ESG Integration

Nomura Asset Management recognizes risks and opportunities, and incorporates them into the investment process using different methods for each strategy based on our own ESG assessments.

Features of Integration

Integrating ESG factors into the investment process is critical, as we believe financial performance and ESG efforts (non-financial information) are closely related and influence one another. We utilize proprietary ESG evaluations of portfolio companies when making investment decisions. In order to effectively incorporate ESG considerations and other non-financial information into the investment process to supplement the analysis of a company's fundamentals (financial information used to evaluate a company), we conduct our own ESG assessment for both equity investing and fixed income investing. This integration of ESG factors into the investment process not only helps reduce downside risk, but is also an essential component to improve returns. ESG assessment is not limited to Japanese companies, as the scope also includes companies in developed countries in Europe and the Americas, as well as companies in Asia and emerging countries. In addition to global themes such as climate change and human rights, we assess specific material ESG considerations for individual industries and companies, and utilize information from multiple external sources to create our proprietary ESG scores. These ratings are made available to all portfolio managers for integration into the investment decision-making process.

Equity Investment	When evaluating the ESG characteristics of portfolio companies, we focus not only on potential risks but also on opportunities to generate future earnings. Although each equity strategy integrates ESG considerations into its investment philosophy and process in a different way, a common ESG evaluation platform is shared by all strategies.
Fixed Income Investment	We select and model ESG factors that are material for credit investment based on a variety of research. In addition to this ESG factor model integration, qualitative evaluations by credit analysts are also considered within the investment process to improve the portfolio's risk-adjusted return and sustainability.

Equity Integration

Equity Integration Approach

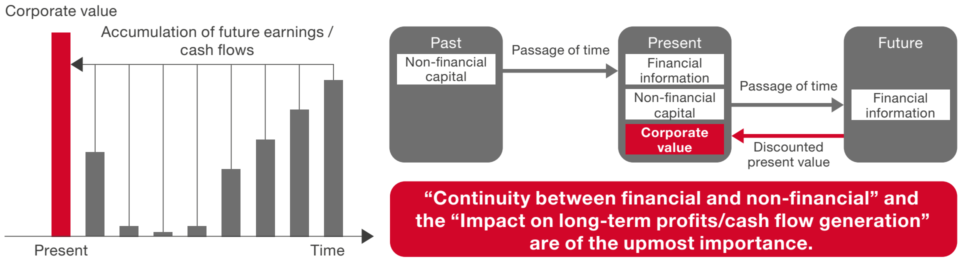
Corporate value is essentially the discounted present value of future free cash flows. The business assets that generate future free cash flow include not only fixed assets such as production facilities, but also various types of intangible assets (capital) not found in financial statements, including human capital and intellectual property. Evaluating such capital, or business assets including non-financial information, is necessary in order to analyze corporate value. We believe that, in addition to financial data, reflecting non-financial data in company evaluations, and making investment decisions based on these evaluations, is essential in order to increase the added value of our investments.

There are two aspects to evaluating intangible assets that do not appear in a company's financial information. The first is evaluating the profits that intangible assets can bring, or a "growth evaluation," and the other is a "business risk evaluation" related to the risks to which a company's profits are exposed.

For "growth evaluation", the business impact of climate change, supply chain resilience, intellectual property, R&D capabilities and organizational strength, quality of human resources and diversity are among the sources of competitiveness that help differentiate a company from its peers. We consider these factors to be materialized in the future as financial information such as corporate profits and growth.

"Business risk evaluation" aims to ascertain the stability and sustainability of future profits based on whether or not the company is able to accumulate intangible assets, and to determine whether or not future profits will fluctuate sharply due to changes in the business environment. In other words, this "business risk evaluation" is looking at how to evaluate the discount rate when discounting future cash flows to the present value. To put it another way, the valuation of intangible assets is an important aspect of determining whether the valuation (relative price metric for the stock price) of the investment target company is too high or too low.

Investors' Basic Philosophy on Corporate Value

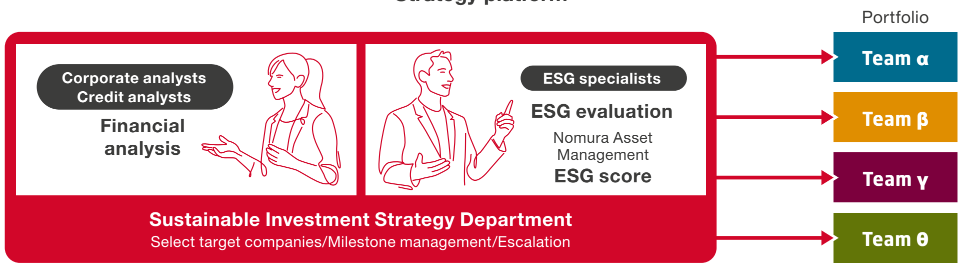


Equity Investment Process

An in-house proprietary ESG score, which is jointly produced by corporate analysts and ESG specialists is utilized for ESG integration into our Japanese equity investments. The ESG score includes environmental, social, governance, and SDG-related considerations, and is a quantified representation of our analysis and evaluation of risks, opportunities, and other factors. These scores serve as an important piece of information utilized by investment decision makers within the investment process/platforms for each investment product (see diagram below). While individual stocks in the portfolio are bought and sold according to their investment ratings, the same score serves as a common language for discussion among corporate analysts, ESG specialists, and portfolio managers, allowing for more effective ESG integration into operations. If additional ESG research is deemed necessary, the Sustainable Investment Strategy Department takes the lead in conducting the necessary engagement activities in collaboration with corporate analysts and ESG specialists.

Our ESG evaluation framework is also applied to our global equities investment. In addition to global themes such as climate change and human rights, we assess specific material ESG considerations for individual industries and companies and utilize information from multiple external sources to create our proprietary ESG ratings. These ratings are made available to all portfolio managers for incorporation into the investment decision-making process. For example, at our Singapore Office, country specialists (CS) are assigned to cover each country in this diverse region, and the main source of added value is the bottom up research conducted by meeting with companies. Investment ratings are assigned to individual stocks based on the fundamental research carried out by CSs as well as the ESG evaluation. The portfolio is constructed based on these ratings.

Strategy platform



Efforts to Advance ESG Integration

Investment Management Department, Japan Equities Active Group, Core Overseas Pension Team

Issues such as climate change, human rights problems, and diversity are common issues that need to be addressed globally and over the long term. All of our main ESG funds published on our website incorporate ESG integration as an investment method regardless of whether they are domestic equities funds, overseas equities funds, or balanced funds.

Aiming to improve and enhance this ESG integration is an important topic for our portfolio management and investment operations. Our investment teams manage portfolios based on a stock selection process that takes various ESG factors into consideration (qualitative and quantitative decisions about ESG). When assessing a company as an investment target, managers of actively managed portfolios must consistently ask "Is this a company that controls ESG risks and opportunities and can continue to grow in five or 10 years?" and manage the portfolio by examining portfolio companies from a long term perspective. In our investment process, investment teams including portfolio managers are partially responsible for ESG assessments. When selecting or trading stocks, our portfolio managers make investment decisions after both referencing a variety of ESG data and information within the company as well as holding internal discussions.

Each investment manager controls the ESG risks and opportunities in the portfolio based on the ESG integration policy of the fund for which they are responsible. In managing Japanese equity portfolio, we control for the weighted average carbon intensity of our holdings to be lower than that of the benchmark, and we aim to keep the weighted average ESG score of our portfolio higher than that of the benchmark. Additionally, we implement ESG risk management at the individual stock level. For example, in the case of a major automotive company, cross-shareholdings within the group were considered an issue from the perspective of the effectiveness of corporate governance. However, we highly appreciated the company's move to fully begin unwinding these cross-shareholdings in pursuit of transparent management aimed at enhancing corporate value, and increased our investment weighting accordingly.

In addition, we make it a point to systematically and carefully explain these ESG integration methods and specific points related to the evaluation of stocks and bonds to our customers.

Coordination with engagement activities is also an important element of ESG integration. The reaction of top management during engagement meetings and the status of milestone achievements are also important signals for managers evaluating "opportunities." Therefore, many of our investment managers attend meetings with top executives, where they discuss ESG issues. By accumulating more experience and case studies of gathering information to make proper decisions on ESG-related risks and opportunities, performing ESG evaluations of individual companies, managing portfolios, and carrying out engagement, we are able to select strong companies that can continuously grow amid the rapid changes in society for our customers.

Efforts to Advance ESG Integration

Growth of environmental/social solutions businesses

Profitability of environmental/ social solutions businesses

Current customer and market development strategy

Growth targets

Assessment of R&D

ESG track record

Environmental performance
CO_2 emissions, stranded asset exposure, eco-friendly procurement ratio, etc.

Social performance
employee turnover rate, diversity, safety indicators, actions on human rights, etc.

Governance
governance structure, compensation, misconduct/scandals, etc.

Portfolio Manager's ESG Viewpoint

Current and future segment mix

Assessment of M&A strategy

Business risks and opportunities

Status of production and sales in regions with enhanced regulations

Changes in the supply chain structure

Geographic risks and opportunities

Exclusion of investment in controversial weapons producers

Nomura Asset Management has a policy to not invest in controversial weapons producers* for the funds/accounts managed by Nomura Asset Management.

If there is a corporate social responsibility issue on a company, it is our basic policy to seek its resolution through dialogue with the company. However, it is difficult to see the benefits of engagement with controversial weapons producers. Therefore, we believe that excluding them from our investments is an appropriate response from the perspective of social responsibility and improve return on assets under management over the long term.

Specifically, all actively managed funds/ accounts, including overseas offices, will be prohibited from investing in controversial weapons producers. For the avoidance of doubt, passive funds managed by Nomura AM entities and funds that are sub-delegated to non-Nomura AM entities are out of scope.

* Producers of whole weapons systems of cluster munitions, anti-personnel mines, biological and chemical weapons, incendiary bombs (white phosphorus), blind lasers and weapons using undetectable fragments are covered. For the avoidance of doubt, producers of essential intended or dual-use components of these products or companies involved indirectly through ownership ties to companies involved in these products are not in the scope of the above exclusion.

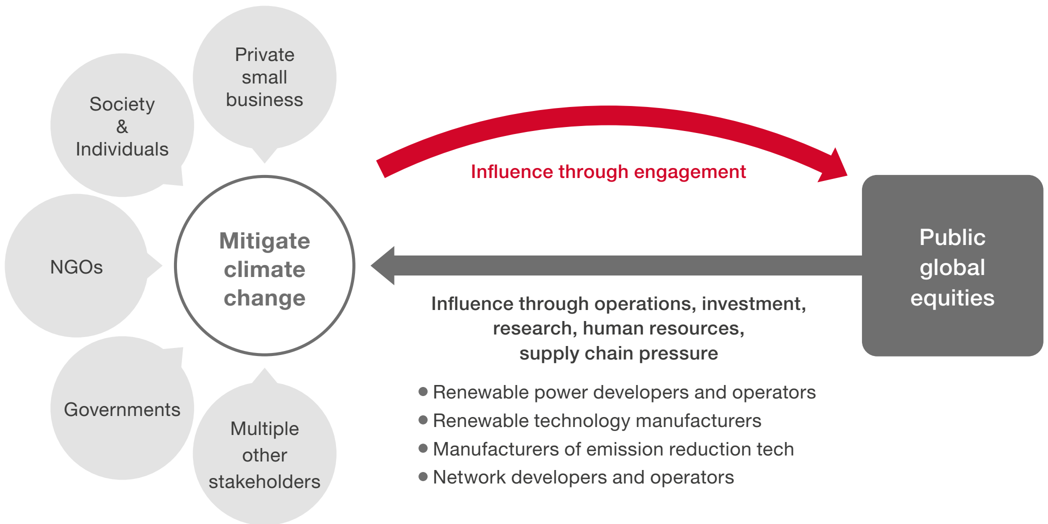
Impact Investing

According to the Global Impact Investing Network ("GIIN"), impact investments are defined as investments made with the intention to generate positive, measurable social or environmental impact alongside a financial return. The key elements of impact investing are "intentionality" to contribute to environmental or social benefits, and "measurability" of environmental or social benefits. In practice, investors often use a "theory of change" framework to map how their investments will lead to their intended impact, which ensures intentionality and enables impact measurement if conducted properly.

Whilst public equity funds are not traditionally considered vehicles for having impact mainly due to limited direct control and financing, we believe that listed companies have a unique role to play, alongside multiple other stakeholders, in solving many of the problems society faces. In this section, we highlight some of our investment strategies with impact mindset, each with distinct investment philosophies and approaches.

Note: For impact investing in listed equities, investors' direct intervention in management is generally limited. Shareholder influence is mainly exercised through voting rights and engagement (dialogue) with companies. Unlike impact investing in private equity, investors cannot typically implement measures directly by appointing directors or intervening in management. Also, investments in listed equities often involve purchasing existing shares on the market, so the capital may not flow directly into a company's new activities. For this reason, attribution and additionality—that is, the ability to demonstrate that the investment directly caused the impact—tend to be lower than in private equity impact investments.

Illustrative diagram **Example for Global Sustainable Equity Strategy**



Example of Impact Investment Process

	ENVIRONMENT		SOCIETY			
Setting issues based on ESG statements	Climate Change	Natural Capital	Access to Healthcare		Social Responsibility	
Establish impact goals	Mitigate Climate Change Keep global warming to below 1.5°c	Mitigate Natural Capital Depletion	Mitigate the Obesity Epidemic	Eliminate Communicable Disease	Global Access to Basic Financial Service	Global Access to Clean Drinking Water
Key Performance Indicators (KPI)	Global Renewable Energy Output Atmospheric CO_2 Levels	Material Consumption per Capita Global Annual Tree Cover Loss	Mortality rate according to WHO Cardiovascular disease, cancer, diabetes, chronic respiratory disease	Deaths due to HIV, TB and Malaria according to WHO	Percentage of low-income households with access to banks	Percentage of Global Population with Access to Safe Drinking Water
Alignment with the UN SDGs	**SDGs7.2** Increase global percentage of renewable energy **SDGs7.3** Double the improvement in energy efficiency	**SDGs12.2** Achieve the sustainable management and efficient use of raw materials	**SDGs3.4** Reduce premature mortality from non-communicable diseases through prevention and treatment	**SDGs3.3** End the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases and other communicable diseases	**SDGs1.4** Ensure all have equal rights to economic resources **SDGs9a** Promote sustainable and resilient infrastructure development in developing countries through enhanced support for finance, technology, and technology	**SDGs6.1** Achieve universal and equitable access to safe and affordable drinking water for all
Identify investment field	• Renewable energy developers • Manufacturers possessing technologies • EV/OEM manufacturers • Highly-efficient office building construction and management	• Sustainable raw material management • Efficient use of raw materials	• Medicine-related businesses • Companies related to the healthcare value chain		• Business that provides payment methods through fintech • Lending business for socially vulnerable groups	• Businesses related to the provision of water and sewage services • Businesses that provide clean drinking water
CPI for individual companies	• Tonnes Carbon saved from products and services • MWh of carbon free energy produced in the year • Electric Transmission & Distribution investment	• Single use plastic water bottles displaced by filtration products • Metric tonnes of material recovered in the year	• Patients reached for treatment of Diabetes and Obesity • Plan members covered	• Patients reached through access strategies • Vaccines delivered in lower-income countries	• Value of mortgages to low income and economically weak in year • Number of people provided insurance solutions in Emerging Economies	• Total people reached through company hygiene & water access programmes • Litres of water treated, saved or reduced by projects in the year
Engagement with portfolio companies	Ongoing engagement with target companies					

Nomura Asset Management's impact investing

Portfolio construction/management process

SOCIAL ISSUES THAT SHOULD BE SOLVED

Establish impact goals and Key Performance Indicators (KPI)

Identify SDGs topics

Identify investment field Select/Define portfolio companies

Establish CPI for individual companies

Engagement with portfolio companies

Our Impact Investment Strategies

Here is an introduction to the impact-investing strategies of Nomura Asset Management's regional offices.

UK

G S E

GLOBAL SUSTAINABLE EQUITY STRATEGY

Our UK office manages Nomura Global Sustainable Equity (GSE) Strategy, which is a concentrated global equity strategy that seeks to deliver strong risk-adjusted returns through investing in companies that the team believes to have high overall positive impact on all stakeholders (meaning the environment, society, customers, suppliers, employees and investors). The approach is based on the belief that impact cannot be claimed without having first established clear environmental and social goals that have a definable objective. At the public company level, it is possible to report 'inputs' (such as R&D investment) or 'outputs' (number of patients receiving HIV treatment) but it is far more difficult to assess true 'impact' (i.e. what was the explicit change to, for example, quality of life or reduction in mortality).

While there are limitations on what a public equity fund can deliver in terms of impact, for certain UN SDGs-related targets public companies are very well positioned with the resources, scale and investment firepower, to bridge the huge funding gaps required to meet the goals. Institutional investors like ourselves are furthermore uniquely positioned to enhance the impact of public companies through targeted engagement. GSE team is committed to reporting credible impact data to support our clients' understanding of the impact that their capital is having on the world alongside the competitive financial returns.

The sixth edition of the Impact Report for the strategy was published in 2026, providing a clear and detailed explanation of how the investment team evaluates the positive impacts brought about by the investee companies and the impacts we aim to achieve through engagement activities.

GSE's approach is:

1. Set 'Impact Goals' and establish Key Performance Indicators (KPIs) for each goal
2. Identify investee companies that support these goals and set Company Performance Indicators (CPIs)
3. Track both KPIs and CPIs and engage with companies to enhance individual impact
4. Report impact data and engagement activity

A Nomura Global Sustainable Equity (GSE)
Co-Portfolio Manager
Daniela Dorelova

B Nomura Global Sustainable Equity (GSE)
Lead Portfolio Manager
Nick Henderson

C Nomura Global Sustainable Equity (GSE)
Co-Portfolio Manager
Benjamin Lacaille

JAPAN

JSEG
JAPAN SUSTAINABLE EQUITY GROWTH STRATEGY

We began managing this strategy in 2016 based on the philosophy of companies addressing social issues through their core businesses. In the 2010s, a wide range of stakeholders started to become aware of the need for sustainability with respect to the environment and society. The idea that it is possible to solve such challenges through investment lies behind this. The turmoil caused by the COVID-19 pandemic that emerged in 2020 has finally settled down after several years. However, while the global chaos has subsided, various social issues that became evident in Japan during that time, as well as disasters caused by climate change, have been occurring frequently in areas throughout Japan, leading to a deepening of the problems. Therefore, urgent action is required to address social challenges. In this strategy, we incorporate the concept of “impact investing,” an investment approach that helps address various environmental and social issues we face as society changes due to a wide range of factors, and we continue to manage our investments based on a long-term perspective. This investment method not only aims to generate the usual investment returns from an asset management product but also focuses on investing in companies that engage in business activities aimed at solving social issues over the long term, thereby contributing to addressing challenges within the society in which we live. These social issues are closely related to the SDGs (Sustainable Development Goals), and the connection between solving these social challenges and achieving SDG targets is one of its key features. Additionally, since many of these social challenges require medium- to long-term efforts, we believe that investing in companies with the premise of long-term investment allows for a balanced pursuit of both excess returns and the resolution of ESG issues. The investment targets of this strategy include companies that can create social value contributing to the achievement of the SDGs, evaluated through our unique ESG scores of Japanese stocks and their fundamentals. We believe that sharing the outcomes and the broad and cumulative impacts achieved by our portfolio companies through the publication of impact reports is an essential process not only to support these companies in addressing social challenges but also to deepen understanding among investors.

A Portfolio Manager
Tatsuhira Matsushima

B Main Portfolio Manager
Jun Takahashi

C Senior Portfolio Manager
Shun Iwakura

ESG Scores for Japanese Equities

Nomura Asset Management computes proprietary ESG scores which represent Japanese companies' true ESG abilities, in collaboration with our analysts and ESG specialists. ESG and other non-financial information are extremely important in predicting corporate value based on future cash flows. Researching, analyzing, and then scoring a portfolio company's non-financial information makes it possible to measure corporate value while taking ESG into account, and we believe doing so leads to higher added value of our investments.

ESG Score Content

The following is an overview of ESG scoring. The assessment comprises four items each with a weighting of 25%. These four items are Environment, Social, Governance, and SDGs. ESG Score keeps a good balance between risks and opportunities. In terms of opportunities, we evaluate items including management's vision and commitment with respect to ESG issues (ability to explain, plan, and execute initiatives, as well as past achievements), along with the future growth potential of companies that contribute to the achievement of SDGs, as well as the management resources that contribute to this. Meanwhile, for risks, our evaluations emphasize items that can be quantitatively analyzed, such as whether or not a company has provided disclosure and/or obtained certification, as well as the data disclosed and trends for such data. Furthermore, we use materiality (important management issues) to take into account differences in industry attributes for each company.

For "Environment," we look at whether a company is managing transition risks and physical risks related to climate change and incorporating such risks into its business strategy. We also look at whether the company's management has expressed a commitment to the environment. With respect to matters such as the TCFD, we analyze and evaluate based on a company's integrated report and materials posted on its website. With respect to evaluating natural capital and other environmental assessments, we evaluate items such as those related to waste management, conservation of river and marine resources, and biodiversity (including preventing marine pollution).

For "Social" factors, our evaluation is divided into looking at a company's internal and external risks as well as measures to address such risks. The former includes assessments such as those related to employees' human rights and the utilization of human capital, while the latter relates to the issues surrounding the quality of products and services as well as supply chain management. Recently, much attention around the world has been given to human rights initiatives. For Japanese companies in particular, we emphasize the evaluation of supply chain management at business sites both in Japan and overseas.

In "Governance," we evaluate multiple items to make sure that companies have put appropriate structures/systems in place, such as the composition of the board, outside director independence, and whether nomination and compensation committees have been established. Meanwhile, we also evaluate qualitative issues such as dialogue with top management and successor planning. The unique strengths of our corporate analysts, who have been studying and analyzing companies extensively for many years, are reflected in our evaluations.

In "SDGs", we proactively evaluate a company's stance vis-à-vis working on future opportunities. We evaluate whether a company considers solutions to SDG issues as business opportunities and appropriately incorporates them into its business strategies. In doing so, rather than simply looking at whether or not a company has businesses that enable it to contribute to the achievement of each goal, we conduct extensive research and forecast future sales mixes capable of contributing to SDGs goals, and look at whether or not a company has excellent human and technological resources to differentiate itself from industry peers.

Corporate analysts who have frequent contact with companies and possess extensive knowledge of the companies they cover collaborate with ESG specialists who analyze ESG from a cross-industry perspective. They work together, identifying items where one or the other possess particular expertise and comparative advantage. Ultimately, the Responsible Investment Department is responsible for the final scores, which are then shared with the related departments.

ESG Scores for Japanese Equities

Revision of ESG Score

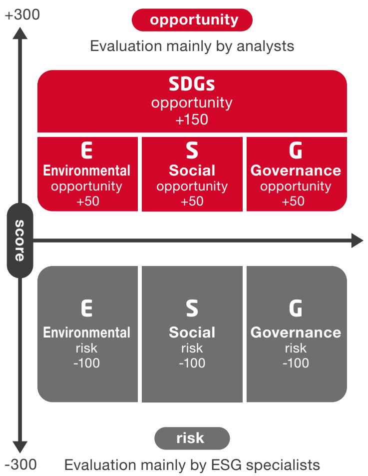
Since our portfolio companies are improving their ESG-related disclosures and their actual initiatives, we revise the ESG scores for Japanese equities on a regular basis, thereby raising the effectiveness of company evaluations using ESG scores. In the 2023 revisions, we are taking it a step further by estimating the economic value of the GHG removals and avoided emissions, and reflecting this in the climate change assessment. In the 2024 revision, we added evaluations of companies' efforts to respond to the TNFD issued in September 2023.

In the 2025 revision, new evaluation items were added: 1 whether or not outside directors with effective skills have been appointed based on the skills matrix required to be disclosed in the Corporate Governance Code, and 2 the details of business opportunities towards nature-positive, especially whether or not specific products and services have been developed. With regard to 1, since the creation of the skills matrix is left to each company, the lack of objectivity and standardization is an issue. Therefore, Nomura Asset Management, in collaboration with a data vendor, has verified whether it is possible to automatically output and evaluate the skills matrix of a board of directors from text information about directors, thereby strengthening the evaluation process for this item. In addition, we are reviewing, as appropriate, some of the other items, taking into consideration changes in regulations, etc., based on the current situation of Japanese companies attained through engagement and proxy voting.

ESG Scoring Framework

Main category		Sub-category	Sub-items
E Environmental	25% of total opportunity: +50 risk: -100	opportunity +50	Environmental strategy, senior management's initiatives
		risk -100	Climate change, Natural capital, response to other environmental issues, etc.
S Social	25% of total opportunity: +50 risk: -100	opportunity +50	Social strategy, senior management's initiatives
		risk -100	Human capital, human rights, response to other social issues, etc.
G Governance	25% of total opportunity: +50 risk: -100	opportunity +50	Evaluation of senior management
		risk -100	Evaluation of board of directors, other governance items
SDGs	25% of total	opportunity +150	

Sub-items are individually evaluated in accordance with sub-category themes. Materiality was introduced in the revision of ESG scores, taking into account the specific characteristics of the industry for each company.



Utilizing ESG Scores

ESG scores generated by quantification of non-financial information are used not only for investment decisions and new product development in investment portfolios, but also for client reporting and our ESG investment management.

Utilizing ESG score data in engagement

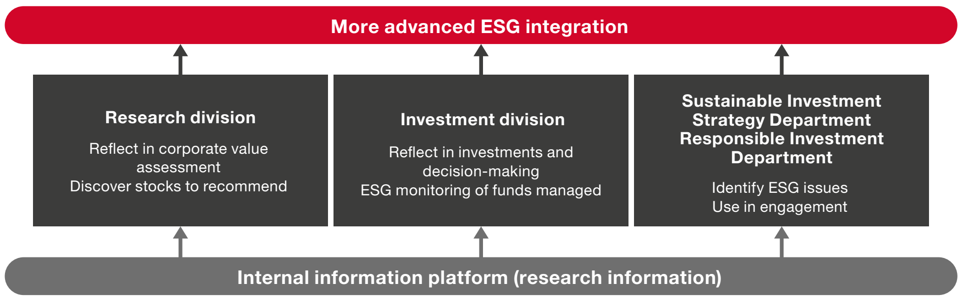
ESG scores are determined not only based on disclosed data but also using information on future risks and opportunities. By using this ESG score, we can compare the strengths and weaknesses of portfolio companies' ESG efforts, and use the scores in engagement such as discussing future course of action.

Utilizing ESG score data in investment activity

ESG scores are posted on an internal research-sharing system. The materials used by investment committees and others to evaluate investment value for individual companies contain regular financial indicators as well as ESG scores and ESG comments by the analysts in charge. These scores are actively utilized in making investment decisions.

Utilizing ESG scores in portfolio construction and monitoring

When building and reviewing portfolios, we check scores for individual companies, use them to make comparisons with industry peers and see how a company's score has changed, as well as to check the ESG quality of the portfolio. Investment managers can also use the items comprising the ESG scores of individual companies as a standalone data. Additionally, by regularly comparing the portfolio's overall ESG score to the benchmark, they can use ESG scores to check ESG risk bias and other factors.



Transition Investment Framework in Fixed Income ESG

Jason Mortimer

Head of Sustainable Investment, Fixed Income

The Growing Importance of Transition Investing

Transition finance has become a major focus area in climate-related investing. As a concept, transition finance supports emissions reductions over time, including in hard-to-abate sectors, while green finance targets projects, assets, or activities that have already reached low or zero carbon emissions. The growing interest in transition finance as a complement to green finance likely reflects the market's shift toward practical decarbonization solutions in the real world, rather than virtual decarbonization in individual portfolios, which is often achieved through exclusions.

While green investments can be assessed objectively using standardized taxonomies and point-in-time analysis, transition investments tend to be more subjective, context-dependent, and dynamic over time. The supply of labeled transition bonds also remains limited, which may reflect the fact that sustainable investment regulation and market structure have largely developed around a "binary" approach that prioritizes unequivocally green investments. As a result, market interest in transition as a concept has not necessarily been matched by capital flows into transition as an investment.

How can fixed income investors overcome these limitations to build credible green and transition portfolios? We believe the solution is to: 1 **assess transition progress at the issuer level using tiers in order to**; 2 **maximize the progress of whole-economy transition at the portfolio level**.

Tracking Issuer-level Progress with "Transition Progress Tiers"

Transition plans have emerged as a key data source for sustainable fixed income investors. These disclosures show whether an issuer's climate transition strategy is aligned with national sector pathways, supported by realistic technology roadmaps, backed by capital expenditure commitments, and reflected in climate governance. In other words, they indicate whether the issuer's climate transition is ambitious and credible. They provide investors with a more holistic and forward-looking view of an issuer's climate transition progress than carbon footprints, and offer important context for evaluating decarbonization targets and commitments.

Corporate climate transition is a process, not an end-state, and there is no global standard for what makes transition "credible." Therefore, in our fixed income ESG, we assess issuers using a transition progress tier approach that classifies them into levels such as "No Commitment," "Transitioning/Progressing," and "Aligned/Aligning." Our approach recognizes multiple potential pathways to net zero, and standardizes transition credibility based on plan quality and completeness, alignment with national sector pathways, evidence of capex allocation, interim targets, and integration into governance. Transition progress tier assessments are dynamic and updated over time to reflect the issuer's ongoing commitment and actual pace of implementation.

Growing Market Focus on Climate Adaptation and Resilience Finance

Despite progress in financing climate mitigation, the world appears to be off track to meet the Paris Agreement's most ambitious goal of limiting warming to 1.5 degrees Celsius. This raises the probability of more extreme increases in global temperatures and climate-induced physical disasters in the future. As a result, policymakers and investors alike are increasingly focusing on climate adaptation and resilience (A&R) investments to reduce and manage damages from these and other physical risks.

New research* suggests that A&R investments to protect corporate property and public infrastructure from risks such as flooding, storms, heat, and earthquakes offer high investment payoff ratios. A 2025 WRI study of 320 A&R investments totaling USD 133 billion across 12 countries found that every 1 USD invested created more than USD 10 in cumulative benefits over 10 years. Moreover, the benefits were not limited to counterfactual modeling of

*https://www.wri.org/research/climate-adaptation-investment-case expected losses from disasters, but also included induced economic gains from better development outcomes in job creation and technology deployment, and broader social and economic benefits from improved human health and biodiversity outcomes — together known as the “Triple Dividend of Resilience”.

Scaling up private capital for A&R finance requires investors to recognize the value of loss-avoidance and broader social and economic benefits from these investments, together with pipelines of investable A&R projects from issuers. Tokyo Metropolitan Government’s recently issued “Resilience Bond” for climate and physical resilience investments suggests that this is possible, with an approach that is well suited to the Asia region.

Maximizing Real-World Decarbonization Rather than Minimizing Portfolio-Level Emissions

Our fixed income ESG framework for transition investment integrates issuer transition progress tiers into a single weighted average score for the portfolio. This transition score establishes a baseline for tracking overall progress across holdings and serves as the framework’s key performance indicator for portfolio construction and risk monitoring. Here, the aim is to maximize real-world decarbonization by allocating capital to a diverse set of issuers implementing the most ambitious and credible transitions in context rather than simply minimizing portfolio emissions through exclusions or by limiting investments to issuers that are already green. This approach can potentially include hard-to-abate sectors in cases where the company demonstrates relatively ambitious goals, clear capex plan alignment with sector pathways, and measurable progress. This feature is especially relevant in emerging market contexts where green or low-carbon investment options are limited. Furthermore, by directly linking issuer transition plan disclosures and follow-through to investor capital allocations, we can engage more effectively with market stakeholders to promote high-quality, standardized disclosure practices. This can ultimately help channel investment into transition sectors and activities that are typically underserved by traditional green investment approaches.

Conclusion

By assessing transition credibility with climate ambition, and orienting capital allocations to the pace of issuer transition progress, we can move beyond exclusions to build credible and diversified green and transition portfolios. This approach channels capital where it can most accelerate decarbonization — particularly hard-to-abate and emerging market sectors — while creating clear incentives for issuers to deliver on their climate transition commitments. In doing so, we aim to unlock investable opportunities, manage transition risks more effectively, and ensure mainstream fixed income plays a constructive, accountable role in the whole-economy’s shift to net zero.

Green Investment and Transition Investment

Investment type	Green	Transition
Objective	Portfolio decarbonization now	Issuer decarbonization over time
Analysis	Issuer-level GHG emissions Investment-level net zero status (Ambition)	Issuer-level transition plan Investment-level transition potential (Credibility)
Maximizes	Share of already green assets	Rate of brown-to-green improvement
Net zero pathway	Single pathway	Multiple potential pathways
Hard-to-bate sector inclusive?	Generally not (Sector exclusions)	Potentially yes (Assessment of transition plan)

An Effective Approach to Sovereign Engagement

As a Responsible Institutional Investor

As a responsible institutional investor, engagement through purposeful dialogue is an effective way to practice active ownership for our invested assets. The most common form of engagement is corporate stewardship, which seeks to promote sustainable corporate value creation and governance improvements through ongoing dialogue between investors and investee companies. However, while equity markets finance corporations, fixed income markets finance both corporate and public issuers, including sovereign borrowers. For these investments, issuer creditworthiness rather than profitability is the key driver, although national governments are generally understood to prioritize accountability to their citizens over market investors. So how and why do we engage with sovereign borrowers as a fixed income investor?

Why engage with sovereigns as a bond investor?

Whether for corporate or sovereign finance, engagement between investors and issuers is important to better understand each side's priorities, shared interests, and challenges. Fundamentally, the resulting communication gives investors an opportunity to discuss the material factors affecting their portfolios and may lead to information discovery for more efficient pricing of sustainability risks and targeting of impact investment opportunities. For this reason, engagement is not a check-the-box exercise but rather a fundamental part of our credit assessment and fixed income investment decision-making process for both emerging and developed markets.

Sovereign issuers face a broad set of sustainability-related risks, including climate- and physical-risk vulnerability, governance and rule-of-law concerns, and demographic and security challenges that can materialize into credit shocks or have a direct impact on market risk and pricing. Through analysis using our proprietary Sovereign ESG Score model and practical investment experience, we believe that sovereign credit markets are not always efficient with regard to pricing in these sustainability risks. By combining quantitative analysis of sovereign-level risks with targeted issuer engagement, we can develop a forward-looking understanding of sustainability factors, reduce portfolio downside risk, identify high-impact sovereign investment priorities, foster trust-based issuer-investor dialogue, and align portfolios with long-term sustainability outcomes.

Unique Challenges and Opportunities in Sovereign Engagement

Bond investor engagements present unique constraints and opportunities. Unlike shareholders, bond investors do not have voting rights or access to the board to directly influence corporate strategy. Instead, they exercise influence through pricing signals, capital allocation signals, and the conditionality implicit in lending and refinancing. When the borrower is a sovereign country, this dynamic changes further. Governments face strategic imperatives and prioritize domestic constituents over private investors, who in local currency fixed income markets are often motivated by regulatory requirements as well as investment profits. This reality limits the levers available to external investors, but it also creates a unique opportunity. Sovereigns are policymakers, so improving government transparency, incorporating investor feedback on policy, and improving the quality of public investments can produce macro-level benefits for citizens and investors alike.

Sovereign ESG Scoring Framework for Engagement – New and Emerging Risk Factors

Environmental	Social	Governance	Security
Energy Security Energy Transition Physical resilience Climate and Physical Risk Environmental vulnerability Water Stress, Drought Risk, Flood Risk Natural capital Ocean Health Fisheries Management	Human development Food Security Production Capacities Human rights Civil rights Criminal and Civil Justice Systems Gender inequality	Economic Competitiveness Global Talent Competitiveness Market Development Logistics Performance Innovation Network Readiness E-Government Development Investor Protection Intellectual Property Protection Start-up Investment Attractiveness Government Effectiveness Control of Money Laundering and Terrorist Financing (AML Risk)	Geopolitical risk National resilience Supply Chain Resiliency Economic Resiliency Cybersecurity Policy Development Domestic stability Justice and Rule of Law Terrorism Risk

Our Approach to Sovereign Engagement

Our approach to sovereign engagement is pragmatic and risk-based. We prioritize engagements where sustainability-related disclosure gaps are material or where policy responses to sustainability challenges could affect market perceptions of creditworthiness and macro-stability. Rather than prescribing policy or acting as advocates for specific outcomes, we seek credible, evidence-based dialogue that clarifies how governments plan to manage their fiscal and sustainability risks. This means focusing on topics such as fiscal transparency and debt sustainability, climate adaptation and mitigation planning, contingent liabilities and public investment efficiency, governance indicators that affect policy and market credibility, and reform pathways tied to physical, social, and economic resilience.

In practice, our engagements take various forms calibrated to the nature of the issuer and the issue at hand. For multilateral development banks (MDBs) and supranationals, we often engage issuers by providing feedback on project pipelines and focusing on sustainable investment priorities, disclosure standards, and emerging risk factors such as resilience and cybersecurity. For sovereigns, engagements typically combine IMF and World Bank analysis, sovereign ratings, proprietary ESG risk metrics, and direct dialogue — seeking to corroborate publicly available plans, request clarifying data, and understand implementation timelines. Where appropriate, we collaborate with stewardship initiatives to amplify investor voices.

Examples of Sovereign Engagement Initiatives in 2025

The year 2025 marked a notable step in this collaborative direction. We joined as the sole Japan-based investor in the Principles for Responsible Investment's (PRI) Collaborative Engagement on Climate Change with Japan, an initiative that fosters collective dialogue between investors and sovereigns on their sustainability priorities. Through this initiative, we aim to deepen understanding and mutually beneficial dialogue with global investors on Japan's GX (Green Transformation) Transition strategy and approach to climate adaptation and physical resilience. In Asia, we contributed to MDB-led initiatives addressing sustainable finance market development in sovereign issuers including Indonesia, Sri Lanka, and Cambodia. We also published policy-related research for the ASEAN region on transition finance, cybersecurity for sustainable digital transformation, and GSS+ bond issuance for local government issuers. These initiatives reflect our belief that partnering with peers, development institutions, and regional experts can deepen insights and increase practical impact for investors and the broader market community.

Conclusion

What distinguishes our sovereign engagement is its emphasis on transparency and dialogue over advocacy. We do not seek to substitute for domestic policymaking or to impose external demands on sovereign issuers. Instead, we aim to provide practical investor feedback and advice, improve market dialogue, and encourage credible policy action that can inform investors' macroeconomic assumptions and contribute to sovereign sustainability-risk analysis. Where engagement reveals positive reform momentum, we may reflect that in improved credit outlooks or increased allocation. Conversely, where engagement highlights unresolved governance and sustainability risks, we may shift to a more cautious allocation or seek pricing commensurate with heightened risk. Sovereign engagement is necessarily an iterative and long-term process. Policy reforms take time, and credit markets are sensitive to both long-term signals and near-term shocks. By coupling engagement with systematic sustainability risk pricing and disciplined capital allocation, we seek to build resilient sovereign fixed income portfolios through better information and alignment with sustainable outcomes. In doing so, we aim to fulfil our fiduciary duty to clients while contributing constructively to improved transparency and risk management in the public financing ecosystem. (Jason Mortimer)

Emerging Market Bond Investment Team

Within our emerging market bond investment team, when engaging with government officials in target countries, we discuss ESG-related themes as well as economic trends and other relevant matters, and incorporate these insights into our investment decisions.

ESG bonds and Japanese bond credit management

Tatsuya Ujita
Senior Portfolio Manager
Investment Department

For nearly 20 years going back to 2006, I have been involved in the market as a portfolio manager specializing in active fixed income investment, with a focus on the Japanese credit market. My mission in this role is clear: to deliver the investment performance required to meet each client's specific needs. However, for clients to have confidence that such performance can be sustained over the long term, it is essential to establish a consistent investment process grounded in a deep understanding of corporate bond issuers and the credit market. While engaging in financial markets on a daily basis, I have often found myself tempted to focus on near-term numbers and become short-sighted. To stay disciplined and take a broader view of the corporate bond investments I manage, I applied through a company program and have been enrolled since 2023 in the Doctoral Program at Waseda University's Graduate School of Commerce, where I am conducting research.

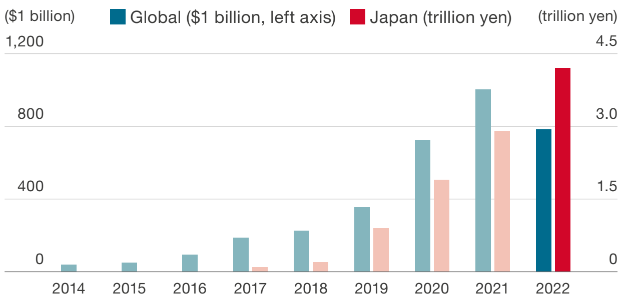
Overview of ESG Bonds by Type

Designation	Green	Sustainability	Transition	SLB	Social
Overview and Purpose	Environmental Improvement	With Both Green and Social Attributes	Environmental Improvement Based on Transition Strategies for High-Emission Industries	Setting Sustainability Performance Targets (SPTs)	Addressing Social issues
Ministry in Charge	Ministry of the Environment	Ministry of the Environment, Financial Services Agency	Financial Services Agency, Ministry of Economy, Trade and Industry, Ministry of the Environment	Ministry of the Environment	Financial Services Agency
ICMA Principles	Green Bond Principles	Sustainability Bond Guidelines	Climate Transition Finance Handbook	Sustainability-Linked Bond Principles	Social Bond Principles
Guidelines in Japan	Green Bond Guidelines	Green Bond Guidelines and Social Bond Guidelines	Guidelines on Climate Transition Finance	Sustainability-Linked Bond Guidelines	Social Bond Guidelines
Use of Proceeds	designated	designated	designated	undesignated	designated
Establishment of a Framework for Project Selection and Management Processes	Required	Required	Required	Not Required	Required
Reporting (Timely Disclosure of Progress)	Required	Required	Required	Required	Required
Key Project Examples	Renewable Energy Green Transportation Green Buildings	-	Improved Efficiency of LNG and Natural Gas Carbon Recycling Blast Furnace	Scope 1 and 2 Emissions Evaluation by a Third-Party Rating Agency at or Above a Certain Standard	Social Infrastructure Employment and Health Healthcare
Penalty if Targets Are Not Achieved	No	No	No	Yes (Coupon step-up Early Redemption Donations to Environmental Organizations)	No
Third-Party Evaluation	Optional In Japan, it is common market practice to obtain an assessment from a domestic rating agency (R&I, JCR, etc.).				
Bond Issuance Costs	Conventional Bond Issuance Costs and Costs of Obtaining Third-Party Certification Certification costs tend to be higher for transition bonds than for other ESG bonds.				
Subsidy Program	Yes (Ministry of the Environment)	Yes (Ministry of the Environment)	Yes (Ministry of Economy, Trade and Industry, Tokyo Metropolitan Government)	Yes (Ministry of the Environment)	Yes (Tokyo Metropolitan Government)

Note: Prepared by the author based on publicly available information and information obtained from lead underwriters, among other sources.

ESG bonds and Japanese bond credit management

Trends in ESG Bond Issuance Amounts: Global and Japan



Note: Prepared by the author based on data from the Climate Bonds Initiative website and Bloomberg.

Estimated Results from ESG Bond Issuance in Japan

ESG Bond Types	(1) Determinants of Issuance Decisions		(2) Market Reaction			(3) Environmental Performance Improvement	
	Commitment	Bond refinance demand	Equity (CAR,%)	Bond (Greenium,bp)	Holdings in institutional investors (GPIF: ESG linkage,%)	ESG Score	CO_2 Emissions Reduction
Green Bond	**0.05**** (0.02)	**0.00** (0.02)	**1.19%***** (0.00)	**-2.41***** (0.93)	**0.13%**** (0.00)	**0.22**** (0.09)	**-0.07*** (0.04)
SLB	**0.03** (0.02)	**0.03***** (0.01)	**-0.67%** (0.01)	**-5.66***** (1.93)	**0.13%** (0.00)	**-0.68** (0.47)	**-0.16*** (0.07)

Note: This table has been prepared by taking excerpts the main projections from the author's research paper. The symbols ***, ** , and * in the table indicate statistical significance at the 1%, 5%, and 10% levels, respectively. Figures in parentheses indicate standard errors.

As one of my research themes, I focused on ESG bonds, whose issuance by Japanese companies has increased sharply in recent years. Since the first green bond issuance by Nomura Research Institute in 2016, ESG bonds have grown to hold a meaningful position in the domestic credit market, accounting for roughly 30% of straight corporate bond issuance in fiscal 2022. Yet, when comparing senior straight bonds and green bonds issued by the same company with the same maturity, there is currently little difference in bond yields (credit spreads) and no significant difference can be identified from the perspective of pure investment returns. In addition, green bonds impose certain direct and indirect issuance costs on issuers, as the use of proceeds is restricted to green-eligible projects and post-issuance monitoring and external disclosure are required. Assuming that the recent rapid expansion of the market is not merely a passing trend, why do companies choose to issue these bonds that include restrictions on the use of proceeds? And why have investors accepted ESG bonds as a new investment product even though they offer no significant difference in investment return compared with ordinary corporate bonds? To address these questions, I conducted an empirical analysis of Japanese bond issuances, referring to analytical approaches developed around the world, particularly in Europe and the United States.

While the details of my findings are not presented here, by relating them particularly to the signaling hypothesis within financial theory, I believe it is possible to clarify the characteristics of green bonds issued by Japanese companies, as is the case in overseas case studies. The signaling hypothesis assumes that market inefficiencies caused by information asymmetry between companies and investors can be alleviated or improved, and that such inefficiencies are resolved when companies disseminate internal information (signals) about themselves. The empirical analysis conducted in this study indicates that the issuance of green bonds serves as a signal of a company's commitment to environmental improvement, and that investors in both the equity and bond markets respond favorably to this signal. In addition, post-issuance environmental improvements have also been observed, including higher ESG scores and lower CO_2 emissions, suggesting that companies tend to respond to the commitment they have conveyed through concrete actions. Although it should be noted that the Japanese green bond market has seen a rapid increase in issuances in recent years, the overall sample size remains limited. Nevertheless, in terms of their ability to communicate their intention—a commitment to environmental improvement—to investors as useful information, these ESG bonds can be viewed as a type of bond that performs a function different from that of conventional straight bonds. As global awareness of the need for environmental improvements continues to grow, I personally hope that an increasing number of companies will start to choose ESG bonds as an important financing option in the years ahead.

Finally, it is also important to feed the insights gained through these research activities back into our actual investment process. For example, based on the results of this analysis, green bond issuance may be used as an important investment consideration, as it can be expected to lead, after a certain period of time, to environmental improvements such as higher ESG scores and lower CO_2 emissions. In particular, I believe that carefully tracking these post-issuance environmental improvements through interviews with issuers and publicly available disclosure information could provide valuable insights. Accordingly, I would like to continue focusing on this as an area for further investigation.

Note: Green bonds, social bonds, sustainability bonds, transition bonds, and sustainability-linked bonds (SLBs) are collectively referred to as ESG bonds.