regarding their financial and environmental performance. IIGF, UNENVIRONMENT INQUIRY, ESTABLISHING CHINA'S GREEN FINANCIAL SYSTEM: PROGRESS REPORT 2017 [构建中国绿色金融体系：进展报告 2017], at 22 (on file with author).

2. *Why Learn from China and "the Rest"?*

Notwithstanding these obstacles, the key reason to take notice of innovations in China and other emerging markets is that the global sustainable finance transition cannot be achieved without it. Relying solely on Western governments or the Global North to offer policy solutions cuts off potentially useful contributions from the Global South and narrow the base of national experiments that could inform new approaches elsewhere.

Refusing to consider lessons from China runs the risk of ignoring the world's second largest economy, a nation with a significant environmental impact, and home to one-fifth of the world's population. Chinese banks are now the four largest in the world (based on Tier-1 capital), ahead of JP Morgan Chase, Bank of America, and Citigroup,[109] and China is one of the world's leading issuer of green bonds.[110] China also boasts over a decade of experience with sustainable finance policymaking and was among the first to establish a national green finance strategy. In recent years, China has established pilot test sites for carbon trading and green finance policy experimentation. China is also poised to become a direct policy exporter as it advises governments and business leaders along the "Belt and Road." For all these reasons, transnational regulatory innovation requires sourcing, at least in part, from China.

3. *What Can China Share?*

With respect to sustainable finance, there are many elements of China's sustainable finance reforms that offer useful learning and perhaps models for other jurisdictions. These can be considered in several categories: macro-level principles and norms, specific policies and regulations, institutional models, and its innovation experience. Because the purpose of this Article is not to advocate for adoption of any one of these possibilities, they are listed here only by way of example.

*(i) Macro-level principles & norms.*

- policy support for sustainable finance at the national level;
- an emphasis on support for the real economy as the benchmark for financial regulation;
- an emphasis on the importance of both market mechanisms and smart regulation; and
- the inclusion of ESG factors in assessments of financial institution performance, credit risk management, and the design of financial products.
- Scalability – The practice of initiating reforms with the largest financial institutions, on a consolidated basis.

[109] *World's Biggest Banks,* Economist, July 14-20, 2018, at 77 (reporting that ICBC, China Construction Bank, Bank of China, and the Agricultural Bank of China (ABC) lead the list).

[110] CLIMATE BONDS INITIATIVE & CHINA CENT. DEP. CLEARING CO., CHINA GREEN BONDS MARKET 2017 (Feb. 2018), at 2,4 [hereinafter "CHINA GREEN BONDS"] (indicating that China is second only to the United States in all green bonds issued worldwide). Initially issued largely by international financial institutions, such as the World Bank and the Asian Development Bank, as well as by sovereign wealth funds, the global green bond volume is rapidly rising. *Id.*

- Gradualism - Introducing new requirements through regulatory guidance before hardening the rules into mandates.[111]

*(ii) Specific policies or regulations.*

- China's national sustainable finance framework;[112]
- ESG disclosure rules for financial institutions;[113]
- Guidance in the Green Credit Guidelines (2012) urging banks to adopt environmental and social credit risk management (ECRM) practices;
- Standards for lender environmental liability;[114]
- Standards for financial institution regulatory oversight, such as the evaluation criteria included in the 2014 Green Credit Audit Standards;
- Green insurance frameworks and related standards for environmental risk assessment;
- Credit rating systems that incorporate ESG risk; and
- Establishing definitions for "green" financial products.[115]

*(iii) Implementation Mechanisms & Experience.*

- Cross-agency information-sharing mechanisms for financial and environmental regulators;

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[111] This is a common approach in many jurisdictions. For example, the Hong Kong Stock Exchanges ESG reporting rules were first introduced on a voluntary basis in 2015. Similarly, climate change reporting for public companies in the United States is subject to issuers' own materiality assessment, with reference to interpretive guidance issued by the Securities & Exchange Commission (SEC). Soft law instruments are also central to the European Union's Approach. *See* Peter L. Strauss, *The Troubling Conjunction of Public and Private Law, in* COMPARATIVE LAW AND REGULATION: UNDERSTANDING THE GLOBAL REGULATORY PROCESS (Francesca Bignami et al. eds. 2016), at 385, 390-394.

[112] The European Union and a number of other countries have also developed national green finance strategies, and all provide helpful points of reference for others. 2018 EC Sustainable Finance Action Plan, https://ec.europa.eu/clima/news/sustainable-finance-commissions-action-plan-greener-and-cleaner-economy_en.

[113] These are part of the reporting rules that apply to all public companies listed on the Hong Kong stock exchange and will soon be adopted for listed companies on mainland stock exchanges.

[114] These represent a value-added adaptation of the United States' initial rules under CERCLA, which have now been substantially reversed. CERCLA now provides a safe harbor for lender liability. CERCLA 101(20(E)(i)-(ii)).

[115] Lack of consistent definitions for "green" investments is a recognized impediment to sustainable finance. *See generally* GEORG INDERST ET AL., DEFINING AND MEASURING GREEN INVESTMENTS: IMPLICATIONS FOR INSTITUTIONAL INVESTORS' ASSET ALLOCATIONS, OECD Working Papers on Finance, Insurance, and Private Pensions, No. 24 (2012) https://ec.europa.eu/info/sites/info/files/180308-action-plan-sustainable-growth-factsheet_en.pdf

- Reliance on third-parties for certification of green financial products and financial institutions' reported ESG indicators.
- Frameworks for banks' internal key performance indicators (KPIs) for sustainable finance practices.
- Environmental stress testing examples, as urged by the TCFD.[116]

In each of these cases, China's innovations have drawn on international and foreign models, but have been operationalized to an extent that few other jurisdictions have yet attempted. From a network production standpoint, local innovations need not be comprehensive to add value; in fact, as in China's case, they are most likely the combined output of earlier imports, local policy initiatives, and evolving norms. They may be narrow in scope, like rules that apply only to certain large financial institutions, or broadly applicable. In the above list as well, few of the examples are unique to China, but they represent innovations where China has either developed a "value-added" adaptation, or where it offers an alternative test case for principles, rules, and systems that other nations are also experimenting with.[117] Only with learning from multiple jurisdictions will it be possible to observe which policy approaches succeed and under what types of conditions, which are broadly applicable, and which are likely to fail beyond the unique context in which they emerged.

4. *Examples of Network production: China's Green Credit Guidelines & Audit Standards*

As discussed above, China's 2012 Green Credit Guidelines are the product of network production. However, they are also an example of local innovation that could be adopted more broadly and from which implementation lessons can be drawn. At present, most Western banks that integrate environmental and social risk into credit risk management and pricing systems do so without regulatory guidance.[118] While a market-driven approach may be preferable, there are few examples globally of frameworks that can guide banks to integrate environmental and social risks into commercial lending practice.[119] In order to highlight more concretely how innovations like the Green Credit Guidelines might contribute to a "snowballing" of innovation in sustainable finance policy, it

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[116] IIGF, U.N. ENVIRONMENT INQUIRY, ESTABLISHING CHINA'S GREEN FINANCIAL SYSTEM: PROGRESS REPORT 2017 [构建中国绿色金融体系：进展报告 2017], at 25 (hard copy). ICBC is the only bank to date that has experimented with its implementation.

[117] *Id.* at 26 (hard copy) (discussing need for PRC government to promote better access to environmental data, develop disclosure and reporting standards, "guide systemically important financial institutions to conduct environmental risk analysis and management" and develop third-party green rating institutions and "strengthen [their] supervision".

[118] *See generally* Olaf Weber et al., *Empirical Analysis of the Integration of Environmental Risks into the Credit Risk Management Process of European Banks,* 17 BUS. STRAT. ENV. 149 (2008); Olaf Weber, *Environmental Credit Risk Management in Banks and Financial Service Institutions,* 21 BUS. STRAT. & ENVT. 248 (2012) (examining practices at the six Canadian commercial banks); Olaf Weber et al., *Incorporating Sustainability Criteria Into Credit Risk Management,* 19 BUS. STRAT. & ENVT. 39 (2010); Paul Thompson, *Bank Lending and the Environment: Policies and Opportunities*, 16 INT'L. J. BANK MARKETING 243 (1998) (examining environmental policies at 12 banks from 8 jurisdictions, including the United Kingdom).

[119] The IFC guidelines and the Equator Principles are not designed for commercial lending, and commercial lenders are less incentivized to consider these risks if they do not look to the funded projects themselves for repayment.

is helpful to consider their content in greater detail. Also of relevance here are the 2014 Green Credit Audit Guidelines, which create a mechanism for regulatory oversight of the Guidelines' implementation.

As explained above, the Green Credit Guidelines issued by the CBRC in 2012 are designed specifically to aid banks in allocating capital toward firms and projects with better environmental and social risk management.[120] They encourage financial institutions to adopt risk management across all stages of the lending process and to comprehensively "identify, measure, monitor and control environmental and social risks."[121]

One contribution of the Guidelines is that they help to define green credit more consistently, a core challenge of all sustainable finance initiatives. Under the Guidelines, green credit is the extension of credit by financial institutions to firms based on a creditworthiness assessment that incorporates an evaluation of the environmental and social risks associated with the borrower.[122] Lenders may also establish environmental and social criteria for the use of the loan proceeds.[123] In contrast to definitions of environmental and social risk that focus only on the financial risks to the firm and its shareholders,[124] the Guidelines define environmental (and social) risks in terms of the negative impacts of bank clients and their affiliates on a range of stakeholders. [125]

The Guidelines urge financial institutions to adopt sound governance and internal management, and to ensure that capital allocation is based on environmental and social credit risk assessments.[126] The Guidelines contemplate that lenders will also incorporate environmental and social analysis into post-loan monitoring and due diligence, at least for projects that present a major environmental and social risk.[127] Because financial institutions may lack the capacity to effectively assess and monitor these risks,

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[120] Green Credit Guidelines, at art. 19.

[121] *Id.* at art. 4.

[122] The Guidelines apply to "banking financial institutions," which includes "policy banks, commercial banks, rural cooperative banks, and rural credit cooperatives." *Id.* at art. 2.

[123] Green Credit Guidelines, at arts. 3-4.

[124] For example, the U.S. Securities and Exchange Commission (SEC)'s 2010 guidance on climate-related risk defines it only in terms of the potential financial impact on the company. Commission Guidance Regarding Disclosure Related to Climate Change, Exchange Act Release Nos. 33-9106, 34-61469 &FR-82 (Feb. 8, 2010), https://www.sec.gov/rules/interp/2010/33-9106.pdf.

[125] Green Credit Guidelines, at art. 4: "environmental and social risks . . . means the possible harm and relevant risks that may be caused to the environment and society in the construction, production, and business operations of [bank clients] and the important affiliates of such clients (重要关联方), including environmental and social issues relating to energy consumption, pollution, land, health, safety, migrant relocation, ecological protection, and climate change."

[126] *Id.* at art. 19 (urging financial institutions to "regard a client's management of environmental and social risks as an important basis for determining the allocation of credit funds").

[127] *Id.* at art. 20. Article 18 of the Guidelines directs banks to utilize contractual covenants to "strengthen [clients'] environmental and social risk management" and to require borrowers that present significant risks "to submit environmental and social risk reports," and to make

the Guidelines give banks the option to outsource client environmental and social risk auditing to third parties.[128] Most critically, the Guidelines prohibit issuing credit to clients that "fail to comply with the relevant regulations on environmental and social performance."[129] Finally,encourage greater transparency from lenders themselves regarding their own environmental and social risk, their implementation of the green credit guidelines,[130] and "the impact of credit granting involving major environmental and social risks.[131] Although not formally required in the Guidelines, a Green Credit Statistical System (GCSS) established in 2013 and green credit audit standards, discussed below, require all twenty-one banks in this study to report annually to the CBRC on their implementation of the Guidelines and the level of green credit lending they provide.[132]

In 2014, the CBRC introduced its 2014 Green Credit Implementation Key Audit Standards to guide banks in applying the 2012 Green Credit Guidelines and to establish key performance indicators (KPIs) for green credit.[133] As departmental guidance, the regulatory authority of the 2012 Guidelines, like earlier sustainable finance policies, is relatively low — they are soft standards rather than clear mandates. However, the 2014 Audit Standards allow the CBRC to assess bank compliance with the Guidelines and are expected to ground more formal evaluation of bank implementation in the near future.[134] At present, China's policy banks and commercial banks are required to conduct annual self-audits and to submit an annual audit report to the CBRC indicating the degree to which they comply with each of the standards.[135]

The Audit Standards are extremely detailed, with over 80 indicators ranging from the role of the bank's board of directors in setting green credit targets and overseeing green credit implementation, to measures for how well banks assess their clients' legal compliance and environmental and social risk in the initial credit assessment and post-issuance.[136] Other indicators measure how well banks monitor covenants in the loan agreement pertaining to the borrower's environmental and social risk management, and rate the bank's own transparency and self-audit practices. Banks must indicate their level of compliance on a four-point scale. Additional quantitative indicators ask banks to report their total lending volume that is considered "green credit." Under the Audit Standards, banks must also disclose their green credit policies and strategies, report the loan volume associated with borrowers

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representations and warranties regarding their environmental and social risk management and improvement.

[128] *Id.* at art. 14.

[129] Green Credit Guidelines, at art. 17.

[130] *See id.* at Ch. V (on internal control management and information disclosure), Arts. 25-28 (on implementation).

[131] *Id.* at art. 24.

[132] CBRC 2016 ANNUAL REPORT, at 59; Notes on the Green Credit Statistics System.

[133] CBRC, Green Credit Implementation Key Audit Standards [绿色信贷实施情况关键评价指标], No. 186, June 27, 2014 [hereinafter "Audit Standards"]. The Audit Standards cover 63 industry sectors. *Id.* at App. 1.

[134] Interview, senior CBRC official, Beijing, July 2017.

[135] *Id.*

[136] *See generally* Audit Standards, *supra* note 133.

who have environmental or labor-related compliance breaches, and disclose environmental or social risk incidents if required under any other regulations.[137] Finally, the Audit Standards include optional indicators on which the bank may report, including average carbon emissions and average electricity consumption per employee, gender diversity in management, disabled employees, hours of green credit training, and level of engagement with environmental NGOs and other stakeholders.[138]

Although the Green Credit Guidelines and related Audit Standards are only one component of China's green finance reforms, they offer a rich source of prescriptions that may be of interest to other regulators or to financial institutions or industry standard-setters who are interested in encouraging banks to adopt their own green credit policies and practices. They also offer alternative approaches to defining green credit, "black credit," and establishing relevant KPIs, all of which contribute to a more diverse menu of policy options for other jurisdictions.

#### 5. *Unexpected Sources of Innovation: Counter-examples & Failures*

[*This section will mention surprising lessons from China's green finance reforms and stress the important contributions to innovation that can be made, as in any research and development process, by so-called failed experiments. Often, seeing what does not work is the most important contributor to future success.*]

## IV. ACCELERATING TRANSNATIONAL REGULATORY INNOVATION

Like other transnational policy challenges, promoting sustainable finance requires rapid innovation, cross-border coordination, efficient pathways for innovation sharing, and solutions that can scale up (and down) from smaller markets to larger ones and vice versa. The case study of China's sustainable finance reform shows that networked diffusion is already happening and that it has the potential to stimulate new forms of regulatory innovation. This Part considers how to promote network production and considers the implications of transnational network production for the field of comparative law.

### A. PROMOTING NETWORK PRODUCTION

At the outset, it is important to note that comparative law offers useful starting points in considering how to promote transnational regulatory innovation. The complexity and scale of transnational regulatory innovation, the diversity of actors beyond the nation-state, and the rise of governance all move beyond the questions that have historically been the focus of comparative law as a field. In addition, the policy context of sustainable finance and the question of how the West might learn from "the Rest" are issues where legal transplant theory, legal origins debates, and notions of formal and functional convergence, all core contributions of comparative law scholarship, still matter.

#### 1. *Identifying Potential Markets for Innovation Exports*

Prior work identifying the circumstances under which legal transplants are effective, or where convergence or harmonization are most likely, remain relevant to the network production model set forth here. This literature teaches that successful transplants or "exports" are more successful when there is a narrower institutional distance between cultural, legal and other institutions in the source and recipient country.[139] Through network production, legal innovation is "sourced" from multiple, overlapping networks of actors, institutions, and jurisdictions. This implies that rules and norms with

[137] *Id.* at § 24.

[138] *Id.* at Part 2, Items 10-17.

[139] *See generally* Seims (2014), at 191-200 (surveying the literature).

a higher percentage of local content require less tailoring to local conditions and be perceived as more aligned with local conditions in the recipient country. If the innovation is seen as sufficiently local and aligned with existing local institutions, institutional distance shrinks and the innovation is more likely to be implemented, succeed in the long-term, and catalyze further internal and external innovation more quickly in more countries.

The clarity, coherence, and legitimacy of the transplant itself, as well as the perceived economic or cultural superiority and prestige of the source jurisdiction also drive countries to "import" legal rules and institutions.[140] These factors also explain why legal transplants have generally been observed to flow from Western developed countries to developing countries in the rest of the world, or from the Global North to the Global South. These findings suggest the continued importance of path dependency and local contexts for network production processes.[141]

As a result, some innovations will be localized in nature and will not be "exportable" or adaptable to new contexts. For example, the widespread use of environmental blacklisting in China, which can affect lender assessments of companies' credit risk could be subject to challenge in the United States on due process or takings clause grounds. A second example is the government-initiated rating system introduced in Jiangsu Province, which rates corporate borrowers on their environmental risk. Banks can then use these ratings to set interest rates or terms and conditions for loans to these companies. However, the ratings are also used by the government as the basis for utility rates, which are higher for environmentally riskier companies. The latter approach may be unworkable where there may be legal restrictions on differentiated rate assessments of this sort.

Another challenge is that at each stage of their development, they are likely to be associated with the latest country or institution of origin, or with the sponsoring or facilitating institution, even though the evolution of regulation through network production means that rules and institutions are no longer sourced in a single country or by a single institution. For example, China's green credit audit system for banks may have its roots in the IFC's environmental and social audit process, but Western countries may still be less willing to adopt "China's" audit system than they would a similar system that were to emerge in Germany, even if the latter were informed by learning from the Chinese experience. For the United States, sustainable finance reforms will still seem most accessible and transferrable if they are accepted in London rather than Beijing or even Johannesburg. As a result, indirect exports and transmission via international organizations may continue to be important.

2. *Promoting Innovation*

The policy diffusion literature has also identified mechanisms most likely to drive accelerated regulatory innovation, including coercion, competition, learning, and acculturation or social

[140] Shaffer et al.'s account of transnational law formation identifies similar factors: "the character of the transnational legal norm and legal order" in terms of their legitimacy, clarity, and coherence; "the relation of the transnational legal order to the receiving state" in terms of power and the place of intermediaries conveying the legal norm; and the domestic "context of the receiving state, and in particular the affinity of the transnational legal norm with domestic demand in light of domestic political contests, institutions, legal culture, and the extent of change at stake." Shaffer et al. (2012), at 235., 248-49.

[141] Despite the globalization of finance, home country consolidated regulation of financial institutions predominates. *See* Arner (2015), at 494-496, 505-06.

construction.[142] Although all of these may be effective drivers of regulatory innovation, those most likely to spur innovation through network production are learning and the spread of new norms through acculturation.

Learning and acculturation are both areas where governments and international organizations have particular influence. At the international level, the G20's Financial Stability Board, IOSCO, and the United Nations' various sustainable finance initiatives all offer established platforms through which local innovation can be shared, and traditional bilateral and multilateral forums remain important. In addition, international consultants, accountants, and other professional firms, as well as financial sector trade associations and direct engagement among financial regulators all offer fruitful avenues for innovation sharing. For example, the IFC regularly convenes the "Sustainable Banking Network," a peer working group of bank managers from its client banks in developing countries that facilitates information exchange. Governments, international organizations, and academic institutions can also play a crucial role by continuing to fund and facilitate peer-to-peer professional exchanges for regulators and practitioners and by developing new transnational research and policy networks that link governments, think tanks, and NGOs engaged in sustainable finance.[143]

Although a hallmark of innovation is that it is spurred on by competition, competition among jurisdictions is likely to promote positive solutions to global policy problems only where there is competition for leadership in the new policy space. Competition for investment capital has been seen in the diffusion literature as most likely to drive a "race to the bottom," as companies seek lower costs of doing business.[144] As a result, competition could work against efforts to coordinate or harmonize new sustainable finance solutions. However, to the extent governments and other local actors see sustainable finance as a key to achieving development goals, raising the reputational status of the jurisdiction, engendering greater trust in its capital markets, or making its rules the standard in a new regulatory space, competition could also stimulate positive innovations. [*To be expanded to emphasize that competition is most likely to drive a race to the top in sustainable finance, as there are limited incentives in favor of a race to the bottom*] For example, competition for leadership in a new policy space or a desire to take credit for innovation may motivate some countries to actively promote sustainable finance reforms.

3. *The Functionalism Benchmark*

Achieving real institutional change rapidly requires an emphasis on functionalism rather than formalism. [*expand]* Comparative law scholars have also drawn important distinctions between "formal" convergence, where a rule or institution looks like the one in the source country but in fact functions very differently, or not at all, in its new setting. Because sustainable finance innovations must be adapted to local market conditions and require a retooling of existing rules, accelerating transnational innovation requires a focus on functional, not formal harmonization or complementarity. [*expand*]

4. *Leveraging Comparative Advantage*

Given the natural hesitation of Western regulators to draw lessons from "less-developed" jurisdictions, particularly those with weak institutions or very different political systems, network production and innovation sharing will be most effective where each source country, organization, or network, is able

[142] Marsh & Sharman (2009), at 274-75.

[143] NGOs that have been active in green finance include GreenPeace, BankTrac, and the World Wildlife Federation.

[144] *See* Dobbin et al., *supra* note __, at 457-60 (surveying theories of economic competition and policy diffusion).

to contribute new knowledge in an area in which it has a comparative advantage. For example, the United States is well-known for its strong deference to market-based solutions, its robust regulatory regime, and its openness to enforcement through private litigation. As a result, its contributions to sustainable finance innovation currently come from the many leading non-profit organizations that are active in developing ESG ratings systems, voluntary guidelines, and responsible investment. Its regulatory innovations are also highly influential, despite the U.S. preference for market-driven solutions. China, on the other hand, has a comparative advantage in top-down regulatory solutions, transnational public-private partnerships, and in the implementation of experimental solutions in both low-income and high-income settings. Hence, its innovations may help developing countries create "next-generation" sustainable finance tools, and its innovations may help adapt global models to function effectively in a context where local financial institutions face higher capacity barriers.

## B. IMPLICATIONS FOR COMPARATIVE LAW & POLICY

The network production model also has implications for the field of comparative law. [*To be revised and expanded*].

### 1. *Complementarity, not Convergence*

Network production may require a reorientation in comparative law from an emphasis on convergence to a pursuit of harmonization and complementarity. Within the literatures on legal transplant and policy diffusion, as well as in economics, scholars have long been engaged in exploring the potential for legal and economic systems to converge over time and in identifying conditions that are conducive to greater harmonization among jurisdictions.[145] This work is obviously of great relevance in thinking about how to speed innovation around a low-carbon transition or other transnational policy problems. Much attention has been paid to these questions in private law fields related to international commerce and investment, such as corporate law, securities law, and financial regulation, where greater harmonization or convergence has clear efficiency gains in reducing transaction costs. The integrated nature of global business, the standard-setting influence of leading capital markets in the West, and the observed preconditions for the development of economies, again in the Western experience, has sparked greater expectations for convergence among scholars.[146]

However, the overall conclusions that emerge from the convergence-divergence debate cast doubt on prospects for convergence among legal and economic systems, at a high level, and also caution that high degrees of convergence or harmonization even with respect to narrower goals, such as the

[145] Much of this work has been inspired by the legal origins literature (LaPorta, Lopez-de-Silanes, Shleifer & Vishny (LLSV) and critics).

[146] Bebchuk, Lucian Arye, and Mark J. Roe. *A Theory of Path Dependence in Corporate Ownership and Governance.* STAN. L. REV. *52* (1999): 127; Sungjoon Cho & Jürgen Kurtz, *Convergence and Divergence in International Economic Law and Politics,* 29 EUR. J. INT'L L. 169 (2018); Jeffrey N. Gordon, *Pathways to Corporate Convergence-Two Steps on the Road to Shareholder Capitalism in Germany,* 5 COLUM. J. EUR. L. 219 (1998); John C. Coffee Jr, *Future as history: The prospects for global* convergence in corporate governance and its implications." 93 NW. U. L REV. 641(1998); Mark J. Roe & Jeffrey N. Gordon, eds. *Convergence and Persistence in Corporate Governance* (Cambridge University Press, 2004). David Charny, *The Politics of Corporate Convergence*, *in id.* at 298; Ronald J. Gilson, *Globalizing Corporate Governance: Convergence of Form or Function*, 49 AMER. J. COMP. L. 329-358 (2001).

adoption of uniform rules, may be difficult to achieve.[147] Underlying market conditions, institutional foundations, and the level of local financial institutions' global integration all vary widely among jurisdictions. Since sustainable finance intersects with the mission of different regulatory authorities, differing patterns of cross-agency collaboration will also affect different jurisdictions differently.

However, harmonization and convergence are not essential to establishing sustainable financial systems, so long as new solutions are functionally coordinated and complementary. For example, the United States GAAP regime appears unlikely to be harmonized with IFRS and even in the euro-zone, there is now strong evidence that the level of harmonization around IFRS is weak. Nonetheless, regulators and stock exchanges have been able to accommodate the co-existence of these two dominant regimes. Achieving a sustainable finance transition is likely to look different in markets with different institutional starting points. But the ultimate policy goals may not require full convergence or harmonization to be successful, as those terms have traditionally been understood – instead, complementarity among local rules may be sufficient.

### 2. *Broadening and Deepening Comparative Inquiry*

Most importantly, the need to advance transnational law formation does not require an abandonment of the foundational contributions of comparative legal scholarship, but it does require a broadening and deepening of comparative inquiry. Given the networked nature of transnational regulatory innovation, comparative scholars cannot limit their analysis to public law or even to state-based soft law measures. Instead, comparative scholars must engage the full range of public, private, and hybrid tools and understand as much as possible about the entire range of networked actors who may be sources of innovation in a given policy space. Comparative scholars must also widen their lens beyond the West to include emerging markets with very different institutional starting points. Fostering transnational regulatory innovation also requires a greater depth with respect to specific national settings. For example, understanding the functional role of China's various green finance reforms requires an in-depth understanding of the Chinese institutional context, as well as an ability to identify foreign or internationally sourced components that may enable more rapid acceptance of new innovations that build on these imports. Finally, comparative scholars must become familiar navigating the intersections of local and foreign sources through more complex transnational networks. Such efforts may enable comparative scholars to help assess and promote useful innovations among policymakers, further fueling the spread of transnational regulatory innovation.

## CONCLUSION

Regulatory innovation has historically depended largely on top-down legal reforms driven by states, on direct exports of policy solutions and institutions from one nation to another, and a reliance on Western sources. While all of these are still critical, solutions to transnational challenges cannot and will not depend solely on fragmented, localized efforts or on unidirectional "exports" from a handful of developed economies to "the Rest." Instead, greening the financial system or combatting climate

[147] *See generally,* Douglas W. Arner, *Cross-border Supervision of Financial Institutions? in* OXFORD HANDBOOK OF FINANCIAL REGULATION 494-95 (Niamh Moloney et al., eds.) (Oxford UP: 2015) (arguing that full cross-border regulatory supervision of the type exercised by the European Union Securities & Markets Authority (ESMA) is unlikely elsewhere). Henry Hansmann & Reinier Kraakman, *The End of History for Corporate Law*, 89 GEO. L. J. 439 (2001); Leonard I. *Debunking the End of History Thesis for Corporate Law,* BC INT'L & COMP. L. REV. 33 (2010).

change will require faster, more efficient legal innovation and implementation based on new mechanisms and drawing on the experience of jurisdictions worldwide.

This Article has argued that transnational regulatory innovation increasingly follows a network production model. In this model, regulatory innovation may emerge in one or more jurisdictions as a strictly domestic innovation, but it is frequently transformed, adopted, and re-designed by other actors who are themselves embedded in transnational networks. The case of China's sustainable finance reforms illustrates this process. It shows that just as products sourced in one jurisdiction can be the base of new types of innovation and even re-exported in a new (value-added) form back to the original source country, so also "innovation snowballing" can occur when innovations in one or more jurisdictions stimulate new policy adaptations that can catalyze future cycles of innovation. [148] Promoting network production processes has the potential to promote the kind of transnational regulatory innovation that is needed to solve today's transnational policy challenges.

[148] Zachary Liscow & Quentin Karpilow, *Innovation Snowballing and Climate Law,* 95 WASH. U. L. REV. 387 (2017) (arguing for guided, targeted policies to accelerate the pace of innovation around climate change); Wolfgang Keller, *International Technology Diffusion*, 42 J. ECON. LIT. 52, 752 (2004) (identifying imports as a "significant channel of technology diffusion.").