

Progress and notions of progress in sustainable finance

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ABSTRACT

The sustainable finance industry has boomed in the face of uncertainties ranging from its justification as a viable financial product to its impact in terms of sustainability outcomes. This article seeks to characterize the conditions of the present phase and to provide insights on its present direction of travel and how future progress might best occur through two lenses. First, it reviews elements of progress in sustainable finance over the past half century as characterized by interactions between three primary factors. Second, it presents a study of recent green bond issuances that examines the strength of the connection between sustainable finance and sustainability objectives. Analysis suggests markets do not demand rigorous design standards or accountability and are focussed on product sector growth over sustainability outcomes. Classification of finance as sustainable often lacks appropriate validation from independent verification and due diligence, post investment assessment of outcomes, and an oversight regime assuring information integrity. The notion that allocating capital to sustainability-labelled financial products contributes to desired outcomes may be an illusion that is distracting from, and so delaying, a more demanding approach to directionally positive capital allocation. Lessons for newer sustainability linked products are considered. Suggested reforms require firmer public governance oversight regulation if acts undertaken in the debt capital markets are to meaningfully contribute to urgent sustainability challenges.

1. Introduction

The rapid emergence of the green bonds market has grown at a compounded annual rate of 55% from 2014 through to the end of 2021, to a total in excess of \$1 trillion in aggregate issuance. While growth in market size prima facie suggests progress, it has brought about an intensified examination of the relationship between capital formation and allocation decisions via financial products such as green bonds (hereafter, "sustainable finance"¹), and the attainment of socially defined values concerned with environmental and sustainability objectives (the "Objectives").²

The growth of the sustainable finance market underscores an evolving repositioning of the role of the corporate. The so-called Friedman doctrine (Friedman 1962, 1970), reflecting most post-war Western economies, conceived the corporate's social responsibility as being

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¹ Although the concept of "sustainable finance" has varied over time. See Dimmelmeier (2021) and further section [2] below.

² Such as ESG and sustainability concepts, the UN's SDGs and, more recently, the EC's Sustainable Corporate Governance (SCG) and the Taskforce on Nature-related Financial Disclosures.

limited to increasing its profits, so long as it stays within the rules of the game. However, the rules have shifted as notions of value creation and social priorities are reassessed.³ The corporate is increasingly put forward as a mechanism that expresses social purpose and responsibility (Business Roundtable 2019; Edmans 2020).⁴

As notions of social value and the role of the corporate have evolved, so too has our collective understanding of the role of finance as one tool that could facilitate the Objectives. Market participants now regularly tout the idea that sustainable finance offerings are a material and directionally positive contributor to the Objectives. The primary argument in this transformation has been whether, and how, to incentivize the creation, uptake and assessment of financial products held out as aligning with the Objectives.

The mandate for capital markets to form around sustainable finance products depends on the extent such products do in fact support the Objectives. Yet there is considerable uncertainty over the real impact of a specific green bond (Kapraun et al. 2021). The strength of the link between capital raised via sustainable finance and tangible contributions to the Objectives is therefore a fundamental concern. Our study of green bond issuances presented in section 3 below indicates that the touted benefits of green bonds remain largely unvalidated. At the point of issuance, the link asserted between the raising of capital and possible sustainability outcomes is weak. There appears to be a limited degree of effort by issuers to establish, on an ex ante basis, mechanisms that enable capital allocation to be verifiably connected with outcomes. While financial markets have long been accustomed to legal, regulatory, commercial and reputational accountability as drivers of commercial practices, particularly around the quality of disclosure, this has not as yet found the same level of expression in the case of alignment with the Objectives. These conditions support limited opportunities for the market to correlate sustainable finance products with consolidated corporate performance on sustainability outcomes, or to undertake a holistic assessment of the effect of a green bond on a corporate's net contribution to the Objectives.

The growth of the sustainable finance market may have supported a notion of progress which is counterproductive - that companies and investors are contributing to the Objectives when sustainable finance practices may in fact be distracting from, and so delaying, a more demanding approach to capital allocation. The illusion is convincing enough to allow companies whose overall business is not aligned with the Objectives to raise capital via green bonds under arrangements that yield limited assessment of use of funds and outcomes (Fitch Ratings 2021). Third-party mechanisms that purport to rate a corporations' performance across environmental, social and governance factors appear to be unreliable - ratings from different ratings providers show a correlation of only 0.54 (Berg et al. 2020) and may be more concerned with the measurement of risk to the corporate rather than risk to the earth and society (Simpson et al. 2021). While some issuances are labelled as greenwashing on an ex post basis, weak ex ante links to

³ See generally Carney (2021) and Mazzucato (2018).

⁴ An important origin of which for sustainable finance is the Freshfields Report (2005).

outcomes fosters a market with limited ability to distinguish between a genuine attempt that has fallen short, and one that was from the outset never going to produce a directionally positive outcome.

Shortcomings such as these represent a significant departure from traditional market norms for accountability and materiality related to disclosures by public companies. Moreover, it ultimately reflects an unresolved misalignment between traditional economic models based around some degree of laissez-faire capitalism and, similar to the repositioning of the role of the corporate, new economic models that seek to connect the right to make profits to the promotion of social values and wellbeing.⁵

While climate change has been on the science agenda since at least 1970, the process of bringing that to scientific agreement, government recognition, and financial market responsibilities has taken half a century. It has taken that long to get sustainable finance on the capital allocation agenda, as discussed in section 2, but it has run up against the problem of not being supported by an infrastructure capable of adequately linking capital flows to the Objectives. Our research suggests that the array of various industry-led confirmations, that a green bond is somehow addressing the march toward the Objectives, may be clouding our collective vision. This is the equivalent of sand being thrown in our eyes – we cannot actually see whether capital allocation aligns with the Objectives.

With a view to providing insights as to how the trajectory of sustainable finance has been shaped, the next section 2 explores the dynamics of this half-century process. Section 3 then turns to consider the conditions of the current phase via a quantitative study of 149 green bonds. The penultimate section 4 collates the findings of the foregoing two sections to identify proposals that may better facilitate the progress of sustainable finance. The final section 5 concludes.

2. The trajectory of sustainable finance

The strength and direction of sustainable finance over the last half-century is the product of a cast of actors including politicians, scientists, academics, lawyers, bankers, corporate and sovereign issuers, investors, accountants, the public, journalists and others, each of which have had their influence. The science around climate change has battled for recognition. Various government-led initiatives have at different times set the stage for market involvement. The public has had a distinctly audible voice that has generally grown over time. Market participants have sought to create new products to meet new demands and opportunities. Industry bodies have responded with standard setting. Academics and journalists have alike set their pens alternatively in support of and critical of the latest development.

Three factors

⁵ This is often put under the tag “impact economy”, however, we note that the tag may be used in a variety of ways. See Forbes (2013) and Martin (2016).

Our review of the complex historical matrix around sustainable finance suggests that its characteristics over time are a result of the interaction between three primary factors. First, there is an interplay between public governance imperatives and market-led responses, often in the form of private governance regimes responding to the imperatives of public governance (“public/private factor”). Second, the premises of sustainable finance are underpinned by standards considered germane to the Objectives and metrics that reconcile broadly defined socially valued outcomes with the narrower accounting- and profit-based lens of traditional financial markets (“persisting factor”). Third, sustainable finance from time to time has to confront the concerns of science, normative rules (such as law and accepted practices), and the vox populi (“limiting factors”).

These factors provide a useful heuristic that aids an understanding of what has shaped the arc of progress in sustainable finance to date. This trajectory-based approach may assist identify what corrections are needed going forward. Using this “three factors” approach, the remainder of this section 2 identifies the main phases of development in the sustainable finance market through to the current Phase 4.

Phase 0 (prior to the late 1980s): Limiting factors

Socially responsible investing (SRI) has long been a part of human society, initiated by religions such as the Methodists and Islam, which screened out investments in activities that were inconsistent with the beliefs and values of the religion. Concerns about civil rights, racial equality and abuse of the labour force in the 1960s influenced thinking about SRI (Richardson 2009, 601). Awareness of climate concerns emerged in the late 1960s⁶ and following the report of the 1971 Stockholm conference, Study of Man's Impact on Climate (SMIC 1971), which predicted global temperatures could rise by 2 degrees Celsius (Pearce et al. 1989; Quesada 1989, 155). By the early 1980s, there were concerns that a 2.5 degrees Celsius rise by 2038 would bring about major economic consequences, and that this was a global problem both in source and for remedies.⁷ Later research addressed the role of other greenhouse gases. A series of climate related disasters in the 1970s and record shattering temperatures during the 1980s served to increase public concern.

It was these limiting factors that induced the first fluctuation between public governance and the market. The Nixon presidency expanded and institutionalized environmental protection laws in United States federal, state, and local governments and in the judicial system. However, private sector push-back sought to water down the reforms in practice (Whitaker 1976) and challenge the climate change narrative (Franta 2021). In the UK, a taxation-based approach to regulate CO₂ emissions was proposed at government levels but didn't gain traction in the private sector and was discarded (Pearce et al. 1989).

Phase 1 (late 1980s to mid-2000s): Public governance takes the lead

⁶ For example, The New York Times ran a story on 20 February 1969, “Expert says Arctic Ocean will soon be an open sea”.

⁷ Per a report of J. A. Laurman to the American Petroleum Institute, March 1980. <https://www.industrydocuments.ucsf.edu/docs/#id=gffl0228>

The 1992 UN Conference on Environment and Development (the Rio Earth Summit) represented a global recognition that the future had to be environmentally sustainable (Serageldin 1993, 6). Moreover, it was understood that public sector action would be insufficient to combat environmental issues and the private sector would have to play a role (Schmidheiny 1992, 25).

It was around this time that businesses began to recognise that participation may be in their interest (Schmidheiny 1992, 24). The first fund labelled as and premised on green investment was established in 1988. Others followed. The general focus was on activities such as renewable energy, water treatment or pollution control technologies, and screening out companies that pollute (Campanale 1994, 43-44). But the market remained niche rather than mainstream, representing less than 1% of the overall investment funds market. Eco-banks committed to environmentally sound banking services also emerged during this time and by 1995, 65 financial institutions had signed up to the "A Statement by Banks on the Environment and Sustainable Development" presented at the Rio Earth Summit (White 1996, 204).

This phase also saw the emergence of persisting factors that were to continue in subsequent phases. The first of these was standards: in the world's largest green funds market (the United States), two-thirds of the funds did not apply environmental criteria (Kahlenborn 1999, 69). The second of these was value metrics: the Rio Earth Summit had initiated a debate around the comparative financial performance of green investments. Normatively, it was argued that green investment funds would underperform as choices open to fund managers are narrower (Ryall and Riley 1994, 18). Empirically, the evidence was conflicting and data from funds recognized by the Ethical Investment Research Service was inconclusive (Ryall and Riley 1994).

The Kyoto Protocol (1997/2005) represented the conclusion of Phase 1. It created new market needs via emissions trading initiatives and did in fact materially reduce carbon emissions in regulated European markets (Bayer and Aklin 2020). However, it also represented the limits of what public governance was capable of achieving without a fuller participation of the market, as evidenced by its failure to gain support from non-EU constituencies, particularly the United States, and the fact that global emissions continued to grow substantially during its period of operation.

Phase 2 (mid to late 2000s): A swing to private sector governance tempered by persisting and limiting factors

A question that became more pressing as market size and interest grew was whether the use of ESG as a filter for investment decisions was permitted, legally required, or hampered by law and regulation. The Freshfields Report (2005) concluded that the incorporation of ESG principles was consistent with fiduciary duties and that it was arguably required in all jurisdictions. That view has since been countered by a number of legal reports that assert the use of ESG principles as an investment consideration may breach the fiduciary duties of trustees or managers (Schanzenbach and Sitkoff 2020),

ensuring that the topic remained a difficult issue not only for Phase 1 but also subsequent phases.

The year following the Freshfields Report saw the launch of the UN's Principles for Responsible Investment (PRI). Issued in partnership with institutional investors, it reflected the need for markets to form around public governance initiatives. Signatories to the PRI are expected to incorporate ESG considerations into their decision-making, investment analysis, ownership policies and practices. Thousands of investment firms joined, and the awareness of social responsibilities expanded. However, numerous problems with the PRI's reliance on a self-reporting system led critics to conclude that free-riding and greenwashing are prevalent among at least some of the participants (Gray 2009; Bauckloh et al. 2019). Nevertheless, there was a growing consensus in industry of the value of ESG investing that was partly attributable to the PRI, which has responded with reforms seeking to limit deviations from the principles.

Private banks and asset managers were now experiencing significantly greater demand in SRI investment products (Jones 2010) and a corresponding expansion of ESG data providers (Global Investor 2010). In the run up to the UN's Copenhagen Climate Change Conference 2009, corporates and fund managers representing a total of US\$13 trillion assets under management took the lead ahead of governments in demanding that participating nations agree to greater greenhouse gas emissions reductions (Harvey 2009). While this highlighted a clear shift from Phase 1, the private sector had to deal with Phase 1 legacy issues concerning standards and valuation, and growing criticisms that the use of financial systems to combat climate change would not achieve outcomes based around vague intentions to promote sustainability.

Standards such as the PRI were seen as falling short of what is needed because they are not underpinned by objective performance standards, such as the carbon footprint of an investment portfolio (Richardson 2009, 626). This supported a renewed case that voluntary systems do not work and that active government regulation is needed (Joly 2009, 25) to impose penalties in a manner similar to CFCs, sulfur dioxide, and toxic wastes.

The concern over whether SRI investments perform financially compared to investments that do not use sustainability criteria remained unresolved. There was some support that they did, which may have added to a growing consensus that companies offering more sustainable products perform better over the long term (Jones 2010). This was supported by a Goldman Sachs report (2007) and the positive performance of some ESG funds.

Phase 3 (the 2010s): The private sector takes control

The predominant public governance initiative of the decade was the 2015 Paris Agreement requiring signatories to take actions that would limit increases in temperature to 2 degrees Celsius and achieve net zero emissions by the middle of the 21st century. However, from its inception it lacked enforcement mechanisms and standards by which any type of accountability could be achieved.

The persisting factors identified in Phase 2 – concerning standards and financial performance – needed resolution in order for sustainable finance to move forward. Foremost was the question of objective standards and the response was the creation of standards primarily driven by industry associations. This began with the Climate Bonds Initiative launching its first set of standards for verifying credentials of green bonds issuances in 2011 followed by the International Capital Markets Association (ICMA) launching its first Green Bonds Principles (GBP) in 2014. Such standards saw the emergence of service providers giving second-party opinions on issuance and subsequently on operational reviews, both of which were recommendations of the GBP (The Economist 2014a).

However, concerns around greenwashing persisted (Kim 2015, 17). Substantial offerings in 2013 that were heavily oversubscribed were followed in 2014 by green bond offerings from large corporations that were not specifically devoted to renewable or sustainable projects (Linhardt 2014; The Economist 2014b). Standards were becoming more important as green bond offerings from corporates in non-sustainability sectors were becoming substantial when compared to issuers with a focus on environmental projects such as renewable energy.

The other Phase 2 problem, the question of financial performance, appeared to take a positive turn in Phase 3. Data over 2007-17 showed that stock prices responded positively to green bond issuances (Tang and Zhang 2020). Another study of green bonds issued over 2013-2018 showed that investors responded positively to green bond issuances, particularly for first time issuances or issuances that were verified by third parties (Flammer 2021). These findings appeared consistent even in emerging markets such as China (Zhou and Cui 2019). Although the market had during Phase 3 been moving to a lower investor yield on green bonds (Löffler et al. 2021),⁸ this did not translate into decreasing investor interest - demand for green bonds outnumbered their supply (Garvey 2021). The argument emerging as Phase 3 was drawing to an end was that investors are willing to forego financial gains to support the financing of green projects and that factors other than financial performance are relevant to investment decisions. This was assisted by the perception of lower risks associated with green bonds (Löffler et al. 2021, 2).

Phase 4 (2017-2022 *pro tempore*): Limiting factors cause market-led solutions to wobble

In December 2020 the green bonds market reached a landmark - cumulative capital raised since the first green bond issued in 2007 reached \$1 trillion (CBI 2021). Concerns about greenwashing that emerged in Phase 3, rather than being resolved, have become a focus of concern that has triggered the limiting factors. Green bond issuances have continued to explode despite an awakening of the vox populi and its dissatisfaction with, as Greta Thunberg expressed the sentiment at the UN's 2019 Summit on Climate Action, "We are

⁸ A study involving 2000 green bonds and 180,000 non-green bonds which concluded that yields of green bonds were, on average, 15-20 base points lower than those of non-green bonds.

in the beginning of a mass extinction, and all you can talk about is money and fairy tales of eternal economic growth.” Climate-related shareholder activism has emerged and now constitutes a force for accountability.⁹

One approach to the concern has been to position green bond financing as a tool that attracts investors who value longer term sustainability outcomes (Tang and Zhang 2020; Flammer 2021), leaving aside the more difficult question of actual outcomes. Some research does suggest an overall positive trend, consistent with the Objectives, for issuers using green bond financing as compared to issuers that use conventional bonds (Fatica and Panzica 2021). This shows positive correlations between the use of external reviewers and reductions in emissions, and between the use of non-refinancing green product structures and a decrease in an issuer’s carbon footprint. However, the authors of that research suggest such directional distinctions could be attributable to a shift in the wider values of the organization that led to the decision to engage in a green capital raising exercise. For some issuers, a green bond could be an emblem of corporate change. Yet it remains unclear how to document a positive connection between capital allocation and the Objectives, or how to mobilize and reinforce any such directional change. This leaves investors considering a specific issuance in a position of uncertainty.

To this can be added growing concerns pertaining to outcomes and how well the march of persisting factors have ensured, or failed to ensure, that capital raised under a sustainable finance banner is allocated in a directionally positive manner. The proliferation of standards in Phase 3 was notably self-regulatory and hence unchecked by public governance oversight mechanisms.

First, there is an increased awareness of additionality (or the lack thereof). Additionality refers to the new investment capital raised in a sustainable finance offering producing a directionally positive benefit that would not otherwise have been achieved if the sustainable financing did not take place (Escalante et al. 2018). Green bond issuances that refinance existing green projects and/or constitute a repackaging of existing debt may fail to provide key elements of additionality (Greene 2015).

Second, questions have arisen over the utility of standards that first appeared in Phase 3. Attention has fallen on standards whose flexibility promotes uptake, are subject to arbitrage choices, and often lack meaningful assurance processes, together making greenwashing harder to identify (Freeburn and Ramsey 2020, 433-437).

Even for projects perceived to be directionally positive for the Objectives, the challenge set by the vox populi is to provide assurance that the allocation of capital under a green labelling is in fact directionally positive. This encompasses corporate priorities being appropriate, goals that are clearly defined, and outcomes that (both positive and negative) can be and are accurately disclosed.

⁹ Examples include shareholders at HSBC, Barclays and Shell.

Consequently, fundamental questions have returned about what constitutes a green bond, what standards should be used, and what kinds of reporting and accountability should then apply. There is a renewed awareness of the impact economy, a term first coined in 2007 (Fine et al. 2018), in which the economy moves away from solely measuring GDP toward measurements in terms of social welfare, and companies move from only maximising profit to becoming purpose-driven corporations (Schoenmaker 2020). It also reflects a recalibration of the roles of various stakeholders, with shareholders and consumers demanding that companies make returns in a manner that furthers the public good (Fine et al. 2018). Hence, what started as a debate about the financial performance of green investments in Phase 2 seems to have finally reached a stage where impact of the investment becomes an indicator of performance as well.

At the present stage of Phase 4, there has been a distinct mobilization of public governance in response to the limiting factors. A primary initiative of governmental and oversight agencies covering various aspects of the financial system including banking, securities and accounting regulators has been to provide the stimulus for greater disclosure. This includes the Financial Stability Board's Task Force on Climate Related Financial Disclosures (TCFD), the IFRS Foundation's Technical Readiness Working Group's (TRWG) and the Task Force for Nature Related Financial Disclosures (TNFD). Mainly put forward on a voluntary or "comply or explain" basis, disclosure has since gained traction with the supporting efforts by regulatory agencies and stock exchanges to incorporate disclosure requirements, mainly based around the TCFD. These initiatives remain in their early stages and, as they lack the ability to enforce, rely on domestic enforcement strategies.

On the other hand, the EU's Taxonomy Regulation, effective July 2020, directly responds to concerns around standards.¹⁰ It is widely expected to influence jurisdictions outside of Europe (Pavoni 2019) and could facilitate harmonization of global standards in the green bonds market (Deschryver and de Mariz 2020, 14).

The market response, following COP26, is that at least 21% of the world's 2,000 largest corporates have already signed up to meet net zero targets by 2050 or earlier (Shetty 2021). It remains to be seen how that will be implemented and what accountability attaches where implementation is lacking.

Commentary

Behaviour in the financial markets is normally driven by a combination of public governance requirements and expectations, and what practices market participants are prepared to support or tolerate. This is no different in the sustainable finance market. The lens we have used is to portray the substantive conditions of the market as being shaped by three factors that interact to express, effectuate or respond to the Objectives. Such interaction is also part of the process by which the Objectives evolve to find expression in society more broadly and the marketplace more specifically.

¹⁰ Sustainability Taxonomy Regulation (2020/852).

The shift from Phase 0 to Phase 1 was a significant watershed moment in which public governance mechanisms emerged more clearly in response to the triggering of two limiting factors: scientific knowledge and the vox populi.

Phase 1 was mainly characterized by the recognition that a constructive partnering between public and private governance was necessary. While flawed in various regards, it successfully laid the foundation for the participation of the capital market in concerns of a social nature.

Phase 2 was dominated by the expansion of market-led responses to a growing interest and demand for sustainable finance. Characterized by green bonds and green funds with *de minimis* framing around what actually comprised green finance, Phase 2 also saw the emergence of persisting factors that were to play an important role in shaping subsequent phases.

As Phase 3 emerged, a proliferation of new industry standards supported market expansion, as did the increased level of discussion that explored, and at times extolled, sustainable finance as a profitable investment choice. The role of public governance was minimal during Phases 2 and 3, and the limiting factors appeared to be generally assuaged by the seemingly positive direction that was implied by market growth.

As overall market size continued to expand into Phase 4, the limiting factors were triggered by a combination of considerations. This included well-publicized market excesses and concerns around the validity of standards that permitted or even facilitated greenwashing. As Phase 4 and its problems matured, the sustainable finance market came under the spotlight of widespread social movements that had arisen in response to a limiting factor of central concern: the science of climate change. The IPCC's report (2022) highlights threats posed by global warming and the irreversibility of many of these threats. These factors together demanded a public governance response to market practices that has possibly set the ground conditions for the emergence of a new Phase 5, which is discussed in section 4.

The changes over Phases 0 to 4 are represented schematically in Figure 1, which indicates the relative contribution of each factor in each phase.

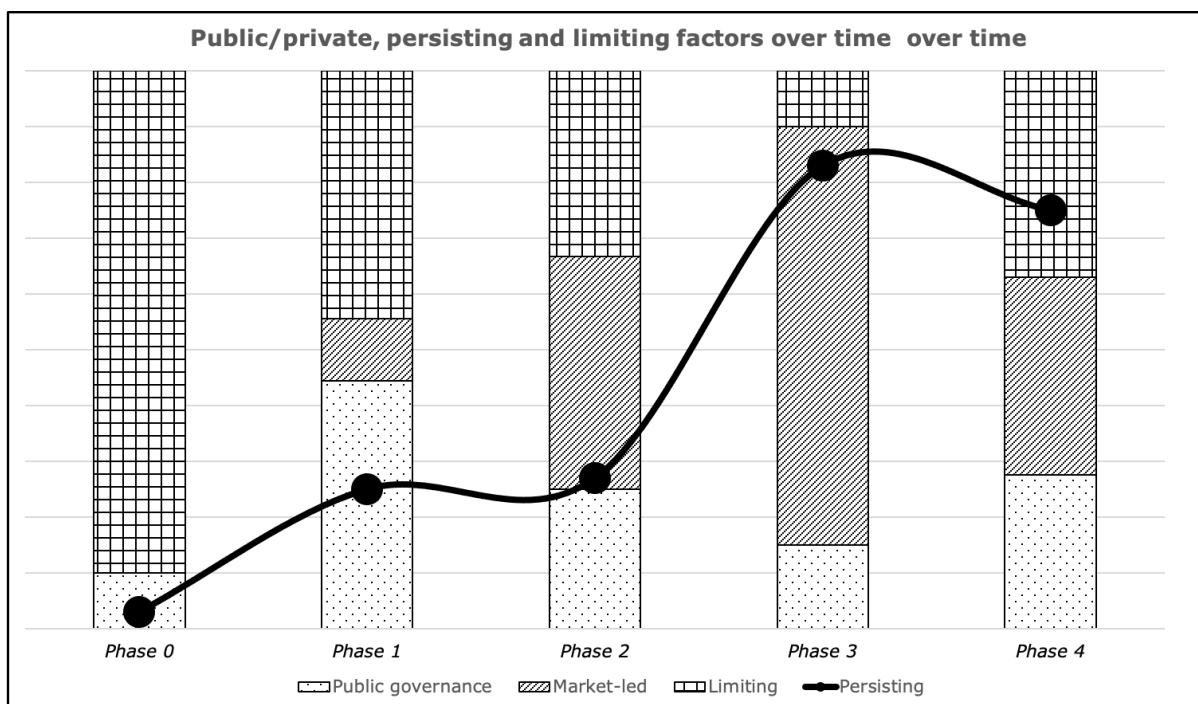


Figure 1: Public/private, persisting and limiting factors over time. The relative contribution of each of the three factors from Phase 0 to Phase 4.

3. Problems in the current phase

To examine how far sustainable finance has evolved towards the purpose of supporting the Objectives, and to assess the issues that may require addressing for a new Phase 5 to emerge, the key characteristics of green bonds issued by corporations during Phase 4 were examined.

Methodology

Selection of issuances

Corporate bond issuances in excess of US\$100 million labelled as green bonds issued between July 2017 and September 2020 were selected. The following issuers were excluded: dedicated renewable energy companies (since all proceeds by definition meet one or more of the Objectives); financial institutions and intermediaries (since it is difficult to assess use of proceeds that are on-lent borrowers in diverse sectors); sovereign issuers (since the use of proceeds can be unique to national development plans and thus hard to separate from their other capital raising issuances); issuances by Mainland China issuers (since green issuances are vetted by a central agency, rather than in the open market). This selection yielded 154 green bonds, however, five were discarded owing to inadequate data leaving a dataset of 149 issuances. The top three jurisdictions by number of issuances were: Europe (71), United States (33), and Japan (20), with the remaining 25 distributed through other markets.

Variables

Variables were preselected by the authors according to their ability to provide information on the robustness of each bond's green purpose. For these purposes, robustness means the strength of the link between capital allocation and outcomes consistent with pursuit of the Objectives. A high level of robustness is characterized by capital allocation that is provably linked to outcomes consistent with the Objectives and provides transparency over any resulting benefits, shortfalls or qualifications in actual outcomes. This contrasts with capital allocation outcomes that are unclear, uncertain or otherwise opaque. Further, an issuer that undertakes some form of accountability for actual outcomes serves to contribute to robustness, as compared to issuers that do not. This resulted in 14 variables, which were organized around three key phases in an issuance: design phase, implementation phase, and data assurance phase.

DESIGN

- 1) Green framework: what standard or framework adopted (such as ICMA's Green Bonds Principles, Climate Bonds Initiative, UN Global Compact principles, Japan Ministry of the Environment's Green Bond Guidelines, ASEAN Green Bond Standard etc.).
- 2) Metrics: metrics identified for measuring the environmental impact of any projects identified as being funded by the issuance, whether self-prescribed or an industry or international standard, whether quantifiable, what measurement it entails (for example, GHG emission reduced, amount of energy saved, climate change adaptation etc.).
- 3) Validation of green labelling: form of verification, certification, opinion, rating or similar (together, "verification") supporting the green labelling of the issuance.
- 4) Initial certifier: identify of any third party involved in providing verification.
- 5) Certifier process: disclosures made about the diligence process, including whether due diligence comprised an on-site or desktop exercise.
- 6) Certifier conflicts: whether any conflict of interest statement provided by verifiers.

IMPLEMENTATION

- 7) Fund segregation: whether proceeds raised by the green bond issuance are segregated from other funding.
- 8) Capital allocation: whether issuer allocates more than 80% of proceeds projects described in the prospectus, as opposed to general corporate purposes.
- 9) Refinancing: whether the issuer uses funds for new projects and catalytic outcomes that provide additionality in terms of contributions to the Objectives, or partly refinances project loans initiated in prior time periods.

DATA ASSURANCE

- 10) Post-Completion reporting: whether the issuer provides annual post-completion verification, certification or similar reporting.
- 11) Quantitative reporting: whether issuer reports quantitatively on the environmental impact of the projects funded by the issuance and, if so, whether standard is self-defined or a recognized external standard (such as the Harmonized Framework for Impact Reporting).

- 12) Independent validation: whether accuracy of the report data is verified or certified by a third party.
- 13) Transparency: the extent to which an issuer has provided public information access, such as websites, third party reports on implementation, and a clear statement of successes and challenges.¹¹
- 14) Accountability: whether any penalty (such as increased coupon rate or disqualification from additional green issuances for a specified period) is contemplated or applied for areas of non-performance relative to the design, including non-completion, mid-course change of project design, or poor operation leading to limited contributions.

Main findings

The data collected identifies eight key problem areas in the profile of green bond issuances that can be grouped under the three phases presented above. The findings are summarized in Figure 2.

DESIGN

- 1) Issuers largely set their own subjective criteria for projects. Only a small percentage of issuances (19%) were designed with reference to scientifically validated sustainability targets using specific certification criteria. Consequently, most projects appear to represent individual companies' views on whether a project could be viewed as positive for sustainability objectives.
- 2) Independence of third-party certifiers typically not disclosed. Of the issuances using a third party to review the underlying projects to validate its link to the Objectives, only 45% of the third-party reviewers disclose whether they have any conflict of interest pertaining to the issuance. Since the issuer pays the reviewer for the work involved in signing off on a green bond proposal, there is considerable merit in reviewers disclosing any existing relationships they have with issuers and how actual or potential conflicts of interest are identified and managed - this is in alignment with the recommendations made by IOSCO (2021).
- 3) Quality of third-party due diligence appears weak. Over three-quarters (76%) of issuances that used third party verification involved a due diligence process limited to an off-site desktop review. The number may be higher as many issuances do not provide any details on the nature of due-diligence undertaken. Off-site desk-top diligence typically relies heavily on the documentary evidence provided by the issuer. While this may be similar to general corporate bond issuance processes, the targeted and high priority objectives of green bonds suggests the need for customary practices of auditors and

¹¹ Each issuance is given a transparency score from 0 to 3: 0 = issuances where the issuer had no dedicated webpage giving access to the issuance's green bond framework, post-issuance reports, SPO/verification/certification/rating reports and prospectus; 1 = issuances where there was a webpage but one or more of the foregoing documents was missing; 2 = issuances where the webpage had these documents except the prospectus; 3 = all documents present on the webpage.

private investors, who would typically directly inspect and evaluate the activities that propose to utilize new funding.

IMPLEMENTATION

4) Refinancing components undermine investor expectations for additionality. 83% of issuances indicate that unspecified portions of proceeds may be used for refinancing activities. Funding provided by investors seeking to make positive contributions to the stated green purpose could be used to finance projects that are partially or fully completed.

5) Weak segregation of funds raised potentially undermines issuer accountability. Only 7% of issuers gave commitments to segregate proceeds between the green projects proposed for funding and other commercial purposes. This is closely related to (4) above as it makes the assessment of additionality difficult or impossible post issuance. Consequently, it raises the question of what investors should reasonably expect when investing in an issuance with a green labelling.

DATA ASSURANCE

6) Minority of issuers commit to holistic reporting of results conducted by an independent party. Although 85% of issuers undertake reporting on their project results, most of these reports (69%) are measured against a criteria defined by the issuer rather than an external criteria (such as the Harmonized Framework for Impact Reporting) and just 17% of issuers engage a third party to assess project results, akin to what might be considered an audit in a traditional financial reporting context.

7) Transparency of reporting details to the public is also limited. Based on the scaling scheme we developed to evaluate transparency of reporting, just 12% of issuers achieved the highest rating, equating to a system where all materials relevant to the issuance and performance are available through easy to access mechanisms.

8) There is almost no evidence of any outcomes-linked accountability to issuers who may fail to achieve targeted outcomes. None of the issuances disclosed any type of penalty for an issuer who either failed to deliver the projects as promised in the funding proposal or failed to achieve the intended environmental and sustainability benefits.

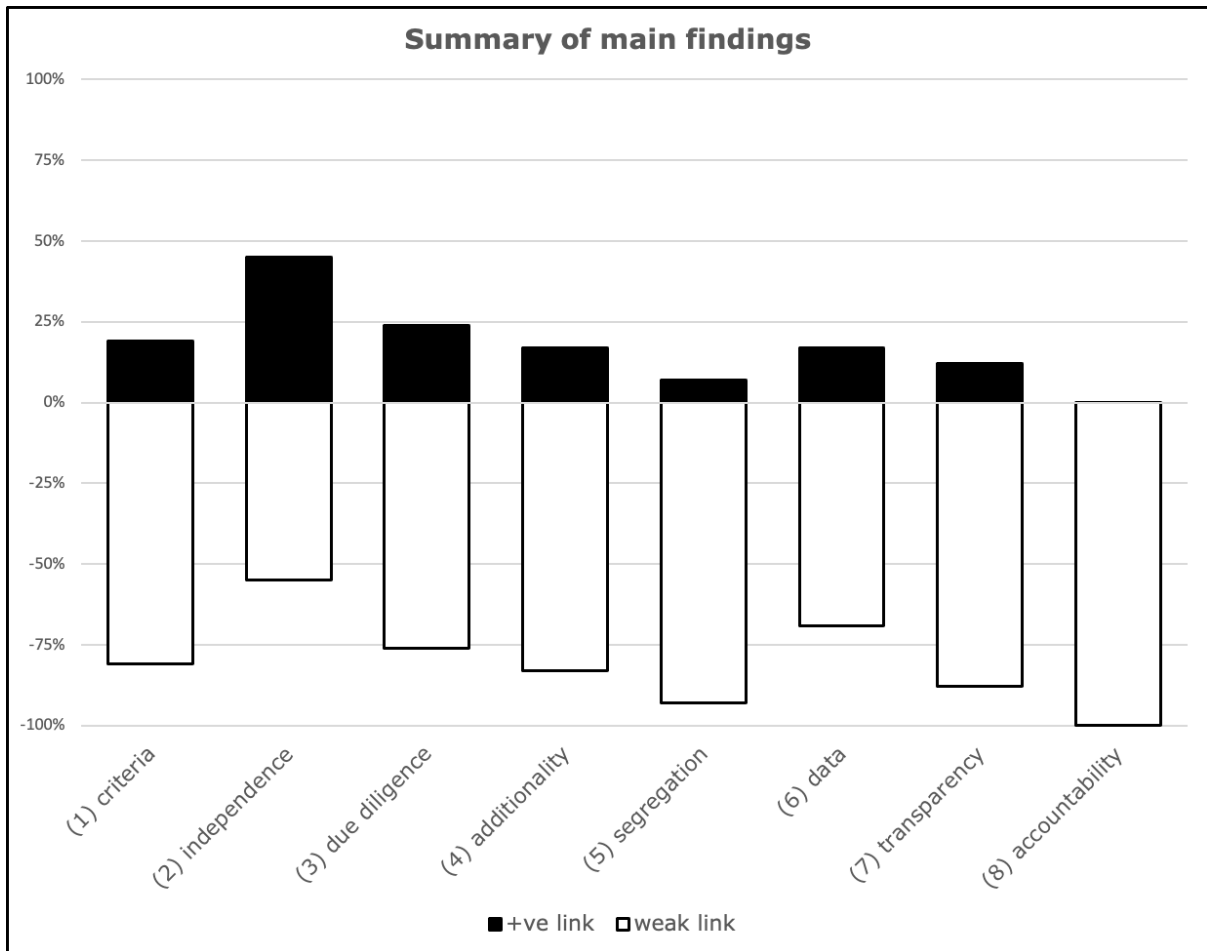


Figure 2: Summary of main findings. Percentage of issuances with conditions that support a link with sustainability outcomes are shown at top. Percentage of issuances that provide a weak or no adequate linkage to outcomes are shown at bottom.

Commentary

Issuers of green bonds in our study pool have significant discretion when approaching the market for a capital raising exercise under an asserted green labelling. This enables most to take advantage of considerable latitude in defining their objectives and allocating proceeds in a manner that meets corporate needs without reconciliation to pre-issuance intent. At the same time, issuers are exposed to limited accountability for actual achievements.

This is supported by the engagement of third parties that lend credibility despite the limited ability to assess the value and integrity of the third party's involvement. It is rare for an issuer to commit to an independent review of results post completion and post capital expenditure. There is a general absence of reporting practices that reconcile capital allocation and project results or that identify positive achievements and areas of deficiency. Consequently, there is limited external verification or oversight of how capital being raised under a green label is being deployed.

Taken together, these conditions result in a material knowledge deficiency. Intent and outcome are unable to be meaningfully correlated. This is curious given the typical pressures and expectations that investors apply to issuers in the context of most capital raisings. In regular bond offerings, investors are keen to ensure proceeds are deployed as per the use of proceeds statement as this is a central aspect of their investment assessment of financial outcomes. The logical corollary in green bond issues would be to ensure that the application of proceeds is consistent with the furtherance of objectives that justify the green labelling. However, the peculiar knowledge deficiency found in the context of a green bond financing calls into question the premises of treating a green bond differently from any other bond and hence to what extent is a green bond merely a labelling exercise. An attendant risk is that stakeholders who seek to support the role of finance as a facilitator of the Objectives but are provided with limited, qualified or no validation for their investment decision, may find it necessary to reconsider subsequent investment decisions.

4. Vectors of change

The capital market has increasingly engaged with green bond issuances, particularly since the growth of market interest in Phase 2. The response of self-regulatory private governance frameworks to new social demands and expectations is not without drawbacks and costs. Rapid market growth has created room for greenwashing in a variety of forms (ESMA 2022). Our findings suggest a more tenacious problem with the standards and accountability infrastructure of the green bonds market and sustainable finance more broadly.

The shortcomings identified in section 3 give rise to significant uncertainties about the vector of travel vis-à-vis the Objectives, both directionally and in terms of velocity when compared with previous phases. Considered in light of the trajectory of Phases 2 and 3, which are dominated by market-led factors, this overall vector of travel is sustained and suggests that problems in the current Phase 4 are an extension of weaknesses inherent in relying on market-led responses.

Self-regulatory standards are not subject to oversight regulation and the perspectives that public governance brings with it. One might argue the narrative of progress provided by market growth backed by standards serves the purpose of promoting self-regulatory solutions that favour industry growth while avoiding potentially profit-reducing regulation (Grote and Zook 2022; Reich 2007). The continuing freedom to use the frameworks selectively enables arbitrage. Limited transparency requirements and practices persist, as does the lack of independent, detailed and unconflicted mechanisms of oversight verification.

Phase 4 has seen a resurgence of public governance initiatives focussed on disclosure, albeit within the general arena of market-led practices. While this reporting foundation could facilitate higher quality standards for green bond issuance (Fitch Wire 2021), it could also neutralize green bond commitments and serve as a tick box exercise if disclosure requirements are insufficiently detailed and not independently verified. Our findings

support the proposition that corporates may continue to employ sustainability disclosures to improve their public profile (Deegan 2002; Lau et al. 2021) or to take advantage of a cheaper capital raising alternative. This aligns with the needs of investors concerned less with substance and more with improving their image or reputation, and asset managers seeking to meet a criterion in an investment mandate, or seeking to ensure higher fees or higher demand (Lau et al. 2021; Grote and Zook 2022).

Voluntary certification standards, whether created by agencies or industry associations, may give rise to reputational liability but are not generally subject to stricter forms of accountability. Disclosure also has its limits in terms of procuring desired outcomes and depends on a proven enforcement mechanism for mis-disclosure, which is presently lacking in the context of green bonds. Some problems are not adequately solved by merely releasing information (Etzioni 2014), and it is suggested that achieving the Objectives is one such problem.

Regulatory scrutiny of products labelled as green is increasing, particularly in the asset management sector. A report by InfluenceMap (2021) reveals numerous exaggerated claims and investment performance that falls short of targets. Given the findings herein, it would be unsurprising to find similar problems with green bond issuances - if data was more transparently available to make an assessment. The lack of a satisfactory system of verification at the point of issuance, or outcome reporting thereafter, is highly problematic in terms of transparency, allowing an illusion of progress that may shelter undesirable practices and outcomes.

The shortcomings discussed herein materially weaken any suggestion that redirecting capital allocation to address sustainability problems can be solved solely by market-led responses to the limiting factors. This is particularly the case where reputation-based accountability for a mislabelled bond may be massively disproportionate to the sustainability risks created or damage done, such as the continuance of environmentally damaging activities. To the extent the evolution of sustainable finance over Phases 2, 3 and 4 has been unsuccessful in terms of demonstrating that it produces outcomes that are directionally positive vis-à-vis the Objectives, the challenge in moving to a new Phase 5 is to identify how to overcome that.

Recommendation

The arc of progress indicated by our research suggests that the sustainable finance market has reached the point where firmer public governance oversight regulation is needed. Despite the strides made by the private sector, a more sophisticated framework consistent with a trillion-dollar industry has not emerged. This encompasses data integrity and due diligence that ensures the credibility of sustainability-labelled finance investments, identifies compliance failures and provides for a system of accountability – it is trite to point out that a framework needs to be enforceable to be effective.

To move into a more directionally positive Phase 5, it will be necessary to build on the voluntary disclosure systems introduced in Phase 4 toward systems of regulatory, and

possibly legal, accountability based on mandated transparency around standards that have been subjected to regulatory approval. This is justifiable on the basis that it is correcting a failure of the market to respond to the Objectives in a more transparent and accountable manner.

It would be possible to connect firm-wide disclosure requirements to specific green bond issuances to create legal consequences, such as via changed terms in the bond. However, that would represent a significant intervention in private bond markets which interacts with complex issues, ranging from pricing to cross-defaults, having difficult to predict consequences. Subjecting green bond issuances to commercial, legal or regulatory sanctions also fails to recognise that an issuer's performance vis-a-vis the Objectives at a corporate level ultimately depends on governance and corporate purpose, and that issuers have recourse to other sources of funding in any event.

A more feasible route for moving into a Phase 5 that aligns with the disclosure-based approaches emerging in Phase 4 is to focus on the third parties involved in a sustainable finance offering who act as a reputational intermediary to provide assurance to the market ("Assurance Services"). This facilitates market responses to corporate products based around the quality, completeness and reliability of Assurance Services. In terms of accountability, it shifts focus to the standard of work that a provider of Assurance Services should undertake to justify an assurance consistent with the stated purposes of a sustainable finance offering. To be effective, such a route would necessitate three key areas for reform:

- bringing Assurance Services within regulatory oversight via a form of licensing or registration;
- setting regulatory standards that promote independent, public-facing reporting on the raising and subsequent deployment of capital, including ex post assessment of sustainability outcomes achieved; and
- with the foregoing infrastructure in place, accountability becomes available in the form of sanctions applied to the providers of Assurance Services who fail to meet minimum market and regulatory expectations.

Such a reform underscores the need for better data based on measurable standards and the independent review of results by qualified and impartial third parties who are subject to appropriate oversight mechanisms. It would also bring the sustainable finance market into better alignment with practices in traditional markets where overarching societal values, including consumer protection and market integrity, are addressed via effective oversight mechanisms.

This has clear parallels with the introduction of credit rating agency regulation following the Declaration of the Leaders of the G20 (G20 2009). Providers of Assurance Services clearly are, similar to credit rating agencies in the debt capital market, an essential market participant in the sustainable finance market.

An important hurdle to introducing a similar regulatory regime is the scope of the mandate of a regulatory agency. So far as member agencies of IOSCO are concerned, 62% of regulators' mandates do not include any specific reference to ESG matters (IOSCO 2020). This has left many securities regulators bringing sustainability issues within their brief on the basis of investor protection, risk management and financial stability, as opposed to pursuing the Objectives more directly. This has generally resulted in imposing a disclosure-based approach on publicly listed issuers and regulated financial institutions based on standards that have emerged in Phase 4.¹² Whether a financial regulator is empowered to create a licensing regime for Assurance Services would remain a matter for jurisdiction-by-jurisdiction assessment. Difficulties may be encountered in the absence of a further declaration of the G20 providing the necessary impetus.

However, while the origination of sustainable finance is in the capital market, it should not be a foregone conclusion that a financial regulator is the most suitable body to oversee the licensing of a provider of Assurance Services. This may instead require a new regulatory mandate to be created with an expertise profile suited to the transformation to a green economy, which may involve the use of tools and considerations other than sustainable finance.

The public governance approach now being implemented in the EU for a designation of "European green bond"¹³ deserves commentary here as, similar to the foregoing, it requires providers of Assurance Services to be subject to regulatory oversight, in this case ESMA. It imposes reporting requirements, including impact reporting, that are to be lauded. However, the EU approach pushes further by requiring use of proceeds to align with the requirements of the EU's sustainable finance taxonomy. As a top-down prescriptive taxonomy, it represents a significant change of direction from the recent trajectory of sustainable finance and as such may risk quashing private market solutions that the market has depended on for its growth. Moreover, it may be difficult to implement globally within the timeframes needed. As at 2020 the EU accounts for less than 8% of global CO2 emissions, and its annual emissions have been in decline since around 1980.¹⁴ It remains moot whether a top-down approach will work in the context of markets that make large contributions to CO2 emissions but are very different from the EU in terms of the characteristics of the financial market and how it is regulated (such as the United States) or economic development (such as Asia).

On the other hand, some of the more recent ideas developed in the private market for seeking accountability for sustainability outcomes are also worth pursuing in parallel with our recommendation above. Sustainability linked products offer the opportunity to tie funding to corporate-wide outcomes and in some cases attach penalties or incentives tied to meeting stated goals. However, we would caution that the lessons from our study

¹² Including the TCFD, TRWG, TNFD, EU Corporate Sustainability Reporting Directive, the European Financial Reporting Advisory Group's climate standard prototype and the newly formed International Sustainability Standards Board.

¹³ Regulation (EU) 2020/852.

¹⁴ Source: <https://ourworldindata.org/co2-emissions>

suggest that the ability of such products to deliver meaningfully ultimately depends on the quality of the Assurance Services that validate them.

5. Conclusion

Sustainable finance has succeeded in establishing a clear footprint in the capital marketplace. It is remarkable that this achievement has occurred while glossing over the primary ontological question: what qualifies capital allocation as sustainable finance? In its stead, the market has relied on industry-led standards cum labelling processes applied at the time of issuance, which have taken precedence over validating outcomes or interim progress toward outcomes. The extent to which sustainable finance has succeeded in shifting capital allocation toward procuring outcomes consistent with the Objectives remains unclear. Stakeholders are consequently information deprived and disempowered on an ex ante basis at the time an investment decision is made and on an ex post basis in terms of connecting allocation decisions to outcomes.

Phases 3 and 4 appear to have created an illusion of progress. This is dangerous insofar as it masks the velocity of substantive change in corporate behaviour and market priorities, and the attendant delays in pursuing the Objectives, which are increasingly perceived as being time sensitive. This is a concern expressed in the first instalment of the IPCC's Sixth Assessment Report (2021) and even more urgently in its February 2022 report. The concern is significantly magnified when one considers that all areas of sustainable finance issuance in 2021, including green bonds, amounted to \$1.6 trillion, which represents about 10% of new debt issuance but only around 2% of aggregated debt issuance of \$270 trillion (Refinitiv 2021; Bloomberg NEF 2022).

There is little doubt that some form of sustainable finance will become a meaningful underpinning of global capital formation to some greater or lesser degree, yet broader questions remain. How will it be shaped and directed, and by who or what, to achieve the Objectives? Why ringfence specific capital raising exercises as sustainable when the overarching objective should be for corporates to formulate financial goals while becoming more responsible and positive contributors to the Objectives at a holistic corporate-wide level? How should sustainable finance fit in to the roadmap for adaptation finance? In the interim, events such as the landmark Dutch court ruling against Shell¹⁵ and the investigation of Deutsche Bank DWS¹⁶ are indicative of social concerns that corporates are not walking the talk.

Perhaps the root of the problem is to stop thinking of green bonds as similar to traditional bonds, which requires the financial condition of a company to be viewed through the lens of the corporate treasurer. If one takes the urgency of climate-change as the starting point, and assumes that capital allocation via sustainable finance can make a positive difference, then the viewpoint needs to shift to that more akin to a holder of equity. This

¹⁵ *Milieudefensie et al v Royal Dutch Shell* (District Court of the Hague, 26 May 2021).

¹⁶ Deutsche Bank DWS is being investigated by Germany's Federal Financial Supervisory Authority and the United States Securities and Exchange Commission for misleading clients about its sustainable investing efforts.

is appropriate since a green bond that does not perform on its sustainability promises has consequences that may go well beyond the ongoing financial integrity of the issuer and the limited financial interests of its bondholders.

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