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Channels of influence in sustainable finance: A framework for conceptualizing how private actors shape the green transition

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Abstract

Since the Paris Agreement, interest in decarbonization and sustainable finance has grown rapidly. Within the prevalent derisking regime, investment for decarbonization must come predominantly from the private sector. However, growth in ‘sustainable finance’ assets is not necessarily causing more sustainability-advancing productive investment to drive the green transition. We thus argue that sustainable finance is not exclusively about *investing* or *providing finance*, but crucially also about *changing corporate practices toward greater sustainability*. To shed light on how private financial actors can influence sustainability in a derisking context and to facilitate this broader research perspective on sustainable finance, we introduce the conceptual framework of ‘channels of influence’. These channels are different strategies and mechanisms used by private actors that influence the behavior of financial and non-financial corporations to increase financial flows to sustainable productive investments. We identify ten channels of influence concerning sustainable finance: (1) initial financing; (2) refinancing; (3) (re)insurance; (4) ratings; (5) climate-litigation; (6) company engagement; (7) divestment; (8) reputation; (9) coalition-building; and (10) standard-setting. These are grouped according to the specificity and breadth of their sustainability impact. Using these channels enables private actors to advance sustainability within the status quo of state-market relations and regulation.

Keywords: channels of influence; derisking regime; financial markets; green transition; sustainable finance

Introduction

Who will pay for sustainability and climate change mitigation and via which mechanisms are questions that lie at the heart of debates and conflicts around the green transition. Rightly so, as the pursued pathways will shape politico-economic developments in the coming decades. To enable a better understanding of the varieties of potential answers to these questions, Gabor and Braun (2023) characterize different macrofinancial regimes as ‘combinations of monetary, fiscal, and financial institutions that shape the creation and allocation of credit/money, and hence the speed and nature of the green transition’. Recent years have seen the rise of a derisking regime particularly in North America and Europe that largely relies on private financial actors to finance and implement the green transition. While the contribution of Gabor and Braun (2023) concentrates on the role of

the state in tweaking risk–return profiles of certain assets and providing selective subsidies to incentivize sustainable financing, this article focuses on the open question of how exactly private financial actors (asset managers, banks, insurance firms, rating agencies etc.) can promote the green transition within a derisking regime.

One predominant set of regulations, standards, principles, and practices through which the derisking regime seeks to advance sustainability and decarbonization can be subsumed under the term ‘sustainable finance’. Although the landmark 2015 Paris Agreement called for ‘making finance flows consistent with a pathway toward low greenhouse gas emissions and climate-resilient development’ (UN, 2015), sustainable finance has hitherto not been effective enough to achieve this objective (RAN, 2024). In 2022, supposedly ‘sustainable investing’ stood at a staggering US\$30 trillion suggesting that already 30% of global investment funds were contributing to the green transition (GSIA, 2023). However, financial flows that actually advance decarbonized energy production and transport (called ‘climate finance’) only increased from US\$364 billion in 2012 to US\$1,265 billion in 2022 (CPI, 2023) – an order of magnitude smaller than broadly defined ‘sustainable investing’ (GSIA, 2023), leaving an enormous gap of US\$6,800 billion in 2022 alone that would be needed to address the climate crisis (CPI, 2023).

The estimates of ‘sustainable investing’ and ‘climate finance’ are not fully comparable as the former seeks to measure a stock of financial assets, while the latter gauges investment into concrete projects. But what this exercise shows is that more sustainable *financial* investment does not necessarily cause more sustainable *productive* investment in the ‘real’ economy. Hence, we find definitions of sustainable finance such as the EU’s (2023: x) ‘taking environmental, social and governance (ESG) considerations into account when making investment decisions in the financial sector, leading to more long-term investments in sustainable economic activities and projects’ to be incomplete, because they assume a direct causal relationship between an increase in sustainable *financial assets* on the one hand and rising sustainable *productive investment* on the other. Put differently, investing in certain stocks or bonds does not inherently induce corporations to equally invest more in sustainability-advancing projects. Consequently, we argue that sustainable finance cannot be exclusively about *investing* or *providing finance* but should also be about *changing corporate practices toward more sustainability* to have a significant positive effect on the green transition – a position largely missing in the literature on sustainable finance (see Caldecott et al., 2022).

Therefore, this article seeks to improve the understanding of the scope of sustainable finance practices which private finance actors may pursue to promote or influence the green transition in a derisking regime. For this, we introduce the novel conceptual framework of ‘channels of influence’ to shed light on how private financial actors already do and can further exert influence on corporations to drive decarbonization and sustainability within the status quo of current state-market relations. Furthermore, the conceptual framework enables future research by enhancing our understanding of how private finance may advance the green transition. Based on this research objective, we conducted 75 expert interviews with financial practitioners, regulators, and civil society organizations (CSOs) from eight OECD countries. Drawing on our findings, we define channels of influence as a set of different specific strategies and mechanisms used by private financial actors that have an impact on the behavior of financial and non-financial corporations in such a way that financial flows to sustainable *productive* investment increase or flows into unsustainable activities decline. In total, we identify ten distinct but interrelated channels of influence: (1) initial financing; (2) refinancing; (3) (re)insurance; (4) ratings; (5) climate-litigation; (6) company engagement; (7) divestment; (8) reputation; (9) coalition-building; and (10) standard-setting.

The sequence of the different channels runs along the axis of *specificity* versus *breadth* of sustainability impact: *Specificity* meaning the relative proximity and attributability of a

channel to resulting changes in productive investment, and *breadth* meaning the relative scope and reach of a channel. For instance, initial financing has a high specificity, but a low breadth as only an individual corporation is involved, whereas coalition-building has a low specificity, but a high breadth of the potential impact, as many actors come together to advance certain sustainability issues. We provide a conceptualization of each channel of influence according to its domain or logic (financial risk–return, corporate governance, and amplification/support) and identify the key actor groups that shape the respective channel.

This article is structured as follows. In the next section, we describe the role that sustainable finance assumes within the derisking regime and take stock of the existing literature on sustainable finance; subsequently we outline our more comprehensive approach, which conceptualizes sustainable finance as a set of different channels of influence. In section three, we present the ten different channels and discuss their interlinkages. Finally, section four concludes.

The role of sustainable finance and the state of the art

In principle, sustainability and decarbonization can be advanced through fiscal measures and investments directed by a ‘big green state’ or, alternatively, through a carbon tax reflecting the massive negative externality of climate change in market prices. However, while political majorities for the former are lacking, a sudden ‘carbon shock therapy’ (Gabor and Braun, 2023) would come with highly disruptive and socially adverse consequences. Hence, in most high-income countries, the dominant green macrofinancial regime is the derisking regime which relies primarily on indirect measures that incentivize or push the private sector to invest in technologies and projects that advance decarbonization.

One major ‘toolkit’ consisting of many different regulations, standards, principles, and practices that has been used within the derisking regime to advance sustainability and decarbonization in recent years can be subsumed under the notion of ‘sustainable finance’. It is crucial to stress that such an array of indirect measures to pursue decarbonization only makes sense in a derisking context as there are no political majorities for either an adequate and effective carbon tax or large-scale state-led investments; this also applies to the manifold ‘toolkit’ of ‘green central banking’ (see Carè et al. 2024; Kedward et al., 2024). Put differently, due to its reliance on indirect measures and weak incentives – and its focus on the ‘production of investibility’ (Gabor, 2023) – derisking does not constitute the most effective framework for the green transition. However, due to current political majorities, it will very likely be the prevalent green macrofinancial regime in most OECD countries in the coming decades. Table 1 shows the three main state-market configurations, and the respective role played by the state, the private sector (i.e., market forces), and sustainable finance in driving decarbonization.

The crucial goal of the green transition is creating new *productive* investment to advance decarbonization. The EU (2018) has defined productive investment as ‘investment in fixed capital or immaterial assets for enterprises, which are to be used for the production of goods and services’ (e.g., renewables or energy efficiency projects). One key problem in using sustainable finance as a toolkit to drive sustainability and decarbonization in the derisking regime context is that most sustainable finance regulations, standards, practices, and products primarily lead to the creation of new ‘sustainable’ *financial assets*, but they do not necessarily create new sustainable *productive investment* – which is what really matters for the green transition.

Much of the existing literature within the disciplines of business studies and finance has focused exclusively on aspects of sustainable financial investment, often equating sustainable finance with ESG investing (see Berg et al., 2022; Eccles et al., 2020; Krahnen

Table 1. Green macrofinancial regimes and the role of sustainable finance.

	Carbon tax primacy	Derisking regime	Big green state
Role of the state	Small	Small to medium	Large
Role of the private sector	Large	Medium to large	Small
Role of 'sustainable finance'	Small	Large	Small

Source: Own elaboration based on Gabor and Braun (2023).

et al., 2021; MacNeil and Esser, 2022). However, for the sustainable finance segment of ESG funds there is no direct way to achieve 'additionality', that is, making capital flow to 'sustainable' projects that would otherwise not have been financed (Fichtner et al., 2023). The reason is that such funds only buy stocks that have been issued in the past and are then traded on secondary markets – and thus do not directly help firms to raise new capital. Furthermore, recent developments have weakened this link: Fewer firms issue new shares on primary markets to finance themselves than in the past; US stock markets in particular now function as a mechanism to channel capital out of listed companies due to large stock buybacks (Lazonick, 2015; Fichtner, 2020). From 2000 to early 2024, US stock markets have facilitated *negative* net equity issuance of over \$8.1 trillion (Federal Reserve, 2024). In addition, while most ESG funds exclude the least sustainable companies (e.g., coal), their portfolios are very similar to conventional funds, which means that their portfolio firms are not pledging to advance sustainability. Another major problem with ESG funds is that the true size of genuinely sustainability-advancing funds is completely unclear with estimates ranging from \$0.8 trillion to \$30 trillion, creating large greenwashing risks (Babic, 2024; Fichtner et al., 2023; Willis, 2023).

Other key segments of sustainable finance include green bonds (via which investors can provide finance to corporations) and green loans (via which banks can provide finance to corporations for sustainability-advancing purposes). Green bonds had rapid growth in 2020–2021, although this has slowed down more recently (CBI, 2024). Both segments are still very small compared to their conventional counterparts and have pending issues, including a lack of binding standards and the question of whether they can achieve additionality (Babic, 2024; Gilchrist et al., 2021). The growth of green loans is likely to remain limited by the lower profitability of many sustainability-advancing projects, the objective of all banks to maintain long-time client relationships and the fact that green loans only arise when there is client demand for them (Interview 26, 46). Hence, a more effective way for ESG funds, banks, and investors to advance sustainable productive investment is using as many channels of influence as possible (see Figure 1).

One additional fact that severely limits the effectiveness and impact of sustainable finance is that most financial products and instruments still adhere to a single materiality ('outside-in') logic, that is, only considering how the climate crisis affects the respective assets and portfolios (Crona et al., 2021). Double materiality ('inside-out' perspective) means considering how companies impact climate change and sustainability. Following double materiality would mean significantly improving the impact concerning sustainability and decarbonization via all available strategies and mechanisms, including by changing corporate practices toward greater sustainability. Despite some improvements in regulation and market practices, double materiality is rarely pursued with all possible means. Currently, single materiality orientation is still prevailing. This is problematic, because the pricing-in of severe but hard to calculate climate risks through market forces is insufficient and slow (Interview 9, 39, 70, 75). Therefore, analyzing sustainable finance through its three main market segments only provides a limited view, as there are many different private actors that exert influence on the various standards,

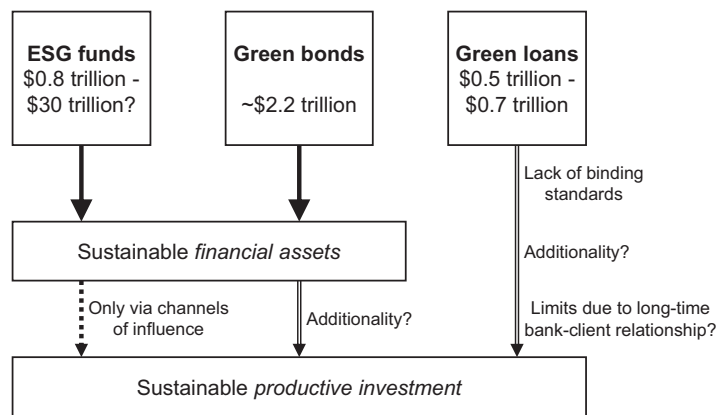


Figure 1. Market segments of sustainable finance and their links to productive investment.
Source: Own illustration based on Babic (2024), CBI (2024), and Fichtner et al. (2023).

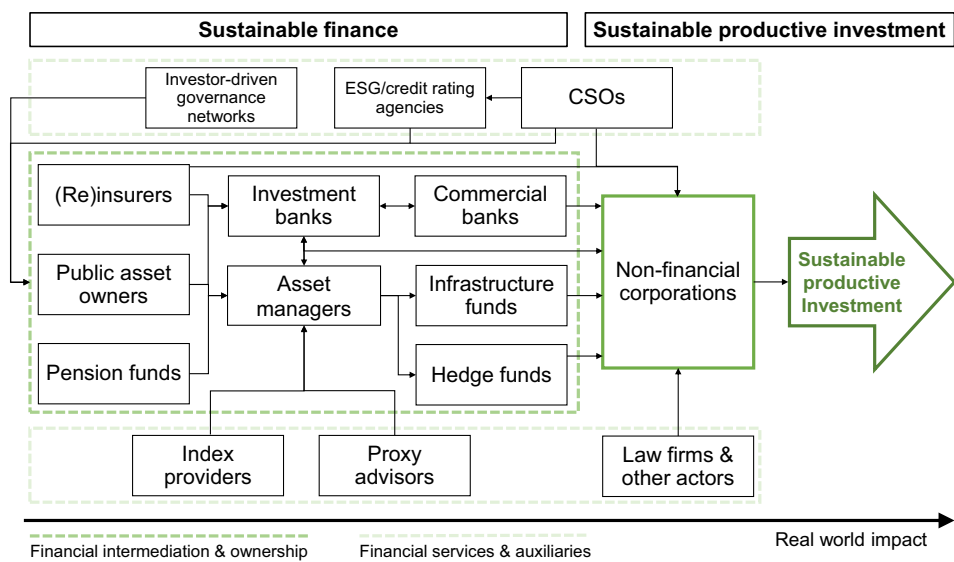


Figure 2. Private financial actors in relation to sustainable finance.
Source: Own illustration.

principles, and practices that make up ‘sustainable finance’. Figure 2 shows all these actors in relation to sustainable finance, both in financial intermediation and ownership as well as financial services and auxiliaries.

Some studies have focused on the potential ‘real-world’ impact of sustainable finance practices and actors (see Busch et al., 2021; Caldecott et al., 2022; Kölbel et al., 2020; Wilkens et al., 2023), but they often stay within a rather narrow understanding of ‘impact investing’ as something pertaining exclusively to investment funds. Moreover, many of these studies focus only on effects that can be quantified and neglect more qualitative factors (see Egerer, 2023). Other contributions have zoomed in on the role of particular private actors, for instance by analyzing the links between equity holdings of large asset managers and potential sustainability impacts via different forms of shareholder engagement, such as

proxy voting or meetings with corporate management (Baines and Hager, 2022; Golland et al., 2022; Gray et al., 2023; Jahnke, 2019a; 2019b; Kölbel et al., 2020). Marti et al. (2024) have provided a multidisciplinary literature review and argue that shareholders can create impact indirectly by engaging in ‘field building’, which means influencing the institutional context in which corporations are embedded. Finally, there is only scant research on the role of commercial banks and insurance companies for the green transition (Akomea-Frimpong et al., 2022).

These contributions have provided valuable insights into the current dynamics of private finance within the green transition, but so far there has not been a systematic and integrative attempt to conceptualize the strategies and mechanisms that shape the behavior and agency of private financial actors, and thereby their potential for change within the given laws and regulations. Within the derisking regime the private sector plays a pivotal role in carrying out (sustainable) productive investment. Therefore, we argue that in order to substantially advance the green transition in a derisking context it is a necessary condition that private financial actors make full use of all potential strategies and mechanisms. Arguably, one key reason why sustainable finance has not delivered on its expectations in recent years is that there is a lack of understanding about how private financial actors actually promote sustainability and by which mechanisms.

The conceptual framework of channels of influence

The purpose of our article is to address this lacuna by developing a novel conceptual framework. We proceeded in three steps. First, we evaluated the existing literature reviews on the ‘impact mechanisms’ of sustainable funds and investors from economics and management studies (Kölbel et al., 2020; Wilkens et al., 2023; Marti et al., 2024). We also screened the relevant literature from (international) political economy, economic geography, and other social sciences on how private actors can influence various aspects of sustainable finance. We found that the focus had been primarily on the impact of investment funds, neglecting the role of banks, (re)insurance companies, rating agencies, and other financial service providers. Second, we conducted 75 semi-structured interviews with financial practitioners, regulators, and CSOs in Belgium, France, Germany, Italy, the Netherlands, Switzerland, the UK, and the US, countries which comprise most of the leading centers of conventional and sustainable finance. Access to the interviewees has been achieved through referrals and snowball sampling. The 75 interviews are thus not necessarily representative, however using three contrasting groups of experts as well as different levels of hierarchy contributed to an ‘internal triangulation’ – an ‘organized cross-checking of information collected via expert interviews’ (van Soest, 2023: 282). In these semi-structured expert interviews, which have inductively informed our analysis, we specifically asked for all potential strategies and mechanisms with which private financial actors can influence sustainable finance practices and advance the green transition. Third, we transcribed and evaluated the interviews. Via inductive content analysis, triangulated with existing literature and the financial press, we comprehensively collected and defined potential impact mechanisms and the various kinds of private actors involved.

The steps described above enabled us to develop the novel *channels of influence* framework. We define channels of influence in sustainable finance as a set of different specific strategies and mechanisms used by private financial actors that have an impact on the behavior of financial and non-financial corporations in such a way that financial flows to sustainable productive investment increase or flows into unsustainable activities decline. Put differently, for many private actors active in sustainable finance, effectively utilizing channels of influence is the only way to promote sustainable productive

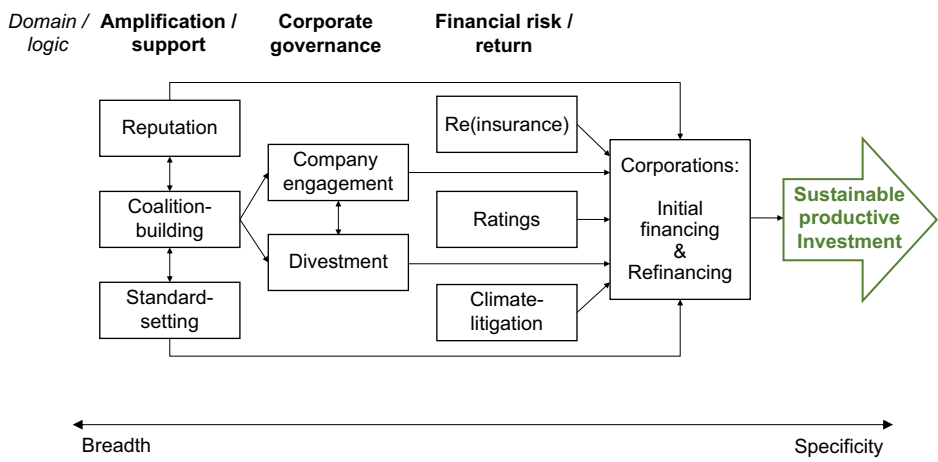


Figure 3. Domain or logic of channels of influence in sustainable finance and their interlinkages.
Source: Own illustration.

investment. We thus see *channels of influence* as an analytical concept that seeks to clarify how to shift financial flows toward sustainable productive investment.

Accordingly, we understand sustainable finance comprehensively as different practices used by various private actors to advance financial flows to sustainable aims or curb those to unsustainable ones. These practices can, for example, be direct productive investments, direct engagement strategies, or more indirect forms of influence which shape financing decisions. They do not only involve various private financial actors, but also the interplay between them, CSOs, and public asset owners, because one novel finding of our expert interviews was that these two actor groups play an important but as-yet neglected and underestimated role for some strategies and mechanisms. In this article, we conceptualize channels of influence as means for private actors to exert influence within existing regulations. Therefore, we exclude efforts that seek to change the regulatory status quo, such as lobbying. More importantly, we do not include here the various possible levers by the government and state agencies, such as monetary policies, fiscal policies, and (financial) regulations. We thus limit public actors to their role as asset owners.

Figure 3 shows ten channels of influence available to private actors that we identified on the basis of the literature review and the conducted 75 interviews, their corresponding domain or logic, and the major interlinkages between them. We broadly distinguish between three domains or logics: First, the risk–return trade-off is one of the fundamental driving factors of corporations and private financial markets, stating that – in principle – the higher the risk of an investment, the higher the potential return. Factors that influence this calculus will thus influence corporate investment behavior. Second, corporate governance comprises all the rules and processes via which corporations are directed and controlled. Consequently, mechanisms that affect corporate governance can impact corporate practices. Third, there are strategies and mechanisms that work indirectly by amplifying or supporting other channels of influence.

The channels are ordered along the axis of *specificity* versus *breadth* of sustainability impact. Initial financing has the highest specificity of sustainability impact as it can directly create sustainable productive investment. Generally, the channels with more *breadth* serve as a supportive structure for the ones with more *specificity*. For instance, pressure of divestment might change the balance of power in company engagements, whereas changes in financial risk perceptions due to lower credit/ESG ratings or the cessation of reinsurance of high-emission industries bear direct consequences for initial

financing and refinancing. Moreover, reputation, coalition-building, and standard-setting can impact virtually all other channels. These ‘soft’ and often unquantifiable channels of influence follow the logic of supporting or amplifying other channels within the domain of corporate governance or financial risk–return. Conversely, channels with higher impact *specificity* also interact with those with more *breadth* via spill-over effects, such as divestment campaigns or climate-litigation causing reputational damage to firms or industries.

Channels of influence in sustainable finance

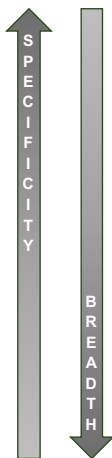
In this section, we conceptualize and discuss the ten channels of influence in sustainable finance available to private actors from the most specific channels to the ones with the greatest breadth (Figure 4). We also identify key actor groups that shape each channel and give examples.

Initial financing

The channel of influence with most *specificity* and least *breadth* is the direct, initial financing of sustainable productive investment, for example, electric vehicles, renewables, and energy efficiency projects – or start-up companies working on sustainability-advancing technologies. This can principally happen in two ways: First, internally via retained earnings, that is, profits of a company, or second, externally through a bank loan, a bond or equity, or a combination of both (Campiglio et al., 2017). By definition, initial financing can be clearly attributed to a particular *productive* investment (attributability), which would not have occurred without it (additionality) (Krahn et al. 2021). Hence, it is only these financing flows that directly contribute to the green transition without detours.

In principle, several financial instruments can serve as vehicles for initial financing. Examples include bank loans to finance productive investment, green bonds that are issued against particular sustainability-advancing capital assets (e.g., wind farms), or equity issued at an initial public offering and subsequently bought by investors. The latter is particularly important at the initial phase of business development when companies typically lack access to bank loans and capital markets, but, contrary to conventional wisdom, it is often public finance rather than venture capital that provides the necessary start-up support (Mazzucato and Semieniuk, 2018). Furthermore, corporate bonds are typically *refinancing* instruments issued after initial investment, whereas equity markets overall saw net capital outflows from corporations in recent decades – largely due to stock buybacks and dividend payments (Lazonick, 2015; Fichtner, 2020).

One important peculiarity of initial financing is that when it comes to bank loans, there is no financing constraint as such, because commercial banks endogenously create money by expanding their balance sheet when they issue loans (McLeay et al., 2014; Wullweber 2024). Crucially, this sort of financing does not rely on the redistribution of prior savings, as is often assumed in market-fixing approaches to sustainable finance (Golka et al., 2024; Murau et al., 2023). Hence, ‘the amount of available external finance for low-carbon investment is also a function of the demand for credit by low-carbon companies’ (Campiglio et al., 2017: 317), implying that credit expansion by banks is limited only by the intricacies of maintaining long-time customer relationships and the Basel III banking regulations (Interview 26, 46). However, the greatest limitation to utilizing bank leverage to finance the green transition currently still lies with the lower relative risk-adjusted profitability of sustainable productive investments vis-à-vis unsustainable ones, especially in the energy sector (Semieniuk et al., 2021; Christophers, 2021).

Channel of Influence	Domain/Logic	Actor groups	Sustainability Impact
<i>Initial financing</i>	Financial risk/return	Commercial banks, non-financial corporations, infrastructure funds	
<i>Refinancing</i>	Financial risk/return	Investment banks, asset managers, pension funds, (re)insurers, PAOs	
<i>(Re)insurance</i>	Financial risk/return	(re)insurers	
<i>Ratings</i>	Financial risk/return	Credit rating agencies, ESG rating agencies, CSOs, index providers	
<i>Climate-litigation</i>	Financial risk/return	CSOs, law firms, hedge funds	
<i>Company engagement</i>	Corporate governance	Asset managers, pension funds, proxy advisors, PAOs	
<i>Divestment</i>	Corporate governance	Asset managers, pension funds, index providers, CSOs	
<i>Reputation</i>	Amplification/support	CSOs, asset managers, PAOs, ESG rating agencies	
<i>Coalition-building</i>	Amplification/support	Asset managers, banks, (re)insurers, CSOs, pension funds, PAOs	
<i>Standard-setting</i>	Amplification/support	Investor-driven gov. networks, index providers, PAOs, CSOs	

Note: CSO – Civil Society Organization, PAO – Public Asset Owner.

Figure 4. Channels of influence in sustainable finance.
Source: Own illustration.

The most important private actors in initial financing are commercial banks and infrastructure funds. Their operations differ considerably regarding the two types of company borrowers most relevant for the green transition. First, young and unlisted companies depend on external debt financing for expansion and growth (Mazzucato and Semieniuk, 2018). Second, large, listed and mature corporations tend to finance a larger part of their productive investments out of cash-flows from operating activities. This pertains especially to oil and gas majors, which are highly profitable and can thus expand relatively independently from external funding costs (Christophers, 2021). But although the cost of external debt finance plays a minor role for capital expenditure of these majors, debt still plays an important role for mergers and acquisitions, share-buybacks, and access to liquidity (Caldecott et al., 2022). Furthermore, the numerous smaller and mid-sized independent oil firms depend on external debt.

Between 2000 and 2015, approximately 64% of new external debt financing for the oil and gas sector came from bank loans, followed by 26% from bonds and share-issuance representing just 10% (Cojoianu et al., 2019), underscoring the importance of banks for fossil fuel financing. Although funding has shifted significantly toward corporate bonds since 2020, now making up 50%, banks still play a key role in underwriting bonds (see *refinancing*) and offering standby-credit lines to their corporate customers (Ambrose, 2023). So far, most of the world’s largest banks have not cut financing for new fossil fuel projects (RAN, 2024). However, there exists considerable scope for renegotiation (i.e., worsening) of credit conditions when rolling-over loans, because the oil and gas sector relies on domestic ‘relationship banking’ that goes beyond purely quantitative considerations (Hoepner et al., 2016; Interview 39). Hence, Caldecott et al. (2022) argue that loans pose the strongest (in our words, most *specific*) transmission mechanism between finance and the productive economy.

Refinancing

Once a productive investment has been financed initially, the ensuing asset has to be held until maturity, a process that may involve a variety of balance sheets fulfilling different

functions over the asset's lifetime (Murau et al., 2023). Often, refinancing means substituting initial financing in whatever form with cheaper, tradable debt securities such as a corporate bond. Corporate bonds are typically not issued for a specific project, but against the overall cash-flow of a company, thus lacking attributability. Although this is given in other cases of tradable debt securities such as securitized loans as well, what distinguishes refinancing from initial finance is that these financial flows do not immediately add to new *productive* investment. Hence, they show a lower specificity than initial financing. This 'difficulty of linking funding and investment in a comprehensible, traceable way' (Krahnén et al., 2021: 2) renders the utilization of refinancing instruments for the green transition challenging, because its effective real-world impact often cannot be determined (Langley et al., 2021).

Nevertheless, there are several mechanisms by which refinancing can contribute to more sustainable *productive* investment as a channel of influence. First, it can free up both bank and corporate balance sheet space to finance new initial investments (Interview 9, 26, 73). Second, green bonds may also have certain process-driven impacts on corporate practices, for example, through sustainability-related auditing before issuance or improved access to liquidity due to a broader investor base (Interview 59). Third, the anticipation of lower refinancing costs attached to green-labeled versus conventional securities – the so-called 'greenium' – may incentivize more sustainable productive investment to serve as collateral for future green bond issuance or green securitization (CBI, 2024; Interview 59, 72). The underlying market logic is that if a critical mass of investors shifts portfolio holdings to green-labeled securities, it will affect overall capital costs of corporations significantly enough to impact productive investment (Krahnén et al., 2021).

However, for such a market dynamic to become viable, a sufficient stock of green-labeled securities must be issued in the first place. The total issuance of green bonds has reached a respectable \$2.8 trillion by end-2023 (CBI, 2024). In 2014, green bonds accounted for only 0.6% of all bonds issued in the EU, rising to almost 9% in 2022; globally, however, green bonds accounted for less than 5% of all bonds (EEA, 2023). Despite strong demand and growth in recent years, evidence of an emerging greenium for green bonds is still somewhat ambiguous (Wilkens et al., 2023). Furthermore, most 'green' verifications are confined to disclosure and reporting, excluding the question of real-world impact (Langley et al., 2021). These points suggest that this third mechanism of the refinancing channel of influence is not yet effective in advancing financial flows to sustainable productive investments.

Conversely, refinancing could play a crucial role in curbing flows to unsustainable aims. Capital markets are essentially made up of large, listed corporations, respective underwriting banks (often large investment banks such as JPMorgan Chase), and institutional investors who end up holding fixed-income securities and equities, particularly pension funds and insurers (Interviews 23, 27, 35, 36, 39, 43, 54, 68, 75). Thereby, this (shadow banking) system provides corporations with indirect financing via institutional investors (Kedward et al., 2024). Notably, large asset managers such as BlackRock and Vanguard continue to indirectly fund oil and gas majors in this way without any conditionalities attached (Reclaim Finance, 2023). Since access to liquidity matters for large corporations' business operations, bondholders as well as underwriting banks could reach out to bond issuers at investor roadshows and at debt issuance (see *company engagement*), especially at critical times when companies try to refinance loans with cheaper bonds (Caldecott et al. 2022; IIGCC, 2023; Interview 27, 35, 39). Crucially, this also includes public institutions that act as asset owners – such as public pension and sovereign wealth funds (Babic and Sharma, 2023; Interview 44, 68). Furthermore, a refusal of certain investors to hold bonds pertaining to unsustainable (e.g., coal and oil) corporations (see *divestment*) to a point where liquidity in corresponding markets declines would arguably

disincentivize banks to underwrite such bonds by increasing risks, thus raising the cost of capital and lowering overall business profitability of such sectors (Interview 39, 45).

(Re)insurance

Ever since Stern (2007: viii) termed climate change ‘the greatest market failure the world has ever seen’, policymakers, academics, and financial practitioners sought to ‘fix’ the market by pricing in climate-related risks (Bolton and Kacperczyk, 2021; Campiglio et al., 2022; Crona et al., 2021; Semieniuk et al., 2021). Most of these accounts refer primarily to the ‘outside-in’ dimension of financial risk impinging on incumbent industries and financial actors holding their debt as assets (Campiglio et al., 2022). By contrast, financial risk may also be conceptualized in its ‘inside-out’ dimension as a potential channel of influence by (re)insurance companies, rating agencies, and law firms, governing through one of the financial system’s inherent logics (Folkers, 2024). This entails utilizing risk-pricing to bring risk–return profiles of investments (both *productive* and *financial*) in line with climate science, that is, worsen risk–return profiles of unsustainable investments and – in turn – improve those of sustainable investments.

The risk-related channel of influence with the arguably highest specificity is the outright pricing-in of physical and transition risks by insurance companies and their respective re-insurers. These costs directly impinge on the financial risk associated with productive investments. If (re)insurers stopped insuring new unsustainable productive investments, this would significantly increase the cost of such endeavors and squeeze their profitability vis-à-vis sustainable alternatives. Therefore, CSOs such as ‘Insure our Future’ have called upon 30 (re)insurance companies to immediately stop underwriting new fossil fuel projects (Sims and Jessop, 2023) – a call which has been followed by some in the industry (Allianz, 2023; Interview 23, 36, 42).

On the asset-side, (re)insurers also have strong incentives to improve the sustainability profile of their portfolios (see *engagement* and *divestment*) as their time-horizon is longer than the conventional short-term outlook of most financial market players (Interview 23, 36, 42). Even though several major industry members recently left the Net-Zero Insurance Alliance (NZIA) due to fear of antitrust litigation (Smith and Bryan, 2023), key players in the field announced to stick to their climate goals, above all the world’s biggest re-insurer Munich Re, who already stopped insuring coal-fired plants, coal and oil sand mines, and new oil and gas fields (Interview 23, 42; Sheehan, 2023). The knock-on effects of this decision should not be underestimated, as the cost of re-insuring also affects insurance companies’ risk calculations and pricing. Shortly after Munich Re had made its announcement, Allianz, the world’s second largest insurer, decided to exclude the development of new oil and gas fields, midstream oil-infrastructure, and new oil power plants from their insurance underwriting, including the renewal of existing policies (Allianz, 2023). Such examples among insurance industry competitors suggest a certain peer pressure that may give CSOs influence to drive sustainability in the sector (Interviews 42, 48). However, overall the (re)insurance sector is still far from exhausting its leverage and influence to accelerate the green transition (ShareAction, 2024).

Ratings

Another risk-related channel of influence comprises ratings of climate-related risks. This channel may pertain to the three dominant credit rating agencies S&P, Moody’s, and Fitch, but is currently more utilized by specialized ESG ratings providers such as MSCI, ISS ESG, or Sustainalytics. It is less specific as it operates through financial rather than productive investment, but its breadth is larger because risk metrics often feed into the construction of green-labeled financial indices and influence thousands of investors and companies.

Credit rating agencies include climate change risks in their ratings of credit worthiness, but their ratings have a horizon of only five years or less, whereas the severe risks of climate change manifest themselves during a period of decades. Moreover, credit rating agencies rely on information from corporations that is often not verified (Mathiesen, 2018). In general, the development of ratings is a highly contested process of private *standard-setting*. The question of what counts as '(un)sustainable investment' and thus as relatively risky or not is characterized by conflicting interpretations. Ratings are thus a highly performative form of knowledge production which shapes financial flows to certain asset classes and actors while disregarding others that do not correspond to the epistemic standards employed (Dimmelmeier, 2023).

Recent years have seen the emergence of a private ecosystem surrounding ESG ratings which purports to translate financially material climate-related risks of the corporate sector into measurable and standardized figures (Johnson, 2023). However, almost all ESG ratings lack double materiality, curbing their potential as a channel of influence to shift flows into more sustainable *productive* investment. The reconcilability of the ESG framework with risk-adjusted portfolio investing may explain why this approach has been favored by private-industry initiatives over other, more impactful approaches such as mandatory *company engagement* to mitigate these risks directly on the firm level (Fichtner et al., 2023).

These flaws are illustrative of the essential problem of measuring climate-related risks, namely their inherently political nature. Transition risks require making assessments about the future course of political struggles concerning the green transition (Parfitt and Bryant, 2023), while physical risks are subject to methodological problems, with actuaries openly criticizing that '[f]inancial institutions often did not understand the models they were using to predict the economic cost of climate change and were underestimating the risks of temperature rises' (Hodgson, 2023). This is also exemplary of the inherent limitations of risk disclosures as a market-driven tool of governance in general (Christophers, 2017).

Consequently, ratings of climate-related risks still constitute a weak channel of influence in practice. Nonetheless, both transition and physical risks are very likely to cause a significant share of high-carbon assets to become 'stranded', that is, they will lose their productive value and thus also affect the corresponding financial asset valuations negatively (Caldecott et al., 2021; Semieniuk et al., 2022). By now, this view is shared by the financial industry itself, with the UK's top asset manager warning that a delayed green transition may cause global equity values to drop by a third, while a quarter of current investment-grade bonds could be downgraded (Hodgson et al., 2023). Accordingly, investors now increasingly consider such risks in their portfolio allocation (Interviews 8, 26, 35, 36, 43, 44, 68, 70, 75), which is in turn assumed to incrementally influence firm behavior, leaving high-risk companies with higher risk-premia on their debt and lower valuations of their equity (Schoenmaker and Schramade, 2019; Interview 34, 54).

Climate-litigation

Litigation against laggards in decarbonization (both financial and non-financial firms) constitutes another risk-related channel of influence. Litigation over responsibility for the consequences of climate change has grown sharply over the past few years. What is new is that cases increasingly turn against firms' contribution to global warming in general, not just redress, as had been the case in the past (Hodgson, 2023). The strategy of CSOs, hedge funds, and several private litigation law firms operating this channel of influence is to turn unsustainable high-carbon business practices into a financially material risk – 'so that warnings of "stranded assets" become a self-fulfilling prophecy' (Parfitt and Bryant, 2023). This rise in uncertainty over the future profitability of high-carbon investment essentially

may turn the institution of private law on its head – challenging the predominant legal ‘coding’ of assets that selectively protects private profits despite the negative externalities involved (Pistor, 2019).

A study by the European Central Bank has found that of the 95 largest eurozone banks, 70% could face higher litigation risks because these financial institutions are publicly committed to the Paris Agreement, but their credit portfolios are not yet aligned with this pledge (ECB, 2024; see also NGFS, 2023). Growing attention to greenwashing from states and CSOs has turned legal disputes into a business opportunity, with professional litigation funders backed by institutional investors and hedge funds actively seeking for profitable climate-related claims instead of waiting for class-actions in what one CSO-founder in the field called ‘a golden moment for climate litigation’ (Hodgson, 2023).

One case in which climate-litigation may have played a decisive role already was the withdrawal of finance for new gas field projects of Europe’s second-largest bank, BNP Paribas, in the wake of lawsuits against the latter pursued by CSOs (White and Bryan, 2023). Other high-profile cases include climate-litigation against German utility RWE and oil major Shell (Bryant and Webber, 2024). In total, over 2,300 cases of climate-litigation have been recorded so far (Setzer and Higham, 2023). These events suggest that climate-litigation could serve as a meaningful, albeit unconventional, channel of influence in sustainable finance, especially for CSOs (Weller and Tran, 2022).

Company engagement

The next two channels of influence, company engagement and divestment, fall mainly into the domain of corporate governance and thus mostly concern private asset managers and asset owners. In corporate governance parlance, engagement with company management and the voting of an asset owners’ shares at annual general meetings is referred to as ‘voice’, while divestment – the selling of shares or bonds – is called ‘exit’ (Galaz et al., 2018; Jahnke, 2019a). These channels of influence for sustainable finance are important, considering that the current period is referred to as the ‘age of passive asset management’ in which benchmark stock indices (e.g., the S&P 500) and the firms that create these indices (major index providers such as S&P DJI and MSCI) increasingly shape the capital allocation of many investors, which often merely track these indices via index funds (Jahnke, 2019a; 2019b; Petry et al., 2021). Consequently, active fund managers are in decline, while large passive asset managers that dominate index funds, such as BlackRock and Vanguard, are growing (Braun, 2016; 2021; Fichtner et al., 2017).

Company engagement consists of two main mechanisms through which investors can influence listed companies – proxy voting of their shares at annual general meetings and dialog with top management (Marti et al., 2024 distinguish between public and private voice). Existing research on proxy voting has found that in the past most private asset managers voted all their funds – actively managed funds, passive funds, and ESG funds – in the same way, and they usually voted against shareholder proposals that demanded more sustainability (Baines and Hager, 2022; de Groot et al., 2021; Golland et al., 2022). However, in principle, proxy voting is a channel through which private and public investors can exert significant influence on listed corporations. Shareholder engagement with management is another potentially powerful channel of influence of sustainable finance (Muñoz et al., 2021). Kölbel et al. (2020) found relatively high success rates of shareholder engagement of up to 60%. Hence, in principle, company engagement constitutes a viable channel of influence for sustainability-focused investors to have a positive real-world impact via changing corporate practices toward more sustainability. Initiatives that engage in *coalition-building*, such as Climate Action 100+ have the potential to significantly amplify the effect of engagements (Interview 23, 75).

One episode shows the potential of company engagement. In 2021, the small hedge fund Engine No.1 succeeded in electing three sustainability-minded board members against the will of the management of US oil major ExxonMobil (Coffee, 2021). Most votes at annual general meetings are not legally binding for management, but the election of board members is. Engine No.1 prevailed against ExxonMobil primarily because this activist investor had built a coalition of large private (BlackRock, Vanguard, State Street, and others) and public shareholders, such as the US pension funds CalPERS and CalSTRS (see *coalition-building*). Another element that helped this coalition to succeed was the fact that the influential proxy advisor ISS, to which many shareholders effectively outsource their voting, had recommended voting with Engine No.1 (Coffee, 2021). In hindsight, however, this unique ‘sustainability activism’ has not developed into a persistent trend. One key reason is that ESG funds, the main instruments via which private retail investors are seeking to advance sustainability, neither systematically define nor pursue company engagement – this has been called the ‘ESG shareholder engagement gap’ (Fichtner et al., 2023).

CSOs and public asset owners are crucial for the channel of company engagement. As You Sow, Climate Votes, FollowThis, and ShareAction, for example, organize engagement campaigns and provide analytical work on the proxy voting behavior of private asset managers. Norges Bank Investment Management (NBIM), the Norwegian sovereign wealth fund managing over \$1.5 trillion, is pre-disclosing its proxy voting intentions since 2021. Research has found that NBIM is thereby significantly influencing the voting behavior of the other shareholders (Fahlenbrach et al., 2024). Other public asset owners such as large pension funds from the Netherlands, the UK and the US often pursue forceful company engagement (Interviews 27, 36, 44, 54). CSOs such as Rights CoLab, Center for Active Stewardship and the Interfaith Center on Corporate Responsibility are spreading knowledge to smaller public asset owners about engagement and encourage them to demand company engagement from the private firms that manage their assets (Interview 69, 75). Large private asset managers, such as BlackRock and Vanguard are primarily motivated by maximizing their assets under management. For a short period, they had become more vocal in company engagement, but the recent backlash against decarbonization by the Republicans in the US has caused them to refrain from forceful company engagement (Interview 68, 70, 71). In early 2024, JPMorgan Chase, State Street, and other US asset managers have quit Climate Action 100+ due to ‘intense pressure from Republicans over climate issues’ (Temple-West and Masters, 2024). What this backlash arguably demonstrates is that company engagement is perceived as a very potent channel of influence.

Divestment

There are two different yet interrelated kinds of divestment. The first is more technical and applies when funds sell the stocks of individual listed companies. However, such divestment from specific firms has become difficult or even impossible because many funds nowadays fully replicate existing stock indices, which means that they will only sell stocks if the respective firm is excluded from the tracked index (Petry et al., 2021). The majority of supposedly ‘sustainability-advancing’ ESG funds are effectively tracking benchmark indices (e.g., S&P 500) with the tweak of excluding coal companies and slightly underweighting big oil firms. This is a very weak form of divestment and thus has been called the ‘ESG capital allocation gap’ (Fichtner et al., 2023). Rohleder et al. (2022) have found empirical evidence that (sustainable) funds are able to create ‘decarbonization selling pressure’ thus potentially affecting listed firms. However, others have found that so far divestment has had no significant financial impact on fossil fuel companies (Hansen and Pollin, 2020). Most investors would likely need to practice (sustainability) divestment

for it to have significant effects on listed firms (Wilkens et al., 2023), which seems unrealistic for the foreseeable future. And, as interviewee 69 stressed, the major oil firms have traded with a large discount on the stock market compared to other industries for many years without significantly affecting their business. Arguably an inherent problem of divestment from individual fossil fuel firms is that this reduces the proportion of sustainability-minded shareholders, which means that engagement to drive decarbonization will become more difficult; moreover, as already argued, most oil firms do not need equity for initial financing. Divestment in the segment of bonds is not yet common and might be more effective than divesting from shares, especially if done by large banks (see *refinancing*).

The second dimension of divestment is not narrowly focused on direct financial impact on individual companies. Instead, the focus is much broader about how divestment as a growing societal movement might affect fossil fuel firms and their social license to operate (Cojoianu et al., 2019). This perspective emphasizes that divestment might have significant effects on the public discourse regarding fossil fuels. In the words of Bergman (2018: 1):

While the direct impacts of divestment are small, the indirect impacts, in terms of public discourse shift, are significant. Divestment has put questions of finance and climate change on the agenda and played a part in changing discourse around the legitimacy, reputation, and viability of the fossil fuel industry.

Divestment, especially in its broader form, is shaped by the interplay of civil society and private finance. CSOs, such as 350.org, Carbon Tracker, and Divest USS, have been essential for divestment to become a broader social movement that is increasingly able to influence the ongoing public discourse shift on decarbonization (Ayling and Gunningham, 2017). *Coalition-building* (see section below) is thus a crucial component of divestment in its broad form.

Broccardo et al. (2022) have found that engagement is significantly more effective than divestment in influencing individual listed corporations. Hence, the most important impact of divestment is probably to influence the public discourse on decarbonization and fossil fuel firms rather than to have (measurable) direct financial consequences on individual corporations. Divestment might also have effects by affecting the *reputation* of non-financial firms, banks, and asset managers.

Reputation

The opinion that investors and the public have about financial and non-financial companies matters – this also applies to sustainability, as the salience of this issue is growing significantly. Consequently, reputation can be a significant channel of influence in sustainable finance (Interviews 21, 28, 29, 31, 32, 34, 41, 42). This channel can work in both directions – a positive reputation in terms of sustainability can be beneficial for corporations, while a negative one can clearly entail disadvantageous consequences. In recent years, CSOs have played a central role in naming, blaming, and shaming financial corporations that invest in or provide finance to fossil fuel firms (Interview 7, 13, 48, 65, 66). One key example is the yearly ‘Banking on Climate Chaos: Fossil Fuel Finance Report’ published by the Rainforest Action Network (RAN) in cooperation with BankTrack, Indigenous Environmental Network, Oil Change International, Reclaim Finance, the Sierra Club, and Urgewald (which also shows the importance of *coalition-building*). The report identified the banks that provided the most finance to the fossil fuel industry from 2016 to 2023 – the top five being JPMorgan Chase, Citigroup, Bank of America, Mitsubishi UFJ Financial, and Wells Fargo (RAN, 2024). The fact that these banks have not reduced their

financing of fossil fuels firms substantially in recent years could however indicate that – on its own – reputation is limited as a channel of influence in sustainable finance.

Sustainability-reputation is also becoming important in the segment of asset managers. A global network of more than 20 CSOs has come together under the name of ‘BlackRock’s Big Problem’ to influence the largest global asset manager to do more on climate-related issues (via *company engagement*) – and reputation plays a key role in that process (Bryant and Webber, 2024). Greenwashing has become much more frequent as a strategy to evade reputational loss and negative judgment by the public related to sustainability issues in recent years. The case of the German asset manager DWS shows that greenwashing is now having financially material consequences, as the firm agreed to pay a penalty of \$25 million to the Securities and Exchange Commission for overstating the sustainability of its funds (Palma and Storbeck, 2023). Finally, reputation can also be seen as a major reason for asset managers, banks, and insurance companies to join coalitions for sustainable finance (Schoenmaker and Schramade, 2019; Interview 40).

Coalition-building

Recent years have seen the proliferation of financial governance networks in the form of alliances and coalitions. Among them are the Glasgow Financial Alliance for Net Zero (GFANZ), the Institutional Investors Group on Climate Change (IIGCC), the Paris Aligned Asset Owners Initiative (PAAOI), and many others. Coalitions can be found in the private but also in the public and civil society sphere (Tischer and Ferrando, 2024). Public bodies can furthermore initiate coalition-building in the private sector. UNEP Finance Initiative has for example initiated GFANZ (UNEP FI, 2023). CSOs form relevant coalitions, for example to realize large reports like the annual ‘Banking on Climate Chaos. Fossil Fuel Finance Report’, which is a joint effort from different CSOs (RAN, 2024).

MacLeod and Park (2011: 54) define investor-driven governance networks as ‘coalitions or alliances led by investors (...), formed around a specific public goods issue or issue-areas, in which investors are the primary actor’. Based on this definition and adhering to the integrative approach of this article (i.e., including a variety of private financial actors, not just investors), coalition-building in sustainable finance can be understood as the process of forming coalitions led by different types of private finance actors or joining coalitions launched by the public for strategic reasons. These are formed around sustainability-related public goals and aim to influence the behavior of members and other market participants.

To shape sustainability-related public goals, coalitions in sustainable finance have a variety of tools at their disposal: in the most direct sense these coalitions of financial actors can influence the behavior of their members via information sharing, setting requirements for shared business practice goals, disclosures, monitoring of carbon footprints, and similar measures (MacLeod and Park, 2011; Kawabata, 2019). GFANZ for example is an industry-led but UN-convened network that incorporates industry-specific alliances under its umbrella, for example, the Net-Zero Insurance Alliance (NZIA), the Net-Zero Banking Alliance (NZBA), and the Net-Zero Asset Managers (NZAM) initiatives. Its members are required to set and follow up on science-based targets that lead to a net-zero transition of operations and portfolios by 2050 or sooner (UNEP FI, 2021). Coalitions also play a crucial role in driving company engagement strategies. One major actor is the Climate Action 100+ initiative, which specifically coordinates investor engagement strategies to change the world’s most carbon emitting companies (see *company engagement*). A variety of studies furthermore suggests that financial governance networks are crucial in framing what sustainable finance is and should be, thereby practicing *standard-setting* (Dimmelmeyer, 2023; MacLeod and Park, 2011; Mitchell, 2017). Beyond framing, financial governance networks are major contributors to qualifying what high-

carbon assets are specifically and developing metrics to assess such (Langley et al., 2021). MacLeod and Park (2011) call the rise of financial governance networks on sustainability an emerging form of private global environmental governance.

Our research has found that, in principle, coalition-building can act as a major amplification/support mechanism for many other channels of influence, including company engagement, divestment, and climate-litigation (Interview 10, 13, 23, 33, 35, 36, 40, 44, 55). While there is influence connected to creating coalitions, these processes are far from linear. Coalitions serve as fora for the coordination of competing interests of financial elite actors (Bernauer, 2020), the coordination is not always successful, however. In fact, recent turmoil reveals how coalitions serve as political space where meaning and ambition of sustainable finance are negotiated, sometimes with the result of companies leaving coalitions. The recent exit of several large insurance companies from the NZIA (Smith and Bryan, 2023), the withdrawal of Vanguard from the NZAM (Flood et al., 2023), and the exit of JPMorgan Chase, State Street, and others from Climate Action 100+ (Temple-West and Masters, 2024) show that coalition-building as a channel of influence can also function as a means to weaken sustainability norms via exiting; alternatively, this could be interpreted as highlighting the potential strength of coalition-building, because the Republicans in the US have focused specifically on undermining coalitions in sustainable finance. On the other end of the spectrum, the German GLS Bank left the NZBA in early 2023 in protest over continued financing of fossil fuel explorations by other members (Marsh, 2023), thus advocating for stricter sustainability standards.

Standard-setting

Private actors have gained regulatory authority and standard-setting capability in certain issue-areas (Büthe and Mattli, 2011). This also holds for sustainable finance (Golka, 2024; Interviews 40, 43, 52, 54). One evident example is the case of ESG investing. The term ESG was introduced in a report by the United Nations Global Compact in 2004, but the concrete market standards for how to conduct this kind of ‘sustainable’ investing have been devised by a small group of ESG index providing firms, primarily by one dominant company: MSCI (Fichtner et al., 2023). As Eccles et al. (2020: 581) have shown, by 2010 MSCI decided to advance a methodology ‘as quantitative as possible’ that was well-suited to create investor-friendly products. Concurrently, they discontinued a methodology that addressed double materiality more comprehensively. In essence, the ESG methodologies dominant today are practicing a very weak form of divestment by excluding coal firms from their portfolio while underweighting oil and gas firms. However, using the potent channel of company engagement is not an essential element of their methodology. Mainly following a single materiality logic, most ESG funds seek to reduce sustainability-related risks to investor’s portfolios, they do not strive to change corporate practices toward more sustainability.

ESG investing is a case in which market dominance of a few firms (primarily MSCI) led to a de facto standard-setting. In other issues areas this was achieved by industry associations (i.e., coalition-building) of private actors (e.g., green bond principles and green loan principles). Studies on standard-setting in other industries have shown that standard-setting agencies compete in so-called ‘standard markets’. In the process, standards tend to increasingly converge in that shared certification platforms or industry-wide understandings of good business practices emerge (Reinecke et al., 2012). Concerning divestment, CSOs such as Urgewald have contributed to the setting of market standards by providing databases (Interview 34), while the large public asset owner NBIM is shaping market practices by regularly publishing a list of firms that have been excluded from its portfolio, which is then followed by most institutional investors in Scandinavia (Interview 44).

Standard-setting is the channel of influence with the greatest *breadth*. As an amplification and support channel it can strengthen other channels such as divestment, company engagement or (re)insurance. Conversely, standard-setting can also weaken other channels and sustainability impact by shaping and legitimizing market practices that do not contribute to changing corporate practices toward more sustainability. Moreover, private standard-setting has the potential to pre-structure public regulation (akin to agenda-setting), as was the case with EU regulation on sustainable finance that did not include binding minimum standards for how ‘sustainable’ funds must pursue company engagement.

Conclusion

Under the derisking regime, which is prevalent in the EU and North America, investment for sustainability and decarbonization is primarily delegated to the private sector (see Table 1). One major toolkit of various regulations, standards, principles, and practices which has been used within the derisking regime to foster sustainability and decarbonization in recent years can be subsumed under the term ‘sustainable finance’. Much has been developed regarding market practices and regulation of sustainable finance, especially in the EU. Some estimates suggest that sustainable finance market segments are now amounting to dozens of trillions. Yet, measures of concrete financial flows that advance climate change mitigation do not seem to be positively affected by growing private sustainable finance assets in a very significant way, as for the year 2022 alone there remained an enormous financing gap of \$6.8 trillion (CPI, 2023). This is arguably the case because rising sustainable *financial assets* do not automatically translate into additional sustainable *productive investment*, which is what matters for advancing the green transition (see Figure 1). In fact, many financial products and most private actors are only able to promote sustainability indirectly by influencing corporate practices (see Figure 2).

In this article, we have introduced the novel conceptual framework of channels of influence to elucidate how private financial actors already do and can further exert influence on corporations to drive decarbonization and sustainability within the status quo of state-market relations. This conceptual framework broadens sustainable finance beyond *investing* and *providing finance* to include strategies and mechanisms to *change corporate practices toward greater sustainability* (see Figure 3). The ten channels we have been able to identify based on 75 expert interviews include a great variety of mechanisms ranging from initial financing, which has a high specificity but a low breadth of its impact for sustainability, to reputation, coalition-building, and standard-setting, which exhibit a low specificity but a high breadth (see Figure 4). The elaboration of the channels of influence enables us to draw analytical and practical conclusions. The first is that identifying and assessing the broad scope and implications of sustainable finance practices is crucial to understand the potential and agency of private financial actors, which have become the focal point of current sustainability efforts – both in societal discourse as well as in policymaking. Our conceptual framework sheds light on promising avenues and internal contradictions that we hope to see further elaborated in future research. Second, the framework also provides practical implications. Civil society actors may see these channels as levers of change, which can inform and direct civil actions toward more effective pressure points. The channels of influence may also inform more effective green financial regulation and policymaking, for example, mandatory sustainability engagement for asset managers.

We argue that within the prevalent derisking regime identifying and utilizing all available channels of influence in sustainable finance is a necessary – albeit insufficient – condition to advance the green transition, as there are no political majorities for either a sufficiently high carbon tax or large-scale state-led investments. One crucial obstacle that the current derisking regime approach faces concerning climate change mitigation is that

decarbonization investment is simply not profitable enough (Interviews 9, 31, 39, 75). Profitability is the all-important driving factor for corporate strategies (see Christophers, 2021). Sustainable finance regulations, standards, principles, and practices do not directly alter the profitability of productive investment toward decarbonization but influence corporate practices in various indirect ways. This means that in the sustainable finance derisking regime there is not one strong coordination mechanism – unlike in the (admittedly ideal type) green macrofinancial regimes that rely on either an adequate and effective carbon price (which, however, by now would have severely disruptive socio-political consequences) or use large-scale state-led investments. This lack of one single coordination mechanism means that many different public and private actors have to fill this void through a variety of indirect means. This includes private financial actors, central banks (Aguila and Wullweber, 2024a; 2024b; Schoenmaker, 2021), public development banks (Mertens and Thiemann, 2017), public asset owners (Interview, 44, 68), and various CSOs (Interview 7, 13, 48, 65, 66).

The urgency of global climate change entailing severe medium to long-term risks and the sheer enormity of the challenge to decarbonize developed and developing countries as soon as possible suggest that *private* sustainable finance needs to be complemented by effective *public* sustainable finance (see Golka et al., 2024; Murau et al., 2023). The majority of our 75 expert interviews from eight OECD countries shared this view. Mobilizing substantial public sustainable finance and effective private finance via all channels of influence is urgently needed to address the global climate crisis.

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List of interviews

1. Former senior managing director investment banking, Germany (16 November 2022).
2. Member of supervisory board of large bank, Germany (14 December 2022).
3. Executive director of civil society organization, Netherlands (16 February 2023).
4. Policy director of civil society organization, Germany (10 July 2023).
5. Research director financial markets at institute for research, Germany (13 July 2023).
6. Member of supervisory board of small bank, Germany (1 September 2023).
7. Staff member of civil society organization, Germany (6 September 2023).
8. Head of division of central bank, European Union (18 September 2023).
9. Managing director of financial service provider, Germany (18 September 2023).
10. Manager of sustainable investment fund, Germany (20 September 2023).
11. Head of sustainable finance at civil society organization, Germany (4 October 2023).
12. Staff member of European Union, Belgium (11 October 2023).
13. Staff member of civil society organization, Belgium (11 October 2023).
14. Staff member of European Union, Belgium (11 October 2023).
15. Staff member of European Union, Belgium (11 October 2023).
16. Economist at central bank, South America (25 October 2023).
17. Staff member of European Union, Belgium (26 October 2023).
18. Member of private association on reporting standards, Germany (26 October 2023).
19. Staff member of European Union, Belgium (27 October 2023).
20. Head of research at civil society organization, Belgium (27 October 2023).
21. Director of civil society organization, Netherlands (1 November 2023).
22. Head of sustainable finance of large bank, Germany (7 November 2023).
23. Chief economist of reinsurance company, Germany (10 November 2023).
24. Staff member of central bank, European Union (14 November 2023).
25. Staff member of civil society organization, Belgium (17 November 2023).

26. Head of sustainable finance of large bank, Germany (20 November 2023).
27. Head of sustainability of asset manager, France (22 November 2023).
28. Sustainable finance expert at large bank, France (22 November 2023).
29. Sustainable finance and regulation expert at large bank, France (22 November 2023).
30. Head of sustainable finance at civil society organization, Germany (27 November 2023).
31. Head of sustainable finance of large bank, Germany (4 December 2023).
32. Project manager sustainability of large bank, Germany (4 December 2023).
33. Member of supervisory board of asset manager, Germany (4 December 2023).
34. Chief executive officer of financial service provider, Switzerland (11 December 2023).
35. Climate investment analyst at insurance company, Switzerland (12 December 2023).
36. Managing director at asset manager, Germany (13 December 2023).
37. Head of sustainability of small bank, Germany (13 December 2023).
38. Managing director at asset manager, France (19 December 2023).
39. Head of sustainability for markets and securities at large bank, UK (15 January 2024).
40. Sustainability expert at consulting firm, UK (15 January 2024).
41. Head of sustainability risk at large bank, UK (15 January 2024).
42. Head of ESG at reinsurance company, UK (16 January 2024).
43. Chief responsible investment officer at asset manager, UK (16 January 2024).
44. Head of risk monitoring at public asset owner, UK (17 January 2024).
45. Vice president Sustainability at large bank, UK (17 January 2024).
46. Head of sustainability at large bank, UK (17 January 2024).
47. Vice president climate and ESG at large bank, UK (17 January 2024).
48. Senior engagement manager at civil society organization, UK (18 January 2024).
49. Director for green finance at public development bank, UK (18 January 2024).
50. Executive director green finance at research institute, UK (19 January 2024).
51. Staff member of European Union, Belgium (22 January 2024).
52. Managing director responsible investment at public asset owner, NL (22 January 2024).
53. Director sustainable finance at industry association, UK (1 February 2024).
54. Head of sustainability client advisory at asset manager, NL (5 February 2024).
55. Head of sustainability at industry association, Germany (22 February 2024).
56. Head of sustainability at industry association, Germany (22 February 2024).
57. Staff member of European Union, Belgium (22 February 2024).
58. Expert in Sustainable Finance at central bank, European Union (29 February 2024).
59. Director of technical development at not-for-profit organization, UK (6 March 2024).
60. Senior analyst at national regulator, European Union (11 March 2024).
61. Former regulator, Germany (19 March 2024).
62. Senior researcher at civil society organization, Germany (27 March 2024).
63. Senior researcher at civil society organization, NL (28 March 2024).
64. Expert at public-private partnership, Germany (11 April 2024).
65. Finance expert at civil society organization, Germany (22 April 2024).
66. Senior researcher at civil society organization, France (26 April 2024).
67. Lead ESG fixed income capital markets at bank, US (27 May 2024).
68. Chief ESG officer at public asset owner, US (28 May 2024).
69. Executive director at civil society organization, US (28 May 2024).
70. Former fund manager fixed-income, US (28 May 2024).
71. Managing director at civil society organization, US (29 May 2024).
72. Capital markets analyst at bank, US (30 May 2024).
73. Capital markets analyst at bank, US (30 May 2024).
74. Sustainable finance lead at bank, US (31 May 2024).
75. Co-founder of civil society organization, US (25 June 2024).

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