

January 2024

Climate-Related Risk and Opportunity Report

Introduction

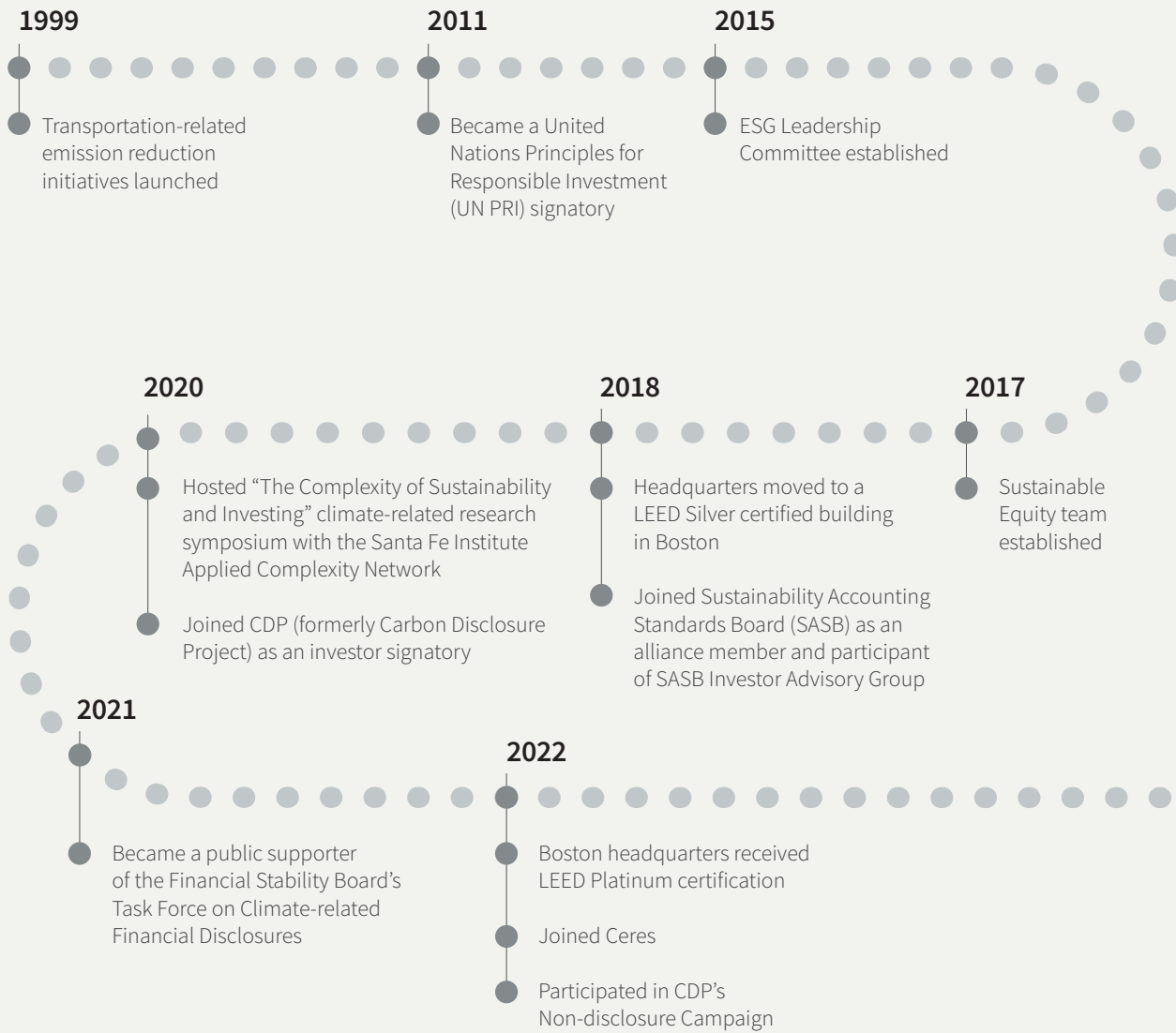
Climate risk and environmental management are key focus areas for Putnam as these issues present increasingly notable risks and important opportunities for businesses and investors. We perceive significant economic consequences from the transition to a lower-carbon economy, including development of new technologies and business models, rapidly changing regulatory frameworks, shifting consumer decisions, and impacts on materials availability and costs. Analysis of these intertwined elements creates opportunities for active managers to identify potential beneficiaries and to continue to refine research questions.

Consistent with Putnam’s overall investment approach and as noted in our [ESG Investment Policy](#), we believe that incorporating consideration of financially material environmental issues is additive and complementary to our fundamental research process and can provide long-term value to clients.

As a public supporter of the work completed by the Task Force on Climate-related Financial Disclosures (TCFD), we believe the framework that TCFD developed is a valuable global standard, and we encourage issuers to adopt the set of reporting guidelines focused on climate risk governance, strategy, and risk management, metrics, and targets.* We recognize that client preferences and requirements continue to evolve with a growing interest in Putnam’s climate risk strategy. In response, we are issuing our inaugural TCFD-aligned climate report.

* The TCFD fulfilled its objective to develop recommendations and released its status report on October 12, 2023. The IFRS Foundation (International Financial Reporting Standards) now monitors companies’ progress on climate-related disclosures. The IFRS Foundation is a not-for-profit, public interest organization established to develop high-quality, understandable, enforceable, and globally accepted accounting and sustainability disclosure standards.

Putnam milestones — Sustainability and climate



Governance

Disclose the organization's governance around climate-related risks and opportunities

At Putnam, responsibility for assessing and managing climate-related risks and opportunities is spread across different teams and individuals. Putnam's ESG Leadership Committee is responsible for setting ESG-related policy, including climate-related policy. It also oversees the establishment of strategic priorities for Putnam's ESG-related activity. The Committee includes senior leaders from across the organization and meets regularly to monitor progress across multiple functions and ensure fulfillment of client, regulatory, and investment objectives.

ESG integration and oversight at Putnam is a collaborative effort that spans numerous functional roles throughout the firm. While portfolio managers have ultimate decision-making authority for the strategies they manage, and the level of ESG integration will vary across strategies, the collaborative investment culture incorporates ESG discussion, analysis, and oversight throughout the research process. Investment teams have access to third-party ESG data and internally developed ESG analytical tools. Climate risk and environmental management are core elements of Putnam's overall ESG integration strategy and are part of the firm's enterprise risk function.

Climate responsibilities and reporting structure

| Role | Reporting to | Climate-related responsibilities |
|--------------------------------------|-----------------------------|---|
| Chief Investment Officer | Head of Public Markets | Lead strategy and execution for Putnam; oversee all investment-related matters |
| Head of Quantitative Equities & Risk | Chief Investment Officer | Incorporate climate-related risk approach in firmwide risk processes |
| Risk Analysts | Risk Manager | Identify, monitor, and communicate climate risks and controls across Putnam's investment activities; determine metrics and calculations for portfolio analysis and client reporting |
| Director of Investment Compliance | Chief Compliance Officer | Oversee daily compliance with the investment guidelines and restrictions imposed by law, regulation, or contracts with clients |
| Head of Sustainable Investing | Chief Investment Officer | Lead strategy for ESG integration across asset classes; manage sustainable investment strategy suite |
| Director of Equity Research | Chief Investment Officer | Manage sector analysts and oversee research activities, including assessment of climate risks and opportunities at the sector and issuer level |
| Equity Analysts | Director of Equity Research | Assess impact of financially material climate risks at the issuer and sector level |
| Head of Sustainability Strategy | Chief Investment Officer | Lead strategy for stewardship & engagement and collaborative affiliations; coordinate with parent company across a range of activities, including climate reporting |

Climate-related committees and working groups

| Committee/Working group | Leadership | Membership | Responsibilities |
|--|--------------------------------------|---|--|
| ESG Leadership Committee | Head of Sustainability Strategy | Cross-divisional senior professionals | Set firmwide ESG-related policy and strategic priorities for Putnam Equity’s ESG-related activity; meet quarterly to monitor progress across multiple functions to ensure fulfillment of client, regulatory, and investment objectives |
| Proxy Voting Committee | Portfolio Manager | Portfolio Managers and the Head of Sustainability Strategy | Establish proxy guidelines and consider special proxy issues that may arise |
| Stewardship & Engagement Working Group | Head of Sustainability Strategy | Sustainability Strategy, Research, and client service professionals | Review and prioritize stewardship activities |
| Climate Risk Working Group | Head of Quantitative Equities & Risk | Investment Risk, Investments, and Sustainability Strategy professionals | Collaborate on climate initiatives, including reporting and analytics |

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

At Putnam, we are driven by our commitment to active investing and its potential to create valuable products, pursue strong performance, and steward long-term investments with care. Climate-related risks faced by the companies in our investment portfolios fall into two primary categories:

- Transition risks that may result from the shift to a lower-carbon global economy (legal and regulatory actions, technology changes, market responses, and reputational considerations)
- Physical risks that may stem from acute weather-driven events (droughts, floods, or fires) or chronic shifts in weather patterns (long-term shifts in precipitation and/or temperature)

Putnam’s strategic approach for assessing climate risks and opportunities involves five key objectives:

- Integrate financially material climate-related risks and opportunities (transition and physical, among others) in fundamental research processes across the sectors and asset classes in which we invest
- Include climate risk assessments in risk oversight processes. Metrics used to assess climate-related risk and opportunities at the portfolio and firmwide level are provided in the “Metrics and targets” section of this report
- Apply active stewardship efforts (engagement and proxy voting) to encourage issuer disclosure of investment-relevant climate-related risks and effective corporate governance to manage such risks
- Increase internal expertise regarding climate risks and associated tools, metrics, and analysis through active participation in affiliations with comparable goals and objectives
- Consider the impact of climate risk on Putnam business operations (energy-efficient buildings, technology-efficient energy, monitoring of travel emissions, and physical risk exposure)

Risk management

Disclose how the organization identifies, assesses, and manages climate-related risks

Investment research

We believe that climate-related risks are relevant and material to long-term business fundamentals, and for that reason, important to all investors. Climate-related risks vary by sector, geography, asset class, and issuer context. Therefore, fundamental research that is tailored to different settings has potential to add meaningful value.

Given this philosophy, our ongoing climate-related research is guided by our internally developed materiality map, which is inspired by the work of the Sustainability Accounting Standards Board (SASB), now the International Sustainability Standards Board (ISSB). Analysts are expected to analyze and consider climate-related issues, where financially material, within their research process and publications, which are documented within Putnam's internal investment systems. We believe that this kind of tailored and forward-looking research focus has the potential to mitigate risk, generate alpha, and be a key contributor to long-term investment results.

Putnam's Equity materiality map is reviewed annually and currently reflects the relevance of a range of environmental considerations such as climate change mitigation; physical climate-change risk; greenhouse gas emissions; energy intensity and renewable energy use; materials sourcing, intensity, and lifecycle management; water intensity and stress; and biodiversity and ecosystems impact. Learn more about [Putnam's Equity materiality map](#).

Research of material climate matters is used in conjunction with assessment of governance and social issues, as many risks and opportunities are interconnected. Members of Putnam's Equity investment team have access to third-party data to assess ESG metrics for issuers, sectors, and portfolios. ESG data sets are embedded within the investment platform, allowing for integration where relevant.

Investment risk

Putnam has established an independent risk team within the investment division charged with identifying, monitoring, assessing, and communicating market-related risk factors and controls across Putnam's investment activities. This organizational structure facilitates an unbiased assessment of risks, including climate-related risks. The risk team conducts a periodic climate value at risk (VaR) review of Putnam's overall assets, a forward-looking and return-based valuation assessment to measure climate-related risks and opportunities.

Engagement and proxy voting

In addition to investment research, Putnam may identify potential climate risks through the engagement and proxy voting processes. Putnam believes that proxy voting can be an important tool for investors to promote best practices in corporate governance and votes proxies in the best interests of its clients as investors. Furthermore, Putnam believes that sustainable environmental practices are important components of long-term value creation. We expect companies to evaluate the potential risks to their business operations that are directly related to environmental factors (among others). In evaluating shareholder proposals relating to environmental initiatives, Putnam takes into account (1) the relevance and materiality of the proposal to the company's business, (2) whether the proposal is well crafted (for example, whether it references science-based targets or standard global protocols), and (3) the practicality or reasonableness of implementing the proposal.

Should the investment research or proxy review processes uncover material risks or opportunities that warrant further exploration, Putnam will actively engage with issuers in two-way dialogue with several goals: to assess the issuer’s knowledge of material climate risks, to better understand the cost-effectiveness of any plans to mitigate risks and maximize opportunities, and to assess governance practices. The majority of engagement occurs privately and directly with issuers and includes direct dialogue with company management and/or boards of directors. We believe that engaging directly and privately leads to the most effective and candid communication, is most additive to our research process and mosaic of information gathering, and offers the highest benefit to our clients.

When engagement does not lead to constructive dialogue or progress, other options may include further outreach that would potentially involve board members and/or senior management, appropriate collaboration with other investors or organizations, consideration of proxy voting issues like board composition, as well as the potential sale of the security.

Putnam business operations

On January 1, 2024, Putnam was acquired by Franklin Templeton, and we expect to make use of climate risk-related resources and relationships from the broader Franklin Templeton organization.

Metrics and targets

Disclose the metrics and targets used to assess and manage relevant climate-related risks and opportunities where such information is material

Acknowledging the immense complexity of climate-related risk, we note that while frameworks and data have progressed significantly, any metric or set of metrics still requires significant context. We analyze climate-related factors where material and financially relevant to the individual issuer, and where the data is available and, we believe, sufficiently accurate. We also incorporate climate-related factors where expressly agreed with our clients, such as in response to their legal requirements or sustainable investment goals.

Analysis to assess climate value at risk is focused on three key components:

- Transition risks associated with decarbonization policies and greenhouse gas emission reduction targets
- Physical risks associated with acute and chronic weather-related events
- Technology opportunities that may arise from changes required for the low-carbon economy transition

A variety of metrics may be evaluated, such as but not limited to:

- Carbon footprint — emissions, intensity, and weighted average carbon intensity
- Adaptive capacity to climate change — presence of GHG reduction targets, use of cleaner energy sources
- Exposure to companies classified as low carbon or low carbon solutions
- Exposure to energy sector and power generation — thermal coal, oil and gas, renewables

Relevant climate risk metrics, subject to availability and data quality, are periodically reviewed against applicable benchmarks at the portfolio level and firm level by Portfolio Managers and the Head of Quantitative Equities & Risk, respectively. Established thresholds allow for identification of risk trends that require further review of portfolio holdings or firm-issuer composition. Results of periodic reviews may trigger initial or follow-up engagement with issuers, as described in detail above.

Conclusion

Putnam believes that an effective, sustainable global financial system is necessary for value creation on behalf of its clients. Our active, research-intensive approach inherently recognizes the importance of fundamental business issues to the investment process, including thoughtful assessment of financially material climate-related risks and opportunities.

While Putnam's ESG Leadership Committee is responsible for setting firmwide ESG-related policy and establishing strategic priorities, numerous roles across the firm play a part in climate-related research, analysis, and reporting for individual securities, portfolios, and firm-level assets.

We are committed to monitoring the regulatory landscape, client interests, and the availability and accuracy of climate-related data and will continue to refine our strategy with the goal of providing long-term value to clients.

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ESG Integration: At Putnam, we define ESG integration as the systematic inclusion of financially material ESG issues (including sustainability risks) as additional inputs into investment analysis and investment decision-making, where possible and appropriate. By considering financially material ESG issues across asset classes, we believe that ESG integration can inform better long-term investment decision-making and may contribute to long-term financial returns. As ESG integration is an enhancement to achieving a financial goal, we believe it can be applied across a wide spectrum of strategies and portfolios. We believe that certain ESG issues are relevant and material to long-term business fundamentals and security values, and important to all investors. Because our goal is to focus research in areas that are most investment relevant, our approaches are guided by mapping financially material ESG issues. Our efforts were inspired by the work of the Sustainability Accounting Standards Board (SASB), which is now part of the International Sustainability Standards Board (ISSB). We have internally developed materiality maps to help structure our ESG-related research priorities, with a goal of adding investment-relevant insights. The relevance and materiality of other ESG issues in our process will differ from strategy to strategy, from sector to sector, and from portfolio manager to portfolio manager, and for some strategies, most notably those where we lack relevant ESG data, ESG considerations are not a material part of our process. Unless stated otherwise in a financial product's documentation, and included within its investment objective and investment policy, ESG integration does not change a product's investment objective or constrain the Putnam's investable universe. ESG determinations may not be conclusive, and securities of companies/issuers may be purchased and retained, without limit, regardless of potential ESG impact. The impact of ESG Integration on performance is not specifically measurable as investment decisions are discretionary regardless of ESG considerations.

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