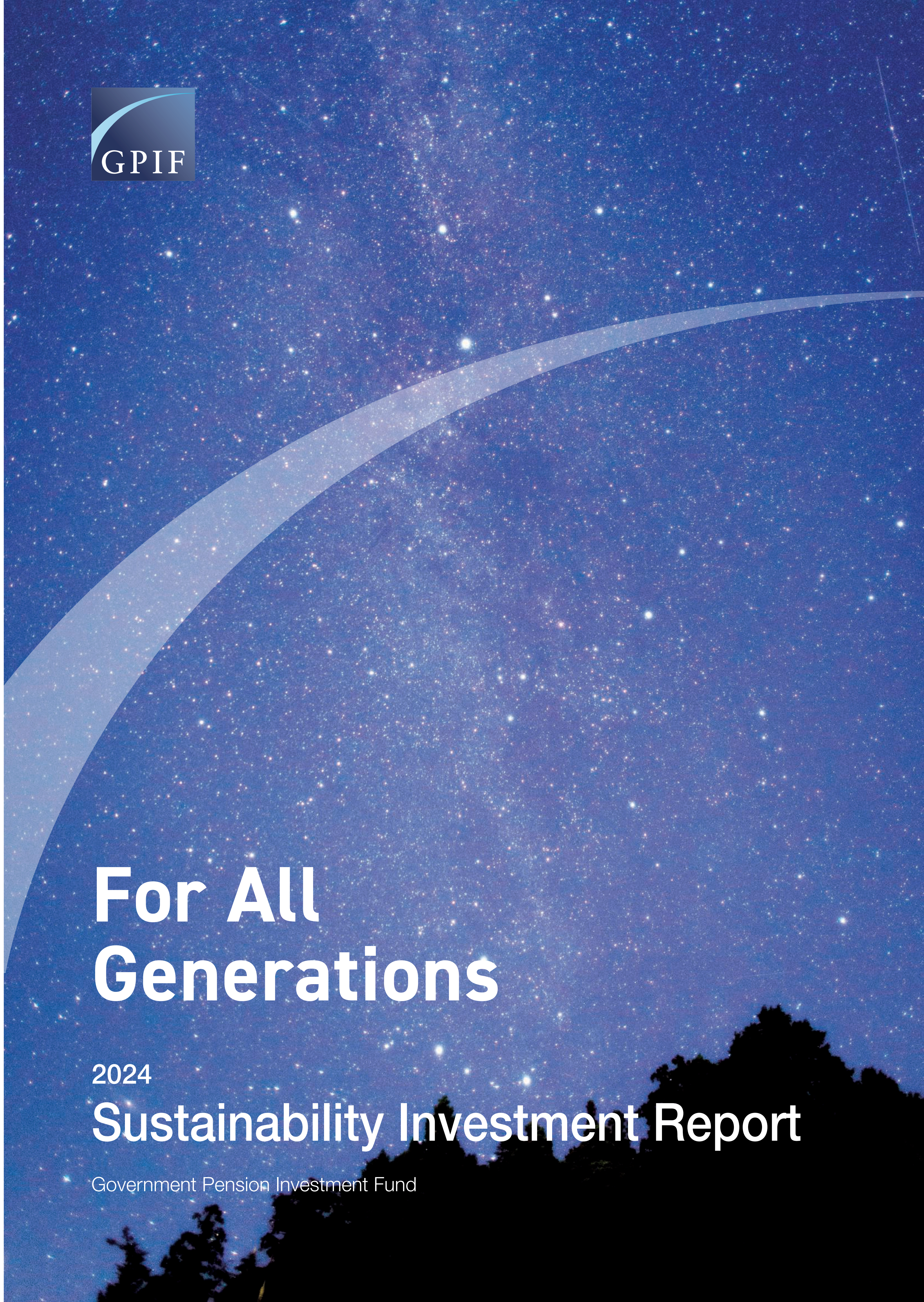


GPIF

For All Generations

2024

Sustainability Investment Report

Government Pension Investment Fund

GPIF Homepage

GPIF YouTube channel

GPIF X

Contact:
Planning and Communication Department, Government Pension Investment Fund
Toranomon Hills Mori Tower 7th Floor, 1-23-1 Toranomon, Minato-ku, Tokyo, Japan, 105-6377
TEL: +81-3-3502-2486 (direct dial),
FAX: +81-3-3503-7398
URL: https://www.gpif.go.jp/en/

FSC MIX Paper | Supporting responsible forestry FSC® C022915
VEGETABLE OIL INK
GREEN PRINTING JFPI P-A10007

For All Generations

GPIF is committed to fulfilling our fiduciary duty to secure adequate retirement funds for both current and future insureds.
GPIF promotes sustainability investment based on the concept of securing long-term benefits for the insureds by reducing negative environmental and social externalities in the capital market.

GPIF in Numbers

Investment Performance Since Launch of Market Operations

Cumulative returns ¥155.5 trillion

Rate of return (annualized) 4.20%

GPIF Portfolio (as of March 31, 2025)

Portfolio Asset Allocation

Asset class	Allocation	Target (range)
Domestic Equities	23.94%	25%(±8%)
Domestic Bonds	27.64%	25%(±7%)
Foreign Equities	24.05%	25%(±7%)
Foreign Bonds	24.37%	25%(±6%)

Breakdown of Passive and Active Funds

Passive funds 81.84%

Active funds 17.76%

Others 0.40%

Universal Owner

Asset size ¥249.78 trillion

Sustainability Investment

Sustainability integration ¥249.78 trillion

Number of GPIF-Owned Securities

Equities 5,477 holdings

Bonds 12,969 holdings

Investment horizon 100 years

Assets under management tracking ESG indexes Approx. ¥18.2 trillion

Investments in green bonds, etc. Approx. ¥1.2 trillion

Long-Term Investment Performance

Cumulative returns ¥155.5 trillion (FY2001 - FY2024)

Rate of Return 4.20% (annualized) (FY2001 - FY2024)

External Ratings

Assessment by PRI[1] ★★★★ (As of March 31, 2025)[2]

Responsible Asset Allocator Initiative (RAAI) ranking[3] Leaders

Number of employees[4]

Employees 187

Specialist personnel[5]

Securities analysts	MBA graduates, etc.	Ph.D. graduates, etc.	Lawyers	CPAs	Real estate appraisers	Tax accountants
65	17	5	5	3	1	1

1 Assessment by PRI: Four stars in all categories
2 The most recent assessment was in FY2023
3 New America, the American think tank, analyzes sovereign wealth funds and pension funds on their responsible investing practices based on the Responsible Asset Allocator Initiative (RAAI) index, developed in partnership with the Fletcher School at Tufts University, every two years.
4 Number of employees: As of April 1, 2025
5 Specialist personnel: As of April 1, 2025 (some are counted in more than one category)

The pursuit of sustainability investment is one of GPIF's key values.
GPIF works to improve the long-term performance of its entire portfolio by achieving both "reduction of sustainability-related risks and improvement of sustainability of markets" and "securing of market average return."

Government Pension Investment Fund

President UCHIDA Kazuto

Q Fiscal 2025 is the first year of GPIF's new Medium-Term Plan (FY2025 – FY2029). What are your aspirations for promoting sustainability investment? Please also tell us the reason for the change from an "ESG Report" to a "Sustainability Investment Report."

I would like to begin by reminding readers what kind of investor GPIF is. GPIF is a "universal owner;" that is, an investor entrusted with an extremely large amount of money to invest in securities spanning the global capital market. GPIF is also a "cross-generational investor," managing assets from a multi-generational perspective. Given this unique positioning, we believe that the pursuit of sustainability investment (investment with consideration for sustainability) is a key value for GPIF from the standpoint of securing long-term investment returns.

In March 2025, GPIF established and announced the "Sustainability Investment Policy," which presents its basic views on sustainability investment, and "GPIF's Initiatives for Sustainability Investment," in conjunction with the launch of the new Medium-Term Plan. In terms of sustainability investment, GPIF aims to improve the long-term performance of its entire portfolio by achieving both "reduction of sustainability-related risks and improvement of sustainability of markets" and "securing of market average return."

Sustainability investment is, by nature, investment with a long-term perspective. Therefore, we must also take a long-term stance when evaluating this investment. Under appropriate governance, we will continue to verify the effects of our sustainability investment. Based on this, we will not hesitate to revise any investment that we find is unlikely to achieve the intended effects described above.

At GPIF, we will promote sustainability investment for all our assets. We will engage in multifaceted initiatives including the promotion of sustainability through a variety of funds—for both traditional and alternative assets—as well as stronger engagement and other stewardship activities.

Next, I would like to explain the reason behind the change from an "ESG Report" to a "Sustainability Investment Report." At GPIF, we have considered ESG (environmental, social, and governance) issues in our investments for some time. However, it is not GPIF's purpose purely to pursue the resolution of E, S, and G issues. Rather, as a universal owner, it is crucial for us to reduce sustainability-related risks and improve the overall sustainability of markets so that we can secure long-term investment returns. From this perspective, we will consider making investments with a consideration for the effects that the investee companies have on society and the environment—in other words, their "impact"—and implement the initiatives necessary to achieve this. We have changed the name of this report to the "Sustainability Investment Report" because we feel it is a more appropriate name under which to present such initiatives. Through mediums such as the "Sustainability Investment Report," we will enhance public communication regarding our sustainability investment initiatives, as part of GPIF's engagement activities in the broad sense of the term.

Q What are your views on the international trends relating to sustainability including ESG? Please also tell us about GPIF's initiatives based on these trends.

People from Japanese companies and institutional investors often express their concern about the rise of anti-ESG movements in countries such as the United States, and the potential impact these movements could have on Japan. However, it remains vital for companies to address the risks and opportunities related to sustainability including ESG.

In this context, the Sustainability Standards Board of Japan (SSBJ) finalized sustainability disclosure standards in March 2025 as a framework for the disclosure of sustainability information in Japan. At present, the Financial Services Agency's Financial System Council is considering the application of these standards to the disclosure of securities reports.

At GPIF, we check on the initiatives of our external asset managers through annual comprehensive assessments. Our external asset managers, both in Japan and overseas, have continued to focus on "ESG integration," in which they incorporate ESG factors into their investment processes. Moreover, many of our external asset managers continue to actively undertake engagement activities relating to sustainability including ESG.

Based on this understanding, we will continue to advance the sustainability investment initiatives I mentioned earlier. GPIF has been exchanging opinions with other asset owners through the Global Asset Owners' Forum, which we established together with overseas public pension funds and others, and has been leveraging the collective knowledge of all participants as part of its efforts to fulfill its stewardship responsibilities. Going forward, I myself hope to actively engage in the exchange of views with overseas public pension funds and others.

Q Starting this year, GPIF is optimizing its ESG index-based investments. Has there been any change in its strategy for sustainability investment?

At GPIF, we have been investing based on ESG indexes since fiscal 2017, adopting nine indexes for both Japanese equities and foreign equities so far. We have also revised our investments under some of these ESG indexes based on a PDCA cycle, including expanding the range of potential investees. We believe that through the investments we have made over the past seven years or so, we have achieved impacts such as promoting changes in corporate behavior, while also securing investment returns.

At the same time, GPIF had excluded ESG index-based investments from rebalancing based on its policy asset mix. From fiscal 2025, however, we have decided to include ESG index-based investments in rebalancing and optimize investment amounts, taking the market environment and other factors into account, to secure market average returns across the entire portfolio while managing risk based on our policy asset mix.

These steps will not hamper our sustainability investment initiatives. We will continue to pursue appropriate initiatives—optimizing our investment amounts while also searching for new ESG indexes and funds—based on a deeper and broader evaluation of their impact.

Q How does GPIF plan to strengthen its engagement, from the perspective of promoting sustainability investment?

As I mentioned at the start of the interview, we believe that it is crucial to engage in multifaceted initiatives for the promotion of sustainability investment. One of the key initiatives will be strengthening our stewardship activities, including engagement. At GPIF, we aim to continue promoting stewardship activities with consideration for sustainability including ESG.

In this context, we announced "Direction and medium-term initiatives of GPIF's stewardship activities" as an appendix to "GPIF's Initiatives for Sustainability Investment" in March 2025. This document clarifies the concept of GPIF's stewardship activities and its priority issues for the future.

Specifically, in promoting stewardship activities, we would like our external asset managers to actively seek engagement with investee companies. In doing so, we expect them to encourage companies to implement initiatives that pursue opportunities, mitigate risks, and ensure the disclosure of necessary information on sustainability including ESG. At GPIF, we will maintain close communication with our asset managers, facilitating constructive dialogue between asset managers and companies.

At the same time, we hope to establish a virtuous cycle in the investment chain by actively conveying GPIF's views as an investor. In addition, we will strengthen our efforts to exchange opinions and collaborate with companies and other market participants, including asset owners. We will work to improve and upgrade our stewardship activities through measures such as the evaluation of their effects.

Q How do you view the sustainability of GPIF itself?

Advancing women in the workplace is a key pillar of promoting diversity, one aspect of GPIF's sustainability. In addition to the annual publication of data on women in the workplace at GPIF, we have analyzed the causes of the gender pay gap to clarify the current situation and implemented initiatives to proactively recruit women, enhance the motivation of female employees, and develop female human resources. Through these initiatives, in fiscal 2024, we witnessed an improvement in several indicators, such as the percentage of female employees in new hires and management positions (see pages 19 to 20).

I believe that creating an environment that fosters the development of human resources to support GPIF's business operations, as well as enhancing the capabilities and motivation of our executives and employees, is essential for GPIF to fulfill its responsibilities and, furthermore, for improving its organizational sustainability. As part of these efforts, we hope to further strengthen initiatives to promote the advancement of women in the workplace and establish working environments that empower diverse talent.

Sustainability Investment at GPIF

At GPIF, we promote investment with consideration for sustainability ("sustainability investment") to secure long-term investment returns for insureds. In addition to financial factors, sustainability investment incorporates non-financial environmental, social, and governance (ESG) factors, together with social and environmental effects (impact), into the investment process.

Why Does GPIF Engage in Sustainability Investment?

GPIF manages and invests approximately ¥250 trillion in pension reserves. GPIF can be described as a "universal owner"—that is, an investor with substantial assets under management that invests in securities spanning the global capital market. The pension reserves that GPIF manages will be used to fund future pension benefits, ensuring that the working generations of the future are not subjected to an excessive financial burden. GPIF therefore invests with a multi-generational timeframe in mind. Therefore, in order for GPIF, characterized as both a "universal owner" and a "cross-generational investor," to earn stable income over a long period of time, the longtime growth of the corporate value of individual companies, which leads to the sustainable and stable growth of capital markets and the overall economy, is crucial.

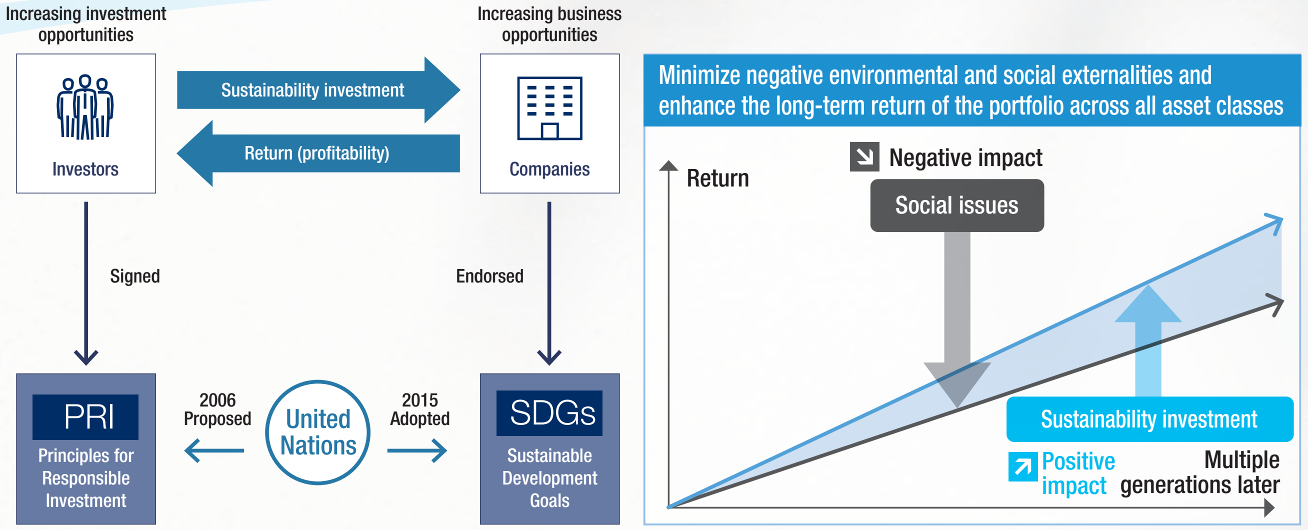
In the long term, the capital market is inevitably subject to sustainability-related risks such as environmental and social issues. For example, if the share prices of some investee companies increase as a result of conducting business activities that do not take into account their adverse effects on the environment and society for the sake of short-term revenue growth, society and the economy as a whole, including other companies, are negatively affected by such activities. Consequently, the entire portfolio of the "universal owner" will be adversely affected. In other words, in order to ensure portfolio profitability, it is essential to reduce negative externalities and maintain a sustainable capital market and society. For a "universal owner" such as GPIF to pursue investment returns in the long term, it is crucial to reduce the negative impact of sustainability-related issues on the capital market.

Furthermore, companies and projects that have a positive impact on environmental and social issues through their business activities may be able to use the resolution of these issues as a source of sustainable growth.

Based on this belief, in order to secure long-term returns for our insureds, we promote sustainability investment, which incorporates non-financial environmental, social, and governance (ESG) factors, together with social or environmental effects (impact), into the investment process, in addition to financial factors. In undertaking sustainability investment, GPIF aims to improve the long-term performance of its entire portfolio by achieving both a "reduction of sustainability-related risks and improvement of sustainability of markets" and "securing of market average return."

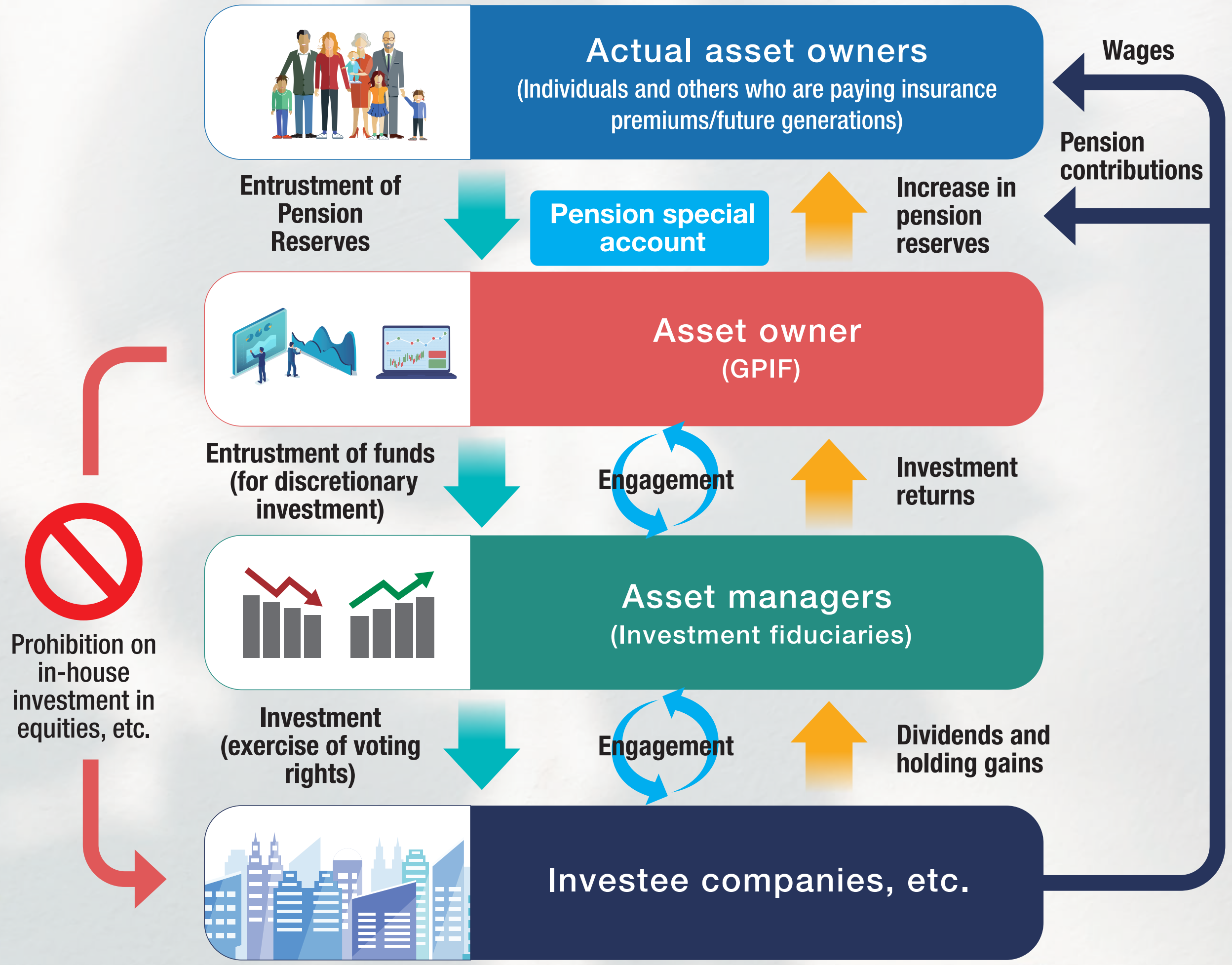
The Relationship between Sustainability Investment and the SDGs

The SDGs (Sustainable Development Goals) are international goals set forth by the United Nations in the "2030 Agenda for Sustainable Development" adopted at the UN Summit in September 2015. The SDGs evolved from the Millennium Development Goals formulated by the UN in 2001 and are targeted for achievement by 2030. They comprise 17 goals aimed at realizing a diverse, inclusive, and sustainable society. Although the sustainability issues considered in the investment incorporating sustainability factors and those of the goals and targets of the SDGs may have different objectives, they also have much in common, and addressing the former also contributes to achieving the latter. We believe that an active commitment to the SDGs and sustainability by companies would help to improve their corporate value, while at the same time, the realization of a sustainable economy and society (achieving the SDGs) would lead to better returns for all assets managed by GPIF over the long term.



GPIF in the Investment Chain

A portion of the pension contributions paid by individuals and others (the actual asset owners) is entrusted to GPIF by the Minister of Health, Labour and Welfare as pension reserves. As the asset owner of these pension reserves, GPIF selects asset managers to manage these assets and encourages them to pursue constructive dialogue (engagement) with investee companies, including consideration of sustainability. This approach is aimed at creating a virtuous cycle where boosting corporate value over the long term leads to growth across the entire economy and the long-term enhancement of investment returns.



Sustainability Investment Policy

GPIF has newly established the “Sustainability Investment Policy.” To secure long-term returns for the benefit of insured, GPIF promotes Sustainability Investments including those which take into account non-financial factors such as ESG (environmental, social, and governance) and social or environmental effects (impact), in addition to financial factors.

Establishment of the Sustainability Investment Policy

The year 2024 marked a significant change in the environment surrounding asset owners. In August 2024, the Japanese government formulated the Asset Owner Principles. GPIF endorsed and accepted these principles in September 2024. The establishment of the Sustainability Investment Policy was presented as a model initiative in the Asset Owner Principles, and GPIF was required to establish policies and to consider “investment considering impact” in GPIF’s 5th Medium-term Objectives.

Accordingly, GPIF established and announced its Sustainability Investment Policy on March 31, 2025, to address the 5th Medium-term Objectives and clarify the position of impact investment.

The Sustainability Investment Policy presents GPIF’s views, goals, and main initiatives for Sustainability Investment. GPIF defines Sustainability Investment as investment that takes into account ESG, impact, and similar factors. In other words, we perceive Sustainability Investment as a broader term than conventional ESG investment.

On this basis, with regard to Sustainability Investment, GPIF aims to contribute to improving the long-term performance of its entire portfolio by achieving both “reduction of sustainability-related risks and improvement of sustainability of markets” and “the securing of market average return.” GPIF promotes Sustainability Investment for all assets, given that sustainability-related issues do not impact only specific companies or asset classes. For such purpose, even more effective approaches are sought by selecting or combining various approaches as listed below according to asset characteristics.

A) ESG integration
B) Engagement / Exercise of voting rights
C) ESG index investment / ESG active fund investment
D) Investment considering impact
E) Sustainability-related risk analysis (climate change, etc.)
F) Collaboration with related organizations, etc.

Just as sustainability investments are made with a long -term perspective, their evaluations are also conducted with a view to the future. At the same time, verifications are carried out as needed, and we will undertake bold revisions if it becomes clear that the expected effects at the outset of investment are unlikely to be realized. We will continue to pursue and actively disclose our sustainability investments based on appropriate governance.

GPIF has also announced its Initiatives for Sustainability Investment, based on the Sustainability Investment Policy, to clarify the initiatives implementing for the 5th Medium-term Objectives period. A detailed explanation of sustainability investment through ESG index-based investment is provided in “Optimization of ESG Index-based Investment Amounts and Future Outlook” on pages 25 to 26.

Column

Investment Considering Impact

In recent years, interest in impact investment has been rising in Japan, as elsewhere around the world. At GPIF, we revised our Investment Principles on March 31, 2025, establishing investment that takes into account “social or environmental effects (impact)” as a key initiative for sustainability investment. Likewise, in the Sustainability Investment Policy and the 5th Medium-term Plan that were announced on the same day, we have clarified the importance of “investment considering impact” as a key initiative. We will proceed with consideration necessary to implement these initiatives.

Clarifying the Status of “Investment Considering Impact”

GPIF’s mission is to contribute to the stability of the national pension system into the future through the safe and efficient management and investment of pension reserves from a long-term perspective, to the sole benefit of insureds. GPIF is not allowed by law and regulation to invest pension reserves for any purpose, such as government policy or the implementation thereof, apart from the benefit of insureds (the prohibition on considering issues except for those that benefit the pension beneficiaries). Therefore, it cannot invest with the direct aim of achieving “social or environmental effects (impact).”

However, given the growing importance of social and environmental issues, projects aimed at developing technologies and innovating business practices to address these issues may experience rapid market expansion and growth, potentially contributing to the sustainable growth of the companies involved. In this context, the “social or environmental effects (impact)” of the business activities of investee companies could be considered an important factor in evaluating their potential for sustainable growth from the perspective of securing long-term investment returns. On this premise, like the consideration of ESG factors, GPIF’s consideration of non-financial factors including impact is not regarded as subject to the prohibition on other considerations, as these factors will lead to higher investment returns over the medium and long term.

Based on this overall understanding, we have revised GPIF’s fourth Investment Principle as presented below.

[Investment Principles]
[4] We believe that sustainable growth of investee companies and the capital market as a whole is vital in enhancing long-term investment returns. In order to secure such returns for the benefit of insureds, therefore, we promote sustainability investment including those which take into account non-financial factors such as ESG and social or environmental effects (impact), in addition to financial factors.

Future Initiatives

In fiscal 2025, we plan to research investment considering impact in line with GPIF’s 5th Medium-term Objectives and Medium-term Plan. We will consider issues including specific investment methods. In addition to providing a market overview of impact investment, this research will broadly collect and examine information on the measurement and reporting of impact indicators in existing investment projects; the relationship between impact and investment returns; the classification and positioning of impact investment by overseas asset owners and others from the perspective of fiduciary duty; and the status of initiatives by asset owners engaged in impact investment; investment performance; monitoring methods incorporating impact; and communication of investment reports and other information.

Chapter 1
Sustainability Initiatives

At GPIF, we have been promoting sustainability initiatives ever since we signed the Principles for Responsible Investment (PRI) in 2015. This includes a diverse range of initiatives. In addition to building organizational and corporate structures related to sustainability investment, we have also adopted ESG-themed indexes, promoted stewardship activities, engaged with index providers and ESG rating agencies, and collaborated with other institutions. In Chapter 1, we focus on the new measures implemented in fiscal 2024, built on the foundations established throughout GPIF's history.

Fiscal 2024 Sustainability Investment Highlights

Here, we present highlights of GPIF's sustainability investment initiatives in fiscal 2024.

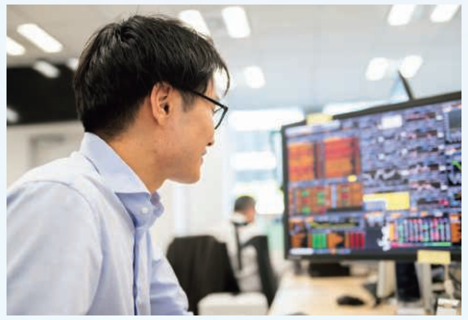
Establishment of the Sustainability Investment Policy

On March 31, 2025, GPIF established and announced the Sustainability Investment Policy, which presents its perspective on sustainability investment. It should be noted that GPIF defines Sustainability Investment as investment that takes into account ESG, impact, and other factors. With regard to Sustainability Investment, GPIF aims to contribute to improving the long-term performance of its entire portfolio by achieving both "reduction of sustainability-related risks and improvement of sustainability of markets" and "the securing of market average return."

Please refer to page 11 for details.

Optimization of the ESG Index-Based Investment Amounts

GPIF launched equity investments benchmarked to ESG indexes in fiscal 2017, and ESG index-based investment assets amounted to approximately ¥18.2 trillion as of March 31, 2025. In line with GPIF's Sustainability Investment Policy, from fiscal 2025, ESG index-based equity investments have been incorporated into the rebalancing framework to ensure efficient asset management in alignment with the policy asset mix, and the ESG index-based investment amounts are being optimized (revision of the amount allocated to each ESG index) by taking the market environment and other factors into account.



Please refer to pages 25 to 26 for details.

Engagement Through Our Asset Managers

GPIF entrusts its equity investments to external asset managers. This includes targeted and constructive dialogue (engagement) with investee companies and the exercise of voting rights. For this reason, GPIF monitors the activities of its external asset managers and requires them to engage in constructive dialogue (engagement) with investee companies. During the twelve months from January 2024 to December 2024, the dialogue coverage of GPIF's domestic equities portfolio was 45% based on the number of companies, an increase of 5% from the previous year.

Please refer to page 29 for details.

Survey of Listed Companies and Company Interviews

In fiscal 2024, we conducted GPIF's 10th "Survey of Listed Companies Regarding Institutional Investors' Stewardship Activities." We surveyed companies in the TOPIX and received responses from 632 companies, representing approximately 70% of total market capitalization. Of the companies that responded to the survey of listed companies conducted in fiscal 2023, we held interviews with the cooperation of just over 30 companies and published the results. Through these initiatives, we were able to ascertain the status of engagement with listed companies by institutional investors, primarily our external asset managers.

Please refer to pages 29 to 31 for details.

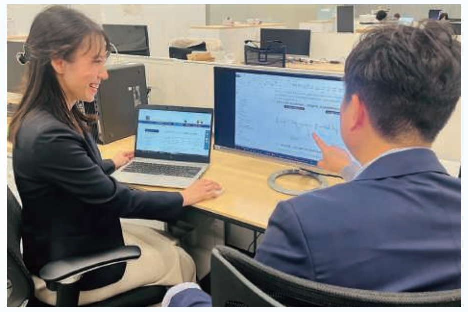
Keidanren-GPIF Asset Owners' Roundtable

In October 2024, GPIF, together with the Japan Business Federation (Keidanren), established the "Keidanren-GPIF Asset Owners' Roundtable," as a forum for the ongoing exchange of views with companies. Amid the increasing importance of stewardship activities and expectations for asset owners following the establishment of the Asset Owner Principles by the Japanese government in August 2024, we established this forum with the aim of further deepening our existing initiatives.

Please refer to page 32 for details.

Measuring the Effects of Stewardship Activities and ESG Investment Project

GPIF conducts on evaluation project using statistical methods such as causal inference to evaluate the effects of its stewardship activities and ESG investment. The project consists of four themes, and we have recently published reports on two of them: "Analysis of the exercise of voting rights by asset managers" and "Study on ESG factors contributing to the improvement of corporate value and investment return."



Please refer to pages 49 to 58 for details.

Governance and Organizational Structure Related to Sustainability Investment

The Board of Governors discusses and oversees approaches to sustainability investment at GPIF. The Executive Office advances sustainability investment initiatives through the ESG & Stewardship Department and other departments related to asset management, and reports on the initiatives to the Board of Governors.

Deliberations by the Board of Governors

The Board of Governors, established in October 2017, makes decisions concerning important matters such as the formulation of the policy asset mix and Medium-term Plan by council decision-making system, and oversees the execution of operations by the Executive Office.

In fiscal 2024, the Board of Governors held 13 meetings, and ESG and other sustainability investment-related issues were discussed at four of those meetings. The Board of Governors discusses and oversees approaches to sustainability investment and the promotion of sustainability investment at GPIF. Details of the discussions by the Board of Governors are posted on the GPIF website in the form of a summary of the proceedings after a certain period of time.

ESG and other sustainability investment-related items discussed and reported on at Board of Governor meetings

Meeting number	Meeting date	Agenda item	
95th	May 2024	Reported Item	2023 ESG Report (Outline)
99th	September 2024	Reported Item	2023 ESG Report
105th	March 2025	Resolution	Sustainability Investment Policy (Draft)
105th	March 2025	Resolution	Change in Policy to Fulfill Stewardship Responsibility (Draft)
105th	March 2025	Resolution	Future Initiatives Concerning Sustainability Investment
105th	March 2025	Reported Item	GPIF's Initiatives for Sustainability Investment (Draft) (Materials for Public Disclosure)
106th	March 2025	Reported Item	Stewardship Activities Report 2024-2025

Composition of the Board of Governors
https://www.gpif.go.jp/en/about/board.html

Status of the Board of Governors
https://www.gpif.go.jp/operation/board/

Executive Structure for Sustainability Investment

The Executive Office implements ESG and other sustainability investment initiatives in coordination with departments related to asset management, including the ESG & Stewardship Department, Investment Department and Private Market Investment Department. The Investment Committee, chaired by the Chief Investment Officer (CIO), deliberates and makes decisions on asset management-related issues, including sustainability investment-related initiatives. Important matters are deliberated by the Board of Governors after discussion in the Investment Committee. In addition to regular checks of the portfolio management by the Investment Committee, the status of sustainability investment is also monitored from a risk management perspective by the Portfolio Risk Management Committee, which meets monthly.

Key departments responsible for sustainability investment

Department	Main Responsibilities	
ESG & Stewardship Department	Promotion of sustainability investment, stewardship responsibility, and analysis and evaluation of the exercise of voting rights, etc.	Selecting ESG indexes (in coordination with the Investment Department), evaluating the stewardship activities of external asset managers, and promoting sustainability investment (including stewardship-related initiatives) across GPIF.
Investment Department	Formulating investment strategy, selecting and evaluating external asset managers for equity and fixed income, conducting operations related to sophisticated investment, etc.	ESG index-based investment (in coordination with the ESG & Stewardship Department) and assessing ESG integration as a part of the external asset manager evaluation process.
Private Market Investment Department	Selecting and evaluating external asset managers for alternative assets, etc.	Integrating sustainability into the selection and evaluation of external asset managers for alternative assets.

Sustainability Initiatives Within GPIF

GPIF is committed to promoting "investment considering impact", and conducts internally the sustainability conscious initiatives and analyses of sustainability issues. Here, we present GPIF's initiatives to address the advancement of women in the workplace and public procurement.

GPIF's Initiatives for the Advancement of Women in the Workplace

We believe that organizations where everyone can work in comfort with a sense of purpose can achieve improved corporate performance and organizational sustainability. Therefore, GPIF places importance on creating a comfortable working environment. We are currently implementing a range of measures to promote the advancement of women in the workplace and ensure that diverse human resources can work at GPIF with a sense of fulfilment. For example, we are promoting the active use of childcare leave, flexible working hours (including early and late), and telecommuting to create a work environment that is supportive for employees caring for children or other family members. We also conduct career training for female employees to further develop their self-understanding for career design, improve essential leadership knowledge, and more.

As part of GPIF's initiatives to promote women's advancement in the workplace, we are analyzing the current status and issues faced by women at our workplace, which is one of the crucial pillars of promoting diversity. The five items that companies are obligated to disclose under the Act on Promotion of Women's Participation and Advancement in the Workplace are also used as quantitative evaluation criteria ((1) to (5) in Figure 1) in the MSCI Japan Empowering Women Index (WIN index), which has been adopted by GPIF. We calculated GPIF's scores for these five metrics.

According to this data, in fiscal 2024, the percentage of women among new hires, employees, and managers all increased from the previous year, while the difference in average years of employment between men and women shrank compared to the previous year. Our record shows that 60.0% of eligible male employees took childcare leave in fiscal 2024.[1] We believe that these results indicate some effect from the ongoing measures described above.

As in fiscal 2023, we analyzed the differences in wages between men and women at GPIF (see (6) in Figure 1) and contributing factors thereof. With regard to the gender pay gap, the wages of female employees were 63.2% of those of male employees in fiscal 2024 (see (6) in Figure 1.) We used GEM App, a gender wage gap diagnostic tool developed by UTokyo Economic Consulting Inc., to adjust these numbers for the various reasons behind the 36.8% gender pay gap (such as age, education and job category) through statistical processing based on economic insight, and compared the pay received by comparable male and female employees (Figure 2.) Our estimates suggest that the major factors causing differences in wages include the relatively high number of younger female employees at GPIF, together with the low number of female employees among specialist personnel, whose wages are relatively higher. We believe that GPIF's gender pay gap and other issues relating to the recruitment and promotion of women are common to the entire asset management industry, but GPIF still appears to have room to improve its internal initiatives to address these issues.

Going forward, we will continue to strengthen the analysis of issues relating to workplace environments at GPIF, as well as initiatives that we believe to be effective in ameliorating these issues, and strive to enhance organizational sustainability.

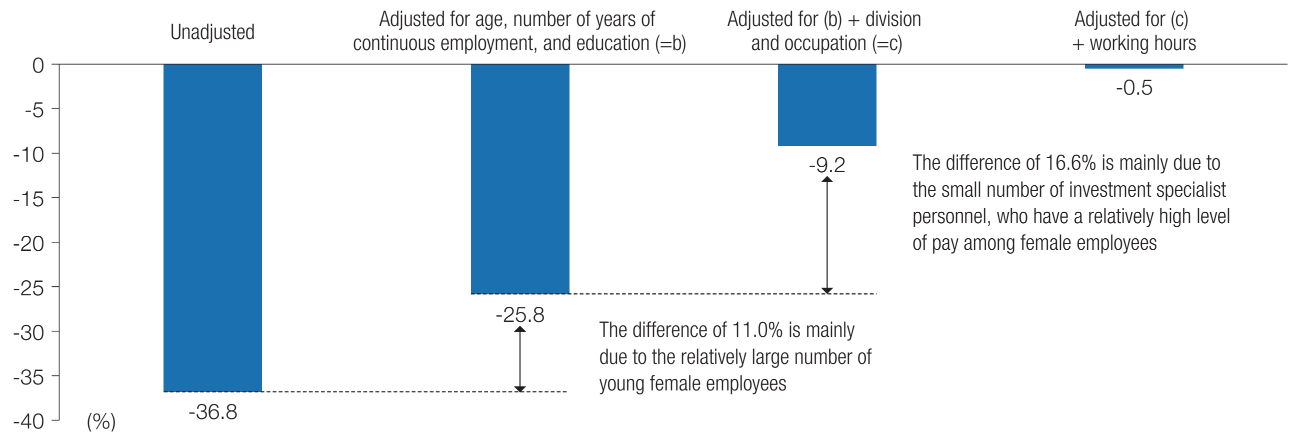
1 With the revision of the Act on Childcare Leave, Caregiver Leave, and Other Measures for Balancing Work and Family Care, companies with over 300 employees are required to disclose the childcare leave uptake rate among their male employees, starting in April 2025. Although GPIF's employee numbers are not subject to mandatory disclosure as of April 1, 2025, we disclose this information proactively.

Figure 1. Women in the Workplace at GPIF

	Fiscal 2024 (%)	Compared to fiscal 2023 (percentage points)
(1) % Female New Hires	36.7	18.5
(2) % Women in the Workforce	25.8	0.5
(3) % Difference in Average Years of Employment Between Men and Women*	-48.7	5.7
(4) % Women in Management Positions	11.1	2.1
(5) % Women on Board**	16.7	0.0
(6) % Gender Pay Gap (Average)***	63.2	-4.8
[Reference] % Childcare Leave Uptake Rate Among Male Workers***	60.0	26.7

(Note 1) The data represents FY2024 results for (1), (6) and childcare leave uptake rate among male workers, status as of April 1, 2025 for (2), (4) and (5,) and status as of March 31, 2025 for (3.)
(Note 2) The data for (1) includes staff members who transitioned from regular employees to specialist personnel and excludes staff employed under a continuing employment scheme, seconded staff, temporary staff and contract workers. The data for (2) includes regular employees, specialist personnel, staff employed under a continuing employment scheme, seconded staff, temporary staff and contract workers, but does not include executive managing directors or part-time staff. The data for (3) includes only regular employees and excludes staff employed under a continuing employment scheme and seconded staff. The data for (4) includes regular employees, specialist personnel, staff employed under a continuing employment scheme, and seconded staff. (6) was calculated excluding executive managing directors, staff joining or leaving during the fiscal year, staff employed under a continuing employment scheme, seconded staff, staff seconded to GPIF, temporary staff, contract workers, and staff on leave.
(Note 3) (3) % Difference in Average Years of Employment Between Men and Women* = (Average years women employed – Average years men employed) / Average years men employed. (5) % Women on Board (Officers)** is the percentage of women among the officers stipulated in Article 6 of the Act on the Government Pension Investment Fund, Independent Administrative Agency. (6) Total annual pay for Gender Pay Gap*** includes basic salary, overtime pay, bonuses, etc., and excludes travel allowances.
[Reference] Childcare Leave Uptake Rate Among Male Workers**** = (Number of male workers who took childcare leave or equivalent) / (Number of male workers whose spouse gave birth) (This ratio fluctuates significantly from year to year due to GPIF's small workforce)

Figure 2. Analysis of Causes of the Gender Pay Gap



(Note) The definition of each adjustment category is shown below.
・Unadjusted: Gender pay gap among all 140 employees surveyed
・Adjusted for age, number of years of continuous employment, and education (=b): Gender pay gap adjusted to compare male and female employees of the same age with the same number of years of continuous employment and education
・Adjusted for (b) + division and occupation (=c): Gender pay gap adjusted to compare male and female employees in the same division with the same occupation, in addition to the adjustments in (b)
・Adjusted for (c) + working hours: Gender pay gap adjusted to compare male and female employees working the same number of hours, in addition to the adjustments in (c)
(Source) Prepared by GPIF using the GEM App developed by UTokyo Economic Consulting Inc.

Public Procurement with Consideration for Sustainability at GPIF

We are pursuing environmentally and socially friendly initiatives with consideration for sustainability in GPIF's public procurement of goods and services.

As part of our environmentally friendly initiatives, we established GPIF's "Basic Policy on Promoting Green Procurement" in fiscal 2024, based on the "Act on Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities." Under this procurement policy, we set a target of 100% procurement of goods and services that satisfy the standards for paper, stationery, office furniture, office equipment, and home appliances, among other items. In fiscal 2024, we largely achieved this target for items where products existed that satisfied GPIF's required specifications. The building where GPIF's office is located is also part of our energy-saving and resource-saving initiatives to achieve urban decarbonization, and it has obtained the highest rank of "S" under the CASBEE real estate certification system.

In fiscal 2024, we also established GPIF's "Basic Policy on Promoting Procurement from Facilities Employing Disabled Persons" based on the "Act on the Promotion of procurement of Goods, etc. from Work Facilities for Persons with Disabilities by the State, etc.", to actively promote the procurement of goods and services from work facilities for persons with disabilities. We purchased office supplies and books and outsourced printing services to work facilities for persons with disabilities in fiscal 2024. Going forward, we will continue to promote public procurement initiatives with consideration for sustainability.

Support for Climate- and Nature-Related Financial Disclosures

GPIF views climate change risks as difficult to eliminate completely through diversification and such risks are highly likely to manifest over the long term. We therefore engage in information disclosure in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). We also analyze the status of nature-related information disclosure by companies based on the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD).

Climate- and Nature-Related Financial Disclosure Consistent with the TCFD Recommendations

For investors, climate change risks occur simultaneously across all asset classes and investee companies and cannot be completely eliminated through diversification. Moreover, it is highly likely that these risks will manifest at least in the long term, and we believe that GPIF, as an asset owner, should take the lead in addressing them. Accordingly, we declared support for the Task Force on Climate-related Financial Disclosures (TCFD)[1] in December 2018 and began disclosing information in accordance with the TCFD recommendations in the 2018 ESG Report.

The TCFD was disbanded in October 2023, before the IFRS Sustainability Disclosure Standards (S1 and S2) went into effect in January 2024. The IFRS Sustainability Disclosure Standards succeed the four thematic areas of the TCFD recommendations (governance, strategy, risk management, and metrics and targets) and require companies to disclose information that contributes to investment decisions to investors. Although there is currently no disclosure framework tailored for institutional investors in the IFRS Sustainability Disclosure Standards, we continue to make disclosures in line with the TCFD recommendations in GPIF's 2024 Sustainability Investment Report.

Given the difficulty of separating climate change-focused investments and activities from sustainability investment-related activities in general, GPIF discloses not only climate change-related initiatives, but also sustainability investment-related activities in general in line with the TCFD recommendations. In the "2024 Sustainability Investment Report", we analyze nature-related disclosures by companies based on the final recommendations, v1.0, of the Taskforce on Nature-related Financial Disclosures (TNFD), which encourage companies and other organizations to begin nature-related evaluation and reporting. We also ask our domestic equities asset managers to nominate companies with "excellent TNFD disclosure," and announce the results.

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

- GPIF's Investment Principles, Sustainability Investment Policy, and Stewardship Principles clearly state that GPIF shall promote sustainability investment including ESG, such as climate change, and GPIF actively works to achieve this declaration.
- The Board of Governors, which oversees the Executive Office, receives reports on sustainability from the Executive Office as necessary (page 17).
- GPIF's Executive Office convenes Investment Committee meetings to make decisions on climate change and other sustainability-related initiatives. An organizational structure is in place to implement these initiatives (page 18).

Strategy Disclose the actual and potential impacts of climate- and nature-related risks and opportunities on the organization's businesses, strategy and financial planning where such information is material.

- GPIF proactively integrates sustainability including ESG across all asset classes. In equity investment, we incorporate external asset managers' sustainability activities into their evaluations as well as conduct investment based on ESG indexes (pages 23 – 24). We invest in ESG bonds through in-house operation of domestic bonds and through external asset managers (page 27). We also promote ESG integration in our alternative investments (pages 33 – 34).
- In relation to the environment (E) in particular, we use indexes for equity investment that focus on each company's carbon efficiency (pages 23 – 24) and invest in ESG bonds including green bonds, transition bonds, and similar instruments (page 27).
- In addition to measuring the carbon footprint of GPIF's portfolio (pages 65 – 68), we evaluate physical and transition risks under various climate scenarios and estimate the impact on investment returns.

Risk management Disclose how the organization identifies, assesses and manages climate- and nature-related risks.

- GPIF has developed a system for monitoring greenhouse gas (GHG) emissions (carbon footprint and carbon intensity) for our entire portfolio as well as for each fund to which we outsource the management.
- The Portfolio Risk Management Committee meets monthly to monitor the risk management status of ESG indexes and other investments (page 18). As well as requiring asset managers to actively engage with companies on material ESG issues, GPIF engages with index providers to encourage improvement in the evaluation methods used within the methodologies of the ESG indexes that GPIF adopts (page 26).
- The risks relating to natural capital are highly individual, and it is important for each company to recognize these risks and take action. At GPIF, we analyze the status of nature-related information disclosure by companies based on the TNFD recommendations (page 84). We also announce the companies with "excellent TNFD disclosure," selected by our domestic equities asset managers (pages 75 – 78).

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

- GPIF aims to control portfolio risks and secure opportunities for investment return by contributing to curbing greenhouse gas (GHG) emissions across the entire economy, through engagement with external asset managers and ESG investment (pages 23 – 24 and 29 – 32).
- GPIF measures Scope 1 to Scope 3 carbon footprint and compares these with each portfolio benchmark by asset class. We also calculate each portfolio's carbon intensity using weighted average carbon intensity (pages 65 – 68).
- Climate Value-at-Risk (CVaR) is a metric used to estimate climate change-related revenue opportunities in addition to transition and physical risks due to climate change (pages 69 – 72).

1 The Financial Stability Board (FSB) established the TCFD in December 2015. The TCFD released its recommendations on how companies and others can better disclose information related to climate change risks and opportunities in June 2017.

ESG Index-Based Equity Investment to Date

In order to improve the long-term risk/return profile of the portfolio by reducing ESG risks, GPIF engages in investment based on ESG indexes. We have progressively adopted ESG indexes since 2017, achieving investment returns from our selection of nine domestic and international indexes. Some ESG indexes have been revised to reduce risks.[1]

Review of ESG Index-Based Equity Investment

GPIF has conducted equity investment based on ESG indexes[2] as its benchmarks since fiscal 2017. We believe that investment based on indexes that focus on corporate sustainability will enhance the equity market through secondary effects such as the improvement of ESG ratings.

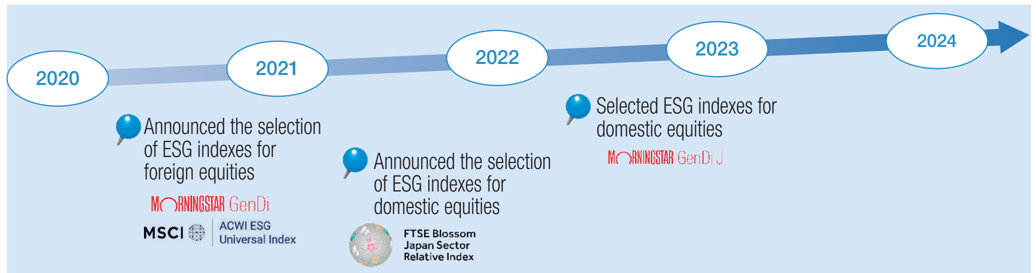
We use a total of nine ESG indexes for domestic and foreign equities as of March 31, 2025. We manage total assets of approximately ¥18.2 trillion based on ESG indexes.[3]

We are progressively diversifying our ESG index-based investment, having adopted four new indexes during the 4th Medium-Term Plan period from fiscal 2020 to fiscal 2024.[4] For the ESG indexes we have used since before fiscal 2020, we have also worked to reduce GPIF's unintended risks, including risks arising from factors outside of ESG and risks arising from the difference between ESG index's parent index (the domestic equities index held by each ESG index provider) and the policy benchmark. We actively engaged in dialogue with index providers and ESG rating agencies to change the parent index of each ESG index (expanding the investment universe, excluding REITs, revising floating stock, etc.) and the methodology of four indexes[5] has also been improved through consultation. Recognizing that corporate ESG disclosures are crucial for improving the precision of ESG ratings, we have improved these ratings by urging index providers and ESG rating agencies to disclose both their ratings and methodologies, as well as to actively engage with companies and provide feedback on their results.

The effects of ESG investment, which may increase the incentive for companies to pursue ESG measures and lead to higher corporate value and long-term investment returns, have been regularly verified, with the results present through GPIF's annual "ESG Report" and other disclosures. With ESG investments based on the PDCA cycle over the past seven years or so, we believe that a certain level of effects has been achieved, such as acceleration of changes in corporate behavior while securing investment returns.

Under GPIF's Sustainability Investment Policy, announced on March 31, 2025, we have set forth our intention to engage in sustainability investment, including ESG index-based investment, based on this PDCA cycle. During the 5th Medium-Term Plan from fiscal 2025 to fiscal 2029, we will engage in optimizing the portfolio through measures such as the adjustment of investment amounts for existing indexes and selecting new indexes, based on a review of our initiatives.

Figure: Status of ESG Index-Based Investment During the 4th Medium-Term Plan Period



1 Tracking error against our policy benchmarks (risk of divergence between the benchmarks used in formulating our policy asset mix and the ESG indexes)
2 Stock indexes for which the composition is determined by the index provider through an evaluation of companies' ESG initiatives based on companies' non-financial information and other factors
3 Please refer to "ESG Index Performance" on pages 43 – 44 for information on the performance of each index
4 FTSE Blossom Japan Sector Relative Index, Morningstar Japan ex-REIT Gender Diversity Tilt Index, MSCI ACWI ESG Universal Index (ex Japan and ex China A-shares), and Morningstar Developed Markets Ex-Japan Gender Diversity Index
5 MSCI Japan Empowering Women Index, S&P Carbon Efficient Index series (2 indexes), and MSCI Japan Select Leaders Index

Domestic equities: Comprehensive ESG indexes

	FTSE Blossom Japan Index	FTSE Blossom Japan Sector Relative Index	MSCI Nihonkabu ESG Select Leaders Index
Concept and characteristics of index	• This index uses the ESG assessment scheme used in the FTSE4Good Japan Index Series, which has one of the longest track records globally for ESG Russell indexes. • It is a comprehensive ESG index that selects stocks with high absolute ESG scores and adjusts industry weights to neutral at the industry level.	• Assessments are performed based on the same FTSE Russell's ESG rating as the FTSE Blossom Japan Index. For the companies with high carbon intensity (greenhouse gas emissions/sales), management attitude toward climate-change risks and opportunities is also assessed. • The index selects stocks with relatively high ESG ratings within each industry, and adjusts industry weights to neutral.	• The MSCI Nihonkabu ESG Select Leaders Index is a comprehensive ESG index that integrates various ESG risks into today's portfolio. The index is based on MSCI ESG Research used globally by more than 1,000 clients. • The index is composed of stocks with relatively high ESG scores in each industry.
Index construction	Best-in-Class	Best-in-Class	Best-in-Class
Constituent universe (parent index)	FTSE JAPAN All Cap Index (1,431 stocks)	FTSE JAPAN All Cap Index (1,431 stocks)	MSCI Nihonkabu IMI (937 stocks)
Number of index constituents	355	663	477
Assets under management (Billion yen)	1,495.3	1,398.0	2,939.3

Domestic equities: ESG thematic indexes (women's advancement/climate change)

	MSCI Japan Empowering Women Index ("WIN")	Morningstar Japan ex-REIT Gender Diversity Tilt Index ("GenDi J")	S&P/JPX Carbon Efficient Index
Concept and characteristics of index	• MSCI calculates gender diversity scores based on information disclosed under the Act on Promotion of Women's Participation and Advancement in the Workplace and selects companies with higher gender diversity scores from each sector. • It is the first index designed to cover a broad range of factors related to gender diversity.	• Domestic equities index that determines investment weighting based on assessment of companies' commitment to gender equality, using the Equileap Gender Equality Scorecard. • Ratings are conducted in four categories: (1) gender balance in leadership and workforce; (2) equal compensation and work-life balance; (3) policies promoting gender equality; and (4) commitment, transparency, and accountability.	• Constructed by S&P Dow Jones Indices based on carbon data provided by Trucost, a pioneer in environmental assessment. • This index is designed to overweight, in each industry, companies that have lower carbon intensity (annual greenhouse gas emissions divided by annual revenues) and that actively disclose their carbon emissions information.
Index construction	Best-in-Class	Tilted	Tilted
Constituent universe (parent index)	MSCI Japan IMI Top 700 (696 stocks)	Morningstar Japan ex-REIT (876 stocks)	TOPIX (1,692 stocks)
Number of index constituents	338	876	1,602
Assets under management (Billion yen)	960.0	728.8	2,273.7

Foreign equities: Comprehensive ESG indexes and ESG thematic indexes (women's advancement/climate change)

	MSCI ACWI ESG Universal Index (ex Japan and ex China A-shares)	Morningstar Developed Markets Ex-Japan Gender Diversity Index ("GenDi")	S&P Global Ex-Japan LargeMidCap Carbon Efficient Index
Concept and characteristics of index	• One of MSCI's flagship ESG indexes, this comprehensive index adjusts the weight of constituents based on each issuer's current ESG rating and ESG trends to improve the overall ESG profile of the index. • The index was developed for large investors seeking to enhance ESG integration while achieving the same level of investment opportunity and risk exposure as the parent index.	• Foreign equities index that determines investment weighting based on assessment of companies' commitment to gender equality, using the Equileap Gender Equality Scorecard. • Ratings are conducted in four categories: (1) gender balance in leadership and workforce; (2) equal compensation and work-life balance; (3) policies promoting gender equality; and (4) commitment, transparency, and accountability.	• Constructed by S&P Dow Jones Indices based on carbon data provided by Trucost, a pioneer in environmental assessment. • This index is designed to overweight, in each industry, companies that have lower carbon intensity (annual greenhouse gas emissions divided by annual revenues) and that actively disclose their carbon emissions information.
Index construction	Tilted	Tilted	Tilted
Constituent universe (parent index)	MSCI ACWI (ex Japan and ex China A-shares) (1,971 stocks)	Morningstar Developed Markets Ex-Japan Large-Mid Cap (1,687 stocks)	S&P Global ex-Japan LargeMidCap (3,405 stocks)
Number of index constituents	1,933	1,686	2,127
Assets under management (Billion yen)	2,490.5	732.3	5,224.8

(Note) Data is current as of March 31, 2025.
(Source) Prepared by GPIF based on data from FactSet, etc.

Optimization of ESG Index-Based Investment Amounts and Future Outlook

GPIF has hitherto excluded ESG index-based investments from rebalancing.[1] However, starting in fiscal 2025, we have decided to include ESG index-based investments in rebalancing and revise the allocation to each index to ensure smooth asset management aligned with our policy asset mix into the future. Going forward, we will continue to pursue further improvements in our ESG index-based investment portfolio through proactive engagement with index providers and asset managers and by selecting new indexes.

Revision and Optimization of ESG Index-based Investment Amounts

Since the adoption of three ESG indexes for domestic equities in fiscal 2017, GPIF has gradually expanded its equity investment using ESG indexes as benchmarks, while adopting new indexes and allocating and rebalancing assets. As of March 31, 2025, there are a total of nine domestic and foreign ESG indexes adopted by GPIF,[2] and the total assets under management based on these ESG indexes were ¥18.2 trillion.[3]

In the past, GPIF's ESG index-based investments have been out of scope of rebalancing, so as not to affect the shares of stocks held through the indexes. However, as a result of rebalancing assets other than ESG index-based investments amid increasing investment amounts by the adoption of new indexes and the continuing rise in stock prices, the proportion of ESG index-based investments has increased in GPIF's domestic and foreign equity portfolios (see Figure 1). As a result, the relative size of GPIF's ESG index fund investments has increased compared to other investments such as active funds (see Figure 2).

This growth in the scale of ESG index-based investments has increased the relative risk within GPIF's policy asset mix. From fiscal 2025, therefore, ESG index investments in both domestic and foreign equities will be incorporated into the rebalancing framework to ensure efficient asset management in alignment with the policy asset mix.

Figure 1. Proportion of ESG Index-Based Investments

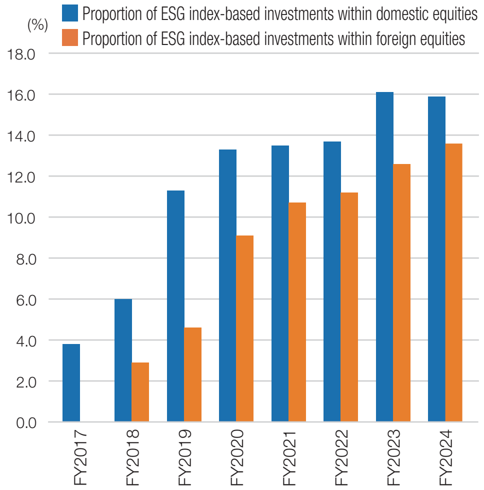
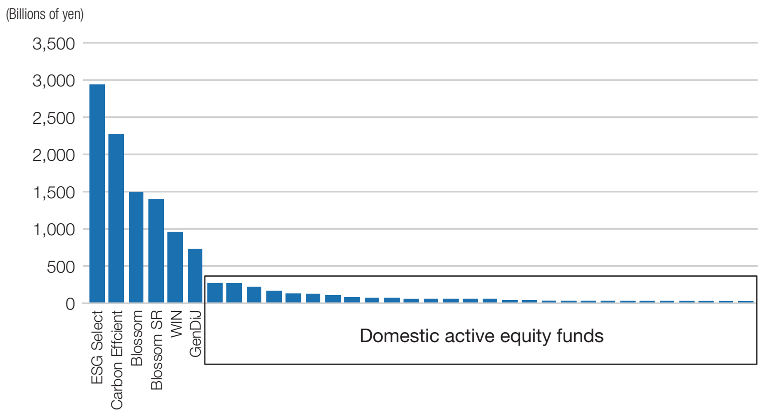


Figure 2. Comparison of the Balances Invested in Domestic Equity Funds



(Note) Investment balances are as of March 2025. ESG Select refers to the MSCI Nihonkabu ESG Select Leaders Index, Carbon Efficient refers to the S&P/JPX Carbon Efficient Index, Blossom refers to the FTSE Blossom Japan Index, Blossom SR refers to the FTSE Blossom Japan Sector Relative Index, WIN refers to the MSCI Japan Empowering Women Index, and GenDiJ refers to the Morningstar Japan ex-REIT Gender Diversity Tilt Index

1 To ensure pension reserves managed and invested in alignment with the policy asset mix, GPIF implements replacement of assets (rebalancing) in a timely and appropriate manner when the asset composition ratio of managed assets diverges from the policy asset mix.
2 Please refer to "ESG Index-Based Equity Investment to Date" on pages 23 – 24 for information such as the characteristics of each index used, the number of constituent stocks, and assets under management
3 Please refer to "ESG Index Performance" on pages 43 – 44 for information on the performance of each index

We have also revised the amount allocated to each ESG index to optimize ESG index-based investment amounts, taking the market environment and other factors into account. The ESG indexes we adopt as of March 31, 2025, comprise "best-in-class" indexes, which select only companies with outstanding ESG ratings, and "tilt" indexes, which include all companies in the parent index while increasing weight toward companies with outstanding ESG ratings. In general, more effective engagement with companies can be expected from "best-in-class" indexes, whose constituent stocks undergo rigorous selection, compared to "tilt" indexes. On the other hand, "best-in-class" indexes tend to carry a relatively higher risk of divergence (tracking error) between the policy benchmark (the benchmark index used for the policy asset mix) and actual investment performance. For "tilt" ESG indexes, which include all the stocks in the parent index with a few exceptions, the tracking error tends to be small. We have revised the amount invested in each ESG index to achieve a balanced allocation that considers the characteristics and risk of both "best-in-class" and "tilt" indexes, optimizing our ESG index-based investment portfolio for domestic equities.

As a result of this reallocation of investments in each index and the revision of our overall investment balance, ESG index-based investments have been approximately 13% of our domestic equities portfolio as of May 31, 2025.

Ongoing Improvement of ESG Index-Based Investment and Future Outlook

Based on GPIF's Sustainability Investment Policy, we evaluate and verify the effects of sustainability investments, including ESG index-based investments. We do not hesitate to revise any investments that we find are unlikely to achieve our initial expectations going forward.

Seven years have now passed since we made our first ESG index-based investments, and we will engage in optimizing the portfolio through measures such as the adjustment of investment amounts for existing indexes and selecting new indexes, based on a review of our initiatives so far.

GPIF has already actively engaged in dialogue with index providers, progressively revising our ESG index-based equities investment methodology (index composition methodology) through consultation. Specifically, this includes measures such as increasing the number of stocks in the parent indexes[4] to expand the potential scope of ESG indexes, changing the methodology used to select constituent stocks to enable the inclusion of companies with relatively small market capitalization. At the same time, we have selected new ESG indexes through the Index Posting System. We will continue to actively engage in dialogue with index providers and seek to improve the risk and return of the entire portfolio by requesting proposals for new ESG indexes that contribute to improving medium- and long-term risk and return through index posting, taking into account the progress of ESG initiatives by companies.

4 ESG indexes are based on indexes (parent indexes) composed of companies from various industries and are constructed so that the composition ratio of companies with high ESG ratings is higher than that in the parent indexes.

Sustainability in Equity and Fixed Income Mandate

When GPIF evaluates its equity and fixed income managers, we examine their ESG integration and related practices on their asset management. We have also invested in green bonds and other ESG bonds.

Sustainability in Equity and Fixed Income Mandate

Most of GPIF's portfolio assets are managed by external asset managers in Japan and overseas. The Investment Department and ESG & Stewardship Department work together to select and evaluate asset managers. Asset managers are evaluated on their investment policies, investment processes, organizational structure and human resources. ESG integration is a key part of the investment process review.

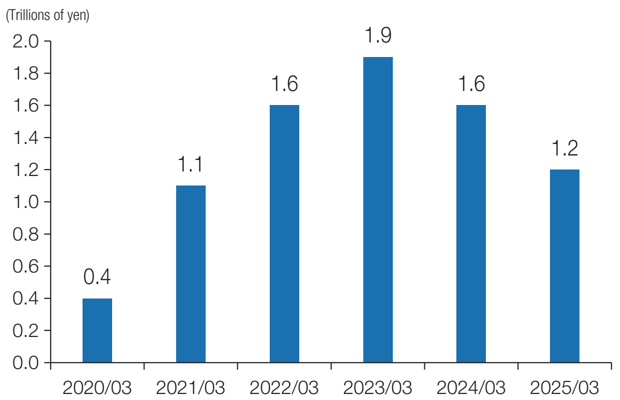
As a Principles for Responsible Investment (PRI) signatory, we defined ESG integration as "the explicit and systematic inclusion of ESG factors into investment analysis and investment decisions" in 2018 based on the definition provided by PRI.

In fiscal 2019, we established evaluation criteria for ESG integration based on GPIF's definition and began comprehensive assessment for asset managers according to these new criteria. In addition to evaluating external asset managers currently working with GPIF, the new ESG integration criteria are also used when selecting new external asset managers.

In the Sustainability Investment Policy announced in March 2025, ESG integration was clarified as one of our "principal initiatives" going forward.

As of the end of March 2025, GPIF has invested around ¥1.2 trillion into ESG bonds, such as green bonds, a decrease by ¥0.3 trillion[1] from fiscal 2023 (Figure 1, Figure 2). This was due to the effects of measures implemented in the foreign bond portfolio to refine risk management. Specifically, in our Passive Foreign Bonds funds, which are benchmarked to the FTSE World Government Bond Index (ex Japan and China, yen-based) and its sub-indexes, we reduced the exposure to off-benchmark (non-government) bond investment, which had been capped at 10% of assets under management, since fiscal 2023. This initiative reduced the non-government ESG bond investment amount held in the Passive Foreign Bonds funds. GPIF's ESG bond investments include in Japan Climate Transition Bonds (GX Economy Transition Bonds by the Japanese government).

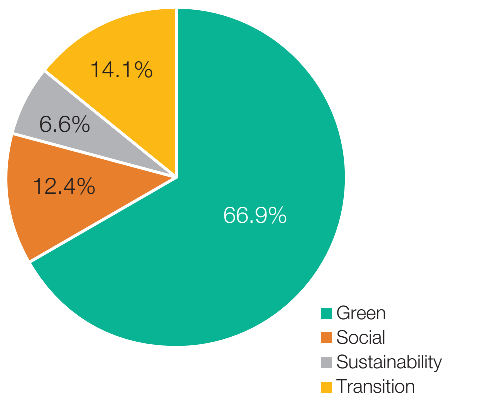
Figure 1. GPIF's Investment in ESG Bonds



(Source) GPIF

Figure 2. Breakdown of GPIF's ESG Bond Portfolio By Type

FY2024 (As of March 31, 2025)



(Source) GPIF

1 The data in Figure 1 are rounded to two decimal places

Column: "Interactions" with Investee Companies in the Investment Processes of Active Equity Funds

At GPIF, we have worked to ascertain how interactions with investee companies are utilized in active equity funds in terms of earning excess returns. Specifically, we asked the people responsible for asset management (portfolio managers and research analysts) whether they had any interaction with investee companies, and the role, significance, and effectiveness of such interactions from the perspective of securing excess returns.

We found that the majority of funds, excluding quant funds, engage in some form of interactions with investee companies from the perspective of securing excess returns. However, few quant funds engaged in such interactions. We also found that even in cases where funds engaged in interactions, there were still some discrepancies among portfolio managers and research analysts regarding their perceptions of the importance of interactions in terms of securing excess returns.

The role and significance of interactions in securing excess returns can be roughly divided into (1) the pre-investment and post-investment research and analysis of (potential) investee companies as part of the investment process and (2) the communication of issues and views to (potential) investee companies from the perspective of enhancing corporate value and achieving sustainable growth.

Regarding (2), only a few active equity funds have declared their investment philosophy in which they promote actions and changes in (potential) investee companies through interactions with those companies and invest in stocks where such actions and changes are expected to lead to higher corporate values. However, through our interviews with asset managers, we were able to confirm that portfolio managers and research analysts at active equity funds actually do raise issues and communicate opinions and other views with investee companies, even if this is not clearly stated in their investment philosophy. They do this, for example, where there are issues for improvement or concerns regarding investee companies, or where investment performance has fallen short of that originally anticipated.

These interactions encompass a diverse range of topics including business strategy, capital allocation, and ESG. Through interviews with our external asset managers, we collected examples where the results of interactions on ESG issues influenced investment decision-making. The managers of domestic active equity funds also expressed the view that Japanese companies have begun to develop a broader understanding of management that is conscious of cost of capital, etc., prompted by requests from the Tokyo Stock Exchange.

We also found that not all interactions, where portfolio managers and research analysts communicated issues and opinions to investee companies, were necessarily recorded in the engagement data collected as part of each asset manager's stewardship activities.

GPIF emphasizes capital allocation and promotion of business strategies that lead to sustainable improvement of corporate value from the perspective of increasing long-term investment returns. In Japan, we believe that, in future, the focus of engagement by asset managers will shift toward the engagement directly related to companies' future cash flows, such as business strategies. At the same time, we want our asset managers to encourage investee companies to pursue sustainability-related business opportunities and take initiatives aimed at mitigating sustainability risks, from the perspective of financial materiality.[1]

From these points of view, we believe that engagement by the asset managers is an effective means to achieve these aims, and we were able to confirm this through these interviews. GPIF expects that our asset managers will continue to implement effective engagement in line with their investment strategies.

1 Financial materiality is a measure of the significance of a specific risk and/or opportunity based on its potential impact on corporate value.

Stewardship Activities and Sustainability Promotion

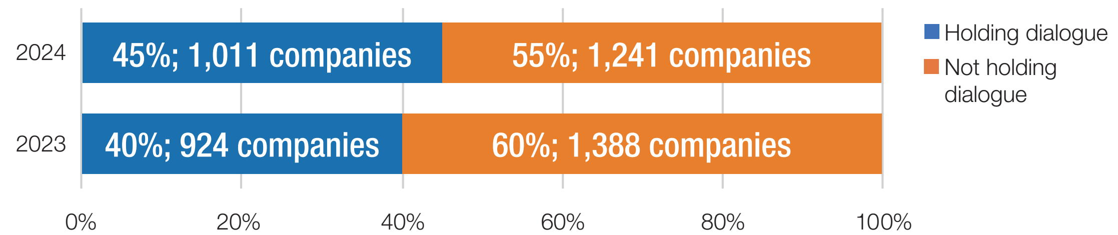
At GPIF, we actively engage in dialogue with asset managers and take initiatives aimed at establishing a virtuous cycle in the investment chain to fulfill our stewardship responsibility. In fiscal 2024, we launched new initiatives such as implementing company interviews and establishing the Keidanren-GPIF Asset Owners' Roundtable.

Status of Engagement by Our Asset Managers

GPIF entrusts its equity investments to external asset managers, which include engagements with investee companies and the exercise of voting rights. For this reason, GPIF monitors the stewardship activities of its external asset managers and requires them to engage in constructive dialogue (engagement) with investee companies.

Figure 1 presents the dialogue coverage of GPIF's domestic equities portfolio. As shown in the figure, our external asset managers for domestic equities engaged with 1,011 companies from January to December 2024. This equates to 45% of investee companies, an increase of 5 percentage points from the previous year. (It also corresponds to 96% in terms of total market capitalization.)

Figure 1. Dialogue Coverage of GPIF's Portfolio



(Note) The percentages above were calculated using the number of investee companies in the domestic equities portfolio at the end of the previous fiscal year as the denominator.

Company Interviews

GPIF has held company interviews with the cooperation of slightly more than 30 companies among the respondents to the "9th Survey of Listed Companies Regarding Institutional Investors' Stewardship Activities," conducted in fiscal 2023. The purpose of these interviews is to ascertain the actual status of engagement with listed companies conducted by our external asset managers and other institutional investors. Through these interviews, we confirmed that institutional investors are having more in-depth conversations with companies from a medium- to long-term perspective. The topics of dialogue have also expanded beyond companies' financial and business situation to include sustainability, governance, the cost of capital, and approaches to effective information disclosure. We also found that companies are reporting feedback from investors to their boards of directors and other internal bodies and reflecting it in their corporate initiatives.

In this context, we confirmed initiatives, regarding sustainability including ESG, undertaken by companies based on dialogue with investors, such as (1) a case where the company's ESG ratings improved through the disclosure of sustainability data, (2) a case where the company used exemplary disclosure cases of other firms, introduced by investors, for internal review, and (3) a case where the company visualized both non-financial and financial information and analyzed how this contributes to enhancing corporate value.

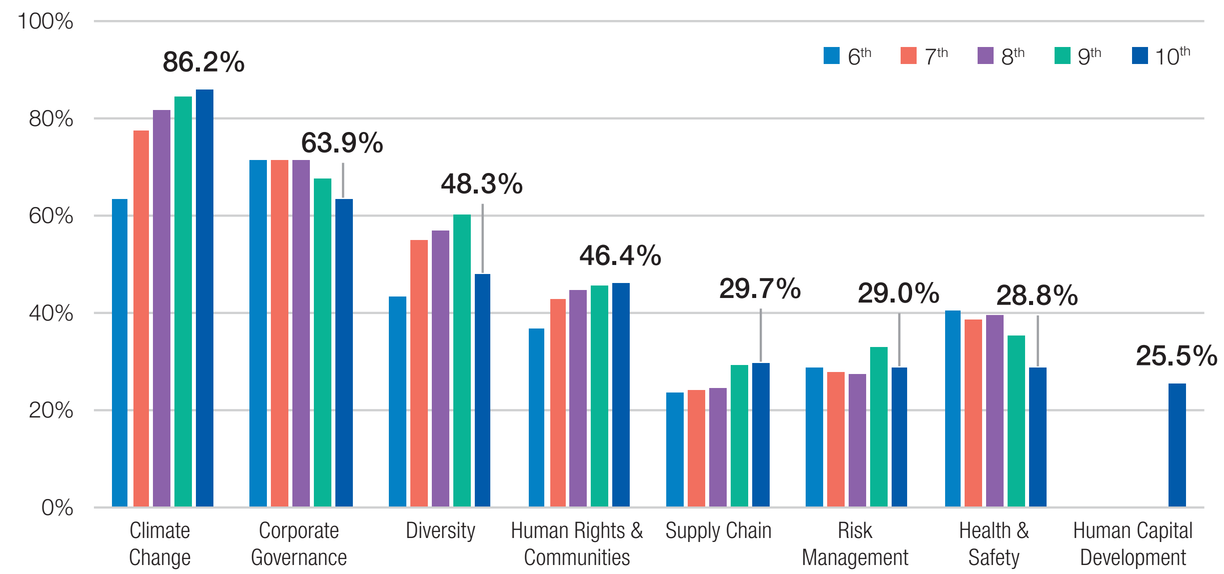
At the same time, companies pointed out the following issues: (1) investors are still asking many questions regarding short-term business performance, (2) some investors are inadequately prepared for dialogue, (3) box-ticking dialogues are being conducted, (4) constructive feedback on the business itself or on sustainability initiatives is not provided enough, and (5) voting rights were exercised based on formalistic standards without considering the actual status.

Survey of Listed Companies

GPIF conducts an annual survey of companies in order to obtain their feedback on the stewardship activities of our external asset managers and to monitor the content and progress of such activities. GPIF also uses the survey to gather their opinions on our initiatives and understand companies' disclosure relating to sustainability including ESG. In our tenth survey, conducted in fiscal 2024, we surveyed companies in the TOPIX and received responses from 632 companies, representing approximately 70% of total market capitalization.

Given the broad scope of sustainability, including ESG, we added "Human Capital Development" and "Privacy & Data Security" to the options from which companies could indicate the key themes of their ESG activities in this year's survey. While response rates on each theme have declined somewhat since companies can choose up to five options in their responses, the response rate for the most popular option, "Climate Change," rose from previous year to 86.2%. On the other hand, while "Diversity" remained the third most popular option, its response rate saw a significant relative decline to 48.3%. That being said, around half of the companies that selected "Diversity" last year but not this year selected the new option "Human Capital Development." This is far higher than the 25.5% overall response rate for this item, suggesting that many companies likely perceive "Human Capital Development" as an initiative that includes "Diversity." In addition to "Human Capital Development," a relatively high proportion of these companies selected the other new option, "Privacy & Data Security," as well as "Capital Efficiency," which is related to requests by the Tokyo Stock Exchange. This would suggest that perhaps these companies are actively engaging in new themes, or that they have judged that certain progress has been made on "Diversity" and shifted their focus to other themes.

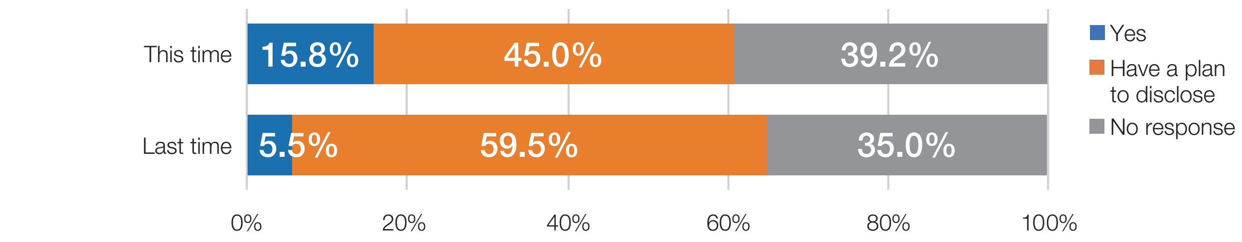
Figure 2. Key Themes in Companies' ESG Activities



(Note) This represents the trend in responses for the eight most popular themes in the 10th survey. Companies could select up to five from 25 items up to the 9th survey, and up to five from 27 items in the 10th survey

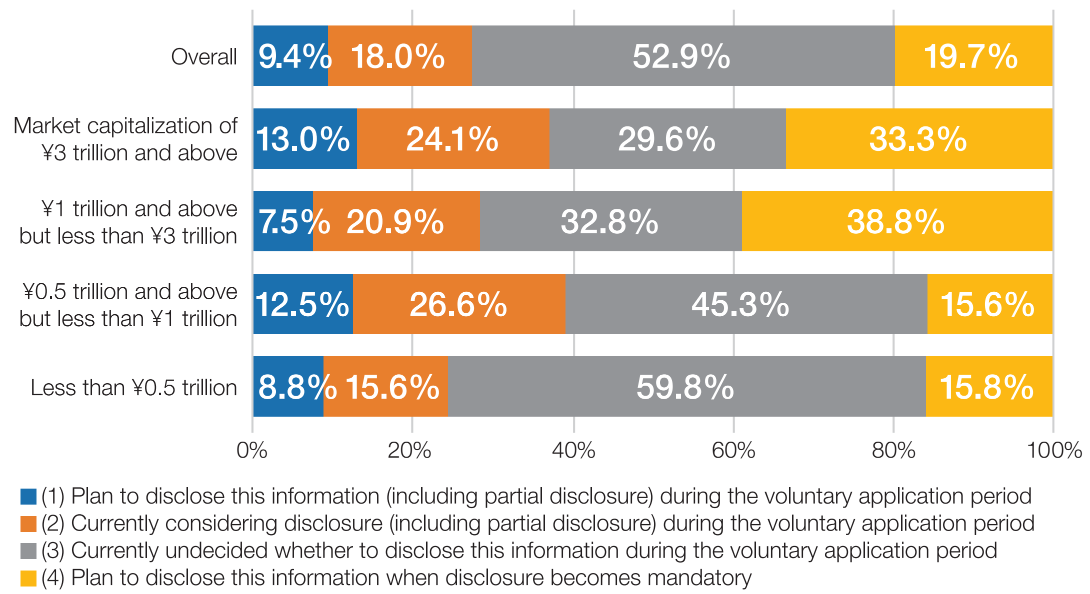
As in the last survey, we asked about the response to the Taskforce on Nature-related Financial Disclosures (TNFD) recommendations. This time, 15.8% of companies disclosed information in line with the TNFD recommendations (see Figure 3). We also asked companies about any issues they were experiencing with the introduction of disclosure based on the TNFD recommendations. We received many comments such as: there are no uniform metrics for natural capital, unlike in the case of climate change; information gathering and analysis can be difficult due to local characteristics and other factors, placing a large burden on companies. Moreover, companies cited the lack of exemplary disclosure by other companies as another current challenge. GPIF presents "'Excellent TNFD Disclosure' Selected by Our Domestic Equities Asset Managers" on page 75 of Chapter 3, as examples of companies that emphasize issues such as natural capital and biodiversity in management.

Figure 3. Status of Disclosures in Line With the TNFD



In March 2024, the Sustainability Standards Board of Japan (SSBJ) published draft sustainability disclosure standards. Discussions were in progress toward the finalization of these standards at the time when we conducted the survey. Three standards were subsequently announced in March 2025. The Financial Services Agency's Financial System Council was also engaged in ongoing discussions regarding the scope of companies subject to the standards and the timing of their application. In this survey, we asked companies about their current plans. As a result, the most common response was "(3) Currently undecided whether to disclose this information during the voluntary application period." However, almost 30% of companies responded that they "(1) Plan to disclose this information (including partial disclosure) during the voluntary application period" or are "(2) Currently considering disclosure (including partial disclosure) during the voluntary application period." We also found a difference in responses by market capitalization.

Figure 4. Responses to the SSBJ's Draft Sustainability Disclosure Standards



Establishment of the Keidanren-GPIF Asset Owners' Roundtable and Its Meetings

In October 2024, GPIF, with Japan Business Federation (Keidanren), established the "Keidanren-GPIF Asset Owners' Roundtable." Amid the increasing importance of stewardship activities and expectations for asset owners following the establishment of the Asset Owner Principles by the Japanese government in August 2024, we established this forum with the aim of further deepening our existing initiatives. The roundtable meetings are designed to serve as a forum for the ongoing exchange of views with companies. We also invited other public pension funds that mainly entrust their investments to external asset managers in a manner similar to GPIF. Federation of National Public Service Personnel Mutual Aid Associations, Pension Fund Association for Local Government Officials, and the Promotion and Mutual Aid Corporation for Private Schools of Japan have also participated in the roundtable meetings since their inauguration.

The first meeting was held in October 2024, attended by directors and other management team members from both asset managers and companies. Each asset owner explained its initiatives based on the Asset Owner Principles, and representatives of Keidanren presented "Opinion Statement on the 'Action Program for Substantiating Corporate Governance Reforms'." This was followed by a vigorous exchange of views between the participating companies and asset owners.

The second meeting was held in February 2025. While the first meeting was a plenary session, the second meeting was attended by approximately 50 participants, including representatives of asset owners, asset managers as guests, and issuer companies. They were divided into four groups for discussion, which was followed by a presentation by each discussion group and an exchange of opinions. During the group discussions, active exchanges of opinions took place on the issues and measures for resolution regarding the two themes; (1) dialogue between companies and investors, and (2) the exercise of voting rights at shareholders' meetings.

Sustainability in Alternative Asset Management

GPIF has been developing initiatives to appropriately integrate sustainability into the selection and post-selection monitoring process of alternative asset managers. For domestic infrastructure investments, we also measure the avoided GHG emissions from renewable energy projects over the past several years.

Sustainability in Alternative Assets

The holding period for alternative assets (Infrastructure, Real Estate, and Private Equity) is generally quite long, and the asset manager itself is often involved in the corporate management and business operations of the investee. As a result, more asset managers are focusing on considering sustainability including ESG in their investment process, not only to identify the risks that may arise during the holding period but also to find opportunities for sustainable asset value growth and corporate value enhancement. This trend is particularly prominent among overseas asset managers.

Although we use the collective phrase "alternative asset management," ESG factors and their impacts differ, depending on the individual characteristics of the asset and/or business in question. Approaches to ESG integration also differ depending on individual investment strategies. With an understanding of these differences, GPIF as an asset owner monitors asset managers' evaluation in terms of sustainability including ESG, as well as the status of their investments.

ESG/Sustainability Evaluation in Selecting Asset Managers

Since GPIF began selecting alternative asset managers that adopt a multi-manager strategy in April 2017, we have added an evaluation of prospective asset managers' initiatives relating to sustainability including ESG to the assessment. Assessments are conducted from a variety of aspects, including due diligence questionnaires and interviews with their sustainability teams. Among other things, we review managers' company-wide sustainability policies, ESG integration into their investment process, and their systems for supervision and reporting to investors after investment execution.

Post-investment Monitoring

There are no standardized rating criteria for sustainability including ESG that can be applied to all alternative assets. Therefore, each asset manager develops their own unique sustainability rating criteria and scoring methodology based on the characteristics of the asset and the fund manager's investment strategy. GPIF monitors asset managers for any changes in their approaches to sustainability, whether the diversified funds in which they invest are managed by PRI signatories, and the status of their sustainability initiatives. Through reports on sustainability produced by asset managers and dialogue with them, we strive to engage with them and to understand the status of the sustainability-related aspects of their portfolios.

Real Estate Portfolio Initiatives:Global Real Estate Sustainability Benchmark (GRESB)[1]

In fiscal 2024, 80% of the funds in GPIF's real estate portfolio participated in GRESB Real Estate Assessment (net asset value weighted average as of the end of the previous December for each year). The participation rate decreased by three percentage points from the previous fiscal year, partly due to some new, recently established investment funds, but the number of funds increased by six funds compared to the previous fiscal year. For fiscal 2024, we also disclose the information related to climate change risks of our real estate portfolio through the status of emission reduction target-setting aimed at Net Zero (achieving zero emissions by absorbing or removing GHG from the atmosphere to offset GHG emissions) among GRESB-participating funds. The real estate sector is responsible for around 40% of global GHG emissions,[2] so there is a strong awareness of the risks relating to climate change in this sector. GPIF's real estate portfolio, too, contains an increasing number of funds that target Net Zero.

Figure 1. Trends in GRESB Participation Rate

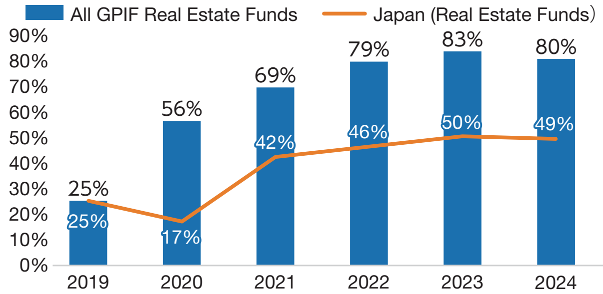
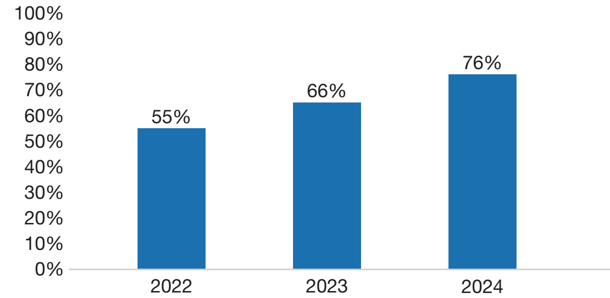


Figure 2. Trends in the Proportion of Portfolio Funds Setting Net Zero Targets[3]



1 GRESB is an initiative, established mainly by European pension funds, that provides a standardized benchmark and validated data of the ESG performance of real assets including real estate and infrastructure. GPIF joined GRESB in fiscal 2019 as an investor member in the real estate sector. In fiscal 2022, GPIF became the first Japanese investor member in the infrastructure sector.
2 UNEP FI Climate Risks in the Real Estate Sector
3 Whether a Net Zero target has been set is reflected in the real estate portfolio as a weighted average based on the net asset value of each fund as of the end of December of the previous year.

Analysis of Private Equity Using Climate VaR

For this year's climate-related financial disclosure, we analyzed the climate change risk of our private equity (hereinafter, PE) portfolio. Specifically, we calculated the Climate Value-at-Risk (CVaR) of the PE portfolio and compared it with our foreign equities portfolio. CVaR measures the impact of climate change on the value of companies and securities through future costs and revenue opportunities.

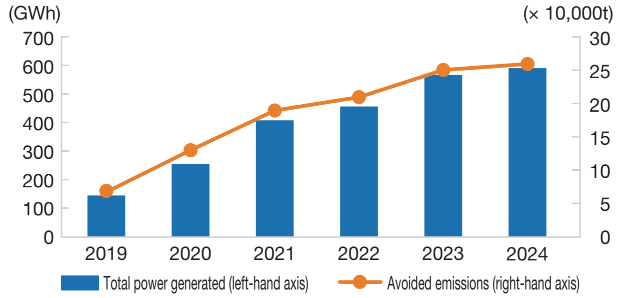
As a result of our analysis, we found that the CVaR of the PE portfolio displayed a similar overall trend to that of the foreign equity portfolio. However, differences were observed; the CVaR of foreign equities was more negative under the 1.5°C scenario, while the CVaR of the PE portfolio was more negative under the 3.0°C scenario. We infer that this difference is attributable to the PE portfolio's significant investment in low-carbon industries such as information technology and healthcare. Please refer to page 70 for the results of this analysis.

Analysis of Avoided Emissions from Domestic Renewable Energy Projects

We continue to analyze the avoided emissions from the domestic renewable energy investments in GPIF's infrastructure portfolio.

The total power generated by the renewable energy in Japan that GPIF invests in through infrastructure funds amounted to approximately 598 GWh in 2024, a 4% increase from the previous year. The total power generated has increased since last year, mainly due to increased investment in solar assets. The theoretical amount of avoided emissions by switching to renewable energy-fueled power generation in 2024 was approximately 260,000 t, increasing 3% from last year. This figure is calculated based on the amount of power generated, using the Japan Photovoltaic Energy Association (JPEA) guidelines and other information such as the GHG emission factors published by domestic power companies. This is equivalent to the annual GHG emissions from electricity usage of approximately 151,000 households (up 2% year on year).

Figure 3. Total Power Generated and Avoided Emissions Through GPIF's Portfolio of Domestic Renewable Energy Projects



(Note) Total power generated and avoided emissions are calculated based on GPIF's holding percentage of end investees.

Initiatives and Collaboration with Other Institutions

Since becoming a signatory to the Principles for Responsible Investment (PRI) in September 2015, GPIF has collaborated with a wide range of initiatives and groups domestically and internationally. In fiscal 2024, we attended the annual conferences of PRI, the International Corporate Governance Network (ICGN), and the Thirty Percent Coalition (now operating as Invest Ahead). We are also involved as an observer in the ISSB Investor Advisory Group (IIAG), which we joined in May 2024. The IIAG's members include over 60 asset owners and asset managers.

Figure 1. GPIF's Collaboration with Initiatives and Groups

Column: Joined the ISSB Investor Advisory Group (IIAG) as an Observer

The ISSB Investor Advisory Group (IIAG) is an advisory body of the International Sustainability Standards Board (ISSB), which develops corporate disclosure standards for sustainability-related financial information. The IIAG provides strategic advice on the development of disclosure standards by the ISSB, as well as support to ensure that investors' perspectives are considered during the development process.

GPIF joined the IIAG as an observer in May 2024 based on our belief that sustainability-related disclosure will become increasingly important in the context of efficient engagement between asset managers and investees going forward.

The members of the IIAG encourage the parties with which they are concerned to apply the IFRS Sustainability Disclosure Standards and support the spread of these standards.

Column: Most Asset Managers Have Become Signatories to the PRI

GPIF's Stewardship Principles establish the principle of "sustainability consideration including ESG integration into the investment process," and GPIF requests its asset managers to sign the PRI and actively participate in related initiatives.

In fiscal 2024, GPIF conducted a survey and interviews with equities and fixed income asset managers to ascertain the status of their participation in the PRI and various initiatives. As a result, we found that all of our domestic equities and fixed income asset managers have become signatories to the PRI as of December 31, 2024. For foreign equities, all but two asset managers had become signatories, while for foreign fixed income, all asset managers or their parent companies had become signatories.

Approximately 80% of GPIF's external asset managers disclose information on the risks and opportunities of climate change in accordance with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD). Some asset managers were considering such disclosure in fiscal 2025.

Meanwhile, approximately 60% of GPIF's external asset managers did not have plans at that time to disclose information on risks, opportunities, and impacts relating to natural capital based on the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD). However, many Japanese asset managers had already commenced or were considering such disclosure.

Figure 2. PRI Signatory Status and Sustainability Disclosures Among Asset Managers

			Signed PRI	Disclosure consistent with TCFD recommendations	Disclosure consistent with TNFD recommendations
Asset managers	Overall		95%	76%	22%
	Domestic	Equities	100%	100%	40%
		Fixed income	100%	100%	58%
	Foreign	Equities	93%	66%	14%
		Fixed income	94%	83%	39%

(Note) One asset manager with a foreign fixed income mandate had not signed the PRI, but its parent company was a signatory.

GPIF's Public Communication

With the establishment of GPIF's Sustainability Investment Policy, we have replaced the previous ESG Report with the annual Sustainability Investment Report, and will continue to enhance our public communication on initiatives related to sustainability investment. We also disseminate information on GPIF's new initiatives, the results of various surveys, and the insights gained through a range of methods such as presentations, contributions to journals, social media, and videos.

Communicating GPIF's Initiatives to the Public

The disclosure of information on sustainability investment is a crucial way for GPIF to engage with its stakeholders. From fiscal 2017 to fiscal 2023, we summarized GPIF's sustainability investment-related initiatives in each fiscal year and published them the following fiscal year as the ESG Report.

GPIF's Sustainability Investment Policy, announced in March 2025, declares our intention to proactively disclose information to insureds, investee companies, and capital market participants. As part of these efforts, we will present GPIF's sustainability investment-related initiatives for fiscal 2024 onward through the annual publication of the Sustainability Investment Report, which replaces the previous ESG Report.

We also provide, on GPIF's website, information such as the results of GPIF's unique questionnaire surveys and initiatives to measure the effects of stewardship activities and ESG investment.

Presentations and Contributions Leveraging GPIF's Expert Insights

We also strive to disseminate information through presentations and by contributing articles to professional journals, leveraging the expert insight of GPIF's executives and employees in sustainability investment. In fiscal 2024, we presented a total of 23 keynote speeches or panel discussions and contributed four journal articles relating to sustainability investment.

We present GPIF's initiatives through keynote speeches and panel discussions at the seminars held by universities and organizations related to sustainability and finance. At a speech presenting the content of the 2023 ESG Report (published in August 2024), we explained in detail the results of our analysis of the risks and opportunities that climate change presents to GPIF's portfolio. This included, for example, an analysis of the impact of third-party certification at the time of bond issuance[1] on the greenium (green premium)[2] of green bonds.

At our lecture for university students, we explained Japan's public pension system and the unique features of GPIF. We then went on to introduce concrete examples of GPIF's sustainability investment such as ESG index-based investment.

In our journal article concerning the "Current Status and Agenda of Increasingly Prominent Scope 3 Disclosures," we provided a commentary on the status of disclosure of Scope 3 greenhouse gas (GHG) emissions[3] by companies in Japan and overseas, including the features apparent in the proportions of each category of Scope 3 emissions.

In our journal article "Descriptive Analysis and Evaluation of the Effects of Engagement in Japan," we presented the results of our evaluation of the effects of engagement, using the method of causal inference based on records of engagement (constructive dialogue with investee companies) by GPIF's external asset managers.

1 For more information about the results of this analysis, please refer to "Green Bond Greenium Analysis" on pages 71 – 74 of the 2023 ESG Report.
2 Greeniums are the premiums attached to green bonds. The term refers to the phenomenon in which green bonds are valued more highly (with lower yields) than ordinary bonds issued with the same conditions.
3 Scope 3 emissions are GHG emissions of the entire supply chain other than Scope 1 and Scope 2 emissions, which are an operator's own GHG emissions.

Figure 1. Main Themes and Number of Presentations Relating to Sustainability Investment in Fiscal 2024

Sustainability investment in general	8 presentations
Stewardship activities	7 presentations
Evaluation of the effects of engagement	5 presentations
2023 ESG Report	2 presentations
Other aspects	1 presentation

Figure 2. Titles of Contributions Relating to Sustainability Investment in Fiscal 2024

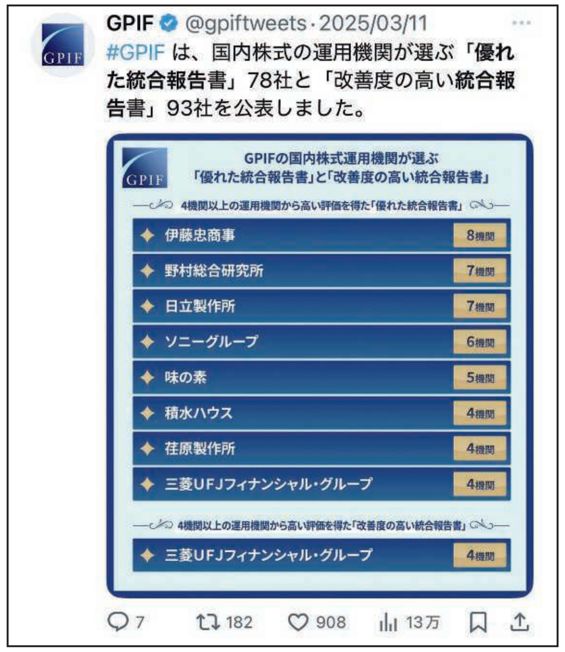
- Outstanding Approaches to Corporate Disclosure in Integrated Reports
- Descriptive Analysis and Evaluation of the Effects of Engagement in Japan
- Current Status and Agenda of Increasingly Prominent Scope 3 Disclosures
- Aims and Evaluation of the Effects of GPIF's ESG Investment

Clear Public Communication by Social Media and Videos

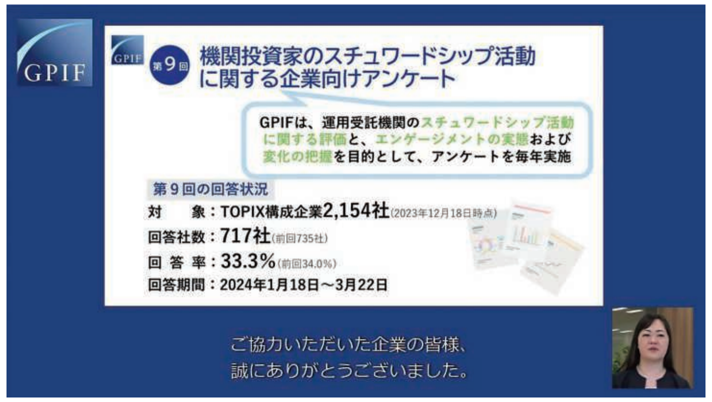
We strengthen GPIF's information dissemination via social media and videos, aiming to reach a wide range of public. In fiscal 2024, we posted information relating to sustainability investment over 60 times on X (formerly Twitter). Of these, our posts calling attention to the announcement of 78 companies with "Excellent Integrated Reports" and 93 companies with the "Most-improved Integrated Reports," each chosen by our domestic equities asset managers, attracted the most attention.

On YouTube, we presented new commentaries on "'Material ESG Issues' for 2023 Chosen by GPIF's Asset Managers" and "Results of the 9th Survey of Listed Companies Regarding Institutional Investors' Stewardship Activities." For the survey of listed companies, we made the material easier to understand by focusing on three points: (1) Action by listed companies to address the Tokyo Stock Exchange's request for improvement of capital efficiency, (2) Disclosure relating to natural capital based on the Taskforce on Nature-related Financial Disclosures (TNFD) recommendations, and (3) Examples of overall engagement with companies by GPIF's domestic equities asset managers that were highly rated by companies.

Most popular post on X (formerly Twitter) (in Japanese)



YouTube video "GPIF: What You Want to Know! Our 9th Survey of Listed Companies" (in Japanese)



GPIF on X (formerly Twitter)

GPIF on YouTube

Overview and Analysis of the Effect Measurement Project (GPIF website)

Review of Sustainability Investment and Future Outlook

Based on the perspective of the Investment Principle, which is “sustainable growth of investee companies and the capital market as a whole is vital in enhancing long-term investment returns,” GPIF promotes investment that incorporates sustainability including ESG, together with various activities to fulfill its stewardship responsibility. Based on the Sustainability Investment Policy announced at the end of fiscal 2024, as well as other policies, we will continue to promote sustainability investment aimed at improving long-term performance across our entire portfolio.

In fiscal 2024, our investments resulted in a small positive return of 0.71% due to factors such as a decline in domestic equities markets, a rise in foreign equities markets, and the slight depreciation of the yen. In monetary terms, we achieved an investment return of ¥1.7 trillion, representing an excess return of 9bp (1bp=0.01%) over our composite benchmark.

With regard to sustainability investment, including investment with consideration for ESG factors and impact, we announced GPIF’s Sustainability Investment Policy and other initiatives at the end of fiscal 2024 to mark the commencement of our 5th Medium-term Objectives period. At GPIF, through the promotion of sustainability investment based on the Sustainability Investment Policy and related policies, we aim to improve the long-term performance of our entire portfolio by achieving both a “reduction of sustainability-related risks and improvement of sustainability of markets” and “securing of market average return.”

Within this framework, for ESG index-based investment, we have decided to include domestic and foreign ESG index-based equity investments in rebalancing and to optimize these investment amounts, taking the market environment and other factors into account. This is aimed at achieving smooth asset management in line with our policy asset mix into the future. We manage total assets of approximately ¥18.2 trillion based on ESG indexes as of the end of fiscal 2024.

In fiscal 2024, we also introduced risk adjustment funds for our ESG index-based investment to control the (unintended) risk arising from differences in constituent stocks and other factors between the parent indexes of the ESG indexes we follow and GPIF’s policy benchmark.

We will continue to engage in optimizing the portfolio through measures such as the adjustment of investment amounts for existing indexes and selecting new indexes, based on a review of our investment outcomes.

Going forward, we will further promote sustainability investment at GPIF through a variety of funds, including both traditional and alternative assets, as well as through stewardship activities.

As for stewardship activities, we conducted company interviews in fiscal 2024 to ascertain listed companies’ evaluations and issues concerning engagement with them by institutional investors and published the results. We will further promote stewardship activities with consideration for sustainability including ESG from the perspective of long-term investment returns, based on the “Direction and medium-term initiatives of GPIF’s stewardship activities,” announced at the end of fiscal 2024. Specifically, we will pursue initiatives focused on enhancing long-term corporate value, as well as promoting the sustainable growth of the capital market and the overall economy, as priority issues during the 5th Medium-term Objectives period. In doing so, we aim to establish a virtuous cycle across the entire investment chain through ongoing dialogue not only with our asset managers but also with external organizations and other stakeholders.

Regarding “investment considering impact,” which is a key initiative in the Sustainability Investment Policy, we will first conduct research to ascertain the current status of impact investment, and then proceed with necessary examination of specific investment methods and other details.

GPIF will continue to pursue sustainability investment initiatives from the perspective of securing long-term investment returns, in cooperation with all relevant stakeholders.

Executive Managing Director / Chief Investment Officer (CIO)
YOSHIZAWA Yusuke

Chapter 2

Measuring the Effects of ESG and Stewardship Activities

In undertaking sustainability investment, GPIF verifies whether its investments are effective in achieving both a "reduction of sustainability-related risks and improvement of sustainability of markets" and "securing market average return." Therefore, in addition to examining investment performance, we also undertake multi-faceted analysis of factors such as ESG indexes and ESG ratings on an ongoing basis. In Chapter 2, we also continue from last year in presenting our analysis results from the Measuring the Effects of Stewardship Activities and ESG Investment Project.

ESG Index Performance

Overall, the ESG index-based passive funds for domestic equities selected by GPIF have outperformed the average of their respective parent indexes from their launch through March 2025. On the other hand, the ESG index-based passive funds for foreign equities selected by GPIF have underperformed the average of their respective parent indexes. We will continue to review the performance of ESG indexes from long-term perspectives.

ESG Index Performance Attribution Analysis

Figure 1[1] shows the performance of GPIF's selected ESG indexes from their launch until March 2025, and during the previous year (from April 2024 to March 2025.) Since their launch, ESG indexes for both domestic and foreign equities have generally outperformed their respective parent indexes (the "parent index") and the policy benchmarks (TOPIX for domestic equities and MSCI ACWI (ex Japan) for foreign equities). In fiscal 2024, the rate of return on some ESG indexes for both domestic and foreign equities underperformed the parent index and policy benchmark.

Figure 2[2] shows the performance of ESG index-based passive funds for domestic and foreign equities selected by GPIF ("ESG passive fund") in terms of their rates of return in excess of the relevant parent index[3], broken down into 'Benchmark Effect' and 'Fund Effect' for the period from June 2017 (when the funds were launched,) to March 2025 for domestic equities, and from September 2018 to March 2025 for foreign equities. In assessing the overall performance of the ESG passive fund, it is necessary to calculate a composite return, as each ESG index has a different launch date. This composite return is calculated using the daily returns of the ESG passive funds, weighted by the total amount of net assets.

As shown in Figure 2, the cumulative excess return of the ESG passive fund for domestic equities over the parent index was approximately 4.8%. The 'Benchmark Effect' has trended upward since March 2023. The 'Fund Effect' turned negative in March 2020 due to fund allocation and other factors, and has trended slightly downward since then, in part because of transaction costs.

On the other hand, the cumulative excess return of the ESG passive fund for foreign equities was approximately negative 1.3%. The 'Benchmark Effect' has been largely neutral since March 2023. The 'Fund Effect' has trended slightly downward since fund launch, in part because of transaction costs.

In Figure 2, we calculate the historical tracking error of the ESG passive fund against the parent index using their daily excess return over a period of 250 trading days from the end of each month. As of the end of March 2025, the tracking error of the ESG passive fund is approximately 0.7% for both domestic and foreign equities.

GPIF has established the Sustainability Investment Policy in March 2025, aiming to enhance the long-term performance of GPIF's entire portfolio by achieving both "reduction of sustainability-related risks and improvement of sustainability of markets" and "securing of market average return." From this perspective, we will continue to verify the performance of our ESG index-based investments based on the PDCA cycle whenever needed.

1 Figure 1 shows the investment performance of the individual ESG indexes.
2 Figure 2 shows the actual performance considering investment timing, such as cash flow, etc.
3 At GPIF, we established "risk adjustment funds" for our ESG passive fund for domestic equities in fiscal 2024, aimed at bridging the gaps that have arisen between each parent index and the policy benchmark. For this reason, this fiscal year, we have chosen to represent excess return against the parent index.

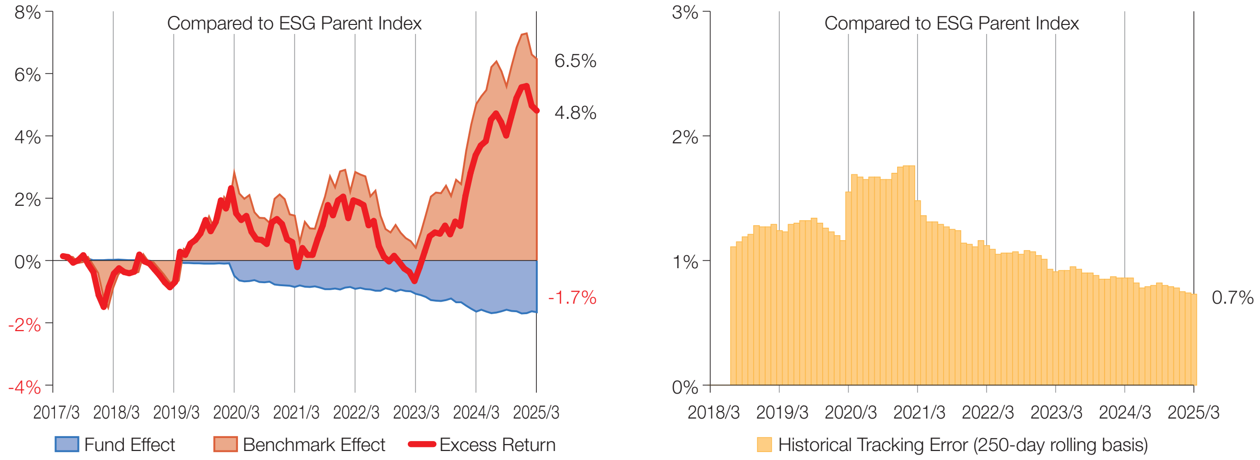
Figure 1. Returns of Nine ESG Indexes Selected by GPIF

	The launch of each fund	The launch of each fund to March 2025 (annualized)			(Reference) April 2024 to March 2025		
		Rate of Return	Excess Return		Rate of Return	Excess Return	
		ESG Index	Parent Index	TOPIX	ESG Index	Parent Index	TOPIX
(1) FTSE Blossom	June 2017	10.89%	1.25%	1.42%	-1.79%	0.31%	-0.24%
(2) MSCI ESG Select Leaders*	June 2017	10.43%	0.78%	0.96%	-1.10%	0.86%	0.45%
(3) MSCI WIN	June 2017	9.72%	0.03%	0.25%	2.17%	4.06%	3.71%
(4) S&P/JPX Carbon	September 2018	9.25%	-0.04%	-0.04%	-1.60%	-0.06%	-0.06%
(5) FTSE BlossomSR	March 2022	16.86%	1.00%	0.63%	-2.18%	-0.08%	-0.63%
(6) Morningstar GenDiJ	March 2023	21.17%	0.75%	0.91%	-1.05%	0.98%	0.50%
		ESG Index	Parent Index	MSCI ACWI ex Japan	ESG Index	Parent Index	MSCI ACWI ex Japan
(7) S&P Global Carbon	September 2018	14.75%	0.11%	0.15%	7.23%	0.05%	0.35%
(8) MSCI ESG Universal	November 2020	18.49%	0.18%	0.17%	6.18%	-0.58%	-0.70%
(9) Morningstar GenDi	December 2020	18.79%	-0.24%	0.84%	7.01%	0.41%	0.13%

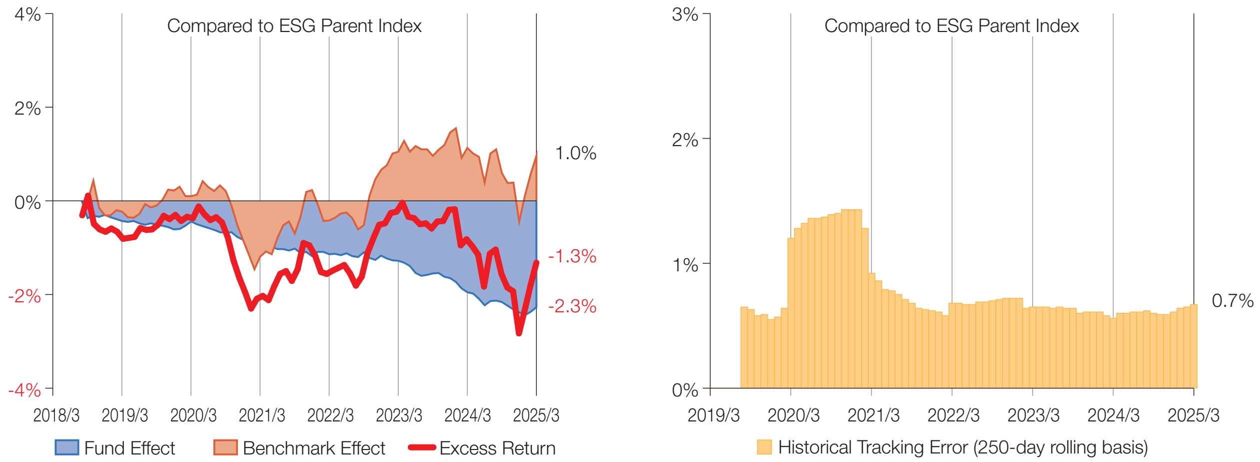
(Note 1) Index returns include dividends.
(Note 2) The parent indexes for (1) to (9) (constituent universe) are as follows:
(1) (5) FTSE Japan All Cap Index ((1) was FTSE Japan until December 2020)
(2) MSCI Nihonkabu IMI
(3) MSCI Japan IMI Top 700 (MSCI Japan IMI Top 500 until November 2019)
(4) TOPIX
(6) Morningstar Japan ex-REIT
(7) S&P Global Ex-Japan LargeMidCap
(8) MSCI ACWI ex Japan ex China A ESG Universal with Special Taxes Index
(9) Morningstar Developed Markets Ex-Japan Large-Mid
* MSCI Japan ESG Select Leaders Index through February 7, 2024; MSCI Nihonkabu ESG Select Leaders Index on and after February 8, 2024
(Source) Prepared by GPIF based on data from FactSet.

Figure 2. Excess Return and Historical Tracking Error Trend of ESG Passive Funds for Domestic and Foreign Equities

Domestic equities



Foreign equities



(Note 1) Parent index return is the average daily return of the parent indexes weighted by the total amount of net assets for ESG passive funds
(Note 2) The definition for 'Benchmark Effect' is the difference in return of ESG indexes on the one hand and ESG parent indexes on the other, while 'Fund Effect' is the difference in return of ESG passive funds and ESG indexes
(Source) Prepared by GPIF based on data from FactSet.

Portfolio ESG Ratings, ESG Rating Rankings by Country, and Correlation Between ESG Ratings

At GPIF, we aim to assess the effects of ESG investment from various perspectives. To this end, every year since our FY2017 ESG Report, we have measured and provided stationary observations of ESG ratings of our equity portfolio, the average and level of improvement of ESG ratings by country, and the correlation between ESG ratings of different providers.

Figures 1 and 2 show the trend in each ESG rating for GPIF's equity portfolios as of March 31 in 2017 and the past five years (2021 to 2025), as well as the ESG rating for the policy benchmarks (TOPIX for domestic equities and MSCI ACWI (ex Japan) for foreign equities) as of March 31, 2025. In FTSE's evaluation for the most recent year, GPIF's equity portfolio ESG rating increased for domestic equities but decreased for foreign equities. We also observed that all ESG scores increased for domestic equities, while E and S scores decreased for foreign equities. Meanwhile, MSCI's evaluation showed an increase in domestic equities and a decline in foreign equities over the past year, similarly to FTSE's evaluation. We also observed that S and G scores increased but E scores decreased for domestic equities, while S scores increased but E and G scores decreased for foreign equities. We compared the ESG ratings for GPIF's equity portfolios to the policy benchmarks (TOPIX and MSCI ACWI ex Japan) as of March 31, 2025. The result shows that GPIF's equity portfolios are outperforming the ESG scores for the TOPIX and MSCI ACWI (ex Japan,) albeit marginally.

Figures 3 and 4 (page 47) show the ESG rating rankings by country as of March 31 in 2017 and the past five years (2021 to 2025). These were calculated based on the ESG ratings of companies from nine representative countries included in the major indexes provided by FTSE and MSCI. The rankings for both FTSE and MSCI are topped by Japanese companies, in addition to companies from European and North American countries such as France, the United Kingdom, the U.S. and Canada. Figures 5 and 6 (page 47) show the rate of improvement in each country over the last eight years and the most recent year. Japanese companies are among the biggest improvers over the past eight years based on the ratings provided by both FTSE and MSCI. Figures 7 and 8 (page 48) compare the distributions of ESG ratings for Japanese companies as of March 31, 2017 and March 31, 2025. The distributions of ESG ratings from both FTSE and MSCI have shifted to the right, indicating a general improvement in the ratings of Japanese companies.

Unlike financial analysis, ESG ratings deal with a variety of non-financial information, and no standardized rating methodologies have yet been established. For this reason, there is considerable variation among ESG ratings by rating agencies, which is shown in Figures 9 and 10 (page 48). The scatter plot in Figure 9 shows the ESG scores of the two rating agencies for the same target companies as of March 31, 2025, with scores by FTSE on the vertical axis and those by MSCI on the horizontal axis. A certain degree of positive correlation is evident for both Japanese and foreign companies. Figure 10 shows the changes in correlation between each ESG score in chronological order as of March 31 in 2017 and each of the past five years (2021 to 2025). The correlation coefficients for Japanese companies have historically been lower than for foreign companies. However, the correlation for Japanese companies has gradually increased, and we have observed that recently, their correlation coefficients have reached similar levels to those for foreign companies.

Figure 1. FTSE ESG Ratings (2017 and Last Five Years)

	ESG	E	S	G	ESG	E	S	G
	GPIF (Domestic Equities)				GPIF (Foreign Equities)			
2017/3	2.43	0.86	0.77	0.80	3.03	0.88	0.95	1.20
2021/3	2.96	1.02	0.98	0.97	3.34	0.99	1.07	1.28
2022/3	3.11	0.96	1.09	1.06	3.26	0.91	1.11	1.24
2023/3	3.29	1.09	1.11	1.09	3.42	1.06	1.12	1.25
2024/3	3.58	1.20	1.21	1.17	3.48	1.11	1.13	1.25
2025/3	3.69	1.22	1.27	1.21	3.44	1.09	1.10	1.25
	TOPIX				MSCI ACWI ex Japan			
2025/3	3.66	1.21	1.25	1.20	3.43	1.09	1.10	1.25
Excess Score	+0.03	+0.01	+0.01	+0.01	+0.01	+0.00	+0.01	+0.00
	Change in Score (GPIF Portfolio)				Change in Score (GPIF Portfolio)			
Past Eight Years	+1.26	+0.36	+0.50	+0.40	+0.41	+0.20	+0.16	+0.05
Past One Year	+0.11	+0.02	+0.06	+0.04	-0.04	-0.02	-0.03	+0.00

(Note 1) Among the stocks held by GPIF, we analyzed those with ESG ratings by FTSE.
(Note 2) ESG scores are calculated as the average ESG scores of companies weighted by their market capitalization in GPIF's portfolio (excluding stocks for which an ESG rating was not available).
(Source) Prepared by GPIF based on data from FTSE. FTSE Russell.

Figure 2. MSCI ESG Ratings (2017 and Last Five Years)

	ESG	E	S	G	Industry Adjustment	ESG	E	S	G	Industry Adjustment
	GPIF (Domestic Equities)					GPIF (Foreign Equities)				
2017/3	5.29	1.56	2.19	1.02	0.52	5.31	1.40	1.91	1.44	0.56
2021/3	5.92	1.21	2.11	1.58	1.02	6.04	1.13	2.08	1.80	1.03
2022/3	6.37	1.22	2.18	1.79	1.18	6.47	1.17	2.19	1.87	1.24
2023/3	6.93	1.26	2.19	2.11	1.37	6.80	1.21	2.16	2.13	1.29
2024/3	7.07	1.26	2.17	2.14	1.51	6.78	1.19	2.13	2.16	1.30
2025/3	7.22	1.20	2.24	2.27	1.51	6.67	1.14	2.16	2.11	1.25
	TOPIX					MSCI ACWI ex Japan				
2025/3	7.16	1.20	2.23	2.26	1.48	6.63	1.14	2.15	2.11	1.23
Excess Score	+0.06	+0.00	+0.02	+0.01	+0.03	+0.04	-0.00	+0.01	+0.01	+0.02
	Change in Score (GPIF Portfolio)					Change in Score (GPIF Portfolio)				
Past Eight Years	+1.93	-0.36	+0.06	+1.25	+0.99	+1.35	-0.26	+0.25	+0.67	+0.70
Past One Year	+0.15	-0.06	+0.08	+0.12	+0.00	-0.12	-0.05	+0.03	-0.04	-0.05

(Note 1) Among the stocks held by GPIF, we analyzed those with ESG ratings by MSCI.
(Note 2) ESG scores are calculated as the average ESG scores of companies weighted by their market capitalization in GPIF's portfolio (excluding stocks for which an ESG rating was not available).
(Note 3) Industry adjustment: Difference between the final rating and the weighted average of each company's rating for environmental (E), social (S) and governance (G), arising due to the normalization of ratings by industry.
(Source) Prepared by GPIF based on data from MSCI. Reproduced by permission of MSCI ESG Research LLC ©2025.

Figure 3. FTSE ESG Rating Ranking by Country (2017 and Last Five Years)

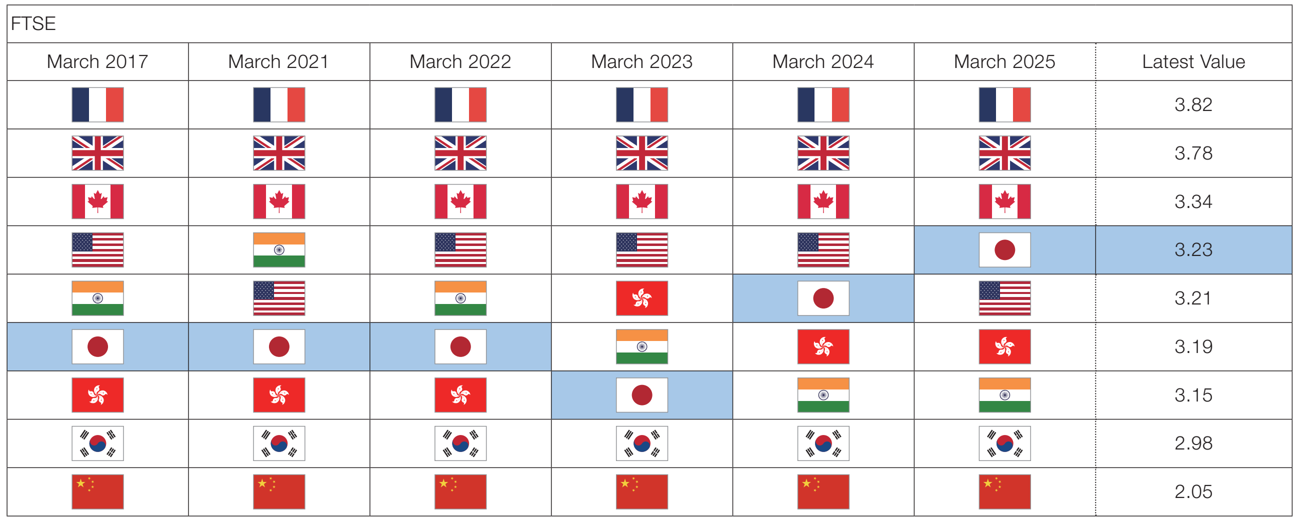


Figure 4. MSCI ESG Rating Ranking by Country (2017 and Last Five Years)

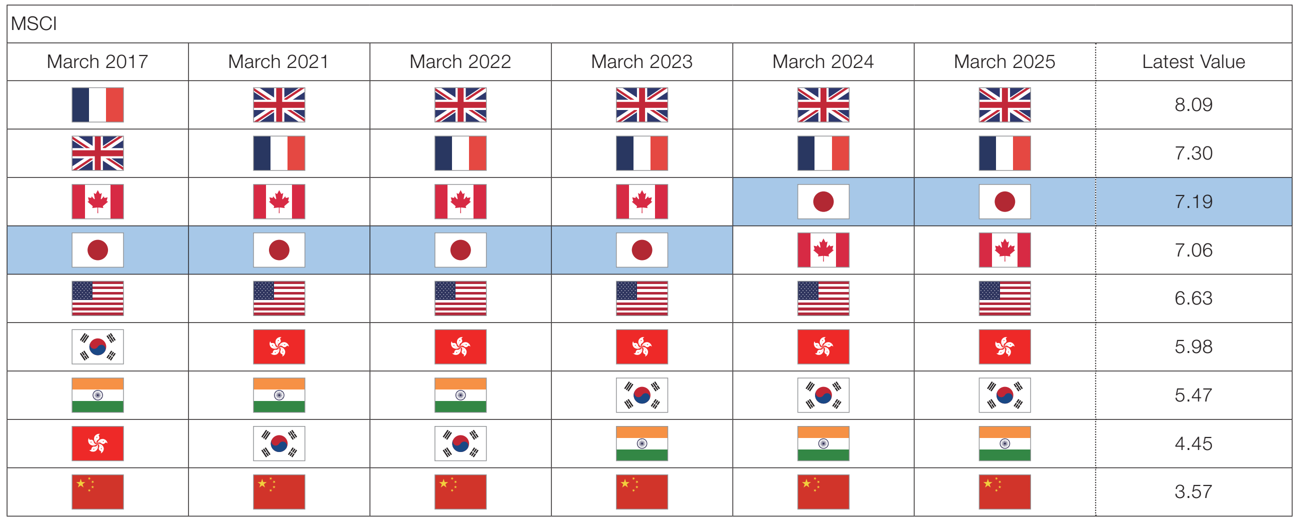


Figure 5. Rate of Improvement in FTSE ESG Ratings by Country

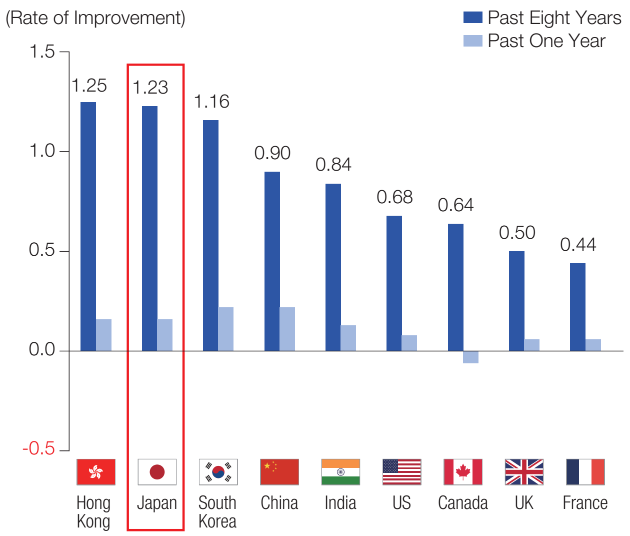
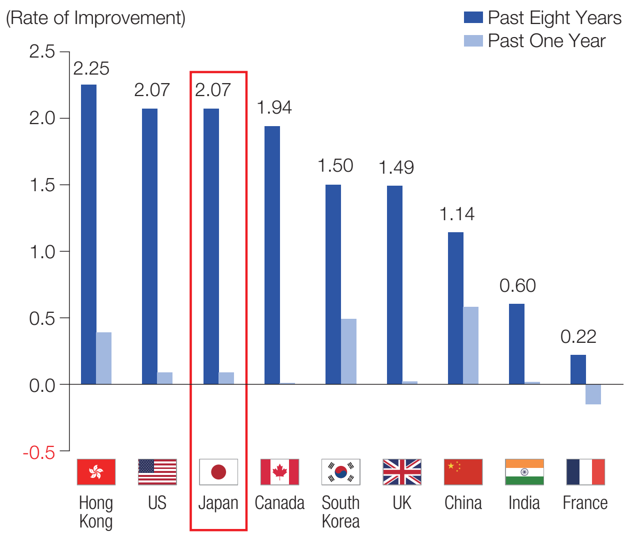


Figure 6. Rate of Improvement in MSCI ESG Ratings by Country



(Note 1) This figure shows the change over the eight years from the end of March 2017 to the end of March 2025 and over the most recent year.
(Note 2) ESG rating of constituents by country on Figures 3 to 6 is calculated as the arithmetic average.

Figure 7. FTSE ESG Rating Distribution for Japanese Companies

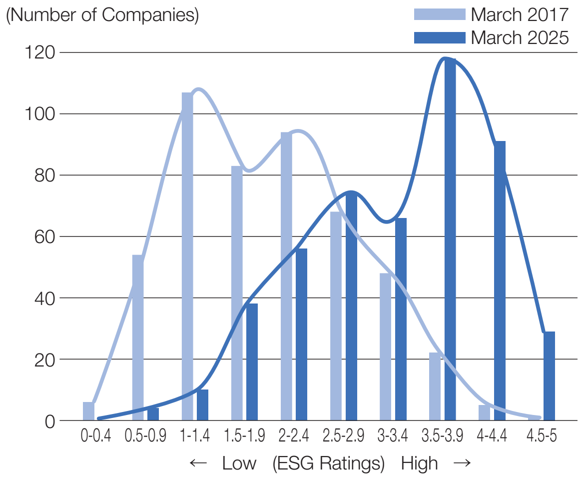
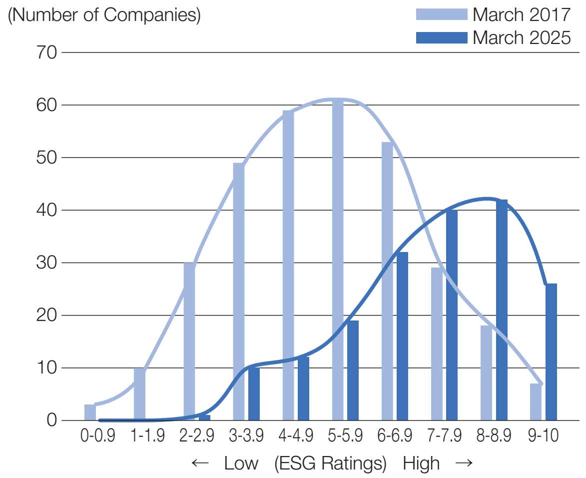
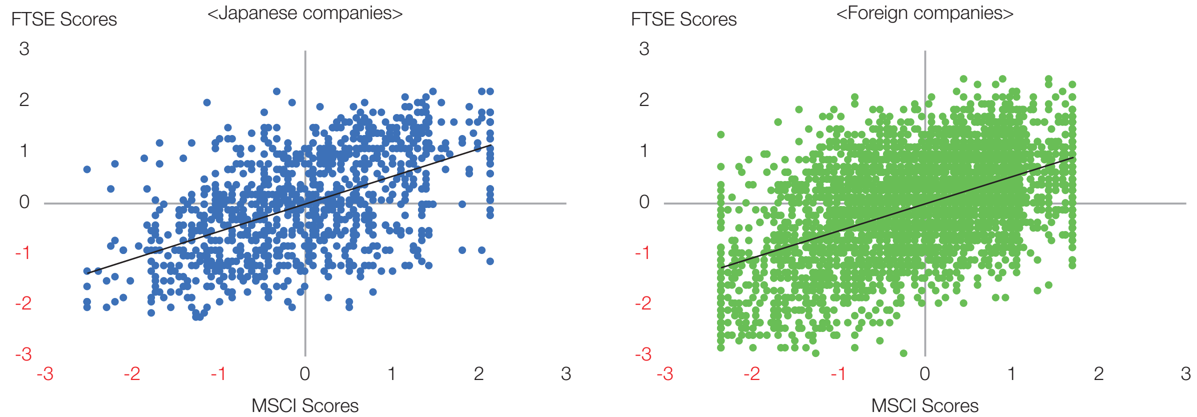


Figure 8. MSCI ESG Rating Distribution for Japanese Companies



(Note) Among the companies included in FTSE's "FTSE All World Index" and MSCI's "MSCI All Country World Index," the analysis presented in Figures 3 to 8 focuses on companies for which an ESG rating is available.
(Source) Prepared by GPIF based on data from FTSE and MSCI. FTSE Russell. Reproduced by permission of MSCI ESG Research LLC ©2025.

Figure 9. FTSE and MSCI ESG Score Correlation Figure (as of March 31, 2025)



(Note) Normalized (mean 0, variance 1) and plotted ESG rating data from FTSE and MSCI.
(Source) Prepared by GPIF based on data from FTSE and MSCI. FTSE Russell. Reproduced by permission of MSCI ESG Research LLC ©2025.

Figure 10. Trends in Correlation Coefficient of ESG Score Data from FTSE and MSCI (2017 and Last Five Years)

<Japanese companies>

	ESG	E	S	G
Correlation Coefficient				
2017/3 (a)	0.37	0.47	0.11	0.04
2021/3 (b)	0.46	0.48	0.09	0.14
2022/3 (c)	0.51	0.49	0.12	0.14
2023/3 (d)	0.53	0.45	0.07	0.15
2024/3 (e)	0.54	0.41	0.07	0.19
2025/3 (f)	0.54	0.40	0.09	0.27
Change in Correlation Coefficient				
Past One Year (f-e)	+0.00	-0.01	+0.02	+0.08
Past Eight Years (f-a)	+0.17	-0.07	-0.02	+0.23

<Foreign companies>

	ESG	E	S	G
Correlation Coefficient				
2017/3 (a)	0.48	0.37	0.20	0.26
2021/3 (b)	0.57	0.38	0.25	0.34
2022/3 (c)	0.59	0.44	0.27	0.37
2023/3 (d)	0.63	0.35	0.26	0.42
2024/3 (e)	0.59	0.33	0.24	0.42
2025/3 (f)	0.54	0.33	0.22	0.39
Change in Correlation Coefficient				
Past One Year (f-e)	-0.05	-0.00	-0.02	-0.03
Past Eight Years (f-a)	+0.06	-0.04	+0.03	+0.13

(Note) Including stocks for which an ESG rating is available for FTSE and MSCI.
(Source) Prepared by GPIF based on data from FTSE and MSCI. FTSE Russell. Reproduced by permission of MSCI ESG Research LLC ©2025.

Measuring the Effects of Stewardship Activities and ESG Investment Project

GPIF conducted an evaluation project from fiscal 2023 to fiscal 2024, using statistical methods such as causal inference to evaluate the effects of its stewardship activities and ESG investment. The project has four themes, and each of them has been implemented in collaboration with external consultants and academia. In fiscal 2024, we implemented and published our results on two themes: “Study on ESG factors contributing to the improvement of corporate value and investment return” and “Analysis of the exercise of voting rights by asset managers.”

Measuring the Effects of Stewardship Activities and ESG Investment Project

Stewardship activities and ESG investment require a long period to improve long-term performance across GPIF's portfolio. Therefore, to appropriately implement the PDCA cycle (Plan → Do → Check → Act) for stewardship activities and ESG investment, it is crucial to examine issues such as whether GPIF’s activities are connected with companies’ behavioral changes and higher ESG ratings, including causal effects between the two, as a first step, without waiting for eventual outcomes such as improvements in long-term performance.

Starting in fiscal 2023, after an appropriate period had passed since the beginning of our stewardship and ESG investment initiatives and sufficient data had been accumulated, we collaborated with external consultants and academic researchers to implement a review of the effects of these initiatives using statistical methods such as causal inference (Figure).

In fiscal 2024, we implemented the “Study on ESG factors contributing to the improvement of corporate value and investment return” and “Analysis of the exercise of voting rights by asset managers” projects, and published a report on the GPIF website. The following pages present a summary of the results of our “Analysis of the exercise of voting rights by asset managers.”

Through the appropriate implementation of the PDCA cycle, we will continue to improve and revise our stewardship and ESG investment initiatives.

Figure. Overview of the Measuring the Effects Project

	Project Themes	Details (Examples)
Measuring the effects of stewardship activities	Evaluation Project on the Effects of Engagement	Study on the causation between the engagement and improvement of ESG performance/corporate value
	Analysis of the exercise of voting rights by asset managers	Trend analysis in voting behavior differences for companies with which they have conflicts of interest and other investee companies
Evaluation of the effects of ESG investment	Study on ESG factors contributing to the improvement of corporate value and investment return	Study on causation between ESG factors and improvement in corporate value/investment return
	Evaluation of the effects of passive equity investment based on ESG indexes	Analysis of the effects of ESG investment on corporate behavior

(Note) The specific analysis content is subject to change

Topics Measuring the Effects of Stewardship Activities

Analysis of the Exercise of Voting Rights by Asset Managers

— Project Overview and Analysis —

We examined differences in asset managers’ proxy voting behavior between the companies with which they have conflicts of interest and other investee companies. As a result, overall, we found no consistent trend in the differences in voting behavior based on the existence of conflicts of interest. Notwithstanding the existence of some cases where conflicts of interest led to apparent differences in voting, overall, the results suggested that this tendency was disappearing over time.

1. Introduction

GPIF requires its asset managers to actively engage in stewardship activities linked to enhancing long-term corporate value. We require them to put beneficiaries’ interests first, including the exercise of voting rights. Back when Japan’s Stewardship Code (the “Stewardship Code”) was established in 2014, there were still some cases where asset managers under the umbrella of financial institutions had not systematically addressed concerns regarding conflicts of interest with their parent or group companies. In this project, we conducted a quantitative analysis using a large amount of proxy voting data to confirm whether the strict management of conflicts of interest by the asset managers has changed their voting behaviors. In particular, we examined differences in asset managers’ proxy voting behavior between the companies with which they have conflicts of interest and other investee companies.

If we could demonstrate, statistically, that the proxy voting behavior of asset managers is not distorted due to the interests of their parent or group companies, it would help dispel any suspicion that they prioritize group relationships in making proxy voting decisions, potentially harming the interests of beneficiaries. The outline of our analysis result of the project is as follows.[1]

Background and objectives of the project

Many Japanese asset managers belong to financial groups headed by banks, securities companies, or insurance companies. In principle, asset managers must put the interests of beneficiaries first. In some cases, however, suspicions persisted that asset managers may be prioritizing the interests of their own financial groups. To rectify this situation, the Stewardship Code established in 2014 requires the formulation and publication of policies for managing conflicts of interest in the exercise of voting rights. In 2017, the revision of the Stewardship Code called for stronger governance systems to manage conflicts of interest, as well as the publication of voting results on each proposal. It was anticipated that exposing voting results to external scrutiny would help prevent conflicts of interest in the exercise of voting rights.

1 This section presents an extract of the major results of analysis from the report on the “Analysis Project on the Exercise of Voting Rights by Asset Managers,” shortened due to space limitations. Please refer to the report for complete analysis results, data definitions and sources.

At GPIF, we added governance frameworks and systems to manage conflicts of interest to our evaluation criteria for the stewardship responsibilities of asset managers in 2016. We also established a system to monitor whether our asset managers are exercising voting rights appropriately, using proxy voting data from each asset manager on each proposal, and began holding meetings with our asset managers utilizing this data.

Asset managers are also strengthening their own systems to manage conflicts of interest, partly in response to requests such as these from governments and asset owners. Many asset managers have established third-party committees composed of outside directors and external experts to create systems for proxy voting decision-making and monitoring. Trust banks and others have also reformed their organizational structures, creating separate asset management divisions to prevent conflicts of interest.

The objective of this project is to present insights, through a quantitative approach, into how various measures to prevent the adverse effects of conflicts of interest have influenced proxy voting behavior over time, and whether there were suspected conflicts of interest in proxy voting behavior in the past.

Following the revision of the Stewardship Code in 2017, asset managers began to individually disclose their proxy voting results, enabling researchers in general to analyze this proxy voting data. This project differs from previous studies by including earlier data, from April 2013 onward.

2. Scope of data analyzed and definition of companies with conflicts of interest

For this analysis, GPIF used the proxy voting results of asset managers for domestic equities, collected through custodians, as the primary data source. The dataset comprises 4,603,167 voting acts by 17 Japanese and 18 foreign asset managers, covering the period from April 2013 to March 2023.

On this premise, we limited our analysis to 13 Japanese asset managers with multiple consecutive years of proxy voting data, to ensure a sufficient dataset for analyzing conflicts of interest.

The proposals analyzed were also categorized into several types based on their content, focusing on those categories with both a high number of instances and opposing votes (Figure 1).

Figure 1. Proposal Categories Used in the Analysis[2]

Election of internal directors	Election of internal company auditors	Payment of retirement benefits
Election of outside (non-independent) directors	Election of outside (non-independent) company auditors	Introduction of takeover defenses
Election of outside (independent) directors	Election of outside (independent) company auditors	Shareholder proposals

2 The proposal categories are based on the data provided by GPIF's asset managers. Votes in favor of shareholder proposals are treated in the same way as votes in opposition to company proposals. In other words, for shareholder proposals, the data are organized as if the votes for and against were reversed. This enables the analysis to focus uniformly on the proportion of opposing votes, allowing for a consistent interpretation of changes in voting behavior.

■ Types of company with which asset managers have conflicts of interest ("interested parties")

The identification of "conflicts of interest" implies a qualitative judgment; in this analysis, we introduced three definitions using the data we collected. An outline of each type of conflicts of interest and a graphic representation of these types are presented in Figure 2 and Figure 3, respectively.

First, "narrowly defined interested parties" refer to holding companies, banks, securities companies, and insurance companies that belong to the same financial group as the asset manager.[3] Next, we identified "broadly defined interested parties" for which the "narrowly defined interested parties" serve as main banks, managing securities underwriters, or major shareholders.

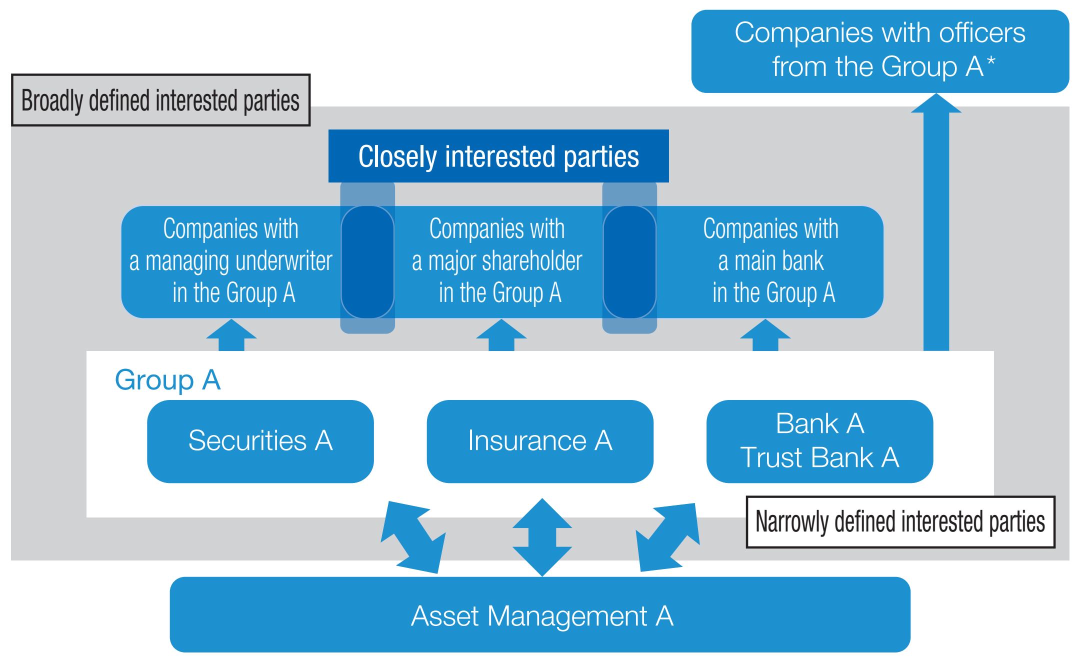
Finally, we defined "closely interested parties," considering the possibility that conflicts of interests may be formed through multiple channels, and that the criteria for major shareholders may capture a large number of interested parties compared to main banks or managing securities underwriters. Specifically, among the "broadly defined interested parties," companies that meet the criteria of being both "a main bank and a major shareholder" or both "a managing securities underwriter and a major shareholder" were designated as "closely interested parties."

To treat only on influential relationships among the assumed types of interested parties, we treated "closely interested parties" as having "conflicts of interest" and analyzed differences in proxy voting behavior compared to other cases.[4]

Figure 2. Definitions of Interested Parties in the Analysis

Narrowly defined interested parties	Holding companies, banks, securities companies, and insurance companies in the same group as the asset manager: major shareholders (5% or greater) or affiliated companies registered in Japan
Broadly defined interested parties	Companies whose main bank, managing securities underwriter, or major shareholder is among the narrowly defined interested parties, above[5]
Closely interested parties	Among the "broadly defined interested parties" above, companies that meet the criteria of being both "a main bank and a major shareholder" or both "a managing securities underwriter and a major shareholder." Used to flag companies for analysis

Figure 3. Illustration of Interested Parties in the Analysis



* Excluded from analysis in this project due to as insufficient data

3 Limited to companies registered in Japan.
4 Narrowly or broadly defined interested parties or parties for which no conflicts of interest exist.
5 Main banks and managing securities underwriters are based on data provided by Toyo Keizai Inc. Major shareholders are defined as the top 15 Insiders/Stakeholders based on data provided by FactSet.

Conflicts of interest analyzed

Figure 4 shows the number of "closely interested parties" among those for which proxy voting data by asset manager (A through G) were available.[6] Since the numbers of Asset managers A and C are relatively large compare to others, it is important to note that the influence of these asset managers is more pronounced in this analysis.

Figure 4. Number of Interested Parties (Companies) by Asset Manager and Year

	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
A	48	375	418	419	425	419	412	394	402	383	25
B	4	20	20	21	20	17	17	17	21	17	14
C	34	335	368	374	354	358	372	365	346	335	27
D	2	NA	16	17	16	13	26	25	40	31	27
E	NA	5	7	7	6	4	1	4	4	NA	NA
F	2	17	22	23	23	19	26	24	21	21	17
G	7	3	NA	NA	NA	8	71	71	72	70	61

* "NA" indicates no interested parties on which proxy votes were cast, including cases where no voting data is available.

3. Differences in proxy voting based on the presence or absence of conflicts of interest from the perspective of descriptive statistics

Differences by proposal type

We began by using simple descriptive statistics to examine differences in proxy voting behavior based on the presence or absence of conflicts of interest. In Figure 5, we compare the proportion of opposing votes on each type of proposal based on whether or not such conflicts of interest exist. Here, the proportion of opposing votes is calculated using the proxy voting results from the asset managers included in the analysis.[7] Whether the opposition ratio is higher when there is a conflict of interest or not varies depending on the type of proposal, and no consistent trend was observed. Therefore, it is difficult to identify an overall pattern based on the presence or absence of conflicts of interest.

Figure 5. Differences in Proxy Voting Tendencies Based on the Presence or Absence of Conflicts of Interest for Each Proposal Type

Proposal type	With conflicts of interest		Without conflicts of interest		Difference in proportion of opposing votes
	Number of votes cast	Proportion of opposing votes (a)	Number of votes cast	Proportion of opposing votes (b)	(a-b)
Election of internal directors	52,407	10.6%	451,865	11.5%	-0.9%pt
Election of outside (non-independent) directors	191	91.1%	3,728	85.8%	5.3%pt
Election of outside (independent) directors	21,321	11.6%	190,265	13.3%	-1.7%pt
Election of internal company auditors	3,122	1.6%	23,932	1.3%	0.3%pt
Election of outside (non-independent) company auditors	111	92.8%	1,828	91.0%	1.8%pt
Election of outside (independent) company auditors	4,600	12.2%	39,505	13.6%	-1.3%pt
Payment of retirement benefits	641	61.8%	6,653	56.8%	5.0%pt
Introduction of takeover defenses	618	63.6%	3,501	69.3%	-5.7%pt
Shareholder proposals	798	9.3%	9,542	6.5%	2.8%pt

6 A total of 13 Japanese asset managers were analyzed. The table above has only seven rows because some asset managers merged during the analysis period, in which case the sum of the numbers of interested parties for each asset manager before the merger is shown in the relevant row.
7 For example, if ten asset managers cast proxy votes on a proposal and five voted against it, the proportion of opposing votes would be 50%.

Differences in the likelihood to oppose the proposals

Conflicts of interest may not affect all proxy voting; they may only influence actions under certain conditions. Given that many institutional investors, including asset managers, disclose their proxy voting guidelines, as well as based on the status of advance voting, it is assumed that companies can anticipate which proposals are likely to receive increased opposition from shareholders before the general meetings. In the case of such proposals, it is assumed that each voting right may carry relatively greater weight, which increases the possibility that voting behavior may be more influenced by the presence or absence of conflicts of interest (Cases in which a large number of shareholders are expected to oppose the proposals by the companies with conflicts of interest, there is a possibility that the asset manager may cast a vote in favor)

To confirm this, we summarized, in Figure 6, the differences in proxy voting behavior based on the presence of conflicts of interest, according to the level of opposition (Referred as the "overall opposition ratio"[8] to distinguish it from the opposition ratio based on asset managers used in Figure 5) in the voting results of each proposal at general shareholder meetings. However, no consistent trend was observed here, either.

As shown above, throughout the analysis period, simple descriptive statistics did not reveal any consistent trend in the differences in voting based on the existence of conflicts of interest.

Figure 6. Differences in Proxy Voting Tendencies Based on the Presence or Absence of Conflicts of Interest by Overall Opposition Ratio

Overall opposition ratio	With conflicts of interest		Without conflicts of interest		Difference in proportion of opposing votes
	Number of votes cast	Proportion of opposing votes (a)	Number of votes cast	Proportion of opposing votes (b)	(a-b)
5% or below	64,248	4.8%	552,239	6.1%	-1.3%pt
Over 5% and up to 10%	10,732	26.6%	93,558	27.1%	-0.5%pt
Over 10% and up to 15%	4,023	38.8%	38,282	37.5%	1.2%pt
Over 15% and up to 20%	2,167	45.7%	21,112	41.6%	4.0%pt
Over 20% and up to 25%	1,167	48.9%	11,231	48.8%	0.1%pt
Over 25% and up to 30%	634	53.8%	6,158	54.4%	-0.6%pt
Over 30% and up to 35%	310	56.5%	2,944	61.4%	-4.9%pt
Over 35% and up to 40%	156	60.3%	1,526	57.6%	2.7%pt
Over 40%	336	29.8%	3,327	27.2%	2.5%pt
No data	36	2.8%	442	7.2%	-4.5%pt

Differences by period (before or after fiscal 2017)

Next, we conducted an analysis focusing on the possibility that the impact of conflicts of interest may vary by period. As noted in the background and objectives of this project, asset managers have strengthened their systems to manage conflicts of interest following GPIF's enhanced monitoring of asset managers after 2016 and the revision of the Stewardship Code in 2017 (including requirements such as the individual disclosure of voting results). We therefore conducted an analysis to test the hypothesis that asset managers' proxy voting behavior concerning interested parties differed before and after fiscal 2017.

In Figure 7, we separate the sample into two periods, before and after fiscal 2017, and summarized the differences in proxy voting tendencies based on the presence of conflicts of interest for each range of overall opposition ratio. We observed no consistent differences in voting tendencies in our analysis of the entire target period in Figure 6. However, focusing on the period before fiscal 2017, the analysis suggests that asset managers were more likely to vote in favor of proposals from companies with which they had conflicts of interest when the overall opposition ratio was high.

Specifically, in the period before fiscal 2017, there was a tendency for the opposition ratio toward companies with conflicts of interest to be lower for proposals with the overall opposition ratio exceeded 25 percent, and in some categories of overall opposition ratio, the difference approached almost 10 percentage points. By contrast, no differences in proxy voting behavior based on conflicts of interest were observed after fiscal 2017. This suggests that the tendency for asset managers to exercise leniency towards companies with which they have conflicts of interest, which was apparent in the data for the period before fiscal 2017, is no longer present after that period.

8 Based on Japan Investor Relations and Investor Support, Inc. (J-IRIS) data.

Figure 7. Differences in Proxy Voting Tendencies Based on the Presence or Absence of Conflicts of Interest by Overall Opposition Ratio for the Periods Before and After Fiscal 2017

Overall opposition ratio	Before FY2017			After FY2017		
	With conflicts of interest	Without conflicts of interest	Difference in proportion of opposing votes	With conflicts of interest	Without conflicts of interest	Difference in proportion of opposing votes
	Proportion of opposing votes (a)	Proportion of opposing votes (b)	(a-b)	Proportion of opposing votes (c)	Proportion of opposing votes (d)	(c-d)
5% or below	2.5%	4.8%	-2.3%pt	6.1%	6.8%	-0.7%pt
Over 5% and up to 10%	18.5%	21.9%	-3.4%pt	29.7%	29.0%	0.7%pt
Over 10% and up to 15%	28.5%	30.6%	-2.1%pt	42.6%	39.9%	2.7%pt
Over 15% and up to 20%	38.1%	32.1%	6.0%pt	48.7%	45.3%	3.4%pt
Over 20% and up to 25%	41.3%	34.6%	6.7%pt	52.1%	55.8%	-3.7%pt
Over 25% and up to 30%	32.4%	40.4%	-8.0%pt	62.6%	61.2%	1.4%pt
Over 30% and up to 35%	33.7%	46.2%	-12.6%pt	67.0%	67.9%	-1.0%pt
Over 35% and up to 40%	40.4%	42.6%	-2.2%pt	68.8%	64.4%	4.4%pt
Over 40%	24.1%	42.3%	-18.2%pt	30.3%	26.0%	4.3%pt
No data	5.6%	10.9%	-5.4%pt	0.0%	2.9%	-2.9%pt

4. Regression analyses of the differences in proxy voting behavior based on the presence or absence of conflicts of interest

■ Analysis (1): Analysis of differences in proxy voting tendencies based on the presence or absence of conflicts of interest by overall opposition ratio

The descriptive statistics presented above suggest that for the period before fiscal 2017, asset managers were more likely to vote in favor of proposals from companies with which they had conflicts of interest, when other shareholders likely opposed to them. This result is consistent with the hypothesis that proxy voting behavior was previously influenced by conflicts of interest. However, there may be another mechanism behind this trend. Therefore, to more rigorously analyze the hypothesis that conflicts of interest influenced voting behavior, we used the following regression model to examine the correlation between the "presence of a close conflict of interest" and "whether a vote was cast in opposition," while controlling for multiple factors.

$$V_{ijst} = \sum_k \beta_k D_{ijt} B_{k_{ist}} + \gamma_1 B_{k_{ist}} + \gamma_2 X_{it} + \alpha_i + \alpha_j + \delta_{G(s)} + \lambda_t + \varepsilon_{ijst} \qquad (1)$$

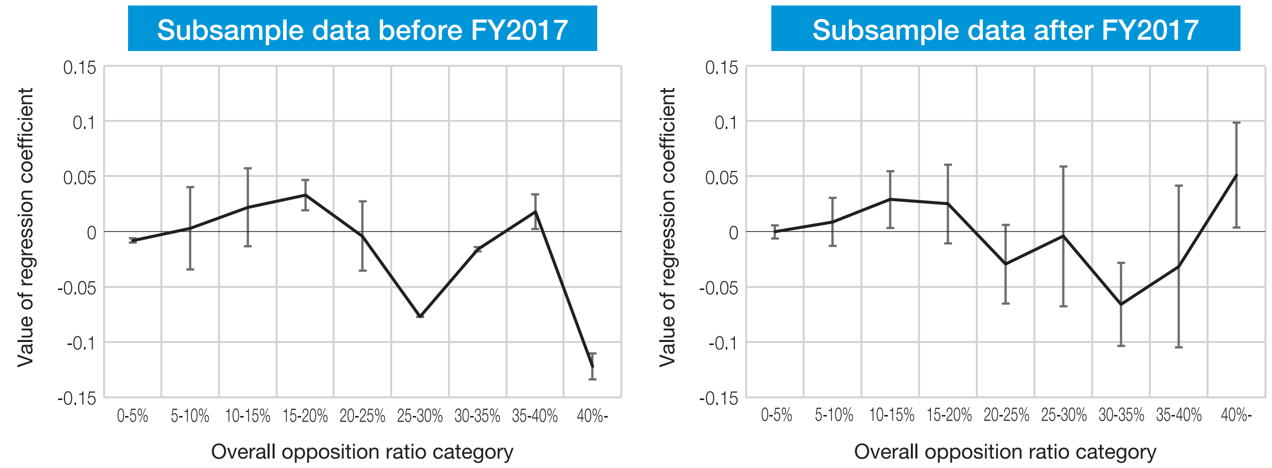
i : Company
j : Asset manager
s : Proposal type
t : Fiscal year
V_{ijst} : Dummy variable given the value of 1 if the vote was in opposition, otherwise 0
D_{ijt} : Dummy variable given the value of 1 if the company is a closely interested party, otherwise 0
$B_{k_{ist}}$: Dummy variable given the value of 1 if the "overall opposition ratio" was category "k," otherwise 0[9]
X_{it} : A control variable for each company's business performance, etc.[10]
α_i, α_j, $\delta_{G(s)}$, and λ_t : Introduced as variables representing the fixed effects of each company, asset manager, proposal type, and year[11]
ε_{ijst} : Error term (factors not included in the model)
β_k, γ_1, γ_2 : Estimated coefficients

9 Overall opposition ratio categories were created in 5% increments up to 40%, as well as a category for 40% and more
10 Dummy variables for log market capitalization, the number of outside directors, and share buybacks were used, together with ROE and the cross-shareholding ratio
11 Indicate the likelihood of opposing votes as a baseline.

Of the estimated coefficients β_k, γ_1, and γ_2, our analysis especially focused on β_k to identify differences in tendencies for each overall opposition ratio category, based on whether there were conflicts of interest. In addition, by dividing the samples from before and after fiscal 2017 into subsamples for analysis, we also examined whether these tendencies differed between the two periods.

The estimates of β_k obtained from equation (1) and the associated 95% confidence intervals are illustrated in Figure 8. The vertical axis represents the difference in the proportion of opposing votes between cases with conflicts of interest compared to those without. For example, a value of -0.1 indicates that in cases with conflicts of interest, the proportion of opposing votes is 10 percentage points lower than in cases without such conflicts. The panel on the left represents the samples from before fiscal 2017. Asset managers were more likely to vote in favor of proposals from companies with conflicts of interest when the overall opposition ratio was between 25% to 35% or over 40%. By contrast, in the panel on the right, which represents the samples from the period after fiscal 2017, a similar tendency is not apparent for any overall opposition ratio category except for the 30% to 35%. Indeed, asset managers actually appeared more likely to oppose proposals when the overall opposition ratio was over 40%. As illustrated in Figure 7, we confirmed that in the subsample from before fiscal 2017, asset managers tended to exercise leniency towards interested parties on proposals with high overall opposition ratios, but this tendency has largely disappeared after fiscal 2017.

Figure 8. Comparison of Periods Before and After Fiscal 2017: Differences in Proxy Voting Based on the Presence or Absence of Conflicts of Interest by Overall Opposition Ratio



■ Analysis (2): Detailed analysis of changes in each fiscal year for proposals with high overall opposition ratios

Next, to confirm the effect of initiatives by asset managers after fiscal 2017, we specifically examined the period when their management of conflicts of interest became stricter using the regression model below, focusing only on proposals with a high overall opposition ratio:

$$V_{ijst} = \sum_t \beta_t D_{ijt} Y_t + \gamma X_{it} + \alpha_i + \alpha_j + \delta_{G(s)} + \lambda_t + \varepsilon_{ijst} \qquad (2)$$

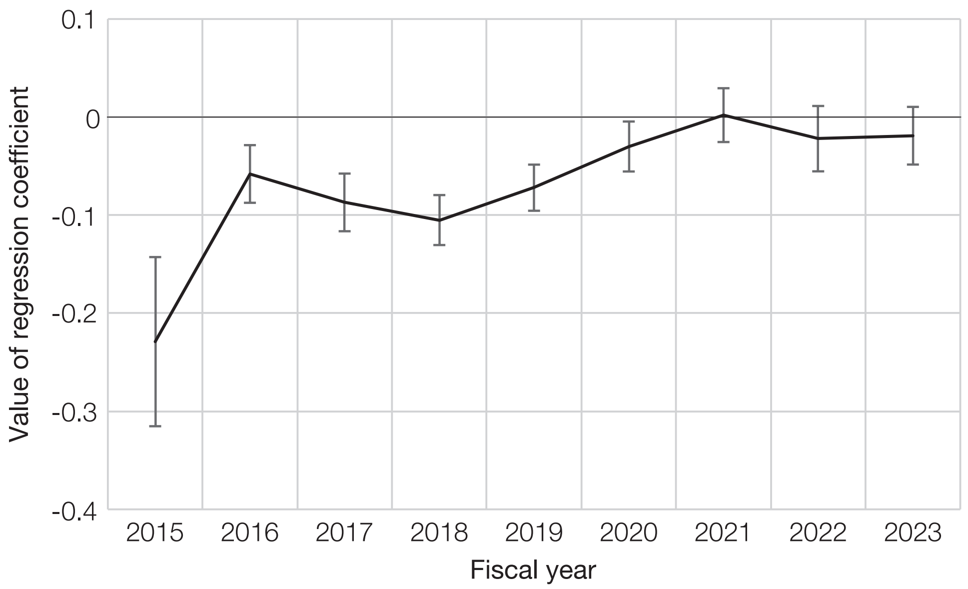
Y_t : Dummy variable representing year
β_t : Estimated coefficient
Other variables: Same as in Analysis (1)

Here, we expected the coefficient for interested parties to be negative and statistically significant before fiscal 2017, and that at some point after fiscal 2017, this significant difference would no longer be observed. We aimed to identify the specific year in which the effect disappears.

The estimates β_t obtained from equation (2) and the associated 95% confidence intervals are illustrated in Figure 9. Before fiscal 2018, asset managers were approximately 10 percentage points more likely to approve proposals from interested parties. However, this effect gradually dissipated through fiscal 2019 and 2020. By fiscal 2021, we observed no significant differences in voting tendencies.

We believe that after the introduction of enhanced monitoring by GPIF in 2016 and the revision of the Stewardship Code in 2017, strengthened management of asset managers' conflicts of interest influenced their behavior over time.

Figure 9. Subsample of Proposals with Overall Opposition Ratios of 30% or More: Differences Based on the Presence or Absence of Conflicts of Interest by Fiscal Year[12]



Analysis (3): In-depth Analysis Using Cross-category Variables (Analysis for Each Asset Manager)

Based on the result obtained in Analysis (2), we proceeded to confirm how proxy voting tendencies for interested parties with high overall opposition ratios have changed for each asset manager. We designed this analysis to consider the possibility that conflicts of interest may have different influence on each asset manager. The regression model, which excludes the fixed effects of each asset manager, is as follows:

$$V_{ijst} = \sum_{k} \beta_k D_{ijt} C_{k_{ist}} + \gamma_1 C_{k_{ist}} + \gamma_2 X_{it} + \alpha_i + \delta_{G(s)} + \lambda_t + \varepsilon_{ijst} \qquad (3)$$

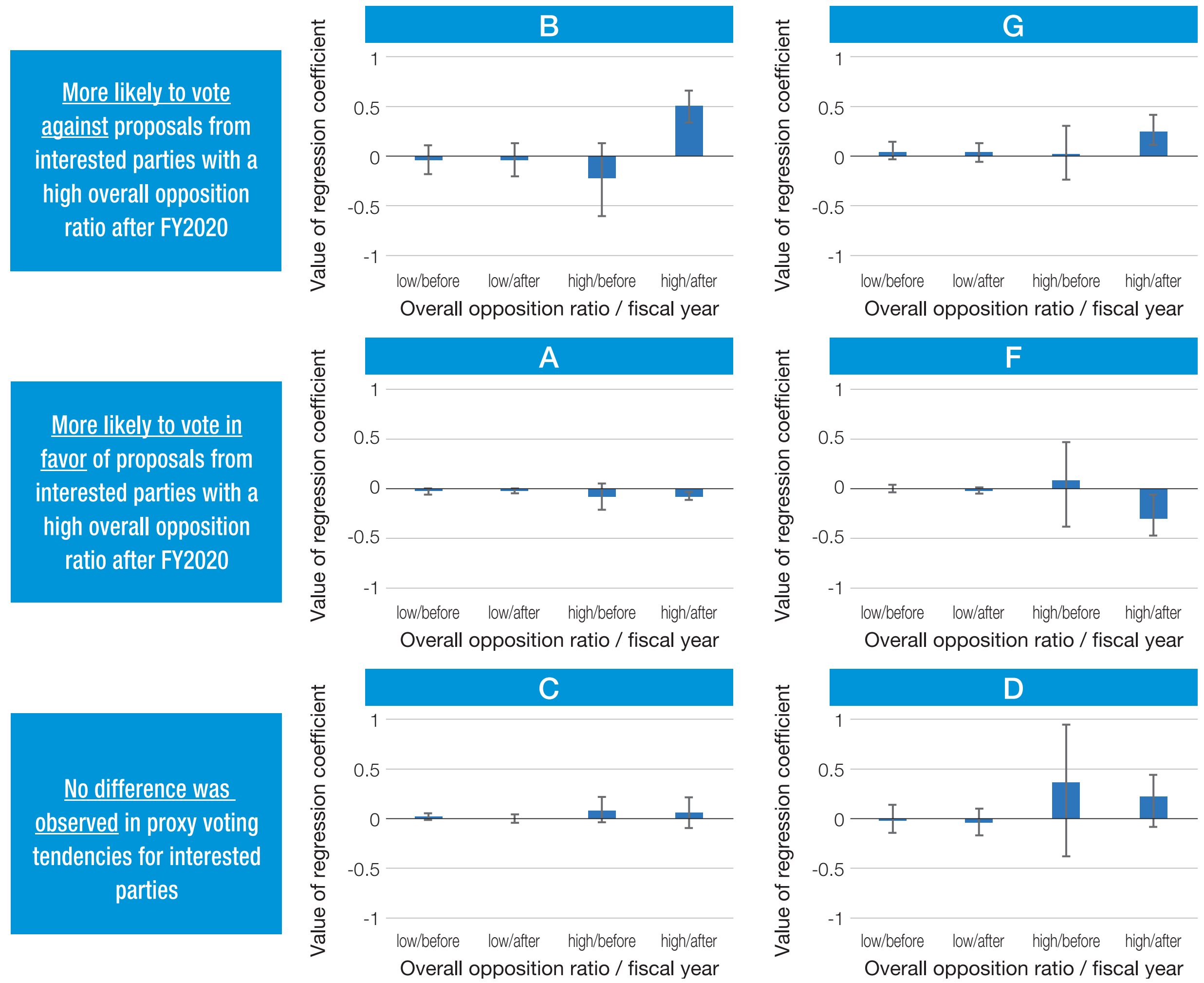
$C_{k_{ist}}$: A dummy variable that indicates k, which is one of four situations: “before fiscal 2020 and overall opposition ratio less than 30%,” “before fiscal 2020 and overall opposition ratio of 30% or more,” “after fiscal 2020 and overall opposition ratio less than 30%,” or “after fiscal 2020 and overall opposition ratio of 30% of more.”

By conducting the analysis using subsamples representing each asset manager, we were able to compare changes in proxy voting tendencies for each asset manager, in the case of proposals with high overall opposition ratios. Since sufficient sample sizes could not be obtained for each fiscal year or for the overall opposition ratio with increments of 5%, we used the previous analyses to determine approximate increments and conducted the analysis using coarser granularity. (We used broader categories based on fiscal 2020 for the period and 30% for the overall opposition ratio.)

We carried out an analysis for each asset manager[13] using equation (3). The estimates of β_k and the associated 95% confidence intervals are illustrated in Figure 10. After fiscal 2020, the voting tendencies for interested parties with a high overall opposition ratio have varied among asset managers. Asset managers B and G were more likely to vote in opposition to interested parties, while asset managers A and F were more likely to vote in favor. We found no difference in the proxy voting tendencies of asset managers C and D based on whether the company was an interested party, regardless of the period. As shown in the previous sections, the tendency to vote in favor of interested parties in the past has gradually diminished in recent years, indicating that actual tendencies vary by individual asset manager.

12 Regression coefficients could not be estimated for fiscal 2013 and fiscal 2014 due to the small sample size and some missing control variables.
13 Asset manager E, has been omitted due to a small sample size.

Figure 10. Changes in Proxy Voting Tendencies Based on Conflicts of Interest for Each Asset Manager



* “Low” and “high” represent overall opposition ratios of less than 30% and 30% and above, respectively. “Before” and “after” represent the period before fiscal 2020 and after 2020, respectively.

5. Summary of this report

Our analysis did not reveal any obvious overall (mean) tendency for the presence of conflicts of interest to influence proxy voting. On the other hand, in certain cases, particularly for proposals with a high overall opposition ratio that could significantly affect approval outcomes, differences were apparent based on the presence of conflicts of interest. For example, in the period before fiscal 2017, asset managers tended to exercise leniency toward proposals with high overall opposition ratios from companies with which they had conflicts of interest. However, this tendency had largely disappeared from fiscal 2017 onward. This suggests that efforts by asset managers to strengthen their management of conflicts of interest have started to show results, following the establishment and subsequent revision of the Stewardship Code and other measures by the Japanese government, as well as demands from asset owners. However, a close examination of the proxy voting results of individual asset managers reveals that voting tendencies based on the presence of conflicts of interest are not uniform.

Using a large volume of proxy voting data, we conducted a quantitative analysis of the differences between voting for interested parties and for other companies, differences that cannot be observed by examining individual voting results. This represents a significant achievement. However, in this analysis, we created GPIF’s own definition of asset managers’ “interested parties.” Due to limitations in the available data, this definition does not cover all cases where it is necessary to manage conflicts of interest. Conflicts of interest can arise in a broad range of situations. The design of systems for managing conflicts of interest and the scope of such management may vary for each asset manager. It is vital that we continue discussions with our asset managers to pursue better methods of managing conflicts of interest, suited to each company.

Chapter 3

Evaluation and Analysis of Sustainability-Related Financial Information

Ever since GPIF declared its support for the recommendations of the "Task Force on Climate-related Financial Disclosures (TCFD)" in 2018, we have engaged in evaluations and analysis of sustainability-related financial information, primarily relating to climate and nature. In the 2024 Sustainability Investment Report, we focus on natural risk and biodiversity, topics that have been the subject of progressive discussion in recent years. We present companies that provide excellent disclosure in line with the recommendations of the "Taskforce on Nature-related Financial Disclosures (TNFD)," based on the results of a survey of GPIF's external asset managers for domestic equities. In addition, we undertake new initiatives such as analyzing sustainability-related financial disclosures, including social and governance themes.

Disclosure and Analysis of Sustainability-Related Financial Information: Composition and Key Points

In Chapter 3, we summarize climate change-related information in line with the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD) and our survey findings based on the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD). We then proceed to an overall examination of sustainability-related financial information, including not only environmental but also social and governance themes, to analyze the progress made in corporate information disclosure. We also analyze the impact of controversies on corporate performance, focusing on the many incidents of controversies associated with companies' social and governance aspects.

Analysis of Climate- and Nature-Related Financial Information

The TCFD notes that asset owners "sit at the top of the investment chain and, therefore, have an important role to play in influencing the organizations in which they invest to provide better climate-related financial disclosures." Disclosures by asset owners "may encourage better disclosures across the investment chain (...) thus enabling all organizations and individuals to make better-informed investment decisions." Based on this approach, GPIF has disclosed climate-related financial information six times so far, since the 2018 ESG Report. In the 2024 Sustainability Investment Report, we measure the greenhouse gas (GHG) emissions for the assets in GPIF's portfolio (as of March 31, 2025) and conduct a climate change scenario analysis.

An examination of the GHG emissions per million yen of sales (Scope 1, 2, and 3) by industry in our equities portfolio reveals that those were the highest, in descending order, in the financials, industrials, and energy sectors for domestic equities, and in the energy, industrials, and materials sectors for foreign equities. Looking at the historical trend in GHG emissions (Scope 1+2), we found that emissions have generally been declining since fiscal 2016 for both domestic and foreign equities, a trend that has continued in the most recent data. We calculated GHG emissions for the equities portfolio based on data from S&P Global (formerly Trucost).

We used the Climate Value-at-Risk (CVaR)[1] metric to analyze risks and revenue opportunities for each climate change scenario. For foreign equities, the most negative aggregated CVaR[2] was estimated for the "1.5°C, disorderly transition" scenario. By contrast, for domestic equities, this scenario was the only one that resulted in a positive aggregated CVaR.

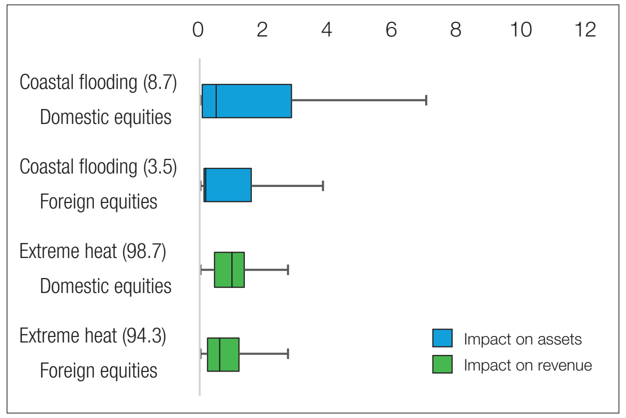
We also engaged in a more detailed analysis than in previous years concerning physical risks and opportunities, to estimate the damage caused by climate change. We estimated the impact of extreme weather on assets and revenue on a portfolio level, as of 2050, under the "3.0°C, hot house world (current policies)" scenario (Figure 1). In the case of domestic equities, for example, looking at the impact on assets, "coastal flooding" is characterized by a limited proportion of affected assets but a high loss rate for each asset. Meanwhile, the impact on revenue from "extreme heat" is only moderate, despite the large proportion of assets affected. We commissioned MSCI to provide analytical support.

In our implied temperature rise (ITR) analysis, we evaluated the possible impact of the projected GHG emissions from the companies in GPIF's portfolio until 2050 on global warming, in terms of the rise in temperature. We found that the impact for all our assets exceeds the 2°C target of the Paris Agreement. We commissioned MSCI to provide analytical support.

We examined and compiled examples of "excellent TNFD disclosure" based on the TNFD recommendations.[3] Specifically, we asked 20 external asset managers who are entrusted with domestic equity investment to select companies with "excellent TNFD disclosure." As a result, 28 companies were nominated. Of these, the disclosures of seven companies were highly rated by at least three asset managers (Figure 2).

1 An analysis method used to estimate the impact of policy changes and hazards associated with climate change on corporate value and securities value. For details, please refer to the "2025 Analysis of Climate-Related Risks in the GPIF Portfolios and ESG Controversies' Financial Impact," a report on MSCI's analysis for the preparation of this report.
2 The aggregation of the values for policy risks (e.g. the cost of reducing GHG emissions), technology opportunities (e.g. revenue from environmental technologies), and physical risks and opportunities (e.g. damage from climate change).
3 GPIF has not declared its endorsement to the TNFD, but we believe that nature-related risks, just like climate-related risks, can potentially affect assets under management through their impact on the corporate value of investee companies, and we monitor disclosures by companies.

Figure 1. Average Annual Losses Due to Extreme Weather in 2050



(Note) The numbers in parentheses next to each hazard risk indicate the percentage of the total portfolio assets that are affected.
(Source) Prepared by GPIF based on materials from MSCI.

Figure 2. "Excellent TNFD Disclosure" Rated Highly by at Least Three Asset Managers

Company Name	Votes
ASAHI GROUP HOLDINGS, LTD.	6 votes
KIRIN HOLDINGS CO., LTD.	6 votes
TOKYU FUDOSAN HOLDINGS CORP.	4 votes
SUMITOMO FORESTRY CO., LTD.	3 votes
OJI HOLDINGS CORP.	3 votes
NEC CORP.	3 votes
MITSUBISHI UFJ FINANCIAL GROUP, INC.	3 votes

(Note) Companies that received the same number of votes are listed in securities code order.
(Source) Prepared by GPIF

Analysis of the Disclosure of Sustainability-Related Financial Information and Controversies

In the 2024 Sustainability Investment Report, we present an analysis focusing not only on environmental theme but also social and governance themes.

To understand the status of companies' disclosure of sustainability-related financial information, we conducted an analysis of information disclosure across 17 themes such as "board structure," "supply chain," "climate change," "human rights & community," and "diversity." Our analysis included the percentage of companies disclosing information and a year-on-year comparison of the content of these disclosures. For example, regarding "board structure," we found that the proportion of companies in which the chief executive officer (CEO) is separate from the chairperson of the board is higher in Europe and North America than in Japan (Figure 3). At the same time, however, we found that the proportion among Japanese companies has doubled over the past four years and is continuing to trend upward.

We also conducted an analysis of corporate practices, including undisclosed information.[4] Comparing the gender pay gap based on median hourly wages, which represent workers' base salary, we found that the gender pay gap in Japan is approximately twice as large as in other regions. We commissioned S&P Global to provide analytical support.

Our analysis of information disclosure revealed that companies are not actively disclosing information related to their own controversies. In this context, we examined the overall characteristics of corporate controversies globally and analyzed the impact of controversies on corporate performance. A study of companies included in the MSCI World Index revealed a total of 3,525 incidents of controversies from December 2016 to May 2025, with the highest number of incidents (575) occurring in the category "bribery and fraud," which includes accounting fraud (Figure 4). We found that in Japan, Europe, and the Asia-Pacific (excluding Japan), the EPS growth rate for companies where controversies had occurred was lower than that of companies where no controversies had occurred.[5] We commissioned MSCI to provide analytical support.

Figure 3. Main Results of Our Analysis of the Disclosure of Sustainability-Related Financial Information

	Item	Japan	North America	Europe	Asia-Pacific
Governance	Separation of CEO and chairperson of the board	14%	39%	64%	22%
	Third-party assurance on integrated reports	58%	38%	80%	55%
Environmental	Third-party assurance on Scope 3 emissions	62%	48%	73%	36%
	Disclosure of commitment to biodiversity	62%	47%	56%	50%
Social	Human rights policy applicable to suppliers	75%	77%	88%	51%
	Disclosure of the number of incidents of corruption and bribery	38%	15%	47%	57%

(Source) Prepared by GPIF based on materials from S&P.

Figure 4. Number of Major Incidents of Controversies by Region and Content

Pillar	Sub-Pillar	Thematic Indicators	Japan	North America	Europe	Asia-Pacific
Environmental	Environmental	Toxic emissions & waste	4	41	26	35
Social	Customers	Anticompetitive practices	58	130	135	81
		Customer relations	15	106	81	68
		Marketing and advertising	5	52	30	21
		Product safety and quality	27	147	76	86
	Human rights concerns	Impact on local communities	9	81	34	48
	Labor rights	Collective bargaining & union	10	79	69	49
		Discrimination & workforce diversity	4	78	14	20
		Health & safety	16	93	28	109
		Labor management relations	27	134	58	105
		Supply chain labor standards	25	38	42	65
Governance	Governance	Bribery and fraud	55	159	109	252
		Governance structure	5	25	26	50

(Source) Prepared by GPIF based on materials from MSCI.

4 Although not publicly disclosed, these data are collected from the responses of various companies to surveys conducted by S&P Global.
5 However, different results may be obtained depending on the analysis methods, subjects, and periods analyzed.

Analysis of Portfolio Greenhouse Gas Emissions — Characteristics of GPIF's Portfolio —

In the first half of Chapter 3, we measure greenhouse gas emissions from the assets in GPIF's portfolio and analyze the portfolio's climate change risks. As a preliminary step, this section presents the characteristics of GPIF's portfolio and our measurements of greenhouse gas emissions per million yen of sales for each industry sector.

Characteristics of GPIF's Portfolio

In the first half of Chapter 3, we measure greenhouse gas emissions (hereinafter "GHG emissions"), analyze transition risks[1] and physical risks,[2] and analyze the implied temperature rise for the domestic and foreign equities within GPIF's portfolio, based on data as of March 31, 2025. Because analysis results are heavily influenced by the asset value and sector weighting of each asset class, it is important to understand the characteristics of our portfolio prior to interpreting these results.

GPIF's portfolio is composed of roughly half bonds and half equities by overall market value. As of March 31, 2025, domestic equities accounted for 23.94% of the total portfolio, foreign equities for 24.05%, domestic bonds for 27.64%, and foreign bonds for 24.37%. The majority of our bond portfolio, both domestic and foreign, consists of government bonds and government-related bonds, with a low proportion of corporate bonds (Figure 1). Looking at the GHG emissions for our portfolios of domestic equities, foreign equities, domestic corporate bonds, and foreign corporate bonds, it is apparent that GHG emissions from the bond portfolio account for a low proportion, less than 5%, indicating that bond portfolio has only a small impact on GPIF's overall portfolio (Figure 2). For this reason, the following analysis only considers the equities portfolio.

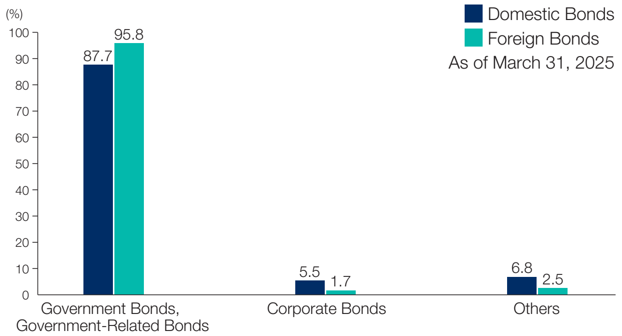
First, an examination of the composition of GPIF's equities portfolio by industry sector[3] reveals differences between domestic and foreign equities. (Figure 3). The largest sectors in the domestic equities portfolio, in order of proportion, are industrials, consumer discretionary, and financials. Whereas in the foreign equities portfolio, they are information technology, financials and healthcare.

The next figure (Figure 4) looks at characteristics of GHG emissions by industry sector. The data shown here is for GHG emissions per million yen of sales, to facilitate comparison between industry sectors. The scope of GHG emissions used in the analysis includes not only direct emissions by the company itself (Scope 1) and indirect emissions related to purchased electricity (Scope 2), but also indirect emissions from procured products and services other than purchased electricity (Scope 3 upstream) and indirect emissions from the consumption and use of sold products and services (Scope 3 downstream) (Figure 5). In our equities portfolio, emissions per million yen of sales were highest, in descending order, in the financials, industrials, and energy sectors for domestic equities, and the energy, industrials, and materials sectors for foreign equities. The energy, materials, and industrials sectors include companies with large direct and indirect emissions, while the financials sector includes the GHG emissions of investees and borrowers which explains why emissions per million yen of sales tend to be high for this sector.

It is necessary to bear in mind both the sector composition and tendency of sector GHG emissions when understanding the results of the analysis presented in the following sections. Around 90% of domestic equities and 80% of foreign equities in GPIF's equities portfolio are held through passive funds, which means our investment is largely identical to the sector ratios of each benchmark.

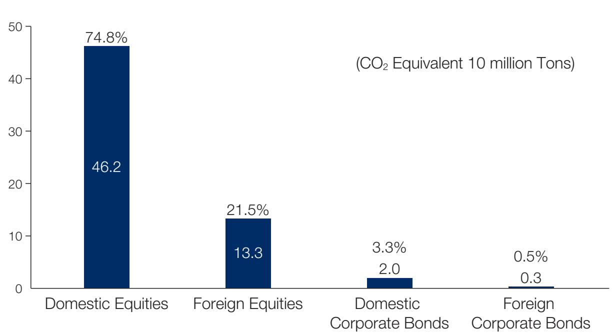
1 Transition risks are risks that arise from policy, technological innovation, demand change, etc. that accompany the transition to a low-carbon economy.
2 Physical risks are risks from direct damage to an asset, supply chain disruption, etc., caused by climate change.
3 Based on the 11 sectors of the Global Industry Classification Standard (GICS).

Figure 1. Breakdown by Category in GPIF Bond Portfolio



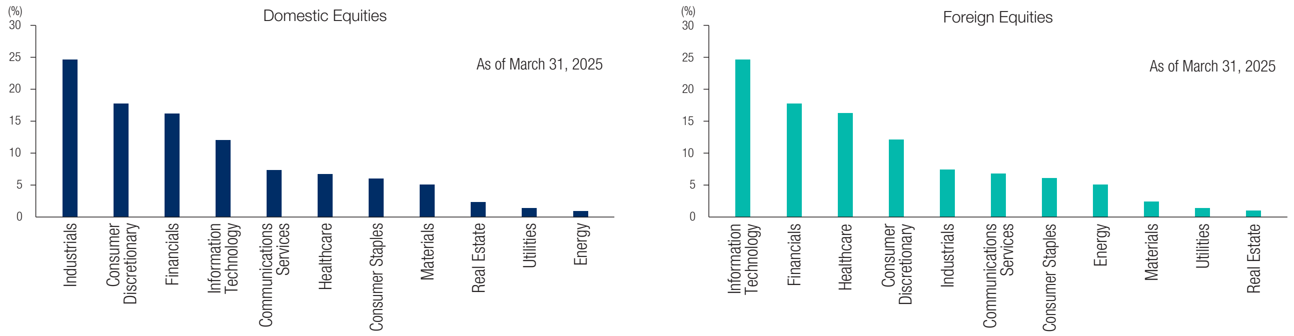
(Note) "Others" includes securitized products.
(Source) GPIF

Figure 2. Carbon Footprint of GPIF's Portfolio by Asset Class[4]



(Note) Carbon footprint is apportioned based on the percentage of the stocks/bonds holdings of the issuing companies. The apportionment is calculated using the size of the holding in stocks/bonds in the issuing companies at the time of analysis as the numerator and the enterprise value including cash (EVIC) as the denominator.
(Source) Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

Figure 3. Breakdown of GPIF Equities Portfolio by Sector Based on Total Market Value



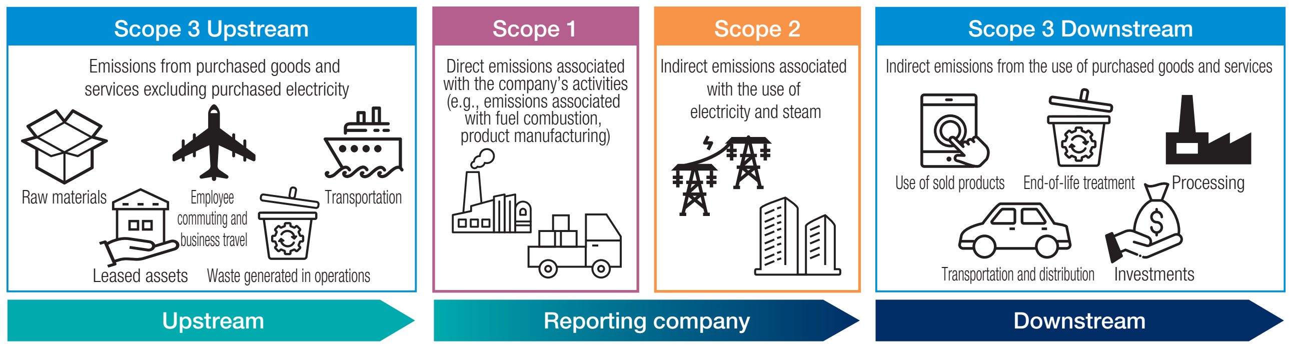
(Source) GPIF

Figure 4. Greenhouse Gas Emissions per Million Yen of Sales[4] (CO_2 Equivalent Tons)

	Energy	Materials	Industrials	Consumer Discretionary	Consumer Staples	Healthcare	Financials	Information Technology	Communications Services	Utilities	Real Estate
Domestic Equities	19.46	11.63	23.54	9.07	2.93	0.70	26.04	2.78	1.01	11.07	2.36
Foreign Equities	26.46	19.89	23.78	4.83	3.51	0.55	7.58	2.20	0.73	14.60	4.04

(Note) Carbon footprint is apportioned based on the percentage of the stocks holdings of the issuing companies. The apportion is calculated using the size of the holding in stocks in the issuing companies at the time of analysis as the numerator and the enterprise value including cash (EVIC) as the denominator.
(Source) Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

Figure 5. Greenhouse Gas Emissions by Scope



(Note) The above figure indicates the major sectors included in each scope.
(Source) Created by GPIF based on the Greenhouse Gas Protocol, etc.

4 The calculation scope of greenhouse gas emissions includes Scopes 1, 2, and 3. The year-to-year percentage changes in GHG emissions of top or bottom 1% have been excluded from calculations as outliers. Data is as of March 31, 2025 (GHG emissions data is calculated from available data as of March 31, 2025).

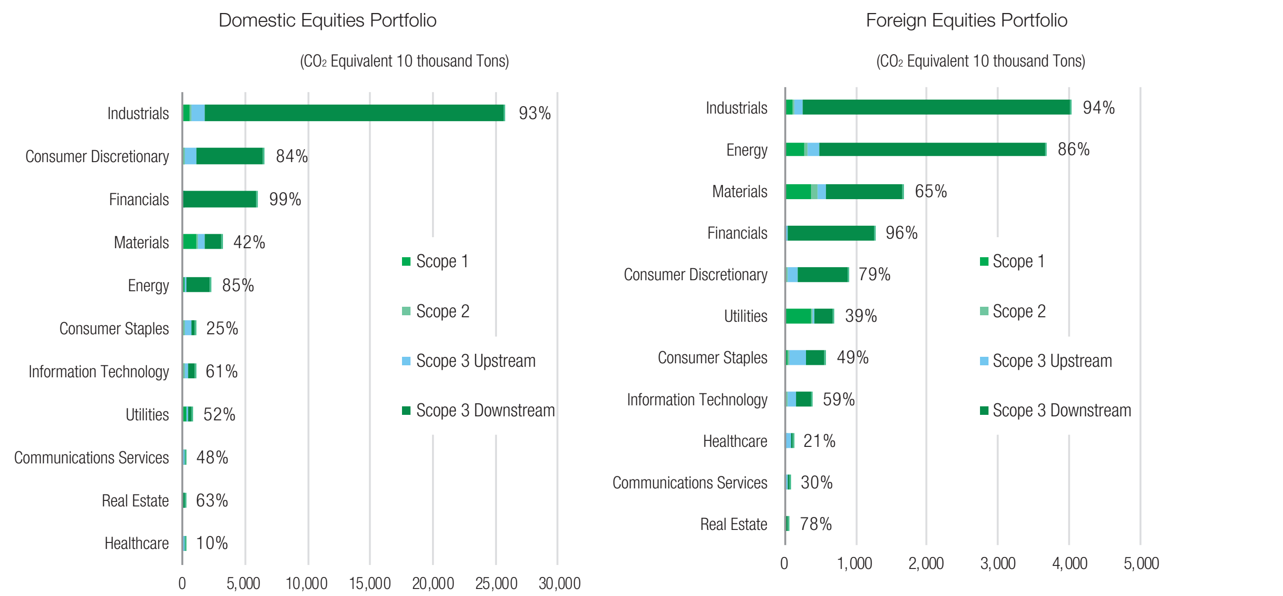
Analysis of Portfolio Greenhouse Gas Emissions — Carbon Footprint and Carbon Intensity —

GPIF measures the greenhouse gas emissions (carbon footprint) of the companies in our portfolio each year as part of our climate-related financial disclosures in line with the TCFD recommendations. The changes in greenhouse gas emissions in each asset class are significantly affected by the changes in stocks/bonds held and amounts held in GPIF's portfolio.

Greenhouse Gas Emissions by Sector Significantly Affected by Scope 3

Figure 1 shows greenhouse gas (GHG) emissions[1] for the equity portfolio at the end of fiscal 2024 by sector and by scope. This includes Scope 1, Scope 2, and Scope 3 GHG emissions. For both domestic and foreign equities, total emissions were greatest in the industrials sector. For foreign equities, total emissions were also high in the energy sector. Focusing on industry sectors with a particularly large proportion of Scope 3 Downstream emissions, the proportion was highest in the industrials, energy, and consumer discretionary sectors, as well as in the financials sector, which includes Scope 3 Downstream GHG emissions from investees and borrowers. Portfolios with a higher weighting of companies in these sectors require caution, as analysis results change significantly depending on whether or not Scope 3 is included in the calculation. In the analyses below, the top and bottom 1% in terms of year-to-year percentage change in GHG emissions have been excluded from our calculations as outliers. Additionally, for Scope 3, many companies do not disclose their emissions, and results are highly dependent on model estimates. Therefore, Scope 3 has been excluded from our analysis of historical trends and analysis of the main causes of change (Figure 3 and Figure 4 on page 66, Figure 6 and Figure 7 on page 67).

Figure 1. Greenhouse Gas Emissions by Industry Sector and Scope



(Note 1) Data available as of March 31, 2025.
(Note 2) Numbers on graph are the percentage of Scope 3 Downstream emissions to total emissions.
(Source) Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

1 GHG emissions are apportioned based on the percentage of the stocks holdings of the issuing companies. The apportion is calculated using the size of the holding in stocks in the issuing companies at the time of analysis as the numerator and the enterprise value including cash (EVIC) as the denominator.

Carbon Footprint (GHG Emissions) Analysis

Figure 2 shows the measurement of Scope 1–3 emissions for GPIF's equity portfolio as of the end of fiscal 2024. Total emissions are higher for domestic equities than for foreign equities, with levels roughly equivalent to those of the TOPIX for domestic equities and the MSCI ACWI ex Japan for foreign equities. This result is influenced by the relative size and sector of holdings of each asset class within GPIF's portfolio as shown in Figures 1 to 4 on page 64, as well as the proportion of the portfolio invested in passive funds. The breakdown of GHG emissions in domestic and foreign equities shows that Scope 3 accounts for the major proportion of total emissions.

Figure 3 shows the trend in GHG emissions (Scope 1+2), using 100 for fiscal 2016 emissions as a base. Emissions have generally been declining since fiscal 2016 for both domestic and foreign equities, and this trend continues in the most recent data.

Figure 4 shows the main causes of the change in GHG emissions (Scope 1+2) from fiscal 2023 to fiscal 2024. We have analyzed the causes of the decrease in GHG emissions in terms of "investee emissions," which represents the change due to GHG emissions by investee companies, "portfolio weighting," which represents the change due to the proportional weights of stocks and bonds in the portfolio, and "compound factors," which represents other causes. For domestic equities, GHG emissions decreased by 2.44 million tons year on year, mainly due to a decline in investee emissions, while for foreign equities, GHG emissions decreased by 2.67 million tons, primarily due to changes in portfolio weighting. (See Figure 8 on page 68 for the carbon footprint of the equities portfolio by industry sector and a factor breakdown by sector.)

Figure 2. Carbon Footprint by Scope

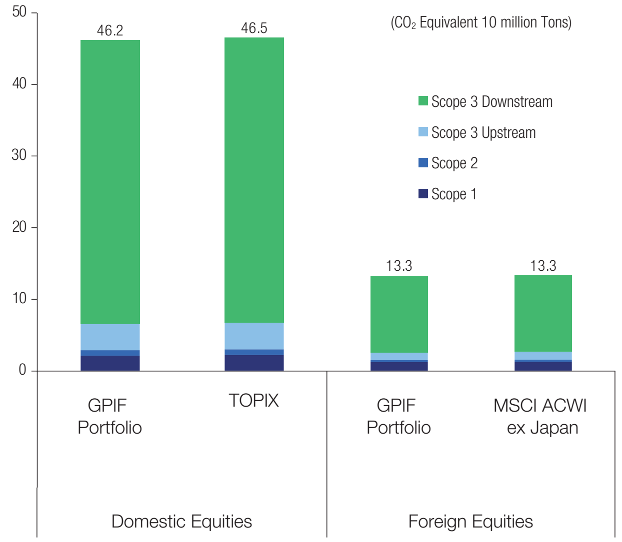
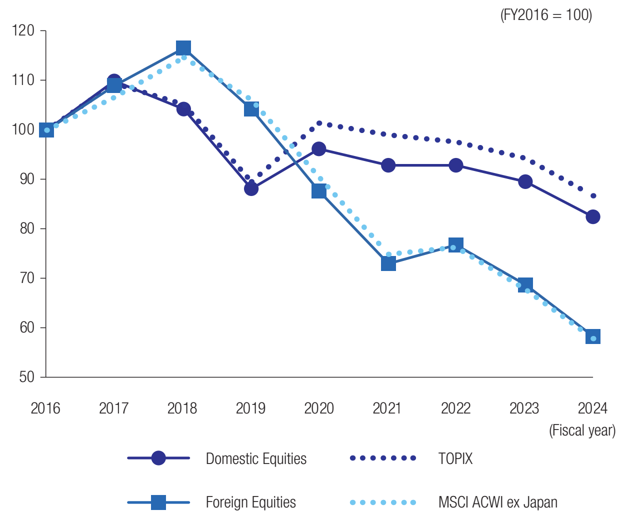


Figure 3. Carbon Footprint Trends



(Note) Data available as of March 31, 2025
(Note) Carbon footprint is calculated based on Scope 1+2
(Source) Figures 2 & 3: Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

Figure 4. Analysis of Main Causes of Change in Carbon Footprint

(CO_2 Equivalent 10 thousand Tons)

	Domestic Equities					Foreign Equities				
	Emissions	Change in emissions by factor				Emissions	Change in emissions by factor			
	in FY2024		Investee emissions	Portfolio weighting	Compound factors	in FY2024		Investee emissions	Portfolio weighting	Compound factors
GPIF Portfolio	2,880	-244	-213	-44	+13	1,495	-267	-70	-202	+4

(Note) Carbon footprint is calculated based on Scope 1+2
(Source) Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

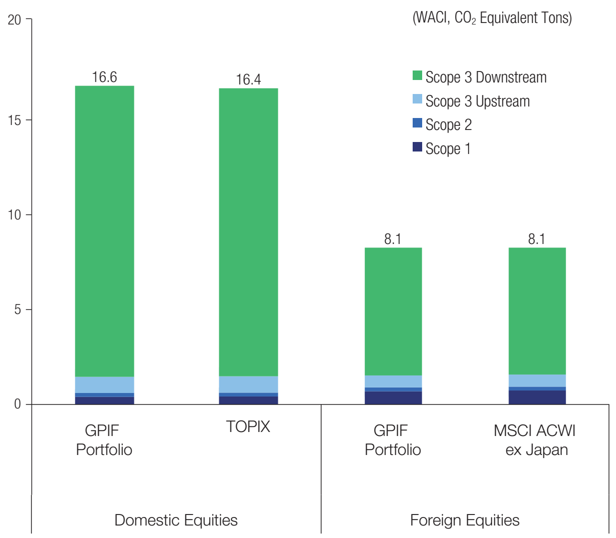
Carbon Intensity Analysis

Figure 5 measures Scope 1 to 3 carbon intensity for the equity portfolio at the end of fiscal 2024. For this analysis, weighted average carbon intensity (WACI), the disclosure of which is recommended by the TCFD, was used as the basis for the calculation of carbon intensity. WACI is a weighted average of GHG emissions[2] per million yen of sales, weighted by the portfolio holdings. WACI is higher for domestic equities than for foreign equities. The levels for domestic and foreign equities are roughly equivalent to those for the TOPIX and MSCI ACWI ex Japan, respectively. The WACI breakdown by asset class shows that Scope 3 accounts for the major proportion in both domestic and foreign equities.

Figure 6 shows the trend of WACI (Scope 1+2), using 100 for fiscal 2016 as a base. Emissions have generally been declining since fiscal 2016 for both domestic and foreign equities, a trend that has continued in the most recent data. These results are largely in line with the carbon footprint trends presented on page 66.

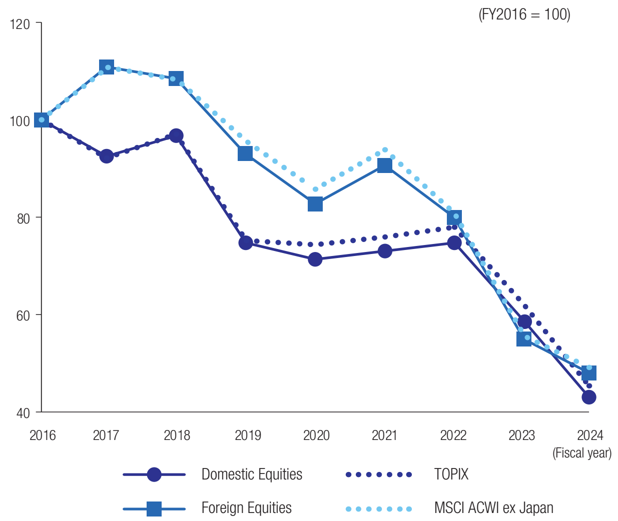
Figure 7 shows the main causes of the change in WACI (Scope 1+2) from fiscal 2023 to fiscal 2024. We have analyzed the causes of this change in terms of “investee carbon intensity,” which represents the change due to the carbon intensity (GHG emissions divided by net sales) of investee companies, “portfolio weighting,” which represents the change due to the proportional weights of stocks and bonds in the portfolio, and “compound factors,” which represents other causes. WACI decreased by 0.22 tons for domestic equities and 0.13 tons for foreign equities. In both cases, the decrease was mainly due to a decrease in investee carbon intensity, demonstrating that changes in GHG emissions per million yen of corporate sales are the main factor driving WACI downward. (See Figure 9 on page 68 for WACI by industry sector and a factor breakdown by sector for the equities portfolio.)

Figure 5. Weighted Average Carbon Intensity (WACI) by Scope



(Note) Data available as of March 31, 2025

Figure 6. Trends in Weighted Average Carbon Intensity (WACI)



(Note) WACI is calculated based on Scope 1+2

(Source) Figures 5 & 6: Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

Figure 7. Analysis of Main Causes of Change in Weighted Average Carbon Intensity (WACI)

(CO_2 Equivalent Tons)

	Domestic Equities					Foreign Equities				
	WACI in FY2024	Change in WACI by factor	Investee carbon intensity	Portfolio weighting	Compound factors	WACI in FY2024	Change in WACI by factor	Investee carbon intensity	Portfolio weighting	Compound factors
GPIF Portfolio	0.59	-0.22	-0.16	-0.07	+0.01	0.88	-0.13	-0.12	+0.01	-0.02

(Note) WACI is calculated based on Scope 1+2

(Source) Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

2 Based on unallocated GHG emissions

Analysis of the Main Causes of Changes in Carbon Footprint and Carbon Intensity in the Equities Portfolio by Sector

Figure 8 shows a breakdown by sector of the main causes of the change in GHG emissions (Scope 1+2) from fiscal 2023 to fiscal 2024, presented in Figure 4 on page 66. Figure 9 shows a breakdown by sector of the main causes of the change in WACI (Scope 1+2) from fiscal 2023 to fiscal 2024, presented in Figure 7 on page 67. Decreases in the materials and industrials sectors for domestic equities, and the materials and utilities sectors for foreign equities, have been largely responsible for the changes in both GHG emissions and WACI. The data in Figure 9 are shown in kilograms, as the amounts of WACI by industry sector are too small to display practically in tons.

Figure 8. Analysis of Main Causes of Change in Carbon Footprint (by Sector)

(CO_2 Equivalent 10 thousand Tons)

	Emissions in FY2024	Change in emissions by factor	Investee emissions	Portfolio weighting	Other factors	Emissions in FY2024	Change in emissions by factor	Investee emissions	Portfolio weighting	Other factors
	Domestic Equities					Foreign Equities				
Energy	190	+3	-7	+4	+7	311	-53	+4	-55	-1
Materials	1,268	-131	-137	-2	+8	454	-134	-31	-110	+7
Industrials	630	-72	-46	-22	-4	128	-6	+1	-8	+2
Consumer Discretionary	192	-15	-12	-4	+0	51	-4	+2	-7	+1
Consumer Staples	132	-3	-7	+4	-1	56	-13	-6	-5	-2
Healthcare	34	-2	-5	+3	-0	16	+0	+1	-1	+0
Financials	10	+2	+0	+1	+0	23	-0	-1	+0	+0
Information Technology	115	-2	-0	-3	+1	48	-7	-0	-6	-0
Communications Services	28	-2	-1	-1	+0	20	+2	+1	+1	-0
Utilities	272	-20	+2	-24	+1	381	-52	-42	-9	-1
Real Estate	10	-1	-1	-0	-0	7	-1	-0	-1	+0

(Note) Carbon footprint is calculated based on Scope 1+2

Figure 9. Analysis of Main Causes of Change in Weighted Average Carbon Intensity (WACI) (By Sector)

(CO_2 Equivalent kilogram)

	WACI in FY2024	Change in WACI by factor	Investee carbon intensity	Portfolio weighting	Compound factors	WACI in FY2024	Change in WACI by factor	Investee carbon intensity	Portfolio weighting	Compound factors
	Domestic Equities					Foreign Equities				
Energy	18	-5	-3	-2	+0	127	+0	+9	-8	-1
Materials	204	-83	-59	-31	+6	198	-40	-18	-22	+1
Industrials	143	-56	-45	-13	+1	72	-12	-9	-2	-0
Consumer Discretionary	43	-14	-11	-5	+2	35	-8	-7	-2	+1
Consumer Staples	28	-5	-5	-1	+0	21	-6	-5	-2	-0
Healthcare	18	-3	-3	-0	+0	13	-3	-2	-1	+0
Financials	11	+1	-0	+2	-0	19	-1	-4	+4	-1
Information Technology	38	-13	-5	-11	+3	50	-5	+2	-7	-1
Communications Services	14	-1	-1	+1	-0	19	+1	-1	+2	-0
Utilities	66	-35	-30	-7	+2	308	-52	-90	+52	-14
Real Estate	5	-1	-1	-1	-0	13	-1	-1	+0	-0

(Note) WACI is calculated based on Scope 1+2

(Source) Figures 8 & 9: Prepared by GPIF based on data from S&P. S&P Global Sustainable1, S&P Trucost Limited Copyright © 2025 S&P Global Inc.

Financial Impact
— Climate VaR Analysis —

While addressing climate change risks imposes costs on companies, it is also expected to provide increased revenue opportunities as demand for environmental technologies grows. The impact of both on GPIF's equities portfolio indicates that prices could change by between +5.7% and -8.8% for domestic equities and between -3.0% and -9.2% for foreign equities under each scenario.

Analysis of Equities Portfolio Using Climate Value-at-Risk

This section uses Climate Value-at-Risk (CVaR)[1] to analyze the climate change risk to equities. CVaR is a metric for estimating the impact of climate change on corporate value under various scenarios published by the Network of Central Banks and Supervisors for Greening the Financial System (NGFS), which is composed of the central banks and financial supervisory authorities of major countries, and others. Specifically, CVaR estimates impact from the three perspectives: policy risks (e.g. the cost of reducing GHG emissions), technology opportunities (e.g. revenue from environmental technologies), and physical risks and opportunities (e.g. damage from climate change). This report summarizes how GPIF's portfolio would be impacted under each of the NGFS scenarios.

An outline of the eight baseline scenarios is presented in Figure 1. These scenarios cover three major cases with temperature increases of +1.5°C, +2.0°C and +3.0°C. Variations are added to each of the three major cases to account for differences in factors such as the timing of policy introduction and the speed of technological change, resulting in the eight baseline scenarios.

Figure 1. NGFS Climate Change Scenarios

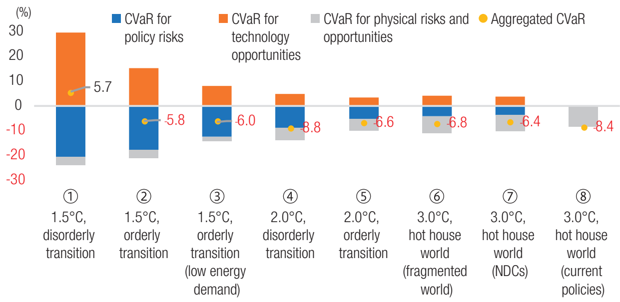
	Baseline Scenario	Temperature Increase	Scenario	Policy Introduction	Technological Change
①	1.5°C, disorderly transition	+1.5℃	Divergent Net Zero	Immediate but divergent across sectors	Fast
②	1.5°C, orderly transition	+1.5℃	Net Zero 2050	Immediate and smooth	Fast
③	1.5°C, orderly transition (low energy demand) (Note)	+1.5℃	Low demand	Immediate and smooth	Fast
④	2.0°C, disorderly transition	+2.0℃	Delayed transition	Delayed	Slow
⑤	2.0°C, orderly transition	+2.0℃	Below 2°C	Immediate and smooth	Moderate
⑥	3.0°C, hot house world (fragmented world)	+3.0℃	Fragmented world	Delayed and fragmented	Slow/fragmented
⑦	3.0°C, hot house world (NDCs)	+3.0℃	Nationally Determined Contributions (NDCs)	NDCs	Slow
⑧	3.0°C, hot house world (current policies)	+3.0℃	Current policies	None (current policies)	Slow

(Note) Scenario assumes decline in energy demand due to reduced emissions, introduction of technology and behavioral changes
(Source) Prepared by GPIF based on data from MSCI.

In this section, we examine the results of an analysis of CVaR by scenario for GPIF's equities portfolio as of March 31, 2025. Our analysis of the factors of CVaR by scenario, shown in Figures 2 and 3, indicates that as scenarios approach Net Zero 2050, policy risks become increasingly negative because of the introduction of stricter environmental regulations on companies. Meanwhile, physical risks and opportunities become less negative because the physical impacts of climate change will be mitigated under these scenarios. Additionally, technology opportunities become more positive due to increased revenue opportunities resulting from increased demand for environmental technologies. While CVaR of domestic and foreign equities exhibit a similar trend overall, the positive contribution of technology opportunities is relatively larger for domestic equities. Looking at aggregated CVaR, which is the total of CVaR for policy risks, technology opportunities, and physical risks and opportunities, we observe that while for foreign equities the most negative aggregated CVaR is estimated under "1.5°C, disorderly transition" scenario, for domestic equities, this scenario is the only one that results in a positive aggregated CVaR.

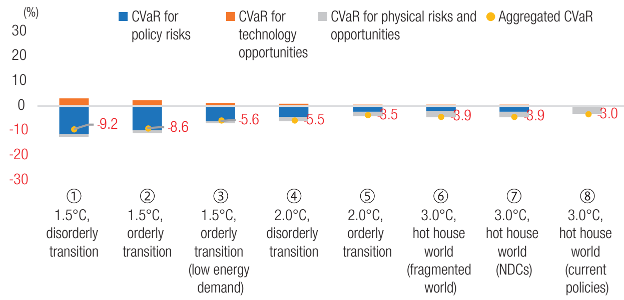
1 Climate Value-at-Risk (CVaR) is an analysis method used to estimate the impact of policy changes and hazards associated with climate change on corporate value and securities value. For details including data that could not be published due to space limitations, please refer to the "2025 Analysis of Climate-Related Risks in the GPIF Portfolios and ESG Controversies' Financial Impact," a report on MSCI's analysis.

Figure 2. CVaR of the Domestic Equities Portfolio



(Source) Prepared by GPIF based on data from MSCI.

Figure 3. CVaR of the Foreign Equities Portfolio

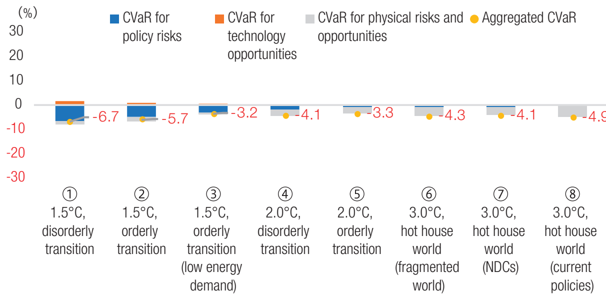


(Source) Prepared by GPIF based on data from MSCI.

Column
Analysis of Private Equity Climate VaR

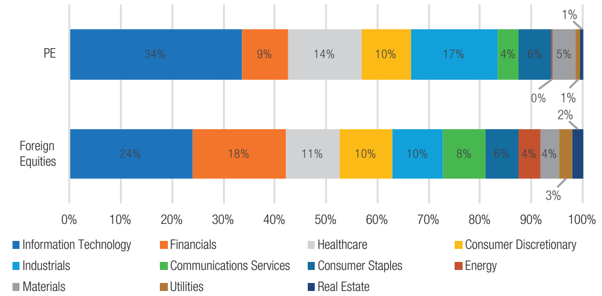
In this analysis, we estimate CVaR of each private equity (PE) investee to calculate the CVaR of GPIF's entire PE portfolio.[2] An examination of the composition of the constituents of GPIF's PE portfolio by region reveals that over 60% are based in the United States, a similar percentage to the foreign equities portfolio. Given this fact, we have analyzed the CVaR of the PE portfolio through a comparison with the foreign equities portfolio.

Figure 4. CVaR of the Private Equity Portfolio



(Source) Prepared by GPIF based on data from MSCI.

Figure 5. Portfolio Composition by Sector



(Source) Prepared by GPIF based on data from MSCI.

In GPIF's PE portfolio, the most negative aggregated CVaR was estimated for the "1.5°C, disorderly transition" scenario, followed by the "1.5°C, orderly transition" scenario, which also resulted in a large negative value (Figure 4). This result is the same as for GPIF's foreign equities portfolio (Figure 3). However, whereas the foreign equities portfolio recorded a larger negative aggregated CVaR for the 1.5°C scenarios, where the impact of policy risks was large, the PE portfolio recorded a larger negative aggregated CVaR for the 3.0°C scenarios, where the impact of policy risks was small.

Comparing the sector composition of the PE portfolio with that of the foreign equities portfolio, we see that energy, which has high GHG emissions, accounts for a relatively smaller percentage of the PE portfolio. On the other hand, information technology and healthcare, which have low GHG emissions, account for a relatively larger share. In other words, the composition of the PE portfolio is relatively weighted toward low-carbon industries (Figure 5). As a result, we infer that under the 1.5°C scenarios, where policy risks have a significant negative impact on sectors with high GHG emissions, the negative impact on aggregated CVaR is milder in the PE portfolio than the foreign equities portfolio. At the same time, however, it should be noted that the negative impact of physical risks and opportunities, another component of CVaR, is actually slightly larger for the PE portfolio.

2 For details of the differences between the methodology used to calculate CVaR in the equities and PE portfolios, please refer to the "2025 Analysis of Climate-Related Risks in the GPIF Portfolios and ESG Controversies' Financial Impact."

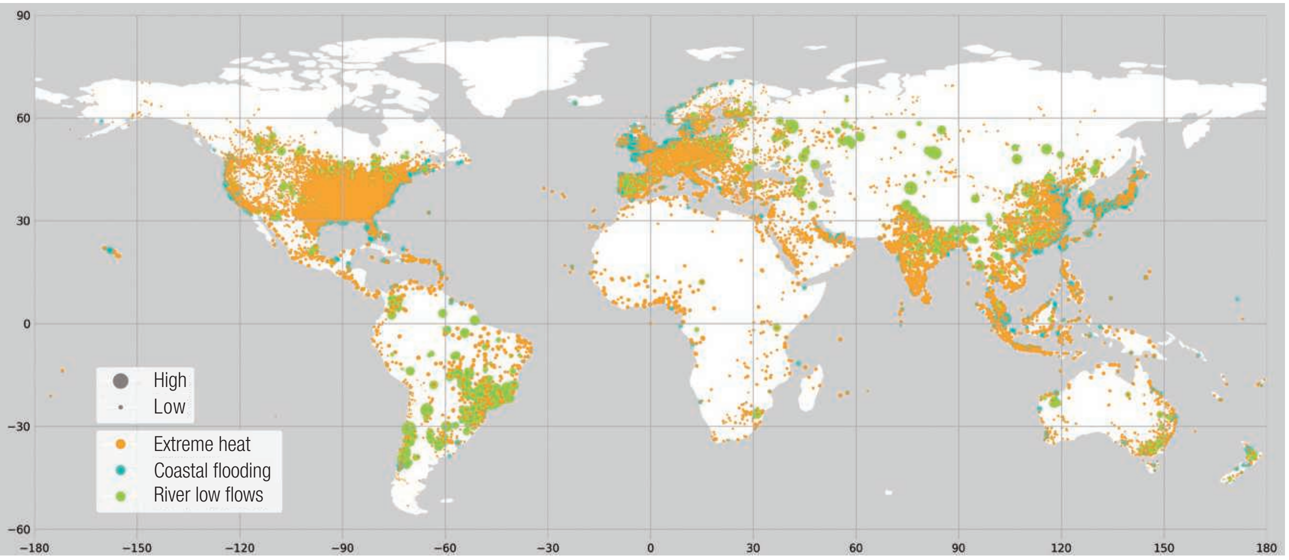
Analysis of Physical Risks and Opportunities by Type of Hazard Risk

For the 2024 Sustainability Investment Report, we have attempted an analysis focusing on physical risks and opportunities. To measure CVaR for physical risks and opportunities, we used climate-related data based on observations and forecasts from the latest climate models to estimate the corporate financial impact of the extreme weather events, both chronic and acute, anticipated to occur by the end of the 21st century, by region and sector. In doing this, we classified weather hazard risks into two categories: 'chronic' and 'acute,' depending on their nature. We analyzed a total of 11 types of hazard risk.[3]

This year, we used MSCI's GeoSpatial Asset Intelligence to conduct an analysis at the level of individual corporate assets. Specifically, we calculated the expected loss from weather hazards of each specific scale by multiplying the amounts of asset damage and revenue loss by the frequency of the hazard occurrence. By aggregating the expected losses from weather hazards of a range of scales, we estimated the average annual expected loss for each type of hazard.

Figure 6 plots on a world map the hazards expected to increase the average annual loss on the assets in GPIF's equity portfolio the most from 2025 to 2050, under the "3.0°C, hot house world (current policies)" scenario. For this plot, we selected three types of hazard expected to have a relatively large impact on these assets: "extreme heat," "coastal flooding," and "river low flows." We found that while "extreme heat" affects a wide range of assets, its contribution to increasing the average annual loss is relatively small. By contrast, while the distribution of assets affected by "coastal flooding" and "river low flows" is less widespread than that of "extreme heat," these hazards tend to cause a greater increase in the average annual loss.

Figure 6. Geographical Distribution of Weather Hazard Risk in GPIF's Equities Portfolio



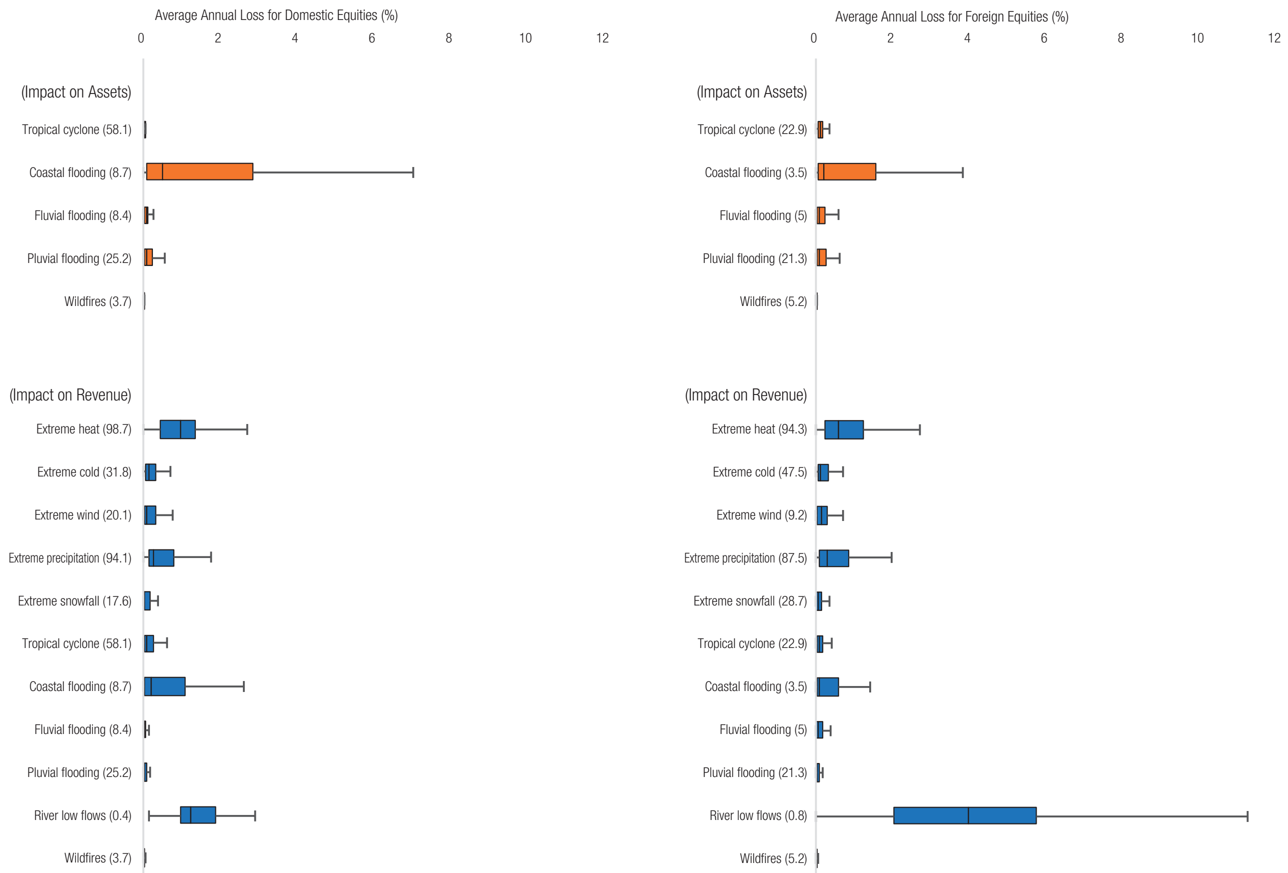
(Note) This figure plots assets held by the constituents of GPIF's equities portfolio. The size of each dot represents the size of the increase in the average annual loss from 2025 to 2050, under the "3.0°C, hot house world (current policies)" scenario.
(Source) Prepared by GPIF based on data from MSCI.

Figure 7 presents an aggregation of the impact of physical risks and opportunities on assets and revenue at the portfolio level, as of 2050, under the "3.0°C, hot house world (current policies)" scenario. In the case of domestic equities, while the percentage of all assets affected by "coastal flooding" is limited, at 8.7%, the average annual loss is highest for this type of hazard, indicating a serious physical risk. Meanwhile, looking at impact on revenue, while "extreme heat" affects 98.7% of all assets, its impact on the revenue from these assets is only moderate. By contrast, while the percentage of all assets affected by the "river low flows" is extremely small at only 0.4%, the impact of this hazard on asset revenue is greater than that of "extreme heat," suggesting a significant, although localized, impact (Figure 7, left panel).

The risk structure in the foreign equities portfolio is generally similar to domestic equities. However, we found that the impact on assets from "coastal flooding," although larger than other hazards, was not as serious as for domestic equities. Regarding impact on revenue, on the other hand, while the "river low flows" affected only a small percentage of assets—less than 1%—its impact on asset revenue was higher than that of domestic equities (Figure 7, right panel).

Regarding the domestic equities portfolio, looking at the trend in the percentage of assets exposed to "coastal flooding," the hazard for which the average annual loss on assets is the highest, we forecast a gradual increase from 8.3% in 2030 to 8.7% in 2050, reaching 9.2% in 2100 under the "3.0°C, hot house world (current policies)" scenario. Likewise, we found that analyzing longer periods results in an increase in the third quartile (75th percentile) of the average annual loss. This trend is also apparent in other acute risks such as "tropical cyclone," "fluvial flooding," and "wildfires," suggesting that physical risks may increase with rising temperatures and the passage of time.

Figure 7. Impact of Physical Risks and Opportunities on Assets and Revenue in 2050 Under the "3.0°C, Hot House World (Current Policies)" Scenario (Left Panel: Domestic Equities; Right Panel: Foreign Equities)



(Note 1) This figure is a box-and-whisker plot (also known as a box plot), which is widely used to visualize the distribution and variance characteristics of a data set. The box represents the range from the first quartile (25th percentile) to the third quartile (75th percentile), and the vertical line through the box represents the median (50th percentile). The whiskers to the left and right of the box represent the range from 1.5 times the interquartile range (IQR) to left the first quartile to 1.5 times the IQR to right the third quartile.
(Note 2) The numbers in parentheses next to each hazard risk indicate the percentage (%) of all portfolio assets affected.
(Source) Prepared by GPIF based on data from MSCI.

3 The chronic risks encompass five types of weather hazards: "extreme heat," "extreme cold," "extreme wind," "extreme precipitation," and "extreme snowfall." Acute risks encompass six types of weather hazard: "tropical cyclone," "coastal flooding," "fluvial flooding," "pluvial flooding," "river low flows," and "wildfires."

Impact on the Environment and Climate — Implied Temperature Rise Analysis —

Based on projected GHG emissions from the companies in GPIF's portfolio through 2050, we evaluated their potential impact on global warming in terms of the rise in temperature. By asset class, we found an implied temperature rise of 2.4°C for domestic equities and 2.6°C for foreign equities, indicating an overall rise exceeding 2°C.

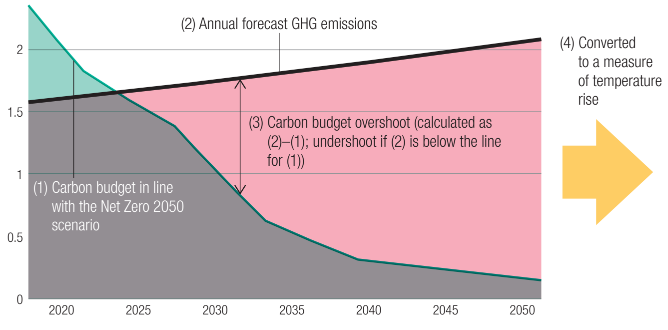
Implied Temperature Rise Analysis of GPIF's Portfolio

In this section, we examine the results of our analysis using MSCI's Implied Temperature Rise (ITR). ITR evaluates, based on a company's projected greenhouse gas (GHG) emissions, the extent to which those emissions may contribute to global warming, using the ITR metric.

Implied temperature rise (ITR) is estimated using the following steps. (1) We calculate the carbon budget[1] available to individual companies based on NGFS[2] the Net Zero 2050 scenario. In doing this, we consider elements such as the company's present revenue, carbon intensity, and the emissions reduction pathways for each sector indicated in the NGFS scenario. (2) We forecast future GHG emissions based on each company's current GHG emissions and a target credibility assessment[3] of its declared emissions reduction targets. (3) We calculate the relative overshoot (or undershoot) from each company's allocated carbon budget by dividing the difference between (1) and (2) by (1). (4) We then multiply the result of (3) by both the global-level carbon budget aligned with the 1.5°C target and the Transient Climate Response to Cumulative Emissions (TCRE) factor.[4] The TCRE factor represents the relationship between GHG emissions and temperature rise. This calculation helps convert each company's projected emissions into a measure of temperature increase (in °C). (See Figure 1, left panel.)

The results of the analysis indicate that the implied temperature rise across GPIF's portfolio is 2.4°C for domestic equities, 2.4°C for domestic bonds, 2.6°C for foreign equities, and 2.6°C for foreign bonds as of March 31, 2025. The levels of ITR are slightly lower for domestic assets than for foreign assets. Looking at the changes since last fiscal year, while ITR was unchanged for foreign equities, it trended upward slightly for foreign bonds, domestic equities, and domestic bonds (Figure 1, right panel). In the following section, we present an analysis focusing on the year-on-year changes in ITR for these four asset classes.

Figure 1. Temperature Rise Potential in GPIF Portfolio



Domestic Equities		Domestic Bonds	
Fiscal 2024	YoY change	Fiscal 2024	YoY change
2.4℃	+0.1℃	2.4℃	+0.2℃
Foreign Equities		**Foreign Bonds**	
Fiscal 2024	YoY change	Fiscal 2024	YoY change
2.6℃	±0℃	2.6℃	+0.1℃

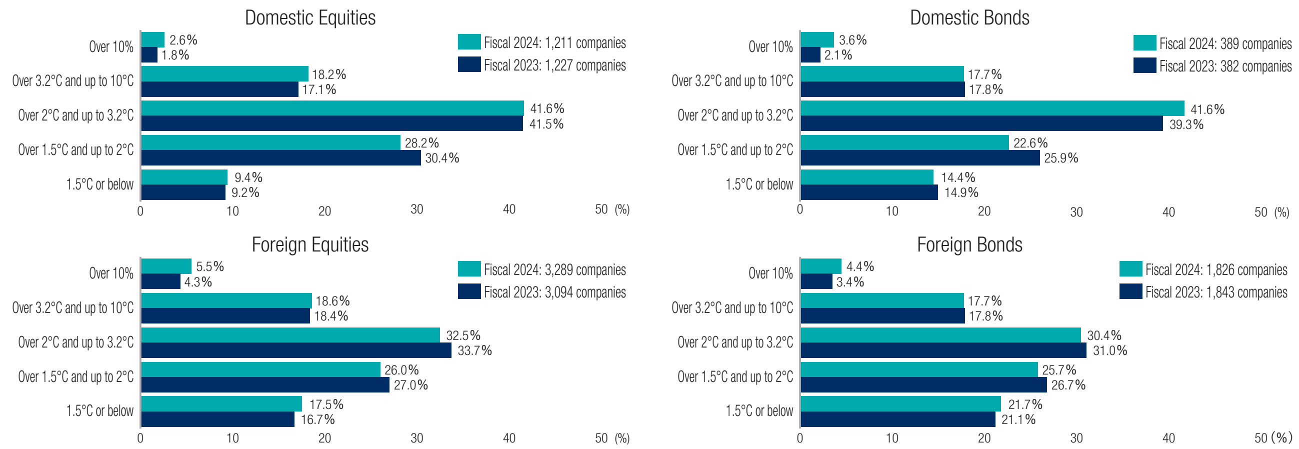
(Source) GPIF, Reproduced by permission of MSCI ESG Research LLC ©2025. All rights reserved.

1 The carbon budget is the upper limit of allowable GHG emissions before the rise in global temperature reaches a specified threshold.
2 The Network of Central Banks and Supervisors for Greening the Financial System (NGFS) is an international network of the central banks and financial supervisory authorities of major countries.
3 MSCI conducts the target credibility assessment of GHG emissions reduction targets using four perspectives: (1) short-term targets set for each emissions scope, (2) third-party verification by the Science Based Targets initiative (SBTi), (3) past GHG emissions (results)were in line with the targets and (4) progress towards current targets.
4 This factor indicates the contribution of the releasing 1Gt of GHG emissions to temperature rise, based on scientific findings.

Analysis of Changes in Implied Temperature Rise over Time

Figure 2 shows the distribution of companies by ITR level across GPIF's domestic equities, domestic bonds, foreign equities, and foreign bonds portfolios. The percentage of companies with an ITR of over 10°C has increased in both the domestic and foreign portfolios. On the other hand, the domestic and foreign portfolios show differing trends for the percentage of companies with an ITR of 1.5°C or below: while the percentage has risen in the foreign equities and foreign bonds portfolios, the increase for domestic equities has been minimal, and the percentage has actually decreased for domestic bonds.

Figure 2. Distribution of Companies in GPIF's Portfolio Across Four Asset Classes (by Level of ITR)

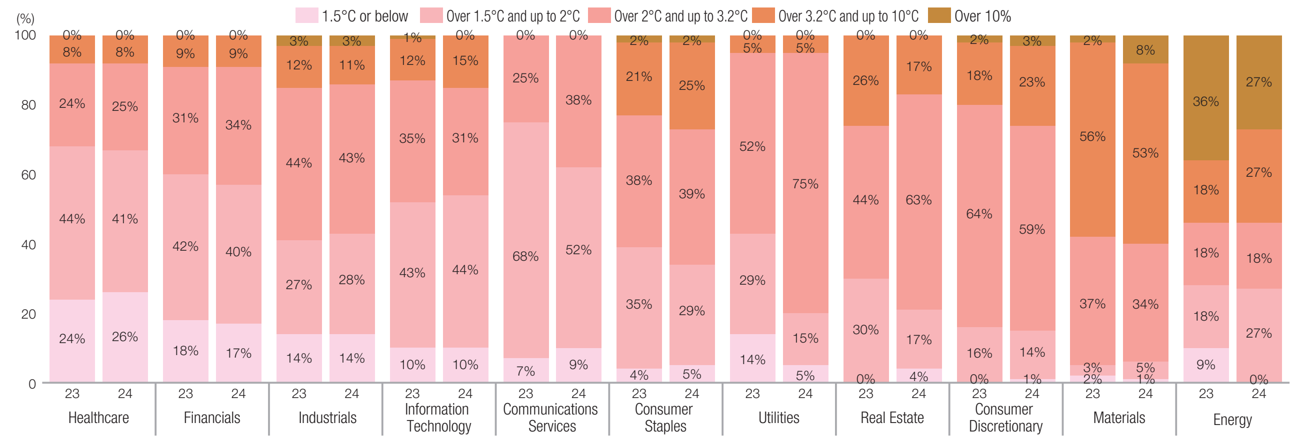


(Note) Only companies for which ITR evaluations exist as of March 31, 2024 and March 31, 2025 have been included.
(Source) GPIF, Reproduced by permission of MSCI ESG Research LLC ©2025. All rights reserved.

Figure 3 shows the distribution of the companies in GPIF's domestic equities portfolio by level of ITR and sector. Some improvement is apparent in the energy sector, which has high GHG emissions, with the percentage of companies with an ITR level of over 10°C decreasing through fiscal 2024. On the other hand, the percentage of companies in this sector with an ITR level of 1.5°C or below has also declined to 0%. In the utilities and materials sectors, which likewise have high GHG emissions, the proportion of companies with high ITR levels has been increasing overall. Meanwhile, the healthcare and financial sectors, which have low GHG emissions, have retained a high proportion of companies with an ITR level of 2°C or below.

In this way, while the ITR level of the entire portfolio has changed little over time, an analysis focusing on the attributes of the constituent companies (ITR level and sector) may provide new insights into the progress of measures to address climate change risk in each sector. If there is a large turnover in portfolio constituents, however, the analysis should take the impact of this turnover into account.

Figure 3. Distribution of Companies in GPIF's Domestic Equities Portfolio (by Level of ITR and Sector)



(Note) Only companies for which ITR evaluations exist as of March 31, 2024 and March 31, 2025 have been included.
(Source) GPIF, Reproduced by permission of MSCI ESG Research LLC ©2025. All rights reserved.

"Excellent TNFD Disclosure" Selected by Our Domestic Equities Asset Managers

GPIF requested its external asset managers who are entrusted with domestic equity investment to select companies with "excellent TNFD disclosure." As a result, 28 companies with "excellent TNFD disclosure" were nominated by 20 domestic equities asset managers. Among these, the disclosures of seven companies received high evaluations by at least three asset managers.

28 Companies with "Excellent TNFD Disclosure"

The long-term enhancement of the corporate value of investee companies and the sustainable growth of the overall market are essential for GPIF to increase its investment returns over the long term. For this reason, we undertake a range of activities to promote constructive dialogue (engagement) between our asset managers and investee companies. As part of these initiatives, GPIF published the "Excellent Disclosure Series," selected by its asset managers to encourage disclose of information by companies that serve as fundamental basis for engagement. Since fiscal 2021, we have asked our external asset managers entrusted with equity investment to select companies with excellent disclosure based on the recommendations of the Task Force on Climate-related Financial Disclosures (TCFD), and announced the results.

In the 2024 Sustainability Investment Report, we announced a new initiative: "Excellent TNFD Disclosure," selected by our domestic equities asset managers.

The Taskforce on Nature-related Financial Disclosures (TNFD) was established in 2021 to develop an international framework for organizations to evaluate and disclose risks and opportunities related to natural capital and biodiversity. It released its final recommendations in 2023, encouraging companies to disclose information on the financial impact of risks and opportunities associated with nature-related issues based on four pillars: governance, strategy, risk and impact management, and metrics and targets. In GPIF's fiscal 2024 survey of listed companies, respondents cited the current shortage of exemplary disclosure by other companies as a challenge in providing information in line with the TNFD recommendations.

We therefore requested 20 asset managers for domestic equities to select up to three companies with "excellent TNFD disclosure," as examples of companies that emphasize issues such as natural capital and biodiversity into management. All asset managers responded, resulting in the selection of 28 companies engaged in "excellent TNFD disclosure" (Figure). Among these, the disclosures of seven companies were highly rated by at least three asset managers.

Figure. Companies selected by GPIF's domestic equities asset managers for Excellent TNFD Disclosure

Securities Code	Company Name	Votes
1802	OBAYASHI CORP.	1
1803	SHIMIZU CORP.	2
1911	SUMITOMO FORESTRY CO., LTD.	3
2502	ASAHI GROUP HOLDINGS, LTD.	6
2503	KIRIN HOLDINGS CO., LTD.	6
2802	AJINOMOTO CO., INC.	2
3289	TOKYU FUDOSAN HOLDINGS CORP.	4
3861	OJI HOLDINGS CORP.	3
4307	NOMURA RESEARCH INSTITUTE, LTD.	1
4452	KAO CORP.	2
4540	TSUMURA & CO.	1
4568	DAIICHI SANKYO CO., LTD.	1
4911	SHISEIDO CO., LTD.	1
6326	KUBOTA CORP.	2
6504	FUJI ELECTRIC CO., LTD.	1
6701	NEC CORP.	3
6758	SONY GROUP CORP.	2
7004	KANADEVIA CORP.	1
7752	RICOH CO., LTD.	1
7951	YAMAHA CORP.	1
8053	SUMITOMO CORP.	1
8306	MITSUBISHI UFJ FINANCIAL GROUP, INC.	3
8316	SUMITOMO MITSUI FINANCIAL GROUP, INC.	1
8750	DAI-ICHI LIFE HOLDINGS, INC.	1
8801	MITSUI FUDOSAN CO., LTD.	1
9101	NIPPON YUSEN K.K.	1
9433	KDDI CORP.	1
9984	SOFTBANK GROUP CORP.	1

(Note) The above list is composed of companies whose TNFD disclosure were selected by external asset managers as "excellent TNFD disclosure." Listed in securities code order. The companies highlighted in blue received multiple votes.

Comments on "Excellent TNFD Disclosure" Selected by at Least Three Asset Managers

In this section, we present asset managers' comments on the disclosure of seven companies selected for "excellent TNFD disclosure" by at least three asset managers.

ASAHI GROUP HOLDINGS, LTD. (6 votes)

- The company conducted a comprehensive LEAP analysis to thoroughly understand nature-related risks and disclosed strategies to address the identified risks. Starting this year, Asahi has integrated TCFD and TNFD, recognizing the close interconnection between climate change and natural capital, particularly concerning water and agricultural products.
- The company's integrated TCFD/TNFD disclosures have maintained readability, unlike many such integrated disclosures, and its comprehensive analysis makes it easier for users to grasp the overall picture of risks and opportunities the company faces.
- In addition to comprehensively analyzing the supply chain based on the integrated TNFD and TCFD framework, the company is also commended for the detailed information it discloses regarding the impact of agricultural raw materials by country. Going forward, we expect to see the status of implementation of countermeasures.
- (1) Quantified financial impact disclosed – deep dive on two agricultural commodities (hop and barley) to assess financial impact (2) Complete LEAP analysis including the P (Prepare)
- The company analyzed the impact on the procurement of agricultural raw materials, including financial effects, in a way that also integrated the TCFD framework. For its main ingredients, barley and hops, it applied the LEAP approach[1] to analyze the impact on farms in important production countries, detailing specific measures to prevent and recover from natural degradation. We rated it highly overall.
- The company's analysis integrated the TCFD and TNFD frameworks. It systematically and concisely organized information, from the selection of the analysis targets to incorporation into the roadmap. This made it easy to visualize the path to the company's vision.

KIRIN HOLDINGS CO., LTD. (6 votes)

- The report includes the key elements (reporting using the LEAP approach, scenario analysis, heatmap of dependencies and risks). Furthermore, the company quantifies the financial impact assessment by theme and topic, commits to being Nature Positive by 2030 using the AR3T framework[2] proposed by the SBTN, and also lays out a clear roadmap to meet all TNFD disclosure standards by 2026.
- The company clearly demonstrates the dependence and impact of the entire value chain on natural capital, and is commended for providing disclosures that enable a good understanding of the concrete financial impact and relevance to business strategies.
- The company's disclosures integrate the TCFD and TNFD frameworks, and it conducts an analysis by country and raw materials. We appreciate the detailed and comprehensive disclosure, including individual cases.
- The company carefully covers each item in the TNFD recommendations. It estimates financial impact and explicitly evaluates resilience. The fact that KPIs are linked to remuneration is also outstanding. The company is commended for showing the links between its transition plan, investment plan, and funding plan.
- In addition to the detailed individual analyses, we appreciate the company's comprehensive assessment based on analyses using both the TCFD and TNFD frameworks.
- Kirin conducts extensive, location-specific materiality assessments of their nature-related impacts and dependencies. In particular, Kirin's Metrics and Targets disclosure stands out. Kirin's targets surrounding use of biological/water resources and containers and packaging are progressive and clearly-defined. Kirin also provides updates on progress against targets and strategies implemented to mitigate nature-related impacts from business activities.

1 The LEAP approach is a framework proposed by the TNFD for companies to evaluate their dependence and impact on natural capital and the associated risks and opportunities. After Scoping, the LEAP approach comprises four steps: Locate, Evaluate, Assess, and Prepare.
2 AR3T is an acronym of Avoid, Reduce, Regenerate & Restore, and Transform. The purpose of the AR3T framework is to help companies prioritize their actions toward nature.

✦ TOKYU FUDOSAN HOLDINGS CORP. (4 votes)

- In 2023, the company announced the industry's first TNFD Report (First Edition), which has been revised into the TNFD Report (Third Edition) along with the progressive expansion of targets for urban and resort development. The comprehensive LEAP analysis of on-site natural dependence and impact, as well as risks and opportunities, is particularly significant, as the company is among the first in the industry to disclose this information.
- The company provides a valuable quantitative analysis of its contributions to nature-positive initiatives in the greater Shibuya area and Tokyu Resort Town Tateshina. It clearly conveys an image of the co-creation of value for both the community and the company.
- The company is commended for conducting a LEAP analysis using the results of its own surveys and big data. Its disclosures integrating the TCFD framework, transition plan, and TNFD framework is the first attempt in the industry. It has implemented a PDCA cycle, including successive disclosures incorporating beta versions of the TNFD framework, with a progressively expanding scope.
- The company provides a clear analysis of changes in the percentage of green areas, demonstrating the limitation of negative impacts and the transition toward a nature-positive state. It also presents both detailed analyses and specific examples, such as its contributions to Tateshina.

✦ SUMITOMO FORESTRY CO., LTD. (3 votes)

- The company conducts a LEAP analysis for the four businesses with a significant connection to nature. Quantification of environmental impacts and the consideration of financial impacts are evident throughout. It presents disclosures integrating the TCFD and TNFD frameworks, with a strong awareness of both the evolution of the wood cycle and business growth.
- The company presents integrated TCFD/TNFD disclosures and is commended for incorporating the results of scenario analysis based on the TCFD framework and LEAP analysis based on the TNFD framework into its next medium-term management plan.
- The company presents excellent disclosures concerning aspects such as the LEAP approach, the identification of risks and opportunities, and its policy for future initiatives.

✦ OJI HOLDINGS CORP. (3 votes)

- The company provides disclosure that identifies the nature-related dependencies, impacts, risks, and opportunities at its main business locations, as well as targets such as forest restoration and methods for evaluating natural value. We appreciate the company's approach, which uses multiple approaches to achieve highly effective analyses that can be shared with investors.
- The company carefully addresses each item in the TNFD recommendations. The disclosure is interesting in that the company attempts to specifically evaluate the asset value of domestic company-owned forests and assess the levels of various endangered species. The actions it takes in response align with the conclusions of the analysis and are specific in content.
- The report is extremely detailed. Its presentation of initiatives that leverage the overlap between company-owned forests and biodiversity conservation areas is especially strong. The company clearly discloses its evaluation process for dependence, impact, risks, and opportunities, extending to fertilizers and pesticides.

✦ NEC CORP. (3 votes)

- The company discloses the specific status of measures to address risks at each business location. It is notable for its detailed analysis and its presentation of both upside and downside factors, which adds depth to the disclosures as reading material.
- (1) Periodical Update - 2nd edition. Focusing more on tech driven products/solutions to customers for biodiversity impact monitoring which will equip more companies to be able to address the issue. (2) Explanation of the thought process - Step by step explanation on how they went about assessing the impact and dependencies using familiar 3rd party platform/tools. (3) Innovation - Data driven management approach to biodiversity where they could help other companies to preserve and restore biodiversity. (4) Open communication - Rare for a Japanese company to list contact email addresses in the report.

- The company defines its business activities as "direct operations," categorizes suppliers as "upstream" in the value chain, and the customers who use its products as "downstream." It conducts comprehensive evaluations of dependence and impact on natural capital, as well as risks and opportunities, in collaboration with external experts.

✦ MITSUBISHI UFJ FINANCIAL GROUP, INC. (3 votes)

- We view this as best-practice disclosure among Japanese financial institutions. The company not only presents an understanding of its own dependence and impact on natural capital but also an analysis of risks and opportunities across its entire investment portfolio as an asset manager. It collaborates with its corporate business partners through engagement and demonstrates a proactive stance toward the protection and regeneration of natural capital.
- The company discloses information on the publication of its TNFD report, the clarification of its policies, and its response to the TNFD recommendations (four items), as well as specific examples (especially regarding the formation of partnerships).
- In addition to its advanced application of the TNFD framework as a financial institution, the company presents plans for activities to identify lending targets for potential monitoring.

In addition to the comments above, we received comments from some asset managers regarding the key points used to assess "excellent TNFD disclosure" and the current status of disclosure based on the TNFD recommendations, which are presented below.

- We selected three companies based on whether their initiatives and disclosures related to natural capital effectively enhance corporate value, specifically by increasing confidence in corporate sustainability and reducing the cost of capital. Going forward, we look forward to further efforts to improve disclosures, including quantifying contributions to nature-positive initiatives, measuring the financial impact on businesses activities, and making more advanced use of the AR3T framework (which evaluates efforts for natural capital). We will support these initiatives through engagement.
- We selected companies based on an assessment of the following four points: (1) the extent to which the company has disclosed information in line with the TNFD framework (14 items); (2) the appropriateness of the LEAP analysis in relation to strategy, risk management, and indicator targets; (3) whether the explanation integrates the TCFD recommendations; and (4) whether the disclosure addresses not only environmental impact but also financial impact based on dependence.
- At present, the TNFD framework has not yet reached the stage where it requires an equivalent depth of information from all companies, and it is natural that disclosure levels vary by industry and by company. We recognize that the TNFD recommendations incorporate cultural aspects, relations with local communities, and other perspectives that are often emphasized. However, it is essential for companies to demonstrate the relationship between nature and financial/corporate value in line with materiality. In this field, the degree of materiality can vary significantly among companies, depending on the industry, activities, and region.
- Many companies still do not fully recognize the importance of understanding the dependence and impact of their business activities on natural capital, as well as the associated risks and opportunities. We also observe that companies face significant challenges in assessing these factors across the entire supply chain, particularly in terms of data organization and the application of complex evaluation methods.

Analysis of the Status of Disclosure of Sustainability-Related Financial Information

To understand the status of companies' disclosure of sustainability-related financial information, we conducted an analysis of information disclosure across 17 themes such as "board structure," "supply chain," "climate change," "human rights & community," and "diversity." Our analysis included the percentage of companies disclosing information and a year-on-year comparison of the content of these disclosures. We also conducted an analysis of corporate status, including undisclosed information. Comparing the gender pay gap based on median hourly wages, which represent workers' base salary, we found that the gender pay gap in Japan is approximately twice as large as in other regions.

Analysis of the Status of Disclosure of Sustainability-Related Financial Information

Companies that disclose a large amount of sustainability-related information tend to have higher ESG ratings[1] and are more likely to be included in the indexes adopted by GPIF for equity investment benchmarked to ESG indexes.[2] There has been clear progress in corporate sustainability-related information disclosure over the eight years since fiscal 2017, when GPIF first began ESG index-based investment. Information disclosure serves as the basis for constructive dialogue (engagement) between asset managers and companies. An increase in the quantity and quality of disclosure facilitates a deeper understanding of companies' strategies and risks, enabling more advanced dialogue. Based on this belief, we focus on encouraging more sophisticated information disclosure by companies.

It is not easy, however, to gain an overall picture of the progress made in information disclosure, or a systematic understanding of the different trends in each region. Therefore, in this section, we analyze the status of disclosure of sustainability-related financial information by companies and highlight the current situation and issues in each region.

We examine disclosures by approximately 1,600 of about 1,700 constituents in the S&P Developed LargeMidCap Index, with the addition of China H shares, which are subject to an annual survey of listed companies conducted by S&P Global.[3,4]

We compare disclosures across four regions: Japan, North America, Europe, and the Asia-Pacific (excluding Japan). Figure 1 shows the number of companies examined in each region, and Figure 2 shows their distribution by market capitalization. This analysis focuses on regional trends. However, the results may be affected by differences in the distribution of companies by market capitalization.

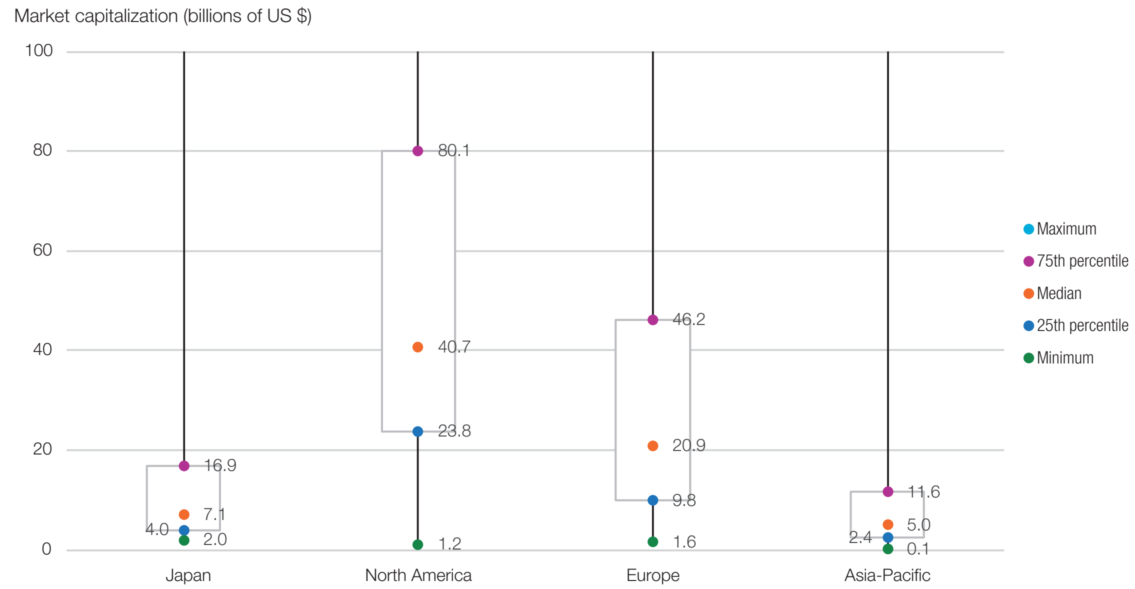
Figure 1. Number of Companies Analyzed (by Region)

Region	Number of Constituents in the Index	Number of Companies Analyzed
Japan	335	333
North America	491	483
Europe	402	379
Asia-Pacific	543	490
Total	1,771	1,685

(Note 1) The number of companies in the index refers to the number of constituents in the S&P Developed LargeMidCap Index, with the addition of China H shares.
(Note 2) The number of companies analyzed refers to the number of companies in S&P Global Corporate Sustainability Assessment.
(Source) Prepared by GPIF based on materials from S&P Global.

1 For more information about the effect of ESG information disclosure on ESG ratings and the correlation between ESG ratings, please refer to page 50 of the 2021 ESG Report.
2 When GPIF first introduced ESG indexes as benchmarks for equity investment in 2017, it expected that this would encourage the disclosure of ESG-related information by companies. We adopted ESG indexes that are essentially designed to positively evaluate companies based on publicly available information, incorporating an incentive structure where companies are encouraged to actively disclose information, leading to higher valuations and inclusion in the index. Through this mechanism, we aimed that ESG ratings of individual companies are raised by improvement of the quality and quantity of their information disclosure, which leads their enhancement of the level of their measures to address sustainability. Through these changes in corporate behavior, we aimed to improve the overall ESG performance of the Japanese stock market.
3 The S&P Global Corporate Sustainability Assessment (CSA).
4 The number of companies analyzed may differ depending on the survey item. Please refer to S&P Global's report "Performance analysis of sustainability disclosure and human capital development" for the number of companies surveyed for each item.

Figure 2. Market Capitalization Distribution of Companies Analyzed (by Region)



(Note) The maximum market capitalization in all regions exceeds US $100 billion and is therefore not displayed on the chart.
(Source) Prepared by GPIF based on materials from S&P Global.

Among the themes analyzed for environment (E) and governance (G), we selected 14 themes that were considered significant by many investors and can be compared in a global context, based on the "'Material ESG Issues' Chosen by GPIF's Asset Managers" identified through a survey of asset managers.[5] These include themes such as "climate change," "human rights & community," "board structure," "supply chain," and "diversity"[6] (Figure 3). The social (S) themes were based on the Japanese Cabinet Office's Human Capital Visualization Guidelines,[7] with the addition of "engagement," "mobility," and "compliance." We analyzed the disclosure status of companies regarding specific data items held by S&P Global for the themes targeted in this analysis.[8]

Figure 3. The 17 Themes Analyzed

	Theme	"Material ESG Issues" Chosen by GPIF's Asset Managers				Human Capital Visualization Guidelines
		Domestic Equities Passive	Domestic Equities Active	Foreign Equities Passive	Foreign Equities Active	
Governance	Board Structure, Self-Performance Assessment	86%	69%	75%	59%	–
	Corporate Governance	71%	77%	75%	56%	–
	Supply Chain	100%	31%	75%	33%	–
	Disclosure	100%	69%	100%	52%	–
Environmental	Climate Change	100%	100%	100%	85%	–
	Biodiversity	100%	77%	100%	52%	–
	Water Resources, Water Security	57%	23%	100%	30%	–
	Deforestation	71%	15%	100%	22%	–
	Waste Management	57%	23%	75%	15%	–
Social	Human Rights & Community	100%	62%	100%	48%	–
	Human Capital Development	57%	31%	25%	26%	●
	Engagement	–	–	–	–	●
	Mobility	–	–	–	–	●
	Diversity	100%	77%	100%	30%	●
	Health & Safety	57%	23%	75%	37%	●
	Labor Standards (Labor practices)	57%	46%	50%	48%	●
	Compliance	–	–	–	–	●

(Note 1) The percentages shown in the four columns under "Material ESG Issues" chosen by GPIF's asset managers represent the percentage of managers who cited each issue as a "material ESG issue" out of the total number of managers for that asset class and investment style.
(Note 2) A "●" mark in the Human Capital Visualization Guidelines column indicates that the item is subject to disclosure under the guidelines (page 28).
(Source) GPIF

5 See page 52 of the Stewardship Activities Report 2024-2025, published in March 2025.
6 "Controversies" was another theme cited as a material issue by many asset managers. 86% of domestic equities passive asset managers, 54% of domestic equities active asset managers, 50% of foreign equities passive asset managers, and 11% of foreign equities active asset managers responded that controversies is a "material ESG issue." We present a detailed analysis of controversies in "Analysis of the Impact of Controversies on Corporate Performance" on page 91.
7 These guidelines are compiled as a comprehensive manual focusing on the disclosure of information related to human capital in capital markets, including directions for addressing the use of existing standards and guidelines.
8 Please refer to S&P Global's report "Performance analysis of sustainability disclosure and human capital development" for details, such as definitions of the data for each item.

Analysis of Disclosure Relating to Governance (G)

Board Structure and Compensation

The establishment of an effective corporate governance framework is vital for companies to achieve sustainable growth and enhance their corporate value in the medium- to long-term. We believe that the independence, continuity, and diversity of the board of directors, and the provision of appropriate incentives through executive compensation, are matters that affect the effectiveness of corporate governance.

Regarding board independence, it is considered that appointing a chairperson who is separate from the chief executive officer (CEO) can enhance the objectivity of the board and its independence from management, helping to ensure high-quality governance and the effective functioning of the board. We found that in Europe and North America, a relatively large percentage of companies (64% and 39%, respectively) have a separate CEO and chairperson. In Japan, this percentage is only 14% (Figure 4 (1)). At the same time, however, we found that it has doubled over the past four years and is continuing to trend upward. This suggests a rising awareness of board independence among Japanese companies (Figure 5).

Independent non-executive directors are expected to play an important role in enabling companies to foresee changes in the business environment and reflect them in management strategies, making it important to appoint a sufficient number of competent independent non-executive directors. It has also been pointed out that the boards of companies listed on the Tokyo Stock Exchange Prime Market, which are expected to expand globally, should be composed of a majority of independent non-executive directors.[9] The median percentage of independent non-executive directors on company boards in Japan is only 44%, less than half and much lower than in North America (89%) or Europe (73%) (Figure 6).

The tenure of board of directors is one indicator used to evaluate the balance between governance continuity and directors' independence. It has been pointed out that serving for some time at a company enhances directors' understanding of the business and builds an appropriate level of trust with management. On the other hand, an excessively long tenure raises concerns regarding independence. The median board tenure in Japan is four years. This does not differ greatly from other regions, where directors generally serve for around five years (Figure 7).

Regarding the diversity of the board of directors, it is expected that a balanced mix of knowledge, experience, and abilities will enhance the effectiveness of corporate governance by facilitating the discussion of management issues from diverse perspectives, leading to an improvement in corporate value in the medium- to long-term. The percentage of female directors, in particular, is seen as a key indicator of gender diversity. The median percentage of female directors in Japan is 20%, which is lower than in Europe (40%) or North America (33%) (Figure 8). However, this percentage has improved substantially from 9% to 20% over the past four years, and progress is being made (Figure 9).

It is also seen as important to link CEO compensation to medium- to long-term performance from the perspective of encouraging sustainable corporate growth. Specific examples of effective compensation design include deferred bonuses, restrictions on the exercise of stock options for a certain period, and the establishment of performance evaluation periods. Overall, 99% of companies in North America and 93% of companies in Europe have introduced a CEO compensation system of this type. By contrast, only 50% of companies in Japan and 36% in the Asia-Pacific have such systems, indicating significant variation by region (Figure 4 (2)).

9 Financial Service Agency "Action Programme for Corporate Governance Reform 2025."

Supply Chain

Companies face challenges in implementing risk management that extends beyond their own business activities to encompass the entire supply chain. The potential emergence of issues such as human rights violations or environmental damages in the supply chain may impact a company's reputation and financial performance.

In this context, an examination of the percentage of companies that have established and disclosed codes of conduct for suppliers reveals that the vast majority of companies in Europe (96%), North America (89%), and Japan (88%) have moved ahead to implement such disclosure (Figure 4 (3)). On the other hand, the percentage of companies engaged in ESG programs, such as the cancellation of contracts with suppliers that make insufficient efforts to address ESG, is highest in the Asia-Pacific region (63%), indicating that companies in different regions are focusing on different initiatives (Figure 4 (4)).

Disclosure and Other Themes

The percentage of companies that obtain third-party assurance based on international standards for integrated reports, sustainability reports, and other similar disclosures is highest in Europe (80%). The percentage is below 60% in all other regions, demonstrating a disparity with Europe (Figure 4(5)). The Corporate Sustainability Reporting Directive (CSRD) issued by the European Union (EU) mandates the progressive disclosure of sustainability information by certain companies. At the same time, it requires companies to obtain third-party assurance. These circumstances indicate that third-party assurance is more advanced in Europe than elsewhere.

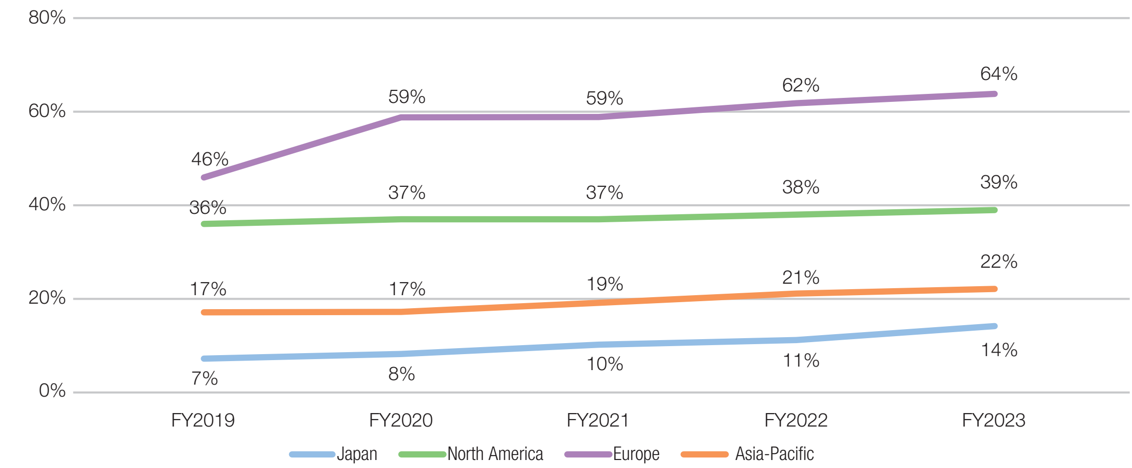
Europe also features a high percentage (80%) of companies that have signed the United Nations (UN) Global Compact, which sets forth 10 principles that companies should address in relation to human rights, labor, the environment, and anti-corruption, leading other regions (Figure 4(6)).

Figure 4. Status of Disclosure Relating to Governance (G) Themes

Theme	Item	Japan	North America	Europe	Asia-Pacific
Board Structure and Compensation	(1) Percentage of companies with a separate CEO and chairperson of the board	14%	39%	64%	22%
	(2) Percentage of companies that disclose guidelines incorporating items that consider long-term performance into variable compensation for the CEO	50%	99%	93%	36%
Supply Chain	(3) Percentage of companies that disclose codes of conduct for suppliers	88%	89%	96%	64%
	(4) Percentage of companies engaged in ESG programs targeting suppliers to identify and address key risks	59%	38%	49%	63%
Disclosure	(5) Percentage of companies that obtain third-party assurance for integrated reports, sustainability reports, and other similar disclosures	58%	38%	80%	55%
Others	(6) Percentage of companies that are signatories to the UN Global Compact	58%	29%	80%	29%

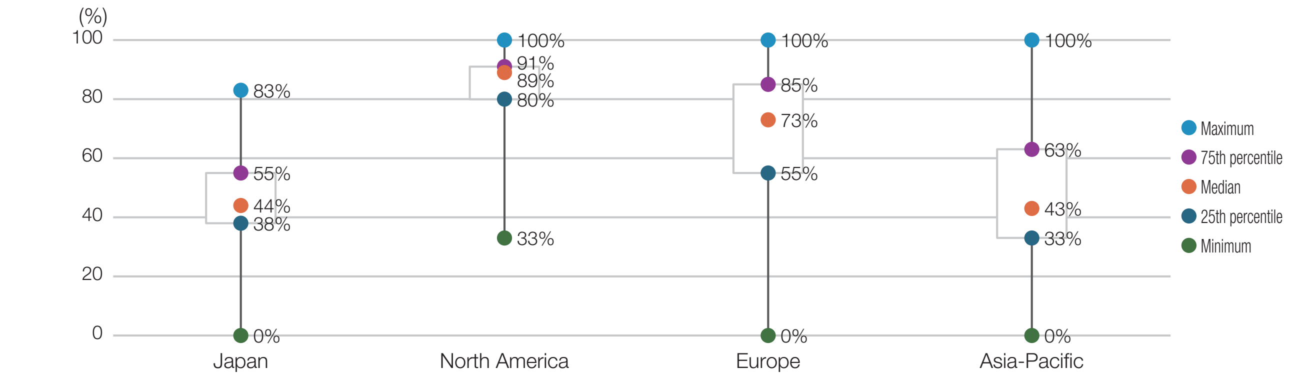
(Source) Prepared by GPIF based on materials from S&P Global.

Figure 5. Trend in the Percentage of Companies with a Separate CEO and Chairperson of the Board



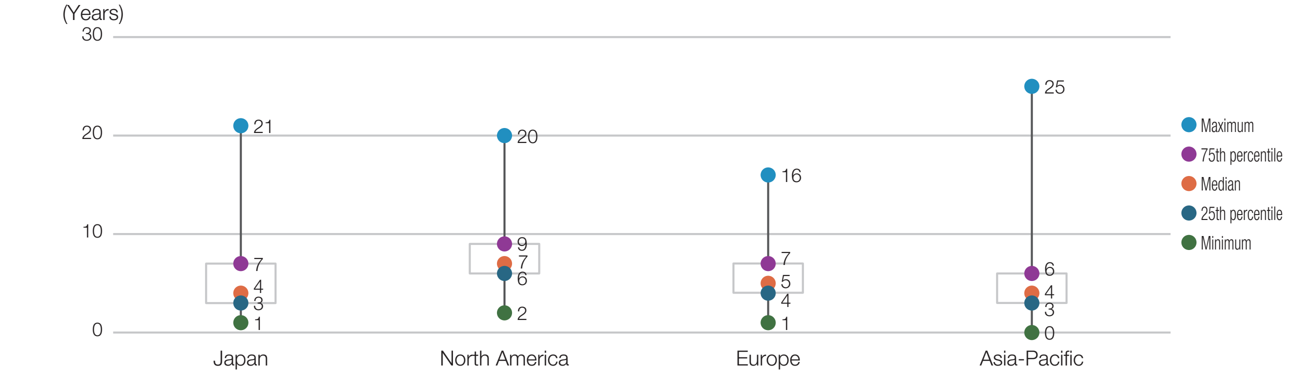
(Source) Prepared by GPIF based on materials from S&P Global.

Figure 6. Percentage of Independent Non-Executive Directors on the Board of Directors



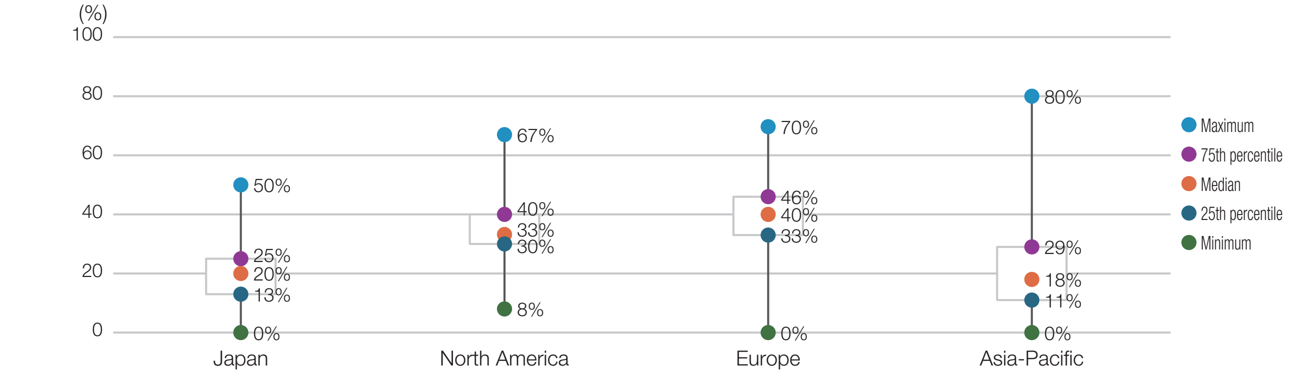
(Source) Prepared by GPIF based on materials from S&P Global.

Figure 7. Average Tenure of Directors



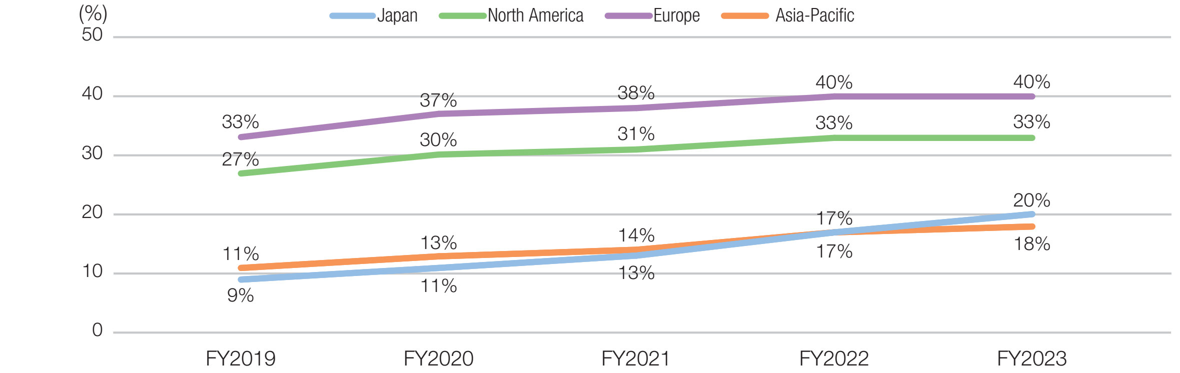
(Source) Prepared by GPIF based on materials from S&P Global.

Figure 8. Percentage of Female Directors on the Board of Directors



(Source) Prepared by GPIF based on materials from S&P Global.

Figure 9. Trend in the Median Percentage of Female Directors on the Board of Directors



(Source) Prepared by GPIF based on materials from S&P Global.

Analysis of Disclosure Relating to Environment (E)

Climate Change

In March 2025, the Sustainability Standards Board of Japan (SSBJ) published Japan's domestic Sustainability Disclosure Standards, based on alignment with the two Sustainability Disclosure Standards of the International Sustainability Standards Board (ISSB): General Requirements for Disclosure of Sustainability-related Financial Information (IFRS S1) and Climate-related Disclosures (IFRS S2). Going forward, the disclosure of sustainability information based on the SSBJ's disclosure standards is expected to become mandatory for listed companies in stages, depending on their size.

Under these circumstances, there is a heightened focus on obtaining third-party assurance on the information disclosed. In Japan, the Financial Services Agency is proceeding with the consideration of measures including the introduction of mandatory third-party assurance when disclosing information in securities reports based on SSBJ's disclosure standards. Third-party assurance is an effective mechanism for enhancing the reliability of disclosed information. Based on this understanding, we have analyzed the status of the disclosure of items required under IFRS S2 and SSBJ's Climate-related Disclosure Standard in each region, as well as the status of third-party assurance (including third-party verification; the same applies hereinafter).

We found that, in all regions, at least 90% of companies disclose Scope 1 and 2 greenhouse gas (GHG) emissions[10] (Figure10 (1,2)). However, there are regional differences between the percentages of companies that have obtained third-party assurance, etc., with the highest percentage in Europe, at approximately 80%, followed by Japan, North America, and the Asia-Pacific with approximately 70%, 60%, and 50%, respectively (Figure 10 (6,7)). For Scope 3 emissions,[11] we found that 95% of companies in Europe, 88% in Japan, 81% in North America, and 54% in the Asia-Pacific disclose information on at least 3 of the 15 emissions categories. The percentage of companies that have obtained third-party assurance is substantially less than the percentage disclosing information, across all regions (Figure 10 (5,8)). We look forward to seeing companies progress with measures to obtain third-party assurance for GHG emissions information, not least for the purpose of enhancing the reliability of their disclosures.

Biodiversity

Interest in the disclosure of natural capital-related information by companies has risen following the release of the recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) in September 2023. Reflecting this trend, across all regions, over half of companies now disclose their policies and commitments relating to biodiversity, with the highest percentage in Japan, at 62% (Figure 10 (13)).

On the other hand, there are few companies that explicitly state goals concerning "net positive impact"[12] in their commitments to biodiversity: around 10% in the Asia-Pacific region, Europe, and Japan, and only 3% in North America (Figure 10 (14)).

Deforestation, Water Resources, Water Security, and Waste Management

The TNFD recommendations include natural resources such as forest areas and water resources in the definition of natural capital. The recommendations also cite waste as a factor that changes nature through reuse and recycling.

Looking at the status of corporate disclosures, at least 70% of companies in each region disclose programs related to the effective use of water resources, while at least 80% of companies in each region disclose programs related to waste management (Figure 10 (16, 18)).

On the other hand, corporate measures to address forest conservation are limited. The percentage of companies that have announced policies or commitments not to engage in deforestation is only 30% in Europe, which has the highest rate, and is even lower in other regions. Overall, we found that efforts in this area are not progressing compared to other themes relating to natural capital (Figure 10 (15)). However, this result may be influenced by the differing needs for forest conservation measures in each industry.

10 Scope 1 represents direct emissions associated with the company's activities and Scope 2 represents indirect emissions related to purchased electricity.
11 Scope 3 represents the sum of indirect emissions from procured products and services other than purchased electricity (Scope 3 upstream) and indirect emissions from the consumption and use of sold products and services (Scope 3 downstream).
12 Measures such as conservation and restoration to counteract the negative impact of corporate activities on natural capital, aiming to transform the overall impact into a positive one.

Figure 10. Status of Disclosure Relating to Environmental (E) Themes

Theme	Item	Japan	North America	Europe	Asia-Pacific
Climate Change	(1) Percentage of companies that disclose Scope 1 emissions	96%	93%	98%	97%
	(2) Percentage of companies that disclose Scope 2 emissions	95%	91%	99%	96%
	(3) Percentage of companies that disclose Scope 2 emissions (location-based)	71%	85%	90%	93%
	(4) Percentage of companies that disclose Scope 2 emissions (market-based)	61%	70%	88%	31%
	(5) Percentage of companies that disclose at least 3 of the 15 categories of Scope 3 emissions	88%	81%	95%	54%
	(6) Percentage of companies that obtain and disclose third-party assurance for Scope 1 emissions	69%	64%	84%	54%
	(7) Percentage of companies that obtain and disclose third-party assurance for Scope 2 emissions	71%	63%	84%	54%
	(8) Percentage of companies that obtain and disclose third-party assurance for Scope 3 emissions	62%	48%	73%	36%
	(9) Percentage of companies that integrate the four elements of the TCFD recommendations (strategy, governance, risk management, and metrics and targets) in the management of climate-related risks and opportunities	96%	80%	88%	79%
	(10) Percentage of companies that have disclosed a net zero commitment	83%	52%	84%	46%
	(11) Implementing or planning programs and activities to achieve net zero emissions for Scope 1 and 2	72%	34%	58%	38%
	(12) Implementing or planning programs and activities to achieve net zero emissions for Scope 3	43%	21%	43%	19%
Biodiversity	(13) Percentage of companies that disclose policies and commitments relating to biodiversity	62%	47%	56%	50%
	(14) Percentage of companies that include biodiversity commitments in their goals for "net positive impact"	8%	3%	12%	13%
Deforestation	(15) Percentage of companies that have disclosed policies and commitments against deforestation	15%	14%	30%	22%
Water Resources, Water Security	(16) Percentage of companies that have disclosed programs relating to the efficient use of water resources	81%	76%	69%	87%
	(17) Percentage of companies that disclose water consumption	83%	68%	80%	90%
Waste Management	(18) Percentage of companies that have disclosed programs relating to waste management	90%	82%	80%	90%
	(19) Percentage of companies that disclose data on waste volume	75%	58%	78%	73%

(Source) Prepared by GPIF based on materials from S&P Global.

Analysis of Disclosure Relating to Social (S)

We conducted an analysis of corporate status concerning ESG issues relating to social (S), including undisclosed information. Undisclosed information refers to data that, although not publicly disclosed, is collected from the responses of various companies to surveys conducted by S&P Global.

We analyzed themes focused not only on human rights, which many of our asset managers have selected as a "material ESG issue," but also on disclosure related to human capital, which has been set as a new research project target following the ISSB's establishment of standards for climate-related information disclosure.

Specifically, we analyzed the seven areas outlined in the Japanese Cabinet Office's Human Capital Visualization Guidelines: Human Capital Development, Engagement, Mobility, Diversity, Health & Safety, Labor Standards (Labor Practices), and Compliance. The guidelines state that the purpose of visualizing information related to human capital is to facilitate a deeper understanding of the company's human resource strategy among investors and other stakeholders, as well as achieving the strategic development of human capital, which in turn enhances medium- to long-term competitiveness and corporate value by encouraging mutual understanding among management, employees, and investors.

Human Rights

Awareness of human rights violations in corporate supply chains is growing in the international community. International standards such as the UN's Guiding Principles on Business and Human Rights require companies to avoid any negative impact on human rights from their activities, as well as address any negative impacts that may arise. There has been a movement, mainly in Europe, to impose certain obligations on companies under each country's domestic laws.

A high percentage of companies disclose a companywide commitment to human rights: 98% in Europe, 95% in Japan, and 91% in North America (Figure 11 (1)). It seems that disclosure rates have been boosted by measures such as the requirement to disclose initiatives relating to human rights under Europe's CSRD, as well as the establishment of the Japanese government's "Guidelines on Respecting Human Rights in Responsible Supply Chains".

The percentage of companies that include suppliers in the scope of their human rights policies has risen to 88% in Europe, 77% in North America, and 75% in Japan (Figure 11 (2)). Likewise, many companies in Europe (80%) and Japan (60%) include supply chains in the scope of their human rights due diligence processes,[13] which are aimed at preventing human rights violations. This indicates that companies are making some degree of effort in this area (Figure 11 (5)).

On the other hand, challenges remain in terms of evaluating the effectiveness of these measures. The proportion of companies that have conducted assessments of potential human rights issues during the past three years has remained below half. This is the case even in Europe and Japan, where the proportions were highest (Figure 11 (6)). An examination of the status of human rights assessments for first-tier suppliers and others yielded similar results (Figure 11 (7)).

Human Capital Development, Engagement, Mobility, Health & Safety, and Labor Standards

The median number of training hours per year, which is the metric used for Human Capital Development, was by far the largest in the Asia-Pacific region, with 38 hours. The figures for the other regions were all around 22 to 23 hours (Figure 12).

For Engagement, over 80% of companies in Europe, North America, and Japan have conducted employee survey including satisfaction and others (Figure 11 (8)).

More than 90% of companies in the Asia-Pacific and Europe, 80% in Japan, and over 60% in North America disclose the employee turnover rate, which is the metric for Mobility (Figure 11 (9)). Looking at the time series data from fiscal 2020 to fiscal 2023, voluntary turnover rates rose in all regions up until fiscal 2022, and then decreased in fiscal 2023. However, the decline in Japan, which initially had a lower turnover rate than other regions, was only slight (Figure 13).

13 Human rights due diligence refers to a series of actions taken by companies to identify, prevent, and mitigate human rights violations within their own operations, group companies, and suppliers, as well as to evaluate the effectiveness of their efforts and to explain and disclose how they have addressed these issues.

Regarding Health & Safety, we analyzed the percentage of companies that have announced policies on occupational health and safety. We found that companies are progressively taking steps, with around 70% to 80% of companies in each region announcing such policies (Figure 11 (10)).

Regarding Labor Standards, we found regional differences in the percentage of companies that disclose the existence of independent labor unions or collective bargaining agreements. This percentage is the highest in Japan at 82%, compared to only 49% in the Asia-Pacific region (Figure 11 (12)).

Diversity

For Diversity, we examined the gender pay gap and the percentage of female managers.

We found that Japan has by far the highest percentage of companies that analyze their gender pay gap, at 98%, well ahead of Europe, which was in second place at 65% (Figure 14). Looking at the content of analysis, we found that 76% of companies in Japan and 42% in Europe compare the wages of women and men across the entire company regardless of position, while 22% of companies in Japan and 23% in Europe compare the wages paid to women and men in equivalent positions (Figure 14).

Based on data from companies that analyze their gender pay gap, we compared median hourly wages, which represent workers' base salary, by gender.[14] An analysis of the difference between men's and women's hourly wages showed that the gap between the genders was the largest in Japan, where men's wages were 27% higher (median) than women's. The difference was 14%, 13%, and 12% in the Asia-Pacific, North America, and Europe, respectively. From these results, we found that the gender pay gap in Japan is approximately twice as large as in other regions (Figure 15).

Likewise, we found that the percentage of female managers is lower in Japan than in other regions. The median value of the actual percentage of all management positions occupied by women is lowest in Japan, at 11%, which is about one-third of the levels in Europe and North America (Figure 16). Japan also has the lowest median value for the target percentage of all management positions occupied by women, at 15%, which is significantly below the other regions. North America has the highest median target (43%), followed by the Asia-Pacific (40%) and Europe (33%) (Figure 17). In Japan, the large gender wage gap may be linked to the low percentage of female managers.

Compliance

For Compliance, we analyzed the percentage of companies that disclose the number of violations of their internal codes of conduct. The level of information disclosure is limited across all compliance items. Less than half of all companies disclose the number of instances of corruption or bribery across every region other than the Asia-Pacific, where the percentage of such companies is the highest, at 57% (Figure 11 (15)). Europe has the highest percentage of companies that disclose the number of incidents of discrimination and harassment, but the level remains low even there, at 40% (Figure 11 (13)). In addition, less than half of companies in all regions disclose the number of cases of conflict of interest, money laundering, insider trading, and privacy-related incidents (Figure 11 (14, 16, 17)). From these results, it is evident that further efforts are needed to improve transparency regarding the handling of information that violates companies' codes of conduct.[15]

14 We analyzed the percentage of companies that compare the wages of women and men companywide, regardless of position. Please note that this is not an analysis of the percentage of companies that compare the wages paid to women and men in equivalent positions.

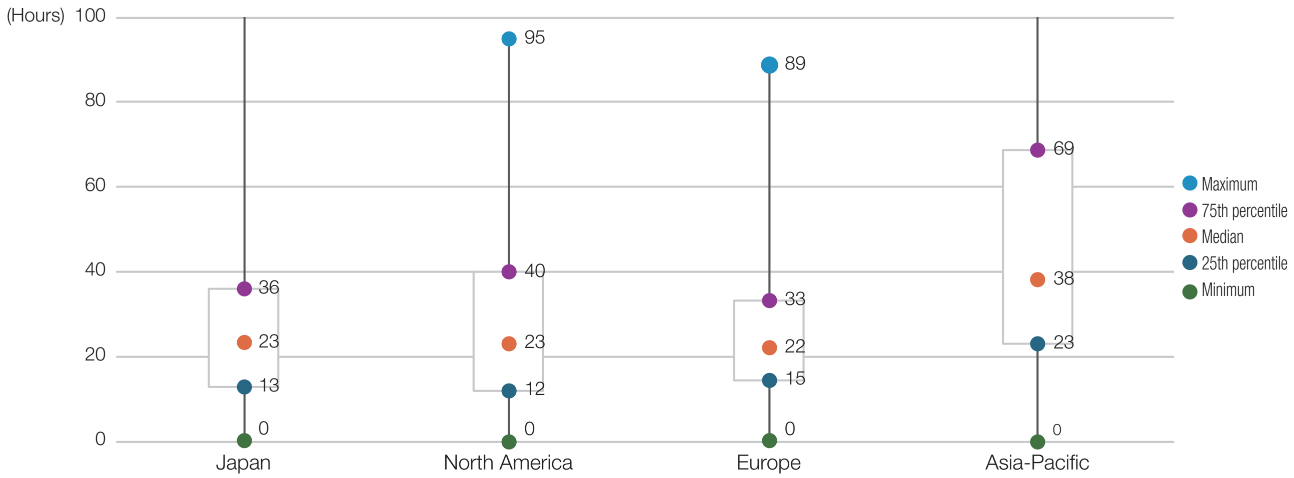
15 Looking at the content of disclosures by companies that disclose the number of violations of their codes of conduct, the median number of cases for all five items covered in Figure 11 was either 0 or a single-digit number.

Figure 11. Status of Disclosure Relating to Social (S) Themes

Theme	Item	Japan	North America	Europe	Asia-Pacific
Human rights	(1) Percentage of companies that disclose commitments relating to human rights companywide	95%	91%	98%	70%
	(2) Percentage of companies with human rights policies that are also applicable to suppliers	75%	77%	88%	51%
	(3) Percentage of companies with human rights policies that are based on international principles	86%	72%	92%	60%
	(4) Percentage of companies that disclose their human rights due diligence processes	70%	52%	84%	46%
	(5) Percentage of companies that include business operations in supply chains in the scope of their human rights due diligence processes	60%	50%	80%	39%
	(6) Percentage of companies that have conducted assessments of potential human rights issues during the last three years	45%	30%	49%	36%
	(7) Percentage of companies that have included contractors and suppliers in their assessments of potential human rights issues during the last three years	43%	27%	46%	31%
Engagement	(8) Percentage of companies that conduct annual surveys concerning issues such as employee satisfaction and stress	80%	81%	85%	68%
Mobility	(9) Percentage of companies that disclose employee turnover rate	87%	68%	90%	95%
Health & Safety	(10) Percentage of companies that have disclosed policies concerning occupational health and safety	75%	73%	83%	85%
Labor Standards	(11) Percentage of companies that disclose the provision of childcare facilities and childcare contributions to their employees	57%	34%	32%	30%
	(12) Percentage of companies that disclose the existence of independent labor unions or collective bargaining agreements	82%	58%	72%	49%
Compliance	(13) Percentage of companies that disclosed the number of incidents of discrimination or harassment that violated their internal codes of conduct in the last fiscal year	24%	9%	40%	37%
	(14) Percentage of companies that disclosed the number of incidents of conflicts of interest that violated their internal codes of conduct in the last fiscal year	10%	4%	15%	14%
	(15) Percentage of companies that disclosed the number of incidents of corruption or bribery that violated their internal codes of conduct in the last fiscal year	38%	15%	47%	57%
	(16) Percentage of companies that disclosed the number of incidents of money laundering or insider trading that violated their internal codes of conduct in the last fiscal year	14%	2%	11%	24%
	(17) Percentage of companies that disclosed the number of incidents relating to customer privacy that violated their internal codes of conduct in the last fiscal year	16%	19%	32%	51%

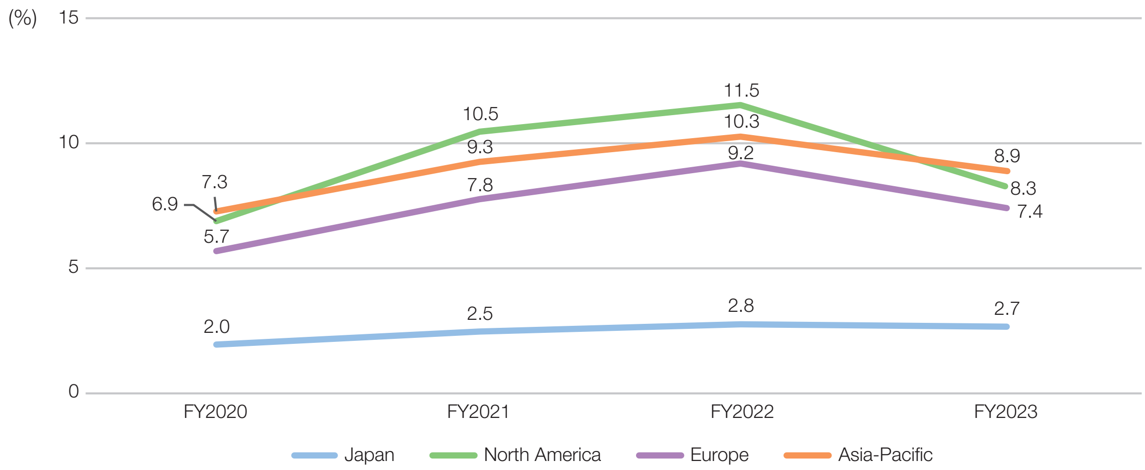
(Source) Prepared by GPIF based on materials from S&P Global.

Figure 12. Number of Training Hours per Employee (Last Fiscal Year)



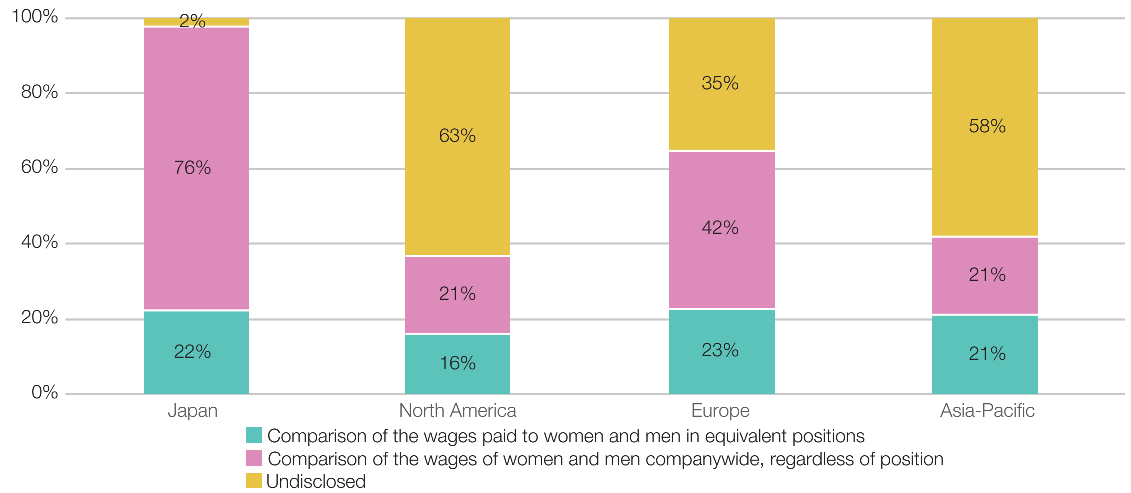
(Note) In Japan and the Asia-Pacific region, the maximum number of hours exceeds 100 hours and is therefore not displayed on the chart.
(Source) Prepared by GPIF based on materials from S&P Global.

Figure 13. Voluntary Turnover Rates (Annualized, Median Values)



(Source) Prepared by GPIF based on materials from S&P Global.

Figure 14. Percentage of Companies that Have Analyzed Their Gender Pay Gap



(Source) Prepared by GPIF based on materials from S&P Global.

Figure 15. Gender Pay Gap (Median Hourly Wages)

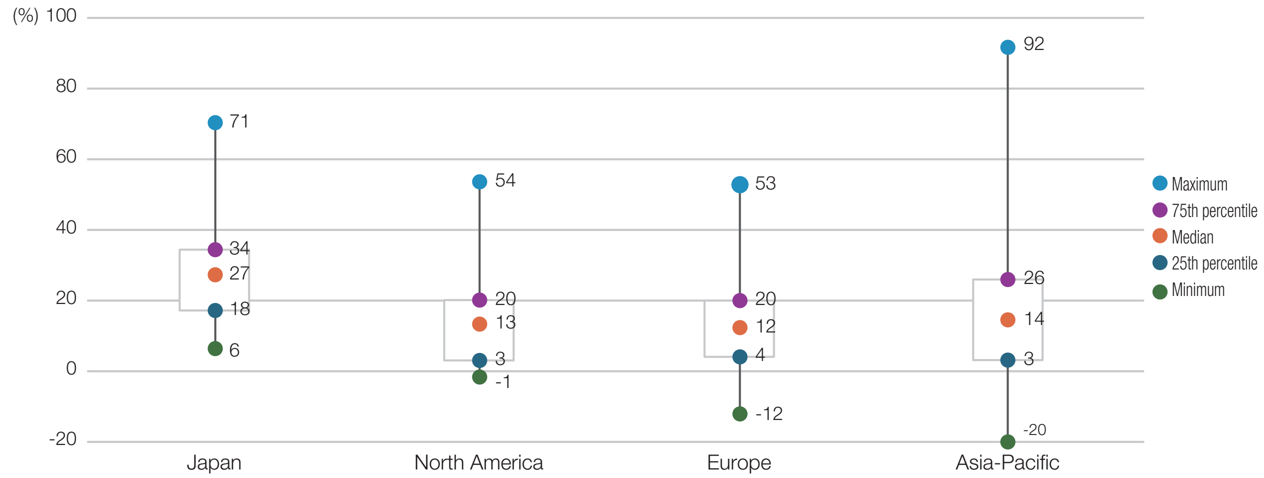
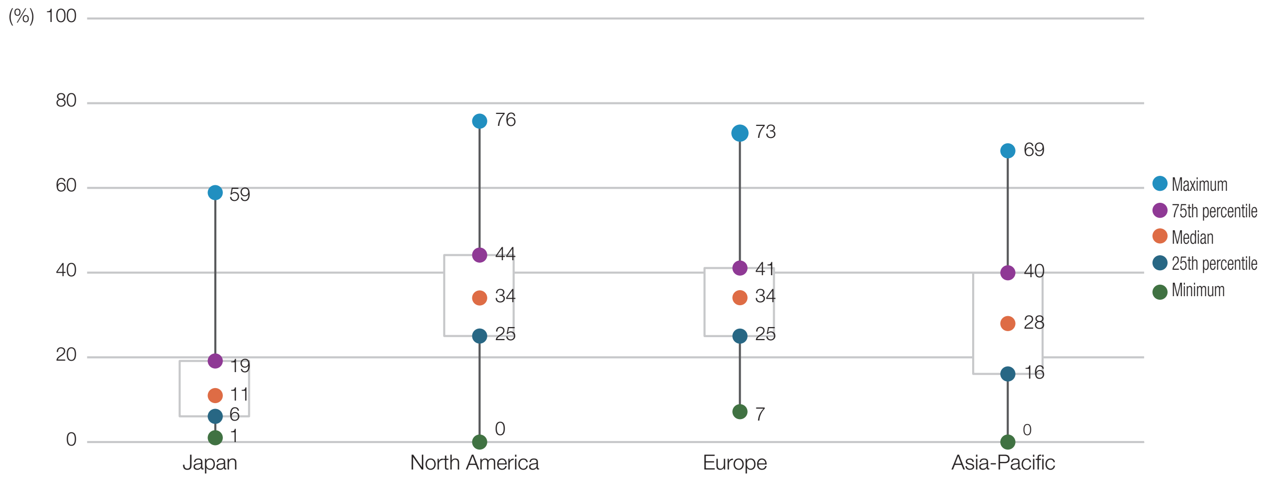
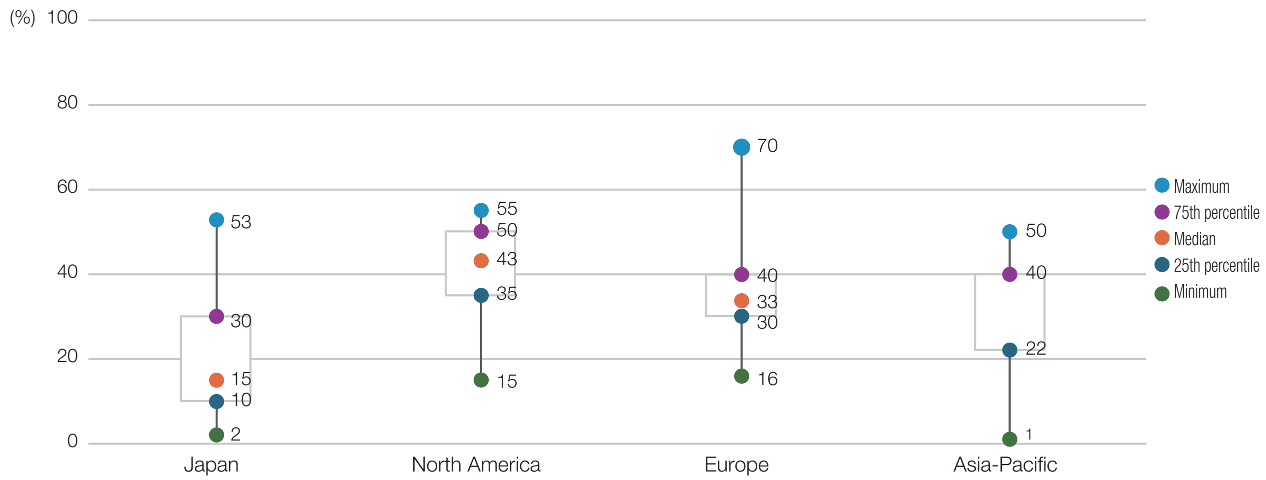


Figure 16. Percentage of Female Managers in All Management Positions (Actual)



(Source) Prepared by GPIF based on materials from S&P Global.

Figure 17. Percentage of Female Managers in All Management Positions (Target)



(Note) The median value for the Asia-Pacific region is 40, which is equal to the 75th percentile.
(Source) Prepared by GPIF based on materials from S&P Global.

Analysis of the Impact of Controversies on Corporate Performance

In recent years, investors and stakeholders have become increasingly wary of the risks associated with corporate controversies. In this section, we summarize the overall characteristics of corporate controversies globally and conduct a comparison by region of the impact of controversies on companies' financial indicators, in addition to the controversy-related methodologies incorporated into the ESG indexes employed by GPIF.

The "Controversy Score" Incorporated into GPIF's ESG Index-based Investment Methodologies

Corporate controversies can potentially lead to serious issues in business management through its impact on management reliability and performance forecasts. Moreover, it may give rise to significant social repercussions, thereby undermining the sustainability of the economy and society itself. In recent years, investors and stakeholders have become increasingly wary of the risks associated with corporate controversies. This increasing focus on controversies, particularly among investors in domestic equities and domestic bonds, is also evident in the "material ESG issues" identified by GPIF's asset managers.[1]

However, as our "Analysis of the Status of Disclosure of Sustainability-Related Financial Information" (page 87) clearly shows, few companies actively disclose information relating to their own controversies, and challenges remain in terms of ensuring the transparency of governance.

In this context, the ESG indexes adopted by GPIF incorporate methodologies that utilize information distributed by external organizations such as mass media outlets to identify controversies, enabling the index providers to exclude or underweight companies involved in controversies (Figure 1). These methodologies make up for insufficient information disclosure by companies, while also enabling the construction of an index that reflects the risk of controversies.

In the FTSE and S&P indexes, companies that do not meet certain criteria are excluded from the index based on the RepRisk Index,[2] which quantifies companies' ESG-related risks. The RepRisk Index is calculated based on the information sources reporting controversies, the frequency and timing of controversies, and the severity and novelty of incidents. It is measured on a scale of 0 to 100, with a higher number indicating higher ESG-related risk.[3]

The MSCI indexes only include companies that meet a certain standard, based on a proprietary controversy score calculated by MSCI. The controversy score is calculated on a scale of 0 to 10 based on the severity of the incident, whether the company was directly involved, and whether the incident has been resolved, among other factors. Companies involved in the most serious controversies are given a controversy score of 0, with higher scores of up to 10 indicating less serious controversies.

Under the methodology used in Morningstar's indexes, companies that have been involved in lawsuits relating to gender discrimination or sexual harassment, whether these result in judgments or settlements, are listed for 12 months.[4] The companies on the list are assigned to the group with the lowest tilt factor of 0.5 for quarterly rebalancing. The weighting of each stock is then recalculated using the relevant tilt factor and free float market capitalization, and its weighting is adjusted according to the index methodology.

1 See page 52 of the Stewardship Activities Report 2024-2025.
2 The RepRisk Index algorithm was developed by RepRisk, a Swiss company.
3 In addition, the FTSE index incorporates a methodology under which the index provider independently collects information from media sources and excludes constituents that have been involved in controversies and are assessed to have responded inadequately.
4 Morningstar uses a system to monitor legal judgments, etc., relating to sexual harassment and gender discrimination at companies, based on the methodology developed by Equileap, a Dutch company. When a judgment, etc., suggests structural or systematic problems within a company, that company is added to the "Alarm Bell List."

Figure 1. Rules for Including Companies Where Controversies Have Occurred

ESG Indexes Adopted by GPIF	Main Methodological Rules
• FTSE Blossom Japan Index	Companies that do not meet certain criteria are excluded from the index based on the RepRisk Index developed by RepRisk
• S&P/JPX Carbon Efficient Index • S&P/JPX Global Ex-Japan LargeMidCap Carbon Efficient Index	Companies that do not meet certain criteria are excluded from the index based on the RepRisk Index developed by RepRisk
• MSCI Nihonkabu ESG Select Leaders Index • MSCI Japan Empowering Women Index • MSCI ACWI ESG Universal Index (ex Japan and ex China A-shares)	Include only companies that meet certain criteria based on MSCI ESG Controversies Score
• Morningstar Japan ex-REIT Gender Diversity Tilt Index • Morningstar Developed Markets Ex-Japan Gender Diversity Index	Companies on the list are assigned to the group with the lowest tilt factor for quarterly rebalancing

(Source) GPIF

Number of Incidents of Controversies by Region and Content

In this section, we use data based on MSCI's controversy scores to examine the number of incidents of controversies by region, aiming to present an overall picture of corporate controversies. The data is categorized into environmental, social, and governance controversies. It is further categorized and recorded into themes such as "Toxic emissions & waste," (environmental), "Anticompetitive practices" (social), and "Bribery and fraud" (governance).

We flag four levels of controversies, based on the controversy score, to understand the number of new incidents.

- Red: Companies, including group companies (the same applies hereinafter), have been directly involved in one or more "very severe" incident of controversies. Equivalent to a controversy score of 0.
- Orange: Companies have been directly involved in one or more "very severe" incident of controversies but have partially resolved stakeholder concerns, companies that continue to be indirectly involved in "very severe" incidents of controversies by business partners, etc. Equivalent to a controversy score of 1.
- Yellow: Companies have been directly involved in one or more "severe" or "very severe" incident of controversies but have largely resolved stakeholder concerns, companies that continue to be directly involved in one or more "moderate" incident of controversies, etc. Equivalent to a controversy score of 2 to 4.
- Green: Companies directly involved in one or more "minor" incident of controversies, companies not involved in any incidents of controversies, etc. Equivalent to a controversy score of 5 to 10.

We compiled monthly data on the number of companies in the MSCI World Index, which consists of approximately 2,800 large- and mid-cap stocks in developed countries,[5] for which the flag color has deteriorated from green to yellow, orange, or red. We found a total of 3,525 such cases from December 2016 to May 2025 (Figure 2). By category, we found, from largest to smallest, 2,555 cases of social controversies, 732 cases of governance controversies, and 238 cases of environmental controversies.

By theme, "bribery and fraud," including accounting fraud, was the most prevalent, with 575 cases. In addition, the common issues across all four regions—Japan, North America, Europe, and Asia-Pacific—were "Anticompetitive practices," such as price collusion and bid rigging, "Product safety and quality," involving the sale of products with questionable safety and recalls, and "Labor management relations," including cases of suspected unjust dismissal.

5 Average number of constituent stocks during the period under analysis.

Figure 2. Number of Incidents of Controversies by Region and Content

Pillar	Sub-Pillar	Thematic Indicators	Specific Example	Japan	North America	Europe	Asia-Pacific
Environmental	Environmental	Biodiversity and land use	Deforestation and habitat destruction that leads to species loss	2	15	20	16
		Operational waste (non-hazardous)	Large waste emissions from business activities and improper waste treatment	0	1	0	1
		Supply chain management	Unsustainable procurement of raw materials	0	3	9	1
		Toxic emissions & waste	Leakage of hazardous chemicals from factories	4	41	26	35
		Water stress	Excessive pumping of groundwater	0	1	2	0
		Energy and climate change	Criticism and lawsuits targeting large-scale GHG emissions	4	22	21	11
		Others	Other environmental controversies	0	0	0	3
Social	Customers	Privacy and data security	Unauthorized use of customer data and leakage of personal information	12	47	11	23
		Anticompetitive practices	Price collusion and bid rigging	58	130	135	81
		Customer relations	Fraudulent claims and excessive fees	15	106	81	68
		Marketing and advertising	Advertisements presenting incorrect or misleading information	5	52	30	21
		Product safety and quality	Sale of products with questionable safety and recalls	27	147	76	86
		Others	Other customer-related controversies	1	8	3	1
	Human rights concerns	Impact on local communities	Activities that forcibly expropriate land or negatively impact the local economy	9	81	34	48
		Civic liberties	Cooperation with government-imposed restrictions on civil rights or surveillance	0	8	0	18
		Human rights-related concerns	Involvement in projects that raise concerns about human rights violations	0	20	19	14
		Others	Other human rights-related controversies	0	0	0	0
	Labor rights	Child labor	Involvement in child labor	0	5	1	9
		Collective bargaining & union	Obstruction of labor union formation and strikes	10	79	69	49
		Discrimination and workforce diversity	Discrimination based on gender or race	4	78	14	20
		Health & safety	Accidents and injuries in the workplace, non-compliance with safety standards	16	93	28	109
		Labor management relations	Suspected unfair dismissal	27	134	58	105
		Supply chain labor standards	Suspected poor working conditions or forced labor at suppliers	25	38	42	65
		Others	Other controversies relating to labor rights	0	2	0	0
Governance	Governance	Bribery and fraud	Suspected bribery or accounting fraud	55	159	109	252
		Controversial investments	Investment or financing of projects suspected of human rights violations or similar issues	7	7	14	7
		Governance structure	Insufficient supervision of conflicts of interest and ethics violations	5	25	26	50
		Others	Other governance-related controversies	1	7	4	4

(Source) GPIF, Reproduced by permission of MSCI ESG Research LLC

Impact of Controversies on Corporate EPS Growth

In this section, we engage in a quantitative analysis of the impact of controversies on corporate performance. Specifically, we examine the difference in future EPS growth between companies depending on whether or not controversies have occurred.

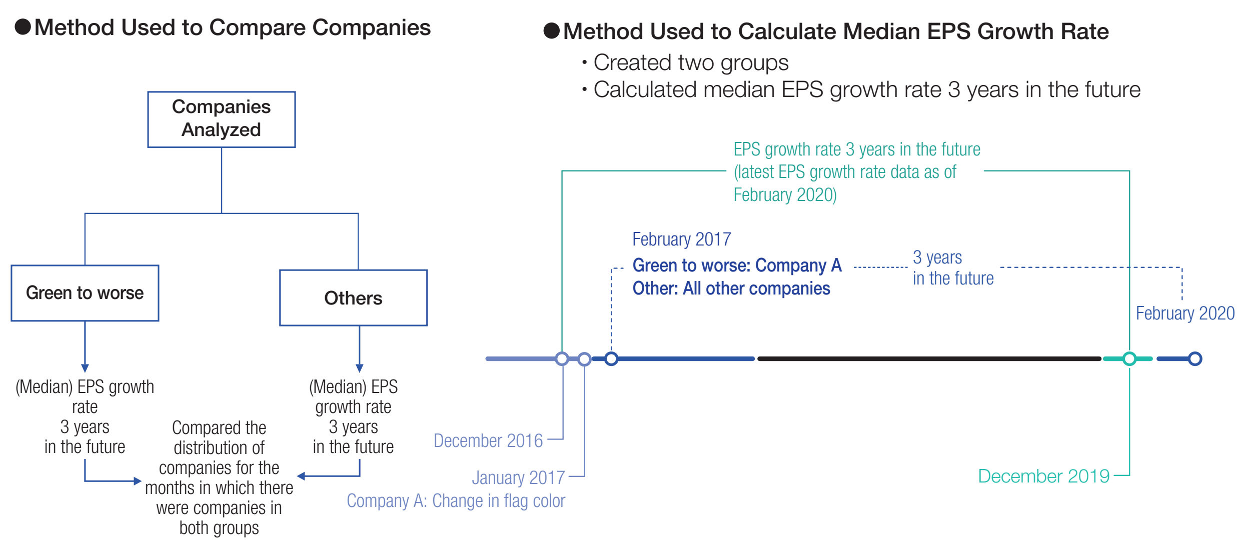
We define "companies with controversies" as the group of companies that have experienced a deterioration in the controversy score from green to worse flag color and "companies without controversies" as all other companies. We classify each company analyzed into one of these groups on a monthly basis.

On this basis, we calculate the median EPS growth rate[6] (hereinafter referred to as the EPS growth rate) for each group by using the latest EPS as of each month for each company and the latest EPS for three years in the future (Figure 3). This method enables us to calculate the EPS growth rate for "companies with controversies," including EPS before and after the controversies occurred. We classified companies into one of the two groups on a monthly basis from December 2016 to December 2021, and complied the EPS growth rates for each group for comparison.

6 We used the median instead of the mean, considering the potential impact of outliers.

We analyzed approximately 2,500 companies[7] from four regional indexes: the MSCI Japan Index (hereinafter referred to as Japan), the MSCI North America Index (hereinafter referred to as North America), the MSCI Europe Index (hereinafter referred to as Europe), and the MSCI AC Asia Pacific ex Japan Index (hereinafter referred to as Asia-Pacific). We compared the results for each region.

Figure 3. Method Used to Analyze the Impact of Controversies on Corporate EPS Growth

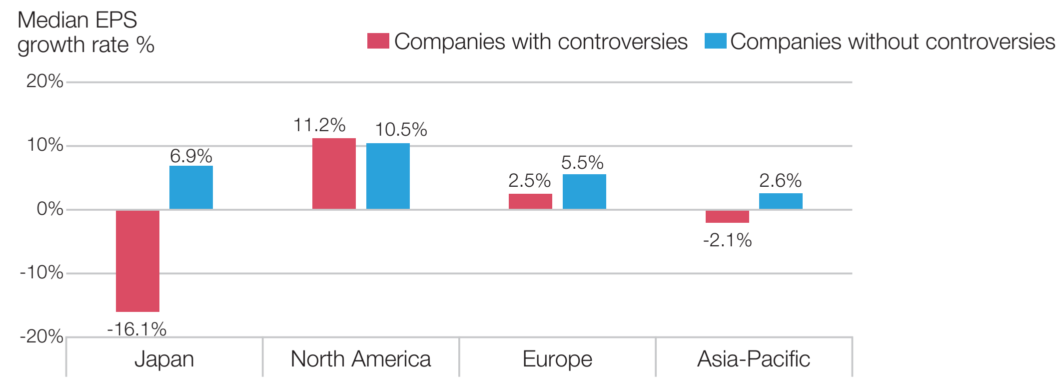


(Note) For details, please refer to the "2025 Analysis of Climate-Related Risks in the GPIF Portfolios and ESG Controversies' Financial Impact," which is a report on MSCI's analysis prepared for this report.
(Source) MSCI

As a result, we found that in Japan, Europe, and the Asia-Pacific, the median EPS growth rate for "companies with controversies" was lower than that of "companies without controversies." The difference was especially large in Japan, where the EPS growth rate of "companies with controversies" was -16.1%, a full 23.0 percentage points lower than that of "companies without controversies." By contrast, in North America, the EPS growth rate of "companies with controversies" was actually 0.7 percentage points higher, at 11.2% (Figure 4).

These results suggest that, in regions other than North America, controversies tend to negatively impact companies' EPS growth. Japan, in particular, may be an environment where corporate controversies can seriously impact future performance and stakeholder trust. Of course, different analysis methods, subjects, and time frames can be expected to produce different results. To further understand the relationship between corporate behavior and financial performance, it will be necessary to conduct analyses that take into account regional differences in governance structures and stakeholder responses.

Figure 4. Comparison of Median EPS Growth Rate Between Companies With and Without Controversies



(Source) GPIF, Reproduced by permission of MSCI ESG Research LLC

7 Average number of constituent stocks during the period under analysis.

Disclaimer (GPIF)

This report is intended to provide information regarding GPIF's sustainability investment-related initiatives and the evaluation and analysis of sustainability-related non-financial information. Please refer to GPIF's website (https://www.gpif.go.jp/en/investment/) for the official version of the 2024 Sustainability Investment Report. The content of the report is up-to-date at the time of writing, and GPIF provides no guarantee of its accuracy and completeness. It may be amended or changed at any time without prior notice. GPIF and third parties reserve all rights concerning the content of the report. Please consult with the Planning and Communication Department (TEL: +81-3-3502-2486) before reproducing or copying (not including quotations) this Sustainability Investment Report for commercial purposes.

Disclaimers (other companies)

FTSE

London Stock Exchange Group plc and its group undertakings (collectively, the "LSE Group"). © LSE Group 2025. FTSE Russell is a trading name of certain of the LSE Group companies. "FTSE®", "FTSE Russell®" are trade marks of the relevant LSE Group companies and are used by any other LSE Group company under license. All rights in the FTSE Russell indexes or data vest in the relevant LSE Group company which owns the index or the data. Neither LSE Group nor its licensors accept any liability for any errors or omissions in the indexes or data and no party may rely on any indexes or data contained in this communication. No further distribution of data from the LSE Group is permitted without the relevant LSE Group company's express written consent. The LSE Group does not promote, sponsor or endorse the content of this communication.

MSCI

Although GPIF's information providers, including without limitation, MSCI ESG Research LLC and its affiliates (the "ESG Parties"), obtain information from sources they consider reliable, none of the ESG Parties warrants or guarantees the originality, accuracy and/or completeness, of any data herein and expressly disclaim all express or implied warranties, including those of merchantability and fitness for a particular purpose. None of the Information is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such, nor should it be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. None of the ESG Parties shall have any liability for any errors or omissions in connection with any data or Information herein, or any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages.

S&P Global Inc.

This content (including any information, data, analyses, opinions, ratings, scores, and other statements) ("Content") has been prepared solely for information purposes and is owned by or licensed to S&P Global Inc. and/or its affiliates (collectively, "S&P Global").

This Content may not be modified, reverse engineered, reproduced or distributed in any form by any means without the prior written permission of S&P Global. You acquire absolutely no rights or licenses in or to this Content and any related text, graphics, photographs, trademarks, logos, sounds, music, audio, video, artwork, computer code, information, data and material therein, other than the limited right to utilize this Content for your own personal, internal, non-commercial purposes or as further provided herein.

Any unauthorized use , facilitation or encouragement of a third party's unauthorized use (including without limitation copy, distribution, transmission or modification, use as part of generative artificial intelligence or for training any artificial intelligence models) of this Content or any related information is not permitted without S&P Global's prior consent subject to appropriate licensing and shall be deemed an infringement, violation, breach or contravention of the rights of S&P Global or any applicable third-party (including any copyright, trademark, patent, rights of privacy or publicity or any other proprietary rights).

This Content and related materials are developed solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. S&P Global gives no representations or warranties regarding the use of this Content and/or its fitness for a particular purpose and references to a particular investment or security, a score, rating or any observation concerning an investment or security that is part of this Content is not a recommendation to buy, sell or hold such investment or security, does not address the suitability of an investment or security and should not be relied on as investment advice.

S&P Global shall have no liability, duty or obligation for or in connection with this Content, any other related information (including for any errors, inaccuracies, omissions or delays in the data) and/or any actions taken in reliance thereon. In no event shall S&P Global be liable for any special, incidental, or consequential damages, arising out of the use of this Content and/or any related information.

The S&P and S&P Global logos are trademarks of S&P Global registered in many jurisdictions worldwide. You shall not use any of S&P Global's trademarks, trade names or service marks in any manner, and in no event in a manner accessible by or available to any third party. You acknowledge that you have no ownership or license rights in or to any of these names or marks.

See additional Disclaimers and terms of use at https://www.spglobal.com/en/terms-of-use.

Investment Principles

1 Our overarching goal is to contribute to the stability of the national pension system by securing the investment returns that it requires with minimal risk and from a long-term perspective, to the sole benefit of insureds.

2 Our primary investment strategy is diversification by asset class, region, and timeframe. While market prices may fluctuate in the short term, GPIF will take full advantage of our long-term investment horizon to achieve investment returns in a more stable and efficient manner, while simultaneously ensuring sufficient liquidity to pay pension benefits.

3 We formulate our overall policy asset mix and manage risks at the portfolio, asset class, and investment manager level. We utilize both passive and active management in order to achieve benchmark returns (i.e., average market returns) and seek untapped profitable investment opportunities.

4 We believe that sustainable growth of investee companies and the capital market as a whole is vital in enhancing long-term investment returns. In order to secure such returns for the benefit of insureds, therefore, we promote sustainability investment including those which take into account non-financial factors such as ESG and social or environmental effects (impact), in addition to financial factors.

5 In order to enhance long-term investment returns, we shall advance various initiatives (including those considering sustainability such as ESG) to promote long-termism as well as sustainable growth of investee companies and the capital market as a whole, and to fulfill our stewardship responsibilities.