THE CAPCO INSTITUTE
JOURNAL
OF FINANCIAL TRANSFORMATION

GOVERNANCE OF SUSTAINABILITY

Governance of sustainable finance

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#59 JUNE 2024

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DEAR READER,

In my new role as CEO of Capco, I am very pleased to welcome you to the latest edition of the Capco Journal, titled **Balancing Innovation and Control**.

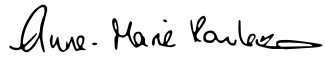
The financial services and energy sectors are poised for another transformative year. At Capco, we recognize that this is a new era where innovation, expertise, adaptability, and speed of execution will be valued as never before.

Success will be determined based on exceptional strategic thinking, and the ability to leverage innovative new technology, including GenAI, while balancing a laser focus on risk and resilience. Leaders across the financial services and energy industries recognize the transformative benefits of strong governance while needing to find the optimal balance between innovation and control.

This edition of the Capco Journal thus examines the critical role of balancing innovation and control in technology, with a particular focus on data, AI, and sustainability, with wider corporate governance considerations. As always, our authors include leading academics, senior financial services executives, and Capco's own subject matter experts.

I hope that you will find the articles in this edition truly thought provoking, and that our contributors' insights prove valuable, as you consider your institution's future approach to managing innovation in a controlled environment.

My thanks and appreciation to our contributors and our readers.



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GOVERNANCE OF SUSTAINABLE FINANCE

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ABSTRACT

This article offers insights into what sustainable finance means and how it is addressed in the public policy context using a subset of the Carrots & Sticks dataset that comprises 1,070 sustainable finance policies. The study reveals the financial services sectors targeted, who is governing, and how binding sustainable finance policies are. Additionally, the study explores whether policymakers and standard-setters concentrate their efforts on recommending positive action or establishing binding rules. The findings help to advance a shared understanding of the governance of sustainable finance in the context of public policymaking.

1. INTRODUCTION

There is an increasing expectation that public policy can incentivize the financial services industry toward sustainable activities and assets, and away from ones that harm people and the planet. One of the key points of focus of such regulatory efforts is around disclosure requirements. The rationale being that requiring greater reporting will bolster transparency into financial holdings, and this can instigate market pressures away from financing "brown" assets, and towards greener activities.

Despite widespread interest in the topic, there is a paucity of knowledge of how sustainable finance is being governed. Dimmelmeier (2021) offers insight into how sustainable finance has evolved as a "contested concept" since the late 1990s. Kumar et al. (2022), in their large-scale review of the state of the art in academic literature, find that the definition of sustainable finance remains broad, "encompassing myriad dimensions of sustainable ways to attain finance and investment goals." Indeed, sustainability remains an issue area characterized by opacity. The Economist (2022) named "sustainability" one of the "wooliest words in business" and the 2022 World Economic Forum meetings in Davos were pre-empted with articles that strove to detail "what is sustainable finance and how it is changing the world" [Broom (2022)].

In this article, we advance our understanding of the governance of sustainable finance. We do this by using natural language processing (NLP) techniques to analyze the 1,070 policies in the Carrots & Sticks database[1] that focus on sustainable finance. We reveal which activities (e.g., asset management, banking, and insurance) are targeted and how binding policies are. Our goal is to mitigate opacity and the persistence of terms as merely a "North Star" [i.e., loosely defined principles, see van den Broek and Klingler-Vidra (2021)], offering clarity by detailing how sustainable finance is conceived and operationalized in public policy. In addition, we assess whether the aim of sustainable finance policy is "hard" law or "soft" law [Abbott and Snidal (2000)], using "carrots" or "sticks", to effect action.

[1] Carrots & Sticks (carrotsandsticks.net)

Our findings help us to advance a shared understanding of the governance of sustainable finance in terms of whether Copenhagen, Glasgow, or Rio – a metaphor for this broader suite of public policies – are sufficiently targeted, ambitious, and sector-focused. This has several important and direct policy implications as a lack of conceptual clarity around sustainable finance can create confusion among stakeholders and the general public, lead to inconsistent and ineffective policy outcomes, result in implementation challenges, and can reduce accountability as it applies to policy success or, perhaps more importantly, failure.

2. SUSTAINABLE FINANCE: A 30-YEAR ODYSSEY OF A CONCEPT

What is sustainable finance? A quick answer would be that it depends on who you ask and when. Different and competing definitions have evolved over time and as a reaction to changing policy exigencies [Schoenmaker (2017), Schoenmaker and Schramade (2019)]. To an important degree, sustainable finance is a "contested concept" [Dimmelmeier (2021)] replete with enough ambiguity to encompass "myriad dimensions of sustainable ways to attain finance and investment goals" [Kumar et al. (2022)].

As evidenced in recent stocktaking exercises of 227 articles in Bui et al. (2020), 166 articles in Cunha (2021), and 936 articles in Kumar et al. (2022), research on sustainable finance is vast. At the same time, however, there is no consensus on the meaning of what we label "sustainable finance". In a recent overview, Forstater and Zhang (2016) explain how, instead of a single definition, there are "a few working definitions and sets of criteria." Policymakers, practitioners, and academics use different terms to refer to the same thing.

This includes a broad range of related but different neologisms. For the European Commission and the United Nations Global Compact, the preferred term is "sustainable finance". However, the OECD and the International Financial Corporation (IFC), as well as governments in the U.K., Germany, and China, use "green finance" and "green banking". We also see the use of terms like "climate finance" (World Bank), "(socially) responsible investing" (Principles for Responsible Investing (PRI)); Code for Responsible Investment in South Africa (CRISA)), and "sustainable investing" (Global Sustainable Investment Alliance). The United Nations Environmental Program (UNEP), tracing the term back to its origins with the 1992 Earth Summit in Rio de Janeiro,[2] uses "sustainable finance" and "green banking". While some of these terms have distinct and well-defined meanings, they are often used to refer to the same broad concept. Recent academic stock-taking exercises, including Dimmelmeier (2021), Kumar et al. (2021), and Akomea-Frimong et al. (2021), confirm the same use of a broad range of different terms in the academic literature. Policy institutes, including the Stockholm Sustainable Finance Centre[3] and Swiss Sustainable Finance[4], while noting the absence of a common terminology, propose sustainable finance lexicons with no less than 100 entries.

Underlying this conceptual confusion, however, is a uniting feature of sustainable finance – namely the core idea of how finance (both investing and lending) interacts with economic, social, and environmental issues [Schoenmaker and Schramade (2019), Köbel et al. (2020), Kumar et al. (2022), Lindenberg (2014), Urban and Wojcik (2019)]. Bakken (2021) defines it as investing in line with environmental, social, and governance (ESG) considerations. Rather than only an "E" or green focus, researchers assert that sustainable finance refers to the ways by which finance (both investing and lending) interacts with ESG issues [Schoenmaker and Schramade (2019), Kumar et al. (2022), Urban and Wojcik (2019)].

But what does this mean in the world of governance? The first tack policymakers take amounts to making general declarations about leveraging finance toward sustainability ends. For the OECD, "green finance" is defined as "achieving economic growth while reducing pollution and greenhouse gases".[5] For the IFC (2009), green finance is defined as "[i]nvestment products that preserve the environment, ensure social justice and promote economic prosperity." A second approach is to shift focus to how funds are channeled by investors. This is described in terms of "investments flowing to sustainable development projects" (International Development Finance Club), "resources" catalyzing climate resilient development (World Bank), as well as "capital rising for projects with environmental benefits (Green Bonds Principles). A third tack places emphasis on the investor. The idea here is about getting ESG information to investors and ensuring they "consider" ESG factors when making investment decisions [European Commission; Code for Responsible Investment in South Africa (CRISA), the Global Sustainable Investment Alliance)]. The United Nations' PRI provides the

[2] http://tinyurl.com/8vupkve6
[3] The Stockholm Sustainable Finance Centre's sustainable finance lexicon can be found here: http://tinyurl.com/yc4ucx5j
[4] The Swiss Sustainable Finance glossary can be found here: http://tinyurl.com/4m9632ae
[5] OECD Green Finance and Investment, http://tinyurl.com/96cxssfu

> *"Our findings stress the importance of balancing regional and international policies with strengthened national transparency requirements across all ESG pillars."*

clearest expression of this idea: responsible investing is about "explicitly acknowledging the relevance to the investor of ESG factors and the long-term health and stability of the market as a whole."

To help cut through the confusion of sustainable finance as it is presented in governance contexts, we use natural language processing (NLP) techniques to examine the current operationalization of sustainable finance as an issue area, and the nature of policies globally in terms of their binding nature.

3. DATA AND METHODS

Our analysis uses data from Carrots & Sticks (C&S), an online database and policy repository of corporate sustainability policy. C&S takes a broad approach to defining corporate sustainability policy and, as of 2023, comprised 2,463 policy instruments in 132 countries, 76 international and regional organizations, in 39 languages, and ranging from 1897 to present [Chalmers et al. (2024)]. C&S acts as a platform of platforms, bringing together and consolidating information from other databases including European Corporate Governance Institute (ECGI), Green Policy Platform, PRI, the Reporting Exchange (RE), and the Sustainable Stock Exchange Initiative (SSE), each of which aggregates corporate sustainability policies, broadly conceived.[6]

Using C&S's corpus of sustainability policy documents, we identified all policies that specifically target financial activities and institutions. To do this, and building on the work of Al-Ubaydli and McLaughlin (2017) and state-of-the-art natural language processing (NLP) techniques more generally [Rice and Zorn (2021), Gentzkow et al. (2019), Loughran and McDonald (2016)], we first established a bespoke dictionary of "n-grams", or unique terms [including both single words or unigrams, as well as terms with two words (bi-grams), and three words (tri-grams)] that refer to four distinct sets of financial activities: (1) banking, (2) financial market infrastructure (FMI), a category that includes securities and commodity exchanges, (3) fund management, and (4) insurance.[7] The four categories were created by combining the codes and descriptors of two widely used schemes for classifying distinct sectors of economic activities, namely: the United Nations' International Standard Industrial Classification scheme (ISIC rev. 4); and the North American Industry Classification System (NAICS).[8] Through an iterative process of careful hand coding amongst the five members of the research team, we generated a set of unique n-grams for each of these four distinct financial activities.[9] Our n-grams are meant to be categorical, exhaustive, and allow for deviations in spelling, pluralization, and punctuation. Relative to previous studies, this allows us to assess "who in finance" is targeted by sustainable finance policies.

The result is a corpus of 1,070 sustainable finance policies (i.e., corporate sustainability policies that target financial activities and institutions) spanning a time period from 2001 to 2021. Given our focus on the specificities of language and linguistic change over time, only English language policies were retained. The corpus includes policies from 95 countries from all major world regions as well as 23 international organizations. We analyze this corpus of sustainable finance policies through a combination of hand-coding and NLP techniques.

[6] Corporate sustainability includes "corporate responsibility", "corporate social responsibility", "environment, social, governance", "ESG", "materiality", "non-financial materiality", "shared value", and "social value". It does not include the broader suite of labor-related governance policies, such as "industrial relations", "labor reforms", and "labor regulation".

[7] Banking consists of commercial banking, savings institutions, credit unions, and other depository credit intermediation, as well as securities and contracts brokerages. FMI refers to many of the services auxiliary to banking and financial market activities, such as securities and commodity exchanges, loan brokers, financial transactions processors, and investment advisors. Fund management includes pension funds, health and welfare funds, open-end investment funds, and portfolio management. Insurance encompasses life, health, medical, property, and casualty insurance carriers, as well as claims adjusting, reinsurance, and insurance brokers.

[8] This approach to developing finance ngrams builds on the work of Al-Ubaydli and McLaughlin (2017). A key difference, however, is that these authors treat finance as a single category, conflating everything from commercial banking to fund management to pensions and central banking. Our approach is more nuanced and allows us to not only distinguish between various sub-sectors of financial activity (i.e., banking, fund management, insurance, etc.), but it also allows us to pinpoint specific activities in each sector. For instance, in the banking category, we can distinguish between specific banking activities (like stock broking, commercial banking, and credit granting) and institutions (like savings banks and commercial banks) and financial instruments (like money orders and unlisted equities).

[9] The ngram dictionary can be found at http://tinyurl.com/3ds4z7bx

4. ANALYSIS AND RESULTS

4.1 What terminology is being used?

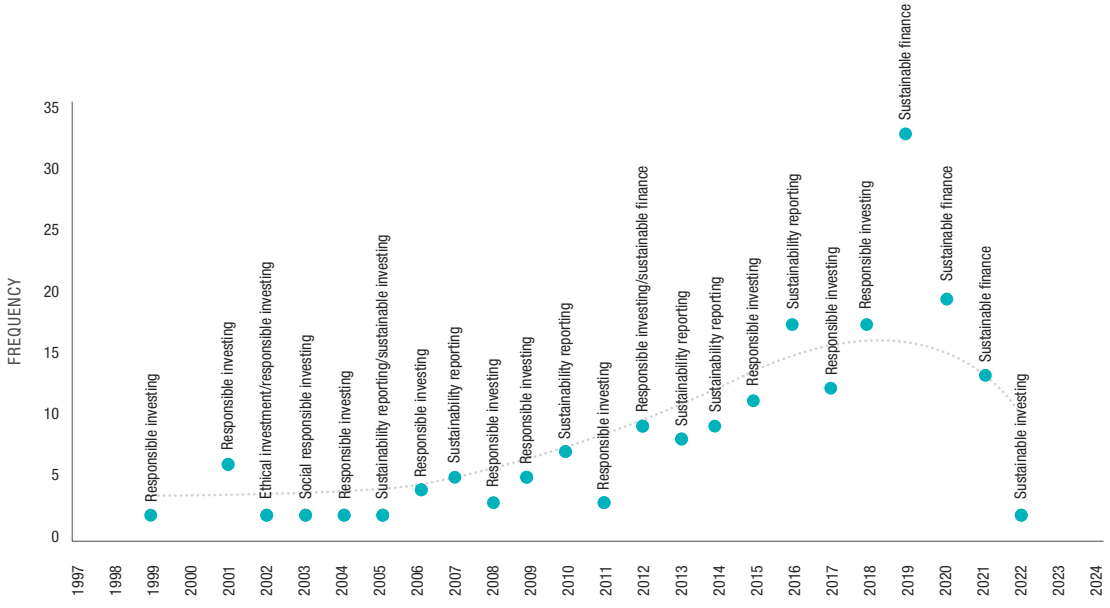
The language of sustainable finance, as this term is now understood, dates from around the beginning of the 21st century. The first appearance of a sustainable finance n-gram in our corpus is in 2001. In this year, the European Union's "Green paper promoting a European framework for corporate social responsibility" uses the terms "responsible investing", "socially responsible investing", and "ethical investing". In the same year in the Netherlands, Stichting Corporate Governance Onderzoek Pensioenfondsen's Corporate Governance Handbook, uses "responsible investing" and "socially responsible investing" as cognates. This timeline aligns well with broader developments in the field. In particular, only a few years before, in 1997, the term "sustainable development" first appeared in the Delphi and Ecologic Institute's report on "The role of financial institutions in sustainable development." According to Dimmelmeier (2021), just two years later in 1999 "the term 'Responsible Investment' appeared for the first time in the continental mainstream news" [see also, Gond and Boxenbaum (2013)].

Over time, we see an increase in the relative prevalence of n-grams involving "green", "carbon", and "climate" ("E" language), with green bond, green finance, green investing, and climate finance all rising in frequency over time [Chalmers et al. (2023)]. At the same time, other than "responsible investing", the language of social responsibility ("S" language) dropped from its previously prominent position. The prominence of "E" n-grams in 2016-2021 relative to previous time periods suggests the term sustainable finance has gone full circle since its genesis in Rio in 1992. While it originated from an environmental perspective, the language of sustainability appears to have been consumed by that of social responsibility in the early 21st century. We are now seeing the proliferation of "climate" and "green" in public policies pertaining to instruments (e.g., green bonds) for acting on the "E" aspect of sustainable finance.

Figure 1 shows the most frequently used sustainable finance n-grams for each year between 1998 and 2022, as well as its frequency of use. We see that only a few n-grams dominate the sustainable finance landscape. In fact, from a total of 40 possible n-grams, Figure 1 only includes five sustainable finance n-grams.

Figure 1 only captures the most frequently used n-gram for each year of our analysis. Are we seeing the use of broader array of different SF n-grams (over time)?

Figure 1: Most frequently used sustainable finance n-grams (2001-2021)



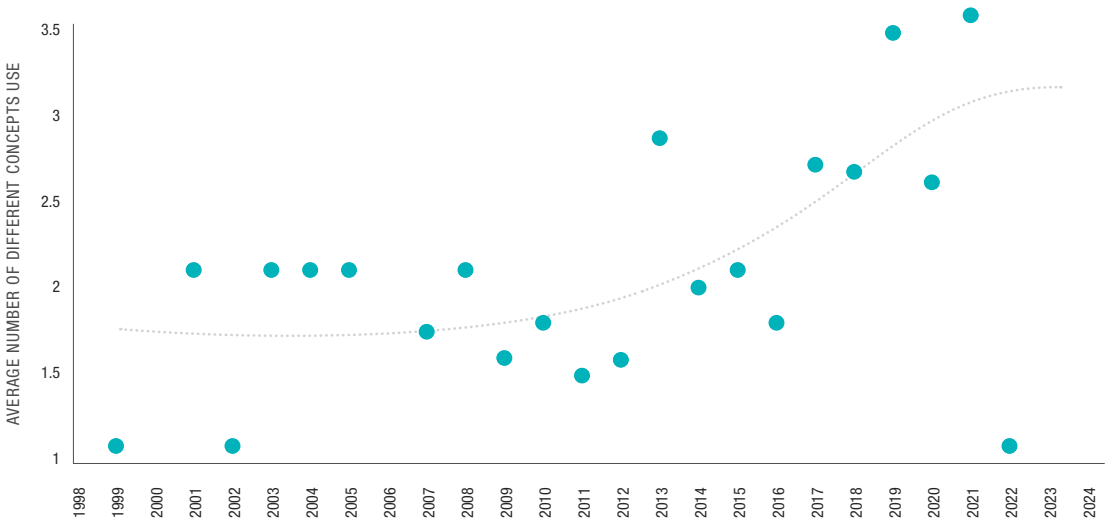
Note: The gray dashed line represents a LOWESS trend, i.e., the smoothed relationship between the data points.

In contrast, Figure 2 shows average number of different SF n-grams used per document across the same period. The general trend is that sustainable finance policies are using an increasing number of different SF concepts over time. By 2015, we see an average of nearly three distinct n-grams in use per policy and about 3.5 by 2021. These averages do not convey the more extreme diversity of terms used in certain outlier policies. Take the Sustainable Stock Exchange Initiative's (SSE) 2017 "How stock exchanges can grow green finance: a voluntary action plan" as an example. In this single policy document, the SSE uses a total of 12 different sustainable finance n-grams, including sustainable finance instruments (carbon tax, green bonds, and green securities) as well as cognate terms (sustainable economy, green investing, sustainable investing, responsible investing, sustainability reporting, climate finance, sustainable finance, green finance, and blended finance).

Using multiple different concepts can foster a lack of conceptual clarity and could contribute to concept stretching. This, in turn, can make it difficult to develop effective governance, leading to, or exacerbating:

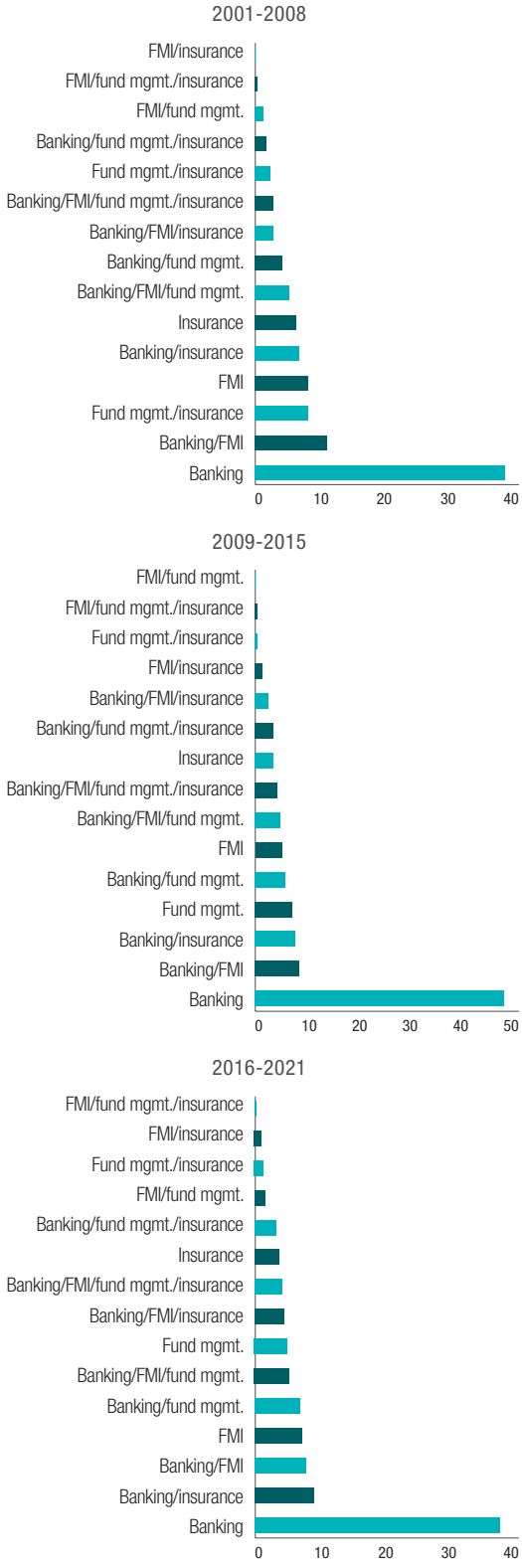
- **Inconsistent policy outcomes:** policies developed using different concepts may not address the same issues, leading to inconsistent results.
- **Implementation challenges:** if policymakers use different concepts to describe the same issue, it can make it difficult to develop a coherent policy framework that can be effectively implemented.
- **Reduced accountability:** if the concepts used to describe an issue are unclear or inconsistent, it can be challenging to assess whether the policy has been successful or not.
- **Missed opportunities:** if policymakers use different concepts to describe the same issue, they may miss important aspects of the problem, leading to incomplete or ineffective policy solutions.

Figure 2: Average use of different sustainable finance n-grams within a single policy document



Notes: The gray dashed line represents a LOWESS trend, i.e., the smoothed relationship between the data points.

Figure 3: Share of sustainable finance policy by financial sector target over time



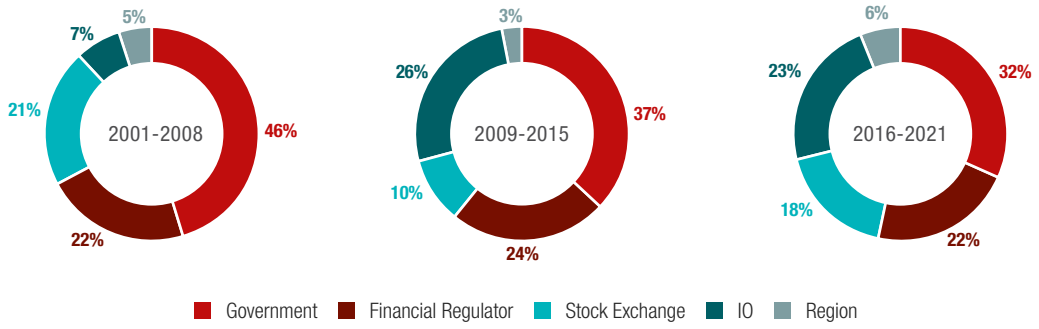
4.2 Which financial sectors are targeted in governance, and who is making policy?

While the language of sustainable finance policy is important, so too is understanding which parts of the financial system are being targeted by such policies and which organizations are most active in sustainable finance policymaking.

Addressing the first of these issues, Figure 3 details the proportion of policies within our sustainable finance corpus targeting the different sub-sectors of finance, namely: banks, financial market infrastructure (FMI), fund management, and insurance. To better trace these developments over time, we examine trends in three time periods. The first period starts with the first appearance of a sustainable finance cognate term in public policy 2001 and runs until 2008; the second is from 2009-2015; and the third is from 2016-2021. These time periods roughly align with the recent stocktaking exercises of Kumar et al. (2022) and Dimmelmeier (2021). Important here is our ability to capture sufficiently long time periods and to isolate key events that likely shaped sustainable finance policy, like the 2008 global financial crisis, CoP 2009, and the 2015 Paris Climate Agreement. As some policies reference more than one sector at a time, we also include combinations of sectors targeted. Banking is by far the most targeted sector in all three time periods. By contrast, policies with a sole focus on fund management, FMI, and insurance are far less common, with each of these sectors having roughly similar shares. There has been relatively little movement in these sector shares over the past two decades. While the prominence of banks within our sustainable finance policy corpus is unsurprising, the scale of this focus perhaps is. According to the Financial Stability Board [FSB (2022)], in 2021, banks accounted for 37.6% of global financial assets yet around three-quarters of the documents in our corpus reference banks in some capacity.

Which institutions are more active in issuing these policies? As illustrated in Figure 4, national governments are responsible for the largest proportion of the policies in our corpus. This dominant role of national governments has declined over time, however, falling from 46% of issuing all policy documents at the beginning of this century to 32% in the latest period. This gap has been filled by international organizations (IOs), whose share has increased from just 7% in the first period to 23% at the end. This likely mirrors the establishment of new sustainable-finance focused IOs, like the SSE and PRI, as well as increased focus on sustainable finance by the likes of the U.N. Global Compact and the OECD. In contrast to IOs, regions, like the European Union, consistently feature very little as issuers of sustainable finance policy. Finally, stock exchanges and financial regulators account for around

Figure 4: Sustainable finance policy by issuer type



20% of policies each. This rise of IOs as sustainable finance policy issuers augurs well for future cross-border and multi-stakeholder collaborations. What remains to be seen, though, is how successful these policies are, or promise to be, in driving towards substantive actions.

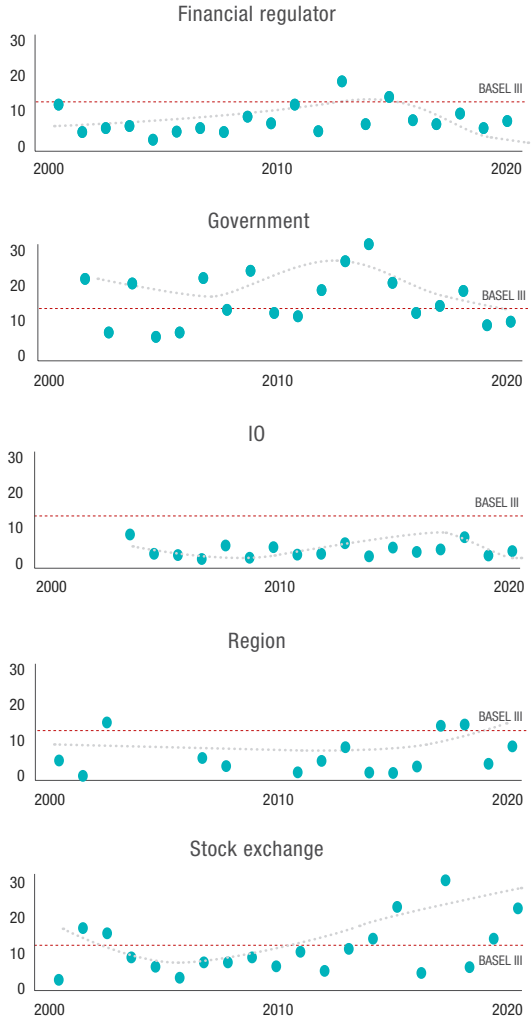
4.3 How binding are sustainable finance policies?

Researchers distinguish between policies that are binding and enshrined in legislation or "hard law", and all other types of non-binding or "soft law" policies [Abbott and Snidal (2000)]. Where do sustainable finance policies fall on this spectrum, and to what extent are different issuer types (e.g., national governments and IOs) writing hard or soft laws? To investigate this, we use an existing dictionary of 183 "constraining" or restrictiveness terms specifically developed to analyze legal, legislative, and regulatory documents [Loughran and McDonald (2011)]. This dictionary includes terms related to degrees of commitments, compulsion, dictates, mandates, and obligations.

The results of this analysis are presented in Figure 5, which shows the mean of the count of restriction n-grams per issuer type (i.e., IOs, national governments, etc.) per year in our sustainable finance policy corpus. Higher scores correspond with a greater degree of "restrictiveness". As a baseline to put our results in context, we include a restrictiveness score for Basel III (10.3%), the set of international banking standards developed in response to the Global Financial Crisis.

Figure 5 paints a mixed picture of more binding policies in some sectors and less binding policies in others, with no clear overall time trend. First, financial regulators and IOs tend to issue relatively unrestrictive sustainable finance policy guidelines and there has been little change in this approach over time. Though Copenhagen, Glasgow, and Rio have convening power, our findings align with the idea that

Figure 5: Average policy restrictiveness by issuer type over time



Notes: The gray solid line represents a LOWESS trend, i.e., the smoothed relationship between the data points. The blue dots are average restrictiveness scores for all policies issued in that year.

IOs continue to issue "soft law", rather than policies that have teeth in requiring action. Second, perhaps surprisingly, national governments have moved substantially over the past decade towards issuing "softer" policies. The policy with the single highest restrictiveness score in our corpus is the 2001 Australian Financial Services Reform Act, which mandated all issuers of financial products to disclose the extent to which "labor standards or environmental, social or ethical considerations are taken into account in the selection, retention, and realization of an investment". Since then, national governments have sought instead to encourage action through establishing best practices, codes, and strategies rather than mandating or requiring actions or disclosures. Finally, stock exchanges and regional actors, like the European Union, have become somewhat more restrictive in their policymaking in recent years, although signals here are quite noisy with large changes year-to-year. Stock exchanges have moved closer towards issuing "hard law" policies – this raises some concerns about the scope of companies being targeted by such policies (e.g., only publicly-traded firms).

5. DISCUSSION AND CONCLUSION

Our research identifies substantial evolution in the nature and scope of sustainable finance governance over time. One trend is the increasing emphasis placed on the environment and climate finance. Terms such as "green bonds" and "green investing" now feature prominently. This shift reflects a growing recognition of the finance sector's pivotal role in mobilizing large amounts of private capital to meet investment needs for achieving the U.N. SDGs and the climate targets of the Paris Agreement [UNEP (2015), Bielenberg et al. (2016)].

A second trend – the increasing share of sustainable finance policies issued by international organizations – reflects the increased emphasis on multilateral efforts in recent years, such as the Glasgow Financial Alliance for Net Zero and the Taskforce on Climate-Related Financial Disclosures. And third, the lack of any clear direction in the restrictiveness or bindingness of these policies (i.e., the degree to which they are "hard" or "soft" law) raises potential governance concerns [Abbott and Snidal (2000)]. Notably, policies from regional entities, such as the E.U., and by stock exchanges have become more restrictive over time, while national government policies

have become less restrictive. This divergence underscores the nuanced governance landscape, prompting concerns about the efficacy of high-profile international collaborations like the Glasgow convention in achieving meaningful results without follow-up enforcement by national governments.

The emergence of less restrictive national policies seems consistent with the hopes being placed on carbon offset markets, which are currently nascent.[10] Offsets are traded on voluntary carbon markets (VCMs), which operate outside of regulatory purview and allow (but do not require) companies to invest in a variety of emissions-reducing activities, including renewable energy, agricultural, and forestry-related projects. The voluntary nature of the VCMs raises concerns about the quality and validity of the purchased offsets. For example, the emissions reduced or sequestered must be additional to those under a business-as-usual scenario and must be both verifiable and persistent – challenges that can be especially difficult to meet for forestry and other land-use projects. Recently, blockchain-based initiatives in the forestry sector have aimed to address these concerns, though the value of these initiatives are yet to be demonstrated. And while still in a pilot or proposal phase, partnerships between corporations and project developers are emerging [Kotsialou et al. (2022)]. There are concerns, however, that household demand for such green finance is still muted [Bethlendi et al. (2022)].

In stark contrast, carbon allowances traded in compliance markets, such as the E.U.'s Emission Trading Scheme (ETS) portray maturity, with an estimated value of more than U.S.$100 bln in 2020 [Blaufelder et al. (2021)]. Historically, the effectiveness of these schemes has been blunted by low implied carbon prices. However, recently the price of permits, specifically in the E.U.'s Emission Trading Scheme (ETS), has increased dramatically and is expected to grow further, as the cap on emissions will continue to decrease annually until 2030. With E.U. ETS being the flagship program for achieving ambitious climate targets, these dynamics align with our research findings, indicating a trend towards increased restrictiveness in policies implemented by regional organizations such as the E.U. over time.

In conclusion, our research highlights a notable rise in sustainable finance policies and terminology since 2001, with a growing emphasis on environmental factors. However, there is a concerning trend of decreasing restrictiveness in national government policies, countered by stricter measures from regional entities like the E.U. and stock exchanges. Market incentives are gaining prominence over concrete obligations for companies, while global events like Copenhagen, Glasgow, and Rio provide guiding principles. Nonetheless, our findings stress the importance of balancing regional and international policies with strengthened national transparency requirements across all ESG pillars.

[10] The estimated market value of the carbon offsets market was around £300m in 2020 [Blaufelder et al. (2021)].

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