Research Report
ESG

June 2023

2022 TCFD Report

STATE STREET GLOBAL ADVISORS

Contents

Executive Statement

Yie-Hsin Hung
President & CEO, State Street Global Advisors

In this year's TCFD report — my first as CEO of State Street Global Advisors — I am pleased to report our firm's efforts related to climate change. We continue to believe that climate change can present both risks and opportunities for the companies in which we invest on behalf of our clients and therefore should be well understood and managed by those companies. As a fiduciary whose objective is to enhance long-term value with respect to the investments we make on behalf of our clients, our focus is on progressing best practices and engaging with companies on their disclosure, plans, and progress regarding the climate-related risks and opportunities relevant to their business, as well as on developing climate-related investment solutions in response to client demand.

Climate change has the potential to disrupt economies worldwide and challenge companies across sectors and geographies, to varying degrees. As such, climate risk has been a priority of our stewardship efforts since 2014 and will remain one of our top stewardship priorities for the foreseeable future. We believe it is our duty as a fiduciary to engage with portfolio companies to encourage better disclosure and oversight of risk mitigating plans associated with climate change.

In 2022, our climate stewardship efforts primarily focused on encouraging portfolio companies to improve their reporting around climate-related risks facing those companies. We engaged more companies across a broader range of indices in 2022, seeking to hold directors accountable for public corporate disclosure as well as oversight and governance of the climate-related risks relevant to their business. In 2023, we will continue to focus our stewardship efforts on the risks and opportunities that climate change poses to portfolio companies.

In addition to engaging with portfolio companies, State Street Global Advisors continues to invest resources to analyze and report on climate risk and progress over time. In 2022, we added resources to our Asset Stewardship team and expanded the number of third-party data providers to improve our climate-related risk analyses and related reporting. This effort continues in a meaningful way today.

As an organization, we will continue to prioritize the management of climate-related risks, plans, and opportunities in relation to our clients' portfolios, which will require us to increase our efforts in engaging with portfolio companies and regulators around the world.

Introduction

State Street Global Advisors ("we," "our," "us," or "the firm") is the asset management arm of State Street Corporation ("State Street," "Parent"). We are one of the world's largest asset managers, responsible for over $3.48 trillion in assets under management ("AUM")[1] and the third-largest provider of exchange-traded funds globally.[2] We partner with many of the world's largest, most sophisticated investors and financial intermediaries to help them preserve and create value through a rigorous, research-driven investment process that spans both indexing and active investment disciplines.

We believe that an effective and orderly energy transition may produce economic benefits for our clients. Conversely, we believe an unsuccessful energy transition could lead to significant economic disruption with a correspondingly negative effect on our clients' portfolios.

We also believe it is very important for the portfolio companies in which we invest our clients' assets to disclose material climate-related risks facing those companies' operations and industries. With growing concern globally that climate change is a potential systemic risk to firms and sectors alike,[3] we ask portfolio companies to provide transparency into their plans for managing climate-related risks facing their operations and businesses, and we encourage boards to have oversight of climate risks and opportunities that are material to the companies they oversee. We have called on the companies in major indices in the US, Canada, the UK, Europe, and Australia to align with the climate-related disclosures requested by the Task Force on Climate-related Financial Disclosures ("TCFD"), and we recognize the value of aligning with these disclosure requirements as well.[4]

This is our second report on the TCFD recommendations, to disclose how we manage to climate-related risks and opportunities, both in our capacity as a business (i.e., emissions related to business operations and potential business strategy implications of climate risk) and in our capacity as an asset manager (i.e., risks associated with our clients' portfolios). While this TCFD report should be considered separate and distinct from State Street's TCFD report, which was published as part of its ESG Report earlier this year, we leverage our Parent company's existing best practices and processes and, in some cases, people and committees, to help us manage certain aspects of climate risks in our own capacity. We have some overlap with State Street in nearly all areas of this report, but it is important to note the following:

- The Risk Committee of the State Street Board has a remit to oversee the risks present in our business, including climate risk;

- Our Risk Management team is part of State Street's Enterprise Risk Management organization, and we draw on enterprise risk processes and frameworks to aim for consistency in our approach;

- Our business continuity and disaster recovery strategies are developed and implemented in alignment with State Street; and

- Our internal metrics related to our carbon footprint are included at the corporate level because we are co-located with State Street. We do not separately track Scope 1 and 2 emissions at this time.

While we work closely with State Street across our organization, the asset management business faces distinct risks and opportunities that are outlined in this standalone TCFD report. Below is a summary of the climate risk that may exist in our overall business and strategy, as well as the climate risks that may exist within our clients' portfolios. In 2022, key highlights included:

As a manager of clients' portfolios

- Executing targeted engagement campaigns around our expectations for climate-related disclosures, including holding more than 265 portfolio company engagements on climate-related matters to encourage disclosure and board oversight, of which 90 involved in-depth discussion of climate transition plans;

- Participating in the Net Zero Asset Managers (NZAM) initiative by setting interim targets for emissions reduction that apply to a portion (approximately 14% as of December 31, 2021) of our assets under management[5]; and

- Incorporating climate risk management into our investment risk management processes for certain investment strategies, where appropriate, as described in greater detail below (see **"State Street Global Advisors' Consideration of ESG Factors within Specific Investment Strategies"**).

As a business

- Developing and launching new climate investment strategies and enhancing existing climate investment strategies;

- Lowering State Street's carbon footprint and improving the resiliency of our physical assets and operations; and

- Integrating climate risk management into our enterprise risk management framework.

We recognize there continue to be constraints on climate risk management — including the fact that net zero methodologies are still being developed, and relevant data is imperfect. Therefore, we will continue to work with relevant stakeholders to improve disclosure methodologies. Although the TCFD provides helpful guidance, the challenge of developing and implementing emerging best practices remains. We aim to promote consistent and valuable climate-related disclosures over time.

The table below summarizes our disclosure across the four TCFD pillars.

Figure 1 **Summary of Our Disclosure Across the Four TCFD Pillars**

TCFD Recommendation Pillar	**Key Points**
Governance Disclose the organization's governance around climate-related risks and opportunities	
Describe the board's oversight of climate-related risks and opportunities.	State Street's Board of Directors (the "Board") provides ongoing oversight of State Street Global Advisors' near- and long-term business strategy. In 2018, our Board of Directors assumed responsibility for oversight of environmental, social, and governance obligations, initiatives, and strategies. In 2021, State Street formalized existing governance over ESG initiatives and activities by specifically including oversight responsibilities in the charters of each of the following Board committees: Examining and Audit; Human Resources; Nominating and Corporate Governance; Risk; and Technology and Operations. During this process, the Risk Committee of the Board of Directors added responsibility for the risk management component of the climate risk of State Street's obligations, initiatives, and activities to the Board Risk Committee's charter. Additionally, State Street Global Advisors operates across the world with legal entities in North America, Europe, and the Asia Pacific region. State Street Global Advisors has legal entities that are structured independently and whose leadership and boards may have additional reporting and oversight responsibilities related to environmental issues, including climate change. State Street Global Advisors' Chief Executive Officer ("CEO") and Chief Risk Officer ("CRO") report annually to the Board Risk Committee, including on risk management components of climate-related matters, as appropriate.
	The Nominating and Corporate Governance Committee of the State Street Board is responsible for the oversight of additional corporate governance components of State Street's ESG obligations, initiatives, and activities, including matters related to climate. To share insights about best practices, the State Street Global Advisors Asset Stewardship team typically reports twice annually to the Nominating and Corporate Governance Committee.
Describe management's role in assessing and managing climate-related risks and opportunities.	The State Street Global Advisors Executive Management Group ("EMG") is the consultative body responsible for strategic planning, business-goal and financial tracking, overall firm governance, and talent management.
	The State Street Global Advisors Risk Committee is responsible for ensuring the alignment of strategy, risk appetite, and risk management standards. The State Street Global Advisors Risk Committee reports to the EMG and receives updates from all other State Street Global Advisors Committees on material risks.
	The State Street Global Advisors ESG Committee, established in early 2022, is responsible for overseeing our ESG investment practices, which may include climate, and other environmental-related factors. The State Street Global Advisors ESG Committee reports to the EMG no less than annually on any material matters that could pose strategic risk to our business and to the State Street Global Advisors Risk Committee, where appropriate, on material risks.
	With respect to our clients' portfolios, our Asset Stewardship team has considered climate change to be a core focus of our stewardship activities since 2014. The Asset Stewardship team expects companies to consider the long-term risks and opportunities relevant to a company's business, which may include those related to climate change, and encourages decision-useful disclosure on climate-related risk.

<table>
<tr><th>TCFD Recommendation Pillar</th><th>Key Points</th></tr>
<tr><td colspan="2">Strategy Disclose the actual and potential impacts of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning where such information is material</td></tr>
<tr><td rowspan="2">Describe the climate-related risks and opportunities the organization has identified over the short, medium, and long term.</td><td>Risks With respect to our business, our initial, qualitative risk assessment highlights operational and product risks as most impactful. Acute weather events may also pose a risk to our physical assets. With respect to our clients’ portfolios, climate risk may lead to decreased asset values and higher volatility over time. For State Street Global Advisors’ Asset Stewardship team, we continue to prioritize climate risk as a core campaign.</td></tr>
<tr><td>Opportunities We may experience increased demand for our climate investment strategies and funds. We also may experience increased demand for our proprietary ESG analytics, including those related to climate, from investors, portfolio companies, financial intermediaries, and other asset owners.</td></tr>
<tr><td>Describe the impact of climate-related risks and opportunities on the organization’s businesses, strategy, and financial planning.</td><td>Climate change risks and opportunities can influence our work as a business, including our product development, sales and marketing, and investment in additional data, tools, and employees to support delivery of certain services. Climate change risks and opportunities may also impact the management of our clients’ portfolios, including our risk management and asset stewardship program.</td></tr>
<tr><td>Describe the resilience of the organization’s strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.</td><td>Most of our index funds (and the majority of our AUM) are currently focused on strategies designed to track broad market exposure. For clients that request it, we may help our clients understand the nature of climate risk embedded in the indexes in which they are invested through climate investment education (e.g., client meetings, published thought leadership) and analytics (e.g., client reporting).</td></tr>
<tr><td>Describe how risks and opportunities are factored into relevant products or investment strategies and describe related transition impact.*</td><td>We offer a variety of capabilities for clients who wish to pursue a climate focus, including positively and negatively screened portfolios and thematic funds. For example, we have developed a Sustainable Climate Strategy that uses a mitigation and adaptation methodology to build climate change thematically into equity portfolios. The customizable framework allows us to create client portfolios that target reductions in current and future carbon emissions, increase exposure to green revenues, and increase resiliency to the risks posed by climate change. We also provide both bespoke and standardized reporting to clients in certain strategies to help them understand TCFD-aligned and climate-focused risks and opportunities in their portfolios. For more information on our investment strategies, please refer to our ESG Investment Statement.</td></tr>
<tr><td colspan="2">Risk Management Disclose how the organization identifies, assesses, and manages climate-related risks</td></tr>
<tr><td>Describe the organization’s processes for identifying and assessing climate-related risks.</td><td>As a business
• Conducting our Material Risk Identification process that is specific to the asset management business.
As a manager of clients’ portfolios
• Engaging with portfolio companies about the climate-related risks relevant to their business; and
• Integrating available ESG data and climate data (e.g., carbon intensity) in the risk monitoring and reporting processes, as appropriate.</td></tr>
<tr><td>Describe the organization’s processes for managing climate-related risks.</td><td>We employ the Three Lines of Defense model in executing our risk management framework to drive strong risk accountability, identification, monitoring, and reporting activities. The business units, which own and manage the risks inherent in their business, are considered the first line of defense. Enterprise Risk Management (“ERM”) and other support functions provide the second line of defense for all risk types, including climate-related risks. Finally, Corporate Audit, which assesses the effectiveness of the first two lines of defense, represents the third line of defense.</td></tr>
<tr><td>Describe engagement activity with investee companies to encourage better disclosure and practices related to climate-related risks in order to improve data availability and asset managers’ ability to assess climate-related risks.*</td><td>Climate risk management has been a core stewardship priority at State Street Global Advisors since 2014. Through engagement, we aim to understand how companies oversee and manage climate-related risks and opportunities and encourage disclosure in line with our expectations. Since 2014, we have held over 1,100 climate-related engagements with portfolio companies across industries and markets. We have a longstanding commitment to enhance decision-useful disclosure on climate-related risk and have encouraged portfolio companies to report in accordance with the recommendations of the TCFD since we first endorsed the framework in 2017. In 2022, we began voting against directors at companies in several major indices where companies failed to provide sufficient disclosures in line with the TCFD framework. In 2022, we also conducted thematic engagement campaigns on such topics as climate transition plans, the social risks related to climate transition plans, managing methane emissions, and deforestation-related risks. These campaigns serve to both improve our understanding of these topics as well as encourage best practice disclosure.</td></tr>
</table>

TCFD Recommendation Pillar	Key Points
Describe how processes for identifying, assessing, and managing climate-related risks are integrated into the organization's overall risk management.	The State Street Board Risk Committee has integrated climate into its remit and oversight, and each committee of the Board has taken on responsibility for climate-related matters that fall within their respective remits. For example, the Examining and Audit Committee of the State Street Board oversees climate risk disclosure in State Street's publicly filed documents. In addition, we have established a State Street Global Advisors ESG Committee that is responsible for ESG oversight and reports to the EMG and the State Street Global Advisors Risk Committee, where appropriate, on material risks.
Describe how material climate-related risks are identified, assessed, and managed for each product or investment strategy.*	Where appropriate and consistent with a fund or strategy's disclosed objectives: • climate risks are identified and assessed throughout the product and investment strategy lifecycles, through investment research and analysis, portfolio construction and management, and investment risk management. • we perform review and challenge on ESG and climate matters, where appropriate, as part of the product governance process; • we aim to review all investment strategies at least annually, across a range of metrics including ESG characteristics, through our Investment Strategy Review Committee (a sub-committee of the Investment Committee); and • we perform climate data due diligence and comparative analysis to identify best in class metrics, indicators, and data points to drive climate-focused solutions.
Metrics and Targets Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material	
Disclose the metrics used by the organization to assess climate-related risks and opportunities in line with its strategy and risk management process.	We currently use third parties to source business- and product-related data to help assess climate-related risks and opportunities for our clients' portfolios, where relevant. The metrics we leverage include fossil fuel reserves, brown and green revenues, carbon intensity, carbon footprint, implied temperature rise, Scope 1 and 2 carbon emissions, adaptation results, and weighted average carbon intensity ("WACI") emissions data. In 2022, we worked with multiple providers to identify additional forward-looking metrics that can be used to further assess climate-related risks and opportunities for relevant strategies.
Disclose Scope 1, Scope 2 and, if appropriate, Scope 3 greenhouse gas (GHG) emissions and the related risks.	Our Scope 1 and 2 emissions are measured and published as part of the State Street Corporation TCFD report. We are assessing Scope 3 (Category 15, Investments) reporting in light of data and calculation challenges.
Describe the targets used by the organization to manage climate-related risks and opportunities and performance against targets.	**As a business** Because we co-locate with our Parent company, our operational targets (e.g., emissions and energy use) are available in the State Street Corporation TCFD report. **As a manager of clients' portfolios** In connection with State Street Global Advisors' participation in NZAM, we have set interim targets for emissions reduction that apply to a portion (approximately 14% as of December 31, 2021) of our assets under management. While we believe attention to climate risk is relevant to long-term value, our targets will only be achieved if net zero is important to our clients, and they instruct us to achieve that objective in the portfolios that we manage for them. In this regard, it should be noted that we will not depart from client mandates to achieve the objective of net zero, we will not force any client to embrace net zero, and we will not sell companies in any index because those companies do not achieve net zero targets or objectives. As an index manager, we are long-term shareholders on behalf of our clients, and we are focused on delivering the index exposure to those clients.
Asset managers should describe the extent to which their assets under management and products and investment strategies, where relevant, are aligned with a well below 2°C scenario, using whichever approach or metrics best suit their organizational context or capabilities.*	We provide scenario alignment analysis and TCFD-aligned carbon metrics, transition risk analysis, and physical risk analysis to clients of certain strategies on a regular basis. We also have the capability to provide customized reports upon request (e.g., assessments of progress against annual Weighted Average Carbon Intensity ["WACI"] reduction targets).
Asset managers should disclose GHG emissions for their AUM and WACI for each product or investment strategy, where data and methodologies allow. Asset managers should consider providing other carbon footprinting metrics they believe are useful for decision-making.*	We currently provide emissions and WACI analysis to certain clients and are in the process of developing the reporting mechanisms to disclose GHG emissions more comprehensively.

* Reflects recommendations that are included in the Supplemental Guidance for Asset Managers, which incorporates updates to the guidance for the financial sector released by the TCFD in 2021.

Governance

State Street is committed to effective corporate governance in order to fulfill our responsibilities to our clients, investors, and other key stakeholders. State Street has established a governance structure that actively considers climate and other environmental factors.

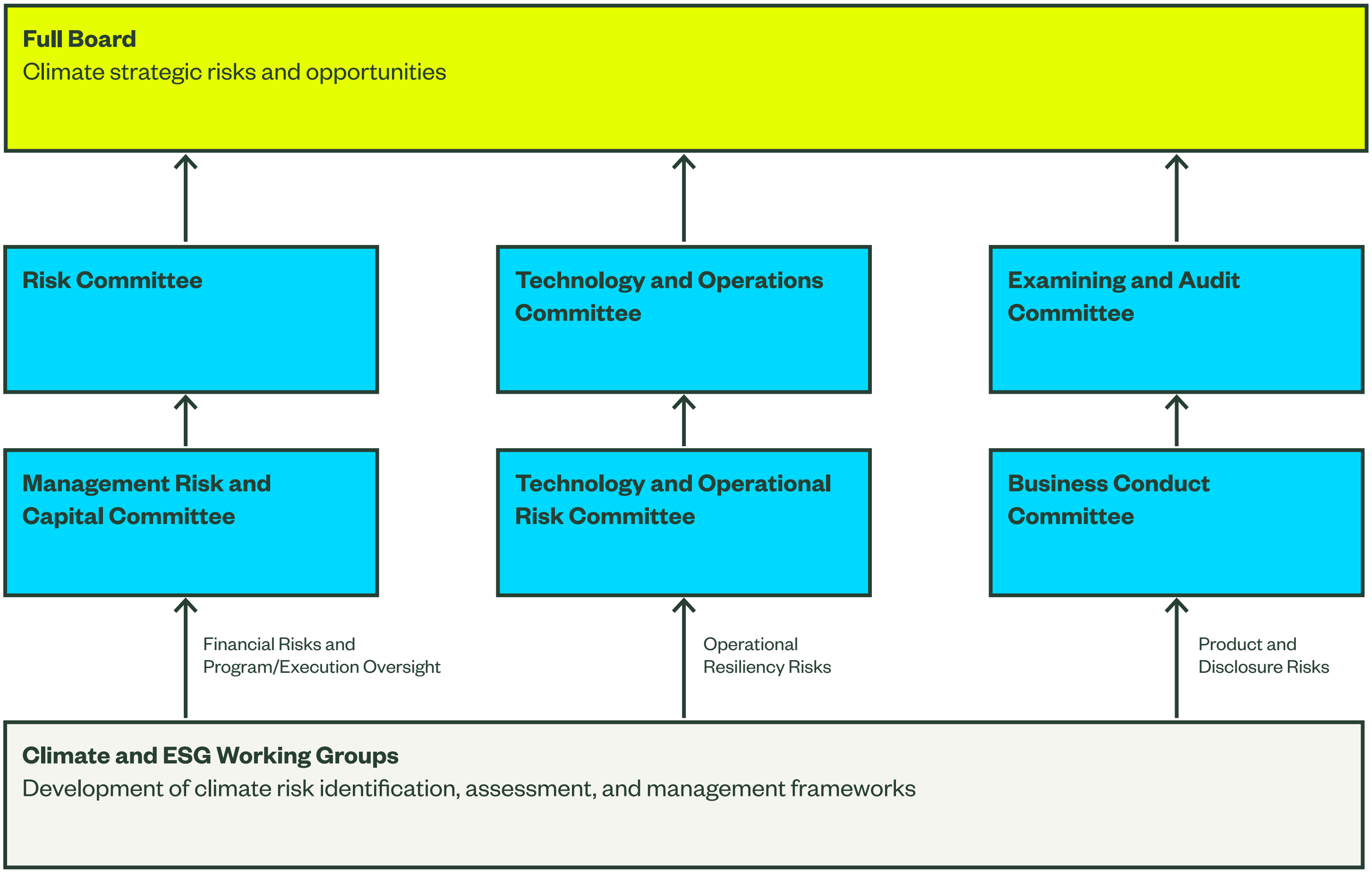
Board and Parent Company Oversight

State Street Global Advisors sits within State Street's wider corporate governance framework, led by State Street's Board. The Board's mandate includes oversight of ESG obligations, initiatives, and strategies. In 2021, State Street formalized existing governance over ESG initiatives and activities by specifically including oversight responsibilities in the charters of each of the following Board Committees: Examining and Audit; Human Resources; Nominating and Corporate Governance; Risk; Technology; and Operations. During this process, the Risk Committee of the Board added responsibility for the risk management component of the climate risk of State Street's obligations, initiatives, and activities to the Board Risk Committee's charter.

State Street Global Advisors' CEO and CRO annually report to the Board's Risk Committee, including on ESG-related matters, as appropriate. Additionally, State Street Global Advisors' Asset Stewardship team typically reports twice annually on its activities, including climate-related activities, to the Board's Nominating and Corporate Governance Committee to share insights about best practices. These semi-annual updates to the Board cover ongoing stewardship efforts, corporate engagements, and proxy voting, including actions taken around sustainability and climate change-related topics.

Within State Street, climate risk management efforts are overseen by the Management Risk and Capital Committee ("MRAC"), which is the senior oversight and decision-making body for financial risk and capital and liquidity management, and which oversees State Street's management of climate risks and climate risk regulatory requirements. Climate and ESG Working Groups provide oversight for the development of climate risk identification, assessment, and management frameworks.

Figure 2
State Street Climate Risk Governance Structure



Source: State Street Global Advisors. As of 31 December 2022.

Legal Entity Reporting

State Street Global Advisors operates across the world with legal entities in North America, Europe, and the Asia Pacific region. We have legal entities that are structured independently and may have additional reporting and oversight responsibilities related to environmental issues, including climate change. Within our global framework, certain legal entities are responsible for overseeing applicable climate risk-related requirements.[6]

State Street Global Advisors Management Oversight

In 2021, our EMG engaged in strategic planning related to our priorities, including ESG, and laid out a multi-year plan to invest in our ESG capabilities, including those focused on climate. These investments include further building out our ESG teams (across operations, investments, and distribution) and developing supporting capabilities (e.g., data and reporting). These investments include acquiring additional ESG/climate index and data licenses and developing our product range. Through these strategic investments, we are working to position our business to respond to client demand for investment solutions. On a quarterly basis, executives monitor State Street Global Advisors' ESG strategy as a business, including climate-related risks and opportunities.

Figure 3
Governance Structure

Executive Management Group (EMG)

Consultative body responsible for strategic planning, business goal and financial tracking, overall firm governance and talent management.

Reporting

Risk Committee

Responsible for ensuring the alignment of strategy, risk appetite and risk management standards (corporate-wide).

Subcommittees

- EMEA Risk
- Liquidity
- Model Risk

Reporting

Escalation of Material Risk Breaches

Environmental, Social & Governance (ESG) Committee

Responsible for overseeing the firm's ESG and proxy voting framework and philosophy.

Global Investment Committee

Responsible for the firm's investment philosophy and processes, investment strategies, approach to new markets and instruments and relationships with counterparties.

Subcommittees

- Technical
- Trade Management Oversight
- Investment Strategy Review
- Securities Lending

Global Product Committee

Responsible for the creation of products based on the firm's investment strategies.

Subcommittees

- North America Product
- EMEA Product
- APAC Product
- Sub-Advisory Oversight

Global Fiduciary & Conduct Committee

Responsible for addressing fiduciary and business conduct matters across the firm and oversight of the firm's collective investment funds.

Subcommittees

- EMEA Fiduciary
- APAC Fiduciary
- Independent Fiduciary
- Class Action Litigation
- Sales Practices

Global Operations & Compliance Committee

Responsible for the firm's operating infrastructure compliance functions.

Subcommittees

- North American Valuation
- EMEA Valuation
- APAC Valuation
- Global Operational Risk
- Business Technology Investment

Source: State Street Global Advisors. As of 31 December 2022.

Executive Management Group

State Street Global Advisors' firm governance structure is designed to support effective and efficient decision-making and provide oversight of its business functions. The structure consists of the EMG, which comprises the firm's most senior leadership and serves as a consultative body for the benefit of the firm's President and CEO. The EMG is responsible for overall firm governance and oversees the activities of State Street Global Advisors' six senior committees:

- Risk Committee
- ESG Committee
- Global Investment Committee
- Global Product Committee
- Global Fiduciary and Conduct Committee
- Global Operations and Compliance Committee

State Street Global Advisors Risk Committee

Our Risk Committee is responsible for ensuring the alignment of business strategy, risk appetite, and risk management standards. If the ESG Committee (or other senior committee) notes any material risk matters, the committee will escalate the matter to the State Street Global Advisors Risk Committee.

State Street Global Advisors ESG Committee

In early 2022, we formally established an ESG Committee to further centralize the governance of our ESG strategy. The primary responsibilities of the ESG Committee are to:

- Oversee the firm's ongoing commitments to ESG and sustainable investing, related business practices, and public policy matters; and
- Oversee the Asset Stewardship team's proxy voting and issuer engagements on behalf of all the firm's discretionary portfolios, and review and approve the policies, guidelines, and guidance that pertain to State Street Global Advisors' proxy voting and engagement activities (the "Voting and Engagement Policy").

Other senior committees may also oversee matters related to ESG, climate, and/or sustainability, where appropriate to their remits.

Asset Stewardship

Our Asset Stewardship team is centralized under our Global Head of ESG and Sustainable Investing, who oversees its activity and reports to our Global Chief Investment Officer. As noted above, the ESG Committee oversees the Asset Stewardship team's proxy voting and issuer engagements as well as reviews and approves the Voting and Engagement Policy, which forms the basis of the team's work.

Further information on our Asset Stewardship and ESG teams can be found in the Risk Management section of this report and in our 2022 Stewardship Report.

Enhancing Oversight

We aim to continue enhancing our internal governance approach, through which the Board and senior leaders are informed of and oversee climate-related risks and opportunities related to our business.

Strategy

With respect to our clients' portfolios, our perspective on climate change is rooted in our fiduciary duty to invest assets in clients' best interests and to seek value over the long term.

Many of our clients want to understand how they may invest their assets to adapt to a low-carbon economy. In response, we are broadening our toolkit to provide investment strategies and analytics that help clients identify and mitigate the climate risks present in their portfolios.

Short-, Medium-, and Long-Term Opportunities for Our Clients' Portfolios

We believe that the efforts of the public and private sectors to significantly reduce greenhouse gas emissions may present opportunities for our clients. To pursue such opportunities, we manage ESG and climate strategies that target specific objectives, and we continue to develop our product pipeline.

Climate and Low-Carbon Investment Strategies

Across both equities and fixed income, we offer climate solutions for clients seeking to align their portfolios with their goals concerning transition to a low-carbon economy. For investors seeking to align their portfolios with their climate ambitions and/or align with climate-aware industry frameworks, we offer climate-related investment products and solutions that are designed to meet specific climate-related objectives.

First, we offer investors the choice to apply climate-related exclusions in many forms, leveraging data where applicable. Clients may choose to exclude certain business activities, companies, sectors, or regions based on their respective climate-related objectives. We have developed a wide array of these capabilities to align with investors' goals and/or investment beliefs.

Second, we offer investors the capability to track a third-party index incorporating climate considerations. More climate index strategies are evolving to incorporate more forward-looking metrics, such as those tracking the EU Paris Aligned Benchmarks, which include decarbonization targets and consider corporate target setting. These more forward-looking measures are being embedded into the respective index methodologies and can be calibrated in various ways — to account for elements like tracking error budgets and other portfolio construction constraints, such as region, sector, and security-specific deviations from the parent index.

Third, for investors seeking to align portfolios with their ambitions and/or align with climate-related industry frameworks, our proprietary strategies include investment products and solutions that are designed to meet specific climate-related objectives. Our products and solutions include proprietary quantitative investment models — such as our sustainable climate equity strategies, sustainable climate bond strategies, a low-carbon equity framework, and a low-carbon bond index framework — as well as a fundamental equity strategy which aims to generate long-term capital growth through investment in equity securities that are seen as leaders in their respective industries.

Across investment strategies with climate attributes, we may consider mitigation and/or adaptation as important investing dimensions. Mitigation refers to avoiding and reducing emissions in a portfolio or among portfolio companies. Adaptation denotes a company's ability to position itself to take affirmative advantage of the climate transition.

Green Bond Investing

Green bonds are part of a family of ESG-labeled bonds and are defined and qualified by a clear use of proceeds ("Up") pledge by the borrower to allocate the funds borrowed to projects that meet specific environmental (green) objectives, including climate change mitigation and adaptation. This facilitates the ability for investors to identify and provide funding to bond issuers based on their future intentions relating to environmental objectives, rather than on their historical record on sustainability. Like conventional bonds, green bonds are long-term fixed income debt instruments. They generally have the same seniority, recourse, and rating as an issuer's conventional bonds. The main difference between green and conventional bonds is that the proceeds of a green bond are earmarked for climate- and environment-related projects.

State Street Global Advisors established its first US Green Bond strategy in 2012. This was subsequently followed by the launch of a Global Green Bond Index Strategy in 2015. State Street Global Advisors also manages a number of separately managed accounts that either have an indexed green bond-only investment objective (i.e., they target 100% investment in green bonds) or a targeted allocation as part of the overall investment objectives of a mandate (i.e., strategies which target a certain percentage or multiple vs. the reference benchmark).

State Street Global Advisors is a member of the International Capital Market Association and the Climate Bonds Initiative and is involved in various working groups as part of an initiative to enhance global standards, transparency, and consistency in the ESG-labeled bond market.

For further information on our ESG investing strategy, please see our ESG Investment Statement.

Our Use of Climate Analytics

The State Street Global Advisors Research and Data team receives ESG data from a wide variety of data providers covering themes such as climate, controversies, governance, and gender. In addition, we have developed a proprietary ESG scoring methodology called R-Factor™, which draws on data from multiple ESG data providers and leverages the Sustainability Accounting Standards Board's ("SASB") widely accepted and transparent materiality framework, as well as a corporate governance score, to generate a unique score ("R-Factor score") that measures the performance of a company's business operations and governance as it relates to industry-specific ESG Factors. We currently score more than 11,500 issuers with R-Factor scores, and we aim to continue to expand our coverage universe. R-Factor is used by State Street Global Advisors for stewardship purposes, in the management of our clients' portfolios, and in client reporting.

Reporting

In addition to building out our investment capabilities, we have enhanced our monthly performance reports and fund factsheets for certain clients' equity investment portfolios to include ESG data, where relevant. The ESG report sections for these clients may include, as relevant, a summary of R-Factor scores at the portfolio level, a Climate Profile section illustrating climate-related exposures with key metrics, and a Stewardship Profile with information on management proposals and gender diversity. We may also provide, as relevant, a range of additional reports to support regional regulatory requirements, including climate metrics and asset stewardship data.

Forward-looking Plans

Going forward, we aim to further enhance our strategy related to climate. For instance, we will consider developing more climate-focused investment products in response to client demand.

We also intend to develop and facilitate training and resource upskilling across our business, with an objective to give our clients a better understanding of our climate-focused investment strategies.

Short-, Medium-, and Long-Term Risks to Clients' Portfolios

As an asset manager, we have a fiduciary duty to our clients and are responsible for managing assets with an aim to meet a specific investment objective. We are exploring the use of climate scenario analysis to help evaluate the climate-related investment risks faced by our clients.

In addition to offering clients a variety of climate-related investment solutions, we aim to manage risks to our clients' portfolios through:

- **Engaging in climate stewardship** Climate risk management has been a core stewardship priority at State Street Global Advisors for nearly a decade. For further information on our asset stewardship strategy, please see the Risk Management section of this report;

- **Joining the Net Zero Asset Managers initiative** As part of this initiative, State Street Global Advisors set interim targets for emissions reductions that apply to a portion (approximately 14% as of December 31, 2021). We describe our targets on our website, and a discussion of these targets is included in the Metrics and Targets section of this report; and

- **Participating in industry organizations** We participate in industry organizations to support information-sharing and the development of industry standards around climate-related matters, such as disclosures.

Moving forward, we intend to continue our focus on managing climate change risks and opportunities to clients' portfolios. At State Street Global Advisors, this means we will:

- Continue seeking high quality data and metrics to assess portfolio risks and opportunities;

- Continue engaging directly with portfolio companies on climate-related topics, including disclosure related to environmental and climate change risks facing those companies' operations and businesses, through our asset stewardship program; and

- Continue engaging with regulators and policy makers to enhance public disclosures.

Climate Impact on Business and Strategy

In addition to considering climate risks and opportunities in relation to clients' portfolios, we are continuing to integrate climate considerations into our business and strategy. We have incorporated climate considerations into our business strategy and planning in the following ways (note, the list below is not exhaustive):

- **Protecting the resiliency of State Street's physical infrastructure** State Street's business depends upon maintaining a robust and resilient physical infrastructure across global locations that can handle the impacts of a changing climate. State Street incorporates potential climate impacts in business continuity planning and considers longer-term climate patterns in the company's location strategy and operational resiliency planning. We co-locate with State Street, and more information can be found in the "Climate-Related Risks to Our Physical Assets" section of State Street's TCFD report.

- **Reducing emissions** In 2017, State Street voluntarily set science-based reduction targets for its own operating carbon emissions. In 2020, State Street surpassed its 2025 target of a 30 percent reduction and set a new goal of a 27.5 percent reduction by 2030 as measured against the 2019 baseline year. In 2022, State Street announced that, in line with global best practices, it had updated its science-based carbon target to a 1.5-degree scenario from its prior well-below 2-degree level. State Street is aiming to achieve this over the same timeline, namely by 2030 for its Scope 1 and Scope 2 emissions. This translates to a reduction of 46.2% from the 2019 baseline, rather than 27.5%. Paired with State Street's commitment to carbon neutrality, which we achieved for the third year in 2022, this two-pronged approach involves procuring green power and carbon offsets for all energy consumption while looking to reduce overall energy consumption each year. The target covers all of State Street's Scope 1 and 2 emissions under operational control following the location-based method.

- **Enhancing our product offerings** Clients may continue to request products and services designed to address climate-related risks and opportunities. Accordingly, we manage ESG and climate strategies that target specific objectives, and we continue to develop our product pipeline to better serve our clients.

Moving forward, we intend to continue our focus on managing climate change risks and opportunities by way of our long-term business strategy. At State Street Global Advisors, this means we will seek to:

- Further build out our differentiated investment strategies and products that aim to be climate-aware to meet market demand; and

- Improve our resource efficiency and other operations that have helped minimize State Street's internal footprint.

Risk Management

A robust approach to risk management is critical to enable effective delivery of our products and services. We believe climate change may be a financial risk to our clients' portfolios and to our business. Therefore, we recognize the importance of integrating climate risk into our risk management framework. In this section, we disclose our current risk management practices and the areas where we intend to focus our efforts going forward, both in relation to clients' portfolios and to our business.

Risks to Clients' Portfolios

Investment Risk

The Investment Risk Management team is responsible for independently monitoring investment risk exposures to ensure that risk exposure levels and contributions are consistent with portfolio-specific guidelines and return expectations. Furthermore, it is the team's responsibility to highlight intentional and unintentional exposures, inclusive of climate-related risks for strategies with a climate objective. Attention is focused on where we have risk, how much risk we have, and whether it is consistent with our views and client objectives. For relevant strategies, the team provides portfolio-level risk reporting to investment managers to help ensure they are taking appropriate climate-related risks in their portfolios. Initial reporting that leverages climate data is in place when relevant, and the team is in the process of developing an associated framework and risk processes.

Risks to Our Business

As investor, industry, and regulatory expectations intensify, we face increasing demand for disclosure about our products and climate-related processes. To help meet those expectations, our Global Head of ESG and Sustainable Investing is continuing to build out the ESG team and strengthen our ESG/climate governance structure. In 2022, this strengthening included the establishment of a dedicated ESG Operations team to manage our ESG governance framework. This team's remit includes facilitating the work of the State Street Global Advisors ESG Committee, providing support around policies, procedures, and controls, liaising with internal audit on relevant assessments, and advancing the firm's efforts to meet regulatory requirements and public commitments, including with respect to climate.

Product Risk

In order to manage risk around our product set, including potential divergence from client preferences or demand, the Product team frequently engages with the ESG, Distribution, and Investment teams, as well as our clients, to explore our clients' climate preferences and needs.

Operational Risk

Operational Risk is defined as the risk of loss resulting from inadequate or failed internal processes and systems, human failure, or external events. State Street's Operational Risk Framework provides an integrated set of programs, inclusive of policies, processes, and tools that assist in the controlling and measuring of operational risk and withstanding expected and unexpected financial events. It also accounts for the impacts of climate risk events, such as possible acute physical impacts of climate change, that may affect our operational risk and resiliency.

Identifying and Assessing Climate-related Risks to Clients' Portfolios

Our business model informs our approach to risk identification and assessment. As a large manager of index assets, we have historically thought of risk management in indexed products in the context of tracking error to the index. While that remains true, we have also enhanced our processes, where appropriate, to establish ESG and climate reporting on key climate metrics for certain strategies.

Managing Climate Risks in Clients' Portfolios

For risks in client portfolios, our investment teams are the primary risk owners responsible for evaluating environment- and climate-related risks and opportunities if relevant to the investment portfolio. Our investment teams have a fiduciary responsibility to invest assets in the best interests of our clients. We identify and assess risks relevant to our client portfolios, including environment- and climate-related risks, where relevant, and incorporate such risks into our risk management framework for certain investment strategies, where appropriate, as discussed in greater detail in the table below.

The Investment Strategy Review Committee (a sub-committee of the Investment Committee) seeks to ensure continued efficacy of investment strategies, consistent with client expectations and with consistent outcomes across portfolios and through time. The Investment Strategy Review Committee aims to review all strategies at least annually across a range of metrics including ESG characteristics.

Our approach to ESG investing by investment area is summarized below; where relevant to the strategy, the processes described may be inclusive of climate-related risks and opportunities.

Figure 4 **State Street Global Advisors' Consideration of ESG Factors within Specific Investment Strategies**

Asset Class	Approach
Equity Index and Smart Beta	Within our equity index strategies, ESG Factors may be incorporated in multiple ways. An equity index itself may either incorporate ESG characteristics or seek to increase target exposure to sustainable investment opportunities. In addition, we may integrate ESG into a beta solution that we design as a custom solution in response to client request. In contrast, indexing strategies with the sole objective of replicating the return of a non-ESG benchmark do not consider ESG Factors in investment selection, as the primary driver of investment decisions in such strategies is the objective of replicating the performance of the relevant index.
Active Quantitative Equity	The Active Quantitative Equity team has incorporated signals derived from ESG metrics into its forecasts of stock returns, where available, and uses these for all strategies managed by the team. The ESG signals are included in their model of expected return forecasts alongside measures representing other themes, such as value, company quality, and investor sentiment. The team also has the capability to manage exposure to other measures of ESG on behalf of clients, when requested. However, unless disclosed to investors, these strategies do not have an ESG objective, and ESG factors are not determinative of security selection. A non-ESG strategy may hold securities with unfavorable ESG qualities if our model otherwise determines that such securities are a worthwhile investment.
Active Fundamental Equity — Growth/Core	In their investment decision-making processes, the Active Fundamental Equity Growth & Core team uses R-Factor scores and other ESG data metrics to help isolate specific issues and assess the quality of companies and the sustainability of their growth. The Active Fundamental Equity Growth & Core team may invest in companies where the team has a positive view of company fundamentals despite a lack of ESG data and/or low ESG scores. However, unless disclosed, these strategies do not have an ESG objective and ESG factors are not determinative of security selection. A non-ESG strategy may hold securities with unfavorable ESG characteristics where the team otherwise has a positive view of company fundamentals.
Active Fundamental Equity — Value	The Active Fundamental Equity Value team seeks to identify and incorporate ESG Factors into its investment decision-making processes. Analysts with the Active Fundamental Equity Value team typically do not exclude companies on the basis of a low or challenged ESG assessment. Instead, the team seeks to understand the underlying ESG Factors and their potential impact on earnings power, balance sheet strength, and the value of the business. Where, after analysis, the team has a positive view of both the fundamentals and valuation of a company, the team may still invest in the company despite a challenged ESG assessment.
Fixed Income	State Street Global Advisors manages both fixed income index strategies, including those seeking to minimize tracking error generally through a stratified sampling approach, as well as active strategies, some of which utilize credit research assessments as a part of the investment process. In credit research processes, ESG Factors may play a role in helping to better assess an issuer's creditworthiness. In particular, corporate governance can play a role in fixed income credit assessments. Governance structures drive risk policies and can safeguard proper checks and balances. Depending on a given security's sector and/or the underlying investment strategy, creditworthiness assessments may also consider environmental and social factors. Integrating ESG Factors into fixed income investing can be complex given the wide spectrum of available security types. Entity-level ESG data now exists for a range of fixed income securities issued by public corporations, but it can become more challenging to assess the ESG Factors in relation to other fixed income security types, such as sovereign bonds and securitized products. Within our fixed income indexing capabilities, ESG Factors may be taken into account in a number of ways, including through the index itself (such as a third-party index that incorporates ESG factors into the index methodology) or by deploying screens, tilts, or stratified sampling techniques using R-Factor scores and/or other ESG data. In contrast, fixed income mandates with the sole objective of replicating the return of a non-ESG fixed income benchmark do not consider ESG Factors in investment selection, as the primary driver of investment decisions for such strategies is the risk profile of the relevant index. Our active fixed income teams may consider ESG Factors in their credit research process by utilizing R-Factor scores and/or other ESG data to consider the impact of those ESG Factors on an issuer's creditworthiness. In addition, as referred to above, State Street Global Advisor's CRM team may consider ESG Factors in the onboarding and oversight process to the extent that such factors materially affect trading counterparty creditworthiness.

Asset Class	Approach
Cash	The Cash Management investment process utilizes short duration, high quality securities to achieve the dual objectives of principal preservation and access to liquidity. Our investment professionals that manage our Cash Management strategies have access to the R-Factor scores for the issuers of instruments held in Cash portfolios. Similar to issuer ratings, the R-Factor score is an input to the cash credit research process but is not the primary driver of the overall investment decision.
Currency	Currency hedging mandates are typically focused on removing the currency exposure in an underlying portfolio and thus do not take a view on the sustainability of the economies underlying the currencies. However, within certain active and enhanced strategies where the mandates allow State Street Global Advisors to take into account the longer-term growth potential of economies, we include a measure of the quality of different countries' governance. In addition, an important part of currency management is the management of counterparty risk.
Multi-Asset, Customized Solutions and Alternatives	Our Investment Solutions Group (ISG) is responsible for building multi-asset and custom solutions to meet our clients' specific investment objectives. ISG is composed of different teams that perform the following complementary functions: • Quantitative Research, model developments and monitoring, and strategy development; • Portfolio construction and management with a specific focus on the design of investment strategy and the management of Multi-Asset Products, tactical asset allocation, flexible asset allocation, exposure management and execution of the Outsourced Chief Investment Officer (OCIO) mandates; • Management of alternative investment asset classes with a focus on illiquid assets such as property investments, private equity, and alternatives-only mandates; • Investment Manager Selection and Oversight, which evaluates internal strategies and investment teams of State Street Global Advisors as well as external managers whose investment solutions are chosen to fulfill specific investment objectives and requirements. The team has developed an ESG rating process aiming to identify best practice ESG integration to effectively capture ESG considerations within portfolios. The team is currently working toward establishing ratings for all existing managers being used across State Street Global Advisors; • Client engagement with specific and dedicated teams on business strategy and development, operational support, and reporting. ISG is responsible for the design and construction of capital market assumptions on a large number of asset classes — including equity, fixed income, liquid and private alternatives — that are used to build strategic asset allocation recommendations for clients. These rely on long-term assumptions that ISG makes about future risks and returns on these asset classes. In Q3 2020, ISG decided to incorporate R-Factor within the equity asset class forecasts, ascertaining the R-Factor score of the different equity markets, and modifying the risk forecasts accordingly. Given our observation that R-Factor scores for companies in some equity markets in aggregate are persistently higher than for others (due to structural differences in culture, law, persistent sector composition, or environment), we focus on how R-Factor scores for each equity market rise or fall over time, rather than the absolute levels. Improvements in the R-Factor score may be rewarded by the market in the form of (1) higher returns and (2) reduced risks. While ESG ratings may have a nuanced effect on returns, their impact on risk is expected to be more straightforward: improved R-Factor scores may reduce tail risks associated with ESG Factors, thereby delivering an overall lower level of risk (standard deviation). The inverse is true for equity markets of countries in which companies may have seen a deterioration in their R-Factor scores. To account for these relationships, we have developed a framework that associates countries where companies demonstrate increasing R-Factor scores with lower risk expectations, and vice versa. As part of its broad mission, ISG engages directly with clients to create portfolios that meet the relevant client's specific objectives including, where relevant, ESG objectives. For portfolios where the client is pursuing an ESG objective, the portfolio construction process will include a review and an assessment of the ESG characteristics of the different underlying investment strategies and corresponding building blocks that will be selected. ISG will then incorporate these findings into the overall portfolio construction process, balancing the client's ESG goals with other considerations including risk constraints and return considerations to construct a portfolio solution with the goal of addressing the client's overall investment objectives.

Engagement and Proxy Voting

At State Street Global Advisors, we believe that managing climate-related risks and opportunities may be relevant to maximizing long-term value for our clients. Our risk management activities include leveraging our proxy voting and engagement efforts to seek long-term value for our clients.

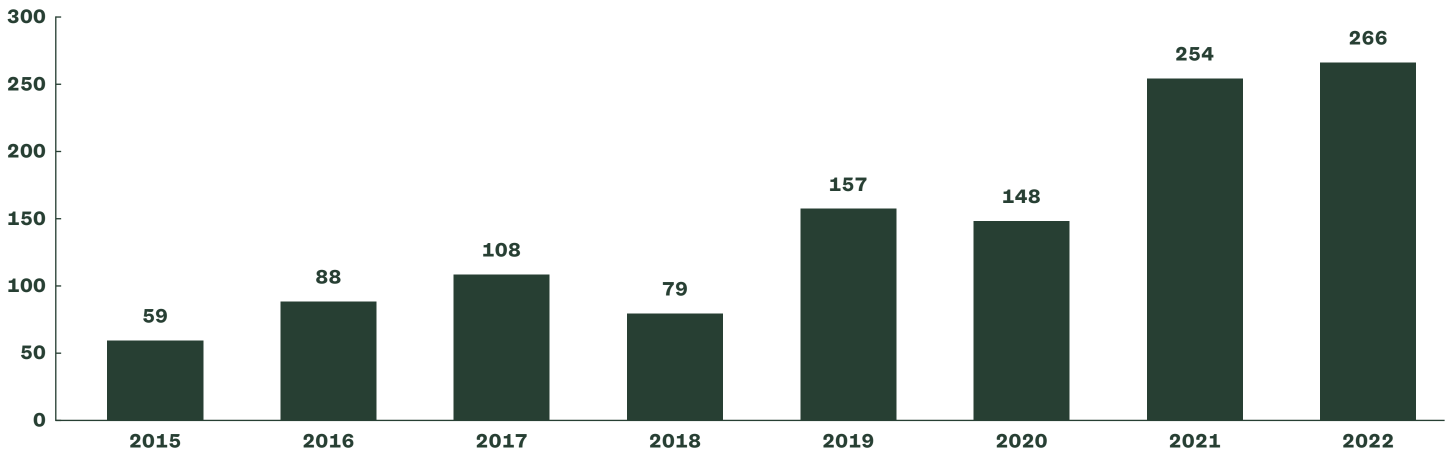
Company Engagement

Engagement is an important pillar of our Asset Stewardship program. Our engagements with portfolio companies focus on issues that may affect long-term value. We believe engagement with portfolio companies and proxy voting can be important tools to seek value for clients. We strive to consider a number of factors, including the size of absolute and relative holdings, companies identified as lagging in their market, and industry standards on climate change disclosures.

As an asset manager with a long-term investment horizon, we view our engagements with portfolio companies as ongoing conversations. The dialogue is intended to be interactive and evidence-based. Once we have identified a company for engagement, we actively seek direct dialogue with the board and management. In framing discussions regarding climate, we often leverage the four pillars of the TCFD framework: governance, strategy, risk management, and metrics and targets. Through our conversations with company management and boards, we aim to understand how companies are managing and overseeing the risks and opportunities related to climate change, where relevant. We base our engagement on a long-term, multi-year approach to stewardship that includes working with companies to encourage effective oversight and disclosure of climate risks and opportunities.

Since 2014, we have used our engagements with companies to understand their approaches to overseeing the physical and transitional impacts of climate change. To date, we have held more than 1,100 engagements with companies across multiple industries on climate-related issues. In 2022, we engaged with over 265 companies across multiple industries to understand their approaches to climate change.

Figure 4
Number of Annual Climate Engagements



Source: State Street Global Advisors. As of 31 December 2022.

Proxy Voting

We have a longstanding commitment to enhance decision-useful disclosure on climate risk management and have encouraged our portfolio companies to report in accordance with the recommendations of the TCFD since we first endorsed the framework in 2017. State Street Global Advisors believes that the recommendations of the TCFD provide the most effective framework for disclosure of climate-related risks. Starting in the 2022 proxy season, we began taking voting action against companies in the S&P 500, S&P/TSX Composite, FTSE 350, STOXX 600, and ASX 100 indices if companies fail to provide sufficient disclosure regarding climate-related risks and opportunities related to that company, or board oversight of climate-related risks and opportunities in accordance with the TCFD framework. Starting in 2023, we have expanded this voting action to the following additional markets: the ASX200, TOPIX 100, Hang Seng, and Straits Times indices.

Climate-related Shareholder Proposals

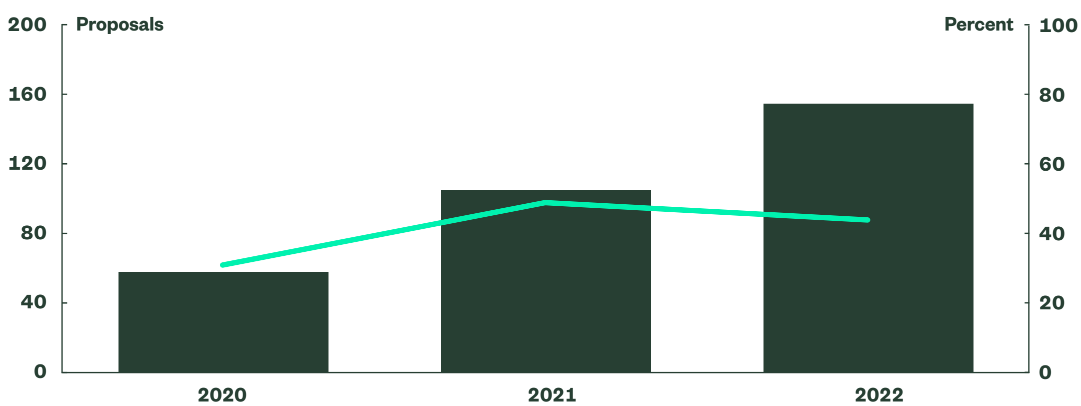
In 2022, we voted on 155 climate-related shareholder proposals at our portfolio companies. We supported 44% of the climate-related proposals, a slight decrease compared to the prior year. Overall, we were generally not supportive of shareholder proposals that we felt were overly prescriptive, such as those calling for a transition to renewable energy within a defined timeframe or phasing out a project, business, or product. We continue to support proposals that we believe will support long-term shareholder value. Below is the approach when voting on climate-related shareholder proposals:

- **For** We will consider voting for shareholder proposals that we believe will lead to increased alignment with our expectations for climate-related disclosures;
- **Abstain** We will consider voting abstain when we support some elements of a proposal's request, or recognize a company's commitment to implement related disclosure and/or oversight practices; and
- **Against** We will vote against shareholder proposals that we believe are immaterial, overly prescriptive, or would not further our disclosure and oversight expectations.

Our approach to voting these proposals has remained consistent over the past few years as demonstrated by our voting record in Figure 5.

Figure 5
Support for Climate-related Proposals*

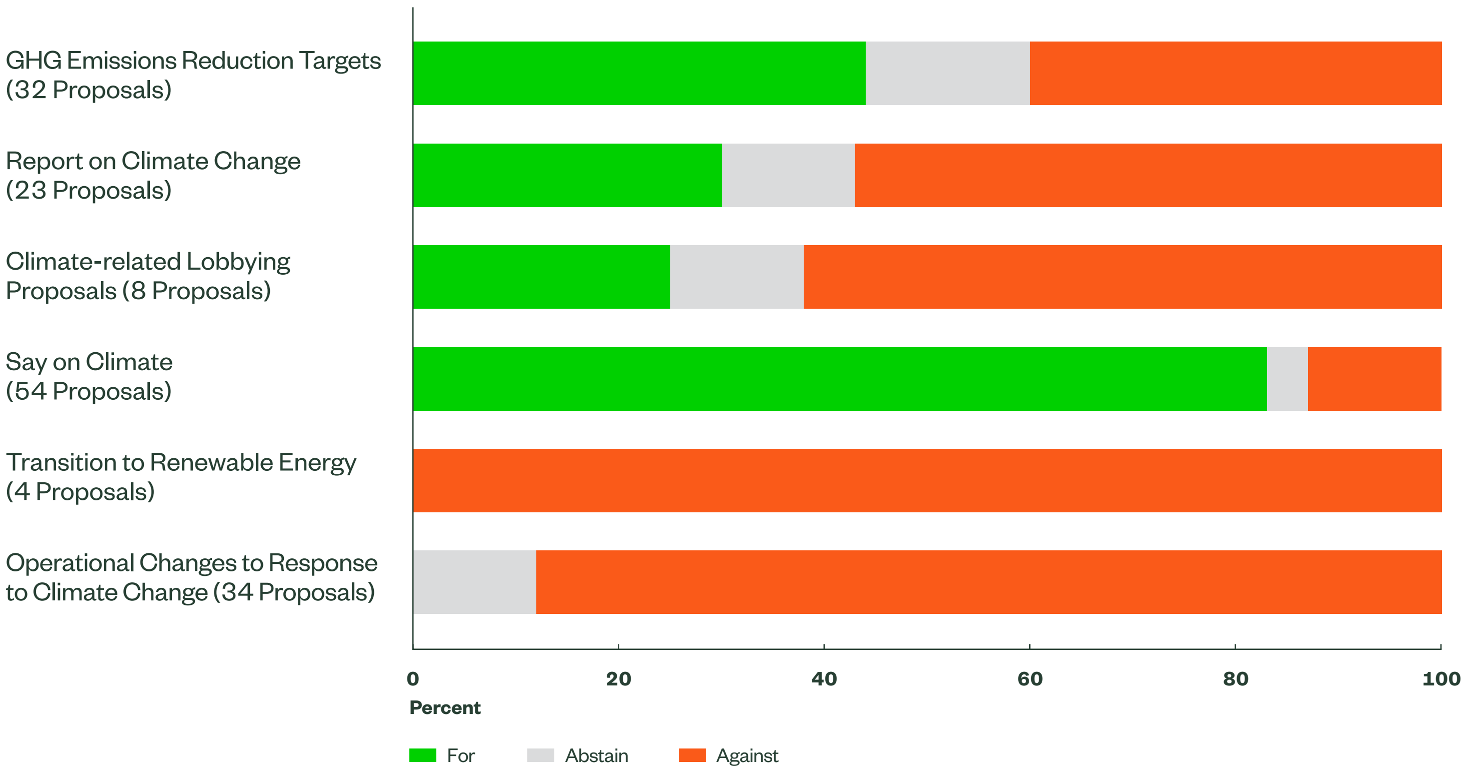
Number of Proposals
% Supported by State Street Global Advisors



Source: State Street Global Advisors. As of 31 December 2022.
* Includes shareholder and management Say on Climate proposals.

The table below outlines our FY 2022 climate change proxy voting track record by proposal type:

Figure 6
Climate-related Proposals by Category



Source: State Street Global Advisors. As of 31 December 2022. *Includes both shareholder and management "Say on Climate" proposals.
Notes: GHG Emissions Reduction Targets: Shareholder proposals that request companies to adopt GHG emissions reductions targets including Scope 1, 2, and/or 3 GHG targets, science based targets, targets aligned with a specific temperature pathway (e.g. 1.5C), and targets associated with reducing GHG emissions associated with investment, lending, or underwriting portfolios.
Report on Climate Change: Shareholder proposals that request companies to enhance reporting on climate-related topics which may include climate scenario analysis or physical risk assessment, a company's climate transition plan or strategy to achieve climate targets, and climate-related disclosure in financial statements. This includes proposals requesting enhanced disclosure in line with frameworks such as the Task Force on Climate-related Financial Disclosures, Climate Action 100+ Net Zero Benchmark, Ipieca, CDP, and Sustainability Accounting Standards Board, among others. Proposals related to the disclosure or management of risks related to plastics and packing are not categorized as climate-related proposals.
Climate-related Lobbying: Shareholder proposal that requests the company adopts specific practices related to climate-related lobbying or enhances disclosure related to climate-related lobbying, including conducting an assessment of the company's stated climate positions compared with the positions of its trade associations.
Say on Climate: This category includes both shareholder proposals requesting the adoption of an advisory vote or "Say on Climate" as well as management proposals requesting an advisory vote on the company's climate transition plan, climate strategy, or climate/sustainability-related reporting.
Transition to Renewable Energy: Shareholder proposals requesting companies to introduce specific renewable or alternative energy sources or increase the generation or supply of renewable energy sources within a defined timeframe.
Operational Changes in Response to Climate Change: Shareholder proposals requesting the phase out of a product or business line within a defined timeframe in response to climate-related risks. This may include divestment, decommissioning, or closure of certain assets, phasing out or restricting investment, underwriting, or lending to a particular sector, and commitments to manage down certain operations, among others.

Asset Stewardship Thought Leadership

Our Asset Stewardship team publishes thought leadership to help inform our portfolio companies and educate broader market participants about our perspectives on ESG issues, including climate change. Over the past few years, our climate-related thought leadership has covered a variety of topics, including our perspectives on effective board climate risk oversight, disclosure trends in carbon-intensive sectors, and insights from engagement campaigns on climate and environmental focus areas.

We publish guidance to communicate to our portfolio companies how we expect them to disclose and oversee climate risks and opportunities. Our Guidance on Climate-related Disclosures serves as a key input to inform our engagement and voting efforts and outlines the topics we may address during engagement.

Future Efforts

As our climate stewardship efforts evolve, we remain committed to thoughtful engagement and maintaining our disciplined approach to proxy voting.

To better understand how these engagements and our proxy voting lead to successful outcomes, please refer to our 2022 Stewardship Report.

Identifying and Assessing Climate-related Risks to Our Business

We view climate change as an intersecting risk that may pose implications to our business. In alignment with our Parent company, we view risk identification as an iterative activity that includes inputs across the three lines of defense. We include climate risk as a strategic risk in our Material Risk Identification process — which utilizes a bottom-up approach to identify our most significant risk exposures, irrespective of their likelihood or frequency — and consider climate risk-related drivers through their impact to our broader inventory of material risks.

In 2022, State Street Global Advisors Enterprise Risk Management conducted its first Climate Risk Identification workshops with senior management. The purpose of these workshops was to help drive alignment with regulatory requirements and to identify ways that physical and transition climate risks could impact the firm's financial performance, operations, and franchise value. The participants reviewed the corporate climate risk drivers and identified risks specific to State Street Global Advisors that were not captured as part of the corporate review. These results were mapped to the existing risk taxonomy.

In 2023, we plan to conduct our second annual Climate Risk Identification workshops with senior management to seek to further to capture the potential long-term impacts of climate risks. We plan to enhance our climate risk identification and assessment capabilities by covering portfolio exposure analytics and sensitivity analysis. In line with industry best practices, we plan to leverage several Network for Greening the Financial System and/or Intergovernmental Panel on Climate Change scenarios, given the increasing adoption by global regulators and the granularity of data provided across a range of plausible scenarios. Together, these plans represent a significant step forward in our ability to identify and assess climate-related risks to our business.

Managing Climate Risks to Our Business

State Street Global Advisors' risk function is closely aligned with State Street Corporation's regarding how we identify, assess, and monitor risk. Responsibility for risk oversight is allocated to ensure decisions are made at an appropriate level and are subject to robust and effective review and challenge. As such, we leverage the three lines of defense model to manage material risks, which may include climate-related risks, to the organization.

Embedded in our risk management are the governance committees that oversee and manage our risks. Our committees and teams across the three lines of defense play important roles in identifying and managing our climate risks.

Governance

Our ESG Committee is composed of stakeholders across the first and second lines of defense. The committee is responsible for overseeing the Firm's ongoing commitments to ESG and sustainable investing, related business practices, and public policy matters; overseeing the Asset Stewardship Team proxy voting and issuer engagements on behalf of all the Firm's discretionary portfolios; and reviewing and approving the Voting and Engagement Policy.

The ESG Committee is one of State Street Global Advisors' five senior-most committees that escalates risks directly to the State Street Global Advisors Risk Committee, where necessary.

Additionally, the Risk Committee of the State Street Board has responsibility for the material risk management components (including climate risk) of State Street's ESG obligations, initiatives, and activities.

The teams comprising our second line of defense — Risk and Compliance — establish and monitor adherence to the risk and control framework and create an additional layer of independence.

The third line of defense team — Audit — provides final assurance that the first and second lines of defense are designed and operating effectively in carrying out these responsibilities.

Climate Change Risks to Our Physical Assets

Physical climate risk, especially acute weather events, may increase in the years ahead. This may impact both our physical assets and the services we provide to our clients around the world.

State Street, including State Street Global Advisors, regularly evaluates the physical risks of climate change to inform our plans to address potential operational vulnerabilities related to climate or environmental factors. This includes assessing the frequency and severity of acute weather events that may impact our operations, induce damage, disrupt our supply chain, or potentially hinder our ability to provide products or services.

We are committed to mitigating the effects to clients from any service interruptions, including those related to climate change, in addition to taking responsibility for mitigating our own climate impacts.

For more information, please refer to State Street Corporation's TCFD report.

Metrics and Targets

Metrics and targets play a critical role in assessing climate-related risks for our clients. We see climate metrics as useful inputs for understanding and disclosing climate-related risks, including in the TCFD-aligned reporting we provide to clients.

Metrics for Assessing Climate Risks and Opportunities Related to Clients' Portfolios

We use a range of climate metrics across data providers in different applications as a part of our client reporting on certain investment strategies. These metrics include industry standards, such as fossil fuel reserves, brown and green revenues, carbon intensity, carbon footprint, implied temperature rise, Scope 1 and 2 carbon emissions, adaptation results, and WACI emissions data. We continue to evaluate the effectiveness of various metrics. Going forward, as transparency and reliability around climate data improves, we will assess and may report on additional forward-looking climate metrics.

Some metrics, such as carbon intensity and carbon footprint, have robust coverage and more well-defined methodologies. However, other metrics lack transparency, and the methodologies require additional validation before we can further integrate them into our business. For example, we have extensively reviewed various climate Value-at-Risk (VaR) providers and are comparing the various approaches and evaluating which tool would be most robust and effective. Such climate VaR datasets are well-suited for the purpose of understanding the impact of climate-related risks and opportunities under different climate scenarios — depending on the data vendor, these scenarios may include those published by the International Energy Agency, the Intergovernmental Panel on Climate Change, or the Network for Greening the Financial System. We are exploring the use of such datasets for various purposes including incorporation in investment strategies, client reporting, and risk management.

Targets For Assessing Climate Risks and Opportunities Related to Clients' Portfolios

We have set interim targets for emissions reductions that apply to a portion (approximately 14% as of December 31, 2021) of our assets under management (our "Net Zero Target Assets").[7] While we believe attention to climate risk is relevant to long-term value, our targets will only be achieved if net zero is important to our clients, and they instruct us to achieve that objective in the portfolios that we manage for them. In this regard, it should be noted that we will not depart from client mandates to achieve the objective of net zero, we will not force any client to embrace net zero, and we will not sell companies in any index because those companies do not achieve net zero targets or objectives. As an index manager, we are long-term shareholders on behalf of our clients, and we are focused on delivering the index exposure to those clients.

We have set the following three targets that apply only to our Net Zero Target Assets:

1. By 2040, we expect all of our client assets in our Net Zero Target Assets (14% of our total portfolio assets as of December 31, 2021) invested in carbon-intensive industries[8] to be (i) achieving net zero[9] or (ii) aligned to net zero,[10] and we will work with those clients to help them develop net zero guidelines and implement them into their portfolios.

2. By 2030, we expect 90% of financed emissions[11] in carbon-intensive industries in the client portfolios in our Net Zero Target Assets (14% of our total portfolio as of December 31, 2021) to be coming from companies: (i) achieving net zero, (ii) aligned to net zero, or (iii) subject to engagement and stewardship actions.

3. By 2030, we expect financed Scope 1+2 carbon emissions intensity[12] in each client portfolio in our Net Zero Target Assets (14% of our total portfolio assets as of December 31, 2021) to be reduced by 50% relative to a 2019 baseline.

Metrics and Targets Related to Our Business

Scope 1 and 2 Emissions Disclosures

Our Parent's Scope 1 and Scope 2 emissions are tracked and reported as part of their TCFD disclosures. Going forward, we will continue to expand on our target and metric disclosures as we progress on our net zero goals and further integrate climate metrics into our business and strategy.

Appendix: State Street Global Advisors UK Domiciled Legal Entity TCFD Disclosures

State Street Global Advisors Limited, Managed Pension Funds Limited, and State Street Unit Trust Management Limited (the "State Street Global Advisors UK Entities") each place reliance on the climate-related financial disclosures contained in the State Street Global Advisors group-level TCFD report, which applies in respect of the activities of State Street Global Advisors globally.

State Street Global Advisors Limited A limited liability company organized under the laws of England and Wales; authorized and regulated by the Financial Conduct Authority ("FCA").

Managed Pension Funds Limited A limited liability company organized under the laws of England and Wales; authorized by the Prudential Regulation Authority ("PRA") and regulated by the FCA and the PRA.

State Street Unit Trust Management Limited A limited liability company organized under the laws of England and Wales; authorized and regulated by the FCA.

The disclosures made in the State Street Global Advisors group level TCFD report and this Appendix are provided by the above State Street Global Advisors UK Entities pursuant to the reporting requirements set out in Chapter 2 of the FCA ESG sourcebook.

Alex Castle
CEO of State Street Global Advisors Limited

Rebecca Bridger
CEO of Managed Pension Funds Limited and State Street Unit Trust Management Limited

Endnotes

1 This figure is presented as of December 31, 2022 and includes approximately $58.60 billion USD of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated. Please note all AUM is unaudited.

2 Pensions & Investments Research Center, as of December 31, 2021. Updated annually when new data is released in June.

3 Institutions including the Bank of England, the IMF, and the Federal Reserve have all asserted these risks, as has the UN-sponsored Intergovernmental Panel on Climate Change.

4 These indices are S&P 500, S&P/TSX Composite, FTSE 350, STOXX 600, ASX 200, TOPIX 100, Hang Seng, and Straits Times.

5 Net zero means that the total greenhouse gas (GHG) emissions being emitted should be lower than or equal to the total GHG emissions being removed or absorbed (i.e., no positive emissions). On a net basis, no additional emissions should be released into the Earth's atmosphere.

6 For more information about the legal entities for which TCFD reporting is a regulatory requirement, please refer to the appendix.

7 Our Net Zero Target Assets are dedicated equity and/or corporate bond portfolios that also meet one of the following criteria: (i) the portfolio is managed pursuant to a climate strategy; (ii) the portfolio is a fund or separately managed account domiciled in Europe; or (iii) the portfolio is a separately managed account domiciled in the US, APAC, or Middle East, but only if the client has embraced net zero or a similar climate pledge.

8 State Street Global Advisors defines carbon-intensive industries as the following Global Industry Classification Standard (GICS) subindustries: Electric Utilities, Integrated Oil & Gas, Multi-Utilities, Steel, Construction Materials, Independent Power Producers & Energy Traders, Oil & Gas Refining & Marketing, Oil & Gas Exploration & Production, Diversified Metals & Mining, Airlines, Commodity Chemicals, Industrial Gases, Aluminum, Oil & Gas Storage & Transportation, Multi-Sector Holdings, Diversified Chemicals, Fertilizers & Agricultural Chemicals, Air Freight & Logistics, Agricultural Products, Environmental & Facilities Services, Coal & Consumable Fuels, Paper Packaging, Railroads, Marine, Automotive Retail, Oil & Gas Drilling, Food Retail, Paper Products, Hotels, Resorts & Cruise Lines, Internet & Direct Marketing Retail, Hypermarkets & Supercenters, Precious Metals & Minerals.

9 We consider a company to be achieving net zero if they meet the following definition set by the IIGCC Paris Aligned Investment Initiative (PAII) Net Zero Investment Framework: the company's current emissions are at/close to 2050 net zero level, and they have an investment plan/business model in line with net zero.

10 We consider a company to be aligned with net zero if they meet the following five criteria based on the PAII Net Zero Investment Framework: (i) a long term 2050 goal consistent with achieving global net zero, (ii) short- and medium-term emissions reduction target (scope 1, 2, and material scope 3), (iii) current emissions intensity performance relative to targets (scope 1, 2, and material scope 3), (iv) disclosure of scope 1, 2, and material scope 3 emissions, and (v) a quantified plan setting out the measures that will be deployed to deliver GHG targets, proportions of revenues that are green, and, where relevant, increases in green revenues.

11 Financed Emissions are the greenhouse gas ("GHG") emissions linked to the companies in which we have invested our clients' assets on an equity or fixed income basis.

12 Financed Scope 1+2 carbon emissions are the Scope 1 and Scope 2 GHG emissions linked to the companies in which we have invested our clients' assets on an equity or fixed income basis. Scope 1 emissions are direct GHG emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 emissions are indirect emissions from the generation of purchased energy, such as electricity, steam, heat, or cooling. Carbon emissions intensity measures the absolute emissions of an investment divided by the investment volume in USD, expressed as tons of CO2eq/$M invested.

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* Pensions & Investments Research Center, as of December 31, 2022.
† This figure is presented as of September 30, 2023 and includes approximately $58.13 billion USD of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated. Please note all AUM is unaudited.

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Marketing communication

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Equity securities may fluctuate in value in response to the activities of individual companies and general market and economic conditions.

Net zero means that the total greenhouse gas (GHG) emissions being emitted should be lower than or equal to the total GHG emissions being removed or absorbed (i.e., no positive emissions). On a net basis, no additional emissions should be released into the Earth's atmosphere.

Net zero strategies Investment strategies that seek to align investments with a net-zero goal by a particular point in time (e.g., 2050).

The returns on a portfolio of securities which exclude companies that do not meet the portfolio's specified ESG criteria may trail the returns on a portfolio of securities which include such companies. A portfolio's ESG criteria may result in the portfolio investing in industry sectors or securities which underperform the market as a whole.

A fund's incorporation of **ESG considerations** in its investment process may cause it to make different investments than funds that do not incorporate such considerations in their strategy or investment processes. Under certain economic conditions, this could cause a fund's investment performance to be worse than funds that do not incorporate such considerations. A fund's incorporation of ESG considerations may affect its exposure to certain sectors and/or types of investments, and may adversely impact the fund's performance depending on whether such sectors or investments are in or out of favor in the market.

Responsibility-Factor (R-Factor) scoring is designed by State Street to reflect certain ESG characteristics and does not represent investment performance. Results generated out of the scoring model are based on sustainability and corporate governance dimensions of a scored entity.

A Smart Beta strategy does not seek to replicate the performance of a specified cap-weighted index and as such may underperform such an index. The factors to which a Smart Beta strategy seeks to deliver exposure may themselves undergo cyclical performance. As such, a Smart Beta strategy may underperform the market or other Smart Beta strategies exposed to similar or other targeted factors. In fact, we believe that factor premia accrue over the long term (5-10 years), and investors must keep that long time horizon in mind when investing.

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The value style of investing that emphasizes undervalued companies with characteristics for improved valuations, which may never improve and may actually have lower returns than other styles of investing or the overall stock market.

Bonds generally present less short-term risk and volatility than stocks, but contain interest rate risk (as interest rates raise, bond prices usually fall); issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss.

Currency Risk is a form of risk that arises from the change in price of one currency against another. Whenever investors or companies have assets or business operations across national borders, they face currency risk if their positions are not hedged.

Hedging involves taking offsetting positions intended to reduce the volatility of an asset. If the hedging position behaves differently than expected, the volatility of the strategy as a whole may increase and even exceed the volatility of the asset being hedged.

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1846350-5729742.2.1.GBL.RTL 1023
Exp. Date: 06/30/2024