IIGCC

Index investing for the net zero transition

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Disclaimer and Legal Statement

Index investing: scaling NZIF alignment

This paper is for index investors, including asset owners, asset managers, index providers, and policymakers, who are looking to **align their investment strategies, product offerings, and policies with the Net Zero Investment Framework (NZIF 2.0) and goals of the Paris Agreement.** It provides **practical considerations on overcoming challenges and implementing solutions** that support real-economy decarbonisation through index investing.

While the term ***'index investing'*** is often used interchangeably with ***'passive investing'***, **index investing more accurately reflects the growing sophistication of quantitative systematic strategies** that seek to track the performance of a specified index through mutual funds, segregated mandates such as ***index funds***, and ***exchange-traded funds (ETFs).***

Index funds and ETFs have become indispensable tools for institutional investors, offering cost-efficient, transparent, and scalable solutions to meet long-term financial and sustainability objectives in a rapidly shifting global market. Yet, despite their growing prevalence, index investors face significant **hurdles in aligning their broad-based portfolios with net-zero targets.**

Recognising the challenge, IIGCC's Enhancing the Quality of Net Zero Benchmarks (2023) set out key principles for constructing, maintaining, and reporting on net-zero-aligned benchmarks. Achieving real-economy decarbonisation requires more than reducing portfolio emissions: **asset selection, stewardship, engagement, and advocacy for systemic change** are key levers for financing reduced emissions and are aligned with NZIF.

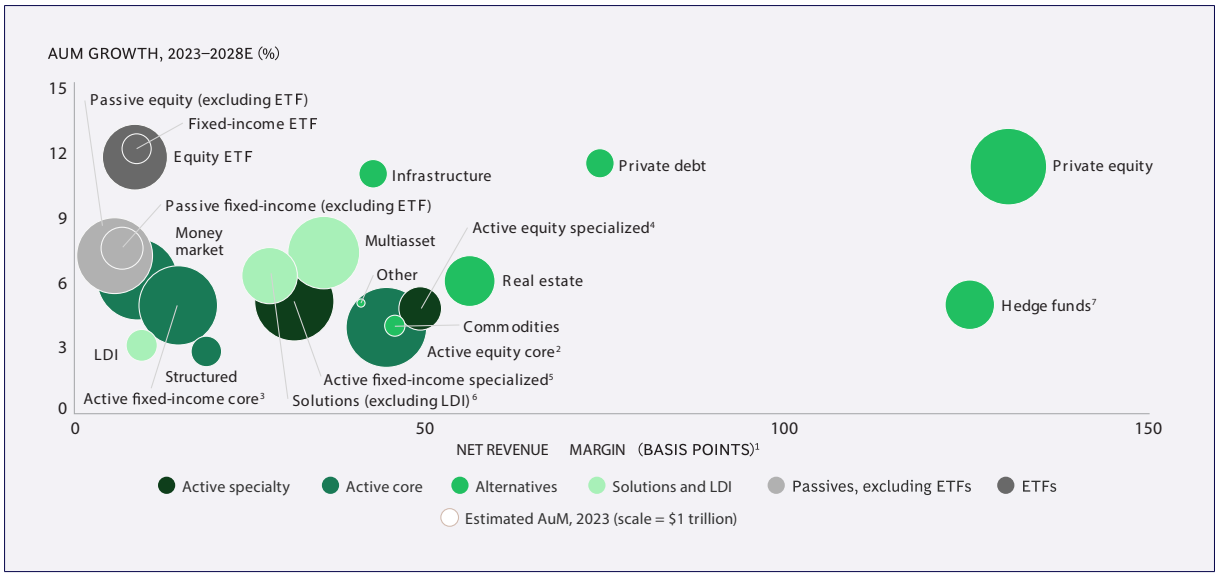
Since then, IIGCC's Index Investing working group has focused on equipping index investors with tools to support the development of their individual strategies. This discussion paper seeks to:

- **Define levers of influence available to index investors** and illustrate how their broad market exposure and long-term capital allocation positions them as important enablers to scale climate transition.
- **Review existing practices** on index portfolio alignment with NZIF.
- **Explore the potential of engagement and active ownership** as an important element for any index investor striving to align with a net zero objective and manage systemic risks.
- **Propose actionable recommendations** for index providers, asset managers, and policymakers that could help to improve transparency and facilitate a greater shift toward index strategies integrating climate considerations.

Key findings

- **Increasing investor allocations to climate indices** can leverage NZIF principles, supporting a net zero objective by financing reduced emissions and scaling up investments in climate solutions. This approach incentivises the inclusion of companies across all sectors that lead their peers in credible and ambitious climate transitions, while accounting for regional and sectoral pathways to ensure an effective transition.
- **Investors seek greater transparency, intentionality, and a clear theory of change in climate index design.** This can be met by integrating reported data where feasible to enable better corporate engagement mechanisms and signal clear expectations to the market to support change at scale.
- **Aligning stewardship and corporate engagement with fund objectives, index design, and climate commitments in line with NZIF can benefit index funds.** Investors value these approaches separately from portfolio construction design, but tailored to index funds to ensure index climate criteria align with engagement prioritisation and escalation mechanisms.
- **Periodic reviews and governance assessments of EU Regulatory Low-Carbon Benchmarks[1] are recommended to ensure benchmarks remain fit for purpose,** reflecting economic and climate realities and driving real-economy decarbonisation.
- As institutional allocations to index funds and ETFs continue to grow, so too do **index investors' responsibilities as active stewards and often universal owners.** Incorporating system-level stewardship,[2] engagement on policy advocacy, and stakeholder and market engagement will be key to meeting net zero goals.

Rise of index investing



Source: BCG's Global Asset Management Market-Sizing Database, 2024

Financial indices have evolved beyond market barometers to essential tools for investors, fund managers, and researchers. Academics use them to study market behaviour, while asset owners and fund managers rely on them for performance tracking and investable strategies such as index funds and ETFs. Indices range from traditional market capitalisation-weighted benchmarks to more complex systematic approaches, such as factor-based and thematic indices, which aim to achieve specific investment objectives, provide targeted exposure, or reflect a particular investment belief.

Indices integrating climate considerations expand the toolkit available to investors, enabling them to systematically incorporate climate goals into their investment process. These benchmarks provide a structured, rules-based framework for aligning the investment approach with climate objectives and ensuring consistent integration of climate risk across the entire portfolio.

At a strategic level, climate indices serve as **policy benchmarks**, guiding asset allocation decisions or helping to define an investor's preferred universe of securities. At the implementation level, they can serve as **performance benchmarks**, supporting both active and indexed strategies and underpinning climate-focused financial products.

Investors use them to evaluate both financial and climate performance, developing **climate-aligned strategies** that align with commitments and board oversight. Additionally, these benchmarks can facilitate **internal and external communication of climate objectives, track progress over time,** and **support corporate engagement.**

As methodologies evolve, climate indices continue to enhance investors' ability to assess climate risks, measure alignment with climate goals, and support informed investment decisions.

A significant and growing proportion of global investments are managed using a systematic approach to investing, such as index funds and ETFs:

- In January 2024, **indexed assets surpassed actively managed assets in the US fund industry.**[3]
- This trend is not isolated to developed markets: **Taiwan ETFs** rose from 37% in 2019 to **64% of local funds** in 2024,[4] in one example.
- Index funds and ETFs represented 43.5% of worldwide long-term assets in 2024.[5]
- According to BCG,[6] **indexed products** now dominate, **capturing** the lion's share of **net inflows across the global investment landscape.** That lead is expected to continue through to 2028.

The value proposition of index investing is now firmly embedded in the investment ecosystem, driven by secular trends that support the rapid growth of index offerings as an effective tool to track performance and allocate capital to market segments or the broader economy. These include:

- **Cost:** index strategies offer a cost-effective and transparent approaches, providing liquid vehicles for broad market exposure, targeted market segments, or for an investment narrative using a robust, data-driven investment process.
- **Product innovation:** developments such as custom indexation and direct indexing have enabled greater personalisation, allowing investors to align portfolios with specific goals and preferences.
- **Sustainable and climate strategies:** while the materiality and complexity of the energy transition requires deliberate choices about the use of climate data, its systemic nature makes scalable index solutions a strong candidate for integration in strategic asset allocation.[7]

Sustainable investing is both shaping and being shaped by the growing shift towards indexed strategies. A FTSE 2024 Global Asset Owner Survey revealed a significant trend: sustainable investing is increasingly adopting a hybrid approach, combining active management and index strategies.[8] **For the first time, asset owners are implementing sustainable investment more often through index strategy implementation than through active strategies.** Similarly, Morningstar reports that in Europe, index funds and ETFs represented 60% of total climate fund assets and continued to see net inflows of new money in 2024, despite outflows from Paris Aligned Benchmark (PAB)-tracking funds.[9]

Aligning index strategies with NZIF: considerations and challenges

Rule-based index strategies are widely used for broad market exposure and present a relatively clear, robust method to align with the investor's specified climate objectives. While constructing a benchmark with a specific decarbonisation rate is relatively straightforward, ensuring these strategies contribute to real-economy emissions reductions requires clear objective-setting and thoughtful design. While such strategies may be effective for aligning capital allocation with long-term climate goals, their ability (in isolation) to influence corporate transitions in high impact material sectors is limited.

The key barriers to scaling net-zero alignment in index strategies include:

- **Real-economy impact:** Existing climate indices may lead to reducing financed emissions at the portfolio level rather than **financing reduced emissions** in assets, which is a **key consideration within NZIF's objectives and targets guidance.** A key challenge for index investors with a goal of financing the decarbonisation of high-carbon activities is that, despite the associated risks, it is arguably necessary for funds to remain exposed to all sectors of the economy.
- Without this, their impact on real economy decarbonisation may be limited. Investors should consider whether a **focus on reducing financed emissions might inadvertently reduce investments in climate solutions, transition finance, and emerging markets,** which may be key enablers for investors to consider in climate investing.
- **Climate data and index transparency:**
  - **Measuring transition alignment:** currently, metrics to quantify the transition are limited in coverage. Proxies, such as annual carbon emissions, can provide indication in certain contexts but are backward looking. A shift toward forward-looking indicators, such as capital allocation or credible transition plans,[10] is needed to better align investments with real-economy impact. Methodology estimates may also diverge, as they often involve scenario-based projections.
  - **Index methodology transparency:** investors often lack visibility as to how climate data is integrated, with opaque scoring methodologies and complex optimisation rebalancing mechanisms. Methodologies do not always ensure transparency of portfolio outcomes. The lack of transparency around the impact of these tools, and regular performance and climate performance attribution on portfolios, hinders understanding and limits the uptake of climate index-based strategies.
- **Performance implications:** integrating climate considerations in line with fiduciary obligations and risk-adjusted returns is essential. However, climate indices may diverge from traditional market indices, raising tracking error considerations.[11] This may lead to concerns about tracking error risk, as short-term volatility is typically driven by economic, financial, or geopolitical factors, rather than climate-related ones, which often involve longer-term risks in those dimensions. Whilst the appropriateness of tracking error as a risk metric may be debated, it is nonetheless the de facto standard for many asset owners and hence remains a key consideration in index construction.

- **Regional and sectoral imbalances:** addressing allocation to **Emerging Markets and Developing Economies (EMDEs) and hard-to-abate sectors is critical to decarbonisation.** Net zero is a global goal, and currently, EMDEs account for two-thirds of the world's energy-related carbon dioxide (CO_2) emissions and 95%12 of the increase in emissions over the 2011-2018 period. Rebalancing portfolios away from these regions risks slowing the transition and increasing systemic financial risks. Institutional investors are faced with a challenge of balancing transition risk and ensuring EMDEs remain investable, receiving adequate transition financing. The Paris Agreement's **'Fair Share' principle** recognises that developed markets should decarbonise faster due to historical responsibility and greater transition capacity, but this is rarely reflected in climate index tilts.
- **Engagement: Effective individual corporate engagement may be challenging due to diversified, broad-based baskets and the low-cost nature of index funds,** the lack of incentives,[13] and a diverse client base with likely varied expectations. Asset owners who do not manage their own corporate engagement programmes and instead rely on external managers may have limited visibility on the scale, resource allocation, and effectiveness of engagement at the portfolio level.

Overcoming these barriers is crucial for index investors who have committed to the goals of the Paris Agreement. As universal owners, they are uniquely positioned to contribute to real-economy decarbonisation by aligning with NZIF and leveraging **index portfolio construction, active ownership, stakeholder engagement, and policy advocacy** to address systemic climate risks.

NZIF alignment

Index portfolio alignment with net zero goals: Review of current practices

NZIF outlines ten backward-, current-, and forward-looking criteria for assessing company alignment with net-zero objectives for listed equities and corporate fixed income. These criteria serve as **guiding principles for investors when designing investment strategies aligned with climate goals.** However, data quality and coverage remain key challenges for climate indices and measuring their alignment with net-zero objectives.

The below review, informed by participating index providers,[14] explores current practices and metrics used in climate indices design in consideration of NZIF, its determining core and additional non-core criteria.[15]

Table glossary

GHG:	Greenhouse Gases
SBTi:	Science-based Targets initiative
TPI:	The Transition Pathway Initiative
WACI:	Weighted Average Carbon Intensity
EVIC:	Enterprise Value Including Cash
TCFD:	Taskforce for Climate-related Financial Disclosures

NZIF criteria	Indicators and metrics used
Emissions performance	**Current absolute or emissions intensity is at least equal to a relevant net zero pathway:** GHG Intensity Score (use of Scope 12 and 3 for high impact sectors or Scopes 1, 2, and 3; Reported/Estimated; choice of denominator (WACI, EVIC, other approaches); GHG Emissions Target Progress; TPI Carbon Performance Assessment; Climate Alignment Scores, Energy Supply Banking Ratio, SBTi
Capital allocation alignment*[16]	**A clear demonstration that capital expenditures are consistent with achieving net zero by 2050:** Limited reported capex data for consistent assessment; use of TPI capital alignment indicators; Climate Alignment Scores, SBTi, Energy Supply Banking Ratio; Investment Alignment Scope 1, 2, 3D, 3U
Decarbonisation plan*[16]	**A quantified set of measures exists to achieve short- and medium-term science-based targets by reducing GHGs and increasing green revenues, when relevant:** GHG Emissions intensity scores, Green Business Revenues, TPI Management Quality scores; Climate Alignment Scores, SBTi, Energy Supply Banking Ratio; Product Decarbonisation Plan, GHG Reduction Programme, Fossil Fuel Investment Management, GHG Performance Incentive Plan, GHG Risk Management, Green Logistics Programmes, Low Carbon Innovation, Low Carbon Investment Planning Programme
Disclosure	**Disclosure of operational scope 1, 2 and material scope 3 emissions:** Use of Scope 12 and Scope 3 for high impact sectors or Scopes 123, Where available reported data is used or estimated due to inconsistent reporting/ lack of comparability; Climate Disclosure Standards; TPI Management Quality scores; Credible track record; Scope of GHG Reporting
Targets	**Science-based short- and medium-term GHG reduction targets:** SBTi; TPI Management Quality scores; Credible track record; GHG Reduction Programme; GHG Emissions Targets; Climate Alignment Scores, Energy Supply Banking Ratio
Ambition	**Long-term net-zero goals consistent with 2050 objectives:** TPI Management Quality scores; GHG Reduction Targets; Net Zero and Science Alignment; Intensity Score, Targets, Green Business Revenue, Climate Risk Management; Climate Alignment Scores, Energy Supply Banking Ratio
Climate policy engagement	**The company has a Paris-aligned climate lobbying position and demonstrates alignment of its direct and indirect lobbying activities:** Low Carbon Transition Rating Management Score Indicator; Positive Climate Policy Engagement; TPI Management Quality scores
Climate governance	**Clear oversight of net zero transition planning and executive remuneration linked to delivering targets and transition:** Low Carbon Transition Rating Management Score Indicator; GHG Performance Incentive Plan; Carbon Leadership Talent; Climate Risk Management; TPI Management Quality scores
Just transition	**The company considers the impacts from transitioning to a lower carbon business model on its workers and communities:** Low Carbon Transition Rating Management Score Indicator; Low Carbon Transition Community Management; Low Carbon Transition Workforce Management
Climate risk and accounts	**The company provides disclosures on risks associated with the transition through TCFD reporting and incorporates such risks into its financial accounts:** Low Carbon Transition Rating Management Score Indicator; TCFD Disclosure Sufficiency; Low Carbon Transition Investment Planning Programme; TPI Management Quality scores

Key insights from a sample of indices in the context of NZIF

Data availability

Most NZIF criteria have reasonable data coverage, including the use of industry-specific indicators and a sector and category level approach to scope 3, based on materiality, although **capital allocation alignment remains a gap.** Some providers use proxies (e.g. consistent with SBTi, TPI) or assess alignment based on improvements relative to a parent index. Within NZIF, **the lack of data is not a reason to allocate away from companies or sectors in transition. Instead, engagement and the use of non-core additional criteria may be utilised to strengthen assessment and alignment.**

Measuring emission performance

Measuring performance using year-on-year changes in carbon intensity may lead to unintended outcomes. Fluctuations in financial denominators in particular can obscure underlying real-economy emissions trends, with inflation adjustments rarely well understood, explained or monitored. The question of how to fairly compare companies with data and those without remains an added methodological difficulty.

Some climate index approaches assess carbon performance using frameworks such as TPI and SBTi, which focus on forward-looking measures of alignment. Factoring in other forward-looking criteria, such as decarbonisation strategy or capex, can also be useful.

Evolving climate index methodologies offer alternative approaches to portfolio-level emissions intensity. These include **tilting or positive/best-in-class selection, without an explicit linear decarbonisation rate target or sector-wide exclusions.**

When informed by NZIF criteria and a **credible engagement strategy,** these approaches can provide an effective pathway to aligning index funds with net zero objectives. **A well-defined theory of change** that outlines how and why the desired outcomes are expected to occur strengthens the credibility of these strategies in achieving real-economy decarbonisation. Climate index strategies can focus on allocating capital towards companies with credible transition plans and thereby clearly signalling investor expectations to the market.

Transparency of climate assessments and index outcomes

Many climate indices rely on opaque climate scores, making it difficult to determine how these factors influence index construction and the resulting security weights, thereby increasing the challenge of engaging with the companies held.

Investors also raised concerns about the low frequency of data updates, and the lack of data transparency that can create significant inconsistencies between climate assessments and corporate realities. Although optimisation techniques are commonly used in equity indices as an indispensable tool to control for multiple parameters in pursuit of the stated objective, they may complicate the transparency of climate KPI impacts on individual company index weights. This may reduce the engagement potential with these companies and require improved attribution analytics, both from implementation fund managers and index providers who rebalance these indices to support greater understanding of the portfolio outcomes. **Some index designs are moving towards greater transparency by integrating reported data** and best-in-class or tilting approaches in index design, offering clearer attribution and signalling to corporates on necessary business practice changes.

Sectoral and regional principles

Climate indices typically apply **uniform methodologies across regions and sectors.** However, investor feedback, including from recent IIGCC Emerging Markets working group discussions, indicates a demand for **more sector- and region-specific pathways.** Some providers are beginning to integrate **differentiated decarbonisation targets, coal phase-out timelines, and green revenue share** to refine climate alignment. Another approach is to measure the emissions performance, either intensity- or absolute-based, at the **asset level and compare it to the rate of decline in the relevant sector or regional benchmark.**[17] These alignment scores (rather than the emissions themselves) can be aggregated. This approach has the advantage of being able to use appropriate, science-based benchmarks and avoids the distortion of using financial denominators.

This challenge also arises in relation to the allocation of carbon budgets to individual companies. Particularly when the activities they are involved in have varying carbon intensities, and when the pathways used to generate company-level alignment scores may introduce unintended sub-industry biases. It therefore remains prudent to test, monitor and control at portfolio level for such biases.

Non-core additional criteria

There appears to be a mixture of approaches on non-core criteria, not least due to limited data or the lack of defined frameworks and metrics. For example, just transition criterion remains underdeveloped in its index construction application due to the absence of a defined framework. Existing governance indicators, such as workforce and community management metrics, may serve as emerging data for index consideration.

Climate governance

Climate governance is a key part of asset-level assessments and a central component of **TCFD and policy engagement.** Related emerging factors in index design include assessing executive remuneration, lobbying activities, and broader corporate strategy. Already embedded in some indices via TPI and other climate metrics, governance indicators may help to strengthen the assessment of corporate commitment to net-zero alignment. Investors are looking to integrate governance factors, such as climate-linked executive remuneration, to enhance accountability and alignment with other assessment frameworks like TCFD.

Emerging markets and the just transition

Emerging markets may require a more tailored approach based on market maturity.

Institutional investors face barriers to incorporating EMDE assets due to market maturity factors such as minimum ticket size, free float, liquidity constraints, and risk-return considerations. There is a strong need for sector- and region-specific pathways that reflect local realities. Evolving index approaches include:

- Standalone country/regional indices for strategic asset allocation.
- Alternative EMDE regional/country indices incorporating local nuances.
- **Differentiated sector- and region-specific pathways with best-in-class tilting** to identify regional transition leaders. Indices are increasingly integrating regional and sector methodologies to reflect fair-share decarbonisation rates and market maturity, influencing both portfolio exposure and engagement priorities.
- Just transition: existing governance indicators, such as workforce and community management metrics, may serve as emerging data for index consideration.

Considerations on aligning index portfolio design to net zero objectives

NZIF provides a principle-based approach, allowing investors to assess company alignment through a combination of determining backward-, current-, and forward-looking criteria. However, practical implementation depends on data availability, methodological transparency, and index design choices. Different climate indices apply varying weighting mechanisms and selection criteria, impacting their effectiveness in managing climate risks and capturing transition opportunities.

Key considerations when structuring a climate-aligned index include defining clear investment objectives, selecting appropriate climate data metrics, and ensuring consistency with financial constraints such as liquidity and diversification. Some investors will have an integrated net zero strategy approach, which they could implement through asset allocation or multi-asset type funds, seeking core equity or fixed income portfolios that deliver such a diversified solution in one fund. under certain tracking error constraints to the parent index. is another option.[18] Some investors prioritise low tracking error (TE) and broad market coverage, while others may seek exposure to transition leaders.

The construction methodology choice may determine how effectively an index reflects climate objectives or supports engagement with portfolio companies and real-economy impact potential. The table below outlines key considerations for the main approaches utilised in index construction that could be taken into account, while recognising that these approaches may also be combined based on investor preferences.

Climate index fund management implementation

While being disciplined and systematic, index managers make a number of decisions to achieve their targeted approach to index replication, including for climate indices. Increasingly, there is a growing **emphasis on achieving fund objective alignment of portfolio design with stewardship activities.**

Index replication styles:

- **Full replication:** Holds all securities in proportion to the index.
- **Representative/stratified sampling:** Used for less liquid markets or fixed income, holding a subset to match index risk/return.
- **Enhanced indexation:** Seeks above-benchmark returns within a controlled risk budget using arbitrage, quantitative signals, or optimisation. Can **link corporate engagement to index climate metrics criteria,** adjusting weights based on engagement outcomes and reducing delays in climate data transmission to index composition.
- **Cashflow-managed index strategies:** like a goal-based approach,[19] particularly in fixed income, can improve climate alignment while optimising costs.

Table 1. Approaches to climate index construction

Type	Optimisation	Best-in-class / positive selection	Weight tilt (linear or optimised)	Screened
Key features	Uses systematic **models** based on covariance matrix and **factors** that seek the **minimum point of active risk,** subject to multiple constraints to balance climate metrics, TE and maintain diversification. Can also align portfolios with decarbonisation pathways and are well-suited for multiple climate and investment goals and objectives.	Selects companies that **lead their peers on climate characteristics** within sectors based on component criteria (e.g., emissions reductions, SBTi commitments, green revenues) while allowing for industry diversification. Often based on either bottom quartile exclusion or top half inclusion, with market weighting.	Adjusts portfolio **weights based on climate scores,** overweighting stronger performers and underweighting weaker ones. Can be structured to maintain sector neutrality and/or track decarbonisation objectives.	**Screens out companies based on predefined climate criteria** (e.g., fossil fuel involvement, failure to meet global standards). Often used in combination with other approaches.
Advantages	Provides a structured, rules-based solution with the ability to manage **multiple constraints and data components** to align portfolios with decarbonisation pathways in a controlled way. **Climate portfolio-level performance is typically controlled** for and surpasses that of the parent, while maintaining diversification.	More **transparent and easy to communicate,** may be more intuitive in term of outcomes. Can be sector balanced while staying invested in all sectors. **Encourages corporate climate leadership** and allows for tracking company progress. Implicitly supports climate alignment. **Climate performance at the portfolio-level typically surpasses that of the parent** while maintaining diversification.	Provides systematic exposure to climate leaders while maintaining broad market exposure. Can be tailored to align with transition pathways, **supporting gradual decarbonisation of the index.** Linear tilting applies a straightforward scaling factor or controls for TE/sector neutrality if optimised. **Climate portfolio-level performance typically surpasses that of the parent** even without exclusions.	**Simple, transparent, and easy to communicate.** Improves portfolio carbon intensity. **Climate portfolio-level performance** typically **surpasses that of the parent.**
Challenges & Considerations	**Sensitive to assumptions** about risk parameters and stable correlations. **Complexity in attribution,** and may be opaque to explain the outcomes and performance attribution, particularly when coupled with targeted decarbonisation and complex climate data scores as inputs.[20]	**TE and climate performance are not explicitly controlled for,** although climate performance is typically improved versus parent. **May maintain diversification** using a broad opportunity set versus parent. Turnover may be higher if data updates are frequent.	**Transparency depends on the climate data and tilting method used. TE and decarbonisation rates may not be explicitly controlled** unless the factors used are relative. Turnover may be higher if data updates are frequent.	**May reduce diversification and prevents engagement with excluded firms. May have higher TE** depending on the breadth of exclusions.
Engagement Potential	**Lower ↓** **Methodological complexity reduces** transparency, limiting its **potential** in investor-led **corporate engagement.**	**Higher ↑** Selection methodology encourages corporate alignment with transition goals, **supporting targeted investor engagement.**	**Moderate → to Lower ↓** Capital reallocation **can incentivise companies,** depending on the transparency of climate metrics and tilting method.	**Moderate → to Lower ↓** **Limits direct investor influence over divested companies,** but non-inclusion/exclusion may act as an incentive for firms to improve and gain/regain inclusion in the investable universe, if the methodology allows this and is communicated clearly and transparently.

Case studies: Lessons learned and practical applications

Ilmarinen: Staying invested in the transition

Ilmarinen, Finland's leading private pension insurer managing €63 billion in assets, **has shifted most performance benchmarks to MSCI Climate Action indices to steer the aggregate portfolio exposures to climate-considerate allocation,** with €22 billion in listed equities and €6.2 billion in indexed Climate Action ETFs across global markets.

Phoenix: Climate Aligned Index Series

Phoenix Group, the UK's largest long-term savings and retirement business managing £290 billion in assets, is committed to achieving net zero by 2050, with interim targets for a 25% (in listed equity and credit) and 50% (across all asset classes) reduction in carbon intensity by 2025 and 2030, respectively. This case study outlines their approach to the **design and implementation of the FTSE All-Share Phoenix Climate Index** to support decarbonisation targets and form the basis of a **sustainable default investment proposition** for Phoenix's clients.

Asset selection and stewardship: Levers of influence and theory of change

Stewardship and engagement in index investing

Stewardship is a critical tool for addressing systemic financial risks and a recognised priority for institutional investors,[21] including on climate change. NZIF provides guidance on stewardship and engagement for both listed equity and fixed income. Here we look at **how this guidance can align with the operational realities of index funds and ETFs.**

Many index investors are integrating climate considerations through index construction using asset selection tools, such as best-in-class selection, tilting, or screens to mitigate climate risks. However, while asset selection utilising an index that incorporates climate criteria can manage risk in high-emission sectors (e.g., thermal coal, tar sands) and improve portfolio carbon performance, on its own, it may not inherently contribute to real-economy decarbonisation.[22]

Engagement remains an important lever,[23] allowing investors to **influence corporate transitions while remaining invested in broad, wide economic sectors.** Engagement may have stronger evidence of impact than selective divestment, particularly through collaborative, well-structured efforts, including when index fund management is used as the implementation style. **Engagement is most effective when it aligns with fund objectives,** featuring realistic and proportional asks through an iterative and multi-year process that supports company value creation goals.[24]

- **Indices can be a powerful lever for engagement through setting and communicating guardrails** that incorporate asset class and regional nuances,[25] including in the methodology of an index.[26]
- Investors can influence corporate accountability through
  1. **transparency in climate index design to signal expectations**
  2. **active engagement on material climate issues,** and
  3. **policy advocacy and stakeholder and market engagement.**
- A well-designed climate index strategy should drive capital allocation while fully leveraging the engagement potential of active ownership, including system-level stewardship, to address the systemic risk of climate change. Index fund managers may wish to **align engagement strategies with index design criteria,** offer fund-specific voting policies, pass-through voting mechanisms in pooled funds, or via a coordinated securities lending approach (See Box 3).

Are you an active owner? Challenges and implementation considerations

Systemic risks for universal "system-level" investors

Asset owners have a fiduciary duty to balance risk and return over the long term.[27] **Climate change introduces both idiosyncratic risks – affecting individual securities – and systemic risks,** that impact the entire economy and may require a system-level investing[28] approach that considers the interconnected nature of environmental, social and financial systems as they influence capital markets.

While debates continue[29] over the relative importance of asset allocation versus asset selection following the seminal work by Brinson et al.,[30] asset allocation is likely to be an important determinant of returns in portfolios made up of index or broadly diversified funds with limited market timing. Although **index funds may mitigate security-specific risks through diversification, as well as integrate of climate criteria into index design, they enhance exposure to market-wide risks** that influence the entire economy.[31]

Given that many asset owners are universal owners, they may need to assess these risks and opportunities not only at the portfolio level, but also in terms of how their investments are shaped by and shape **broader economic systems.**[32]

At the same time, the growing ownership concentration among the largest index fund managers who are invested across nearly the entire market, also referred to as ***universal managers,*** has heightened attention to their evolving role. It also raises questions about **whether they exercise too much or too little influence over the companies in which they invest**.[33]

In parallel, concerns exist regarding market effectiveness and corporate governance in index funds.[34] However, there is balancing evidence that ETFs may enhance market efficiency by improving price discovery and liquidity.[35]

Importantly, **index funds' broad and long-term capital exposure may uniquely position them to support system-wide improvements in market resilience,**[36] including sustainability and climate risk mitigation. The rise of index funds and ETFs could have the potential to alleviate pressure for short-term gains and foster a long-term investment orientation. Since index funds largely remain invested in a broad universe of securities, index fund managers may be compelled to leverage their positions to advocate for improved governance practices and mitigate market-wide risk due to **fiduciary, value creation and reputational reasons.**[37]

Corporate engagement, including for index funds, remains important to mitigate systemic market risks and support competitive sustainability.[38]

For index investors, **policy engagement along with market and stakeholder engagement could play a pivotal role in enabling large-scale climate transition.** Index investing relies on broad market exposure, making system-level change fundamental to managing climate risks across entire portfolios. Index investing is also actively shaped by regulatory requirements that establish methodological and disclosure obligations.

To contribute to system-wide change, index investors may leverage system-level stewardship to:

- Enhance transparency and governance across the broader market ecosystem.
- Influence policy frameworks to create enabling conditions for large-scale decarbonisation.
- Advocate for incorporating climate assessments that align market benchmarks with long-term climate goals.
- Engage collaboratively at an industry level to shape corporate behaviour and market standards.

Efficacy of index fund engagement

Historically, stewardship has not been a primary focus for index investing. This is largely due to its broad exposure, with less capacity for individual corporate engagement, as well as challenges with index fund voting, which may not always match expectations due to a diverse client base.[39] This leads to criticism that index managers are "silent investors".[40] Research also highlights growing corporate governance risks associated with the increasing concentration of ownership among a few large index fund managers, who frequently hold over 5% of voting shares in a significant number of index constituents, acting as top shareholders in many major listed companies.[41]

This raises concerns about diminishing shareholder influence, a shift away from traditional principal-agent relationships, and challenges to ensuring effective corporate oversight.[42] **As ownership concentration grows, index investors hold substantial voting power but may lack the incentives or mechanisms to engage meaningfully with portfolio companies.** This potentially weakens the corporate governance ecosystem and its ability to support long-term economic and societal outcomes.

The structure of index funds, managing thousands of securities within low fee structures, **can** further **limit capacity for direct corporate engagement.** Several factors contribute to concerns about their effectiveness as active owners:[43]

- The main objective is to **track the specified index performance,** whether it goes up or down, limiting incentives to improve the corporate behaviour of companies.
- The **low fee structure** of index funds may create a limiting factor to invest in meaningful engagement across the broad portfolio of securities.
- Many index funds continue to rely on **one-size-fits-all approach to voting recommendations** that may dilute the governance impact. This is despite a growing trend of custom proxy voting policies and pass-through voting in pooled funds,[44] as well as emerging customised policies from third-party proxy advisors.

While index engagement tools remain limited,[45] **approaches such as best-in-class selection indices using reported data may offer potential for greater transparency.** This could serve as an improved channel for scaling stewardship efforts, if **index rules clearly show how the capital flows overweight companies with known climate-positive track records or credible transition plans.**

Notably, Japan's Government Pension Investment Fund evaluation (Box 1) on the effect of engagement by **index funds revealed improved climate and governance KPIs among portfolio companies.**

Box 1. Japan's Government Pension Investment Fund (GPIF) Evaluation Project on the effects of engagement[46] **in index funds**

GPIF, a universal owner with 82.3% of its $1.7 trillion portfolio passively managed including ESG indices, **focusing on stewardship activities and engagements in indexed and active funds, conducted an analysis on measuring the effects of engagement activities by** external fund managers. GPIF performed a large-scale "Fact-Finding Analysis of Engagements" and "Causal Analysis of the Effects of Engagements" on 26,792 engagement cases between FY2017 and FY2022 covering the top 1000 TOPIX companies by market cap in its active and index funds using Difference-in-Differences (DID)[47] method to evaluate the effects of these engagements.

Asset management fees are considered too low to pay for meaningful engagement with companies in a large, diversified portfolio, even when the asset manager uses a targeted approach. **GPIF addresses this concern by paying some of the asset managers a separate fee for engaging with portfolio companies.**

Index fund managers demonstrated engagement results leading to **improvements in financial** (Price-to-Book Ratio, Tobin's Q)[48] **climate** (GHG Emissions Reduction Targets, reduced carbon intensity), and governance (number of Independent Directors) KPIs.

Theme-specific ESG KPIs:

- Among companies engaged on "Climate Change," there was a significant increase in the presence of GHG Emissions Reduction Targets and a decrease in Carbon Intensity.
- Engagements on "Board Structure, Self-evaluation" led to an increase in the number of Independent Outside Directors, with smaller companies also showing improvements in ESG scores.
- In small-cap companies, the presence of GHG emissions targets significantly increased post-engagement.

Performance-related KPIs:

- Engagements on "Climate Change" were associated with positive effects on Price-to-Book Ratio (PBR) and Tobin's Q.
- Engagements on governance (Board Structure) were linked to increases in Natural Logarithm of Market Cap, PBR, and Total Shareholder Return.
- In TOPIX1–1000 companies, Tobin's Q and PBR increased significantly, while Carbon Intensity fell in the intervention group.
- In mid-cap firms, PBR rose significantly following engagement.

GPIF's analysis concluded that active engagement by asset managers including in index funds, "likely made substantial contributions to overall market sustainability, corporate value, and investment returns or improved market beta" and that "**both asset owners and asset managers should continue their efforts to achieve more effective engagement activities".**

GPIF concludes that institutional engagement and index design act as "two wheels of a cart" in index funds with sustainability criteria, complementing each other in driving corporate behavioural change, sustainability and long-term value.

Elsewhere, **a field experiment**[49] **evaluating the potential of index providers as a conduit for corporate climate action demonstrated that companies respond best to explicit, feasible, and actionable requests.**

The impact was further amplified when the risk of removal from the climate index was credible and reinforced by clear index rules. While index vendors may not engage with corporates directly due to the nature of their role to measure market activities, they are in a position to advance products, tools and technological innovation to support investors. The choice of clear climate components criteria, transparent methodologies, and attribution tools used to construct climate indices can serve as powerful levers to signal market expectations for corporates and facilitate structured engagement at scale by investors.

Recent **academic evidence**[50] **and the development of new climate corporate fixed income indices**[51] **emphasise selecting companies based on their current corporate behaviour rather than simply their industry classification,** such as fossil fuels. This approach allows for the inclusion or re-inclusion of fossil fuel companies that are no longer undertaking expansion and phasing down in alignment with the Paris Agreement. When integrated with an engagement strategy, such methodologies can help drive meaningful change at the company level. GFANZ also recommends that better integration of engagement into index funds can better support the global transition to net zero.[52]

Developing new index approaches with greater potential to engage and influence capital allocation – particularly among companies that are delaying the phase-down of fossil fuel operations or investing in new fossil fuel infrastructure – can **help support corporate change and real-economy decarbonisation.**

Resources to meet stewardship ambitions

According to the Global Stewardship Resourcing Survey,[53] **engagement consumes the largest share of stewardship resources,** yet resource allocation varies significantly. More systematic engagement across portfolios and issues, more complex client requirements, and greater rigour in the framing and reporting of engagement activities all require more resources. By some estimations, **current resourcing is only half of what is required to fulfil fiduciary duties.**[54] In the case of index funds, **asset management fees are often too low to support meaningful engagement** across large, diversified portfolios, even when asset managers apply a targeted approach.[55] Although index investors may want to accelerate progress toward climate goals**,** index funds may be lacking clear incentives, priorities, or the resources for effective engagement.[56]

Investing in climate indices can help align portfolios with individual portfolio decarbonisation climate objectives, but **driving the transition further may require more effective corporate engagement and responsible voting, underpinned by greater clarity and intentionality in prioritisation, escalation, and resourcing.**[57] Even the largest asset managers cannot engage on all issues equally,[58] therefore a sharper focus on high-impact areas where multi-year, iterative efforts add the most value may be needed.

One way asset owners could consider addressing these incentive challenges is to **implement an active ownership strategy "in-house",** as is the practice by some. Smaller asset owners may not be in a position to invest in large stewardship teams, or may choose to outsource the dialogue with investee companies and the exercise of voting rights to external asset managers; or prioritise collective engagement efforts.

An alternative may be to **increase allocations to climate index funds that embed structured engagement into their objectives and processes,** ensuring a proactive approach to stewardship and active ownership.

Another approach is to allow index fund managers to **charge stewardship costs directly to the fund and pay asset managers a separate fee for engaging portfolio companies.** This ensures that investors benefiting from engagement also share in the costs, as seen in the GPIF project evaluating engagement in index funds.[59] However, since resourcing transparency remains limited, asset owners **may seek clarity on current stewardship resourcing levels as a starting point.**[60]

Asset owners may also consider incorporating engagement on climate into an Investment Management Agreement (IMA) at the outset and select managers that have effective processes in place.

Box 2. Key questions when assessing efficacy of engagement in indexed portfolio:

- **Alignment of stewardship with climate goals.** How do your stewardship efforts support the climate objectives of your index funds? Does the engagement strategy align with the approach to index construction?
- **Engagement target prioritisation.** What tactics do you employ to prioritise engagement targets?
- **Tracking and reporting outcomes.** Which processes and mechanisms do you use to monitor and report on engagement outcomes within your index funds?
- **Escalation process.** What is your escalation process in index funds?

Box 3. Securities lending considerations for stewardship policy[61]

Securities lending, widely used by institutional investors, involves temporarily lending stocks or bonds to a borrower in exchange for a fee, with collateral (typically cash or other securities) provided to mitigate risk. According to the International Securities Lending Association (ISLA), the global lendable securities pool stands at **€36.4 trillion,** with **€3.0 trillion** on loan. This practice may enhance market liquidity, price discovery, and trading efficiency, while also generating additional income.

Why does it matter for index funds or ETFs?

Securities lending helps offset costs in index funds and ETFs, which maintain broad and stable portfolios. For example, some asset managers report borrowing demand of around 8% of lendable assets, while ETFs alone generated €399 million in lending revenue in 2020. Similarly, the Florida Retirement System (FRS) Pension Plan earned over USD 560 million from securities lending between 2006 and 2021, demonstrating its role in enhancing investment returns.

Aligning securities lending with stewardship

Asset owners such as CalSTRS, PGGM and Nest, with diverse, broad, long-term holdings including indexed portfolios, **align their securities lending practices with stewardship** by:

- **promoting transparency on voting right,** and
- **ensuring that shares are recalled for significant votes when feasible.**

Frameworks like the Global Principles for Sustainable Securities Lending **(PSSL)** advocate for disclosure of lending policies to prevent under-voting or voting abuse, preserving investor influence over corporate governance.

These efforts aim to **coordinate the lending process to prevent under-voting or voting abuse,** ensuring that the **fund's proxy authority over portfolio investments is preserved.** This may involve recalling shares on-loan or restricting the lending of certain securities when necessary.

What does successful engagement look like for index investors?

Core action points for investors: Applying NZIF to index funds[62]

This section outlines practical steps for implementing engagement based on NZIF and the Net Zero Stewardship Toolkit, tailored to index investors, asset managers and asset owners, who engage directly with corporates. Where relevant it reflects existing toolkit guidance, while offering additional recommendations or adaptations to address index-specific investor context. These steps are intended to support the **alignment of the engagement strategy for index funds** (including ETFs) **with the climate objectives of the fund, intentionality, and materiality.**

Set and publish an engagement strategy (Step 3 of Net Zero Stewardship Toolkit)

- Ensure **prioritisation mechanisms** are explicitly defined for index funds, **particularly for climate-critical sectors.** (Step 1 of Net Zero Stewardship Toolkit)
- Signal market expectations: **where feasible, use reported data for index construction** to encourage corporate climate improvements and **align methodologies with engagement approaches.**
- **Escalation and milestones in index portfolio impacts:** develop escalation processes (including public commitments or collaborative actions) for non-alignment with NZIF, **linking outcomes to index construction decisions** such as weight adjustments, or screening as specified by index rulebooks or client mandates.

Set net zero alignment criteria, time-bound company-level objectives and portfolio goals (Step 2 of Net Zero Stewardship Toolkit)

- Develop a framework of **company net zero alignment criteria,** used to determine if companies can be **classified as aligned and to set company-level, time-bound objectives and milestones that support stewardship priorities** and enable measurement of portfolio alignment goals.

Engage with index providers (Step 3 of Net Zero Stewardship Toolkit)

- Engage with index providers to disclose **how the index methodology aligns with index climate objectives** where appropriate to influence corporate behaviour change.
- Engage with index providers on the **development of workflows, with data insights to scale climate engagement** across a broad universe.

Publish an NZIF-aligned voting policy (Step 4 of Net Zero Stewardship Toolkit)

- Develop and publish a **voting policy that incorporates investor-led** Net Zero Voting Guidance, ensuring it addresses index fund objectives on climate.

Publish voting actions and records (Step 4 of Net Zero Stewardship Toolkit)

- **Provide records of voting actions,** including the rationale for any deviations from the policy at portfolio level.

Demonstrate impact of engagement (Step 5 of Net Zero Stewardship Toolkit)

- Fund-level disclosures and reporting on the **alignment of stewardship with the investment objectives of the fund.**

Assess external fund managers stewardship capacity (Step 5 of Net Zero Stewardship Toolkit)

- Assess the **engagement and stewardship capacity of external funds** and investment managers to ensure alignment of net zero objectives with the stewardship approach at either the fund or fund-manager level.

Align securities lending with stewardship strategy (Additional)

- Coordinate securities lending programs to **prevent under-voting or voting abuse, ensuring proxy authority is exercised as per the fund's climate engagement policy.**

Minimum requirements:

- **Policy integration:** Publish a clear **securities lending policy or fund-level guidelines aligned with net-zero objectives.** This includes **collateral guidelines** aligned with the investment objective of the portfolio.
- **Voting rights protection:** Establish **protocols to recall securities** on loan for the most significant votes or where voting is deemed material.

Expectations:

- **Reporting:** ensure **transparency on securities lending practices,** including quantitative and qualitative data on securities on loan, exercise of recalls for voting purposes, or non-vote due to securities on loan on at fund-level.
- By **aligning a securities lending approach with NZIF,** asset owners and managers can generate additional portfolio income from securities lending while **maintaining robust stewardship and climate engagement goals.**

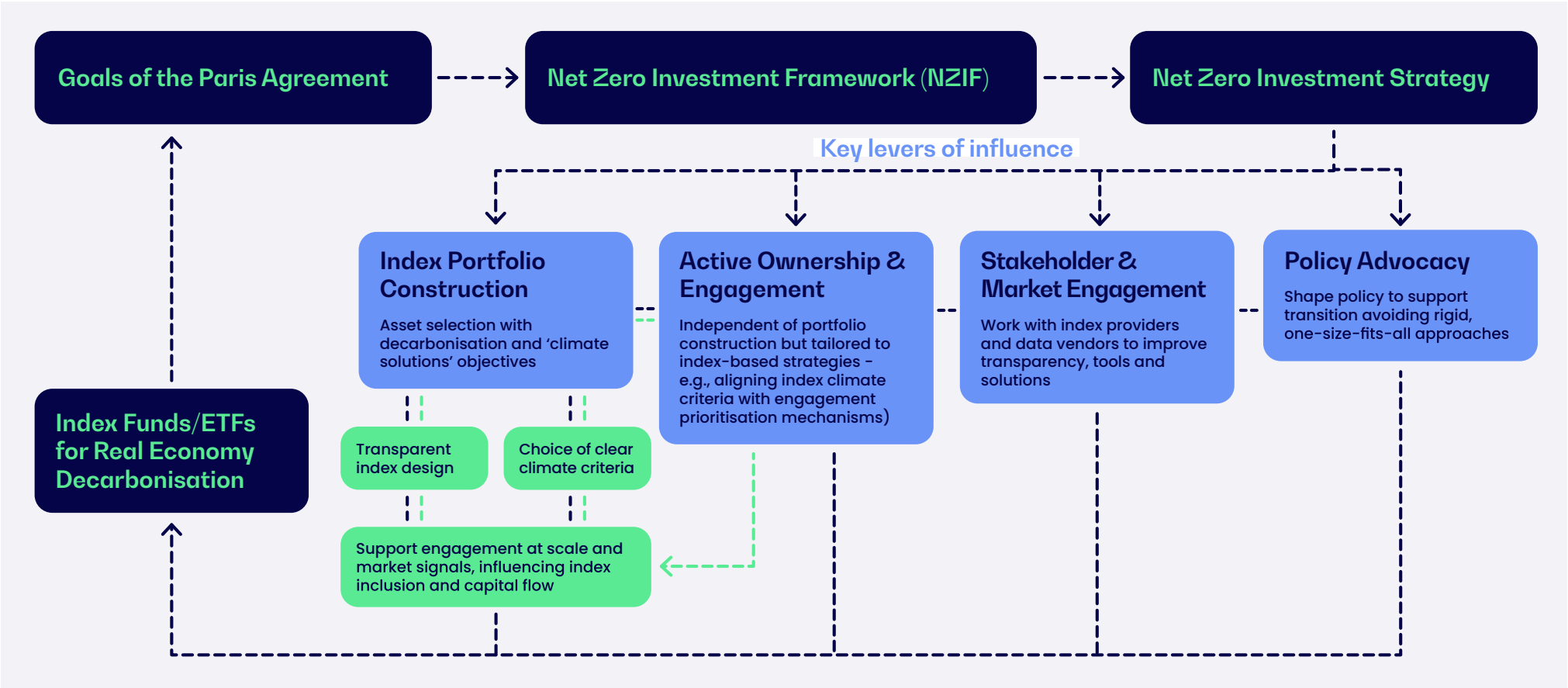
Box 4. How index providers can facilitate more effective engagement in index funds

Integrating climate data in index construction. Applying NZIF principles supports indices in their objective to direct capital towards decarbonisation, facilitating peer comparisons. This also supports benchmarking, equipping investors with clear data to engage companies on climate performance and alignment with net-zero goals.

Enhancing workflow and analytics for scalable engagement. Index providers can offer advanced tools to streamline climate data analysis, allowing investors to efficiently screen and prioritise engagement across large portfolios. Further innovation in insight workflows can improve investor engagement strategies.

Proactive and transparent signalling on index eligibility. Linking index inclusion or non-inclusion to climate criteria, such as emissions reductions or science-based targets, encourages corporate alignment. Transparency of the climate assessments and regular (public where feasible) updates can serve as engagement levers, signalling potential inclusion or non-inclusion and encouraging corporate behaviour change. Similar to publicly accessible information on ESG ratings offered by some ESG rating providers, index providers could provide pertinent data insights on index constituent climate performance on factsheets or on the website.

Theory of change: addressing systemic risks and the climate transition challenge



Given the nature of index strategies, investors may leverage multiple levers in a structured **theory of change**[63] **aligned with NZIF** to address how the broad-based portfolio[64] can use asset selection via **index construction, active ownership, and policy advocacy** to align with climate goals.

Clearly articulating **intentionality and a theory of change has gained prominence in sustainability frameworks,** including impact investing GIIN guidance[65] the UK labelling regime[66](SDR), and a recent joint statement from a coalition of asset owners managing USD 1.5 trillion.[67]

Using NZIF, investors can align portfolios with the climate objectives through index design. Furthermore, prioritised corporate engagement can influence high-emitting companies to adopt credible transition plans. System-level stewardship can support systemic change through policy advocacy and market engagement. This combined approach promotes real economy decarbonisation and corporate behaviour change while balancing the trade-off between risk and long-term financial performance.

To address systemic risks and shape action for the net-zero transition, investors allocating to index funds and/or ETFs can use three key NZIF levers for driving change:

1. **Asset-level alignment and targets:** Aim to help investors shift the alignment of underlying holdings to be consistent with net-zero goals by integrating forward-looking climate metrics. Within index construction, tools such as **tilting, screening, and best-in-class selection can direct capital flows toward companies positioned to lead the low-carbon transition.** At the same time, **active ownership may improve alignment** over time by systematically engaging with investee companies to enhance disclosures, establish credible transition plans and targets, and drive decarbonisation across their operations and supply chains.
2. **Stakeholder and market engagement:** Index investors, with their market-wide exposure, have the potential to support systemic corporate change. Beyond individual company engagement, system-level stewardship enables investors to address global systemic risks by influencing standard-setters, industry bodies, and collaborative initiatives, while also **working with market service providers, index providers, and data vendors to advance net-zero-aligned practices and enhance transparency in investment decision-making.**
3. **Policy advocacy:** Index investors can help shape regulatory frameworks that enable an effective transition by **promoting improved disclosure standards, sustainable market structures and incentivising climate solutions.** They can promote transparency in index design, data use and active ownership practices while avoiding rigid, one-size-fits-all approaches.

By utilising these levers where feasible, **index investors are well positioned to contribute to meaningful, systemic change:** addressing climate risks, supporting the real economy's transition to net zero, and upholding their long-term fiduciary responsibilities.

Investor expectations

Investor expectations of index providers

Despite their importance, climate indices often lack transparency due to complex methodologies, opaque optimisations, and inconsistencies in climate data. Many rely on proprietary climate scores, making it unclear how securities are selected and weighted. This hinders investor confidence in allocating to climate index strategies at scale and complicates corporate understanding of index inclusion criteria. **Greater transparency and clearer index design would enhance confidence, improve capital allocation, and strengthen their role as engagement tools for corporate transition.**

Transparency, intentionality in the objective and the theory of change

- Clearly **define the index's investment objective,** ensuring alignment with measurable climate goals and transparency on alignment assessments.
- Clearly **articulate the theory of change,** demonstrating how methodology and climate metrics support the index objective.
- **Timestamp data inputs used in the index,** including composite indicators (such as SBTi, CDP, TPI) for transparency.
- **Report index climate metrics data** on corporates and disclose the share of high-emitting companies in all benchmarks
- Publish **climate performance metrics** for all benchmarks using NZIF's assessment approach.
- Offer **ex-post financial and climate attribution on index rebalances,** explaining inclusions/exclusions, climate alignment and emission performance.
- **Transparently embed climate criteria to signal to corporates the key areas for improvement** needed to be eligible for inclusion in the index to support scaled engagement.
- **Engage with policymakers to periodically review regulations,** such as the EU's Low Carbon Benchmarks, to ensure they are fit for purpose.

Follow IIGCC recommendations **for index providers** to create benchmarks with real-economy decarbonisation objectives.

Investor expectations of asset managers

- Design and offer **index solutions aligned with NZIF principles.**
- Clearly state the investment objective of the fund and how it is **aligned with the climate objective and index design.**
- Outline the **alignment of climate engagement policy with the climate objective and investment process of the fund.**
- Ensure that the **active ownership approach** (proxy voting, corporate engagement, and shareowner campaigns) is independent of the portfolio construction process, active or indexed, but tailored to the nature of index funds. E.g., prioritisation and escalation mechanisms, and aligning index climate criteria with engagement.
- **Scale engagement efforts;** demonstrate accountability to investors as per the Net Zero Stewardship Toolkit recommendations.
- Provide **ongoing analysis of index investment performance** and how it is impacted by the **climate objective.**

- Report on the **outcome of stewardship activities through voting and engagement, including the approach to prioritisation, and escalation** if companies are not responding to engagement and any wider collaborative engagement initiatives.
- Provide **transparency** around the **allocation of resources related to stewardship** and engagement activities on a fund basis.
- Publish a detailed **policy on securities lending** with regards to voting for securities on loan and voting rights protection. This could include details on whether securities can be recalled in accordance with local laws and exercised **in line with the climate engagement policy** of the fund. Transparent reporting on what proportion of securities were on loan and recalled during the voting season, together with the rationale behind this approach, would also be beneficial.
- Work with index providers and data providers on the development of climate benchmarks aligned with NZIF and investor-led principles from IIGCC's Enhancing the Quality of Net Zero Benchmarks (2023) paper.

Expectations of asset owners

- **Incentivise stewardship in asset manager selection,** where feasible, by clearly articulating expectations in policies and in the selection process. These should specify that the asset manager's approach and capacity to exercise stewardship are seeking to be fully consistent where feasible with the asset owner's investment strategy, policies, and objectives over the appropriate time horizon and to the expected level of monitoring and engagement.
- Publish a **policy on climate engagement guidelines** aligned with NZIF/ Net Zero Voting guidance.
- Ensure that the **active ownership approach** (proxy voting, corporate engagement, and shareowner campaigns) is independent of the portfolio construction process, active or indexed, or whether investments are managed internally or externally but tailored to the nature of index funds. This could include **prioritisation and escalation mechanisms** and aligning index climate criteria with engagement.
- Engage with asset managers and index providers to develop investment and data processes aligned with NZIF/ Net Zero Voting guidance and to **integrate engagement into climate index fund solutions.**
- Publicly disclose **climate strategy and commitments to asset allocation,** including the intended proportion to be managed passively using climate indices or as a reference benchmark for active funds.
- Engage or encourage external fund managers to **engage with companies in allocated indices as an active owner,** regardless of the implementation style. Where fund managers engage with individual companies, request fund-level reporting on the engagement meetings, outcomes, escalation, and next steps.
- Participate in **collaborative and industry-wide initiatives,** and engage with policymakers to drive system-wide change towards net zero.
- **Incorporate engagement on climate into Investment Management Agreement** (IMA) where feasible and appropriate.

Investor expectations of policymakers

Regulatory low carbon benchmarks[68]

Ensure periodic review and governance of regulated benchmarks

- Following the expectations of EU Benchmarks Regulation (EU BMR)[69] and the EU's Low Carbon Benchmark Regulation for periodic **"fit for purpose" review and governance,** the regulated benchmark principles of EU PAB/CTB should continue engaging with investors. This can ensure the integration of the latest thinking to support global decarbonisation of the real economy through the lens of financing reduced emissions.
- **Introduce sectoral and regional decarbonisation pathways** to reflect transition realities across different markets.
- **Prioritise publicly available data and credible forward-looking metrics.**
- Address and refine how **scope 3 emissions** are integrated into benchmark rules, ensuring they **incentivise corporate action** rather than create unintended sectoral or regional biases and outcomes.

Index transparency

Improve requirements for better transparency of climate index methodologies and progress tracking to:

- Disclose emissions, targets, and transition plans across all benchmarks, including traditional market-cap indices, to improve investor understanding of climate risks.
- Require benchmark administrators to publish clear attribution analysis, distinguishing real-economy emissions reductions from portfolio rebalancing effects.
- Disclose climate benchmark performance against stated climate objectives to ensure alignment with net zero goals.
- Support ongoing analysis of the index investment performance and how it is impacted by the climate objective.

Engagement and stewardship

- Promote disclosures on how **engagement is integrated into the investment process** of index funds, and require asset managers to report voting records and engagement activities for index constituents.
- Promote **transparency for stewardship and engagement resourcing,** and on how costs are allocated to these activities.

Conclusion

The rapid expansion of global investments managed as systematic, indexed strategies, increasingly incorporating climate criteria, means **that index investing plays a crucial role in scaling the transition to a net zero economy.**

Index investors, like active investors, may integrate climate indicators into asset selection using climate indices to align portfolios with the objective of decarbonising investment portfolios and increasing investment in climate solutions. However, these methods alone may not necessarily enable real-economy decarbonisation or address systemic risks. Doing so is critical for universal owners whose portfolio performance depends on broad market returns and system-level change.

To contribute to the transition to a low-carbon economy, it is **key for index investors to go beyond portfolio-level decarbonisation by engaging with companies, influencing system-level change through policy advocacy, and fostering stakeholder and market engagement.** Collaborative initiatives, where feasible, can further support investors.

Climate index designs may focus on reallocating capital away from companies posing the greatest systemic risks and incentivising their inclusion as they adopt credible transition plans, while incorporating regional and sectoral considerations.

Greater **climate data transparency and clearer index design** can help to enhance investor confidence and strengthen the role of indices as engagement tools by signalling investor expectations to the market. **When aligned with NZIF principles and combined with the active ownership of index funds, these mechanisms can support corporate transition,** reinforce accountability, and better align investments with investors' individual climate commitments.

As the allocation to index investing strategies continues to grow, so does the responsibility of index investors to act as active stewards of systemic change. By incorporating climate considerations into index design where feasible and integrating active ownership with policy advocacy and market engagement, index investors can accelerate the net zero transition while discharging their fiduciary responsibilities.

Areas for further research

Climate solutions

Climate solutions are critical within NZIF, requiring clear definitions and measurement to scale adoption across asset classes, particularly in index investing. IIGCC guidance **reviewed green revenue- and green capex-based metrics** for listed equity and corporate fixed income, highlighting the **role of climate solutions in investor net zero transition plans.** Further research may benefit index investors as industry thinking evolves.

Just transition

Existing governance indicators, such as workforce and community management metrics, may serve as emerging data for index consideration. Thought leadership frameworks from **initiatives such as** TPT, Impact Investing, LSE, **and forthcoming IIGCC guidance** can further inform the development of index designs. This can help investors engage with companies on the social impacts of decarbonisation.

Nature

Nature-related considerations in index investing are still in their early stages, with **product development evolving across deforestation,** biodiversity, and broader environmental metrics. While custom strategies are emerging, standard climate indices have yet to fully integrate nature factors, largely due to data limitations. Current approaches, such as binary deforestation flags, provide a starting point but remain limited. Advancements in data capture technologies and alignment of the emerging frameworks (Company Benchmark – Nature Action 100, The Taskforce on Nature-related Financial Disclosures, Finance for Biodiversity Foundation, Roadmap – Deforestation-Free Finance, Transition planning | Glasgow Financial Alliance for Net Zero), as well as forthcoming NZIF deforestation supplementary guidance, may enhance the assessment of corporate exposure and resilience to nature-related risks, supporting greater integration into index methodologies.

Climate securities litigation

Securities litigation serves as an **important mechanism for deterring corporate misconduct** and compensating investors when such misconduct occurs. Despite its significance, research[70] highlights that index investors often "stay on the sidelines" regarding securities litigation. This is against the backdrop of asset owners[71] **committing to and urging asset managers to actively manage assets in this context.** These asset owners view such involvement as essential for **safeguarding their investments, enhancing the long-term value of the portfolio** and deterring wrongful corporate conduct that undermines the integrity of financial markets.

It could therefore be useful to further assess the potential for climate securities litigation, **integrated in the sustainable stewardship policy of the index fund,** with the goal of enhancing long-term portfolio value consistent with the investment objective.

External fund managers and asset owner stewardship

Investors can leverage NZIF as part of their fiduciary duty to identify and manage climate-related financial risks within their portfolios. A core premise of NZIF is that investors can address these risks through asset selection, engagement with existing holdings and policy advocacy, as well as stakeholder and market engagement. However, the use of external fund managers for implementation may present challenges in maintaining effective climate risk oversight. To support ongoing net-zero alignment efforts, an external fund manager working group is underway, with a new asset owner stewardship workstream to follow. These initiatives aim to assist IIGCC members, including index investors who rely on external managers to implement and enhance the effectiveness of their stewardship efforts.

Endnotes

[1] Regulation (EU) 2019/2089 on the EU Climate Transition Benchmark (EU CTB) and the EU Paris-aligned Benchmark (EU PAB) *EU Climate Transition Benchmarks Regulation - European Commission*, 2020.

[2] This includes advocating for a supportive policy and regulatory environment that creates the right conditions and provides the incentives needed to accelerate progress on the transition to net zero.

[3] Morningstar, *Index Funds Have Officially Won | Morningstar*, February 2024

[4] Financial Times, *Taiwan ETF issuers to pull in $420mn in fees this year*, October 2024

[5] Morningstar, *Morningstar World Wide Fund Flows 2024* Long-term funds exclude money market funds. India and China are not included in this report, February 2025

[6] Boston Consulting Group (BCG), *Global Asset Management 2024: AI and the Next Wave of Transformation*, May 2024

[7] CalPERS, *CalPERS Climate-Aware Investing in Global Public*, July 2024.

[8] FTSE 2024 AO survey based on 303 asset owners across Americas (30%), Asia Pacific (31%), and EMEA (39%), March 2025.

[9] Morningstar Sustainalytics *Investing in Times of Climate Change_November 2024.pdf*, November 2024.

[10] Morningstar Sustainalytics, *Setting SBTi Targets is Good, but Far from Sufficient*, February 2025.

[11] University of Cambridge – Finance for Systemic Change, *Climate on the bench: corporate bond benchmarks as a tool for institutional investors | Department of Land Economy*, October 2024.

[12] IRENA, *A Just and Inclusive Energy Transition in Emerging Markets and Developing Economies*, October 2024.

[13] The primary objective of an index funds is to track the specified index regardless of the underlying constituents performance

[14] Bloomberg, FTSE, MSCI, Morningstar, and Solactive based on sample of equity and corporate fixed income indices

[15] IIGCC, *Net Zero Investment Framework: Listed Equity – Alignment and Engagement Targets*, 2024.

[16] Additional alignment criteria that a corporate within a high impact material sector needs to meet.

[17] Such as ASCOR, Climate Action 100+ Disclosure Framework Indicator 11, Climate Action Tracker, IEA, NGFS, SBT, TPI and others

[18] It is important to note that each investor will be subject to different regulation and labelling regimes that may constrain the products available, in particular when retail end-investors are involved.

[19] Bloomberg, *Goal-Based Investing in Fixed Income*, 15 October 2024.

[20] Grinold, R.C. & Kahn, R.N., *Advances in Active Portfolio Management: New Developments in Quantitative Investing*, McGraw-Hill Education, 2019. Optimisation methods may be materially affected by the assumptions of the covariance matrix used. Small changes in inputs (e.g., risk model parameters, return weightings, time-series length) can have high sensitivity and impact portfolio composition, risk-return outcomes, and climate alignment, potentially leading to suboptimal portfolios.

[21] The People's Pension, *Asset Owner Statement on Climate Stewardship*, March 2025

[22] Quigley, E. (2023). Evidence-based climate impact: A financial product framework. Energy Research &Amp; Social Science, 105, 103252. https://doi.org/10.1016/j.erss.2023.103252; Border to Coast Pensions Partnership, *Divestment and Engagement in the Context of Climate Change*, August 2024.

[23] Climate Action 100+, *Progress Update | Climate Action 100+*, February 2025.; Dimson, E., Karakaş, O., & Li, X., *Active Ownership*, The Review of Financial Studies, 28(12), 3225–3268, December 2015

[24] Kölbel, J.F., Heeb, F., Paetzold, F., & Busch, T., Can Sustainable Investing Save the World? Reviewing the Mechanisms of Investor Impact, Organization & Environment, 33(4), 554–574, December 2020. https://doi.org/10.1177/1086026620919202

[25] IIGCC, Net Zero Bondholder Stewardship Guidance, June 2023. https://www.iigcc.org/resources/net-zero-bondholder-stewardship-guidance

[26] University of Cambridge – Finance for Systemic Change, *Climate on the bench: corporate bond benchmarks as a tool for institutional investors | Department of Land Economy*, October 2024.

[27] "Sustainability and the subject of climate change are of importance to pension funds generally, and beyond that to economies as a whole, and to the population at large. These are subjects that make particular demands in the consideration of risk and return over time". Financial Markets Law Committee (FMLC), *Pension Fund Trustees and Fiduciary Duties: Decision-making in the Context of Sustainability and the Subject of Climate Change*, 6 February 2024

[28] Lukomnik, J. & Burckart, W., *Tools Used by System-Level Investors in Their Net-Zero Initiatives*, CFA Institute, 2024.

[29] Davis, J.H., Kinniry Jr., F.M., & Sheay, G., *The Asset Allocation Debate: Provocative Questions, Enduring Realities*, Vanguard Investment Counseling & Research, 2020

[30] Brinson, G. P., Hood, L. R., & Beebower, G. L. (1986). Determinants of Portfolio Performance. Financial Analysts Journal, 42(4), 39–44.

[31] University of Cambridge Institute for Sustainability Leadership (CISL), *The Rise and Influence of Investor Stewardship: Technical Report*, 2024. p.71:

[32] Lydenberg, S., Integrating Systemic Risk into Modern Portfolio Theory and Practice, Journal of Applied Corporate Finance, 28(2), 56–61, 2016. https://doi.org/10.1111/jacf.12175

[33] MSCI, Ownership & Control 2022: Global Equities Concentration on the Rise, July 2022; Bebchuk, L.A. & Hirst, S., *The Specter of the Giant Three*, Boston University Law Review, 99, 721–741, 2019. http://dx.doi.org/10.2139/ssrn.3385501; De La Cruz, A., Medina, A., & Tang, Y., *Owners of the World's Listed Companies | OECD*, OECD Capital Market Series, 2019. Paris: OECD.

[34] James, K.R., Mittendorf, D., Pirrone, A., & Robles-Garcia, C., *Does the Growth of Passive Investing Affect Equity Market Performance*, Financial Conduct Authority Research Note, February 2019

[35] Equity: Dermineur, E., & Roy, S., *ETF Adoption and Equity Market Macro-Efficiency*, City, University of London, City Research Online, 2024 ; Fixed Income: BlackRock, Lessons from COVID-19: ETFs as a Source of Stability, Lessons from COVID-19: ETFs as a Source of Stability July 2020.

[36] E.g. CalSTRS is a long-term investor; its long-term strategy is demonstrated through its multiple long-term holdings, including its passively managed portfolios in its three largest asset categories: Domestic Equities, Fixed Income, and non-U.S. Equities. CalSTRS' involvement in stewardship activities is to maximize the longer-term value of the securities, consistent with its role as a significant capital allocator. California State Teachers' Retirement System (CalSTRS), *Sustainable Investment and Stewardship Strategies Program and Portfolio Policy*, May 2024

[37] Filali Adib, F.Z., *Passive Aggressive: How Index Funds Vote on Corporate Governance Proposals*, SSRN Working Paper, 20 November 2019.

[38] Hooper, L., & Gilding, P. (2024). *Survival of the Fittest: From ESG to Competitive Sustainability*. Cambridge, UK: Cambridge Institute for Sustainability Leadership.

[39] Pensions for Purpose, *Systemic Stewardship: Challenges & Strategies for Change*, March 2025.

[40] Net zero Investor, *Who is the silent majority?*, 21 July 2023

[41] MSCI, *Ownership & Control 2022: Global Equities Concentration on the Rise*, July 2022

[42] Bebchuk, L.A. & Hirst, S., *The Specter of the Giant Three, Boston University Law Review*, 99, 721–741, 2019; De La Cruz, A., Medina, A. and Tang, Y. *Owners of the World's Listed Companies | OECD*, OECD Capital Market Series, 2019

[43] Bebchuk, L.A., & Hirst, S. (2019). *Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy*. Columbia Law Review, 119(8), 2029–2145; Morley, John (2019), "Too Big to Be An Activist", Yale Law and Economics Research Paper

[44] Asset Management Exchange (AMX) & DWS, AMX and DWS develop new pooled funds service that allows pension schemes to express stewardship preferences 1 February 2021.; BlackRock, *Empowering investors through Voting Choice* 2022; State Street Global Advisors (SSGA), Global Proxy Voting and Engagement Policy, 2025

[45] Church of England Pensions Board, *FTSE TPI Climate Transition Index*, launched 30 January 2020. MSCI, *Climate Engagement Toolkit: Supporting Your Climate Engagement Strategy,* 2023.

[46] Government Pension Investment Fund (GPIF), *Evaluation Project on the Effects of Engagement*, May 2024.

[47] The Difference in Differences (DID) Method is a method to estimate the effects of the treatment to be investigated by identifying and comparing the differences between the pretreatment and post-treatment status of an intervention group (treated group) and a control group (untreated group). In this report, the intervention group consists of companies that were engaged, and the control group consists of companies that were not.

[48] The Q ratio, also known as Tobin's Q, measures the relationship between market valuation and intrinsic value. In other words, it estimates whether a business or market is overvalued or undervalued.

[49] Heeb, F., & Kölbel, J.F., *The Impact of Climate Engagement: A Field Experiment*, SSRN Working Paper, 2024.

[50] Quigley, E. (2023). Evidence-based climate impact: A financial product framework. Energy Research &Amp; Social Science, 105, 103252.

[51] University of Cambridge – Finance for Systemic Change, *University of Cambridge to Develop First Global Bond Index to Address Fossil Fuel Expansion*, 2024.

[52] Glasgow Financial Alliance for Net Zero (GFANZ), *Consultation on Index Guidance to Support Real-Economy Decarbonisation*, October 2024.

[53] Principles for Responsible Investment (PRI) & Thinking Ahead Institute (TAI), *Global Stewardship Resourcing Survey Report*, May 2024.

[54] Beloe, S., & Monteiro, R., *From Obstacles to Outcomes: Enhancing Effectiveness in Stewardship and Engagement*, WHEB Asset Management, October 2024.

[55] PRI Academic Blog, *Analysing the World's Largest Asset Owner's Approach to ESG Engagement*, November 2023.

[56] Reportedly, as little as 0.2% of estimated fees may be allocated to stewardship. Bebchuk, L.A., & Hirst, S. (2019). *Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy*. Columbia Law Review, 119(8), 2029–2145.

[57] PRI & TAI, *Putting resources where stewardship ambitions are - Thinking Ahead Institute*, May 2024.

[58] Webb, D., *BlackRock Stewardship Head Warns of 'Resource Constraints' for Engagements*, Responsible Investor, 11 March 2024

[59] PRI Academic Blog, Analysing the World's Largest Asset Owner's Approach to ESG Engagement, November 2023.

[60] The People's Pension, *Asset Owner Statement on Climate Stewardship*, March 2025

[61] SBA Florida Annual Investment Report, Fiscal Year July 1, 2020 June 30, 2021. available at: 2020-2021_air.pdf; BlackRock had 8% of its lendable assets on loan globally with 4% on loan for equities. Source: BlackRock, 01/12/2020 30/11/202 1, unaudited figures. From "Securities Lending Viewed through the Sustainability Lens".

[62] Different asset classes require different engagement strategies. Any strategy will need to reflect and recognise the different rights and responsibilities associated with the asset, such as the right to vote for shareholders.

[63] Financial Conduct Authority (FCA), *Sustainability Disclosure and Labelling Regime*, February 2025, p. 142. "Theory of change - (in ESG) a comprehensive description and illustration of how and why a desired change is expected to occur in a particular context."

[64] While thematic index funds with narrow universe exists, the focus of this discussion is broader universe indices

[65] Global Impact Investing Network (GIIN), *Guidance for Pursuing Impact in Listed Equities*, March 2023. Theory of change is "a sequence of cause-and-effect actions or occurrences that the investor believes will accelerate as a result of their actions and will contribute to a set of targeted social and environmental results".

[66] Sustainability disclosure and labelling regime | FCA "Theory of change in (ESG) [is] a comprehensive description and illustration of how and why a desired change is expected to occur in a particular context."

[67] The People's Pension, *Asset Owner Statement on Climate Stewardship*, March 2025, 'Holding managers accountable' - $1.5trn asset owner coalition sets out new guideline on stewardship alignment | Netzeroinvestor

[68] Recommendations in line with IIGCC *Investor expectations of EU sustainable finance* (section 6e)

[69] Article 27 EU Benchmarks Regulation (EU BMR) – Review and Oversight of Benchmarks – requiring regular review the methodologies used for the indices to ensure they remain fit for purpose; and Regulation (EU) 2019/2089 of the European Parliament and of the Council of 27 November 2019 amending Regulation (EU) 2016/1011 as regards low carbon benchmarks.

[70] Bebchuk, L. A. (2020). *Index Funds and the Future of Corporate Governance: Theory, Evidence, and Policy*. Columbia Law Review, 119(8), 2029–2079

[71] California State Teachers' Retirement System (CalSTRS), *Sustainable Investment and Stewardship Strategies Policy*, May 2024

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