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Integrity through Alignment: A 2022 Roadmap for Global Standards and Market-led Approaches in Sustainable Finance

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Paper in Brief:

- This is the second paper in the IIF's series on [the case for greater international alignment](#) in sustainable finance policy and regulation.
- With the aim of achieving integrity and alignment in sustainable finance markets around the world, we set out a roadmap for public-private collaboration in six areas: *Disclosure; Climate and ESG data and ratings; Classification Systems, including taxonomies; Scenario-based Climate Risk Measurement (including supervisory climate scenario exercises); Regulatory Capital; and Net Zero Alignment and Transition Plans.*
- A clear understanding of the respective roles of market-based and official sector efforts and initiatives –and an efficient model for interactions between them – will be necessary to create enabling conditions for an optimal mix of innovation, leadership, capacity building, and universalization of best practices across the sustainable finance sphere.

In Numbers: Sustainable Finance Policy and Market Developments

Assessing Risks and Opportunities

- **Climate change dominates the risk landscape:** Over 90% of CROs view climate change as the top emerging risk in the next five years ([Source](#): IIF/EY 2021 Bank Risk Management Survey).
- **Sustainable investments could see exponential growth:** \$580 billion has been invested in ESG funds and over \$1.4 trillion of ESG debt issued; with surging demand, issuance could hit \$3.8 trillion by 2025 ([Source](#): IIF Sustainable Debt Monitor).

Achieving net zero targets by 2050 might require the climate bond universe to reach \$36 trillion by 2025 and over \$60 trillion by 2030. ([Source](#): IIF/Pictet Bonds that Build Back Better)

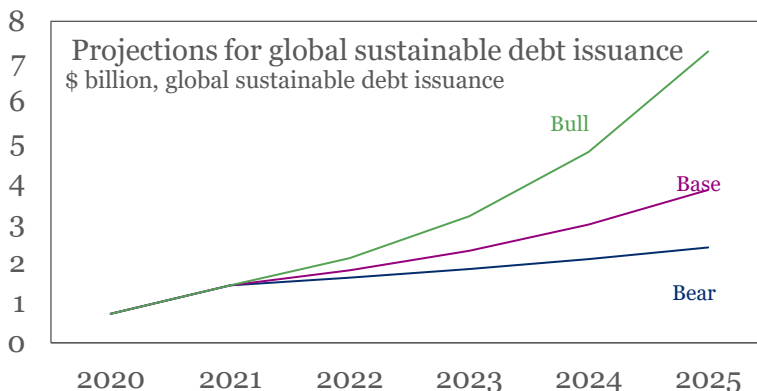


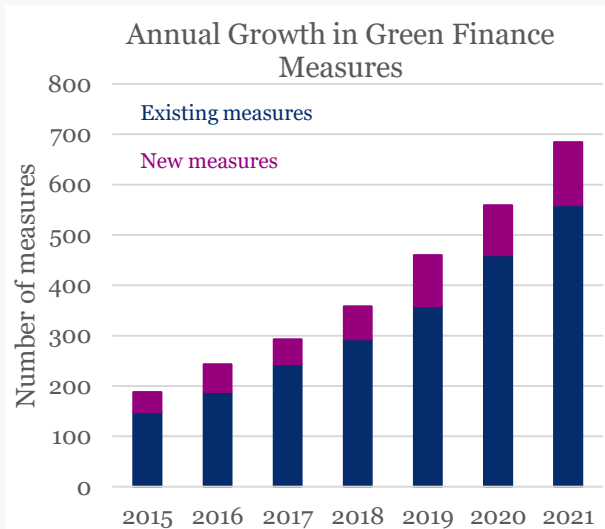
Figure notes: Alternative projections under different assumptions about market sentiment. See [IIF Sustainable Debt Monitor](#) (January 2022) for further details.

The Changing Role of Policy and Regulation

- **Major increase in policy and regulatory action:** There are now over 680 unique policy measures in place across jurisdictions ([Source](#): UN Green Finance Platform). 2021 saw nearly 1,000 sustainable finance/ESG regulatory developments—an increase of 250% over the past five years.¹ ([Source](#): ECOFACT Policy Outlook)

- **Supervisors across the globe are undertaking climate scenario analysis exercises:** At least **27 central banks or supervisors** are conducting or have concluded scenario analysis exercises between 2021-23; new and repeat exercises are being planned ([Source](#): NGFS October 2021).

- However, different approaches obfuscate comparison of potential impacts: supervisors in different jurisdictions have employed **at least six unique measures of credit risk impact alone**



Source: [UN Green Finance Platform](#)

- **Prudential tools - an open debate:** at least **22 references** to climate and regulatory capital have been made by policymakers or regulators over the past twelve months, often in relation to climate scenario analysis. (Source: IIF)

Charting New Frontiers - Classification and Alignment

- **Classification frameworks, such as taxonomies, are proliferating:** taxonomies are under development in **24 jurisdictions** around the world. ([Source](#): ECOFACT)
- **Net Zero is the new yardstick for private-sector climate ambition:** over **25 different Net Zero coalitions** have been launched, covering sectors such as energy, agriculture, industry, transport, and buildings, with the Glasgow Financial Alliance for Net Zero (**GFANZ**) alone convening **450 member firms from 45 countries**. (Sources: IIF, [GFANZ](#))

Executive Summary

Recent years have demonstrated that global challenges—such as climate change, biodiversity loss, and the COVID-19 pandemic—require global solutions, predicated on common approaches and clear international coordination. We argue that this same global coordination is urgently needed for the rapidly evolving policy, regulatory, and market-based architecture for sustainable finance. This architecture has developed organically across jurisdictions as financial institutions, other market actors, regulators, central banks, and policymakers collectively seek to enhance resilience to climate-related and other environmental social and governance (ESG) risks, align the financial system with sustainability-related objectives, and mobilize capital in support of the Net Zero transition. However, rapid innovation has led to the risk of fragmentation, as jurisdictional frameworks and market-based initiatives have advanced significantly in the absence for formal global standard-setting - which is now just commencing in certain areas. As such, the global sustainable finance landscape is now characterized by dynamic interaction between national or regional policies, global standards, and market-led initiatives, which are developing on parallel—yet sometimes divergent—tracks.

Ultimately, the efforts of both market actors² and the official sector³ to design and implement frameworks for sustainable finance should be united by common goals - ensuring that sustainable finance markets have integrity, can operate efficiently, and are resilient to future risks without generating unintended consequences. Recognizing the different routes towards achievement of these objectives, we have identified six key areas for further development and alignment of market-led and/or official-sector frameworks. This

¹ Regulatory developments include any relevant policy development, such as submission of initial regulatory proposal, consultation periods, parliamentary debates, and entry into force of a given law.

² In this paper, the terms “market actors” or “private sector” refers to private financial sector institutions (including banks, investors, and insurers, credit ratings agencies, market infrastructure providers, service providers), other private sector stakeholders, and voluntary coalitions and leadership groups within the private sector.

³ In this paper, the term “official sector” or “public sector” refers to public authorities, including central banks, financial sector and market regulators, and policy institutions (including national-level and regional government bodies), standard-setting bodies, other intergovernmental institutions, and voluntary coalitions and leadership groups within the public sector.

paper sets out a “public-private roadmap” to help achieve common approaches across jurisdictions and markets in the areas of: **Disclosure; Climate and ESG Data and Ratings; Classification Instruments, including Taxonomies; Scenario-based Climate Risk Measurement Exercises; Regulatory Capital; and Net Zero Alignment and Transition Plans.**

- **Disclosure:** The launch of the International Sustainability Standards Board (ISSB) was a critical milestone towards consolidating the many voluntary frameworks for disclosure. However, there is still a long way to go to achieve widely referenced and implemented climate (and broader ESG) disclosures. Jurisdictional approaches, including financial sector requirements, are being implemented alongside the development of global standards, generating transitional challenges and posing alignment issues. Furthermore, the ultimate impact of the ISSB’s efforts to develop global baseline standards will depend in part on progress in other areas, such as efforts to enhance data quality and develop metrics, as well as the ISSB’s capacity to reflect emerging disclosure approaches in new areas, such as Net Zero alignment. To address transitional challenges, the ISSB could support jurisdictions in developing an equivalence and/or substituted compliance regime for jurisdictional approaches that go beyond the global ISSB baseline standard, or where other standards may be used. Finally, further international public-private collaboration is needed to analyze the relationship between regulatory reporting, Pillar 3 risk-related disclosures and corporate ESG disclosure requirements affecting financial institutions.
- **Climate and ESG Data and Ratings:** Ensuring integrity in sustainable finance markets requires strong foundations, including in terms of high-quality, verifiable, and reliable data. However, despite ongoing efforts by market and official sector actors, issues of data quality and availability remain a significant challenge from an integrity perspective, in terms of financial institutions’ efforts to allocate capital and manage risks, as well as their efforts to deliver decision-useful disclosures for their investors and other stakeholders. In the area of climate and ESG risk data, we recommend that official-sector efforts focus on fostering common approaches to addressing data gaps—such as the appropriate use of proxies—while corporate disclosure and other key data sources improve over time. In the area of ESG ratings and data products —where methodologies are still evolving— market-based codes of conduct should be allowed to develop, with appropriate regulatory minimum safeguards for quality and transparency on the construction of ESG ratings, in line with recent recommendations from IOSCO. Allowing the market to develop industry standards and codes of conduct for ESG ratings and data products would drive coherence in a dynamic way over time. Official sector support—including the provision of public databases and industry-supervisory collaboration on bridging data gaps in supervisory contexts—would also be beneficial.
- **Classification Instruments and Taxonomies:** A wide variety of market-based and official-sector classification instruments—including taxonomies for identifying, verifying, and aligning investments with sustainability goals—have emerged as central components of sustainable finance frameworks in some jurisdictions. These instruments can vary significantly in terms of objectives, ambition level, scope, granularity, technical criteria, methodologies, and applications. Significant divergence in the design of classification

instruments could ultimately obstruct their fundamental objectives of enhancing clarity and integrity, and providing common baselines. However, it is not clear that a common global framework for the design of classification instruments like taxonomies may be possible—or even desirable—considering important differences in jurisdictional policy objectives and financial market contexts. Recognizing these complexities, there is a growing focus on interoperability of jurisdictional classification instruments, and how market-based and official-sector approaches can be more coherently integrated. Efforts to enable interoperability, including the development of common frameworks for the design of classification instruments, should be a primary focus. An official-sector international organization or intergovernmental forum could be designated as a central authority to benchmark and assess the similarities and differences between classification instruments for the purposes of facilitating discussion between jurisdictions on equivalence considerations. Since such processes would be complex, technical, and significant in terms of financial market impacts (e.g., cross-border investments), assessment of equivalence should not be left to voluntary coalitions or third parties. Separately, policymakers and regulators could engage with industry stakeholders to determine how taxonomies and other classification instruments can be more effectively leveraged to meet the objective of facilitating the financing of the transition.

- **Scenario-based Climate Risk Measurement Exercises:** Scenario-based Climate Risk Measurement (SCRM) is an emerging technical field in which public and private approaches are developing in parallel. Supervisory SCRM exercises to date have varied significantly in terms of key design parameters, including scenarios used, risk and institutional scope, format and specification, key modelling assumptions, and outputs. Although there are significant challenges posed by data gaps and methodological uncertainties associated with these exercises, the first series of exploratory supervisory exercises has yielded useful initial insights, including about data and methodological constraints. However, it is often challenging to directly compare or assess the results of different supervisory exercises given differences in design parameters, the segmentation of results across risk types and sectors, and the metrics chosen to quantify impacts. Ongoing industry-supervisory collaboration would be very helpful to develop the technical underpinnings of SCRM analysis during this exploratory phase. For example, collaborative efforts to increase alignment around science-based scenarios (such as those developed by the NGFS) and other technical work to enhance the comparability of exercise results, including in terms of impact quantification metrics. In the near-term, clarification and coordination by authorities globally on the relationship of scenario-based climate risk analysis to the prudential framework would be helpful to reduce fragmentation of approaches across jurisdictions. Specifically, climate scenario analysis exercises should be differentiated from prudential applications until conceptual and technical issues are addressed. Until then, it is important for authorities to – as stated by the Basel Committee on Banking Supervision (BCBS) – *“recognise the limitations of their analyses when communicating their results or using them in supervisory assessments.”*⁴

⁴ BCBS 2021, [“Principles for the effective management and supervision of climate-related financial risks”](#) (November), hereafter referred to as “BCBS 2021.”

- **Regulatory Capital:** Some authorities have started to express tentative views about the potential role and limitations of adjusting regulatory capital in response to climate-related financial risks, including the European Central Bank (ECB), United Kingdom Prudential Regulation Authority (UK PRA), and the Canadian Office of the Superintendent of Financial Institutions (OSFI). Many prudential authorities that have commented on the subject and the global financial industry agree that prudential approaches, including in relation to capital, should always be risk-based and data-driven and should not be used as a tool to directly incentivize capital allocation to achieve climate policy goals. While most national prudential authorities have expressed caution or uncertainty regarding changes to “Pillar 1” requirements, some authorities have made more assertive statements particularly in relation to firm-specific (so-called “Pillar 2”) capital requirements and the macroprudential framework.⁵ It would not be appropriate for authorities to use firm-specific tools (Pillar 2) or the macroprudential framework simply because those tools are readily available and can be applied flexibly today. More broadly, there are open questions regarding the use of analytical tools, such as climate scenario analysis exercises, to inform near-term prudential requirements, particularly given that supervisory exercises to date have indicated that the financial stability risks from climate change are moderate and manageable in the short- to medium-term. Looking ahead, it is particularly important that discussions on the potential implications of climate-related risks for regulatory capital be led by the relevant global standard-setting bodies, and that those standard-setters take a holistic view of the prudential framework, also accounting for complementarities and potential overlaps between its different components. In the interest of achieving global alignment, individual jurisdictions could refrain from making national adjustments to the capital framework (such as Pillar 1 requirements within the banking capital framework) before the global standard-setting bodies have analyzed and issued final opinions on whether adjustments there would be warranted on a data-driven, risk basis. To the extent that jurisdictions consider applying capital tools or other measures under the (Pillar 2) supervisory review framework or macroprudential framework, they should do so based on solid conceptual and empirical grounds and maintain an overall risk-based approach.
- **Net Zero Alignment and Transition Plans:** The current array of market-based initiatives for Net Zero alignment—including transition plans—will need to become much more coordinated, and potentially consolidate, to avoid the risk of duplicative and overlapping guidance. Similarly, it would be inefficient for multiple national-level approaches to be developed in this ‘greenfield’ area, especially as some market-based frameworks are already well advanced. Where official sector authorities seek to provide guidance on aspects of Net Zero Alignment, including transition plans, they should reflect the core components of market-based frameworks as they are formalized. Prudential authorities, in particular, should take care to clarify whether financial institutions’ Net Zero activities are

⁵ We recognize that Pillar 1 (globally relevant minimum capital requirements and buffers) and Pillar 2 (firm-specific measures applied as part of the supervisory review process) are terms used in the banking capital framework only. A similar approach has been taken by the International Association of Insurance Supervisors (IAIS), which has been developing and implementing the insurance core principles (ICPs) and a common framework for the supervision of internationally active insurance groups (IAIGs).

relevant to their prudential mandates (and, if so, how). By the same token, prudential authorities should not assume the responsibility of regulating the general approach to the development of Net Zero alignment frameworks, as other mechanisms—including market discipline—should be used to ensure the technical appropriateness and integrity of such frameworks. Wherever possible, associated global initiatives aimed at enhancing alignment should integrate relevant aspects of the Net Zero Alignment agenda into their work programs e.g., the ISSB’s work to develop global climate risk disclosure standards could consider aspects such as the disclosure of transition plans, drawing on the work of the Financial Stability Board’s (FSB) Task Force on Climate-related Financial Disclosures (TCFD).

Looking across the six case studies discussed in this paper, some insights emerge on the necessary process and dynamics of public-private collaboration in 2022, and beyond:

- i. **Public/private collaboration is essential in all areas, but the form it should take will vary across topics**, depending on levels of maturity of methodological approaches, the necessary level of homogeneity of practices and implications for integrity outcomes, the extent to which more closely specified and enforced standards would in fact contribute to enhanced integrity, and relationships with existing market-based frameworks, policy instruments, and supervisory and regulatory tools. Often, allowing room for innovation and identification of ‘what works’ is a necessary stage before official sector intervention to regulate practices may be deemed necessary.
- ii. **In many cases, alignment will be achieved through concerted efforts to formulate global regulatory standards or principles; however, challenges can arise where regulatory approaches run on a “parallel track” with evolving market-led standards.** There should be clear channels for early engagement between market-led standards and global policymakers and standard-setting bodies, with the objective of containing the potential for fragmentation *ex ante*. Further, on their own, global regulatory standards and/or principles are not a panacea – they require implementation at the jurisdictional level and need to gel with jurisdictional needs and developments.
- iii. **Ultimately, it is likely that the goal of ensuring integrity in sustainable finance will be achieved through market-led and official-sector efforts and initiatives, and interactions between them.** Clear, pragmatic and risk-based expectations from regulators and prudential authorities will be needed for the financial industry to respond to the climate crisis with the necessary urgency and scale. Clarity on the potential use of different supervisory and regulatory tools is required throughout (e.g., in relation to regulatory capital requirements).
- iv. **Going forward, public-private collaboration and dialogue will be necessary to assess the degree to which market-based frameworks and official-sector approaches are achieving their intended effects and leading to desired outcomes**, with ongoing evaluation and revisions as required to ensure that instruments remain fit-for-purpose and that risks of potential unintended consequences are minimized. A clear understanding of the respective roles of market-based and official sector frameworks –and an efficient model for interactions between them– will be necessary to create enabling conditions for an

optimal mix of innovation, leadership, capacity building, and universalization of best practices across the sustainable finance sphere.

Figure ES1: A global roadmap for integrity and alignment in sustainable finance

Topic	Pathway for alignment of frameworks and development of common approaches	Other priority supporting actions
Disclosure Standards	<ul style="list-style-type: none"> • Global standard-setting process via the ISSB, leveraging market-based frameworks. Jurisdictional alignment efforts centered around the ISSB global baseline • Development of protocols for an equivalence and/or substituted compliance regime where jurisdictional approaches exceed the global baseline • Analysis of the relationship between regulatory reporting, Pillar 3 risk-related disclosures and corporate disclosure requirements affecting financial institutions 	<ul style="list-style-type: none"> • Clarification of next steps for integration of voluntary disclosure frameworks, including TCFD • Industry collaboration to advance views on technical protocols for construction of metrics
Climate and ESG Data and Ratings	<ul style="list-style-type: none"> • Continued efforts to accelerate uptake of globally aligned corporate disclosure approaches (in line with future ISSB standards) • Prudential supervisors and financial institutions to engage in a technical dialogue on the appropriate use of estimates and proxies in different contexts • Development of market-based codes of conduct for ESG ratings providers, with appropriate regulatory minimum safeguards drawing on IOSCO recommendations 	<ul style="list-style-type: none"> • Public provision of open-source databases of ESG information • Review and dialogue on intended uses and limitations of ESG data and ratings products in regulation and supervision • Public-private dialogue on how to expand the availability of ESG ratings for smaller companies and emerging markets
Classification Instruments and Taxonomies	<ul style="list-style-type: none"> • Multi-stakeholder process to develop standards for the interoperability of different instruments, focusing on core objectives, applications and interactions with other policy tools • Designation of an official-sector authority or intergovernmental forum to benchmark and assess similarities and differences between classification instruments for the purposes of facilitating discussion between jurisdictions on formal equivalence considerations 	<ul style="list-style-type: none"> • Jurisdictional initiatives to leverage existing taxonomies where similar design features or use cases are applicable • Ensure that market-based approaches (e.g., ICMA, CBI, LMA) continue to be recognized as valid
Scenario-based Climate Risk Measurement Exercises	<ul style="list-style-type: none"> • Focus on collaborative development of technical underpinnings during the exploratory phase of supervisory climate scenario exercises • Clarification and alignment by authorities globally on the relationship to the prudential framework: climate scenario analysis exercises should be differentiated from prudential applications until conceptual and technical issues have been addressed 	<ul style="list-style-type: none"> • Supervisory coordination and communication around exercises (e.g., sharing results and insights, conducting exercises at consolidated level only) • Collaborative efforts to increase alignment around science-based scenarios and other technical work to enhance the comparability of supervisory exercise results

<p>Regulatory Capital</p>	<ul style="list-style-type: none"> Continued efforts by global standard-setting bodies to develop clear guidelines on the relevance of climate risks for regulatory capital, taking a holistic view of the prudential framework and accounting for complementarities and potential overlaps Firm-specific requirements (“Pillar 2”) or macroprudential framework should only ever be considered based on solid conceptual and empirical grounds to maintain an overall risk-based approach; they should be considered holistically with the Pillar 1 microprudential framework Regulators should take an analytical and cautious approach, considering methodologies and data challenges, to ensure the capital framework remains risk-based 	<ul style="list-style-type: none"> Jurisdictional adjustments to the capital framework could be deferred until the global standard-setting bodies have assessed whether adjustments there would be warranted on a data-driven, risk basis; jurisdictions should ultimately transpose the final BCBS approach
<p>Net Zero Alignment and Transition Plans</p>	<ul style="list-style-type: none"> Market-based frameworks for Net Zero Alignment should rapidly coordinate and potentially consolidate to avoid risks of duplication or overlaps Prudential regulators and supervisors should develop and articulate a position that is consistent with their prudential mandates for how they will engage on firms’ Net Zero commitments or transition plans Interconnections with relevant global initiatives should be recognized and reflected in work programs (e.g., the ISSB’s on global disclosure standards) 	<ul style="list-style-type: none"> Industry-supervisory collaboration to explore how to incorporate corporates’ and financial institutions’ Net Zero alignment activities and transition plans in the context of supervisory climate scenario analysis

The paper proceeds as follows:

Executive Summary 3

Introduction and Context..... 10

Case Study #1: Disclosure 14

Case Study #2: Climate and ESG data and ratings 16

Case Study #3: Classification Instruments and Taxonomies 21

Case Study #4: Scenario-based Climate Risk Measurement..... 25

Box 1: Apples and Pears? The challenges in comparing the results of supervisor’s climate scenario analysis exercises 28

Case Study #5: Regulatory Capital..... 30

Case Study #6: Net Zero Alignment and Transition Plans 33

Conclusions: Implications for Public-Private Collaboration in 2022..... 37

Introduction and Context

The experience of recent years has proven that challenges which are inherently global in nature - such as climate change, biodiversity loss, and the COVID-19 pandemic - require global solutions, predicated on the basis of common approaches and clear international coordination. Climate change and the related economic implications, represents a structural change for economies and firms globally. For this reason, responses and adaptations to it require strong foundations that will endure over time. This applies also to the associated policy and regulatory architecture for sustainable finance. In addition to legal and regulatory efforts towards alignment, common approaches are also often fostered in a market-led way through industry initiatives such as commitments and targets, and the development of frameworks for common practices to enhance market efficiency and ensure integrity.

Today, numerous jurisdictions are implementing a range of policy instruments to align the financial system with sustainability-related objectives, enhance its resilience to climate-related and other ESG risks, and mobilize capital in support of the Net Zero transition. In recent years, there has been an exponential increase in the scope and volume of policy and regulatory instruments being announced and implemented, with the UN Green Finance Platform identifying over 680 unique policy instruments in place across jurisdictions.⁶ 2021 saw nearly 1,000 regulatory developments in the sustainable finance and ESG space, which is an increase of 250% over the last five years.⁷ In some cases, these jurisdictional approaches cover areas where actions to implement global standards or common approaches are already underway, such as in the area of disclosure requirements. In many cases, national authorities are exploring new areas where efforts towards common approaches are at an earlier stage of development (e.g., scenario analysis), or where new agendas are being advanced through market-led initiatives (e.g., frameworks for Net Zero Alignment and transition plans).

Valuable efforts and processes have started to establish global standards and/or principles in select areas of the sustainable finance agenda, including ESG disclosures (including work by the IFRS Foundation and International Organization of Securities Commissions, IOSCO) **and supervisory approaches** (including work by the Basel Committee on Banking Supervision, BCBS, and International Association of Insurance Supervisors, IAIS). This reflects priorities and efforts over many years, and particularly following the global financial crisis, to foster an effective culture of international cooperation and collaboration in financial regulation.

However, due to the urgency of key sustainability challenges such as climate change, sustainable finance policy frameworks have been developing more organically - with several jurisdictional frameworks and market-based initiatives having advanced significantly in the absence of global standard-setting, which is now just commencing in certain areas. If this trend persists, and steps are not taken to align local approaches with global standards as they develop, there is a risk that core elements of the sustainable finance

⁶ UN Green Finance Platform, [Green Finance Measures Database](#).

⁷ ECOFACT [Policy Outlook](#). "Regulatory developments" include submission of initial regulatory proposal, consultation periods, parliamentary debates, entry into force of a given law, court decisions, and other relevant developments affecting policy implementation.

policy framework will permanently diverge across jurisdictions. This could lead to a host of challenging implementation and coordination issues for financial market participants, policymakers, and financial supervisors, which could ultimately constrain efforts to scale up capital for the Net Zero transition. It is therefore important that global standards develop at an appropriate speed and with the necessary inputs from, and coordination with, individual jurisdictions and the private sector.

As jurisdictional policies, global standards, and market-led initiatives develop on parallel - and sometimes divergent - tracks, important questions are arising about the relationships and interactions between official-sector and market-led frameworks for sustainable finance. As Figure A demonstrates, market-led and regulator-led approaches to developing standards can be used effectively in different contexts depending on the circumstances and objectives of the standards; ultimately, there is a spectrum between them and they can co-exist. There is an emerging trend in sustainable finance of core market-led frameworks and approaches being progressively integrated into policy and regulatory instruments (e.g., with climate disclosure standards). Recently, some supervisors have indicated an intention to explore the supervision of aspects of emerging market-led frameworks such as Net Zero alignment, including targets and transition plans.⁸

Ultimately, market-based and official-sector efforts to develop and align frameworks for sustainable finance are united by common goals - to ensure that sustainable finance markets have integrity, can operate efficiently, and are robust to potential future shocks and trends. Looking at the developments in 2021, including the debate among market, policy, and civil society stakeholders on the risk of greenwashing, it is of paramount importance to ensure integrity and clarity on the criteria and evidence underlying claims about sustainability-related characteristics of financial products and commitments. By the same token, there needs to be a clear understanding of the potential role and limitations of the financial sector in driving sustainable outcomes and economy-wide transformations. The significant focus on financial sector commitments at COP26 raised important questions regarding the optimal balance of private sector versus official-sector efforts on climate change, with a potential risk of overemphasis on the former.⁹ Clearly, the financial sector does have an important role to play in terms of climate risk management and reporting, capital allocation, advisory and structuring practices, and engagement with corporate and public sector clients - but it will be inhibited in playing its role if science-based, economy-wide climate policy frameworks are not in place to shape the transition.

Recognizing the different routes toward achieving common practices and advancement, the IIF has identified six key areas in which alignment and integration of market-led and/or official-sector frameworks should be pursued in 2022. With the aim of achieving common or more consistent approaches across jurisdictions and markets, this paper explores

⁸ Frank Elderson, Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB, 2021. "Overcoming the tragedy of the horizon: requiring banks to translate 2050 targets into milestones" (October); Bank of England/Prudential Regulation Authority 2021, "[Climate-related financial risk management and the role of capital requirements: Prudential Regulation Authority Climate Change Adaptation Report 2021](#)" (October), hereafter referred to as "PRA 2021".

⁹ IIF 2021, "[IIF COP26 Outcomes and Implications](#)" (November).

what the public-private roadmap could look like in the following six case studies: Disclosure; Climate and ESG data and ratings; Classification Systems, including taxonomies; Scenario-based Climate Risk Measurement (including climate scenario analysis and stress testing exercises); Regulatory Capital; and Net Zero Alignment and Transition Plans. In each case study, we consider climate and broader ESG topics to the extent that they are relevant and in scope of current initiatives. Therefore, some case studies have a stronger emphasis on climate-related topics (e.g., Regulatory Capital, Net Zero Alignment and Transition Plans) while others cover broader ESG topics. Most of the topics are relevant to the broader financial system and different types of financial institutions; where the discussion pertains particularly to one type of financial institution, this is indicated.

While we have separated these topics into distinct case studies for purposes of exposition and brevity in this paper, these topics are in fact linked in many ways (see Figure B). To take one example, the introduction and uptake of classification instruments, such as taxonomies, within financial markets may support positive real economy decarbonization outcomes where their application is carefully targeted – for instance, as a basis for climate or ESG-related financial product standards, which enable greater clarity for investors and reduce the potential risk of greenwashing. However, as is the case in several jurisdictions, classification instruments such as taxonomies may have interlinkages (or indirect implications) in other areas, including the structure of disclosure standards, which may in turn influence the types of corporate data which become publicly available to investors and financial institutions and thereby potentially influencing capital allocation. This serves to show that, when considering a change in any given policy area, it is important to consider the inherent connections between the different topics in order to internalize the full effects of an adjustment or intervention.

Figure A – Comparing market and official-sector alignment approaches to the development of standards¹⁰

Type of standards [not mutually exclusive ^(a)]	Circumstances in which the approach can be effective	Current Examples	Current Potential Sustainable Finance Applications ^(b)		
Market-led (codes, standards)	<ul style="list-style-type: none"> Public good requires collective action As an alternative, or compliment to^(a), regulator-led approaches Where specialist (market, technical) knowledge is required Where market practices are rapidly evolving and innovation is encouraged (also by authorities) Where sufficient industry consensus can be reached on approach and content To account for sector-specific dynamics (e.g., banking/insurance/asset management) Can be broader and more 'aspirational' than regulatory mandates. 	<p>ISDA Protocols¹¹ - a mechanism to efficiently implement standard contractual changes over a broad number of counterparties, overseen by an industry association.</p> <p>Global FX Code¹² - global principles of good practice in the foreign exchange market developed by a partnership between central banks and market participants from multiple jurisdictions.</p>	Net Zero Alignment and Transition Plans	<div style="display: flex; align-items: center; justify-content: center;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-right: 10px;">Classification Instruments and Taxonomies</div> <div style="border-left: 1px dashed green; border-right: 1px dashed green; height: 100%; position: relative;"> <div style="position: absolute; top: 0; right: 0; width: 10px; height: 10px; background-color: green; clip-path: polygon(50% 0%, 61% 35%, 98% 35%, 68% 57%, 98% 57%, 79% 91%, 50% 70%, 21% 91%, 32% 57%, 2% 57%, 39% 35%, 2% 35%);"></div> <div style="position: absolute; bottom: 0; right: 0; width: 10px; height: 10px; background-color: green; clip-path: polygon(50% 0%, 61% 35%, 98% 35%, 68% 57%, 98% 57%, 79% 91%, 50% 70%, 21% 91%, 32% 57%, 2% 57%, 39% 35%, 2% 35%);"></div> </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; margin-left: 10px;">Use of estimates/proxies to fill data gaps</div> </div>	
Regulator-led (standards, requirements)	<ul style="list-style-type: none"> Public good requires collective action When market-led codes or standards do not emerge or may not be sufficiently robust or practiced without public sector intervention Where there are benefits to the regulator closely specifying a standard or requirement Where topic closely relates to existing regulatory tools 	<p>Financial accounting standards - IFRS and GAAP standards are highly detailed, globally-applied standards which are also referred to in regulatory and securities market requirements.</p> <p>Regulatory capital requirements for banks and insurers -developed by global standard setting bodies as minimum standards for internationally-active institutions.</p>	Industry-led climate scenario analysis		Climate and ESG data and ratings
			ESG Disclosure Standards		Supervisor-led climate scenario analysis
			Regulatory Capital		

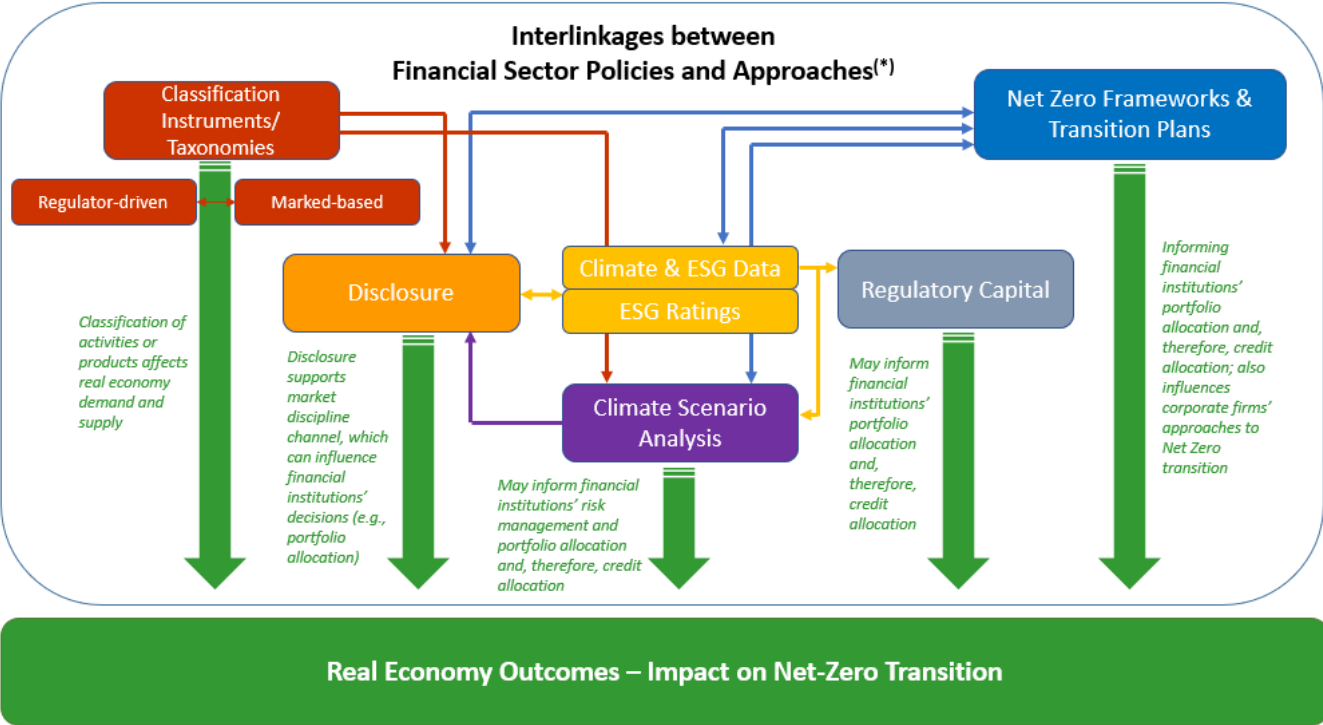
Table notes: (a) There is a wide spectrum between market-led and regulator-led standards, and the two types often co-exist. Further, sometimes regulatory authorities recognize, endorse or refer to industry standards or codes, which can also change the nature of market-led standards. (b) The shading colors are indicative only; examples towards the top of the table indicate that more weight on market-led approaches could be appropriate, and examples towards the bottom of the table indicate that more weight on regulator-led approaches may be appropriate. The case study discussions in the remainder of the paper provide further elaboration.

¹⁰ Further discussion of this topic can be found in CFA Society United Kingdom 2020, "[Codes, Standards and Regulations and their respective roles in providing a framework for expected conduct and behaviour in global financial markets](#)" (February).

¹¹ International Swaps and Derivatives Association (ISDA), [Protocols Overview](#).

¹² Global Foreign Exchange Committee 2021, "[FX Global Code July 2021](#)"(July).

Figure B: Stylized representation of the interlinkages between the financial sector policies and approaches discussed in this paper



* Stylistic diagram highlighting potential links between the topics discussed in detail in this paper. Other topics are relevant and will interact with the policies and approaches detailed here. Green arrows indicate how a topic can influence real economy outcomes.

Case Study #1: Disclosure

The launch of the IFRS-backed International Sustainability Standards Board (ISSB) at COP26 was an extremely important and welcome step towards a harmonized global framework for ESG disclosures, something that is now widely recognized as desirable by many financial institutions, investors, corporates, and public authorities.¹³ While positive, there are numerous open questions about the structure and implementation of the new global baseline standards that the ISSB will develop, including their core sustainability scope (and process to move beyond climate to a broader range of ESG factors), the degree of sectoral granularity (e.g., for corporates vs. financial institutions), and the process through which standards will be developed and implemented. In addition, there are a range of transitional implementation and coordination issues which may emerge as jurisdictions seek to retroactively align existing frameworks with the new "baseline" standard developed by the ISSB, and as others design and implement new frameworks where they are not already in place.

One potential challenge is where a jurisdiction's disclosure requirements go beyond the forthcoming global standard, potentially leading to extraterritorial expectations on

¹³ See IFRS Foundation 2021, "[IFRS Foundation Trustees' Feedback Statement on the Consultation Paper on Sustainability Reporting](#)" (April), hereafter referred to as "IFRS Foundation 2021".

market participants. To give one current example, the EU's Corporate Sustainability Reporting Directive (CSRD) proposal has extraterritorial features as it will impose EU-aligned disclosure requirements to the group-wide operations of EU companies (including their non-EU exposures) and to non-EU companies that are listed on EU regulated markets. Where foreign borrowers and investees are (at least presently) subject to different corporate ESG disclosure requirements than in the EU this can create an asymmetry which, for EU and non-EU financial firms alike, could make meeting the reporting requirements for non-EU counterparties and operations challenging and could generate some adverse, unintended consequences.¹⁴ That said, to exclude non-EU exposures would reduce the intended scope of CSRD reporting, which is intended to provide ESG-related information about all firms operating in the EU. This type of dilemma can present itself when disclosure requirements diverge across jurisdictions.

Fortunately, these challenges are not novel and mechanisms such as “equivalence”¹⁵ and “substituted compliance”¹⁶ regimes allow differing jurisdictional approaches to co-exist.

In the case of core financial reporting standards, jurisdictions which apply one of the two dominant regimes – IFRS and GAAP – typically recognize the other set of standards as equivalent, to enable foreign entities seeking to operate in their markets to do so more efficiently.¹⁷

It would be beneficial for the ISSB and individual jurisdictional authorities to collaborate early on in the standard-setting process to develop a framework for an equivalence and/or substituted compliance recognition regime which could be applied to final standards in future. In support of this, jurisdictional authorities should engage closely with the ISSB process to explore how to align their current and future frameworks with the forthcoming standards. It is possible that some jurisdictions will, in the future, fully align with the final ISSB standards while others use them as a baseline to go further for their domestic market. In either case, it is important that jurisdictions seek to align local frameworks with relevant aspects of

¹⁴ These could include: disrupting some firms' issuance programs or leading to a relocation of issuance activities; increasing the cost and complexity of non-financial reporting for firms operating in the EU with exposures in third countries; forcing firms to rely on proxies and estimates, which can generate concerns about inaccuracies, greenwashing and liability risk. Potential conflicts could arise where information in foreign jurisdictional requirements are required to be disclosed under local requirements; for instance, if US-domiciled firms were required to disclose EU information in 10-K filings in order to list debt securities on EU exchanges. Further, similar instances of extraterritoriality in disclosure requirements could become prevalent if other jurisdictions take a similar approach.

¹⁵ IOSCO 2019. "[Market Fragmentation & Cross-border Regulation](#)" (June): "Recognition, also known as "equivalence" in certain jurisdictions, refers to a tool under which a host regulator "recognizes" a foreign regulatory regime, or parts thereof, following an assessment of the foreign regulatory regime. This may be unilateral or mutual and is primarily used to reduce regulatory and supervisory overlaps between jurisdictions, in the interest of market participants and in support of the free flow of financial services."

¹⁶ Ibid. "Substituted compliance recognizes comparability between foreign and domestic regulatory frameworks such that foreign firms operating in a host jurisdiction may continue to comply with all or part of their domestic rules while serving market participants of the host jurisdiction. Exemptions, where available, are another way that one jurisdiction can defer to another jurisdiction."

¹⁷ For example, since 2007 the U.S. SEC has allowed foreign issuers to list and operate in the U.S. on the basis of financial statements produced under IFRS standards, even though the U.S. has deemed that IFRS is not appropriate for its own market and U.S. domestic entities must use U.S. GAAP. Filers do not need to reconcile their IFRS accounts to U.S. GAAP. In 2016 (the most recent year for which statistics are available from the IFRS Foundation), more than 500 foreign private issuers with a market capitalization of more than \$7 trillion filed SEC financial statements based on IFRS Standards. See: <https://www.ifrs.org/use-around-the-world/use-of-ifrs-standards-by-jurisdiction/view-jurisdiction/united-states/>.

the forthcoming global standards to the highest degree possible, and apply a proportionate approach until decisions on equivalence and/or substituted compliance can be evaluated. This could help reduce transitional challenges in global markets supporting cross-border capital flows, and reduce complexity for corporates, investors and authorities when equivalence or substituted compliance decisions are made in future. It is important that authorities – as well as voluntary frameworks and market participants – engage fully in the design and development of the ISSB’s standards; this will also benefit the ISSB, which intends to leverage existing disclosure frameworks and adapt existing metrics.

Another relevant question is the interaction between the future ISSB standards and the TCFD Recommendations; there is an argument for greater consolidation towards the global standard-setting process in the case of climate-related disclosures at least. The ISSB has already announced that it will integrate the Value Reporting Foundation and the Climate Disclosure Standards Board, acquiring their frameworks and organizational capacities. The initial ISSB climate prototype¹⁸ is also largely modelled on the TCFD Recommendations. There is, therefore, a natural question of whether the FSB’s TCFD infrastructure can be retired and absorbed into the ISSB architecture, for example during 2022 at the end of the FSB’s initial five-year implementation pathway and by when the ISSB will be fully operational. This would mark a formal absorption of a key market-led framework into a standard-setter-led framework, which could be appropriate given the maturing nature of climate-related disclosures and the broad market and regulatory agreement that greater standardization and consistency of disclosures is necessary. Looking forward, the planned technical work of the ISSB – including on protocols for climate-related and industry-specific metrics (drawing on the TCFD and SASB frameworks, respectively) could endeavor to codify which groups of metrics may be relevant for different purposes, for instance quantification of risk exposures, alignment of business models and portfolios with Net Zero goals, or transition plans. That said, on less-established disclosure topics, such as biodiversity – where a Task force on Nature-related Financial Disclosures (TNFD) has commenced work – the development of market-based approaches would be a beneficial first step.

Finally, further public-private discussions at the global level are required to analyze the relationship between supervisory reporting, Pillar 3 risk-related disclosures, and corporate disclosure requirements that affect financial institutions. For example, while the global standards being developed now by the International Sustainability Standards Board (ISSB) for climate-related disclosures may provide useful input to regulatory reporting needs, they are not designed with the objective of risk-related reporting. The industry would welcome an opportunity to further discuss this topic at the global level to prevent fragmentation of jurisdictional approaches to regulatory reporting, which some authorities have already started to design and specify in some detail.¹⁹

Case Study #2: Climate and ESG data and ratings

Ensuring integrity in sustainable finance markets requires strong foundations, including from high-quality, verifiable, and reliable data and third-party products and services that financial firms use to inform capital allocation decisions, product development, strategy

¹⁸ Produced by a “Technical Readiness Working Group” and therefore not an official ISSB product.

¹⁹ For example, see the European Banking Authority’s (EBA) recently finalized draft [ESG Pillar 3 standards](#).

development, and compliance. Multiple market-based and official-sector efforts and initiatives to address data issues are underway. We examine developments related to (a) climate and ESG risk-related data, and (b) ESG ratings and data products, separately in this section.

a) Climate and ESG Risk Data

In the area of climate and ESG risk data, issues of quality and availability remain a significant challenge for financial institutions, supervisors, and policymakers alike.²⁰ Data issues were identified early on as a potential obstacle to financial institutions' progress on the range of fundamental tasks in relation to climate-related risks, including risk management, strategic decision-making, modelling, scenario analysis, and disclosure.²¹ In a recent assessment, the FSB has characterized data issues stemming from a range of factors, including: the current lack of globally consistent international reporting standards; low granularity of data on financial institutions' exposures for purposes of assessing potential exposure to physical risks; challenges in relying on ESG ratings in different applications; the early stage of maturity of forward-looking metrics; and specific issues affecting emerging market and developing economies.²² Other issues relate to timing –e.g., emissions data may only be made available after a delay– and coverage in terms of firms, asset classes, and geographies.

Improvement in the availability, quality and decision-usefulness of corporate disclosures of climate and ESG risk data should be accelerated wherever possible. It is expected that the work towards international sustainability standards will significantly improve the corporate disclosure landscape in the coming years, starting first with climate-related disclosures.²³ Some jurisdictional initiatives addressed to the corporate sector may also lead to quicker progress in certain jurisdictions. However, it is likely to take several years before a significant proportion of corporate entities will be required to make climate-related risk disclosures and will be experienced enough to do so in a highly effective way. Experience with TCFD disclosures demonstrate that it takes time for any preparer to develop their disclosure practices in a new field, particularly when the internal structures, business practices and technical approaches underlying the information to be disclosed (such as governance frameworks, risk management methodologies, tools and metrics) are being rapidly built up.²⁴

²⁰ For example see: BCBS 2021, "[Climate-related financial risks - measurement methodologies](#)" (April), hereafter referred to as "BCBS April 2021"; FSB 2021, "[The Availability of Data with Which to Monitor and Assess Climate-Related Risks to Financial Stability](#)" (July), hereafter referred to as "FSB 2021"; IAIS 2021, "[Application Paper on the Supervision of Climate-related Risks in the Insurance Sector](#)" (May), hereafter referred to as "IAIS 2021"; NGFS 2021, "[Progress Report on Bridging Data Gaps](#)" (May); PRA 2021.

²¹ In July 2021, an IIF survey of 20 large banks globally showed that availability of necessary data was their number one challenge to modelling the financial risks under different climate scenarios (see IIF (2021)).

²² FSB 2021.

²³ The ISSB has stated that it will first develop reporting standards for climate-related risks and opportunities before moving to broader ESG risks and opportunities – see IFRS Foundation 2021.

²⁴ The TCFD recommendations and associated materials have been publicly available to firms globally since June 2017, but as of October 2021 only 32% of TCFD supporters make disclosures across all eleven of the TCFD's recommended disclosures. While many of this sample have not been disclosing against the TCFD since 2017, this experience is an indication of the natural rate of maturity of disclosure practices in a new field.

The assessment by financial institutions of climate-related financial risks requires particular types of data, many of which are unlike those used in traditional risk analysis and some of which will not be provided by corporate disclosure alone. In a 2021 report,²⁵ the BCBS provided a good description of the categories of data which are required for each step of the analytical chain: from data on the physical and transition risk drivers for purposes of linking to economic risk factors, to exposure-level data to link changes in economic risk factors to specific exposures, and financial exposure data to link climate-adjusted economic risk factors to financial risks which may affect the financial institution. The combination of data types, time series and models required to comprehensively account for climate-related risk drivers in financial risk management adds to the complexity of the task and the time required for financial institutions to develop a quantitative approach to climate-related risk management.

However, many financial institutions want -and their stakeholders, including supervisors, increasingly expect- progress on risk management, quantitative analysis, and transition planning on a much quicker timetable than implied by the expected time of arrival of better corporate disclosures and other data. This begs the crucial question of how best to bridge the climate/ESG data gap in the meantime. Some supervisors, recognizing the present data limitations, have publicly encouraged financial institutions to take “ambitious”²⁶ or “strategic”²⁷ approaches to filling data gaps, as well as developing data improvement strategies. Examples of near-term steps to meet data needs in the absence of full information are the use of proxy data or estimates, acquisition of data from third-party sources, and use of qualitative risk classifications informed by expert judgement.

Many financial institutions are nervous about over-reliance on rough estimates, proxies, or inappropriate data for purposes of decision-making and disclosures. Concerns relate to the potential for biased or inaccurate estimation of the risks or opportunities associated with a particular client or project, concerns that the financial institution will expose itself to reputational or liability risks if its stakeholders consider its use of data to be inappropriate, and the challenges and costs associated with re-engineering internal databases and reporting systems for “temporary” data sources which will quickly be phased out.

In the near-term, collaborative approaches will be needed to advance climate and ESG analysis while the underlying data architecture is maturing:

- **Financial institutions and corporates can collaborate** to pool data and develop best practices and platforms for quality assurance, data normalization and comparability. For example, through initiatives such as the *OS-Climate*²⁸ initiative to develop a global data compendium, data commons and scenario-based analytics within an open-source platform, and *ESG Book* which allows users to disclose, manage and keep ownership of

²⁵ BCBS April 2021.

²⁶ Bank of England Prudential Regulation Authority (UK PRA) 2021, “[Climate-related financial risk management and the role of capital requirements](#)” (October).

²⁷ ECB 2021, “[The state of climate and environmental risk management in the banking sector: Report on the supervisory review of banks’ approaches to manage climate and environmental risks](#)” (November).

²⁸ [OS-Climate](#).

their ESG data in real-time.²⁹ Market-led initiatives targeting shared data challenges can be attuned to sector-specific needs and dynamics.

- Similarly, **public authorities could increase ease of access to disclosed information through public, open-source databases.** For example, the EU is establishing a European Single Access Point (ESAP) which will make available in one place EU companies' public financial and sustainable investment-related information.³⁰ In Singapore, the Singapore Exchange (SGX) has consulted on plans to implement a Data Portal for access to structured ESG data reported by issuers.³¹
- **Prudential supervisors and financial institutions should engage in a technical dialogue on the appropriate use of estimates and proxies in different contexts,** including internal risk management, internal capital and liquidity assessments, supervisory climate scenario analysis exercises, and public disclosures. Global standard setting bodies – the BCBS for banks and the IAIS for insurers – could lead this technical dialogue at an international level, engaging with relevant industry groups and market-based frameworks, and reflect this in global principles and guidance.
- Where it is considered appropriate and beneficial to rely on estimates or proxies for purposes of climate or ESG risk assessment and management, it would be **highly valuable for the public and private sectors to work together to develop commonly-accepted approaches for proxying key variables,** which are feasible to produce and accepted by supervisors in different contexts. For example, commonly defined sector averages for CO2 intensity could be agreed to fill some data gaps where emissions are not available or not complete for a corporate counterparty.

b) ESG Ratings and Data products

The evolving significance of ESG ratings and data products for decision-making in financial market raises important issues for the public and private sectors from an integrity perspective. While potentially a very useful additional source of information, many firms and authorities have observed issues in relation to the scope, coverage, clarity, transparency, and difficulty discerning quality and suitability of these products.³² In late 2020, IOSCO finalized a set of recommendations in relation to ESG ratings and data products – some addressed to IOSCO members, some to ESG product providers, and some to the wider market – which offer a set of global principles on topics such as quality assurance and transparency.³³ Recently, regulators in some jurisdictions (Including the European Securities and Markets Authority³⁴ and the Securities and Exchange Board of India³⁵) have initiated consultations and calls for evidence regarding markets for ESG ratings and data products, which could potentially

²⁹ [ESG Book](#).

³⁰ European Commission 2021, *“Capital Markets Union: Commission proposes new measures to boost Europe’s capital markets”* (press release, November).

³¹ Singapore Exchange 2021, *“Consultation Paper on Climate and Diversity”* (issued August).

³² See discussion in IIF response to IOSCO consultation: IIF 2021, *“IIF response to IOSCO Consultation on ESG Ratings and Data Products Providers”* (September).

³³ IOSCO 2021, *“Environmental, Social and Governance (ESG) Ratings and Data Product Providers: Final Report”* (November).

³⁴ ESMA 2022, *“Call for Evidence on Market Characteristics for ESG Rating Providers in the EU”* (issued February).

³⁵ Securities and Exchange Board of India (SEBI) 2022, *“Consultation Paper on Environmental, Social and Governance (ESG) Rating Providers for Securities Markets”* (issued January).

lead to regulatory interventions in those jurisdictions in the near term. Separately, official-sector authorities have indicated an increasing interest in the role of ESG ratings and data products in financial institutions' efforts to manage risks and steer portfolio allocation. For example, the European Commission (EC) has stated in its Renewed Sustainable Finance Strategy (RSFS) that it will take action to strengthen the reliability and comparability of ESG ratings and may also take measures in relation to ESG research, and plans to take action by early 2023 to ensure that relevant ESG risks are systematically captured in credit ratings.³⁶

Given the early stage of maturity and evolving market practices, there is a strong case for allowing the ESG ratings industry to increase transparency and integrity in a market-led way, with regulatory safeguards in areas such as transparency. There is broad acceptance that the ESG data and product market is at an early stage of development and will take time to mature, as it has already started to do with a round of consolidations.³⁷ Some providers are voluntarily taking steps to increase transparency around their products and services,³⁸ and some credit rating agencies are increasingly publishing information about how ESG factors influence ratings actions.³⁹

The market for ESG ratings and data products needs to become more mature and transparent to ensure the highest standards of integrity, to enable the appropriate interpretation and use of the products and services provided, and to expand to cover a wider range of assessed companies. As such, market-led development of a set of industry standards and codes of conduct for the ESG ratings and data products marketplace could be an effective way to drive coherence in a dynamic way over time, and support the growth and maturity of this market. These codes of conduct could be buttressed by high-level standards from IOSCO and its member authorities that lay out the requirements for minimum standards around quality assurance, governance, and transparency. Alongside this, public-private dialogue will be important to ensure that the use of ESG ratings and data is not directly or indirectly required in regulatory or supervisory frameworks (e.g., for disclosure, risk management, product construction, or scenario analysis) without a strong understanding of the intended uses and limitations of those products. Finally, more consideration needs to be given to how to expand the scope of companies that are ESG-assessed - for example, to increase coverage of smaller and non-listed firms and those from emerging and developing markets; a public-private dialogue on this topic could be beneficial.

³⁶ See Actions 3 and 4 in the RSFS: European Commission 2021, [*Annex to the Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions: Strategy for Financing the Transition to a Sustainable Economy*](#) (July).

³⁷ IOSCO 2021, [*Environmental, Social and Governance \(ESG\) Ratings and Data Products Providers: Final Report*](#) (November).

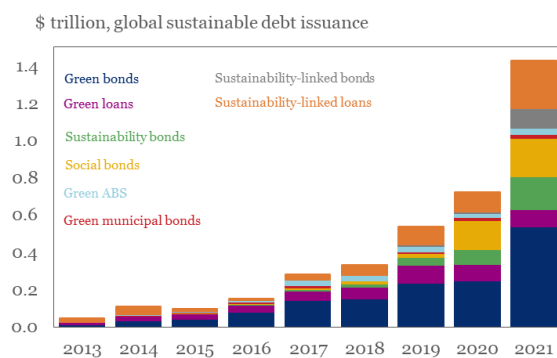
³⁸ For example, the company *RepRisk* now publishes their detailed methodology on their website. Responsible Investor 2021, [*RepRisk CEO says: ESG needs transparency - we have it*](#) (November).

³⁹ See Moody's (Moody's Investors Service 2021, [*Moody's updates its general principles for assessing environmental, social and governance risks methodology*](#) (press release, April); S&P (S&P Global Ratings 2021, [*General Criteria: Environmental, Social, and Governance Principles in Ratings*](#) (press release, October).

Case Study #3: Classification Instruments and Taxonomies

Market-based approaches to identification, verification, and alignment of investments with sustainability goals have developed significantly in recent years as demand for sustainable investments - and expectations regarding the impacts and outcomes of such investments - have increased. Such instruments have developed in their complexity and sophistication over time, starting initially with **high-level frameworks** used by market actors to differentiate product offerings as “responsible” or investments on the basis of exclusion policies. The introduction of seminal financial innovations, such as green bonds, catalyzed the development of **product-focused** classification instruments by market actors - such as the International Capital Market Association (ICMA) *Green Bond Principles*⁴⁰ and the Climate Bonds Initiative (CBI) *Climate Bonds Standards*.⁴¹ As demand for sustainable investment options has increased among institutional and retail clients, heightened investor expectations have pushed firms to develop process-based definitions to convey the sustainability-related characteristics of investment products, such as inclusion criteria, performance thresholds, and impact metrics relevant to specific target outcomes.⁴² Market-based classification instruments are foundational to the integrity of sustainable finance markets, including through the provision of common definitions and core concepts (e.g., use of proceeds frameworks), which are critical for investor confidence in emerging segments of the sustainable finance market. Certain market-based product standards have proven to be largely effective from an integrity perspective in ensuring the consistent design and marketing of sustainable finance products in the professional market.⁴³

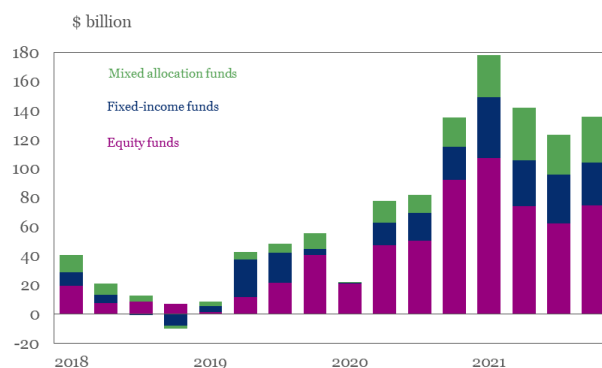
Figure C: Global sustainable debt issuance hit a new record of over \$1.4 trillion in 2021



Source: Bloomberg, BNEF, IIF

Source: [IIF Sustainable Debt Monitor](#) (January 2022)

Figure D: Record flows to ESG Funds in 2021



Source: [IIF Green Weekly Insight](#) (January 2022)

In parallel, as policymakers and regulators have ramped up their focus on sustainable finance and investment from both risk and opportunity perspectives, numerous official-sector-developed classification instruments have emerged as central components of

⁴⁰ International Capital Market Association (ICMA) 2021, “[Green Bond Principles](#)”(June).

⁴¹ Climate Bonds Initiative, “[Climate Bonds Standard and Certification Scheme](#)”.

⁴² IIF 2019, “[The Case for Simplifying Sustainable Investment Terminology](#)”(November).

⁴³ S&P Global 2021, “[To Mitigate Greenwashing Concerns, Transparency And Consistency Are Key](#)”(August).

sustainable finance policy frameworks. The introduction of **taxonomies for sustainable finance** – defined by the Bank for International Settlements (BIS)⁴⁴ as “*set(s) of criteria which can form the basis for an evaluation of whether and to what extent a financial asset can support given sustainability goals*” – has significantly expanded the universe of classification instruments across jurisdictions. In certain jurisdictions, official-sector classification instruments make reference to, or reflect, aspects of market-based frameworks as a way to universalize common practices applied in the market (e.g., guidance on the issuance of green bonds). In other cases, official-sector instruments have been designed to take precedent over market-based instruments that are being applied in their jurisdiction (for instance, by setting new expectations or requirements for implementation). The presence of multiple classification frameworks for a given product or activity can lead to questions about overlaps and complexity in terms of compliance, particularly if the relationships between market-based and official-sector instruments are not clear.

More than 20 countries across the world have introduced, or are planning to introduce, classification instruments related to sustainable finance, including taxonomies.⁴⁵ These instruments vary significantly in their overarching objectives and purpose, issue scope, level of ambition, level of granularity and technical criteria, methodological approaches for classification (e.g. how to verify eligibility), and –most importantly– applications. The rapid proliferation of instruments over the past 24 months is already raising significant concerns about fragmentation even though few instruments have been formally implemented. Several public and private institutions have released assessments or comparisons of these instruments, including the BIS⁴⁶ and International Platform on Sustainable Finance (IPSF),⁴⁷ with the aim of clarifying similarities and differences between them, and spotlighting potential international coordination challenges as implementation advances.

Looking across recent assessments, and also the communiqués of global fora such as the G20 Sustainable Finance Working Group (SFWG), there is evidently a diverse range of views on what types of classification instruments may be necessary to meet jurisdictional objectives. The EU⁴⁸ and China⁴⁹ have committed to using taxonomies in their own jurisdictions and are actively participating in the discussion of their use, including via the IPSF. Looking at other key jurisdictions where taxonomies are not currently planned, a range of different approaches are being taken. In the U.S., the Securities and Exchange Commission (SEC), is focusing on setting corporate disclosure standards, which may include clarification of a common set of metrics for different industries.⁵⁰ While Switzerland appears to be adopting what might be described as an “alignment-based” approach directed at financial institutions: setting expectations for financial institutions to conduct assessments of the degree to which a certain investment or investee is contributing towards the alignment of the broader economy

⁴⁴ Bank for International Settlements (BIS) 2021, “[A taxonomy of sustainable finance taxonomies](#)” (October).

⁴⁵ EcoFact Policy Outlook 2022.

⁴⁶ BIS 2021.

⁴⁷ European Commission International Platform on Sustainable Finance (IPSF) 2021, “[Common Ground Taxonomy – Climate Change Mitigation \(Instruction Report\)](#)” (November).

⁴⁸ European Commission, “[EU taxonomy for sustainable activities](#)”.

⁴⁹ People’s Bank of China (PBC) 2021, “[Green Bond Endorsed Projects Catalogue \(2021 Edition\)](#)” (September).

⁵⁰ SEC 2021, “[Prepared Remarks Before the Principles for Responsible Investment “Climate and Global Financial Markets” Webinar](#)” (speech, July).

with climate and sustainability goals.⁵¹ Finally, the UK is employing a hybrid approach involving the development of an economy-wide taxonomy plus regulation of disclosure of transition plans, with information on progress towards alignment with Net Zero goals.

Multiple challenges could result from differences in the presence and design of classification systems across jurisdictions, which may impede fundamental objectives of enhancing clarity and integrity, and providing common baselines.⁵² These can include: challenges in assessing the relationship between different types of classification instruments (e.g. economy-wide taxonomies vs. sector-specific standards); questions about interactions with other sustainable finance policy instruments (such as disclosure requirements); complexity, duplication and compliance concerns where firms may be subject to multiple frameworks, particularly in relation to cross-border capital flows; and, the risk of actual or perceived greenwashing because of different standards for what is considered to be sustainable in different markets. At a higher level, there is a risk of potential unintended consequences with certain approaches to classification systems, such as disincentivizing the flow of transition finance for industries, sectors, or geographies that would not be classified as compliant, or limiting technological progress by putting too great an emphasis on the sustainability characteristics of today's production techniques.

However, it is not clear that a feasible pathway towards a common global framework for the design of classification instruments, like taxonomies, may be possible - or even desirable. There are several aspects of official-sector classification instruments that may constrain the capacity for coherent international standards to be developed, including the inherent need to reflect jurisdictional policy objectives (such as climate-related targets encapsulated within nationally determined contributions, NDCs, under the Paris Agreement), differences in economic and financial market contexts which may affect a jurisdiction's transition pathway and associated financing needs.⁵³ Furthermore, it is unclear where this would naturally fit in the current global institutional architecture of standard-setting bodies and authorities, partly because of the potentially economy-wide applications of a taxonomy (and so not necessarily a topic for financial sector standard-setters alone). In addition, there may be reasons why jurisdictions would prefer different taxonomy "ingredients" - such as parameters like the thresholds above which an activity would be considered sustainable - for example, linked to the level of their economic development or their NDCs under the Paris Agreement.

Recognizing these complexities, there is now an increasing focus on approaches to assess the interoperability of jurisdictional classification instruments, and how market-based and official-sector approaches can be more coherently integrated. For example:

- The G20 SFWG has discussed ways to enhance international cooperation with respect to classification instruments, and has produced recommendations on this and on the

⁵¹ See for example this [announcement](#) by the Swiss government (November 2021).

⁵² IMF 2021, "[Strengthening the Climate Information Architecture](#)" (September); OECD 2020, "[Developing Sustainable Finance Definitions and Taxonomies](#)" (October).

⁵³ This has been recognized by the IMF - for example, in a September 2021 Staff Climate Note: "[Strengthening the Climate Information Architecture](#)".

interoperability of taxonomies, including in the context of its Sustainable Finance Roadmap released in October 2021.⁵⁴

- The IPSF *Common Ground Taxonomy* report,⁵⁵ which does not propose a common taxonomy *per se*, provides a comparison of the EU and Chinese taxonomies and suggests a methodology for assessing alignment between them. Such an approach could provide a methodological basis for assessing equivalence of different taxonomies. However, important question of whether elements of a taxonomy should be held 'constant' across jurisdictions (e.g. metrics relevant to thresholds or other eligibility criteria) may remain unresolved in the absence of more formal, and global, guidance.
- The International Monetary Fund (IMF), Organization for Economic Co-operation and Development (OECD) and World Bank are working together to develop overarching principles to facilitate convergence of taxonomies developed by both the public and private sectors.⁵⁶

As dialogue within the G20, international institutions, and voluntary coalitions like the IPSF continues, **it will be important to ensure that public and private stakeholders develop a shared view of what interoperability of classification instruments means in practice** – namely, the ease with which you can compare that a financial asset achieves sustainability goals in two or more jurisdictions. Considering these factors, the IIF would propose the following recommendations at the current juncture:

- **Further steps to develop global standards for interoperability of market-based and official-sector classification systems** focusing on their core objectives, applications and interactions with other policy tools. This should recognize that jurisdictional factors are likely to affect specific design choices (e.g., definitions and thresholds) in jurisdictional classification instruments.
- **Those jurisdictions that are considering developing classification instruments could refer to existing and established taxonomies where they have the same use cases in mind**, while learning from the challenges with existing taxonomies. This would reflect the G20 SFWG recommendations on the design and implementation of classification systems.⁵⁷
- **An official-sector international organization or intergovernmental forum could be designated as a central authority to benchmark and assess the similarities and differences between classification instruments for the purposes of facilitating discussion between jurisdictions on equivalence considerations.** To take an example from outside of finance, this is similar to the case today for organic food standards, with an institution called *IFOAM Organics International* playing the "central clearing house" role.⁵⁸ Recognizing the complexity, technicality, and significance of equivalence decisions for cross-border financial markets, such processes should not be left to voluntary coalitions or third parties. Considering that classification instruments can cover economy-wide activities as well as financial sector products and services, consideration is needed to ensure that

⁵⁴ G20 SFWG, "[Sustainable Finance Roadmap](#)".

⁵⁵ IPSF 2021.

⁵⁶ G20 SFWG 2021, "[G20 Sustainable Finance Roadmap](#)" (October).

⁵⁷ G20 SFWG, "Sustainable Finance Roadmap".

⁵⁸ IFOAM Organics, "[The Organic Equivalence Tracker](#)".

such a central authority is equipped with the necessary breadth of knowledge, skills and adequate resources.

- Policymakers and regulators could engage with industry stakeholders to determine **how taxonomies and other classification instruments can be more effectively leveraged to meet the objective of facilitating the financing of the transition.**

Case Study #4: Scenario-based Climate Risk Measurement

As documented in the NGFS's 2021 stock-taking report, numerous jurisdictional central banks and supervisors have recently undertaken, or are currently undertaking, Scenario-based Climate Risk Measurement (SCRM) exercises. Separately, financial institutions are also increasingly turning to industry-led climate scenario analysis for internal risk management purposes, as input to disclosures, and to inform strategic decision making – such as setting climate-related targets and commitments. As discussed in the IIF's 2021 report "Navigating Climate Headwinds: Reference Approaches for Scenario-based Climate Risk Measurement by Banks and Supervisors,"⁵⁹ public and private approaches are developing in parallel reflecting the shared objective of enhancing approaches for identifying, measuring, and managing climate-related risks.

Supervisory SCRM exercises to date have varied significantly in terms of key design parameters: the scenarios, scope, the format and specification, key modelling assumptions, and outputs. These design choices have significant implications for exercise feasibility, comparability of exercise results and, ultimately, the value of these exercises for supervisors and firms in terms of supporting progress towards an orderly transition to Net Zero with minimal risks to financial stability (see Box 1).

Greater alignment of technical approaches to supervisory SCRM exercises is an increasingly important priority, given the attention and significance being placed on exercise results, and the potential application of these results in the context of prudential interventions. Global standard setting bodies and individual authorities have recognized the range of potential objectives of climate scenario analysis exercises. For example, the BCBS suggests four potential objectives of supervisory climate scenario analysis, including information sharing, identifying common data and methodological gaps, and identifying and assessing relevant climate-related risk drivers affecting individual banks or the banking system.⁶⁰

A common takeaway from the first series of exploratory supervisory exercises undertaken to date has been that there are still significant "challenges posed by data gaps and methodological uncertainties"⁶¹ associated with this new and complex field of analysis. This has been recognized by the NGFS and by several jurisdictional authorities in

⁵⁹ IIF 2021, "[Navigating Climate Headwinds: Reference Approaches for Scenario-based Climate Risk Measurement by Banks and Supervisors](#)" (July), hereafter referred to as "IIF 2021".

⁶⁰ Ibid.

⁶¹ NGFS 2021, "[Scenarios in Action A progress report on global supervisory and central bank climate scenario exercises](#)" (October), hereafter referred to as "NGFS 2021".

recent months.⁶² For these reasons, it is extremely important that there is a continued emphasis on collaborative development in technical areas of climate scenario analysis, such as prioritizing filling underlying data and conceptual gaps and on enhancing the comparability of supervisory exercises in terms of scenario choice, technical specification, and presentation of results. **Until those efforts are further advanced, it is important for authorities to - as stated by the BCBS - "recognise the limitations of their analyses when communicating their results or using them in supervisory assessments".**⁶³ Fortunately, most supervisors are currently taking this approach with respect to their exploratory exercises; the NGFS noted at the end of 2021 that none of their members are currently envisaging calibrating prudential policies such as capital requirements on the basis of their exercises.⁶⁴ Nevertheless, there is potential for a fragmentation of approaches in the coming years, considering that some authorities have indicated that they consider climate scenario analysis as one potential tool to explore the relationship between climate-related risk drivers and capital adequacy.⁶⁵

It is essential that climate scenario exercises - whether initiated by supervisors or used by firms as part of risk management - should be differentiated from other prudential activities or applications until data, tools and understanding have improved to the point at which banks and supervisors have a better understanding of how to meaningfully identify and assess climate-related risks. While it has been recognized that the foundations are not yet in place with respect to technical knowledge, conceptual foundations, data and/or modelling tools, **additional clarifications on this by the global standard-setting bodies such as the BCBS and by prudential authorities would be welcome to support greater alignment and coordination of approaches across jurisdictions.**⁶⁶ In terms of the outstanding conceptual questions in this area, there are issues with setting capital requirements - which are intended to be a cushion against unexpected losses that could occur in the near-term - for those longer-term climate-related risks that could materialize over decades. For nearer-term climate-related risks which may be identified, there are data and methodological challenges with reflecting these appropriately in prudential requirements. In addition, the simplifying assumptions and degree of uncertainty in climate scenario analysis and climate stress testing⁶⁷, particularly over longer time horizons, can make such exercises generally indicative of risks, rather than sufficiently robust to inform prudential requirements for individual institutions. Therefore, caution is required - as has been recognized by the

⁶² For example, see ACPR 2021, "[A first assessment of financial risks stemming from climate change: The main results of the 2020 climate pilot exercise](#)" (June); EBA 2021, "[Mapping climate risk: Main findings from the EU-wide pilot exercise](#)" (May); MAS 2021, "[Financial Stability Review](#)", Special Feature 2 on "Climate Transition Risk Exposure of Singapore's Banking and Insurance Sectors" (December); Bank of Canada and OSFI 2022, "[Using scenario analysis to assess climate transition risk](#)" (January).

⁶³ BCBS 2021.

⁶⁴ NGFS 2021.

⁶⁵ Ibid: "As the observations in this report illustrate, approaches to measuring climate risks vary widely, and there is not yet sufficient insight into how sensitive results are to the differences in underlying assumptions. As more exercises are completed, this knowledge gap will be narrowed and the basis for action should improve. Indeed, a number of survey respondents noted that policy calibration may be an objective of future exercises."

⁶⁶ IIF 2022, "[Response to BCBS Consultation on Principles for the Effective Management and Supervision of Climate-related Financial Risks](#)" (February), hereafter referred to as "IIF 2022".

⁶⁷ See IIF 2021 for a discussion of the distinction between climate scenario analysis and climate stress testing. Both are distinct from traditional macro-financial stress testing, which typically assesses the potential impacts of transitory shocks to near-term economic and financial conditions.

BCBS⁶⁸— to avoid misestimation or coming to misleading conclusions given the importance of the issue.

The IIF has proposed several near-term and medium-term recommendations for greater international alignment and collaborative development of SCRMs exercises.⁶⁹ Near-term priorities could include:

- **The development by the relevant global standard setting bodies of an initial set of Global Principles and/or Sound Practices for supervisory climate scenario analysis.** For example, the BCBS could develop a set of Principles or Sound Practices for supervisory climate scenario analysis and climate stress testing in the banking sector, and the IAIS could do the same in the insurance sector. Alternatively, this could be an area in which the FSB plays a role, covering financial institutions and authorities more broadly. Such Principles or Sound Practices could help set a useful baseline for common approaches across authorities by providing guidance regarding the near-term and potential future relationship between supervisory exercises and the prudential framework, and on technical aspects such as the scope of application of national exercises (e.g., level of consolidation, deference principles, protocols to standardize data proxying, model assurance and impact metrics). Recognizing the dynamically evolving nature of this field of analysis, these would need to evolve and be refined over time on the basis of shared public/private experience.
- **Supervisory coordination and communication around exercises, including leveraging supervisory colleges.** Sharing the results of SCRMs analysis within a cross-border bank's college of supervisors could be highly beneficial. In general, it is more efficient for exercises to be conducted at consolidated group level only and for the relevant findings to be shared with host supervisors – including of subsidiaries – within supervisory colleges.
- **Collaborative efforts to increase alignment around science-based scenarios, such as those developed by the NGFS, and other technical work to enhance the comparability of supervisory exercises results.** The NGFS Reference Scenarios provide a science-based foundation for supervisory SCRMs analysis. The FSB has recently commented that *“further deepening of scenario analysis, making use of NGFS scenarios, will be important”*.⁷⁰ As a next step, it will be beneficial for there to be greater alignment around the NGFS scenarios, particularly in supervisory exercises where comparability of results is particularly important. Greater scenario consistency would improve transparency around this pivotal aspect of scenario-based exercises and contribute to the development of experience and trust with SCRMs exercises, including between supervisors in different jurisdictions. The NGFS continues to develop and

⁶⁸ For example: *“Climate stress testing evaluates the effects of severe but plausible climate scenarios on the resiliency of financial institutions or systems. However, the uncertainty inherent in longer-dated assessments ... and the limited predictive power of historical observations to describe future climate-economic relationships ... render estimates of capital shortfall (or other measures of resiliency) less reliable than those of conventional stress tests employed by supervisors and banks to evaluate resiliency.”* Basel Committee on Banking Supervision, *“Climate-related financial risks - measurement methodologies,”* April 2021.

⁶⁹ IIF 2021, see Section 4 “Recommended Actions for Cross-jurisdictional Alignment and Development”.

⁷⁰ FSB 2021, *“FSB Roadmap for Addressing Climate-Related Financial Risks”* (July).

evolve its Reference Scenarios over time, which is highly valuable and can be informed by feedback from supervisors and financial institutions as they seek to apply them more widely. More broadly – as discussed in Box 1 – to improve decision-usefulness of these exercises for the supervisors, firms and the wider market, supervisory SCRMs exercises should produce a baseline of consistent results with room for more detailed and potentially bespoke metrics in addition. Industry-supervisory engagement to converge on appropriate common analytical approaches and impact metrics would considerably improve comparability and the utility of these exercises for all stakeholders.

- **Collaborative efforts to address data and methodological gaps.** As discussed, the availability and quality of data is one of the leading challenges faced by financial institutions and prudential authorities globally when they undertake SCRMs analysis, and is therefore a key area where work is needed within the financial industry, as well as through collaborations with the public sector (see recommendations under Case Study #2). Beyond data, further collaborative work is required to explore emerging aspects of SCRMs practice, including complex analytical questions.⁷¹

Box 1: Apples and Pears? The challenges in comparing the results of supervisor’s climate scenario analysis exercises⁷²

On reviewing the public results of a sample of recent supervisory SCRMs exercises, some common findings – and challenges – emerge. The IIF has reviewed the specification and results from eight scenario analysis exercises undertaken by jurisdictional and global authorities, including [L’Autorité de Contrôle Prudentiel et de Résolution \(ACPR\)](#), [European Banking Authority \(EBA\)](#), [European Central Bank \(ECB\)](#), [Reserve Bank of Australia \(RBA\)](#), and [International Association of Insurance Supervisors \(IAIS\)](#), the [Hong Kong Monetary Authority \(HKMA\)](#), the [Monetary Authority of Singapore \(MAS\)](#), and the [Bank of Canada \(BoC\)/Office of the Superintendent of Financial Institutions \(OSFI\)](#).

The results of these exercises have delivered some directionally-similar conclusions – specifically, that the estimated impacts of climate-related risks on financial stability and institution safety and soundness are generally moderate and manageable over the short- to medium-term, with the potential for more significant risks arising over the longer term under certain scenarios.⁷³ However, notwithstanding other differences in exercise design related to the institutions in scope, scenario specificities or modelling assumptions, **direct comparison of the results is difficult due to the diversity of metrics supervisors use to quantify the impacts of a given scenario on firms, or at sector levels.** A variety of metrics have been used to measure and present impacts, including: percentage of loans to industries with high carbon emissions (e.g.,

⁷¹ Further elaborated in IIF 2021.

⁷² With thanks to Michaela Palmer (Policy Associate, Sustainable Finance, IIF) for excellent research assistance for this box.

⁷³ See summary of analytical results of DNB 2018, ACPR 2021, ESRB 2020 and ECB/ESRB 2021 on pages 21-22 of IIF 2021. In relation to its 2021 exercise, the ACPR found that French banks and insurers face “moderate exposure” to climate risks. In relation to the 2021 supervisor-led exercise, the ECB found that “the anticipated impact on banks in terms of losses would mostly be driven by physical risk and would potentially be severe over the next 30 years”. In relation to its 2021 exercise, the RBA found that “the overall losses for the financial system are likely manageable” from the risks they investigated.

RBA); increase in leverage (e.g., ECB); decrease in profitability (e.g., ECB); increase in probability of default (e.g., ECB); change in available financial institution capital (e.g., IAIS) or change in capital ratio (e.g., HKMA); rise in insurance claims (e.g., ACPR); and percent of properties with rise in insurance premiums (e.g., RBA). The lack of a common lens for assessing potential impacts, or consistent reference points to contextualize financial stability impacts (e.g., comparing impact measures with past recessions or financial stability events), makes it difficult to evaluate how severe the potential impacts of climate-related risks may be in the context of other systemic risks.

Taking credit risk as an example, we can see how the use of different measurement methodologies and metrics complicates direct comparison across exercises. Of the eight exercises, seven examine credit risk though each with different metrics and parameters. The ACPR measured changes in the annual cost of credit risk,⁷⁴ while the EBA measured changes in expected loss (the product of regulatory probability of default (PD), loss-given-default, and exposure value). The ECB looked at average bank-level PD for corporate loan portfolios; the BoC-OSFI estimated changes in PD for corporate sectors but did not translate this to the impact on financial institutions' PDs. The RBA reported changes in borrower leverage as measured by the loan-to-value ratio. The HKMA examined the annualized credit cost of lending to high-emitting industries, which they define as the average annual change in expected credit losses/average loan amount.

Other challenges arise because of differences in how supervisors segment their analysis and present results. Results are often subdivided differently across physical risk, transition risk, credit risk, market risk, and/or sector type, further complicating comparisons. While all eight of exercises examined present measures of financial institutions' exposure to climate-related risks, measurement differences - e.g., segmentation of the results at sectoral levels or by risk types - limit direct comparisons. For example, the EBA found that of institutions in their sample, 58% of their non-SME corporate exposures to EU obligors are to sectors that may be sensitive to transition risk. The ECB measured exposures differently to the EBA, instead indicating the share of bank loans exposed to climate risk in high transition/high physical risk, high transition/low physical risk, low transition/high physical risk, and low transition/low transition risk scenarios.⁷⁵ These divergences impede direct comparisons of results between the EBA and ECB exercises.⁷⁶

Given the potential role that climate scenario analysis may play in informing future supervisory engagement with firms and potentially broader policy decision making with respect to climate-related risks, it is important to have comparable assessments across jurisdictions which can be used to judge whether or not a given authority's response to the analysis and available results reflects the severity of potential risks facing firms, the financial system, or the broader economy. If collaborative work between authorities and financial institutions were undertaken to determine certain key metrics for standard inclusion in the results for all supervisory SCRM exercises, investors, supervisors, and financial institutions would be able to more easily compare risks across jurisdictions and assess regulatory responses.⁷⁷ As discussions advance within

⁷⁴ ACPR state that the annual cost of credit risk "is calculated by dividing the total annualised flows of provisions for each time interval by the average of the exposures over that time interval".

⁷⁵ Results in these four areas are further divided by systemic institutions and non-systemic institutions.

⁷⁶ If the closest comparison in the ECB results to the EBA results is the share of banks loans exposed to high transition risk/low physical risk, the ECB results estimate this at 30-35%.

⁷⁷ This is similar to the practice that has developed over time with macro-financial stress testing in which certain key results (e.g. impact of a stress on aggregate CET1 or Tier 1 capital ratios) can be easily accessed in all major

leadership coalitions and global standard-setting bodies on common approaches to the uses and design of scenario analysis exercises, engagement between the industry and supervisory community on which metrics these could be and how to measure them in a standardized way is warranted.

Case Study #5: Regulatory Capital⁷⁸

Several authorities have started to express views about the potential role and limitations of using regulatory capital in response to climate-related financial risks. While there have been few formal pronouncements by authorities, several key figures have expressed views in speeches and public fora.⁷⁹ In general, most prudential authorities who have commented so far have underlined the importance of prudential capital standards remaining risk-based and data-driven, and that it is important to assess whether current standards for minimum capital requirements (so-called “Pillar 1” of the BCBS framework for banks⁸⁰) adequately capture and account for climate-related risks. Meanwhile, work is underway for the banking sector at the level of the BCBS, which is preparing a “gap analysis” of the three pillars of the Basel framework.⁸¹ This is aligned with recommendations from the global financial industry that prudential approaches, including with regard to capital, should always be risk-based and data-driven and should not be used as a tool to directly incentivize capital allocation to achieve climate policy goals. This is essential in order to ensure that the core microprudential objectives of Pillar 1 requirements are met,⁸² to ensure the credibility of the prudential regime with market participants, and to avoid harmful unintended consequences, such as inadvertently increasing financial risks and potentially pushing less environmentally sustainable activities to entities

jurisdictions’ exercises however those exercises might otherwise differ. Importantly, however, it would not be appropriate to fit the same results metrics to climate scenario analysis exercises in which the objective is not to assess near-term capital adequacy. Therefore, a debate on which common results metrics are appropriate in the context of different types of climate scenario analysis is needed.

⁷⁸ We recognize that the bank and insurance capital standards are significantly different in design, maturity, scope and jurisdictional application. This paper is not a detailed discussion of specific issues as they relate to the banking or insurance business models or prudential regimes respectively, but is a more general discussion of the features of the relevant global and jurisdictional frameworks. Terminology from the banking capital framework is sometimes used for simplicity.

⁷⁹ The IIF has counted at least 22 statements or references to climate and regulatory capital by policymakers or regulators within the past year, often in relation to climate scenario analysis. For example, remarks by Fernando Restoy (Chairman of the BIS Financial Stability Institute) in [October 2021](#); ECB Macroprudential Bulletin article ([October 2021](#)); PRA 2021; remarks by Frank Elderson ([November 2021](#)); and remarks by Peter Routledge (Superintendent of OSFI) in [January 2022](#).

⁸⁰ We recognize that Pillar 1 (globally relevant minimum capital requirements and buffers) and Pillar 2 (firm-specific measures applied as part of the supervisory review process) are terms used in the banking capital framework only.

⁸¹ BIS 2021, [“Basel Committee published analytical reports on climate-related financial risks”](#) (press release, April).

⁸² See for example BCBS Core Principle 16 for Effective Banking Supervision: *“Capital adequacy: The supervisor sets prudent and appropriate capital adequacy requirements for banks that reflect the risks undertaken by, and presented by, a bank in the context of the markets and macroeconomic conditions in which it operates.”* [BCBS \(September 2012\)](#).

outside of the regulatory perimeter or reducing transition financing to critically important carbon-intensive sectors or emerging and developing market economies.⁸³

While most jurisdictional prudential authorities have expressed caution or uncertainty about whether it would be justified to make changes to Pillar 1 capital requirements on the basis of climate-related risk factors, some authorities have made more assertive statements about firm-specific capital requirements (so-called “Pillar 2” under the banking framework) and the macroprudential framework. For example, the ECB plans to use the outputs of the 2022 firm-conducted climate stress test exercise to inform the Supervisory Review and Evaluation Process (SREP) using a qualitative approach, but it could ultimately influence firm-specific Pillar 2 requirements.⁸⁴ A recent ECB macroprudential bulletin article has argued that macroprudential requirements could be used to address any demonstrably systemic gaps in the Pillar 1 framework before the latter are addressed through the processes at the level of the global standard-setting bodies.⁸⁵ The Bank of England/PRA has discussed how the “risk management and governance scalar” in the Pillar 2 framework could already be used if financial firms make insufficient progress in implementing the PRA’s supervisory expectations for climate risk management.⁸⁶

Nevertheless, firm-specific and macroprudential tools should be deployed with the same fundamental driving principles as Pillar 1 minimum requirements: namely, in a risk-based, proportionate, conceptually rigorous, and evidence-based way. There are some valid reasons to consider (Pillar 2) firm-specific or macroprudential tools, and some less robust reasons. Valid reasons would be if those tools are considered the most appropriate and direct ways for prudential authorities to meet their microprudential and macroprudential objectives in relation to climate-related risks. For example, the macroprudential toolkit is specifically designed to be country-specific – allowing national authorities to respond to risks in their local market – and to co-exist with the microprudential toolkit. In this way, it could potentially be considered by prudential authorities in the future as a means to remain true to their risk-based objectives, while still accounting for the complexities and potential systemic nature of climate-related risks to the financial system. However, it is important to consider microprudential and macroprudential tools holistically to avoid “double-counting” risks or introducing excessive complexity into the regulatory framework. The Pillar 2 framework is broader than just capital adequacy – it relates to the supervisory review process, which is an important mechanism by which supervisors can engage with individual firms on all risks they may face. Supervisors, or supervisory colleges, could potentially respond through the firm-specific Pillar 2 framework if they consider that a firm is not appropriately managing or responding to specific identified material climate-related financial risks that could arise during the supervisory review period, which is typically three to five years. Similar to the interplay of microprudential and

⁸³ IIF 2021, [“Prudential Pathways: Industry Perspectives on Supervisory and Regulatory Approaches to Climate-related and Environmental Risks”](#) (January), hereafter referred to as “IIF 2021 (January)”.

⁸⁴ [Dear CEO letter](#) from Stefan Walter (ECB SSM SG Horizontal Line Supervision) to “significant European institutions” accompanying methodology for 2022 firm-conducted climate stress test (October 2021).

⁸⁵ ECB 2021, [“The challenge of capturing climate risks in the banking regulatory framework: is there a need for a macroprudential response?”](#) (October).

⁸⁶ Bank of England/UK PRA 2021.

macroprudential tools, it is important to consider Pillar 1 and Pillar 2 tools holistically to avoid double-counting risks and for regulatory coherence.

However, **the challenges described in this paper and recognized by authorities such as the BCBS⁸⁷ and IAIS⁸⁸ in relation to the lack of appropriate, high-quality data and well-settled methodologies would need to be thoroughly addressed before there is a strong basis for adjusting firm-specific or macroprudential capital requirements** in a way that is equitable across institutions and does not generate unintended consequences. Many financial institutions and supervisory authorities are still, rightfully, focused on ensuring the appropriate governance and risk management frameworks around climate-related risks, and in building up their capacity and knowledge of tools such as climate scenario analysis. Although efforts are underway to quantify material risks to capital, there are significant conceptual and practical challenges to doing so, including the differing time horizon of internal capital adequacy assessments and many climate risk drivers, as well as issues related to data paucity and the nascent stage of understanding around how climate-related risk drivers can translate into financial impacts.⁸⁹

Arguably, it would not be appropriate for authorities to use firm-specific tools (Pillar 2) or the macroprudential framework simply because those tools are readily available and can be applied flexibly today. Economy-wide supervisory climate scenario exercises to date have indicated that the financial stability risks from climate change are moderate and manageable in the short- to medium-term.⁹⁰ While this does not mean that financial institutions or authorities have the luxury of time to assess and respond to climate-related risks, it should provide some comfort that the prudential measures already in train today with regards to disclosure, risk management guidelines and climate scenario analysis are moving the dial in terms of anticipating, responding to and managing risks in a proactive way, and that regulatory capital measures do not necessarily need to be deployed hastily before the necessary analysis has been undertaken at the international and national levels.

Looking ahead, it is particularly important that discussions on regulatory capital be led by the relevant global standard-setting bodies, and that those standard-setters take a holistic view of the prudential framework, also accounting for complementarities and potential overlaps between the different parts of the framework. In the case of the Basel framework for banking supervision, that includes Pillars 1, 2 and 3 (where Pillar 3 relates to prudential disclosures). The IIF intends to undertake further work on this question with its global membership, including risk management and capital adequacy experts, during 2022 and looks forward to contributing to the analytical dialogue at the global level. Furthermore:

- **In the interest of achieving global alignment, individual jurisdictions could refrain from making national adjustments to the capital framework (such as Pillar 1 requirements within the banking capital framework) before the global standard-**

⁸⁷ BCBS April 2021 ; BCBS 2021, "[Climate-related risk drivers and their transmission channels](#)" (April).

⁸⁸ IAIS May 2021; IAIS 2021, "[Global Insurance Market Report: The Impact of Climate Change on the Financial Stability of the Insurance Sector](#)" (November).

⁸⁹ IIF 2022.

⁹⁰ These exercises usually do not even account for mitigating actions that financial institutions and their clients are taking or preparing to take, as discussed in IIF 2021.

setting bodies have completed their analysis and issued final opinions on whether adjustments would be warranted, and under what circumstances. The possibility of individual jurisdictions revising global-based regulatory frameworks could lead to significant fragmentation of capital requirements across jurisdictions, which complicates cross-border compliance and reduces comparability of financial institutions' capital adequacy in markets. Complimentary analysis which could serve as an input to the global investigation would certainly be valuable, also considering the differences across markets.⁹¹

- **Firm-specific measures (Pillar 2 of the banking capital framework) or macroprudential measures should be considered in a holistic way alongside the Pillar 1, microprudential framework** for purposes of regulatory simplicity, coherence and to avoid double-counting risks, which can reduce the efficiency and net social benefits of a regulatory change.
- **To the extent that jurisdictions consider applying capital tools or other measures under the (Pillar 2) supervisory review framework or macroprudential framework, they should do so based on solid conceptual and empirical grounds and maintain an overall risk-based approach.** This should be informed by a cost-benefit analysis, which should also have due regard for international alignment and transparency considerations. If, in future, the global standard-setting bodies release principles in relation to the (Pillar 2) supervisory review framework and/or the macroprudential toolkit, including in relation to climate scenario analysis and climate stress testing, national prudential authorities should seek to align their approaches with those principles.
- **Beyond the treatment of climate-related risks, some authorities have started to consider broader environmental risks.**⁹² It is important that prudential authorities proceed in a similarly careful and considered way when assessing any potential new risk drivers, drawing on the latest evidence and analysis. As the data and understanding of the dynamics and potential financial transmission channels of non-climate environmental risks – such as biodiversity loss – are far less developed than even for climate-related risks, this suggests that global standard-setting authorities, in conjunction with the industry and other relevant experts, would need to engage in further fundamental analysis of the nature and potential materiality of such risk drivers for the financial system before proceeding to consider the interactions with prudential tools including regulatory capital.

Case Study #6: Net Zero Alignment and Transition Plans

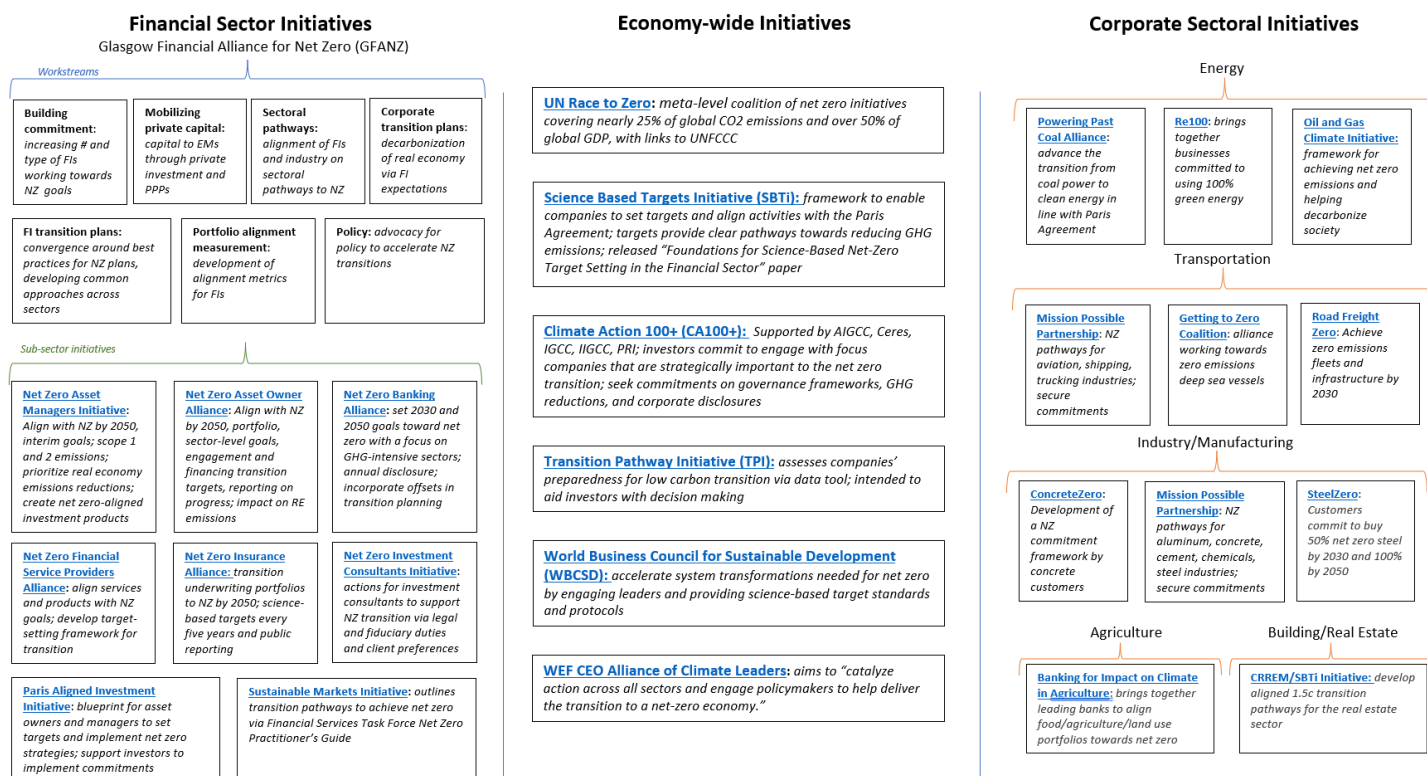
Alignment of financial institutions' portfolios and business models with the goals of a Net Zero economy by 2050 has emerged as one of the core agendas within the sustainable finance sphere, driven by market-based initiatives. There are multiple initiatives which are actively seeking to develop frameworks and guidance to shape common practices for Net Zero Alignment, hosted by a variety of multilateral and non-governmental

⁹¹ For example, the analytical work is planned by the European Banking Authority, European Insurance and Occupational Pensions Authority, and Bank of England/PRA in 2022.

⁹² For example, see Consultation Question 3 in BCBS 2021.

organizations. These include sectoral coalitions within the financial sector, such as the constituent entities of the Glasgow Financial Alliance for Net Zero (GFANZ), as well as a variety of sector-wide initiatives (e.g. SBTi), and other organizations such as NGOs which have developed tools and curate data relevant for alignment assessments (e.g. 2Dii, CBI, CDP, TPI, others). Looking beyond the financial sector, there is a broad and rapidly evolving array of initiatives aiming to develop frameworks for net zero alignment within different corporate sectors, such as manufacturing, transport, and agriculture. A (non-exhaustive) visualization of key initiatives is provided in Figure E below - we count over 25 different Net Zero coalitions.

Figure E: Mapping Global Private Sector Net Zero Initiatives



Source: IIF

A core aspect of the Net Zero Alignment process is the setting of targets for the decarbonization of portfolios and business models, and reporting on progress towards achievement of commitments at regular intervals. With respect to the latter, there is a significant amount of work being undertaken by the aforementioned initiatives to develop frameworks and common approaches for the development of transition plans, which encapsulate an institutions' strategy for alignment, and the metrics that an institution will use to monitor its progress towards achievement of Net Zero goals. Aspects of Net Zero Alignment - such as transition plans - are also being reflected in mainstream market-based frameworks, such as the October 2021 revisions to the Recommendations and Guidance of the TCFD, which affect all TCFD signatories (including those which have not made Net Zero commitments). The latest TCFD guidance is that banks should disclose their transition plans under the "Strategy" pillar of disclosures, but does specify many details about the content and format of those disclosures.

Already, some official sector authorities, including some prudential supervisors, have indicated that they intend, or will seek in the near future, to incorporate aspects of Net Zero Alignment - including commitments made under voluntary frameworks such as GFANZ - into their oversight. At COP26, the UK announced a new policy package to develop the first fully Net Zero Aligned Financial Centre⁹³ and will require financial institutions and other major companies to publish science-based transition plans from 2023. The UK government is creating a high-level Transition Plan Taskforce, engaging regulators, academics and NGOs, to develop a 'gold standard' for transition plans and associated metrics. The ECB's Frank Elderson has called for 'legally-binding' Paris-aligned transition plans to be required for banks,⁹⁴ which authorities including prudential supervisors could enforce.

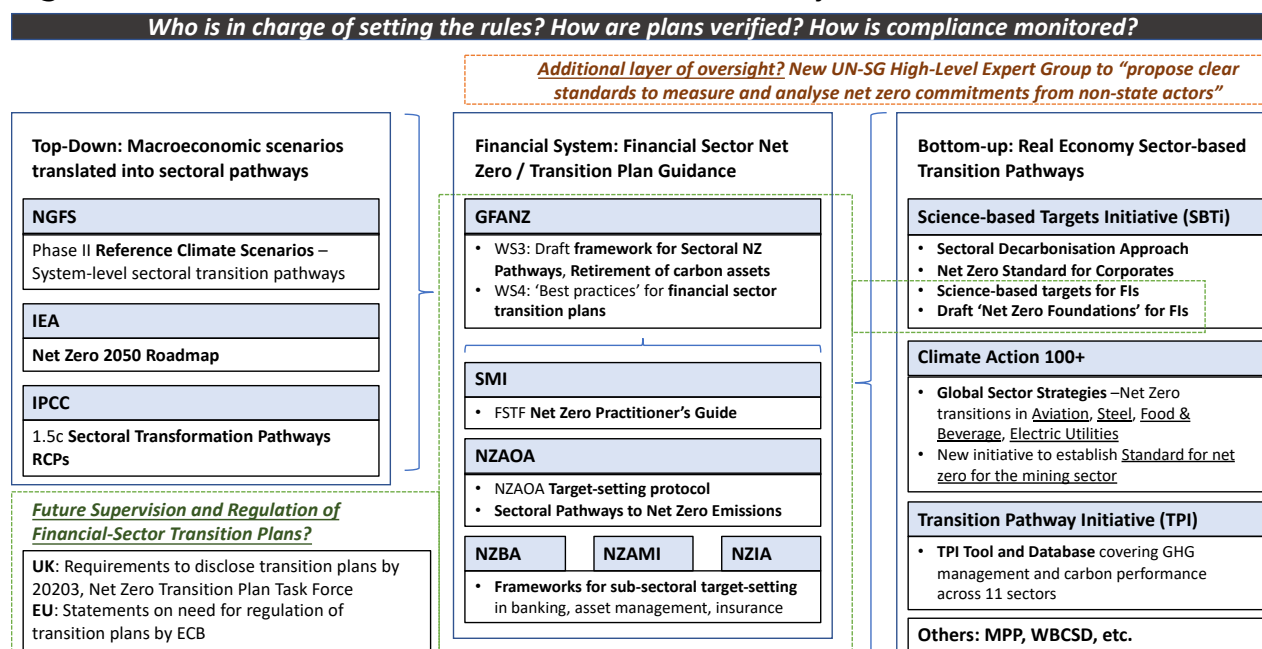
There is currently a lack of clarity on how the process to develop transition plans should advance, and, in the absence of broad-based industry participation, there is a risk that authorities draw on aspects of competing and overlapping market-led processes to develop requirements which affect the entire sector. Analysis by the IIF shows a variety of initiatives currently underway to develop guidance on financial sector transition plans, including those beyond the GFANZ umbrella (see Figure F). At COP26, the UN Secretary General announced that a new High Level Expert Group will be established to "*propose clear standards to measure and analyze net zero commitments from non-state actors,*" and which will submit recommendations on standards for commitment frameworks in 2022.⁹⁵

⁹³ HM Treasury 2021, "[Fact Sheet: Net Zero-aligned Financial Centre](#)" (November).

⁹⁴ ECB 2021, "[Overcoming the tragedy of the horizon: requiring banks to translate 2050 targets into milestones: Keynote speech by Frank Elderson, Member of the Executive Board of the ECB and Vice-Chair of the Supervisory Board of the ECB, at the Financial Market Authority's Supervisory Conference](#)" (speech, October).

⁹⁵ UN 2021, "[Climate Action Commitments Must Be Concrete, Verified to Stop Catastrophic Temperature Rise. Secretary-General Tells High-Level Event](#)" (press release, November).

Figure F: Financial Sector Transition Plans – State of Play



Source: IIF

Regulation and supervision of alignment would be a significant change from the current approach to climate-related risks by central banks and supervisors. Some have made an argument that it is a natural extension of their microprudential objectives to ensure safety and soundness as deviating from significant public commitments could expose financial institutions to reputational risks, and could increase their exposure to physical and transition risks. However, there is some concern that it would, *de facto*, represent a shift by prudential authorities from a core focus on financial stability to more of an “active transition” approach, i.e., to use prudential tools to influence broader macroeconomic transformation goals through the financial services sector.⁹⁶

Market-based frameworks for Net Zero Alignment - including transition plans - will need to coordinate and/or rapidly consolidate to avoid risk to duplicative and overlapping guidance; at the same time, prudential authorities should develop a clear strategy for engaging with financial institutions' Net Zero commitments and transition plans in the context of their core prudential objectives. Specifically:

- Across the current array of active market-based initiatives, greater coordination and delineation of responsibilities is necessary to guard against duplication. Similarly, within the official sector, it would be inefficient for multiple national-level approaches to be developed in this 'greenfield' area, especially as market-based frameworks are well advanced. Where official sector authorities seek to provide guidance on aspects of Net Zero Alignment, including transition plans, they should reflect the core components of market-based frameworks as they are formalized.
- Prudential authorities in particular should take care to clarify whether and how financial institutions' Net Zero activities are relevant to their micro- or macro-prudential mandates. And prudential authorities could consider the use of tools such as supervisory climate scenario analysis exercises to assess the impacts and implications

⁹⁶ IIF 2021 (January).

of broad-based alignment activities within the financial sector and real economy. However, prudential authorities should not assume the responsibility of regulating the general approach to the development of Net Zero alignment frameworks *per se*, as other mechanisms - including market discipline - should be used to ensure the technical appropriateness and integrity of such frameworks.

- Wherever possible, associated global initiatives aimed at enhancing alignment should integrate relevant aspects of the Net Zero Alignment agenda into their work programs. For example, the ISSB's work to develop global climate risk disclosure standards could consider aspects such as the disclosure of transition plans, drawing on the work of the TCFD.

Conclusions: Implications for Public-Private Collaboration in 2022

Market-based and official-sector efforts to develop and align frameworks for sustainable finance are united by common goals - ensuring that sustainable finance markets have integrity, can operate efficiently, are robust to potential future shocks and trends, and can effectively facilitate the economic transition to Net Zero. Therefore, public/private collaboration is essential in all areas, but the form it should take will vary across topics.

More market-led approaches versus more regulatory-led could be appropriate in some circumstances depending on multiple factors, such as levels of maturity of methodological approaches, and in areas where practices are nascent (for instance, in the area of Net Zero alignment). Often, allowing room for innovation and identification of 'what works' is a necessary stage before official sector intervention to regulate practices may be deemed necessary. Similarly, care should be taken to assess what level of homogeneity of practices may be desirable from an integrity perspective. The debate on ESG ratings, where there are both arguments for and against regulatory action to improve the quality and transparency of third-party ratings practices related to the sustainability characteristics and qualities of corporates, is an example of the complexity of these tradeoffs. Furthermore, the balance of market and official-sector leadership may be affected by the rate at which innovation is occurring and how market practices are evolving, the degree of consensus that can be achieved within the financial industry, the extent to which more closely specified and enforced standards are beneficial; and finally, the relationship to existing regulatory or supervisory tools.

In many cases, alignment will be achieved through concerted efforts to formulate global regulatory standards or principles; however, challenges can arise where regulatory approaches run on a "parallel track" with evolving market-led standards (e.g., this is a potential risk in relation to climate disclosures). Given that market-led standards have been at the core of the technical innovation process in sustainable finance - including in relation to data, technical capabilities, products and services- it would still be beneficial in emerging areas for market-led initiatives to be given room to develop (e.g., nature-related disclosures). However, there should be clear channels for early engagement with global policymakers and standard-setting bodies, and an objective of containing the potential for fragmentation *ex ante*. Further, on their own, global regulatory standards and/or principles are not a panacea - they require implementation at the jurisdictional level and need to gel with jurisdictional needs and developments.

Ultimately, it is likely that the goal of ensuring integrity in sustainable finance will be achieved through market-led and official-sector efforts and initiatives, and interactions between them. Clear, pragmatic and risk-based expectations from regulators and prudential authorities will be needed for the financial industry to respond to the climate crisis with the necessary urgency and scale. Clarity on the potential use of different supervisory and regulatory tools is required throughout (e.g., in relation to regulatory capital requirements). While a policy and regulatory backstop may be necessary in certain areas to universalize common approaches and ensure compliance, there are many areas where market-based approaches need to develop further before regulators attempt to set requirements, as this is likely to result in costly fragmentation.

Going forward, public-private collaboration and dialogue will be necessary to assess the degree to which market-based frameworks and official-sector approaches are achieving their intended effects and leading to desired outcomes, with ongoing evaluation and revisions as required to ensure that instruments remain fit-for-purpose and that risks of potential unintended consequences are minimized. A clear understanding of the respective roles of market-based and official sector frameworks –and an efficient model for interactions between them– will be necessary to create enabling conditions for an optimal mix of innovation, leadership, capacity building, and universalization of best practices across the sustainable finance sphere.