



CIGI PAPERS
NO. 47 — OCTOBER 2014

**THE ENVIRONMENTAL RISK
DISCLOSURE REGIME**
NAVIGATING COMPLEXITY IN GLOBAL
FINANCIAL MARKETS

JASON THISTLETHWAITE

THE ENVIRONMENTAL RISK DISCLOSURE REGIME: NAVIGATING COMPLEXITY IN GLOBAL FINANCIAL MARKETS

Jason Thistlethwaite



Copyright © 2014 by the Centre for International Governance Innovation

The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the Centre for International Governance Innovation or its Board of Directors.



This work is licensed under a Creative Commons Attribution — Non-commercial — No Derivatives License. To view this license, visit (www.creativecommons.org/licenses/by-nc-nd/3.0/). For re-use or distribution, please include this copyright notice.



67 Erb Street West
Waterloo, Ontario N2L 6C2
Canada
tel +1 519 885 2444 fax +1 519 885 5450
www.cigionline.org

TABLE OF CONTENTS

iv	About the Author
iv	Acronyms
1	Executive Summary
1	Introduction
2	Environmental Risk Disclosure in Global Governance
6	Environmental Risk Disclosure Regime Complex
7	The Effectiveness of the Environmental Risk Regime Complex
10	Conclusion
10	Works Cited
16	About CIGI
16	CIGI Masthead

ABOUT THE AUTHOR



Jason Thistlethwaite is a CIGI fellow, as well as assistant professor in the School of Environment, Enterprise and Development in the Faculty of Environment at the University of Waterloo. Jason holds a Ph.D. in global governance from the Balsillie School of International Affairs. At CIGI, Jason's research focuses on the implications of the new environmental and climate change risks disclosure regime on the financial sector, and on recommendations to help align policy and industry's resources toward an effective approach to mitigate climate change. To inform this research, Jason works directly with business and government leaders in the insurance, banking, real estate, building and investment industries. His research has been published in a number of academic and industry journals. He is also a frequent speaker and media contributor on Canada's growing vulnerability to extreme weather and a self-described "weather geek." This output is a working paper from his current research at CIGI.

ACRONYMS

A4S	Accounting for Sustainability
CDP	Carbon Disclosure Project
CDSB	Climate Disclosure Standards Board
Ceres	Coalition for Environmentally Responsible Economies
CSR	corporate social responsibility
DEFRA	Department of Environment, Food & Rural Affairs (UK)
GHG	greenhouse gas
GRI	Global Reporting Initiative
IASB	International Accounting Standards Board
IFRS	International Financial Reporting Standards
IGCC	Investor Group on Climate Change
IIGCC	Institutional Investor Group on Climate Change
IIRC	International Integrated Reporting Committee
INCR	Investor Network on Climate Risk
MoU	memorandum of understanding
NGOs	non-governmental organizations
SAICA	South African Institute of Chartered Accountants
SASB	Sustainability Accounting Standards Board
SEC	Securities and Exchange Commission (US)
UNEP	United Nations Environmental Programme
UNEP FI	UNEP Finance Initiative
UNPRI	United Nations Principles for Responsible Investment
WBSCD	World Business Council for Sustainable Development
WRI	World Resources Institute

EXECUTIVE SUMMARY

In recent years, a plurality of different governance initiatives has emerged that are designed to expand the disclosure of environmental risk within financial markets. The emergence of these initiatives represents an important policy development, and it has the potential to reduce environmental risk within the financial sector by incentivizing investments in sustainable economic activity capable of long-term value creation. Unfortunately, environmental risk disclosure has yet to be assessed as a field of governance activity in addition to its potential effectiveness in improving disclosure within financial markets. This paper addresses this gap by describing environmental risk disclosure as a “regime complex” that is defined by a field of fragmented but related governance initiatives that lacks an overarching hierarchy. While this regime complex does reveal evidence for policy convergence among different initiatives, it lacks the enforcement necessary to produce a coherent and comparable disclosure and contributes to uncertainty within the financial sector over the impact of environmental risk. This uncertainty justifies an expanded role of international financial regulations in establishing a mandatory and harmonized disclosure standard that can be applied across different domestic jurisdictions.

INTRODUCTION

The 2008 financial crisis revealed how financial markets were exposed to significant information asymmetries related to housing market credit risk. Financial disclosure and accounting standards, in particular, drew attention for their role in failing to reduce these asymmetries (Nolke 2009). While policy makers have taken steps to improve financial disclosure in response to the crisis, there is a growing concern that “non-financial” information on environmental risk is similarly under-reported. Indeed, new research has suggested that the financial sector may be exposed to an asset bubble driven by an overvaluation that has yet to incorporate the economic impacts of pollution, resource scarcity and climate change (Carbon Tracker 2012; Jones, Allen and Silver 2013).

In response to these concerns about environmental risks, a number of unique governance initiatives have emerged to address the challenge of incorporating environmental risk into financial markets. These initiatives are designed to expand the scope of financial reporting requirements to capture traditionally “non-financial risks,” specifically those that are environmental in origin, such as pollution, resource depletion and climate change.¹ Financial disclosure represents an important tool used by investors

1 In its most strict definition, environmental risk is defined as the credit risk generated by environmental liabilities. For the purposes of this paper, it will take on a broader definition that also captures all the material costs of environmental degradation and climate change for financial markets.

to inform capital allocation decisions within financial markets. Disclosures provide information to investors on a range of important factors including cash flows, profits and losses, and business risks (International Accounting Standards Board [IASB] 2013; Véron, Autret and Galichon 2006). This information helps investors make efficient capital allocation decisions and minimize speculation by linking an asset to information on its underlying fundamentals.

The authority to determine what exact information should be included, and how it should be measured, belongs to both international and national financial standard setters. The IASB has developed the International Financial Reporting Standards (IFRS) as a framework that domestic regulators can use to align their standards (IASB 2010). Over 130 countries have now adopted, or are in the process of adopting, the IFRS (IASB 2011). By adopting the IFRS, domestic financial regulators improve the comparability of financial disclosures between countries, which greatly reduces the transaction costs for investors of comparing reports using different standards. Ultimately, however, domestic regulators dictate their own reporting standards through legislation such as the US Securities and Exchange Commission (SEC) Regulations S-K, the Japan Financial Instruments and Exchange Act, the UK Companies Act and the Canadian Financial Reporting & Assurance Standards.

As a prominent form of regulation designed to improve the efficiency and transparency of financial decision making, the emergence of a plurality of initiatives designed to improve environmental risk disclosure represents an important development for the finance and environmental community. Unfortunately, research has yet to assess the characteristics of environmental risk disclosure as a field of governance activity, and its potential effectiveness in improving the accountability of financial markets for environmental risk has yet to emerge. This paper will address this gap by first describing environmental risk disclosure as a regime complex that is defined by characteristics, including multiple actors and governance levels, fragmented decision making, rule inconsistency and redundancy, and institutional evolution. Second, based on emerging research on regime complexity, this paper will assess different perspectives about its effectiveness in the context of environmental risk disclosure. This analysis will reveal that despite evidence of policy convergence within the regime complex, insufficient enforcement is leading to uncertainty within the financial sector that justifies an expanded role for international financial regulators in establishing a harmonized mandatory disclosure standard.

The first section reviews the emergence of a range of voluntary, regulatory and accounting environmental risk disclosure initiatives. The second section describes how the field of environmental risk disclosure represents a form of regime complexity whereby multiple independent initiatives attempt to govern a similar issue without a

central overarching authority. It explores the characteristics of this environmental risk disclosure regime complex. The third section explores evidence of the regime's effectiveness in improving the disclosure of environmental risk. This analysis reveals that despite a significant expansion in the attempts to govern environmental risk disclosure, the regime is too fragmented to produce a coherent measurement of risk exposure, and could be increasing, rather than reducing, confusion about these risks within the financial sector. This uncertainty justifies an expanded goal for public authorities through the development and implementation of mandatory international financial regulation. The final section of the paper summarizes the main findings.

ENVIRONMENTAL RISK DISCLOSURE IN GLOBAL GOVERNANCE

The link between financial reporting standards and environmental risk first emerged in the 1970s as civil society groups recognized the potential influence that end-users of financial reports, such as investors and consumers, could have over corporate behaviour (Brown, de Jong and Lessidrenska 2009; Gupta 2008). Over the last 20 years, however, efforts to expand disclosure in addition to a range of other corporate accountability mechanisms have grown more diverse in terms of their governance approach and the actors involved.

VOLUNTARY DISCLOSURE

The idea of using voluntary disclosure to attract the attention of investors first emerged in response to the 1989 Exxon Valdez oil spill off the coast of Alaska. The costs of the cleanup, fines and liability convinced a group of investors to collaborate with non-governmental organizations (NGOs) in forming the Coalition for Environmentally Responsible Economies (Ceres) and develop a set of voluntary disclosure standards that could be used to assess environmental risk (MacLeod 2010; Pattberg 2007). Comparable disclosure could leverage investors as sources of environmental governance by using their capital allocations to reward sustainable companies with investment and punish polluters with divestment. Firms would volunteer to provide this information to signal effective management of environmental risks and improve their reputation as sites for investment. In 1997, Ceres established the Global Reporting Initiative (GRI) to expand its efforts to engage investors. The GRI now represents one of the world's leading sustainability reporting initiatives, with over 6,549 organizations participating in the latest round of disclosure (Brown, de Jong and Lessidrenska 2009; GRI 2010). By linking corporate behaviour to environmental risks through disclosure, Ceres has been recognized as a key policy entrepreneur behind efforts

to share information, build capacity and set rules that leverage the material interests of investors with corporate accountability for environmental impacts (Pattberg 2007).

In addition to collaboration among private actors, international organizations such as the United Nations Environment Programme (UNEP) also started to engage the impacts of the financial sector on social and environmental issues. In 1992, the UNEP developed a partnership with a group of banks called the UNEP Financial Institutions Initiative. A similar partnership called the UNEP Insurance Initiative emerged in 1995 to develop strategies to reduce the sector's exposure to environmental risk. These initiatives merged in 2002 to become what is now known as the UNEP Finance Initiative (FI). Although the UNEP FI has not produced a disclosure standard, it requires that its members voluntarily commit to "integrating environmental and social considerations into all aspects of their operations" (UNEP FI 2011). Over 200 organizations from Europe, North America, South America and Asia — including banks and investment and insurance companies — have signed on to join the initiative. The UNEP FI focuses most of its resources on knowledge development and dissemination by organizing regulator meetings with its members in addition to facilitating research. As a part of this role, the UNEP insurance initiative produced a report in 1997 detailing how investors could measure exposure to CO₂ in their investment portfolios (Paterson 2001; Newell and Paterson 2010, 72). Although the benchmarking strategy was never implemented by the UNEP, it has become a prominent and popular tool within the financial sector.

Tessa Tennant, an author of the UNEP benchmarking report and policy entrepreneur with links to the London investment community, formed the Carbon Disclosure Project (CDP) in 2002 with the mandate to measure and benchmark portfolio exposure to CO₂ in addition to a range of other climate change risks. Every year, the CDP sends out a survey to the largest publicly traded firms asking for them to voluntarily measure and disclose their exposure to climate change risks (MacLeod and Park 2011). The CDP parallels the GRI in its organization as a collaboration between private actors, but focuses its disclosure exclusively on climate change risk, whereas the GRI is broader and includes a range of other environmental and social impacts. In addition, the CDP has more of an activist approach by encouraging investors to pressure publicly listed companies to measure and communicate their climate change risks. Over 722 investors representing over US\$84 trillion in assets have signed up to support the CDP's disclosure efforts, which has helped the initiative become the world's largest database for climate change risk

information (CDP 2013a; CDP 2013b).² As a consequence of this wide constituency of support, over 4,000 publicly listed companies have produced reports on climate change risk since the CDP established its survey. In particular, the CDP has convinced 81 percent of the world's largest publicly listed companies to disclose information using their standards (CDP 2013c).

To help reporting organizations measure their CO₂ emissions, the CDP has built on the efforts on the Greenhouse Gas (GHG) Protocol — a separate metric developed by the World Business Council for Sustainable Development (WBCSD) and the World Resources Institute (WRI) in 2001. Although not a formal disclosure standard, the GHG Protocol was an important development as it established a comparable methodology for measuring emissions, which is important information for investors seeking to understand how their portfolios might be exposed regulatory costs associated with carbon taxes or emissions trading. The protocol identified the “organizational boundaries” that reporting organizations should use to account for GHG emissions, including “direct” emissions from any operations, emissions created upstream through the purchase of energy and emissions from more diffuse sources, such as travel, supply chain and products (WRI and WBCSD 2001, 21). Despite wide adoption by many emissions measurement frameworks — such as the CDP, California Climate Registry and the International Standardization Organization — the GHG Protocol is just one of many different emissions measurement systems that investors could look at to evaluate carbon accounting (Green 2010). Jessica Green (2013), for example, has tracked how over 30 different carbon standards capable of measuring offsets, accounting for carbon or providing transparency have originated between 2001 and 2009.

In addition to developing reporting standards and measurement methods, a number of initiatives focus more on leveraging investor and civil society interests in transparency to pressure reporting organizations and regulators to increase disclosure. Ceres established the Investor Network on Climate Risk (INCR) in 2001. Since its founding, more than 100 institutional investors managing over US\$11 trillion in capital have agreed to support INCR (INCR 2013). Unlike existing climate change risk standard setters, such as the CDP, the INCR has a mandate to engage in lobbying. The SEC's 2010

decision to clarify that climate change constitutes a material risk represents one of the INCR's most significant accomplishments (Ceres 2010). Letters submitted by the INCR on behalf of its members arguing that the SEC improve disclosure of climate change risks provided important capacity building to help understand why such disclosure aligns with investor interests. In addition, the INCR also organizes shareholder resolutions on behalf of its members seeking more disclosure from publicly listed firms (Ceres 2013). Several other initiatives have embraced the INCR's approach, including the United Kingdom's Institutional Investor Group on Climate Change (IIGCC) and Australia's Investor Group on Climate Change (IGCC) (INCR 2010; IIGCC 2005; IGCC 2010).

Outside of initiatives focused on climate change, the United Nations Principles for Responsible Investment (UNPRI) also attempt to build capacity within the investment industry in ways that align its interests with disclosure on environmental risk. The UNPRI was launched in 2005 as a partnership between institutional investors in the United Nations and now represents the largest initiative with a mandate to expand disclosure of environmental risks. Over 1,260 investment organizations representing US\$45 trillion in capital have agreed to adopt six principles that include integrating environmental and social issues into their analysis, ownership policies, and promoting disclosure. More specifically, investors are asked to promote standardized reporting (such as the GRI), encourage reporting organizations to include environmental risk information in financial reports and support shareholder resolutions seeking expanded disclosure (UNPRI 2014).

Analysis on voluntary disclosure initiatives reveals a plurality of different attempts to improve environmental risk disclosure employing a number of strategies that often build on previous efforts. Disclosure first emerged within a civil society institutional setting as a means of strengthening corporate environmental accountability, but has now evolved into a more investor-oriented strategy emphasizing risk disclosure and measurement. Public authorities, however, have also started to explore the governance of environmental risk disclosure, particularly at the domestic level where a number of standards and guidance documents have emerged. The following section describes these efforts and confirms that, like their voluntary counterparts, there is a diverse range of disclosure approaches.

REGULATORY DISCLOSURE

Regulatory initiatives involve the adoption of regulations by public authorities to expand the disclosure of environmental risk information. The most rigorous approaches involve specific requirements for environmental and social information backed up by a third-party audit to assess compliance. Other approaches are more flexible, including “comply or explain”

² While the CDP focuses on developing disclosure standards to share information, several initiatives have other partnerships between international organizations, NGOs and investors have emerged that focus on capacity building among investors, but not disclosure. Several other initiatives, including the United Nations Principles for Responsible Investment and the banking sector's Equator Principles, embrace a similar strategy. The latter sets out guidelines that require banks to limit the environmental and social impacts of project financing (such as large infrastructure investments) in developing countries (Wright and Rwabizambaga 2006).

requirements, disclosure of information on whether firms practise corporate social responsibility or guidance that suggests firms should report on environmental or social information.

South Africa deserves credit as the first country to pioneer the use of regulation to encourage expanded disclosure. South Africa's King Committee on Corporate Governance was initiated in 1994 to review the rules over corporate governance as the country emerged from the apartheid regime. The first report from this commission was published in 1994, and although it did not focus on environmental risk, it argued that corporate behaviour must be accountable to a range of stakeholders including those without a direct interest in financial performance, such as civil society actors (Cliffe Dekker Attorneys 2002). Although the report's recommendations were not explicitly integrated into regulation, the Johannesburg Stock Exchange adopted the standards as mandatory for any company listing shares. The second report in 2002, however, expanded the responsibility of corporate directors and boards to include information on sustainability in existing corporate disclosures. In the third report, released in 2009, the King Committee introduced the idea of "integrated reporting" whereby information on sustainability and environmental information would be required alongside traditional financial metrics. By creating space in an annual disclosure report where environmental risk information must be reported, integrated reporting prioritizes non-financial information as much as financial information (Eccles and Krzus 2010). Integrated reporting has now been embedded in the Companies Act of South Africa, and remains enforced by the Johannesburg Stock Exchange (International Federation of Accountants 2010). The new disclosure requirements require third-party verification of the report, and that firms adopt the "comply or explain" model of enforcement. Third-party verification helps regulators determine whether exclusions by the reporting organization are justified. An Integrated Reporting Committee is currently working on developing the specific guidance requirements that firms must use to measure non-financial information (South African Institute of Chartered Accountants [SAICA] 2011).

France has taken a similar approach to regulating disclosure of environmental risks by adopting Article 225 in its Grenelle II laws governing disclosure requirements. Article 225 is more prescriptive than South Africa's integrated reporting requirements, because it identifies environmental policy, pollution and waste management, climate change and biodiversity impacts as information that must be disclosed. France has limited these requirements to firms with an annual revenue higher than €100 million or with more than 500 employees. Information that is omitted from the report must be justified as not relevant by the reporting organization. Similar to South Africa, decision making over what to include in the report is subject to

a third-party audit, which assesses whether disclosure is sufficient based on the reporting organization's explanations. Unfortunately, France has yet to develop an enforcement mechanism that would sanction a company for failing to adequately disclose information (Ernst & Young 2011). Despite the lack of a clear enforcement mechanism, the third-party audit constitutes an important source of accountability that many other existing and emerging disclosure regulations lack.

A number of other countries have adopted similar mandatory requirements, but they tend to lack requirements for a third-party audit. In 2014, the Australian Securities Exchange adopted guidance that requires listed companies to disclose any environmental and social risks in addition to strategies to mitigate these risks. Similarly, in April 2014, the EU Parliament passed legislation making it mandatory that publicly listed companies with more than 500 employees on EU stock exchanges disclose information on environmental politics, risks, social and employee issues, and human rights, in addition to anticorruption and bribery strategies (European Commission 2014). Denmark requires companies to disclose their use of environmental resources if they have a financial impact on the firm. Indonesia requires disclosure on a firm's impacts on the environment and society (Initiative for Responsible Investment 2013).

Some regulations, such as those of Brazil's stock exchange or Taiwan, require that listed companies identify whether they produce a corporate social responsibility (CSR) report and explain when a report is not produced. Other governments require companies located within their borders to produce a CSR or environmental report regardless of whether or not they are publicly listed. The Dutch government asks companies to produce a separate environmental report that includes information on pollutants and environmental management systems. Norway and Malaysia recently introduced regulation that requires companies to produce a CSR report.

Other authorities — such as Canada, Italy and the United States — have not introduced any additional regulation, but instead have issued guidance that clarifies that environmental and social impacts should be disclosed. In 2010, the Canadian Securities Administrators introduced its first guidance, which clarifies environmental risks, trends and regulatory impacts, in addition to management of sustainability, as issues that should be disclosed if they impact the firm's value. Italy's 2007 guidance stated that companies should include non-financial indicators relevant to the operation of the business (Initiative for Responsible Investment 2013). In 2010, the SEC voted to issue guidance that climate change should be considered a risk included in annual Form 10-K reports (Ceres 2010).

Regulators working for international financial organizations have also started to expand research to

assess the potential for existing disclosure requirements to measure and communicate non-financial risk. Unlike many voluntary and domestic approaches, however, this work avoids explicit references to environmental risks. For example, the Financial Stability Board formed an Enhanced Disclosure Task Force, which subsequently produced a report on strategies to reduce the information asymmetries that contributed to the 2008 financial crisis. Several of the recommendations include language that while not explicitly identifying environmental risk, could require such disclosure. For example, the report supports disclosure on a bank's business model, assumptions and limits of financial models, and expanding disclosure to capture "publicly known risk events related to other risks" (Enhanced Disclosure Task Force 2012, 13). For banks with significant investment in industries exposed to environmental risk, these recommendations could expand the range of disclosure to include environmental risk.

Regulatory disclosure initiatives demonstrate that public authorities are beginning to prioritize the impact of environmental risk within financial markets. Similar to their voluntary counterparts, these initiatives reveal significant diversity in the strategy and scope of information required.

ACCOUNTING DISCLOSURE

In addition to the plurality of voluntary and regulatory approaches, the accounting industry has also started playing a much stronger role in shaping the disclosure of environmental risk. Accounting initiatives are distinctive since they directly employ professional accountants in the development of their standards, target harmonization and consolidation among existing voluntary and regulatory initiatives, and align disclosures with well-established reporting norms and methodologies. From this perspective, accounting-led disclosure constitutes a potential bridge between voluntary and regulatory efforts as they seek to align differences between the two approaches.

In 2006, the Prince of Wales launched Accounting for Sustainability (A4S) to engage the accounting community as a means of producing a more consistent and harmonized approach to integrating sustainability and environmental risks into financial disclosures (A4S 2014). The next year, several existing reporting organizations — including the CDP, GHG Protocol and Ceres — established the Climate Disclosure Standards Board (CDSB) as a collaboration between accountants, investors and reporting organizations. Unlike A4S, which has a broad mandate to engage the accounting community, the CDSB is charged with developing an international harmonized set of climate change risk reporting standards that can be adopted by regulation (CDSB 2013). In 2009, A4S and the GRI followed the CDSB's lead by agreeing to collaborate in a process to expand the work by the South African King Committee on integrated reporting. They initiated the International Integrated Reporting Committee (IIRC)

to develop a set of international standards that investors, reporting organizations and accountants could use to measure sustainability and environmental indicators alongside existing financial data (Eccles and Krzus 2010, 3). While A4S, the CDSB and the IIRC are all UK-based organizations, the Washington, DC-based Sustainability Accounting Standards Board (SASB) was launched in 2011 with a similar mandate as its counterparts, but focused on producing sector-specific standards (SASB 2013a).

Accounting-led disclosure initiatives all share similar organizations, strategies and mandates. Each organization involves a board that includes representation from senior decision makers in the corporate, civil society, financial and accounting sectors (IIRC 2013a; CDSB 2010a; SASB 2013b). Standards are developed in each initiative through a technical or working group that involves significant representation from professional accountants (IIRC 2013b; CDSB 2010b; SASB 2013c). This process is designed to identify and integrate existing best practices into a set of harmonized standards that can produce comparable information that is "decision-useful" for investors. Once developed, standards are released for a public comment period. Feedback from the consultation is then incorporated back into the standards before they are approved by the board and released (IIRC 2013d; CDSB 2009; SASB 2013d). Each initiative has completed a set of disclosure standards, including the CDSB's Climate Change Reporting Framework, and the IIRC's International Integrated Reporting Framework (IIRC 2013c). The SASB is more focused on sector-based standards and has two frameworks for the health care and financial sectors (SASB 2013c; 2013e).

Each framework emphasizes a range of environmental and social impacts, but they share an overarching framework emphasizing the "financial reporting" model to inform whether disclosure is necessary. The IIRC (2013f) has developed a metric designed to measure a company's range of "capitals" including financial, manufacturing, intellectual, social and relationship, human and natural sources. The CDSB combines the CDP and GHG Protocol in its disclosure framework on climate change risk. The SASB's focus on specific sectors involves more granular metrics. For example, for its standards on the pharmaceutical sector, the SASB asks whether a company is developing drugs on emerging diseases that are likely to increase through environmental change, such as malaria in response to climate change.

Analysis on the range of voluntary, regulatory and accounting initiatives targeting the expansion of environmental risk disclosure reveals considerable diversity in terms of the actors involved and the strategies they employ. The following section examines how this diversity of approaches can be conceptualized as a form of regime complexity defined by a field of similar but distinct initiatives.

ENVIRONMENTAL RISK DISCLOSURE REGIME COMPLEX

The plurality of different environmental risk disclosure initiatives can be defined by the concept of a “regime complex.” Kal Raustiala and David Victor (2004) developed this concept to examine how a field of different governance initiatives influences a common issue area without a centralized hierarchy. Further analysis on regime complexes by Robert Keohane and David Victor (2011, 9) suggests that they exist on a continuum between hierarchical institutions with formally agreed upon rules, such as the World Trade Organization, and at the other end, a fragmented series of initiatives with little or no connection between each other. Green (2013) expands this concept to focus on institutional complexity that exists among private governance institutions working on carbon accounting. Based on this literature, regime complexes can be defined by a number of common characteristics, including multiple actors and governance levels, fragmentation, rule inconsistency and redundancy, and institutional evolution.

MULTIPLE ACTORS AND GOVERNANCE LEVELS

Regime complexes involve rule making developed and enforced by a range of public and private actors at the domestic, transnational and international level. Some initiatives only involve private governance whereby non-state actors (such as NGOs) ally with businesses to generate rules in issue areas where government regulation is weak or insufficient (Green 2013). At the same time, public authorities such as governments, regulators or international organizations can generate their own rules, or ally with private actors in “hybrid” rule-making systems (Backstrand 2008; Bulkeley et al. 2012). Evidence of multiple actors and governance levels is clear in the case of environmental risk disclosure. For the most part, voluntary and accounting initiatives are private transnational organizations that involve cross-border partnerships between NGOs, publicly listed firms, investors and accountants to develop mutually agreed upon disclosure standards. For example, the CDP is located in London, but reporting organizations are located in 16 countries (CDP 2013c). Initiatives such as the UNEP FI, however, reveal an example of a hybrid arrangement where public officials work with private financial firms to improve disclosure. At the same time, many regulatory approaches exist at the domestic level and are limited to public authorities, such as financial regulators.

FRAGMENTATION

Regime complexes are fragmented and involve multiple initiatives that develop rules or strategies linked to a similar objective, but are not necessarily linked in any formal

relationship. Environmental risk disclosure initiatives all share the common goal of improving the communication and measurement of corporate environmental and social impacts. But these efforts are divided among a range of independent initiatives that each have their own mandates and organizational jurisdiction. This fragmentation is particularly evident in the area of climate change risk governance. Initiatives such as the GHG Protocol, CDP, Ceres, INCR and CDSB all devote resources toward expanding disclosure of climate change risks, but have independent boards, technical working groups and memberships.

RULE INCONSISTENCY AND REDUNDANCY

Regime complexes involve rule inconsistency as each initiative develops its own set of standards, but often share similar characteristics that can lead to redundancy. Among voluntary initiatives, the GHG Protocol is employed by the CDP and CDSB, but each organization uses a different format and scope of disclosure. Regulatory disclosures exhibit significant diversity in both the scope of their application and how they are enforced. Governments, such as South Africa’s and France’s, have developed fairly specific requirements for disclosure that must be verified and audited by a third party. At the same time, some governments only require disclosure if a company has adopted a CSR policy, or they issue voluntary guidance that clarifies whether information should be disclosed rather than making a formal requirement. In addition, some rules are adopted by stock exchanges (all publicly listed companies must comply), whereas other rules apply to any company located within the country. While each requirement is distinct in its scope and jurisdiction, they often require that similar environmental risk information is included, whether through a CSR report or a financial statement creating redundancy for firms that must report using multiple frameworks.

INSTITUTIONAL EVOLUTION

Regime complexes tend not emerge from a “clean slate” and evolve based on already established institutions and regulations that already address similar issue areas (Raustiala and Victor 2004). The emergence of accounting-led initiatives reveals how environmental risk disclosure builds and adds layers onto pre-established approaches. The IIRC, for example, emerged through a partnership between the GRI and A4S to consolidate existing environmental reporting standards in an international framework. In addition, South Africa has agreed to adopt the framework developed by the IIRC as guidance for publicly listed firms on the Johannesburg Stock Exchange (SAICA 2011). The United Kingdom’s adoption of mandatory GHG reporting requirements references the CDSB’s Climate Change Reporting Framework as a source of further guidance for firms (Department of Environment,

Food & Rural Affairs [DEFRA] 2013). The CDSB combines aspects of both the CDP's benchmarks for climate change risks with the GHG Protocol's benchmark for emissions measurement.

Analysis on environmental risk disclosure demonstrates evidence for regime complexity, as there is no single organization with the rule-making authority necessary to produce a global standard accepted by private, public and civil society actors. How does regime complexity influence the effectiveness of environmental risk disclosure? The next section examines this question.

THE EFFECTIVENESS OF THE ENVIRONMENTAL RISK REGIME COMPLEX

Research on regime complexity has yet to empirically assess effectiveness, but does offer some assumptions whether multiple and overlapping initiatives can strengthen governance. Regime complexity can produce an effective form of governance because it offers a flexible forum for addressing multifaceted issues over which governments remain divided or are marginal in terms of priority. The environmental risk disclosure regime represents a response to a demand to "fill" a governance gap by supplying accountability in the financial sector in areas where regulation from states or international institutions is undersupplied or insufficient (Green 2014; Pattberg 2007; Falkner 2003). Multiple and overlapping initiatives constitute individual sites of experimentation where, over time, policy convergence around a commonly accepted standard can occur. From this perspective, evidence of effectiveness would involve organizations designed to harmonize existing standards, similarities in the way each of their frameworks measures environmental risk and growing support for their adoption by financial stakeholders.

Despite this optimism, many experts view regime complexity as inherently limited compared to interstate- and state-based regulation. Instead of a functional site of experimentation, regime complexity reveals a failure to overcome collective action problems as actors engage in forum shopping by picking institutions that align with their interests but do little to influence changes in behaviour (Alter and Meunier 2009). Thus, regime complexity offers little environmental value and, more importantly, little incentive for the financial industry to leverage its wealth as a source of environmental governance. Effectiveness from this more skeptical perspective would involve accountability, specifically evidence that failure to disclose information is sanctioned by either cancelling a membership in a disclosure initiative or administering a fine in the case of regulatory approaches. To assess which assumption for the effectiveness of environmental risk disclosure regime complex is more accurate, the following

section describes how, despite evidence of policy convergence, the environmental risk regime complex lacks the enforcement necessary to produce an effective outcome.

POLICY CONVERGENCE IN ENVIRONMENTAL RISK DISCLOSURE

As the second section (Environmental Risk Disclosure in Global Governance) revealed, while environmental risk disclosure involves a plurality of different initiatives, several ongoing efforts to reduce fragmentation and increase harmonization have emerged. The first source of evidence for such harmonization can be found in the organizational design of each initiative. Both voluntary and accounting-led initiatives facilitate extensive deliberation and consultation on their standards to improve their capacity to measure environmental and social risks, but also cultivate support from financial stakeholders. By benchmarking the standards against the experience of organizations that have reported information using other standards, a process of technical consensus building can occur that gradually reduces differences in approach.

To date, the GRI has produced four different frameworks, each designed to incorporate feedback and address weaknesses captured in the previous round of reporting. GRI's latest "G4" framework was developed through an extensive consultation process. In 2011, GRI started collecting information on the effectiveness of the G3 standards through a 90-day public comment period. Based on this feedback, working groups were created to develop context for revised guidelines. These working groups involved participation from business, financial markets, labour groups and businesses. Once the working groups finished developing proposals for new standards, they were approved by the GRI's Board of Directors and Stakeholder Council. After approval, the revised standards were exposed to a second 90-day public comment period. Feedback from this process went into final revision through the work of a Technical Advisory Committee before seeking final approval from the board (GRI 2011).

The IIRC also spearheaded an effort to recognize major frameworks adopted by its counterparts as appropriate for its own disclosure requirements. In 2013, the IIRC signed a memorandum of understanding (MoU) with the GRI, recognizing the use of its standards as acceptable for an integrated report. In the same year, the IIRC also developed an MoU with the CDP and CDSB, recognizing that each organization will work to harmonize their approaches under the scope of integrated reporting. As Paul Simpson, executive director of the CDP argues, the MoU will help "promote the global harmonization and clarity of corporate reporting requirements in ways that drive consistency and comparability. This will improve the effectiveness of corporate reporting practices, benefiting companies and investors alike" (IIRC 2013e). The IIRC has also signed

an MoU with the SASB recognizing the importance of producing comparable information for investors (GRI and CDP 2014). Independent of these arrangements, the CDP agreed to an MoU with the GRI in 2013 to align climate change risk reporting requirements (*ibid.*).

In addition to formal agreements that each initiative should recognize their counterpart's standards, analysis on each initiative's framework reveals some significant similarities in terms of the metrics used. The concept of measuring value in terms of a non-financial "capital" has been adopted by the SASB and IIRC frameworks, but is also a part of the CDP and CDSB's research agendas. Among accounting standards, the financial reporting model that dictates information must be decision-useful for investors has been widely adopted. The GHG Protocol's methodology for establishing organizational boundaries around emissions has been adopted by both the CDP and CDSB. Moreover, the CDSB has adopted the CDP's metric for dividing climate change risk into physical, regulatory, reputational and legal categories. The popularity of certain metrics across environmental risk disclosure frameworks can be considered evidence of a regulatory diffusion driven by participants who have interests in adopting standards that are recognized by most organizations as being of the highest quality (Green 2013).

Evidence of policy convergence can also be found in the growing recognition that voluntary and accounting disclosure frameworks can be used to strengthen emerging regulatory standards. South Africa, for example, has agreed to include the IIRC's disclosure standards in its requirement that all publicly listed firms provide integrated reports (SAICA 2011). The CDSB worked closely with the United Kingdom's DEFRA in the development of mandatory requirements to disclose GHG emissions. When the regulations were announced, the CDSB's framework for measuring climate change risks was identified as an appropriate standard for guiding disclosure (DEFRA 2013). The SASB is explicitly designed to provide standards that strengthen the SEC's existing Form 10-K disclosure requirements. While these requirements dictate that disclosure must be decision-useful for investors, reporting organizations often do not consider environmental and social factors as a part of this definition. The SASB's standards are designed using a process whereby reporting organizations, accountants, investors and civil society groups assess whether social and environmental impacts meet the SEC's definition. Investors and managers can use this guidance to determine whether a reporting organization is meeting its legal disclosure requirements for environmental and social impacts (SASB 2013e).

The adoption of strategies to improve consolidation, formal agreements to recognize the use of different standards, convergence among non-financial accounting metrics, and the growing alignment of voluntary and accounting standards with regulatory approaches reveal evidence

of experimentation and policy convergence within the environmental risk regime complex.

ENVIRONMENTAL RISK UNCERTAINTY AND REGULATION

Critical scholars view regime complexity as inherently limited compared to interstate- and state-based regulation. Evidence of this argument can be found in the relatively weak enforcement mechanisms employed by disclosure initiatives and growing confusion within the financial industry over the impact of environmental risk due to inconsistent and insufficient reporting (Clapp and Thistlethwaite 2012).

Although environmental risk disclosure initiatives are designed to encourage firms to participate by reducing the costs of compliance, they rarely introduce sanctions for members that fail to produce any disclosure. For example, the GRI requires that reporting organizations can decide between a "core" or "comprehensive" approach to disclosure. The former approach limits disclosure to the "essential elements of a sustainability report," whereas the latter expands the scope to all of the GRI's main indicators, such as strategy, analysis, governance, ethics and integrity (GRI 2013, 13). The decision over which approach to adopt is ultimately up to the reporting organization's needs, and the perceived demand of such information among its stakeholders. This approach to dictating disclosure has been criticized as "soft" and dependent "to a large extent on the goodwill or interests of reporters" (Dingwerth and Eichinger 2010, 84).

Standards that place the responsibility for determining disclosure on the reporting organization's discretion are a widely adopted approach among accounting and regulatory frameworks as well. More specifically, these standards invoke the concept of decision-useful information to inform reporting organizations on the level of necessary disclosure. The determination of what information is considered decision-useful, however, is left to the reporting organization. Reporting organizations tend to oppose expanded disclosure due to both the costs associated with additional measurement and also reputational scrutiny among investors or civil society organizations (Richardson 2002). Moreover, most reporting organizations are inexperienced with the methodologies necessary to measure non-financial information, which tends to be exposed to greater levels of uncertainty. For example, the IIRC acknowledges that "practical issues" could limit disclosure of some information, such as the "availability of reliable data" and the "inherent inability to identify all risks, opportunities and outcomes" that could impact the company (IIRC 2013g, 29).

Despite this reliance on the goodwill of reporting organizations, disclosure frameworks try to limit significant gaps in the information provided through "comply or

explain” and external verification requirements. The GRI, IIRC, SASB, CDP and CDSB all use this approach to encourage firms to provide disclosure. Unfortunately, there is no clear mechanism for firms that offer more explanations for gaps than actual disclosure. The GRI (2013, 13) argues that reports with significant gaps could invalidate the reporting organization’s “ability to claim that its sustainability report has been prepared in accordance with either the Core or Comprehensive options of the guideline.” The IIRC (2013g) makes a similar claim that inadequate disclosure might be judged as non-compliant with the framework. External verification involving a third-party audit of a firm’s disclosure report is one strategy that initiatives can use to strengthen compliance. For the most part, this is a voluntary requirement among disclosure initiatives, which leads to low rates of external verification. A recent study by the European Commission (2014) on non-financial disclosure in the European Union revealed that less than half of the companies participating in voluntary schemes sought out an external form of assurance. Regulatory approaches, such as in South Africa and France, do require external verification but, similar to their counterparts, also rely on a “comply or explain” enforcement mechanism.

Inadequate enforcement mechanisms are contributing to insufficient and inconsistent disclosures that both reporting organizations and investors are struggling to interpret. This inadequate and inconsistent disclosure is limiting the uptake of environmental and social information among investors and contributing to uncertainty and confusion (Kolk, Levy and Pinkse 2008, 741). Bloomberg provides environmental and social information from GRI and CDP reports for investors and has tracked engagement with this information. Between 2010 and 2011, Bloomberg found that use of environmental and social information increased by 50 percent, but this only represents one percent of the total “user base” (Business for Social Responsibility 2012). The UNPRI recently completed an analysis on the use of environmental and social information in decision making over equity investments. Inadequate disclosure was identified as a significant obstacle in acquiring “consistent, comparable and audited information” necessary for use in investment decisions (UNPRI 2013, 6).

An emerging debate over a “carbon bubble” within portfolios exposed to fossil fuel investments offers evidence for the impact of inadequate disclosure and subsequent uncertainty. According to Bloomberg, investment by the world’s largest oil companies is five times larger than it was in 2000 (Carbon Tracker 2014). For the UK-based Carbon Tracker Initiative, this investment constitutes evidence of a carbon bubble (Carbon Tracker 2012; *The Economist* 2014; Leggett 2012; Gore and Blood 2013). The carbon bubble refers to an overvaluation of fossil fuel assets in large financial markets that fail to account for liabilities related to increasing regulatory risk, specifically government

commitments to limit GHG emissions to a level where warming is limited to 2° C. Carbon Tracker Initiative believes that as investors recognize these liabilities they are likely to pull capital out of investments overexposed to GHG emissions, leaving many existing capital intensive fossil fuel operations as “stranded assets” with significant credit risk.

Investors are starting to respond to greater scrutiny of the potential climate change risks within their portfolios. The Norwegian oil fund and the California Public Employees Retirement System have each engaged in research on the carbon bubble. The latter has even intervened in some of its portfolio companies by seeking the appointment of climate change experts on the board of directors (Clark 2014; Brewster 2013). Investors are also starting to diversify their portfolios away from fossil fuels by increasing exposure to ethical and social responsible investments. In 2014, research by the Responsible Investment Association of Australasia revealed that investment in sustainable funds has grown by 51 percent (Responsible Investment Association Australasia 2014). Shareholder resolutions asking for more information on environment risks have also grown in popularity. Ceres (2013) tracked 500 resolutions between 2011 and 2014, requesting more information on environmental risk exposure.

At the same time investors are researching exposure to carbon risk, the fossil fuel industry is dispelling any argument that they are exposed to a carbon bubble. BP argues that “we’re aware of [the carbon bubble research], but believe the analysis we have seen oversimplifies the issue and overstates financial impact to our investments” (Hope 2014). ExxonMobil (2014) offered a similar defence: “We are confident that none of our hydrocarbon reserves are now or will become ‘stranded.’” These companies justify their positions based on evidence that fossil fuel demand will continue to increase, regulation limiting GHG emissions is highly unlikely and renewable energy will remain marginal within the global energy portfolio. Shell argues that “the world will continue to need oil and gas for many decades to come, supporting both demand and oil and gas prices” (Royal Dutch Shell 2014). It is also skeptical whether governments will take the actions necessary to keep warming below 2° C and believes the likelihood of regulations strong enough to keep emissions below such warming is outside the “reasonably-likely-to-occur range of planning assumptions” (*The Economist* 2014).

This analysis reveals how weak enforcement among existing environmental risk disclosure initiatives has led to inconsistent disclosure, which increases uncertainty in the financial sector over exposure to risks such as climate change. This finding supports assumptions that the risk regime is a poor substitute for mandatory regulation. Although the environmental risk regime complex could facilitate the learning and experimentation that cultivates

consensus for international regulation, this process could also increase financial instability as investors respond to conflicting or confusing accounts of environmental risk. From this perspective, the dangers associated with governance through a regime complex are conflated in the financial sector compared to governance through interstate regulation. Although some national regulators — such as France, the European Union and South Africa — are in the early stages of developing mandatory requirements, each approach is unique, which increases inconsistency. This fragmentation justifies a much stronger effort to develop an international standard. Without international regulation, the consistency and comparability issues that limit the existing regime complex are unlikely to improve, leading to potentially greater instability.

CONCLUSION

The environmental risk disclosure regime constitutes an important development for both financial and environmental politics. In addition to providing standards capable of reducing exposure to risk generated by the economic impacts of pollution, climate change and resource scarcity, disclosure has the potential to shift capital toward sustainable economic activity. Unfortunately, environmental risk disclosure initiatives constitute a regime complex that limits effective measurement and communication of the information necessary to inform investor decision making. This organization justifies an expanded role for international financial regulators in establishing harmonized environmental risk disclosure standards.

Research can help inform the design of an effective approach to regulating the financial disclosure of environmental risk. In particular, more research is necessary on the elements of existing disclosure standards that enjoy consensus by producing information that reporting organizations, investors, civil society organizations and accountants identify as important for decision making. Each of these actors often has a different interpretation of what constitutes an effective disclosure standard. Research on how these actors perceive the reports produced by different standards could prioritize areas of consensus. Without such research, the existing disclosure regime could increase financial instability as conflicting accounts of environmental risk confuse the market signals that investors use to distribute capital.

WORKS CITED

- A4S. 2014. "Governance Structure." The Princes Accounting for Sustainability Project. www.accountingforsustainability.org/about-us/governance-structure.
- Alter, Karen J. and Sophie Meunier. 2009. "The Politics of International Regime Complexity." *Symposium* 7 (1).
- Backstrand, Karin. 2008. "Accountability of Networked Climate Governance: The Rise of Transnational Climate Partnerships." *Global Environmental Politics* 8 (3): 74–102.
- Brewster, Kerry. 2013. "US Pension Fund CalPERS Backs Climate Change Activist's Bid for Spot on BHP Billiton Board." ABC News, November 13. www.abc.net.au/news/2013-11-13/bhp-criticised-for-backing-carbon-change/5088774.
- Brown, Halina Szejnwald, Martin de Jong and Teodorina Lessidrenska. 2009. "The Rise of the Global Reporting Initiative: A Case of Institutional Entrepreneurship." *Environmental Politics* 18 (2): 182–200. doi:10.1080/09644010802682551.
- Business for Social Responsibility. 2012. *Trends in ESG Integration in Investments*. Business for Social Responsibility. www.bsr.org/reports/BSR_Trends_in_ESG_Integration.pdf.
- Bulkeley, Harriet, Liliana B. Andonova, Karin Backstrand, Michele M. Betsill, Daniel Compagnon, Rosaleen Duffy and Ans Kolk. 2012. "Governing Climate Change Transnationally: Assessing the Evidence from a Database of Sixty Initiatives." *Environment and Planning C: Government and Policy* 30: 591–612.
- Carbon Tracker. 2012. *Unburnable Carbon — Are the World's Financial Markets Carrying a Carbon Bubble?* London: Carbon Tracker Initiative. www.carbontracker.org/wp-content/uploads/downloads/2012/08/Unburnable-Carbon-Full1.pdf.
- . 2014. *Carbon Supply Cost Curves: Evaluating Financial Risk to Oil Capital Expenditures*. London: Carbon Tracker Initiative.
- CDP. 2013a. "CDP Investor Initiatives." www.cdproject.net/en-US/WhatWeDo/Pages/investors.aspx.
- . 2013b. "Our Climate Change Work." www.cdproject.net/en-US/Programmes/Pages/climate-change-programs.aspx.
- . 2013c. *CDP S&P 500 Climate Change Report 2013*. London, UK: CDP. www.cdp.net/CDPResults/CDP-SP500-climate-report-2013.pdf.

- CDSB. 2009. "Basis for Conclusions in Exposure Draft: The Climate Standards Disclosure Board Reporting Framework." CDSB.
- . 2010a. "The Board." www.cdsb-global.org/index.php?page=the-board.
- . 2010b. "Technical Working Group." www.cdsb-global.org/technical-working-group/.
- . 2013. "CDSB: History and Mission." www.cdsb.net/about-cdsb/history-and-mission.
- Ceres. 2010. "Investors Managing \$2.1 Trillion in Assets Praise SEC for Climate Disclosure Guidance." www.incr.com/Page.aspx?pid=1214.
- . 2013. "Shareholder Resolutions." www.ceres.org/investor-network/resolutions.
- Clapp, Jennifer and Jason Thistlethwaite. 2012. "Private Voluntary Programs in Environmental Governance: Climate Change and the Financial Sector." In *Business and Climate Policy: Potentials and Pitfalls of Voluntary Programs*, edited by Karsten Ronit, 43–76. UN University Press.
- Clark, Pitta. 2014. "Norway Spurs Rethink on Fossil Fuel Companies." *Financial Times*, March 4. www.ft.com/cms/s/0/4b1c89dc-a313-11e3-ba21-00144feab7de.html#axzz2yDHTVeoM.
- Cliffe Dekker Attorneys. 2002. *King Report on Corporate Governance for South Africa: What It Means to You*. Cliffe Dekker Attorneys. www.mervynking.co.za/downloads/CD_King2.pdf.
- DEFRA. 2013. *Environmental Reporting Guidelines: Including Mandatory Greenhouse Gas Emissions Reporting Guidance*. UK: DEFRA. www.gov.uk/government/uploads/system/uploads/attachment_data/file/206392/pb13944-env-reporting-guidance.pdf.
- Dingwerth, Klaus and Margot Eichinger. 2010. "Tamed Transparency: How Information Disclosure Under the Global Reporting Initiative Fails to Empower." *Global Environmental Politics* 10 (3): 74–96.
- Eccles, Robert G. and Michael P. Krzus. 2010. *One Report: Integrated Reporting for a Sustainable Strategy*. New Jersey: Wiley & Sons.
- Enhanced Disclosure Task Force. 2012. *Enhancing the Risk Disclosures of Banks*. Basel: Financial Stability Board.
- Ernst & Young. 2011. "How France's New Sustainability Reporting Law Impacts US Companies." [www.ey.com/Publication/vwLUAssets/Frances_sustainability_law_to_impact_US_companies/\\$FILE/How_Frances_new_sustainability_reporting_law.pdf](http://www.ey.com/Publication/vwLUAssets/Frances_sustainability_law_to_impact_US_companies/$FILE/How_Frances_new_sustainability_reporting_law.pdf).
- European Commission. 2014. "Non-Financial Reporting." *The EU Single Market*. http://ec.europa.eu/internal_market/accounting/non-financial_reporting/index_en.htm.
- Exxon Mobil. 2014. "Energy and Carbon — Managing the Risks." <http://cdn.exxonmobil.com/~media/Files/Other/2014/Report%20-%20Energy%20and%20Carbon%20-%20Managing%20the%20Risks.pdf>.
- Falkner, Robert. 2003. "Private Environmental Governance and International Relations: Exploring the Links." *Global Environmental Politics* 3 (2): 72–87.
- Gore, Al and David Blood. 2013. "The Coming Carbon Asset Bubble." *The Wall Street Journal*, October 29. <http://online.wsj.com/news/articles/SB10001424052702304655104579163663464339836>.
- Green, Jessica. 2010. "Private Standards in the Climate Regime: The Greenhouse Gas Protocol." *Business & Politics* 12 (3): 1–37.
- . 2013. "Order out of Chaos: Public and Private Rules for Managing Carbon." *Global Environmental Politics* 13 (2): 1–25.
- . 2014. *Rethinking Private Authority: Agents and Entrepreneurs in Global Environmental Governance*. Princeton: Princeton University Press.
- GRI. 2010. "Reporting Framework Overview." *The Global Reporting Initiative*. www.globalreporting.org/ReportingFramework/ReportingFrameworkOverview/.
- . 2011. "G4 Development Process Overview." www.globalreporting.org/resourcelibrary/G4DevelopmentProcessOverview.pdf.
- . 2013. *G4 Sustainability Reporting Guidelines*. Amsterdam, Netherlands: GRI.
- GRI and CDP. 2014. *Linking GRI and CDP*. London: GRI and CDP. www.globalreporting.org/resourcelibrary/Linking-GRI-and-CDP-2014.pdf.
- Gupta, A. 2008. "Transparency Under Scrutiny: Information Disclosure in Global Environmental Governance." *Global Environmental Politics* 8 (2): 1–7.
- Hope, Mat. 2014. "What the Fossil Fuel Industry Thinks of the 'Carbon Bubble.'" *Carbon Brief* (blog). www.carbonbrief.org/blog/2014/07/we-ask-the-fossil-fuel-industry-what-it-thinks-of-the-carbon-bubble/.
- IASB. 2010. "About the IASB." www.iasb.org/About+Us/About+the+IASB/IFRSs+around+the+world.htm.

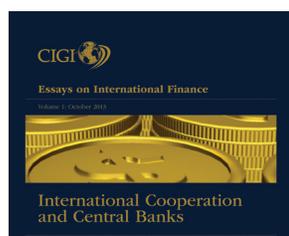
- . 2011. "Use Around the World." www.ifrs.org/use+around+the+world/use+around+the+world.htm.
- . 2013. "A Review of the Conceptual Framework for Financial Reporting." IASB discussion paper. www.ifrs.org/Current-Projects/IASB-Projects/Conceptual-Framework/Discussion-Paper-July-2013/Documents/Discussion-Paper-Conceptual-Framework-July-2013.pdf.
- International Federation of Accountants. 2010. *Governance Is King!* London, UK: International Federation of Accountants.
- IGCC. 2010. "Investor Group on Climate Change Australia/New Zealand (IGCC)." www.igcc.org.au/.
- IIGCC. 2005. "A Climate for Change: A Trustee's Guide for Understanding and Addressing Climate Change Risk." www.iigcc.org/_data/assets/pdf_file/0010/262/A_climate_for_change.pdf.
- IIRC. 2013a. "Board." www.theiirc.org/the-iirc/structure-of-the-iirc/the-iirc-board/.
- . 2013b. "Technical Task Force." www.theiirc.org/the-iirc/structure-of-the-iirc/technical-task-force/.
- . 2013c. "Working Group." www.theiirc.org/the-iirc/structure-of-the-iirc/iirc-working-group/.
- . 2013d. *Consultation Draft of the International <IR> Framework*. London, UK: IIRC. www.theiirc.org/wp-content/uploads/Consultation-Draft/Consultation-Draft-of-the-InternationalIRFramework.pdf.
- . 2013e. "CDP, CDSB and IIRC Announce Collaboration to Accelerate Integrated Reporting." www.theiirc.org/2013/07/18/cdp-cdsb-and-iirc-announce-collaboration-to-accelerate-integrated-reporting/.
- . 2013f. *Basis for Conclusions*. London, UK: IIRC. www.theiirc.org/wp-content/uploads/2013/12/13-12-08-Basis-for-conclusions-IR.pdf.
- . 2013g. *The International <IR> Framework*. London, UK: International IIRC. www.theiirc.org/wp-content/uploads/2013/12/13-12-08-THE-INTERNATIONAL-IR-FRAMEWORK-2-1.pdf.
- INCR. 2010. "Climate Change: Managing Risks." www.incr.com/Page.aspx?pid=219.
- . 2013. "Investor Network on Climate Risk." www.ceres.org/investor-network/incr.
- Initiative for Responsible Investment. 2013. *Current Corporate Social Responsibility Disclosure Efforts by National Governments and Stock Exchanges*. Harvard University.
- Jones, Aled, Irma Allen and Nick Silver. 2013. *Resource Constraints: Sharing a Finite World - Implications of Limits to Growth for the Actuarial Profession*. Cambridge, UK: UK Institute and Faculty of Actuaries.
- Keohane, Robert and David Victor. 2011. "The Regime Complex for Climate Change." *Perspectives on Politics* 9 (1): 7–23.
- Kolk, Ans, David Levy and Jonathan Pinkse. 2008. "Corporate Responses in an Emerging Climate Regime: The Institutionalization and Commensuration of Carbon Disclosure." *European Accounting Review* 17 (4): 719–45.
- Leggett, Jeremy. 2012. "Carbon Bubble Is the Real Risk for Markets." *Financial Times*, August 30. www.ft.com/cms/s/0/629f9a52-2283-11e2-b606-00144feabdc0.html#axzz38OEW0Ahh.
- MacLeod, Michael. 2010. "Private Governance and Climate Change: Institutional Investors and Emerging Investor-Driven Governance Mechanisms." *St. Antony's International Review* 5 (2): 46–65.
- MacLeod, Michael and Jacob Park. 2011. "Financial Activism and Global Climate Change: The Rise of Investor-Driven Governance Networks." *Global Environmental Politics* 11 (2): 54–74.
- Newell, Peter and Matthew Paterson. 2010. *Climate Capitalism: Global Warming and the Transformation of the Global Economy*. Cambridge: Cambridge University Press.
- Nolke, Andreas. 2009. "The Politics of Accounting Regulation: Responses to the Subprime Crisis." In *Global Finance in Crisis: The Politics of International Regulatory Change*, edited by Eric Helleiner, Stefano Pagliari and Hubert Zimmermann, 37–55. London: Routledge.
- Paterson, Matthew. 2001. "Risky Business: Insurance Companies in Global Warming Politics." *Global Environmental Politics* 1 (4): 18–41.
- Pattberg, Philipp. 2007. *Private Institutions and Global Governance: The New Politics of Environmental Stability*. Cheltenham, UK: Edward Elgar.
- Raustiala, Kal and David G. Victor. 2004. "The Regime Complex for Plant Genetic Resources." *International Organization* 58: 277–309.
- Responsible Investment Association Australasia. 2014. *Responsible Investment Benchmark Report*. Responsible Investment Association Australasia. www.responsibleinvestment.org/wp-content/

- uploads/2014/07/2014-Benchmark-Report-Fact-Sheet.pdf.
- Richardson, Benjamin J. 2002. *Environmental Regulation Through Financial Organisations*. London: Kluwer Law International.
- Royal Dutch Shell. 2014. "Re: Shareholder Inquiries about Carbon Bubble and Stranded Assets." May 16. <http://s02.static-shell.com/content/dam/shell-new/local/corporate/corporate/downloads/pdf/investor/presentations/2014/sri-web-response-climate-change-may14.pdf>.
- SAICA. 2011. "An Integrated Report Is a New Requirement for Listed Companies." www.saica.co.za/tabid/695/itemid/2344/language/en-ZA/An-integrated-report-is-a-new-requirement-for-list.aspx.
- SASB. 2013a. "Vision and Mission." www.sasb.org/sasb/vision-mission/.
- . 2013b. "Board of Directors." www.sasb.org/sasb/board-directors/.
- . 2013c. "Standards Council." www.sasb.org/sasb/standards-council/.
- . 2013d. *Standards Outcome Review: Health Care*. Washington, DC: SASB. www.sasb.org/wp-content/uploads/2013/07/SASB-Outcome-Review-Report-Healthcare.pdf.
- . 2013e. *Conceptual Framework*. Washington, DC: SASB. www.sasb.org/wp-content/uploads/2013/10/SASB-Conceptual-Framework-Final-Formatted-10-22-13.pdf.
- The Economist*. 2014. "The Elephant in the Atmosphere." *The Economist*, July 19. www.economist.com/news/business/21607838-managers-biggest-oil-firms-clash-investors-over-climate-change-elephant.
- UNEP FI. 2011. "About UNEP FI: Background." www.unepfi.org/about/background/index.html.
- UNPRI. 2013. *How Investors Are Addressing Environmental, Social and Governance Factors in Fundamental Equity Valuation*. London: UNPRI. www.unpri.org/viewer/?file=wp-content/uploads/Integrated_Analysis_2013.pdf.
- . 2014. "About the PRI Initiative." www.unpri.org/about-pri/pri-governance/pri-financial-information/.
- Véron, Nicolas, Matthieu Autret and Alfred Galichon. 2006. *Smoke & Mirrors, Inc: Accounting For Capitalism*. Ithaca: Cornell University Press.
- WRI and WBCSD. 2001. "The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard." www.ghgprotocol.org/files/ghg-protocol-2001.pdf.
- Wright, Christopher and Alexis Rwabizambuga. 2006. "Institutional Pressures, Corporate Reputation, and Voluntary Codes of Conduct: An Examination of the Equator Principles." *Business and Society Review* 111 (1): 89–117.

CIGI PUBLICATIONS

ADVANCING POLICY IDEAS AND DEBATE

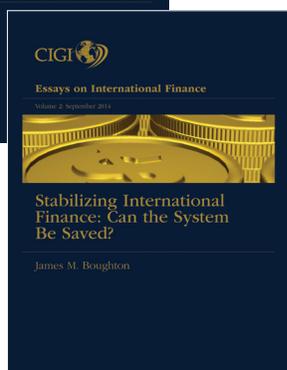
CIGI SPECIAL REPORTS



Essays on International Finance: Volume 1 — International Cooperation and Central Banks

Harold James

The inaugural volume in the series, written by Harold James, discusses the purposes and functions of central banks, how they have changed dramatically over the years and the importance of central bank cooperation in dealing with international crises.



Essays on International Finance: Volume 2 — Stabilizing International Finance: Can the System Be Saved?

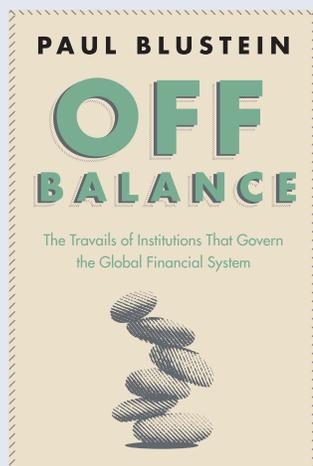
James M. Boughton

The world economy showed remarkably strong and widespread growth throughout most of the second half of the twentieth century. The continuation of that success, however, has been undercut by financial instability and crisis. Weak and uncoordinated macroeconomic policies, inappropriate exchange rate policies, inherently volatile private markets for international capital flows, and weak regulation and oversight of highly risky investments have all played a part. To regain the financial stability that must underpin a renewal of global economic strength will require improvements in both policy making and the structure of the international financial system.

Available as free downloads at www.cigionline.org

CIGI BOOKS

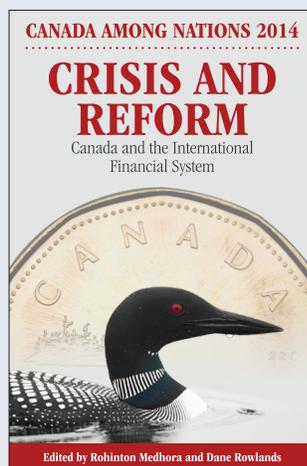
AVAILABLE FOR PURCHASE DIRECTLY
FROM WWW.CIGIONLINE.ORG/BOOKSTORE



Off Balance: The Travails of Institutions That Govern the Global Financial System *Paul Blustein*

Paperback: \$28.00;
eBook: \$14.00

The latest book from award-winning journalist and author Paul Blustein is a detailed account of the failings of international institutions in the global financial crisis.



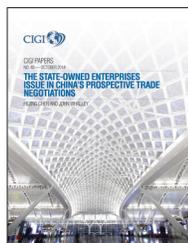
Crisis and Reform: Canada and the International Financial System

Edited by Rohinton Medhora and Dane Rowlands

Paperback: \$32.00;
eBook: \$16.00

The 28th edition of the Canada Among Nations series is an examination of Canada and the global financial crisis, and the country's historic and current role in the international financial system.

CIGI PAPERS



The State-Owned Enterprises Issue in China's Prospective Trade Negotiations

CIGI Papers No. 48
Hejing Chen and John Whalley

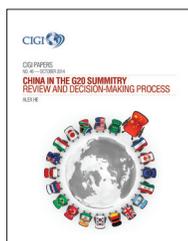
Chinese state-owned enterprises (SOEs) are likely to be key elements in China's trade negotiations over the next few years. This paper examines some key sub-issues regarding SOEs for these trade discussions and proposes strategies to focus debate and outline possible approaches to accommodation, rather than definitively resolve the issues.



Reforming the Global Architecture of Financial Regulation: The G20, the IMF and the FSB

CIGI Papers No. 42
Malcolm D. Knight

The global financial crisis that began in 2007 and deepened in 2008 exposed major weaknesses in financial and macroeconomic policy coordination, and profound flaws in financial risk management and regulation in a number of advanced countries. This paper undertakes an analysis of how cooperation takes place among three actors – the G20, the IMF and the FSB – to implement the fundamental reforms needed to ensure that the global financial system is better able to withstand shocks than it was in 2007-2008.



China in the G20 Summit: Review and Decision-Making Process

CIGI Papers No. 46
Alex He

As the largest emerging economy, China believes that the Group of Twenty (G20), instead of the Group of Eight (G8), is the ideal platform for its participation in global governance. This paper examines the reasons why China joined the G20 rather than the G8, and then focuses on a detailed review of China's participation in G20 summits since the enhanced forum began in 2008.



China's Goals in the G20: Expectation, Strategy and Agenda

CIGI Papers No. 39
Alex He

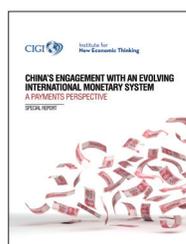
The G20 has emerged as the lynchpin of China's involvement in global economic governance. It remains the only economic institutional setting where the country can operate on par with major Western powers. China has a strong interest in maintaining the status of the G20 as the premier forum for economic cooperation, and a vested interest in ensuring that the G20 does not degrade into yet another "talk shop" of multilateral diplomacy. However, the Chinese leadership's current approach to the G20 is not driven by a desire to position the country as a leading agenda setter.



China and Sovereign Debt Restructuring

CIGI Papers No. 45
Hongying Wang

More than a decade after it put forth the idea of the Sovereign Debt Restructuring Mechanism in the early 2000s, the International Monetary Fund is again seeking to engage various stakeholders in a new round of discussions about improving sovereign debt restructuring. This paper, by CIGI senior fellow Hongying Wang, contends that from China's point of view, the most important question in debt management is how to prevent excessive borrowing and lending and reduce the likelihood of unsustainable debt.



China's Engagement with an Evolving International Monetary System: A Payments Perspective

CIGI Special Report
Paul Jenkins, Thomas A. Bernes, Perry Mehrling and Daniel H. Neilson

The core of this report, co-published by CIGI and the Institute for New Economic Thinking, is to lay out in practical terms the critical issues China must consider in managing its engagement with the evolving international monetary system (IMS). There are both opportunities and pitfalls, and the hope is that the payments approach used will highlight why, and how, China and the IMS should "talk to one another." While the pace, direction and ultimate goals of reform are for China to decide, what it decides will have implications for China and for the functioning of the IMS. Avenues must be found to discuss and assess these implications from a system-wide, cooperative perspective.

ABOUT CIGI

The Centre for International Governance Innovation is an independent, non-partisan think tank on international governance. Led by experienced practitioners and distinguished academics, CIGI supports research, forms networks, advances policy debate and generates ideas for multilateral governance improvements. Conducting an active agenda of research, events and publications, CIGI's interdisciplinary work includes collaboration with policy, business and academic communities around the world.

CIGI's current research programs focus on three themes: the global economy; global security & politics; and international law.

CIGI was founded in 2001 by Jim Balsillie, then co-CEO of Research In Motion (BlackBerry), and collaborates with and gratefully acknowledges support from a number of strategic partners, in particular the Government of Canada and the Government of Ontario.

Le CIGI a été fondé en 2001 par Jim Balsillie, qui était alors co-chef de la direction de Research In Motion (BlackBerry). Il collabore avec de nombreux partenaires stratégiques et exprime sa reconnaissance du soutien reçu de ceux-ci, notamment de l'appui reçu du gouvernement du Canada et de celui du gouvernement de l'Ontario.

For more information, please visit www.cigionline.org.

CIGI MASTHEAD

Managing Editor, Publications	Carol Bonnett
Publications Editor	Jennifer Goyder
Publications Editor	Vivian Moser
Publications Editor	Patricia Holmes
Graphic Designer	Melodie Wakefield

EXECUTIVE

President	Rohinton Medhora
Vice President of Programs	David Dewitt
Vice President of Public Affairs	Fred Kuntz
Vice President of Finance	Mark Menard

COMMUNICATIONS

Communications Manager	Tammy Bender	tbender@cigionline.org (1 519 885 2444 x 7356)
-------------------------------	--------------	--



67 Erb Street West
Waterloo, Ontario N2L 6C2, Canada
tel +1 519 885 2444 fax +1 519 885 5450
www.cigionline.org

