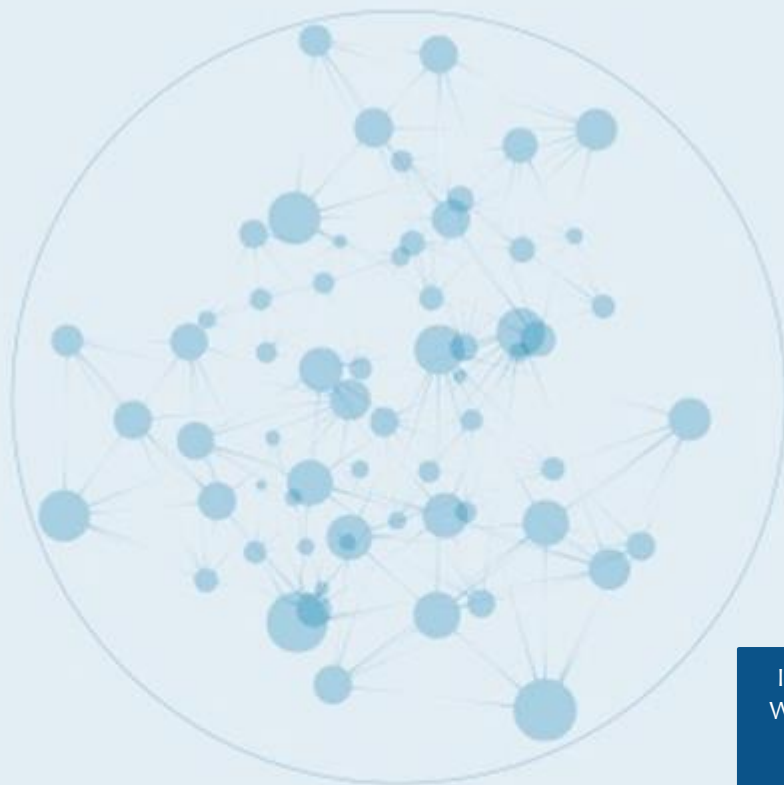




IMAGINING A SUSTAINABLE FINANCIAL SYSTEM



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The UNEP Inquiry

The Inquiry into the Design of a Sustainable Financial System has been initiated by the United Nations Environment Programme to advance policy options to improve the financial system's effectiveness in mobilizing capital towards a green and inclusive economy—in other words, sustainable development. Established in January 2014, it published its final report, *The Financial System We Need*, in October 2015.

More information on the Inquiry is at: www.unep.org/inquiry or from: Ms. Mahenau Agha, Director of Outreach mahenau.gha@unep.org.

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About this report

This paper has been developed as the framing paper for the Research Convening on Design Options for a Sustainable Financial System, which the UNEP Inquiry and CIGI held on 2-3 December 2014 in Waterloo, Canada. The workshop included participants from a range of academic and research institutions from the Waterloo region and abroad, including the University of Waterloo, the University of London, Harvard University, and the University of Gothenburg.

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Theorize we must, otherwise data has no analytic framework, and systematic learning becomes impossible. Conventions are not overturned for random reasons and they do not have random consequences. Learning from experiments is critical to avoid chaos, whether about the effects of incremental nudges or even more so for far grander ambitions and associated actions

Imagine!

Imagine a financial system that serves the long term needs of a healthy real economy, an economy that provides decent, productive and rewarding livelihoods for all, and ensures that the natural environment on which we all depend remains intact and so able to support the needs of this and future generations.

What Problem

Today's financial system is failing the sustainability test. Despite negative real interest rates in many OECD countries it is failing to finance needed infrastructure; with a gap of around US\$1 trillion a year (WEF, 2014). Nor does it meet the needs of SMEs, with a gap of US\$3.5 trillion (McKinsey/IFC, 2010). The UN Intergovernmental Committee of Experts on Sustainable Development Financing has estimated the financial resources needed to deliver on the forthcoming set of Sustainable Development Goals, including investment for resilient energy, agriculture, transport, water, basic health care and education, access to energy, gender equality and global public goods such as biodiversity and climate change mitigation. They conclude that while global public and private savings are sufficient, current financing and investment patterns will not deliver investment where it is needed (ICESDF, 2014). UNCTAD estimates that there is a US\$2.5 trillion annual investment gap in developing countries to meet the post-2015 goals (UNCTAD, 2014).

A cluster of barriers in the real economy can be identified as explaining these shortfalls. A lack of “bankable projects” is a common complaint, and there is little doubt that the events of recent years have reduced the will and capacity to take long-term risks, not least because of policy measures in pursuit of financial stability, such as Basel III. Weak and uncertain policies prevent investment in low carbon, climate resilient projects in particular – where externalities such as carbon emissions are not adequately priced, fossil fuels and water use are subsidized and regulations such as building standards are poorly enforced.

Weaknesses and failures in the financial system constrain its alignment with sustainable development. Endemic short-termism in the financial system has rendered much of the asset base it manages unavailable for long-term investment infrastructure (Group of Thirty, 2013). Such short-termism has been exacerbated by the very policies and regulations enacted to restabilize and de-risk the system in the wake of the financial crisis of 2008 and subsequent economic crisis (Kay, 2012). Mainstream policy debate and practice seeks at best to overcome and avoid a repeat of the last crisis, but offer little by way of a compelling vision of what we actually want. On the environment specifically, the lack of green finance is widely attributed to the higher relative cost of green over dirty investments, although recent research highlights a falling premium across many major investment areas (Global Commission for New Climate Economy, 2014).

Why Imagine?

Imagining a sustainable financial system is a practical and systematic exercise in purposing a system that has evolved over time. The financial system was not established as a purposive entity, but rather has evolved

as a network of channels and vehicles to intermediate between savers and borrowers, to enable people to share risks, and to deliver a return to owners of capital as well as a profit to intermediaries. Yet its growing importance in shaping the architecture of human habitats and their interaction with their environment makes it necessary to consider its externalities and the public goods that are at stake in its design and operation.

The context is a critical aspect of imagining a sustainable financial system. Assumptions about the state of the real economy and the associated policy and market signals determine the performance requirements of the financial system. If we were to assume for example that there are effective carbon prices in the real economy, then this removes the pressure on the financial system to overcome these externalities through its own design. Today's facts on the ground mean that we cannot make this assumption, as negative externalities are widely uncoun­ted across real economy markets. At the same time, other positive assumptions can be built in to our analysis, such as the falling costs of key green technologies, notably in the energy field.

Despite positive developments, a reasonable real world assumption is that our society has embedded, rather than transitory, features that perpetuate the mispricing of environmental risk, and which dilute policy-directed solutions in the real economy. In that light, a sustainable financial system must be designed to overcome *both* financial system failures and real economy mispricing. We can usefully assume that market and policy failures will continue, albeit dynamically, in part because of the political economy effects of residual incumbent interests in natural resource and pollutant intensive assets.

More than anything, we have to assume that societies continue to discount time and value the future less than the present. Much, although not all, of the sustainability challenge can be summed up as one of resetting the intergenerational contract to ensure that actions today do not compromise future generations. We bemoan the problem of short-termism in financial markets, but this inter-temporal challenge goes much further (Kay, 2012). John Kay sums up the problem, almost comically, in his earlier Financial Times article, *Climate Change: the (Groucho) Marxist Approach*, where he eloquently argues: “The problem of weighting the present and the future equally is that there is a lot of future. The number of future generations is potentially so large that small but permanent benefit to them would justify great sacrifice now. If we were to use this criterion to appraise all long-term investment, the volume of such investment would impoverish the current population. No government advocating it would ever be elected. The burden of caring for all humanity, present and future, is greater than even the best intentioned of us can bear.”¹

Imagining is important because of the rapidly changing contours of the financial system. Most directly, the current business models of many financial intermediaries, including banks, insurance companies and brokers, are challenged by technology-enabled disruptive business models from peer-to-peer lending to commoditized on-line financial trading to the transformative capacity of big data for pricing and mutualizing risk (UNEP Inquiry, 2014b). Shifting perspectives on what is needed from an effective financial system may also change views on the role of the state and central banks and the place of policy mandates in financial regulation and monetary policy. Shifting circumstances, from the threat of “secular stagnation” and jobless growth to the increasingly visible effects of climate change on economic and

¹ *Climate change: the (Groucho) Marxist approach*, Financial Times, 27 November 2007: www.ft.com/intl/cms/s/0/e8978fba-9cfb-11dc-af03-0000779fd2ac.html#axzz3JhGrqThp or www.johnkay.com/2007/11/28/climate-change-the-groucho-marxist-approach

financial stability concentrate attention and may lead to changes in views about the underlying function of financial markets.

Imagining is important because the envelope of acceptable solutions will almost certainly change in the future. Today, policy-inspired interventions in the financial economy are broadly frowned upon by prevailing political and technocratic norms in most major markets, especially across the OECD countries. Risk provides a more acceptable lens through which to assess the place of the environment, if at all, in financial policy and regulation. That said, short time horizons, not just of market agents but also of rule-makers themselves, constrain the effectiveness of such a lens whether applied at the investor or the system level.

Most of all, imagining a sustainable financial system allows us to move beyond conventional wisdoms. Deeply held beliefs rarely change unless they are propelled by crisis, as Macintosh illustrates in his analysis of the economic and financial crisis of 2007-2008, which in his view “helped clarify issues, highlighted failures, forced actors together, allow consideration of a broader array of policy options that would otherwise be ruled out, and provided a window of opportunity that permitted major policy shifts that, absent a crises, would be considered highly unlikely or impossible to achieve” (Macintosh, 2014).

The deterioration of the natural environment, as Macintosh and others have pointed out, presents a different kind of crisis, one that has not to date impacted directly on those with power and money (Diamond, 2011). The lack of perceived proximity of the crisis allows for the perpetuation of conventional wisdoms that impede it being addressed, such as the continued assumption by investors that all fossil fuels should be valued as if they can be burned.²

Imagining What

What would be the features of a sustainable financial system? What would its principal actors be doing, what would be the basis on which credit was created and financial capital deployed, and what would be the rules governing what such actors could and could not do? And if such a system were to be developed, how might its progress towards sustainability be understood and measured, what financial flows would count for or against its performance as a sustainable financial system, and what outcomes in the real economy would be counted in an assessment of degrees of success?

The boundaries of the financial system itself are hard to establish. The IMF’s description includes “... banks, securities markets, pension and mutual funds, insurers, market infrastructures, central banks, as well as regulatory and supervisory authorities” (IMF, 2014), which together account for the bulk of the estimated US\$273 trillion of financial assets (Group of Thirty, 2013). To this could be added monetary policy, which recent experience has shown can and does have profound effects on the real economy (Monnin and Barkarwi, 2015). Yet the boundaries are not so simple. The real economy has become increasingly financialized, as corporate balance sheets are used as much for investment banking and financial trading as for supporting the presumed focus of companies in the delivery of products and services. Hundreds of millions of individuals have become traders in today’s sprawling financial system. And what of the fiscal system, which is by definition part of any financial system, but more importantly, increasingly intertwined into private financial and capital markets through a complex web of partnerships and direct and indirect subsidies?

² <http://so2.static-shell.com/content/dam/shell-new/local/corporate/corporate/downloads/pdf/investor/presentations/2014/sri-web-response-climate-change-may14.pdf>

The purpose of a sustainable financial system might be defined as one that effectively and efficiently finances a sustainable real economy; that is, one that brings material prosperity to all, does not create unacceptable levels of inequality, and operates within ecological boundaries that do not endanger the security and well-being of future generations. Inter alia, a financial system that does not deliver this is also not sustainable in that it is creating the conditions for its own instability and ultimately its demise.

Can a sustainable financial system be described at all? Complexity theory tells us that systems are continuously evolving, and are to a significant degree inherently unpredictable (Capra and Luisa, 2014). Such systems are understood more effectively through a lens of institutional, evolutionary and behavioural economics than a classical framework with steady state-equilibria in mind (Beinhocker, 2007). Socially sensitive lending today may prove to be the source of instability and system inequality, as has been recently tested by South Africa's central bank (Goldstuck, Naidoo and Zadek, 2014). Disruptive financial sector business models may disrupt the best laid plans, as Michael Lewis highlighted in the impact of high-frequency trading on the integrity of stock exchanges (Lewis, 2013). Business innovation, technology, regulatory arbitrage and geopolitics, as well as culture and leadership, all conspire to make the system follow hard-to-model, let alone design-contingent pathways. One of the Inquiry's scenarios for financial system governance, 'technology edges', suggests that technology itself changes the basis of governance as human-administered policies and regulations become increasingly ineffective (UNEP Inquiry, 2014b).

Systems are also inevitably subject to external shocks that might determine their success or failure. Extreme natural disasters might unavoidably disrupt what otherwise might be taken to be a financial system designed for environmentally resilience. Breakthrough technologies widely adopted in the real economy might overturn the best laid plans to finance renewable energy at scale, just as political factors might undermine externality pricing or the effectiveness of state action to create livelihood opportunities or transfer resources to vulnerable individuals and communities.

Trade-offs, furthermore, may confound any aim to offer up an uncontested design of a sustainable financial system. Most obvious, perhaps, are the time preferences for individuals and institutions. Trade-offs between costs and benefits to living communities and those as yet unborn, and between diverse and often conflicting interests, can be described but not resolved by the complex mathematics of public economics. Sustainability perhaps more than anything requires effective intergenerational transactions, whether mediated through family, institutionalized accountability, or markets, yet a sufficiently scaled and robust transactional framework is in the main lacking today, as Patton points out in his work on intergenerational finance (Patton, 2014).

Imagining Performance

The performance parameters of a sustainable financial system could be proposed as involving two axes, its impact on social and environmental systems – 'sustainability impacts') and its own sustainability in the face of exogenous shocks induced by these factors. On the former, overarching parameters would involve the accelerated stranding of assets with negative sustainability impacts, and in turn the enhanced valuation of assets delivering zero or positive sustainability impacts. In addition, system-level effectiveness would require that these two parameters were achieved at scale in a timely period to ensure the alignment of financing aggregates with sustained economic development.

On the latter, resilience to sustainability impacts would be critical, related closely but not necessarily a simple aggregation of the valuation parameters set out above. Appropriate risk-adjusted returns to the

owners of financial capital would presumably be a key element in achieving such resilience, but this need not be confined to direct financial returns. Whilst most central banks today have explicitly rejected or failed to comment on the systemic risks posed by environmental feedback effects on the financial system, the Bank of England has recently stepped forward in initiating a prudential assessment of the risks climate change might pose to the UK insurance sector.³

Efficiency as well as effectiveness would be a feature of a sustainable financial system. The efficiency of today's system can best be understood as the cost of intermediation, which Philippon has demonstrated has not fallen historically despite the massive growth in the value and volume of transactions (Philippon, 2012). Any efficiency measure of a sustainable financial system would focus on real economy investment. Such a measure might then exclude a considerable proportion of the value transacted in today's financial system, the numerator of such a measure, which is likely to show a rapidly declining efficiency of the efficiency of today's system.

Minimizing the role of state subsidies for risk taking is another possible efficiency feature of a sustainable financial system (World Bank, 2013). Explicitly over recent decades, significant subsidies have been provided to encourage private capital to flow to green investment opportunities (WEF, 2012), and a growing focus is placed on maximizing the mobilization of private capital prompted by increasingly scarce fiscal resources. Indirectly, but potentially of greater significance, is to consider the effect of the broader, and far greater level of state support to the financial system, on its efficiency of delivering against the sustainability performance parameters such as those set out above.

Imagining How

Whilst design suggests a deductive approach, an inductive approach based on emergent practice might more effectively serve our needs. Possible features of a sustainable financial system can be observed in ad hoc, often early-stage, low-scale form. At the micro, or enterprise, level, growing numbers of financial institutions are adopting measures to ensure more effective consideration of environmental externalities, both through risk pricing or normative policies. At the macro, or rule-based level, central banks and financial regulators from Bangladesh to Brazil and from China to South Africa are experimenting with ways of explicitly incorporating sustainability considerations into rules governing financial markets (UNEP Inquiry, 2014a, 2014b). Financial market standard setters, including for example credit rating agencies such as S&P, are advancing standards that increasingly factor in environmental risk (S&P, 2014).

Such experiments remain, however, largely untested for their efficiency, effectiveness and broader applicability. Many are at an early stage, making assessment premature, such as South Africa's sustainability-focused innovation in the law regarding the fiduciary responsibilities of pension fund trustees, Bangladesh's central bank refinancing window for green investments, and the rapidly emerging volume of green bonds. Indeed, some are still on the drawing board, such as the Bank of England's ongoing prudential review of climate risk across the UK insurance sector, and the People's Bank of China's exploration of a range of green finance policies and regulations.

Some have been on the books for a while, but efforts have been inadequate to collect relevant data to assess impacts, a notable feature of disclosure requirements across the network of "sustainable stock exchanges". Indeed, the mechanisms through which impacts might be examined are often poorly theorized, and might vary across apparently similar instruments. Disclosure under South Africa's King 3

³ www.theguardian.com/environment/2014/oct/13/mark-carney-fossil-fuel-reserves-burned-carbon-bubble

Corporate Governance Code may be effective, for example, because companies are required to demonstrate an auditable, integrated risk management framework (Goldstuck, Naidoo and Zadek, 2014), disclosure requirements at the London Stock Exchange may be effective because of linkages to innovative, investor-tracked indexes and benchmarks, and in the US, SEC-inspired guidance on climate risk disclosure might well not be effective because of its focus on climate, the context of the US where climate is broadly discounted as a business risk issue, or because there is no real mechanism or pathway for the guidance to gain traction.

Experiments may well be understood in a specific context, but what would it take to understand their transferability to other geographies and financial centres? Policy debate about environment and lender liability in Brazil has engaged the central bank directly in creating environmental regulations, just as the US history of addressing land contamination through the ‘Superfund’ liability laws provides deep learning concerning such issues. Can such learning inform the direction of China’s newly established Environment and Resource Court, and can liability issues concerning land contamination provide insight into other forms of environmental liability, such as linked to global public goods such as climate security? South Africa’s Financial Charter provides an interesting case of the role of its financial sector in addressing a post-apartheid need to support “black economic empowerment”. It was forged through intensive dialogue and ultimately negotiation between major actors (The Banking Association of South Africa, 2014). But can such macro-societal processes provide more than inspiration for other countries where there appears to be a lack of alignment of the financial sector to the needs of the real economy?

Experiments are ‘stars in the heaven’, but how can one describe the heaven and its workings? Ad hoc measures may prove to be effective or not, but we also have to understand how they might fit into a wider policy framework or regulatory approach to financial and monetary stability. The Green Credit Guidelines established by the China Banking Regulatory Commission have been seen as the beginning of a process of regulatory and market change that is now having system-wide effects (Zadek and Zhang, 2013). S&P’s move to integrate climate risk into sovereign credit analysis is a positive development by most measures, but it raises concerns about the implications for nations facing climate risks that are neither of their making nor under their control. Pressure on the Bank for International Settlements to consider the environmental impacts of Basel III are understandable but raise questions as to what policy or risk-linked impacts need to be considered in the formulation of capital requirements and related measures (University of Cambridge/UNEP Finance Initiative, 2014).

The jury is out as whether we can gently nudge the financial system or need more radical change to serve the needs of sustainable development. There may well be ways to nudge the system quite dramatically through the use of existing instruments and institutional arrangements. Embedding climate risk into sovereign credit ratings, for example, could shift the cost of capital for a significant portion of the states issuing in excess of US\$70 trillion, providing incentives to improve their climate resilience. Extending the experience of China’s green credit guidelines to other countries could create compelling incentives to clean up and improve efficiency for those investing in natural resource- and pollutant-intensive assets. And building and achieving the adoption of forward-looking indexes and benchmarks in capital markets would do wonders for long-term investors seeking to shift their portfolios towards low carbon and climate resilient assets.

Others, however, see the need for deeper changes in the design and governance of the financial system. Short-termism, perhaps exemplified by high-frequency trading, may need to be severely curbed to improve the absolute and relative return to long-term, less liquid, green investments. Measures

advocated for full reserve banking would be a radical reform indeed, with advocates arguing that it would offer significant environmental benefits (Dittmer, 2014). A veritable Marshall Plan to promote green investment could well be needed, led by development banks and the growing financial muscle of sovereign wealth funds (Mazzucato, 2013).

Governance, competition and ownership would be an integral part of design considerations concerning a sustainable financial system. At the enterprise level, there is little evidence beyond a small leadership group that governing processes are taking a closer account of environmental risks and opportunities. Similarly, there is little or no research addressing the linkages between competition and the sustainability focus and outcomes of financial institutions. Indeed, it could go either or both ways, with less intense competition and higher margins allowing for longer term and broader analysis, or conversely it could be that more competition would promote analytic and product innovations which solve sustainability problems faster. Ownership is similarly opaque on the matter of sustainability. Insofar as short-termism is antithetical to sustainability, impatient mobile capital may well drive out longer-term concerns of financial institutions.

Certainly a working hypothesis could be that institutional investors responsible to pension fund and insurance policy holders are more inclined to count sustainability factors, if only because of their longer time horizons, and possibly because of the broader interests of intended beneficiaries. Yet sovereign wealth funds, with the notable exception of the Norwegian Oil Fund, have proved very conservative to date in their internalization of climate risk, let alone any adoption of environmental policy objectives.

Theorizing for Action

Taking action enables learning-by-doing. Much needs to be better understood, conceptually, theoretically, and empirically. And much can and should be robustly researched. Yet learning at the edge of knowledge requires learning rooted in practice, guided and perhaps framed, but not overly directed, by either theory or empirical evidence from other contexts. Materiality, after all, is a social construct, a product not only of tangible costs and realized revenues, but of the institutional context that frames comparative opportunities and perceptions of risk (Eccles and Youmans, 2014). Acting changes the very basis on which outcomes occur, often profoundly so. Universal investors from CalPERS to the Norwegian Oil Fund can change the course of financial and economic history, just as Brad Katsuyama's innovative approach to stemming front-running by high-frequency traders could revolutionize the practice of trading publicly traded equities (Lewis, 2013).

What was believed to be true may become convincingly untrue, and vice versa. A single agreement, for example, inspired by the two leaders of China and the US regarding carbon emissions reductions could tip the balance of investor opinion about the future, long before any emissions cuts have been achieved. Monetary financing of fiscal spending underpinned by money creation is deemed 'bad' based on historic experience. Yet Lord Adair Turner has recently argued that such an approach might be preferable to today's quantitative easing combined with fiscal austerity, which inflates financial assets whilst penalizing savers and poorer citizens.⁴ Directed lending, similarly, is frowned upon by most authoritative institutions, such as the World Bank (World Bank, 2013). Yet China's recent development success, with all its weaknesses, has been significantly financed by directed lending for land acquisition and the investments of state-owned enterprises, as was the rapid industrialization of Singapore and the Republic

⁴ Printing money to fund deficit is the fastest way to raise rates (10 November 2014): <http://www.ft.com/intl/cms/s/0/8e3ec518-68cf-11e4-9eeb-00144feabdc0.html#axzz3JhGrqThp>

of Korea. Indeed, OECD governments, at least temporarily, have thrown convention to the wind by adopting directed lending practices in response to the financial crisis and global recession, often with considerable success.

Yet theorize we must, otherwise data has no analytic framework, and systematic learning becomes impossible. Conventions are not overturned for random reasons and they do not have random consequences. *Effective theorizing requires that the right questions be asked, raising the possibility of them being usefully answered.* The preceding discussions can be crystallized into a number of questions that, undoubtedly with others, need addressing:

1. What are the relative merits of deploying financial over “real economy” policies and regulations to address environmental and equity issues and outcomes?
2. What are the intersections of, and differences between, long-term investment horizons and sustainability outcomes?
3. What are the impacts of short-termism, short-term trading activity and intra-sector trading on environmental and equity outcomes?
4. What is the level of fiscal support to the financial sector and its impacts on environmental and equity outcomes?
5. How best can financial policy and regulatory aimed at social and environmental outcomes be sequenced and how can trade-offs be understood?
6. How does, can or should investor governance and associated public policies take social and environmental matters into account?
7. What is case for (and against) and practice of different approaches to policy-incentivized lending in addressing social and environmental objectives?
8. How could technology and institutional innovations in the financial sector impact social and environmental outcomes?
9. What is the impact of differing forms of, and policy approaches to, credit creation on social and environmental outcomes?
10. How does financial market structure, including levels of concentration and ownership, impact social and environmental outcomes?
11. What is the role of citizens as consumers, investors, employees and/or as social movements in effecting the financial system’s impact on social and environmental outcomes?
12. What is the case for (and against) and practice of central banks and financial regulators directly and indirectly pursuing social and environmental objectives?
13. How does, can or should analysis of systemic risk under macro-prudential activities take social and environmental matters into account?
14. Do different configurations of financial policy and regulatory authorities impact their capacity to address social and environmental objectives?
15. Should, can and do international finance governance institutions and processes take social and environmental issues into account?

The UNEP Inquiry-CIGI Research Convening, combined with the growing practice and research, will seek to address these questions. The aim must be to provide the foundations for advancing a sustainable financial system, or perhaps many in competition, albeit in pursuit of the same end.

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