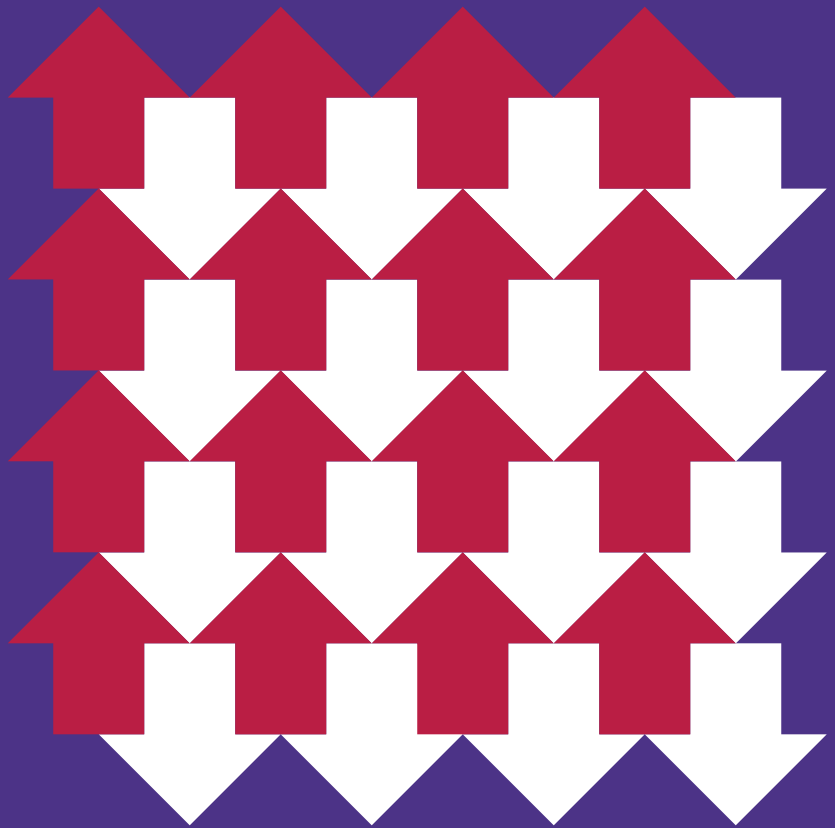


11/2022

# Making finance consistent with climate goals?

Taking stock of the financial sector's climate related investment commitments



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## Authors

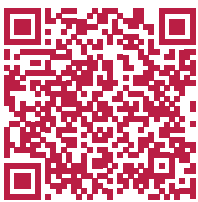
Aki Kachi  
Mats Marquardt

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# Summary

## **Climate has arrived on the financial world's agenda – ambition is still a question**

Climate change has clearly arrived on the financial world's agenda. The number of asset owners and asset managers joining international climate initiatives is growing, and financial institutions increasingly set dedicated climate targets. Of the 50 largest asset managers and asset owners, 90% and 30% of these assets respectively are under a net zero or carbon/climate neutrality target.

GFANZ, the Glasgow Financial Alliance for Net Zero, was founded in 2021 as an umbrella for a number of initiatives within the broader financial landscape under the "Race to Zero" campaign. Already less than one year after its founding, GFANZ's membership has grown rapidly to include a significant share of global assets under management but GFANZ's direct link to the Race to Zero campaign has been severed over tensions regarding the ambition of respective membership criteria. The apparent trade-off between ambitious climate criteria and retaining broad participation is a challenge that raises questions around the potential impact of the alliance.

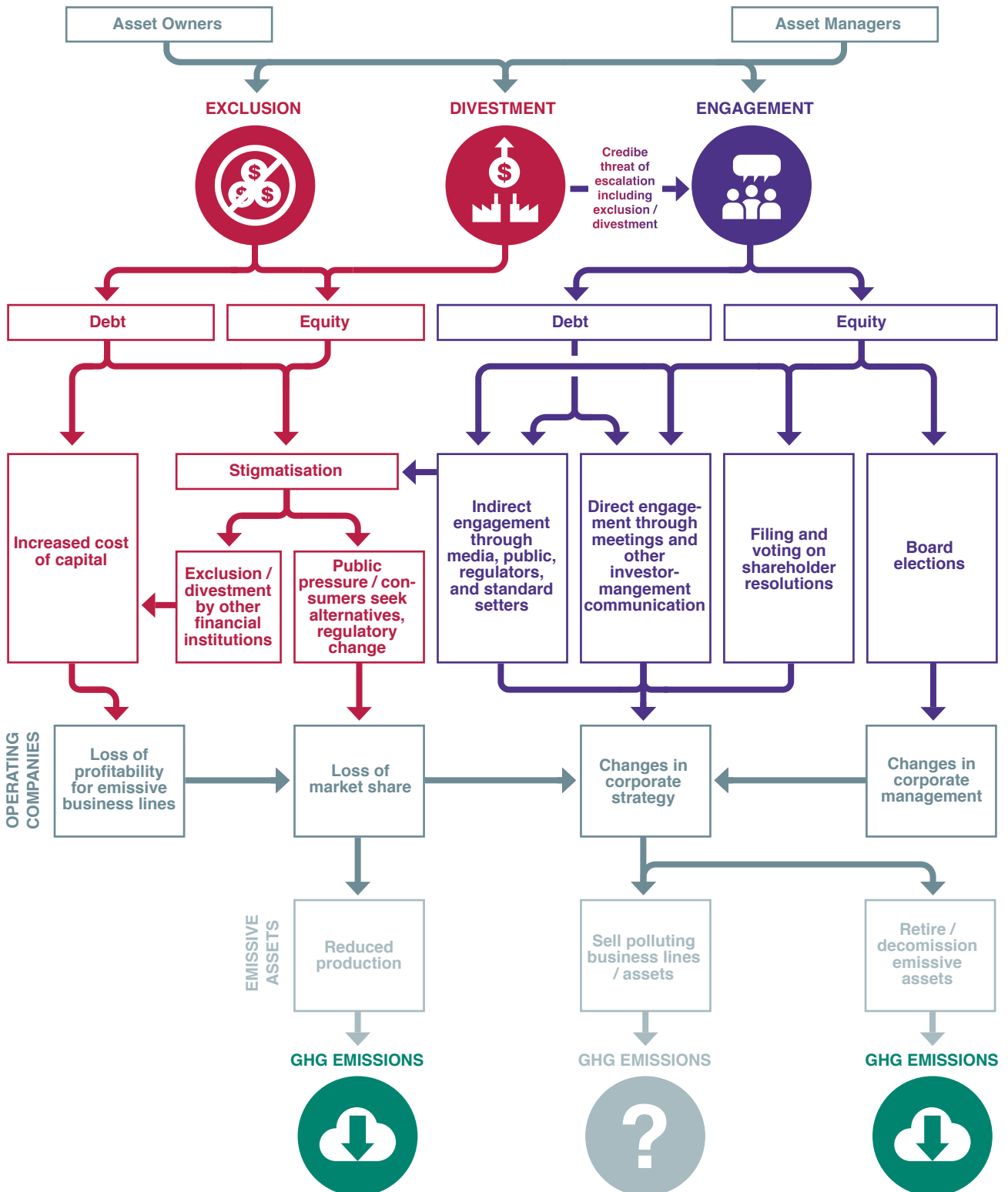
## **Net zero portfolio targets are not the right instrument for 1.5°C**

The indirect link between investors, capital markets, companies, and polluting activities, means that exactly how an investor's decisions affect actual emissions levels

in the real economy remains poorly understood. Net zero or related targets on the portfolio level, are generally not an accurate reflection of the important potential role that financial institutions can have as financiers of the rapid transition the world needs.

At the same time, the increasing concentration of decision-making in capital markets, accelerated by the passive investing trend, means that especially the largest asset managers have an outsized influence on companies' access to capital and their climate strategies. The largest asset managers and asset owners have become "universal owners", with portfolios exposed to a significant portion of all global assets. Their broad exposure means that universal owners' interests have become synonymous with stable economic growth around the world, to which climate change poses a direct threat. As such, it should be in the interest of universal owners to ensure that the emissions intensive parts of their portfolios shift to mitigate the threat of climate fuelled value destruction on their overall portfolio. Despite the growth in target setting, inertia has meant that asset managers and asset owners have not yet meaningfully moved to pressure their high-emitting investee companies to shift towards a decarbonisation pathway.

**Figure 1**  
Complete ownership chain and influence channel overview.



Source: Produced by authors.

### **It is essential that investors take advantage of the leverage they have**

Asset owners and managers have three main channels to influence emissions in the real economy: exclusion, divestment, and engagement (see Figure 1). Interrelated and potentially mutually reinforcing, their potential to support increased climate action in both debt and equity markets are underutilised. In order to make financial flows consistent with the Paris Agreement, asset owners and managers need to take much more advantage of the leverage they have (see Figure 2).

**Exclusion**, and particularly the ability to deny companies' ability to roll over the large amount of bond debt that will mature in the current "critical decade", gives institutional investors significant control over corporates' access to capital. This control also means that institutional investors have significant leverage when engaging with companies on their climate strategies. Currently, however, only about 50% of the 50 largest asset managers and less than 20% of the largest 50 asset owners have climate-relevant exclusion policies, and most exclusion policies have large gaps in coverage or have other loopholes.

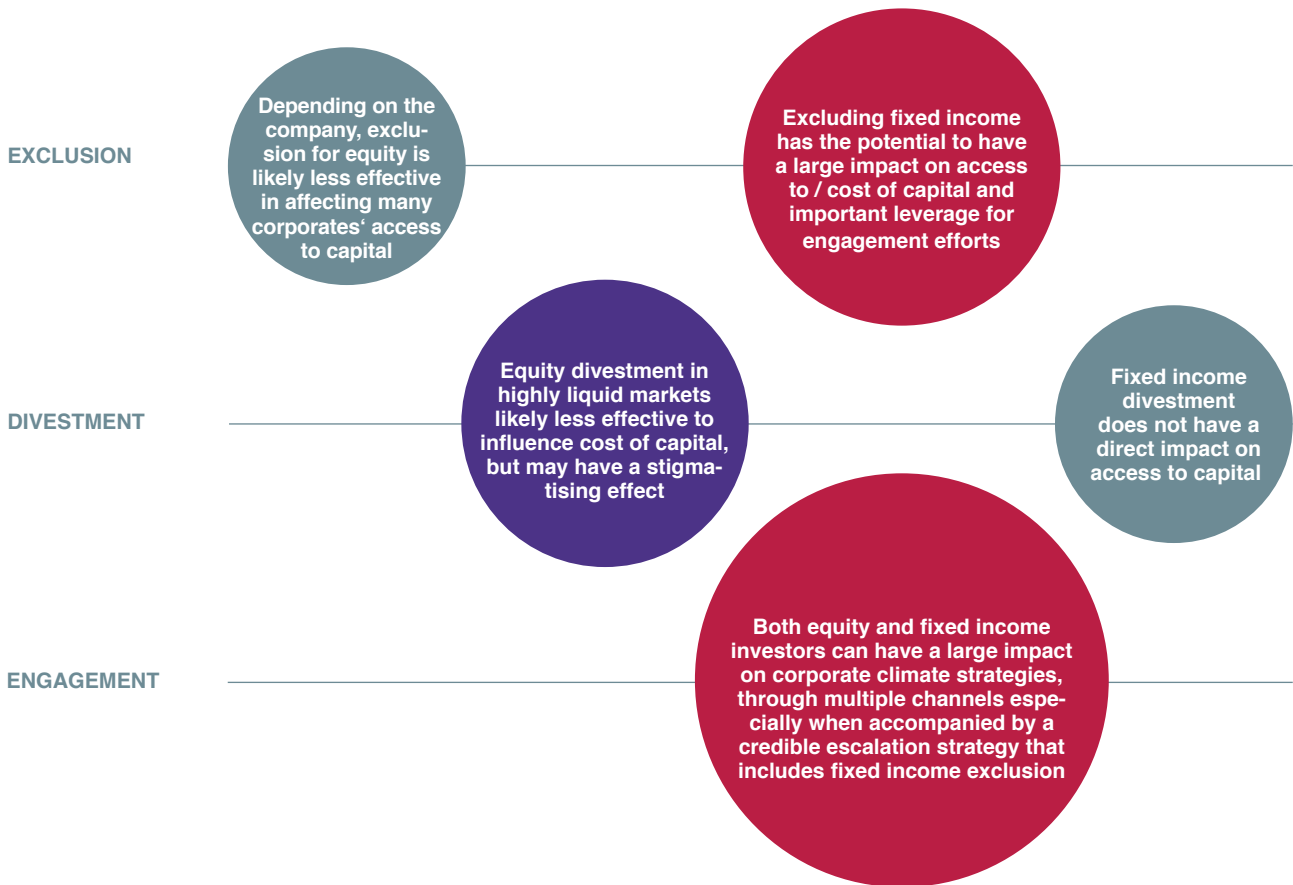
**Divestment** in equity and fixed income markets may help insulate investors from future stranded assets but has only an indirect impact on the cash flow of companies, especially in liquid markets, given the continued number of neutral investors. The stigmatising impact of divestment campaigns may however have an indirect effect depending on a number of geographical and media-related factors. Less than 10% of the largest 50 asset managers and largest 50 asset owners have divested from emissions-intensive assets or made climate-relevant divestment commitments to date.

Although hard to measure with objective criteria, **engagement** efforts are likely generally underutilised. While activist investors have started to engage in climate issues on corporate boards and in annual shareholder meetings, their success largely depends on their ability to convince and mobilise a critical mass of larger institutional shareholders to support their efforts. The high cost of understanding and forming a position as a basis to engage with many thousands of companies is a challenge for most institutional investors, which has made them highly reliant on the research and recommendations of proxy advisors. The recommendations of these proxy advisors are often likely not in line with the overall international climate commitments of institutional investors and institutional investors could benefit by more clearly communicating their climate commitments to proxy advisors and growing their in-house engagement teams to better identify opportunities to influence corporate climate strategy development and implementation.

Given the urgency of action in this critical decade, it is in everyone's interest – including the largest asset owners and managers – to rapidly ramp up use of these strategies to help corporates realise the business opportunities to be found in deep decarbonisation and avoid the worst impacts of climate change.

**Figure 2**

Exclusion, divestment, and engagement: Effectiveness is context-specific.



Source: Produced by authors.

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## Abbreviations

<b>AGM</b>	Annual general meeting
<b>AUM</b>	Assets under management
<b>CBI</b>	Climate Bonds Initiative
<b>CSRD</b>	Corporate Sustainability Reporting Directive
<b>EIB</b>	European Investment Bank
<b>ESG</b>	Environmental, Social, and Governance
<b>ESMA</b>	European Securities and Markets Authority
<b>ETF</b>	Exchange traded fund
<b>FI</b>	Financial institution
<b>GFANZ</b>	Glasgow Financial Alliance for Net Zero
<b>GHG</b>	Greenhouse gas
<b>GRESB</b>	Global ESG Benchmark for Real Assets
<b>GRI</b>	Global Reporting Initiative
<b>GSSB</b>	Global Sustainability Standards Board
<b>ICMA</b>	International Capital Market Association
<b>IIGCC</b>	Institutional Investors Group on Climate Change
<b>IPCC</b>	Intergovernmental Panel on Climate Change
<b>IPO</b>	Initial public offering
<b>NFGS</b>	Network for Greening the Financial System
<b>NZAM</b>	Net Zero Asset Managers
<b>NZAOA</b>	Net Zero Asset Owner Alliance
<b>NZBA</b>	Net Zero Banking Alliance
<b>NZIA</b>	Net Zero Insurance Alliance
<b>OECD</b>	Organisation for Economic Co-operation and Development
<b>PACTA</b>	Paris Agreement Capital Transition Assessment
<b>PCAF</b>	Partnership for Carbon Accounting Financials
<b>PRI</b>	Principles for Responsible Investment
<b>SBTi</b>	Science Based Targets initiative
<b>SEO</b>	Seasoned Equity Offering
<b>TCFD</b>	Task Force on Climate Related Financial Disclosures
<b>UNFCCC</b>	United Nations Framework Convention on Climate Change

# 1 Introduction

Climate change is a challenge that is impossible to ignore and is increasingly making its way into investors' agendas. The Paris Agreement not only calls for limiting global temperature rise to well below 2°C – ideally no more than 1.5°C – it also specifically calls for making finance flows consistent with a pathway towards lower greenhouse gas (GHG) emissions and climate resilient development (UNFCCC, 2015).

While a growing number of asset owners and asset managers are setting “net zero” targets and joining international climate initiatives, “net zero” or related targets on the portfolio level are generally not an accurate reflection of the important potential role that financial institutions can have as financiers of change in the real economy (Bendahou, 2022; Koliaï et al., 2022). At the same time, the increasing concentration of decision-making in capital markets, accelerated by the passive investing trend, means that especially the largest asset managers have an outsized influence on companies' access to capital and their climate strategies, but cannot simply divest to achieve a portfolio target.

Too much finance continues to flow into emissions-intensive capital stock, locking-in continued emissions far into the future, expanding the assets at risk of stranding (Semieniuk et al., 2022), and leading to more current and future financial losses from the impacts of climate change. Now, more than ever, financial actors need to make robust commitments with ambitious targets and follow up on them with rapid implementation schedules. These efforts need to be accompanied by research on

financial institutions' strategies and robust accountability mechanisms to track shifts in financial flows.

Following on “Unpacking the Finance Sector's Climate Related Investment Commitments”, this report seeks to provide an updated assessment of the current status of asset owners' and asset managers' efforts to align the sector with the Paris temperature targets. It analyses recent momentum around sustainable finance more generally, including the Race to Zero (RtZ) campaign and the Glasgow Financial Alliance for Net Zero (GFANZ), but scrutinizes the overall direction of travel and the effectiveness of concrete steps taken so far.

## 1.1 Approach

Lütkehermöller et al. (2020) examined the landscape of financial sector initiatives in 2020, including the tools financial institutions use to translate climate-related investment targets into emission reductions in the real economy. This report provides an update on key developments in financial sector initiatives since then and further explores cause-effect chains with a focus on asset owners' and managers' equity and fixed income investments. Academic literature examining an investor's influence on companies' behaviour, including their climate strategies, has primarily focused on **divestment** and **engagement**, or as Hirschman described it, “Exit” and “Voice” (Hirschman, 1971). Another influence channel, **exclusion** or “denial of (re)entry”, has

recently been further discussed as distinct from divestment (Hoepner and Schneider, 2022). This report reviews literature with regard to the “impact” or “effectiveness” of these strategies in terms of their influence on reducing emissions in the real economy, including a discussion of relevant contextual factors that may affect that impact.

This report further examines current practices of the world’s 50 largest asset managers and 50 largest asset owners with regard to exclusion, divestment, and engagement (see Annex 2 for list of financial institutions considered)<sup>1</sup>. The report tracks several indicators to measure the pursuit of these strategies in publicly listed equity and fixed income markets (see Table 1), acknowledging that no set of indicators can fully describe financial institutions’ exclusion and divestment policies or their engage-

ment efforts. Unless stated otherwise, data on these indicators has been compiled from publicly available reports and announcements of the 50 largest asset managers and 50 largest asset owners.

Other capital markets, including private equity, sovereign lending, and bank loans, while highly relevant, are beyond the scope of this paper. In addition, further scrutiny of other kinds of financial services including treasury services, underwriting, insurance, and advisory are also relevant and referred to but are generally outside the main scope of this paper. Further, with regard to strategies to reduce emissions in the real economy, this paper concentrates on corporates, rather than the sovereign debt market, which equally requires separate investigations for how investors can maximise their impact.

**Table 1**

Indicators reflecting exclusion, divestment, and engagement trends.

STRATEGY	INDICATOR
<b>Exclusion</b>	<ul style="list-style-type: none"> <li>• Institutions with exclusion policies</li> <li>• Sectoral coverage of exclusion policies (upstream coal, downstream coal, upstream oil and gas, downstream oil and gas, deforestation)</li> <li>• Scope of exclusion policy (full / earmarked finance)</li> <li>• Threshold stringency (where applicable)</li> </ul>
<b>Divestment</b>	<ul style="list-style-type: none"> <li>• Number of announced divestment decisions</li> </ul>
<b>Engagement</b>	<ul style="list-style-type: none"> <li>• Institutions with climate-relevant engagement policies</li> <li>• Number of staff in engagement / stewardship team</li> <li>• Number of shareholder resolutions</li> <li>• Number of successful shareholder resolutions</li> <li>• (Voting in election of board members)</li> </ul>

<sup>1</sup> Although positive impact investment represents an important influence channel for financial institutions, this report does not attempt to analyse its effectiveness, primarily due to the difficulty of evaluating the additionality and intentionality of positive impact investments (Busch et al., 2021).

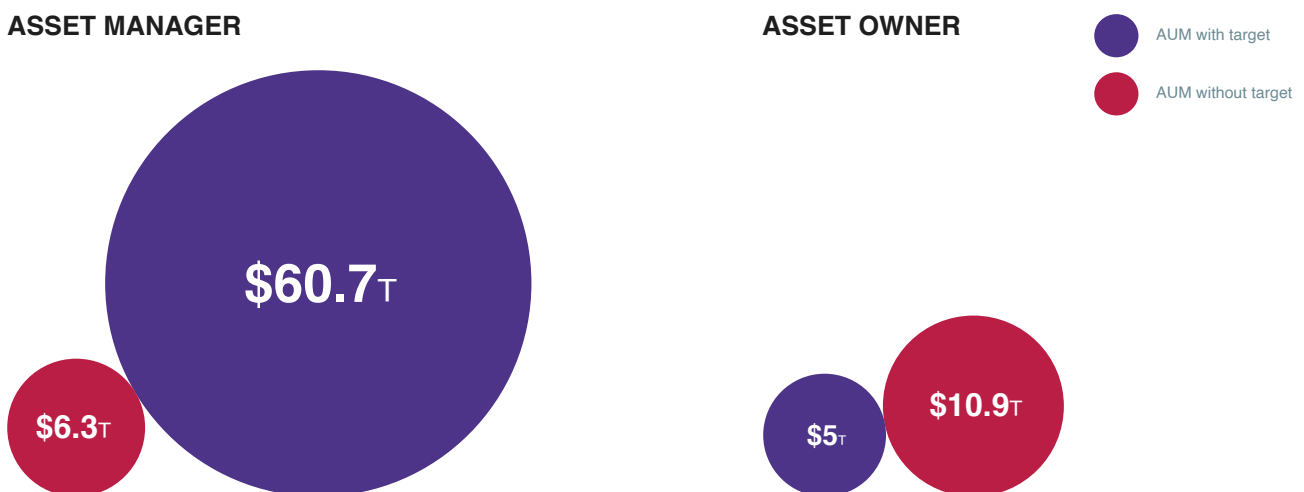
# 2 Financial sector climate initiatives

Financial institutions are under growing scrutiny from regulators, civil society and the broader public with regard to their climate impact and response. Further, the financial sector has also caught the attention of the UNFCCC outside the scope of the official negotiations. In response, financial institutions are increasingly following their real-economy counterparts in setting climate strategies and targets and joining financial sector climate initiatives. Their strategies and targets vary but increasingly include pledges for “net zero” or “carbon/climate neutrality”<sup>2</sup> (see Figure 3). Of the 50 largest asset managers, 90% of the assets are under a net zero target. A third of the assets

of the 50 largest asset owners are under a net zero target. However, approaches to setting net zero targets are often vague, lack standardization and are, so far, subject to limited – but growing – regulatory oversight (Hodgeson, 2022). Although it is clear that limiting global warming to 1.5°C calls for “rapid and far reaching transitions in all aspects of society” (IPCC, 2018), there is a continuing challenge in breaking the global target down to sectors, especially for corporate and institutional investors. A number of initiatives, notably the Race to Zero and the Glasgow Financial Alliance for Net Zero have started to try and establish guidance.

**Figure 3**

Assets under management (AuM) covered by 2050 climate targets (out of the 50 largest asset managers and 50 largest asset owners). Climate targets refer to net zero, carbon/climate neutrality, as well as broader net zero-alignment targets.



Source: Produced by authors.

<sup>2</sup> These terms are sometimes used interchangeably, and often lack a clear definition in terms of scope and the role of netting.

## 2.1 Race to Zero

The Race to Zero (RtZ) campaign is the largest alliance of non-state actors committed to achieving net zero carbon emissions by 2050, seeking to mobilise non-state actors including financial institutions to set net zero targets and deliver required action (UNFCCC, 2021b). Backed by the UN, the campaign brings together a coalition of leading net zero initiatives all committed to delivering “climate action in line with halving global emissions by 2030 and achieving net zero emissions by 2050 at the very latest” (Climate Champions, 2022d, p. 1). RtZ has developed participation criteria for its members including for financial institutions, to provide high level guidance in terms of what targets are appropriate, how to implement them, and the timeline for meeting commitments, i.e. “a minimum floor for robust net zero commitments” (UNFCCC, 2021b; Race to Zero, 2022b). Within 12 months of joining the Race to Zero campaign, actors need to publicly disclose a plan that outlines how participation criteria will be met. RtZ participation criteria, at the time of writing, comprise of the following (Climate Champions, 2022c; Race to Zero Expert Peer Review Group, 2022):

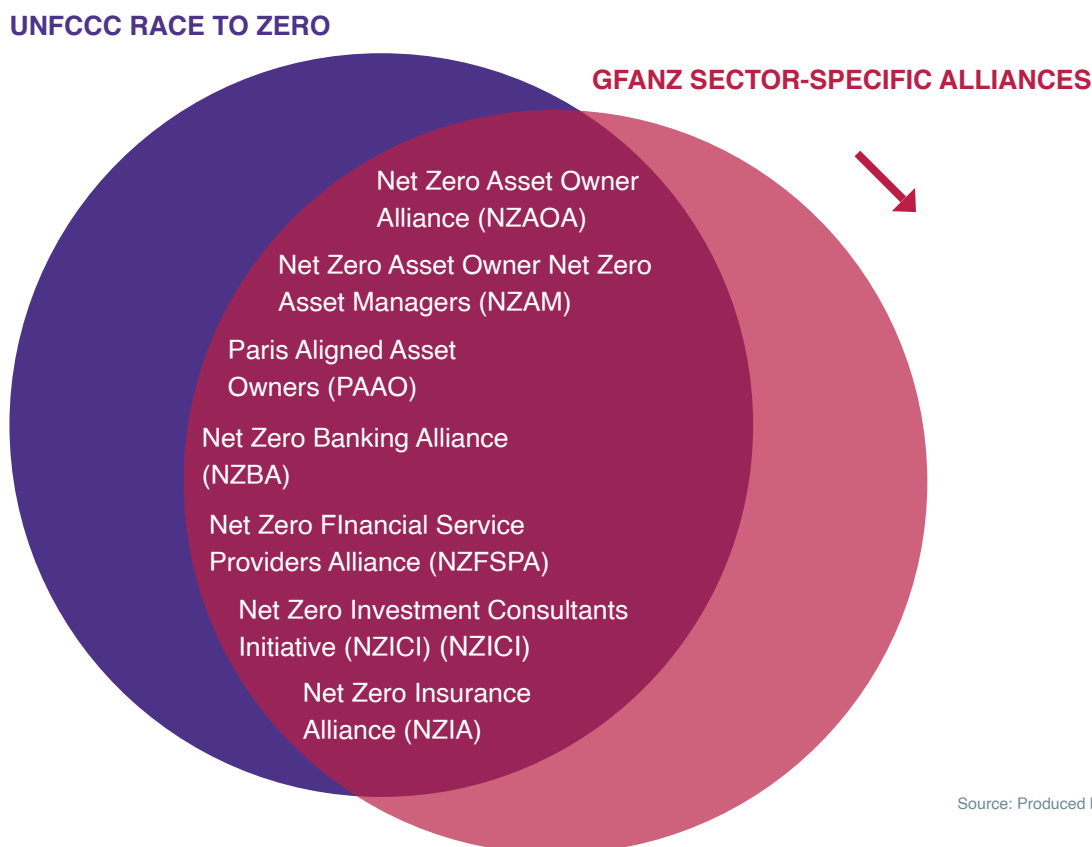
- **Target:** Actors need to set an end target and claim net zero GHG emissions by 2050 following science-based emission reduction pathways, with remaining GHG emissions being fully neutralised via permanent removals or through offset credits.
- **Scope:** The net zero target must cover at least 90% of emissions, including scope 3 emissions such as portfolio / loan book / insured / facilitated emissions.
- **Fair share:** Actors need to operationalise a fair share and equity concept reflecting different sectors’ or actors’ unique roles and varying timelines in driving decarbonisation.
- **Appropriate scenarios:** Actors must define pathways according to recognised climate science scenarios, without reliance on unproven technologies to reverse overshoot.
- **Fossil fuel phase down and phase out:** Actors must phase out the developing and financing of unabated fossil fuel assets, including coal, in line with science-based scenarios.
- **Halting deforestation:** Actors are required to set commitments to stop deforestation across their value chains by 2025. This criterion does not explicitly refer to financial institutions’ financed deforestation.
- **Target type:** Actors are asked to set absolute emission targets to ensure real-world reductions.

## 2.2 Glasgow Financial Alliance for Net Zero (GFANZ)

GFANZ was launched in 2021 by UN Special Envoy on Climate Action and Finance Mark Carney and the COP26 Presidency in direct partnership with the Race to Zero campaign (GFANZ, 2021a). The alliance brings together a number of pre-existing initiatives for various financial service providers (asset owners, banks, asset managers, insurance companies, and others) all promising to achieve net zero GHG emis-

**Figure 4**

Race to Zero and GFANZ alliances: The future of GFANZ sector-specific alliances within RtZ is unclear. The future of GFANZ sector specific alliances within RtZ is unclear institutions with climate targets.



Source: Produced by authors.

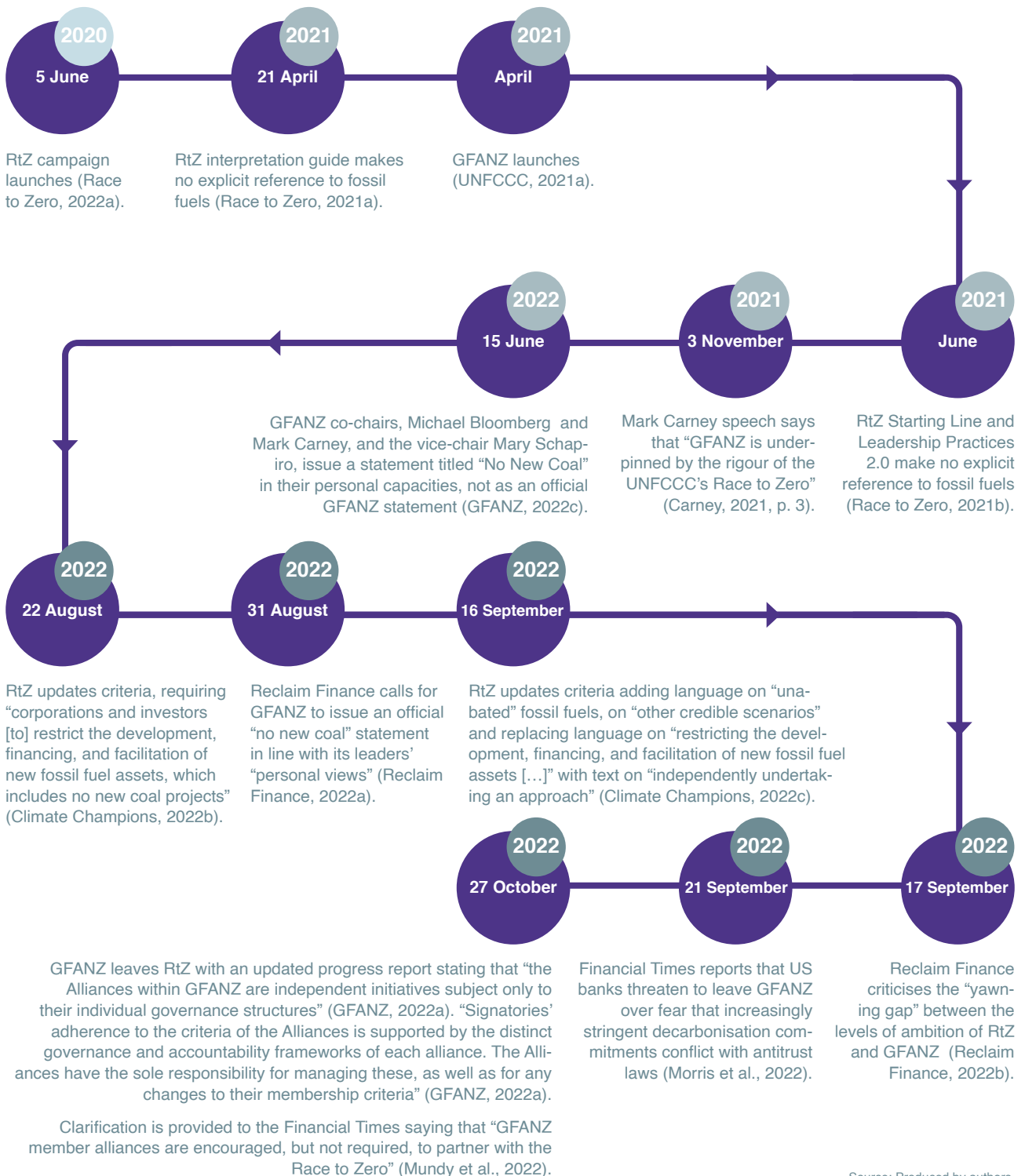
sions by 2050 (GFANZ, 2022b) (see Figure 4). Over 500 financial institutions, representing more than USD 130 trillion in assets under management, had initially subscribed to the Race to Zero campaign through their membership in GFANZ (GFANZ, 2021b, p.11; Climate Champions, 2022a). GFANZ, however, has “quietly quit” the RtZ campaign in October 2022 (Mundy et al., 2022; ReclaimFinance, 2022), granting GFANZ members more flexibility regarding compliance with RtZ participation criteria.

The individual GFANZ alliances are, as of the end of October 2022, still members of the RtZ campaign, but this commitment is no longer a requirement for GFANZ members. According to GFANZ’s latest

progress report, its individual alliances are “independent initiatives subject only to their individual governance structures” (GFANZ, 2022a). Further, the alliances carry “the sole responsibility for managing” accountability frameworks, “as well as for any changes to their membership criteria” (GFANZ, 2022a).

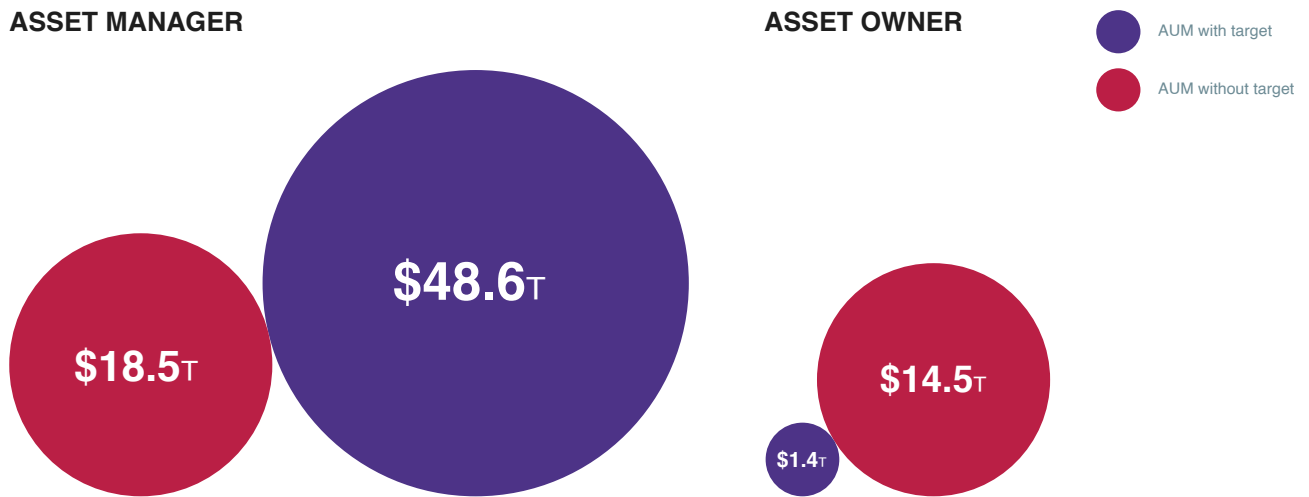
GFANZ departure from the Race to Zero was preceded by a lengthy debate about RtZ ratcheting up its criteria on restricting finance for fossil fuels in general, and coal in particular (see Figure 5). Collectively, GFANZ initiatives cover a significant aggregate value of assets under management (see Figure 6), but few financial institutions currently exclude coal finance.

**Figure 5**  
Timeline of RtZ and GFANZ debate.



**Figure 6**

GFANZ membership by AuM (out of the 50 largest asset managers and 50 largest asset owners).



Source: Produced by authors.



# 3

## The financial sector's role in driving transition

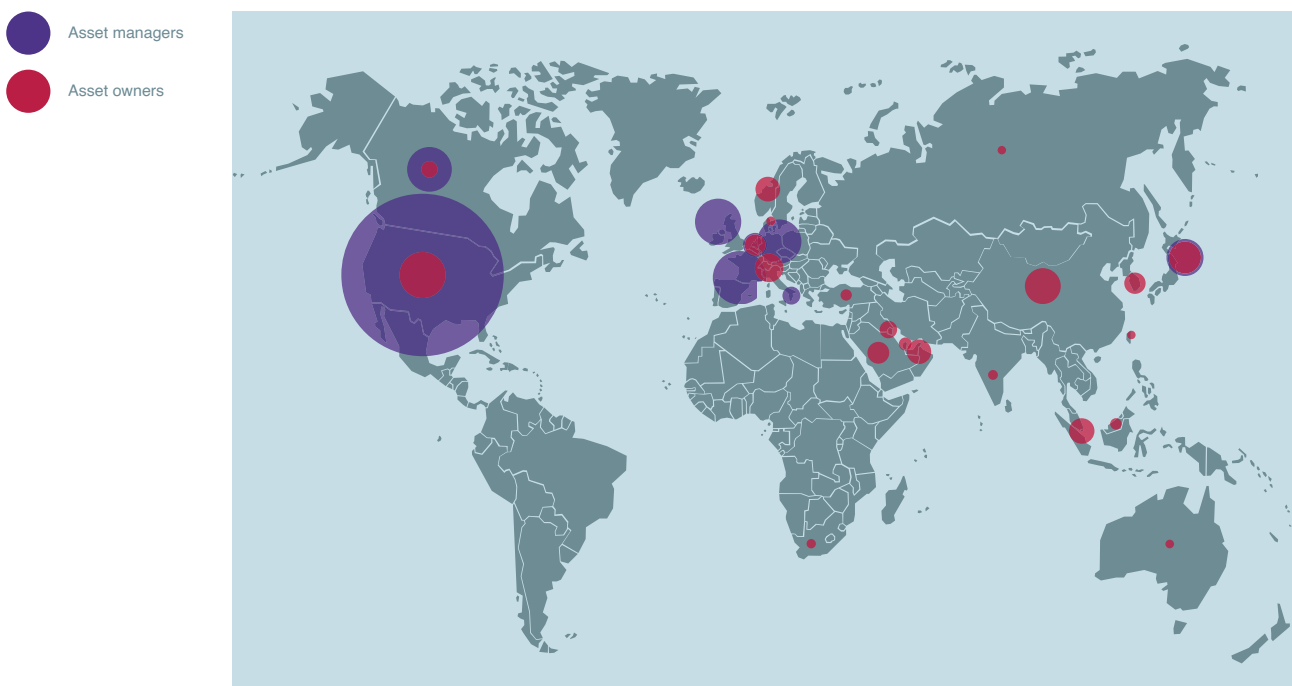
The 50 largest asset owners, the majority of which are pension or sovereign wealth funds, held almost USD 16 trillion in assets in 2021 (Thinking Ahead Institute, 2020) (see Figure 7). Asset owners can have impact on investment decisions, both by choosing criteria for what assets they want to own, and in their selection of whom they want to manage those assets.

The 50 largest asset managers, including big financial institutions such as BlackRock, Vanguard, and State Street

Global, held more than USD 67 trillion of assets under management in 2021 (ADV Ratings, 2021). Large asset managers manage assets for institutional asset owners and retail investors. Their portfolios represent more than a quarter of the total global value of professionally managed assets worldwide (SIFMA, 2022) and collectively represent a large portion of the shares in most publicly listed companies. According to Lazard (2021), in 2021, the “big three” asset managers (Vanguard, BlackRock, and

**Figure 7**

Geographical location of the 50 largest asset managers and 50 largest asset owners (total AuM aggregated by country).



Source: Produced by authors based on Thinking Ahead Institute (2020) and ADV Ratings (2021).

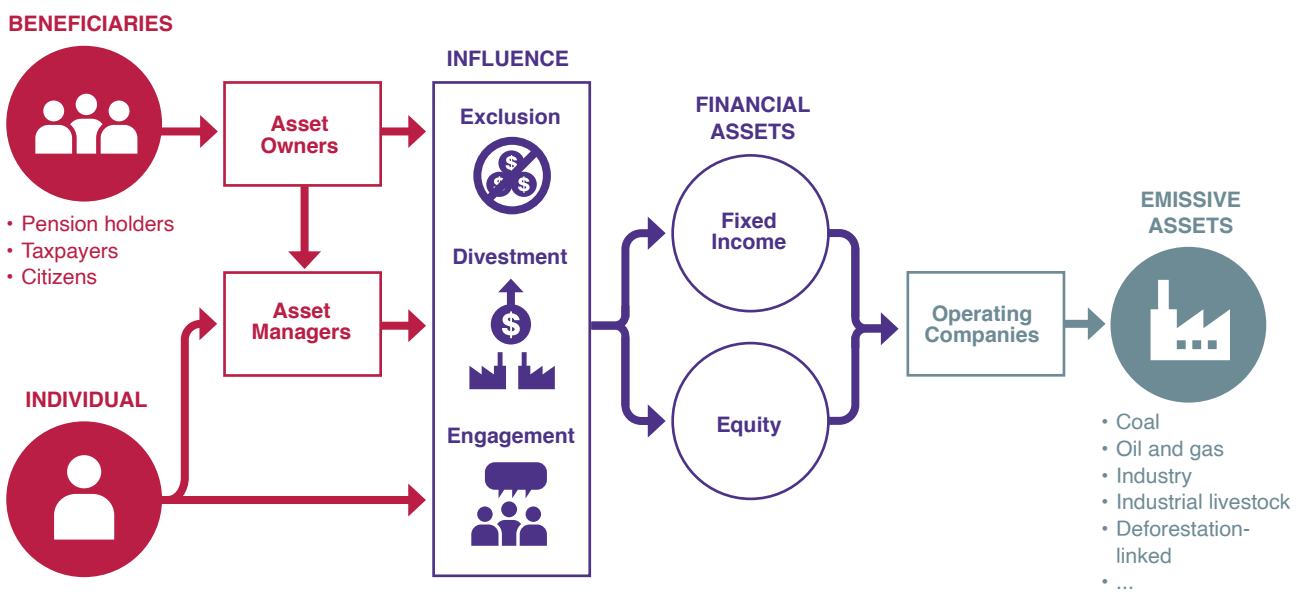
State Street) together controlled 22.8% of the S&P 400, and 28.2% of the S&P 600. Although global data is less clear, there are similar trends outside the United States.

This concentration of financial institutions' asset control is linked to the growing share of capital in passive funds tracking entire markets, managed by these institutions (Bloomberg Intelligence, 2021). Large investors, in their capacity as owners and managers of these passive investments, are exposed to a representative portion of global capital assets: they have become what Hawley and Williams (2000) call "universal owners". Because of their broad exposure, universal owners' interest become synonymous with stable economic growth, to which climate change poses a direct threat. As such, it should be the interest of universal owners to ensure that emissions-intensive<sup>3</sup> investee companies do not have negative impacts on their overall portfolio.

### 3.1 Emissive asset ownership chain

The relationship between financial assets (see Figure 8) and GHG emissions is complex and multi-layered, with ownership separated from direct control. Financial institutions with stakes in an emissions-intensive company (e.g. by owning bonds or shares) bear responsibility for the emissions they finance, but often only hold tradable claims over revenues and do not have direct managerial control over the emissive assets. This separation of ownership and control has critical implications for financial institutions' climate targets, their overall role as financiers of transitions, and for how financial institutions should align financing accordingly.

**Figure 8**  
Ownership chain and influence channels.



Source: Produced by authors drawing on InfluenceMap (2018).

<sup>3</sup> "Emissions-intensive" companies, sectors, activities, or assets generally refers to emissions of carbon-, methane-, nitrous oxide- and fluorinated gases, unless stated otherwise. However, the report concentrates primarily on carbon and methane emissions as specifically associated with fossil and industry sector activities, as well as land use change. Other conditions further inform the atmospheric concentration of CO<sub>2</sub>e and the earth's surface temperature but are out of the scope of the paper.

## 3.2 “Net Zero” and target setting

Financial institutions, following their real-economy counterparts, increasingly set “net zero” or “climate/carbon neutrality” targets. These targets are often embedded in the target setting frameworks of sector initiatives such as the Glasgow Financial Alliance for Net Zero and others. These targets can be misleading or even be counterproductive, where there is an excessive emphasis on portfolio emissions and neglect the broader role financial institutions play in financing economy-wide transitions, as well as financial institutions’ channels of influence.

The Net Zero Asset Owner Alliance (NZAOA) has the most comprehensive target setting protocol of the GFANZ initiative, calling not only for Paris-alignment of investment activities, but also prescribing concrete Paris-aligned medium and long-term reduction targets (see also [Box 1](#)) for both fixed income and equity investments (UNEP, 2022). The Net Zero Asset Managers initiative (NZAM) requires its members to pledge to support the goal of net zero emissions by 2050, and requires members to set an “interim target for 2030 consistent with a fair share of the 50% global reduction in CO<sub>2</sub> identified as a requirement in the

IPCC special report on global warming of 1.5°C” (NZAM, 2021, p. 1), however, only for the share of assets that the financial institution commits to “be managed in line with the attainment of net zero emissions by 2050” (NZAM, 2021, p. 1).

The 1.5°C temperature target dictates that all economic actors, in aggregate, will need to achieve climate neutrality by 2050. This is a global goal, rather than a goal of any individual portfolio, although if the world decarbonises, the portfolios of financial service providers will decarbonise. In the meantime, in order to contribute to the global goal, it is less important to have a net zero portfolio than a portfolio that enables and brings about decarbonisation in the real economy. To do this, financial institutions should engage with emissions-intensive investee companies and facilitate their shift towards Paris-aligned pathways. Where engagement options have been exhausted and investee companies and clients are not willing to transition, divestment may be the only course of action to avoid stranded assets.

Defining science-based targets for financial institutions along these dimensions is complex in terms of setting ultimate goals, interim goals, and strategies to get there. Most current target setting protocols developed for financial institutions to date fail to appropriately address this ([See Box 1](#)).

## Box 1

### The complexity of science-based climate target setting in the financial sector.

#### WWF's Net Zero Guidance for the Financial Sector:

- Ambition level: "Pledge at the head-of-organization level to reach net zero by 2050 or sooner, in line with global efforts to limit warming to 1.5°C" (WWF, 2021, p. 2).
- Protocol: Short-term targets covering portfolio level target, sector targets, company engagement targets, and green investment targets.
- Asset type coverage: Not explicitly defined.
- Role of offsets: Requirement to not rely on excessive carbon dioxide removal techniques.
- Fossil fuel exclusion: Not explicitly defined.

#### The Science Based Target Initiative (SBTi)'s Financial Sector Science-Based Targets Guidance:

- Ambition level: "Align all financing with pathways that limit warming to 1.5°C with no or limited overshoot", as well as "neutralise residual emissions through the financing of activities that permanently remove an equivalent amount of atmospheric carbon dioxide" (SBTi, 2022b, p. 7).
- Protocol: Choice of sectorial decarbonization approach ("portfolio targets must meet a minimum ambition indicated by sector-specific methods for well-below 2°C" (SBTi, 2022a, p. 31)), portfolio coverage targets ("100 percent portfolio coverage by 2040" (SBTi, 2022a, p. 32)), or portfolio temperature rating approach ("align their portfolio scope 1 + 2 temperature score with a minimum well-below 2°C scenario and in addition align their portfolio to a minimum 2°C scenario for the scope 1 + 2 + 3 portion by 2040" (SBTi, 2022a, p. 33)).
- Asset type coverage: Portfolio, loan book, insured, facilitated emissions.
- Role of offsets: Not counted as emission reduction.
- Fossil fuel exclusion: Recommendation for coal phase out by 2030.

#### UNEP FI's Target Setting Protocol (Net Zero Asset Owner Alliance):

- Ambition level: "Transition investment portfolio to net zero GHG emissions by 2050" (UNEP, 2022, p. 25).
- Protocol: (Sub-)portfolio targets of 22% to 23% CO<sub>2e</sub> reduction by 2023 and 49% to 65% CO<sub>2e</sub> reduction by 2030 (based on IPCC 1.5°C SR scenarios). The target requires members to set engagement targets, covering either the 20 largest emitters in the portfolio or companies responsible for 65% of emissions in the portfolio.
- Asset type coverage: Listed equity, public debt, infrastructure, and real estate.
- Role of offsets: Carbon credits do not count towards target achievement, with some exceptions for qualified removals (technological and nature-based CDR).
- Fossil fuel exclusion: No explicit exclusion requirement.

#### UNEP FI's Guidelines for Climate Target Setting for Banks (Net Zero Banking Alliance):

- Ambition level: "Targets shall at least align with the temperature goals of the Paris Agreement and support the transition towards a net zero economy by 2050" (NZBA, 2021, p. 3).
- Protocol: 2030 absolute emission or sector-specific emission intensity target.
- Asset type coverage: "Significant majority" of bank's portfolio emissions. Underwriting activities not covered.
- Role of offsets: Banks should apply diligence in using offsets in line with evolving leading practice.
- Fossil fuel exclusion: No explicit exclusion requirement.

#### Institutional Investors Group on Climate Change (IIGCC)'s Net Zero Investment Framework:

- Ambition level: Commitment to the "goal of achieving net zero portfolio emissions by 2040, or sooner" (IIGCC, 2021b, p. 9).
- Protocol: "A <10-year CO<sub>2e</sub> emissions reduction target, expressed in absolute or intensity terms" (IIGCC, 2021b). "A <10-year goal for allocation to climate solutions" (IIGCC, 2021b). "An engagement goal which ensures that at least 70% of financed emissions in material sectors are either assessed as net zero, aligned with a net zero pathway, or the subject of direct or collective engagement and stewardship actions. This threshold should increase to at least 90% by 2030 at the latest" (IIGCC, 2021b). "A 5-year portfolio coverage goal for increasing the percentage of AUM invested in assets in material sectors that are i) achieving net zero, or, meeting the criteria to be considered ii) 'aligned' or iii) 'aligning' to net zero" (IIGCC, 2021b).
- Asset type coverage: Listed equity, corporate fixed income, and real estate.
- Role of offsets: Carbon credits and offsetting should not be used for meeting portfolio emissions targets.
- Fossil fuel exclusion: No explicit exclusion requirement.

# 4

## Strategies: Exclusion, Divestment, Engagement

Although financial institutions have no direct managerial say over investee companies' emissive assets, there are various channels through which financial institutions can exercise control and influence (see Figure 9), each with different implications for their portfolio and the broader economy. Financial institutions can exclude certain highly polluting companies from their portfolio or divest of existing holdings. Additionally, financial institutions may take an active stance and engage investee companies on implementing mitigation action, by exercising their stewardship role or other forms of engagement.

Each of these options can be done in both equity and fixed income markets, but the different characteristics of these markets have important implications for the effectiveness of financial institutions' approaches.

### Equity and fixed income

Equity shares represent partial ownership, with voting rights in terms of management and strategy decision-making. Publicly listed companies' shares can be traded, and equity markets are often comparatively liquid. Corporate debt, which includes bonds and loans, does not represent ownership, but rather a claim to a stream of payments for lent capital. In 2021, there were USD 127 trillion worth

of outstanding corporate and sovereign bonds, just slightly above the total global public equity capitalization of about USD 125 trillion (SIFMA, 2022). Total global debt, however, including both public and private lending, rose to USD 226 trillion in 2020 (Gaspar et al., 2021).

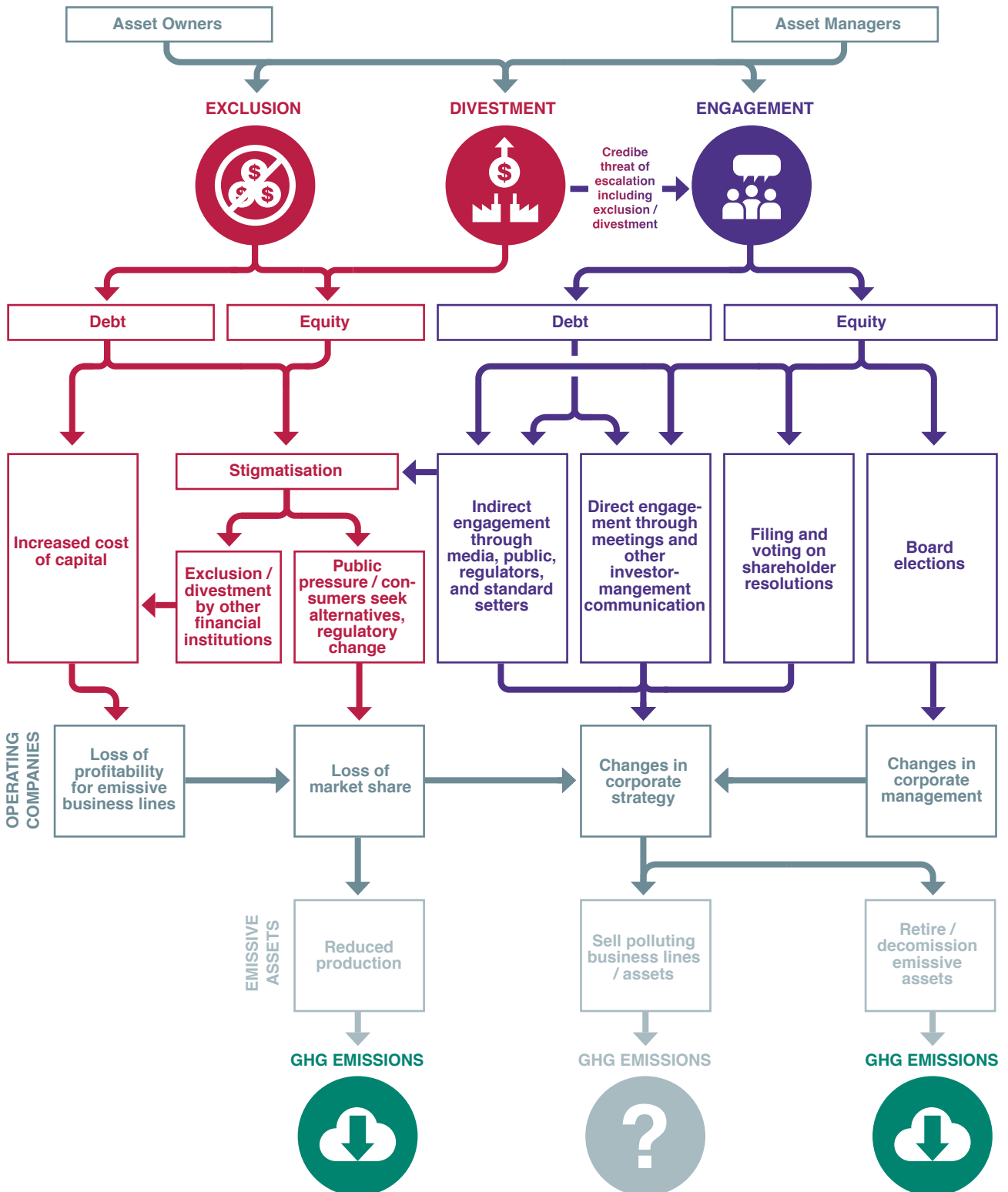
### Timing: primary and secondary markets

The timing of these interventions (see Table 2), or the threat to make a certain intervention, may also be important in determining the impact that they may have – among other factors. Thus, the impact that a certain financial institution can have on emissions in the real economy depends not only on their strategy or mix of strategies, but also on what asset class it is applied to, at what stage in the funding cycle the strategy is executed, and overall market conditions at the time.

### Capital structure

The capital structure of companies also has an influence on what role investors play and how they can exert influence. Many emissions-intensive companies, and oil and gas majors in particular, are more dependent on bond markets to raise capital rather than issuing new equity shares (EY, 2014). The 25 largest emitting companies are responsible for about 25% of global cumulative emissions between 1988-

**Figure 9**  
Complete ownership chain and influence channel overview.



Source: Produced by authors.

**Table 2**

Timing and market distinctions for equity and debt drawing on Hoepner and Schneider (2022), Beers (2021), Hayes (2022).

	PRIMARY MARKET	SECONDARY MARKET
<b>Equity</b>	<p><b>Pre issuance:</b> The period before initial public offerings (IPOs), i.e. when companies go public for the first time.</p> <p><b>Pre-subsequent issuance:</b> The time before seasoned public offerings (SPOs), i.e. when public companies issue new shares.</p>	<p><b>Post first-issuance:</b> Trading of shares of public companies post issuance.</p>
<b>Fixed income / Bonds</b>	<p><b>Pre issuance:</b> The time before initial public debt offering (IPDOs).</p> <p><b>Pre-subsequent issuance:</b> The time before bond maturity and subsequent roll over of corporate debt.</p>	<p><b>Post first-issuance:</b> Trading of bonds of companies post issuance.</p>

2015, but a mere quarter of these emitters are publicly listed (Sjöström and Erlandsson, 2020). Even publicly listed oil and gas companies are not currently looking to raise fresh equity capital. On the back of bumper profits from the energy crisis unleashed by the Russian invasion of Ukraine, BP and Shell have recently announced large share buyback schemes (Ziady, 2022), reducing the overall number of outstanding shares. In contrast, the fixed income market, for example, is currently the fossil fuel's financial lifeline, providing over 90% of the sector's financing (Universal Owner, 2021b).

## 4.1 Exclusion and denial of re-entry

The Robeco Sustainable Investing Glossary defines exclusion as “the act of barring a company’s securities from being purchased for a portfolio due to business activities that are deemed unethical, harmful to society, or in breach of laws or regulations” (Robeco, no date). “Denial of (Re) Entry”, a term coined by Andreas Hoepner and Fabiola Schneider (2022) refers to “an investor not (re)financing a company and thereby withholding fresh cash to activities which do not align with the investor’s stated goal”. Reflecting growing interest in self-proclaimed ESG and sustainable investing, there is a growing number of fossil free investment funds available to retail inves-



tors, both actively managed and exchange traded funds (ETFs), which have fossil fuel exclusion policies (As You Sow, 2022), though this is far from the general practice for all ESG funds (Statista, 2020), or large institutional investors more generally.

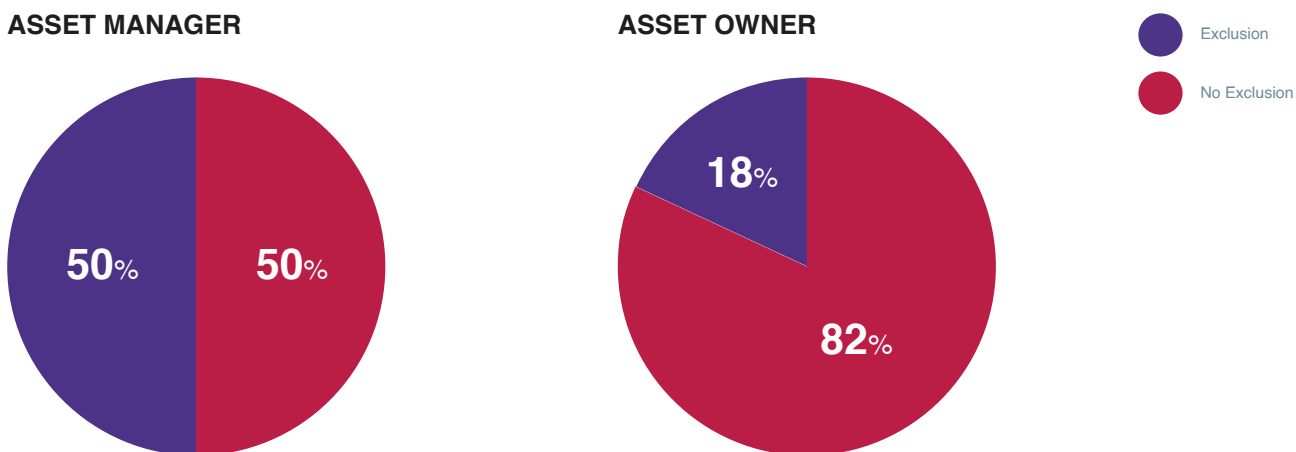
### 4.1.1 Exclusion policies and their coverage

Half of the largest 50 asset managers have exclusion policies targeted at emissions-intensive investee companies and clients (i.e. fossil fuel and deforestation-linked value chains), albeit with various sectorial coverage, different scopes and not necessarily on a counterparty level. In comparison, most of the largest 50 asset owners (mostly pension funds) do not have clear exclusion policies (see Figure 10). Where financial institutions do not exclude invest-

ments in harmful activities, they sometimes claim to conduct enhanced due diligence for these investments. Exclusion policies generally target actively managed assets, where financial institutions have direct control, rather than passively managed assets, which are a rapidly growing investment vehicle (see Box 2).

Whether exclusion is effective in denying capital to certain climate harming activities depends on the scope and stringency of the exclusion policy. Coverage of exclusion policies varies greatly. Less than half of the largest 50 asset managers have exclusion policies that limit financing for the production of thermal coal (coal upstream) and coal-fired power generation (coal downstream). Even fewer asset managers have exclusion policies for oil and gas production – those that do, mostly only exclude unconventional oil and gas production, indicated as partial coverage. Barely any exclude finance for oil and gas fired power generation or activities linked to deforestation (see Figure 11).

**Figure 10**  
Top 50 asset managers and top 50 asset owners with exclusion policies.



Source: Produced by authors.



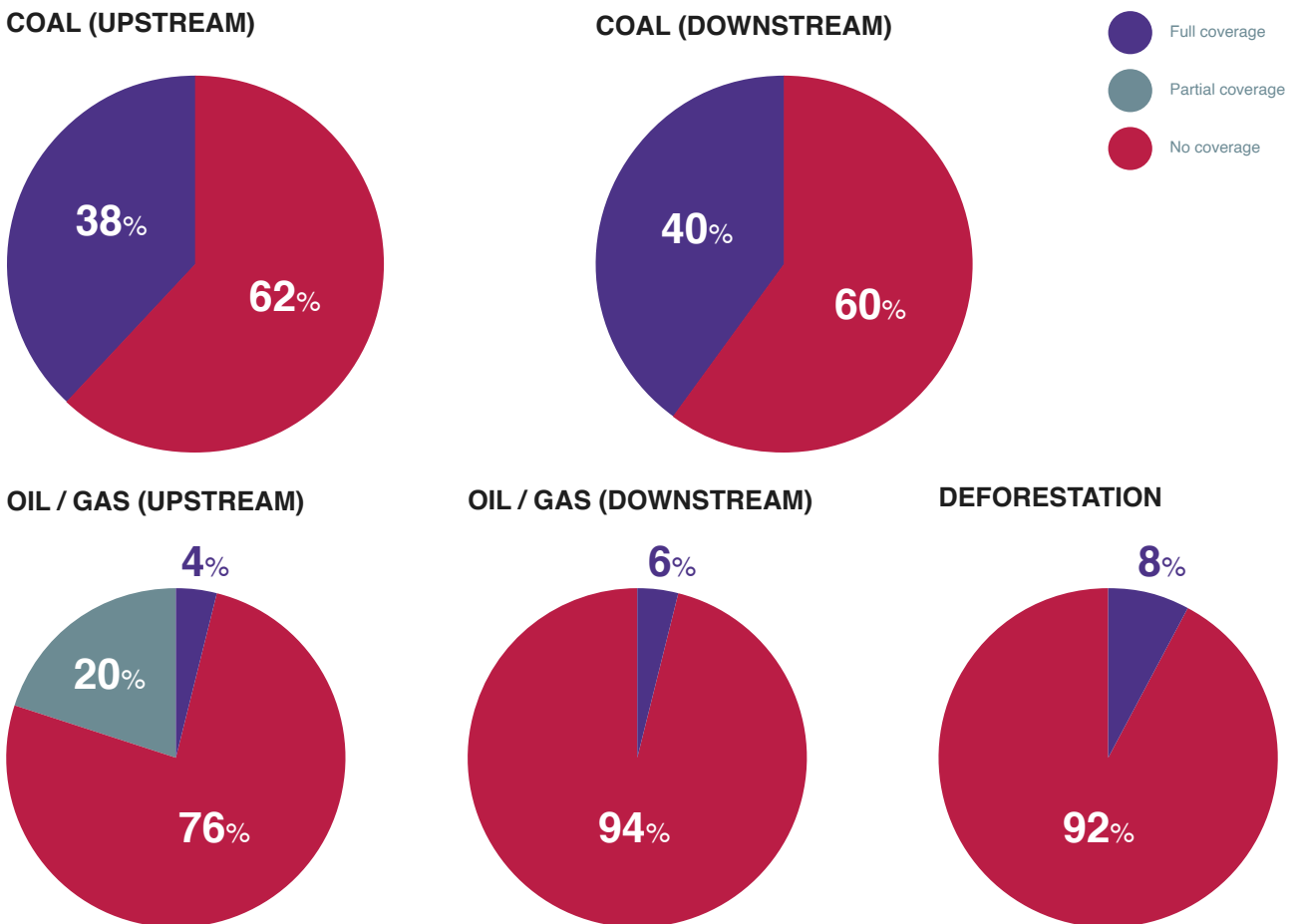
Financial institutions' exclusion policies also differ in scope. The type of exclusion, as well as potentially applicable exclusion thresholds (e.g. revenue thresholds, see below), can have a large impact on the effectiveness of the policy. About a quarter of the 50 largest asset managers with exclusion policies for coal only exclude project finance, but not general balance sheet financing for the company operating/implementing the project. Project finance exclusions affect various emitting sectors differently, for example oil and gas companies use project finance less than power

and utility companies, partially because of the unpredictability of oil and gas projects (EY, 2014).

There are also instances of financial institutions that do not have comprehensive coal exclusion policies but who exclude certain counterparties from financial services considering a reputational risk. Bank of New York Mellon for example, which provided "third party administrative services" including acting as a security trustee to the Adani Group in Australia said it would resign from those legacy transactions because of Adani's controversial development of

**Figure 11**

Top 50 asset managers' climate-relevant exclusion policy coverage.



Source: Produced by authors.

the Carmichael coal mine, citing that the business was not aligned with its “ESG” principles (Butler, 2021).

Other financial institutions have more comprehensive coal exclusion policies, completely restricting financial service provision to investee companies, however, subject to varying relative or absolute thresholds. Depending on how strict the threshold is, financial institutions may still provide significant finance to fossil fuel companies. Several financial institutions hold rather lenient revenue thresholds (other relative or absolute exclusion thresholds exist as well, such as installed capacity or share of electricity produced from fossil fuels), which will likely mean that their exclusionary policies have little impact. Some financial institutions with dedicated coal exclusion policies still finance companies that generate up to 60% of their revenue from coal production (see Table 3).

## 4.1.2 Is exclusion effective? An equity perspective

Exclusion policies may ultimately protect equity investors from transition- and stranded asset risks and may have an indirect impact on the real economy by reducing corporates’ access to capital or financial services. Financial institutions’ ability to effectively influence a company’s cost of capital, however, may be limited, depending on overall market conditions and timing of companies’ decisions to raise fresh capital.

**In the primary equity market**, companies issue new shares to investors. Between 2012 and 2020, investors bought about USD 640 billion in equity issued by the fossil fuel industry, representing 10% of all equity raised in this period. In comparison, the renewable energy and cleantech sector raised only USD 56 billion (1% of total equity) in the same period (Carbon Tracker, 2021). When a private company

**Table 3**

Exclusion thresholds (revenue) for coal. Financial institutions only exclude investee companies that generate revenues above stated thresholds, respective for each technology and/or activity. Produced by authors.

FOSSIL FUEL	ACTIVITY	NO. OF FINANCIAL INSTITUTIONS	MINIMUM REVENUE THRESHOLD	MAXIMUM REVENUE THRESHOLD
Coal	Production	25	1%	60%
	Generation	10	5%	50%
Gas/Oil	Production, unconventional	14	0%	30%
	Production, conventional	1	25%	25%

**Box 2****Fossil fuel exposure through passive investments.**

Financial institutions are heavily invested in emissions-intensive companies through passive investment instruments, such as exchange traded funds (ETFs) or index funds. These instruments commonly track indices composed by third-party index providers. A financial institution managing or investing in these passive instruments usually has no direct control over the composition of the underlying index.

The rise in the popularity of ETFs since the early 2000's has strongly driven the share of passive investments as part of financial institutions portfolios (Mooney, 2018). S&P, Russell/FTSE, and MSCI are among the most prominent index providers. Their largest and most popular indices, however, feature significant exposure to emissions-intensive sectors, such as fossil fuel production (see Table 4 for an overview of BlackRock-managed ETFs tracking common indices).

**Table 4****ETFs and fossil fuel exposure.**

Fund	Fossil fuel exposure	Fossil fuel investment (USD)
iShares S&P 500	9.54%	\$28.26 billion
iShares S&P 100	8.25%	\$657.09 million
iShares Russell 3000	9.32%	\$969.99 million
iShares Russell 2000	8.61%	\$4.52 billion
iShares Russell 1000	9.36%	\$2.55 billion
iShares MSCI ACWI	9.94%	\$1.72 billion
iShares MSCI EAFE	10.19%	\$4.52 billion
iShares MSCI Emerging Markets	10.52%	\$2.76 billion

Source: Fossil Free Funds (2022).

Most financial institutions' exclusion policies do not cover passively managed funds (ReclaimFinance, 2021). Passive investment instruments have emerged as an attractive source of financing for emissions-intensive companies. There are examples of emissions-intensive companies relocating to the US in order to be included in US equity indices and to benefit from passive demand (Universal Owner, 2021b). There is also evidence that companies target passive bond funds by issuing index-eligible bonds (Dathan and Davydenko, 2020). Passive bond funds continue to channel large volumes of financing to emissions-intensive bond issuers such as coal mining companies (Sjöstrom and Erlandsson, 2020).

As universal owners with large leverage, financial institutions could influence index providers to tilt indices away from the most emissions-intensive companies. Weighting and screening approaches exist that would help reducing exposure to emissions-intensive companies while limiting the tracking error of the index fund (Universal Owner, 2021b).

decides to offer listed equity for the first time, it does so via an initial public offering (IPO). To generate investor interest in an IPO, company management generally go on “roadshows” as an outreach effort. At this point, in these meetings, exclusion policies or threat of exclusion may play an important influencing role, especially if aspects of a business model are easily changed to accommodate potential investors’ demands. Once publicly listed, companies can issue additional stock through a Seasoned Equity Offering (SEO), though this dilutes existing shareholders and is comparatively less common than new debt issuance (Blitz and Swinkels, 2020).

A significant factor of the valuation of a company’s stock in the primary market is investors’ demand. Financial institutions can deny emissions-intensive companies access to new capital by not buying certain companies’ new share issuance. If a critical mass of investors behaves similarly and subsequently forces lower valuation, an emissions-intensive company would receive less capital for the same amount of stock issued, i.e. a lower overall market capitalisation for the same company. Overall market capitalisation may influence the cost of debt, depending on capital market conditions, and the timing of debt issuance. Debt markets may represent an alternative option to raise capital outside the scope of some investors’ exclusion policies. Over the last decade, primary offerings from fossil fuel producers have drastically reduced, from 12% of total equity issuance proceeds in 2012 to less than 1% in 2020, potentially signalling a drying up of equity market capital for emissions-intensive companies (Carbon Tracker, 2021).

**Exclusion policies in the secondary equity market** are much less direct and

likely have much less impact. In the secondary market, equity investors trade shares among themselves rather than providing capital to a company. Depending on other investors preferences, an exclusion policy may have some (small) impact on overall market liquidity but not directly on the cost of the originally raised capital.

### 4.1.3 Is exclusion effective? A fixed income perspective

Financial institutions also apply exclusion policies to fixed income investments. Similar to equity markets, financial institutions can cut ties with emissions-intensive bond issuers by denying access to primary capital. The characteristics of fixed income markets, however, differ substantially from those of equity markets, and with it the opportunities for influence and impact. This fundamentally applies to the primary market, with little academic literature on the impact of exclusion in secondary bond markets (Hoepner and Schneider, 2022).

Companies, and specifically capital-intensive fossil fuel producers, raise debt capital through loans and bonds to obtain primary financing and working capital on a regular basis. For example, between 2000-2015, the oil and gas sector raised finance primarily through debt in the form of bank loans (ca. 64%) and bonds (26%) (Cojoianu et al., 2019a). While debt predominates, bonds are nevertheless a core part of financing with many carbon-intensive companies issuing bonds several times a year<sup>4</sup> and often wish to refinance or roll-over existing bonds once they reach maturity (Blitz and Swinkels, 2020).

<sup>4</sup> See for example [Shell’s outstanding bonds](#).

In this critical decade until 2030, and in particular in the next five years, significant volumes of outstanding fossil fuel-related bonds issued by some of the most emissions-intensive companies will mature (see Figure 12). This time period is therefore an integral opportunity for financial institutions to have an influence (Atkinson and Vaid, 2022; Hoepner and Schneider, 2022).

Financial institutions can deny access to primary debt finance by means of exclusion policies (this does not just apply to bonds but also bank loans). Primary corporate bond markets tend to be less efficient (less liquid) vis-à-vis equity markets, reliant on matchmaking between supply and demand via underwriting services (PWC, 2015; BIS, 2016). Exclusion policies of large financial institutions (or collective action)

have the potential to significantly affect demand for affected bonds. If emissions-intensive companies are not able to attract investors on the primary market at a given interest rate, the bond-issuing company is forced to increase interest rates, i.e. the bond-issuing company faces higher capital costs (Sjöström and Erlandsson, 2020). The frequency of primary market issuance and the illiquidity of the bond market allow financial institutions to effectively deny capital to emissions-intensive companies, which can result in deteriorating cash flows, and ideally pressures companies to reduce their CO<sub>2</sub>e intensity.

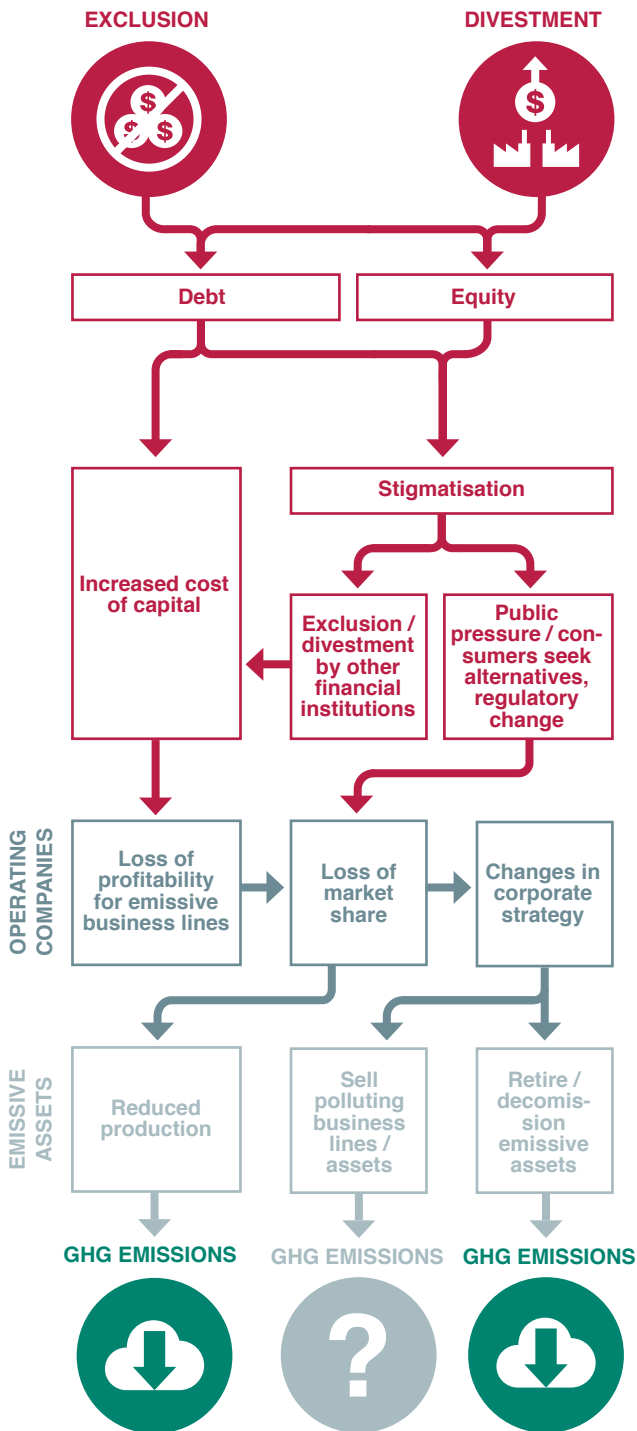
**Figure 12**

Aggregate bond volume by maturity years issued by 30 of the most emissions-intensive coal, oil, and gas companies.



Source: Based on Toxic Bonds (2022).

**Figure 13**  
Exclusion, divestment, and their impact on operating companies and GHG emissions.



Source: Produced by authors.

## 4.2 Divestment

Divestment or “exit” is a strategy that refers to selling securities from an investor’s portfolio. The current climate change related divestment movement has its roots in US campus campaigns targeting the fossil fuel endowments of US colleges and universities in 2008-2011 (Vaughan, 2014; Cojoianu et al., 2019a), which drew on the precedent of the 1960s divestment movement in response to the South African apartheid regime. The divestment movement gained momentum over the last decade, with notable fossil fuel divestment commitments now coming from asset managers and owners beyond educational institutions. About 1500 financial institutions worldwide are actively divesting more than USD 40 trillion worth of assets, according to DivestInvest’s global fossil fuel divestment commitment database (Stand.earth and 350.org, 2022).

Divestment may help reduce an investor’s exposure to transition- and stranded asset risk, but the direct impact on companies’ share prices and their cost of capital (equity and debt) is more nuanced and depends on a variety of other factors.

### 4.2.1 Divestment policies and their coverage

As with financial institutions’ exclusion policies, divestment policies differ in coverage. In some cases, financial institutions issue threats to divest to trigger corporate action with the hope that the threat will

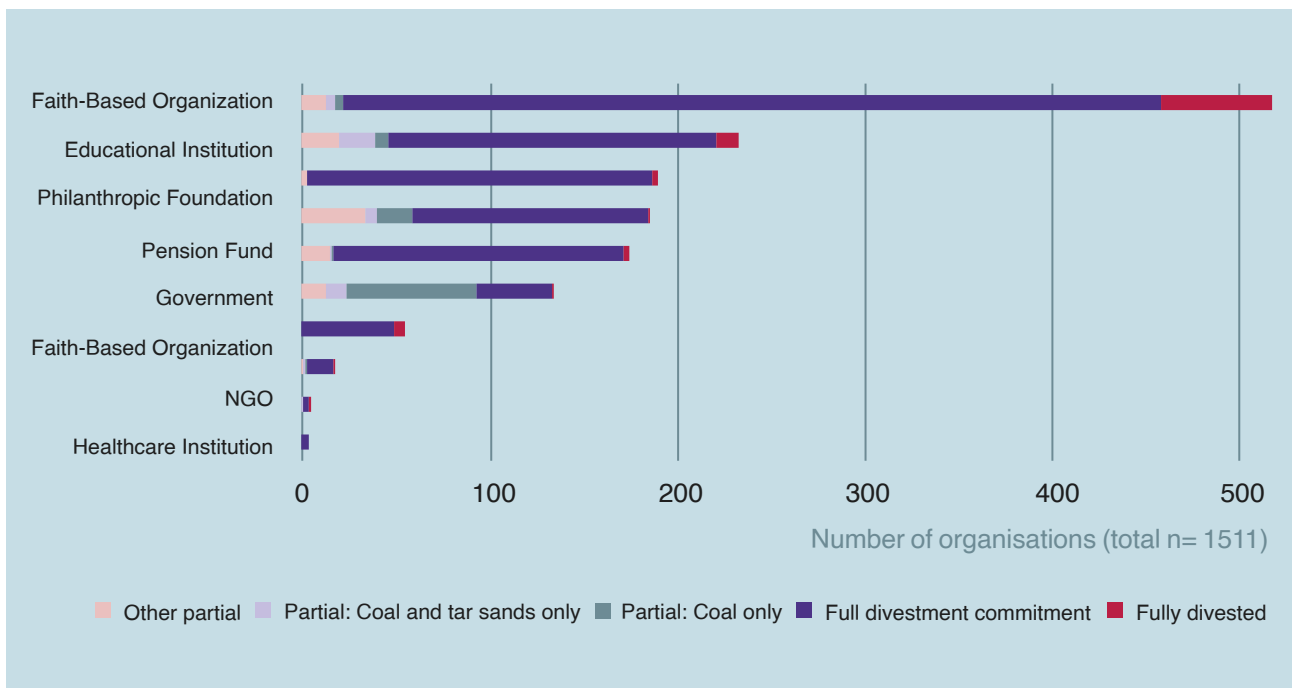
essentially bring about change (see more in next section on engagement).<sup>5</sup>

The global fossil fuel divestment commitment database maintained by DivestInvest tracks divestment events of financial institutions. Notable large asset owners have already announced divestment policies including the Norwegian Sovereign Wealth Fund (Ambrose, 2019), the Dutch pension fund ABP (Boffey, 2021), and various others. The divestment events reported in the database represent divestment commitments and completed divestments, differentiating partial and full fossil fuel value chain coverage (see Figure 14) (Stand.earth and 350.org, 2022). Few listed institutions have completely divested across the whole fossil-fuel value chain. Many of the large investors' divestment commitments only relate to coal and / or

coal and tar sands. Overall, size, ownership form (public versus private), as well as market competition are defining factors for financial institutions' divestment intentions (Egli et al., 2022).

While the USD 40 trillion of reported or committed divestments are indeed sizable (more than the GDP of China and the US combined) (DivestInvest, 2021), few of the largest financial institutions are official members of the DivestInvest initiative. Only 16% of the 50 largest asset owners and 50 largest asset managers have publicly committed to divest, or already divested from fossil fuels through this initiative (see Figure 15). Those that have, mostly have not committed to ambitious exclusion or divestment policies that would reduce investment flows to fossil fuels (e.g. see for example Black-Rock) (Stand.earth and 350.org, 2022).

**Figure 14**  
Divestment policy coverage by type of organisation.



Source: Based on Stand.earth and 350.org (2022)

<sup>5</sup> Divestment policies are not applicable to primary equity and bond markets, as an investor must acquire an asset in order to divest of it.

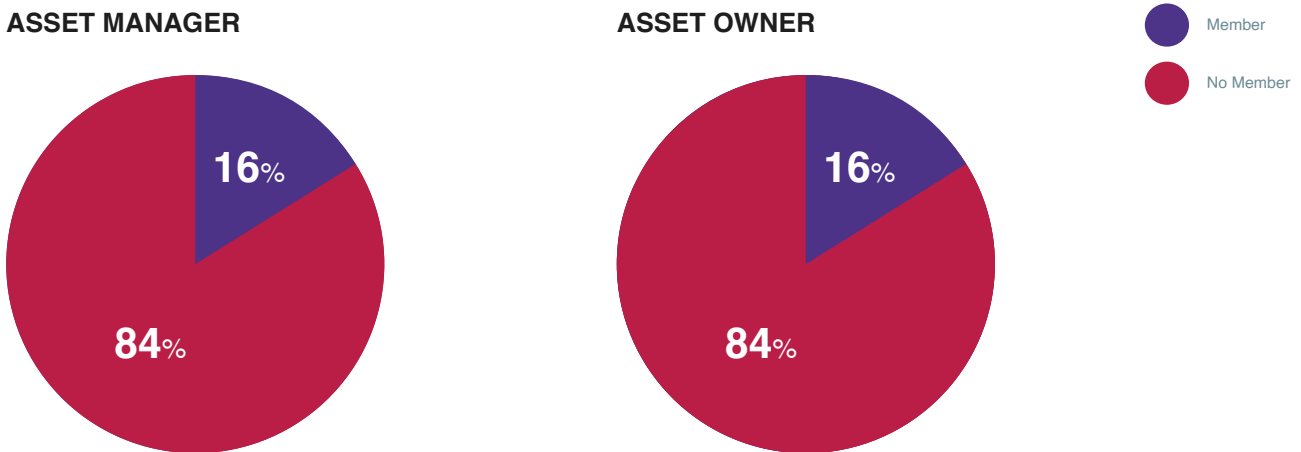
## 4.2.2 Is divestment effective? An equity perspective

Most research on the impact of divestment focusses on equity (Lütkehermöller et al., 2020; Hoepner and Schneider, 2022). In secondary equity markets, however, where investors trade company stocks, divestment has no direct impact on a company's cash flow, but additionally deprives the investor of the ability to engage with the company since it is no longer a partial owner (Ansar

et al., 2013). If an asset owner or manager decides to sell its stock in a company, in theory, depending on the number of shares and market liquidity, the share price of that company may decline (Ansar et al., 2013). However, this does not necessarily translate into actual increases in the investee company's cost of capital. Divestment can only drive up an investee company's cost of capital where a strong and sustained decline of the company's valuation in the secondary market influences the pricing of seasoned equity offering or new debt finance in the primary market. However, in liquid secondary markets, neutral investors often step

**Figure 15**

The share of the top 50 asset managers and top 50 asset owners with divestment commitments through DivestInvest.



Source: Produced by authors, drawing on Stand.earth and 350.org

in and equalise initial impacts on valuation (Ansar et al., 2013). This continued relative liquidity of high emitting stocks in equity markets casts doubt on sustainable impacts of divestment on companies and their GHG emissions (Kölbels et al., 2019; Blitz and Swinkels, 2020).

Still, some studies find evidence of a significant and sustainable negative impact on divested firms' stock prices, which can

result in divested companies decreasing their emissions (Dordi and Weber, 2019; Rohleder et al., 2022). One explanation for why divestment may lead companies to reduce emissions may be a stigmatisation effect or reputational damage, specifically where divestment campaigns catch the attention of the broader investor landscape. Under certain circumstances, divestment campaigns can lastingly increase the cost of



capital for emissions-intensive companies by changing market norms (Ansar et al., 2013). Stigmatisation can entail reputational risks for financial institutions, convert neutral investors to exclusion and divestment, or influence regulators and lawmakers to enact more restrictive legislation (Ayling and Gunningham, 2015). Stigmatisation can as such result in indirect impacts on the probability of future cash flows such as primary offering valuations, and hence the intrinsic company value (Ansar et al., 2013). Whether such economic pressure will result in the divested company to pursue mitigation options, however, is context specific. A number of contextual factors such as the investee company's country of operation, the government's climate action ambition, as well as the regulatory environment can impact the companies' ability to credibly transform (Cojoianu et al., 2019b; Choi et al., 2020; Lütkehermöller et al., 2020).

### 4.2.3 Is divestment effective? A fixed income perspective

The effectiveness of divestment efforts in secondary bond markets is less clear and there have been no dedicated studies examining its impact (Hoepner and Schneider, 2022). As in the secondary equity market, bond trading on the secondary market does not have a direct impact on the issuer or investee company. The relative illiquidity of secondary bond markets, however, means that large selloffs are unlikely absorbed without significant price responses, making large divestment events expensive for the investor (Gibbs et al., 2022). If bond holders drive an impactful divestment campaign against emissions-intensive bonds, they may be able to increase the issuers' credit spreads<sup>6</sup>, which, in return, would result in higher borrowing costs for the company on the primary market the next time it seeks debt capital (Sjöstrom and Erlandsson, 2020).

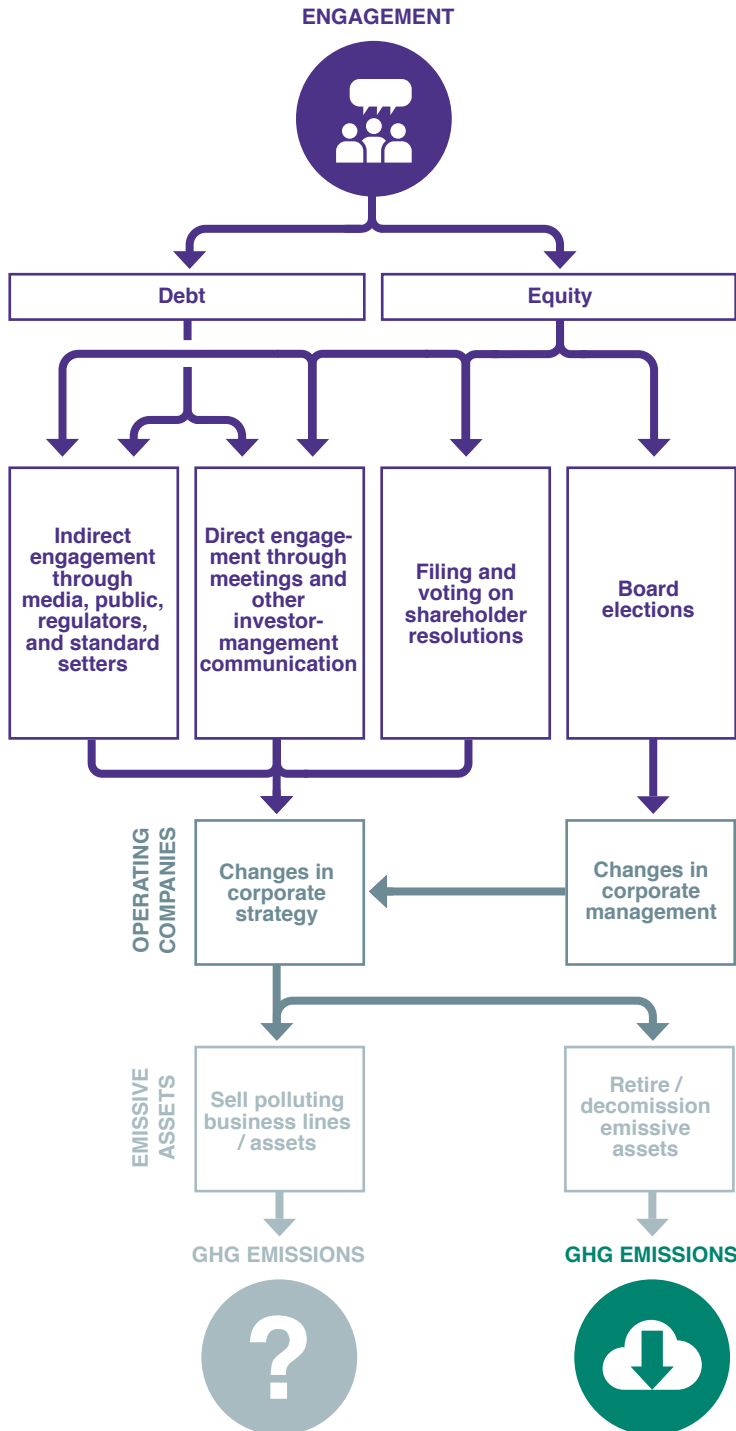
#### Box 3 Shorting

Shorting, or short-selling, is among the instruments that equity investors have to profit from falling stock prices. To short a fossil fuel company, an investor borrows shares from other investors, and sells them with the intention to buy the sold shares at a later point in time and, ideally, at a lower price. Investors that bet that fossil fuel companies will lose future profitability considering transition risk could use short-selling to profit from a potential share price collapse.

Shorting, however, can also be used as an instrument to actively communicate dissent and potentially put downward pressure on share prices (Sainsbury, 2021). A financial institution with enough influence that decides to short a fossil fuel company and publicise this fact, can send a signal to the market about expectations for the investee company's future trend. This may lead other investors to divest from the fossil fuel company, or even open short positions themselves. Because shorting investors only borrow shares in companies in order to sell them, they do not have the same active voting rights and therefore cannot engage with companies as holders of long positions can. However, opening large short positions could support and may help increase leverage in engagement efforts with the investee company.

<sup>6</sup> The credit spread, or the yield spread, is the interest rate difference that bond holders receive from a corporate bond versus risk free rate investments of the same maturity.

**Figure 16**  
Engagement and its impact on operating companies and GHG emissions.



Source: Produced by authors.

## 4.3 Engagement

Corporate engagement is the investors exercising their “voice” vis-à-vis company management to influence business decisions (Hirschman, 1971). Financial institutions can engage and exert impact through various channels to influence a company’s corporate climate strategy. Specifically, financial institutions can communicate demands that investee companies disclose their emissions and potential climate risks, move away from polluting activities, and or set and implement progress towards climate targets. The key argument is that financial institutions can have significant influence over investee companies when they choose to exercise active stewardship. The threat of divestment or future exclusion / denial of re-entry however may be a key point of leverage, the credibility of which may influence the impact of an engagement effort (Hoepner and Schneider, 2022).

It is challenging to identify objective criteria to measure engagement efforts and their results considering both the channels and uncertain nature of results. Financial institutions can promote their positions via meetings or in written form, both publicly and privately, nominating and replacing board members, and through filing and voting on shareholder resolutions (PRI, 2018; Hoepner and Schneider, 2022). Whether engagement efforts are effective usually depends on the level of control financial institutions have, the size of the coalition built around certain asks, the size and reputation as well as on how credible and impactful any potential escalation threat is.

Indirect engagement sees financial institutions pursue other means of engage-

ment that pressure investee companies to comply with investors’ demands, either in support of running direct engagement processes, or as an additional level of escalation. Institutional investors may for example publicly lobby for more ambitious climate action through the public media, or alternatively pursue litigation against the investee’s inaction (PRI, no date). The credible threat of divestment or “threat of exit” can also be an effective means of increasing pressure on investee companies.

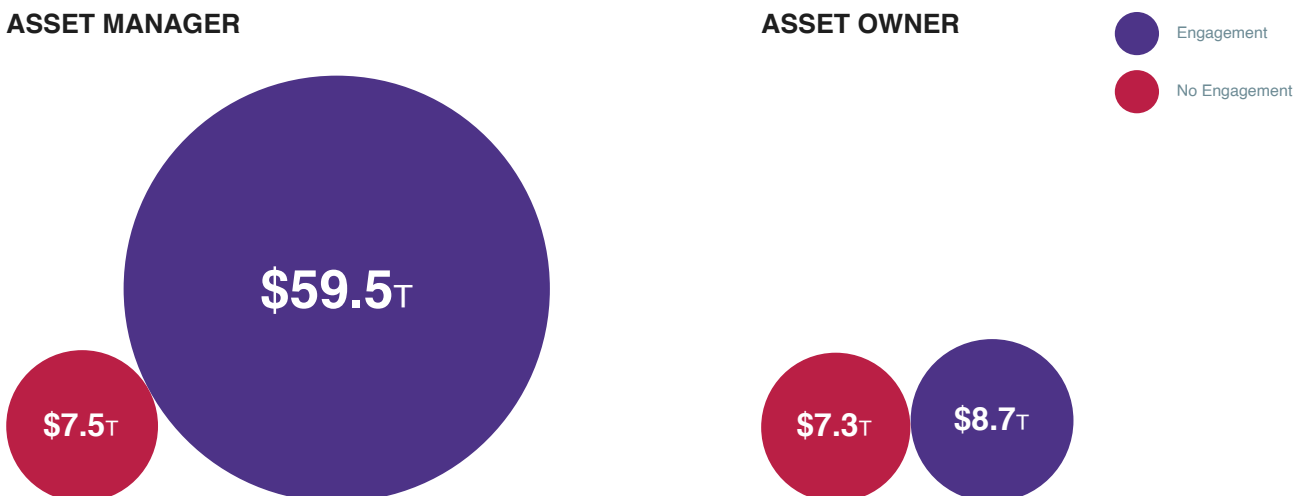
### 4.3.1 Engagement types and policies

Financial institutions exercise stewardship over their investee companies through targeted and time-bound corporate engagement. The majority of assets man-

aged by the 50 largest asset managers is covered by dedicated engagement policies targeted at climate risks, albeit at varying levels of comprehensiveness. In comparison, only roughly half of the assets owned by the 50 largest asset owners (mostly pension funds) are subject to dedicated engagement strategies (see Figure 17). Engagement policies dedicated to environmental themes are quite common, as they also represent an essential part of financial institutions disclosure requirements. For asset owners and asset managers investing in EU investee companies, for example, the EU Shareholder Rights Directive II (SRD II), which came into force in 2017, introduces the obligation to have a dedicated shareholder engagement policy targeting ESG factors (The European Parliament and the Council of the European Union, 2017).

**Figure 17**

Assets under management (AuM) covered by engagement policies (out of the 50 largest asset managers and 50 largest asset owners).



Source: Produced by authors.

## 4.3.2 Is engagement effective? An equity perspective

Most research on engagement efforts focusses on equity (Hoepner and Schneider, 2022). Since owning equity means owning a piece of a company, equity owners have a direct say on how companies are run. Investors can ask investee companies to disclose relevant information, set emissions reduction targets, develop transition plans<sup>7</sup>, and implement concrete action by using their “voice” as shareholders both through communication with company management and through their voting power as shareholders. Specifically, financial institutions can cement their asks by filing shareholder resolutions that are put up for vote at investee companies’ annual general meetings (AGMs). Shareholders may also directly escalate their demands by voting against directors (or nominate and vote for their own candidate) on companies’ boards. As mentioned above, however, considering the partially informal nature of engagement efforts, it is challenging to identify indicators to measure financial institutions engagement efforts.

### Voting behaviour in shareholder resolutions

One relatively transparent indicator of shareholder engagement on climate issues is the number and success of climate related shareholder resolutions. Here, data from the Ceres engagement tracker, which provides data on various ESG related shareholder resolutions for US based companies, shows

a mixed picture (Ceres, 2022).<sup>8</sup> The number of climate-relevant shareholder resolutions, as reported per the database, peaked in 2016 before declining, but increased again in 2022. The share of resolved shareholder resolutions or those with positive outcome (i.e. achieving a majority vote or those that are withdrawn following commitment, dialogue, or for other strategic reasons) mostly grew since 2015 (see Figure 18).

Measured purely by the success of shareholder resolutions, corporate engagement has not yet had a large impact. On a global level, in the AGM season 2021, only about one third of shareholder resolutions with an environmental focus received majority support (global sample of asset managers) (Sood et al., 2021). In 2022, although a record number of proposals were made, the share of support dropped (Masters, 2022). Data from the Ceres engagement tracker, which tracks engagements of US companies, show that cumulatively (since 2015) the majority of climate change resolutions at the AGMs of energy companies and utilities receive no support or are omitted from proxy materials<sup>9</sup> (see Figure 19). While these trends may be indicative, the qualitative wording of a shareholder resolution does not always have the same material impact, which means that successful shareholder resolutions alone cannot be considered the standard for success of engagement efforts.

Large asset managers, such as BlackRock, Wells Fargo, Citigroup, and Goldman Sachs (see for example Mooney (2016)), often oppose social and environmental resolutions, saying that they prefer direct engagement with investee companies and the development of market-level stand-

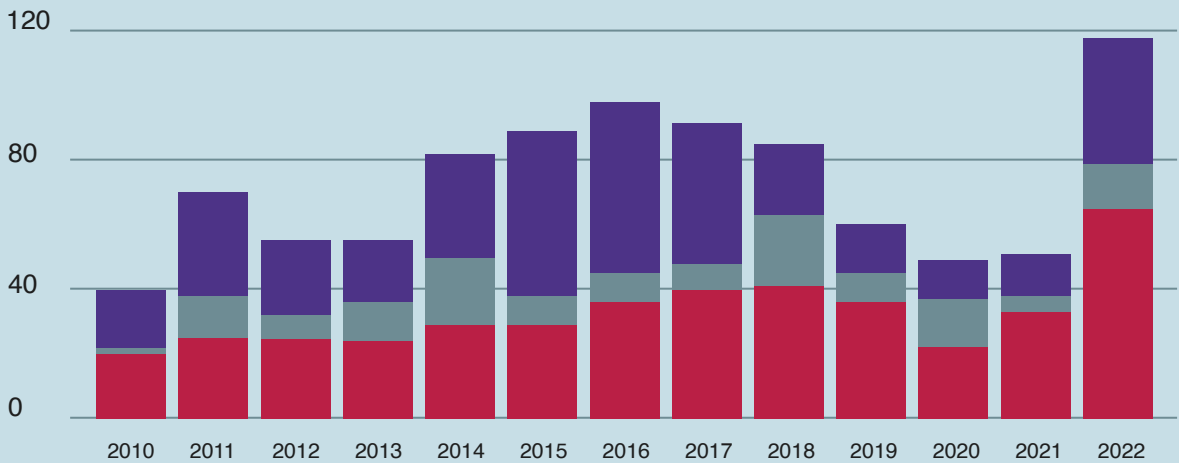
<sup>7</sup> For example, investor position statements such as the IIGCC’s, calling on companies to disclose a (i) net zero transition plan, (ii) identify a director responsible for the plan, and (iii) provide means for investors to monitor and vote on progress (IIGCC, 2021a).

<sup>8</sup> We could not identify similar databases for UK, German, or other countries.

<sup>9</sup> In the US, if a company’s management does not want shareholders to vote on an issue, it can ask the US Securities and Exchange Commission to omit a proposal from proxy voting materials based on various “substantive grounds”.

**Figure 18**  
Climate-relevant shareholder resolutions.

Number of shareholder resolutions

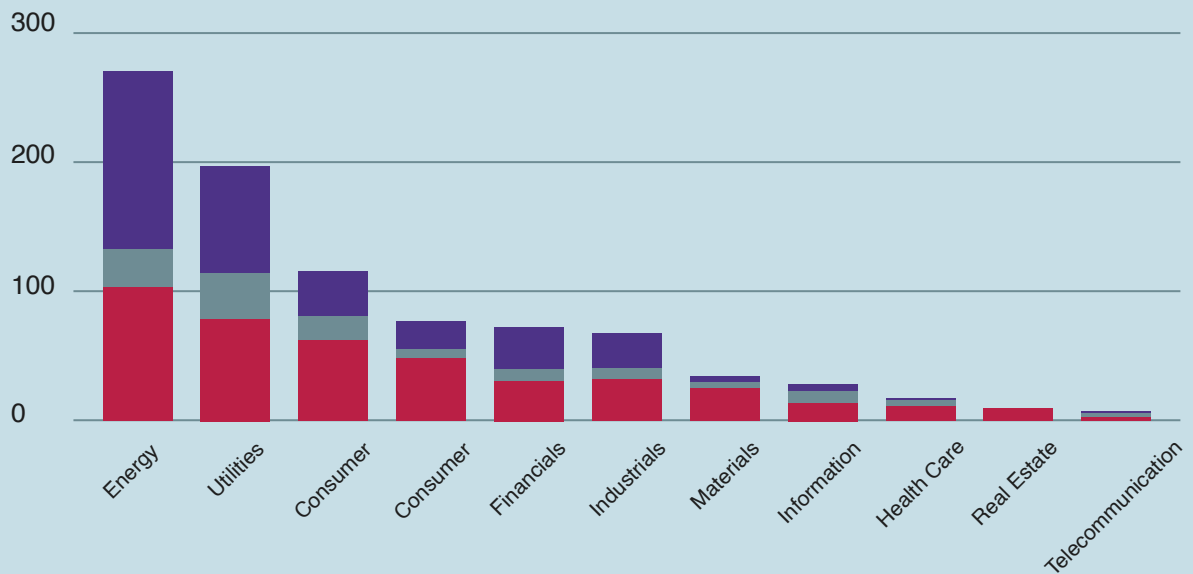


Source: Based on Ceres (2022).

■ Negative outcome ■ Neutral outcome ■ Positive outcome

**Figure 19**  
Climate-relevant shareholder resolutions by sector.

Number of resolutions with climate change focus



Source: Based on Ceres (2022).

ards to address climate risks (Leber, 2022). Since this kind of engagement is largely on an informal bilateral basis, it is hard to verify the form, content, frequency, or impact.

A primary underlying reason for the lack of support from large financial institutions for climate related shareholder resolutions may be the “empty voting problem” (Fisch, 2021). Managers at financial institutions do not necessarily act in the long-term interest of an asset’s ultimate beneficiaries. Investment managers’ incentive structures often do not reward improved climate outcomes, and do not take medium- and long-term climate impacts into consideration. Instead, to

a large extent, their investment decisions are primarily motivated by short-term financial performance (Ivanova, 2017). The real principals of the investment decisions, clients of asset managers or owners, often lack the collective inertia to practice appropriate oversight over investment managers (Ivanova, 2017). Even institutional investors that are members of ClimateAction 100+ and the Net Zero Asset Managers Initiative, opposed one third of shareholder resolutions with environmental focus in 2021, not showing more progressive voting behaviour than non-members (Sood et al., 2021).

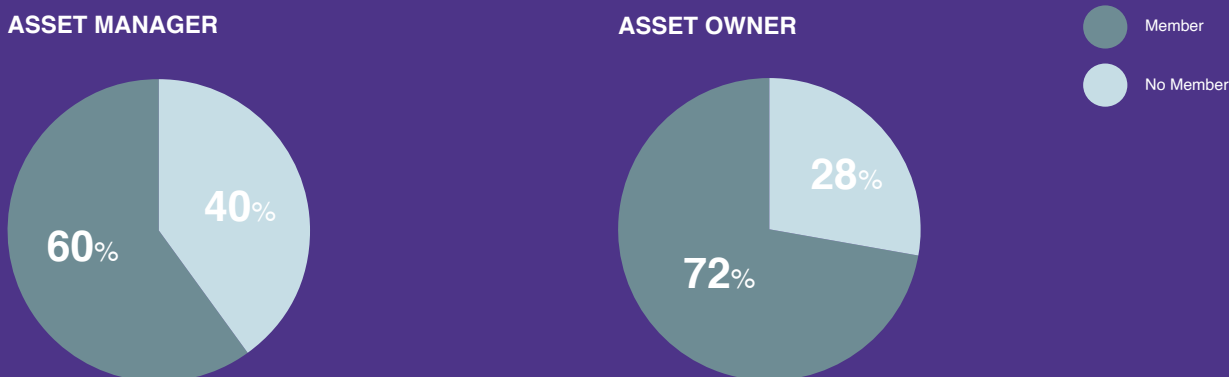
**Box 4**  
ClimateAction 100+

ClimateAction 100+ is among the largest collective engagement initiatives in the finance sector targeting emissions-intensive companies. The investor-led initiative engages with 166 companies, representing at least an estimated 80% of global industrial emissions (Climate Action 100+, 2021). The initiative has 700 active members which together hold almost USD 70tn of assets under management.

However, most of the 50 largest asset owners, and slightly below half of the 50 largest asset managers, are not members of the initiative (see Figure 20). This shows that while ClimateAction 100+ has the potential to establish strong collective pressure on companies, it is unclear whether the largest financial institutions are necessarily on board.

There are questions about the effectiveness of and ambition of ClimateAction 100+. Of the 160 plus focus companies that ClimateAction100+ claims to actively engage with, only 12% have set and disclosed Paris-aligned interim emission targets, and no focus company has provided a comprehensive strategy to fully Paris-align its capital expenditure (Mitchell and Stewart, 2022).

**Figure 20**  
The share of the top 50 asset managers and top 50 asset owners that are members of ClimateAction 100+.



Source: Produced by authors.

### Barriers to active ownership

Financial institutions tend to underutilise their potential influence through engagement. Corporate engagement is resource intensive, which represents a barrier, especially for small investors to file shareholder resolutions (Wu et al., 2021). Formal eligibility requirements for submit-

ting shareholder proposals are relatively low in some parts of the world (e.g. the US), but may be quite restrictive in others. In Germany, for example, filing a shareholder resolution requires investors to hold at least a 5% stake in the investee company, or at least EUR 500 000 in equity (see Table 5).

**Table 5**

Requirements to file a shareholder resolution in selected countries.

COUNTRY / JURISDICTION	REQUIREMENTS FOR FILING A SHAREHOLDER RESO-
Germany	At least 5% of shares or at least <b>EUR 500,000</b> in equity
Czech Republic	At least 5% of shares for companies with market capitalization under CZK 100 million (approx. EUR 4.1 million) – <b>at least EUR 8,415</b> 3% of shares in companies with capitalization of between CZK 100 and CZK 500 million 1% of shares in companies with capital over CZK 500 million (EUR 20.5 million) – <b>at least EUR 205,000</b>
South Korea	0.5% of shares
Australia	100 shareholders
Japan	300 shareholders
Delaware (domicile for most US companies)	\$2,000 worth of shares

Source: Based on Universal Owner (2021a).

The real cost of active stewardship is likely to be much higher. Building a comprehensive case around a proposal and generating collective support can be costly, especially when financial institutions face the problem of asymmetric information (i.e. the financial institution lacks data to effectively monitor investee companies) (Ivanova, 2017). Resource constraints limit engagement efforts, even for the largest asset managers. With few exceptions, the largest asset managers usually do not have more than 50 personnel assigned to stewardship and engagement, which limits quality and quantity of engagements

directed at emissions-intensive companies (Rose et al., 2021) (see Table 6). It is clear that these asset managers are unable to engage with the majority of the companies they hold investments in, and that they are unlikely to appropriately exercise their stewardship role with respect to climate related risks.

Coordinated engagement between large numbers of shareholders of a company is essential to ensure shareholder resolutions gain the required majorities to pass. Collective action and the coordination of engagement, monitoring and data collection via initiatives can act as a cost-sharing



**Table 6**

Number of staff working on engagement / stewardship per financial institution (data collated by authors).

COMPANY	TEAM DESCRIPTION	TEAM SIZE (EMPLOYEES)
<b>BlackRock</b>	Stewardship team	~ 65
<b>Vanguard Group</b>	Stewardship team	~ 35
<b>Fidelity Investments</b>	Proxy associates	~ 14
<b>Allianz Group</b>	Dedicated global professionals	~ 100
<b>J.P. Morgan Chase</b>	Stewardship team	~ 13
<b>Capital Group</b>	ESG team	~ 28
<b>Goldman Sachs Group</b>	Stewardship team	~ 6
<b>Amundi</b>	ESG research, engagement and voting team	~ 22
<b>Legal &amp; General Group</b>	ESG team	~ 48
<b>UBS</b>	Stewardship team	~ 18

mechanism and as a gateway for formalizing engagement, but is also prone to free-riding behaviour (Kruitwagen et al., 2016).

The actual impact of financial institutions’ engagement efforts is often not clear, partly because there is limited or mixed empirical evidence for measurable impact on real-economy companies’ emissions. Gianfrante et al. (2021) for example, find financial institutions’ engagement to only yield measurable impact for the highest emitting companies in the analysed sample. Clearly, also, engagement can only have credible impact where investee companies are able to cover the abatement costs of associated mitigation and transition needs, without leaving the profitability of their business model at risk.

However, engagement success stories can take various forms and are not easily captured empirically. Even where corporate engagement is successful, real emission reduction impacts are not definite. New management structures, improved tracking and disclosure, transparency, as

well as Paris-aligned emission reduction targets are only a step on the way towards-actual changes to polluting business models and production methods. Actual implementation of emission reduction measures may, however, in all cases be much slower or even fundamentally difficult for fossil fuel investee companies.

### Activist investors

Activist investors are asset managers or owners that strategically engage as shareholders of listed companies that they seek to influence, not only on climate issues. Activist investors usually are not large enough for their vote to have meaningful leverage on their own, but they can be successful in staging activist campaigns that can mobilise other investors, including large asset managers and owners, into collective action and be successful in proxy fights.

Activist investors are especially active in the US and European markets and in both markets broader “ESG” issues are a



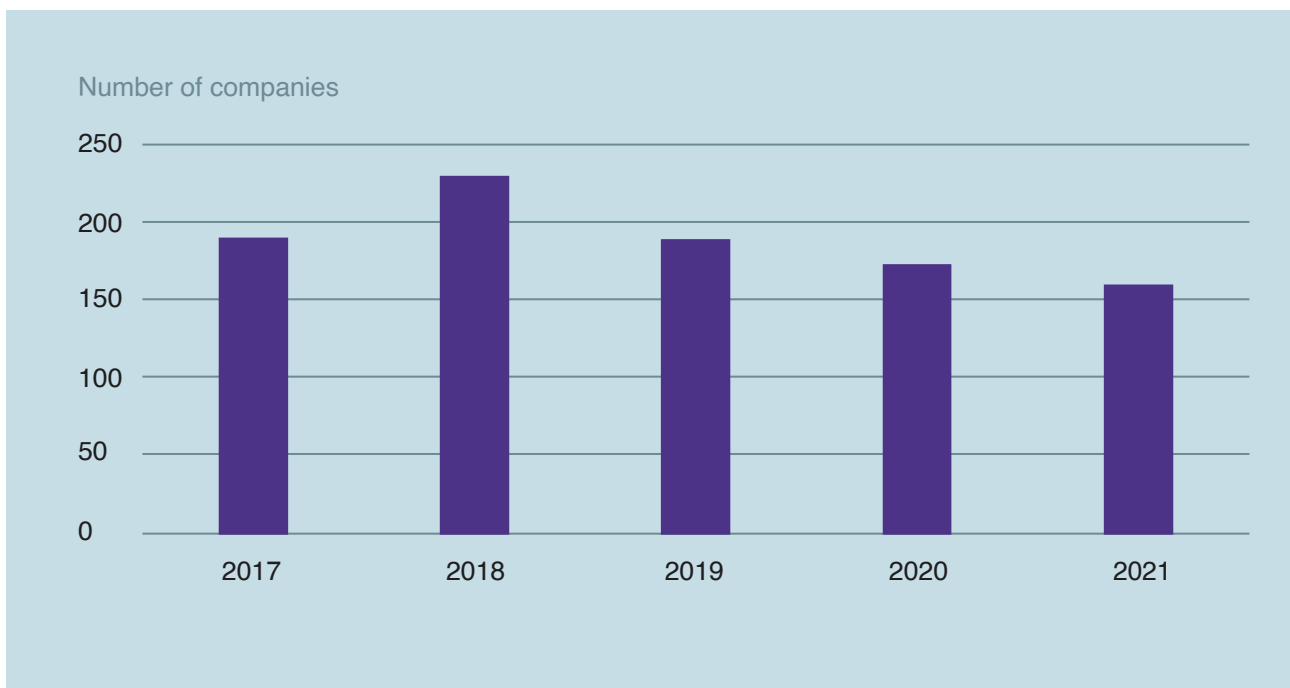
growing theme in activist investor campaigns. Although not all on climate issues, in the US, activist investors mobilised approximately USD 42 billion of capital in 173 campaigns in 2021 (Lazard, 2021). In Europe, activist investors launched about 50 new campaigns in 2021. Overall, however, 2021 global campaign activity has

been declining and deployed capital has stagnated since 2018 (see Figure 21).

Various activist stakeholders have recently launched efforts to change the business models of high-profile fossil fuel companies/utilities and their positions (see Table 7). For example, Engine No. 1's (an American activist and impact-focused

**Figure 21**

Annual campaign activity in terms of number of companies targeted.



Source: Based on Lazard (2021).

investment firm) campaign targeting ExxonMobil has drawn significant attention. The activist fund took a USD 40 million stake in the oil and gas giant, representing a mere 0.02% position. Engine No. 1 was able to convince large institutional shareholders such as BlackRock, Vanguard, and State Street to support Engine No. 1's board member nominations (Phillips, 2021). It remains to be seen how far Engine No. 1's campaign will lead climate action efforts at ExxonMobil, but major transformations remain outstanding. BlackRock announced that it would vote against shareholder reso-

lutions that it considers too prescriptive and voted against a shareholder resolution calling on ExxonMobil to set specific emission targets, but in favour of another resolution calling for scenario planning with a range of energy transition pathways (Masters, 2022). With 9% of all shares, BlackRock's votes in the latter were decisive. Despite the comparative success of Engine No. 1's board nominations, the overall effectiveness of activist investors in leveraging concrete change in companies' climate strategies has not been convincing in many recent campaigns (see Table 7).

**Table 7**  
Selected climate-relevant activist investor campaigns.

COMPANY	ACTIVIST	POSITION	GOAL	SUCCESS, IMPACT
<b>ExxonMobil</b>	Engine No. 1	0.02%	Board member election	Three successful board member nominations, but impact on ExxonMobil's corporate strategy unclear. ExxonMobil is estimated to spend an additional USD 23.8 billion on new oil and gas projects by 2030 (Global Witness, 2022). ExxonMobil has committed to increase investments in low-carbon solutions and has put forward targets for scope 1 and scope 2 emission reduction but does not account for its scope 3 emissions.
<b>Shell</b>	Third Point	USD 750 million	Company split	No split so far, the impact of Third Point's stake in Shell on the company's climate risk mitigation or financial performance is uncertain/marginal. Shell is estimated to develop another USD 28.4 billion of new oil and gas assets by 2030 (Global Witness, 2022).
<b>GM</b>	Engine No. 1	Around 0.27%	Affirming switch to EVs	Unclear impact, the additionality of Engine No. 1's affirmation of GM's EV strategy is not clear (NorEast Invest, 2021).
<b>RWE</b>	ENKRAFT	0.07%	Separation of coal business	Unsuccessful, RWE and institutional investors oppose the proposal, ENKRAFT was not able to raise collective support (Fuhrmann and Döding, 2022; Schöneberg, 2022).
<b>Glencore</b>	Bluebell Capital Partners	Undisclosed	Separation of coal business	Low impact so far, Bluebell has increased pressure on Glencore, asking for concrete plans for the coal spin off by 2023, but its leverage is unclear (Kumar and Biesheuvel, 2022).
<b>SSE</b>	Elliot	3-5%	Separation of renewable business	No split so far, even though Elliot is among the largest shareholders of SSE, it is facing strong opposition from SSE (Twidale, 2021).

Source: Produced by authors.

### The role of proxy advisors

Many smaller investors do not use their right to vote in annual shareholder meetings, this provides those that do vote with more decision-making power. In the US, only about 12% of retail investors actually vote, although retail investors control about 26% of shares (Brav et al., 2019).

Institutional investors, which often have large voting shares in thousands of companies (Lazard, 2021; Wigglesworth, 2022), vote 80% of the time (Brav et al., 2019). Engaging with this number of companies and deciding how to vote at annual shareholder meetings is a major challenge. Proxy advisors are researchers that advise institutional investors how to vote at annual shareholder meetings on a variety of issues.

Two proxy advisors have a large market share: ISS and Glass Lewis had over 90% of the advisory market in the United States (Rose, 2021). Their advice has an outsized impact on the outcome of board elections and shareholder resolutions. According to literature (Gillan and Bethel, 2002; Cotter et al., 2010; Chuan et al., 2019, p. 11), “proxy advisor recommendations can sway anywhere in the range of 13% to 30% of shareholder votes.”

There is concern that some asset managers may unquestioningly be following the advice of these proxy advisers. It is currently unclear if the voting recommendations of these two proxy advisors are in line with the climate commitments of large institutional investors’ and if their engagement potential is therefore undermined by the outsourcing of research and effectively voting power. As noted by Chuan et al. (2019), these proxy investors also constitute an engagement target group with regard to climate and ESG issues, but

there is also a need for more transparency, and increased in-house climate research resources to better integrate climate risks and opportunities to influence companies’ strategies.

### 4.3.3 Is engagement effective? A fixed income perspective

It is less common for financial institutions to engage investee companies on climate risks outside of equity markets (PRI, 2018). Considering the capital structure of many emissions-intensive companies, fixed income markets offer the most comprehensive exposure to these companies and sectors (Sjöström and Erlandsson, 2020). According to PRI (2018), in fixed income markets the share of financial institutions with systematic engagement efforts on their fixed income portfolio is quite low. ESG-integration in fixed income markets is lagging behind, which is problematic given that companies with large fossil fuel exposure increasingly tend to raise capital through these channels (Rennison, 2022). For the corporate bond market, there are estimates that 60-70% of investee companies’ capital structure is not covered by financial institutions’ stewardship, as formal approaches for engagement of bond issuers are mostly lacking (Webb, 2022).

Engagement in fixed income markets differs substantially from listed equity markets. Bond holders do not have voting rights and there are no formal bond holder meetings that offer bond holders a communication channel to the management boards of issuing companies. Large bond

holders are limited to approaching issuers directly if they wish to engage them on climate action objectives, while small-scale investors usually have no proper gateway for engagement.

Generally, investor size and collaboration between financial institutions to leverage collective action can be essential for generating impact, as well as to overcome information and engagement costs. Momentum to steer finance away from emissions-intensive investee companies can result in bandwagon effects whereby investors “vote with their feet” against unsustainable issuers (Hoxha, 2022).

Engagement with bond issuers is most likely to be impactful if financial institutions engage with companies before the new-issuance of bonds, i.e. for primary market offering (Philips, 2020; Hoepner and Schneider, 2022). If demands for better integration of climate action objectives have sufficient support, bond issuers may be more likely to adapt credit agreements accordingly (Philips, 2020). Generally, engagement pre-issuance tends to be more direct and impactful for privately placed bonds. For publicly issued bonds, few entry

points for engagement exist early enough in the issuance process, which can limit the feasibility of impactful engagement (PRI, 2018). Frequency of issuance can also play an important role, as the more often companies issue new bonds, the larger the potential for financial institutions to exercise active engagement. Similarly, the shorter the maturity of a bond investment a financial institution provides, the more control the financial institution has over the bond issuer by withholding renewals (Sjöström and Erlandsson, 2020).

The bond itself, as well as the market in which it is issued, can influence engagement potentials. Sub-investment grade bond issuers, such as corporations in developing or emerging markets, may be more receptive to engagement as they face higher costs of capital amid lower liquidity. On the other hand, these corporations may not have dedicated engagement teams, which can pose a challenge for dialog (PRI, 2018). Overall market conditions, specifically with respect to the prevailing interest rates, can render bond issuers more receptive to engagement as well.

# 5 Conclusion

The Paris Agreement specifically recognises the importance of the finance sector in reaching overall mitigation and resiliency goals. Current continued investment trends make it clear that financial institutions generally, and asset owners and asset managers specifically, are not yet taking a sufficiently active role in bringing about this change.

Ostensibly responding to the need for more action among institutional investors to shift flows, a growing number of financial institutions are making various kinds of climate commitments. Many of them were brought under the umbrella of the Glasgow Financial Alliance for Net Zero at COP 26 in 2021. The alliance has significant potential considering that financial decision-making is increasingly concentrated in the hands of a few large firms, which have an outsized influence on both companies' access to capital as well as their corporate strategy. Unfortunately, the tension between setting ambitious criteria and attracting broad "big tent" membership has proved to be a major challenge, raising important questions around the actual emissions impact of global financial initiatives such as GFANZ. This is made particularly clear by the resistance to more appropriate guidance on restricting further finance to fossil fuels.

Another important failing is that too many asset owners and asset managers concentrate on net zero or carbon neutrality on the portfolio level, rather than considering the impact that investments have in the real economy. Instead of net zero or carbon neutral portfolio targets, institutional investors should focus on how to bring about the transition in the real economy, including through exclusion, divestment,

and engagement. The potential impact of exclusion, divestment, and engagement strategies varies, depending on asset class (equity and fixed income), and when they are employed (primary market, secondary market). Excluding newly issued bonds from a portfolio is likely more effective in having an impact on a company's cost of capital than divestment of shares in publicly listed equity markets. Importantly, they are not mutually exclusive, and the credible threat of exclusion from access to capital and stigmatization from divestment can be used as leverage to engage with companies to shift them towards ambitious measures to decarbonise their businesses.

Based on an analysis of the 50 largest asset owners and 50 largest asset managers, we find that exclusion policies do not live up to their potential in restricting access to capital for emissive business activities, largely because of their relatively small sectoral coverage, insufficient scope, and unambitious thresholds. While divestment's impact on the cost of capital is questionable in liquid markets with many other preference-neutral investors, it may have an impact through stigmatisation. Engagement efforts have the largest potential, especially when backed up with credible escalation strategies that include the threat of exclusion and divestment, but the engagement channels face their own particular challenges and largely remain underutilised.

Given the urgency of action in this critical decade, it is in everyone's interest – including the largest asset owners and managers – to help corporates to realise the business opportunities to be found in deep decarbonisation and avoid the worst impacts of climate change.

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## Annex 1: Methodology note

We derive descriptive statistics on financial institutions' climate targets, initiative participation, as well as engagement, divestment and exclusion policies, from an original database compiled from desk research. The sample of the 50 largest asset managers and the 50 largest asset owners in terms of assets under management forms the basis of the database. Subsequent changes in asset under management value, as well as mergers and acquisitions, are not reflected. The samples are drawn from third party databases:

- Top 50 largest asset owners: Thinking Ahead Institute (2020)
- Top 50 largest asset managers: ADV Ratings (2021)

There is some overlap in terms of represented financial institutions. Some of the largest asset managers also own significant assets and hence also appear in the asset owner database (e.g. BlackRock). Further, there may be significant overlap in terms of represented assets under management. Significant shares of asset owners' assets may be managed by asset managers. For each financial institution in our database, we conducted a series of predefined keyword searches to obtain or access company reports and policies.

## Annex 2: Lists of largest asset managers and asset owners

### Top 50 asset managers based on ADV Ratings (2021)

FINANCIAL INSTITUTION	DOMICILE	AUM			
<b>BlackRock</b>	US	\$7,429,632	<b>DWS</b>	Germany	\$859,379
<b>Vanguard Group</b>	US	\$6,151,920	<b>Sun Life Financial</b>	Canada	\$841,264
<b>State Street Global</b>	US	\$3,116,424	<b>Legg Mason</b>	US	\$803,534
<b>Fidelity Investments</b>	US	\$3,043,134	<b>Manulife Financial Corp.</b>	Canada	\$798,498
<b>Allianz Group</b>	Germany	\$2,539,842	<b>Mitsubishi UFJ Financial Group</b>	Japan	\$780,655
<b>J.P. Morgan Chase</b>	US	\$2,364,000	<b>Ameriprise Financial</b>	US	\$778,100
<b>Capital Group</b>	US	\$2,056,991	<b>Principal Financial</b>	US	\$735,300
<b>NY Mellon</b>	US	\$1,910,000	<b>Affiliated Managers Group</b>	US	\$722,500
<b>Goldman Sachs Group</b>	US	\$1,859,000	<b>Power Financial</b>	Canada	\$714,734
<b>Amundi</b>	France	\$1,617,280	<b>Franklin Templeton</b>	US	\$698,305
<b>Legal &amp; General Group</b>	UK	\$1,568,891	<b>Nippon Life Insurance</b>	Japan	\$688,267
<b>Prudential Financial</b>	US	\$1,550,982	<b>Schroders</b>	UK	\$662,630
<b>UBS</b>	Switzerland	\$1,413,000	<b>abrdn (Standard Life Aberdeen)</b>	UK	\$638,141
<b>BNP Paribas</b>	France	\$1,257,603	<b>AllianceBernstein</b>	US	\$622,915
<b>Northern Trust</b>	US	\$1,231,300	<b>Dimensional Fund Advisors</b>	US	\$609,337
<b>Invesco</b>	US	\$1,226,173	<b>MetLife Investment</b>	US	\$600,030
<b>T. Rowe Price</b>	US	\$1,206,800	<b>New York Life Investments</b>	US	\$596,573
<b>Wellington Mgmt.</b>	US	\$1,154,735	<b>Royal Bank of Canada</b>	Canada	\$592,337
<b>Morgan Stanley</b>	US	\$1,131,824	<b>Geode Capital Mgmt.</b>	US	\$584,279
<b>Wells Fargo</b>	US	\$1,091,100	<b>Federated Hermes</b>	US	\$575,874
<b>AXA Group</b>	France	\$1,085,547	<b>Blackstone Group</b>	US	\$571,122
<b>Nuveen</b>	US	\$1,060,770	<b>MassMutual</b>	US	\$567,000
<b>Natixis Investment Managers</b>	France	\$1,048,507	<b>Generali Group</b>	Italy	\$559,930
<b>Aegon Group</b>	Netherlands	\$1,007,636	<b>Brookfield Asset Mgmt.</b>	Canada	\$545,000
<b>Sumitomo Mitsui Trust Holdings</b>	Japan	\$928,145			
<b>HSBC Holdings</b>	UK	\$867,000			

## Top 50 asset owners based on Thinking Ahead Institute (2020)

FINANCIAL INSTITUTION	DOMICILE	AUM			
<b>Government Pension Investment Fund</b>	Japan	\$1,555,550	<b>Mubadala Development Company</b>	United Arab Emirates	\$229,000
<b>Government Pension Fund</b>	Norway	\$1,066,380	<b>Employees Provident Fund</b>	Malaysia	\$226,101
<b>China Investment Corporation</b>	China	\$940,600	<b>Local Government Officials</b>	Japan	\$224,006
<b>National Pension Service</b>	South Korea	\$637,279	<b>Turkey Wealth Fund</b>	Turkey	\$222,276
<b>Federal Retirement Thrift</b>	US	\$601,030	<b>New York State Common Retirement</b>	US	\$215,424
<b>Abu Dhabi Investment Authority</b>	United Arab Emirates	\$579,620	<b>New York City Retirement</b>	US	\$208,458
<b>Kuwait Investment Authority</b>	Kuwait	\$533,650	<b>Florida State Board</b>	US	\$173,769
<b>Hong Kong Monetary Authority Investment Portfolio</b>	Hong Kong	\$528,054	<b>AON Hewitt</b>	US	\$172,182
<b>ABP</b>	Netherlands	\$523,310	<b>Employees' Provident</b>	India	\$168,095
<b>SAMA Foreign Holdings</b>	Saudi Arabia	\$509,884	<b>Russell Investments</b>	US	\$161,910
<b>GIC Private Limited</b>	Singapore	\$440,000	<b>Ontario Teachers</b>	Canada	\$159,666
<b>SAFE Investment Company</b>	China	\$417,845	<b>Texas Teachers</b>	US	\$157,632
<b>California Public Employees</b>	US	\$384,435	<b>Korea Investment Corporation</b>	South Korea	\$157,300
<b>Temasek Holdings</b>	Singapore	\$375,383	<b>Public Investment Corporation</b>	South Africa	\$151,557
<b>National Social Security</b>	China	\$361,087	<b>ATP</b>	Denmark	\$144,983
<b>Public Investment Fund/Sanabil Investments</b>	Saudi Arabia	\$320,000	<b>Willis Towers Watson</b>	US	\$140,089
<b>Central Provident Fund</b>	Singapore	\$315,857	<b>BlackRock</b>	US	\$139,588
<b>Canada Pension</b>	Canada	\$315,344	<b>State Street Global Advisors</b>	US	\$137,227
<b>Qatar Investment Authority</b>	Qatar	\$295,200	<b>Boeing</b>	US	\$129,545
<b>Mercer</b>	US	\$260,467	<b>AustralianSuper</b>	Australia	\$129,095
<b>PFZW</b>	Netherlands	\$243,839	<b>AT&amp;T</b>	US	\$125,611
<b>California State Teachers</b>	US	\$243,311	<b>National Wealth Fund</b>	Russia	\$124,000
<b>Investment Corporation of Dubai</b>	United Arab Emirates	\$239,379	<b>Labor Pension Fund</b>	Taiwan	\$123,655
			<b>Washington State Board</b>	US	\$119,992
			<b>New York State Teachers</b>	US	\$119,663
			<b>Wisconsin Investment Board</b>	US	\$116,877
			<b>North Carolina</b>	US	\$114,631

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