



# **Evaluation Project on the effects of engagement**

**May, 2024**



# Introduction

[Acknowledgements]

This project was conducted by GPIF in collaboration with UTokyo Economic Consulting Inc. (UTEcon). We wish to express our sincere gratitude to Mr. Masahiro Shibata and Dr. Atsuko Izumi of UTEcon, and Professor Kazunori Suzuki of Waseda University, an advisor to UTEcon, all of whom contributed greatly to this project by performing quantitative analyses. We also wish to thank all the information vendors who allowed us to use their data in this project.



# Abstract

- In recent years, Government Pension Investment Fund (GPIF) has conducted various initiatives to promote engagement activities by its asset managers. The main purpose of this project is to use statistical causal inference methods to demonstrate what behavioral changes, ESG performance improvements and corporate value enhancements have been brought about to the investee companies by the engagement of asset managers.
- From FY2017 to FY2022 (for FY2022, until the end of December, 2022), we performed “Fact-Finding Analysis of Engagements” and “Causal Analysis of the Effects of Engagement” regarding 26,792 engagements covering 48,077 themes in total, by 21 funds of GPIF’s external asset managers entrusted with domestic equity investment. No previous studies have comprehensively analyzed such a large number of funds and dialogues.
- “Chapter 2: Descriptive Analysis of Engagements” revealed that the engagement activities of asset managers by both active and passive funds are increasing year by year top-level managers in Chairman/CEO and Board member (Internal director)/Executive officer categories have also increasingly attended. Concerning passive funds, dialogue with "Outside Directors" is increasing. By company size, dialogue is particularly active among large companies. As for the dialogue themes “Board Structure, Self-evaluation” and “Management & Business Strategies” have been the most common for all fiscal years, while “Climate Change” has been increasing rapidly in recent years. This trend is particularly evident in industries with high-emission, demonstrating that asset managers engage in dialogue with investee companies according to the characteristics of the industries.
- It is also found that asset managers tend to have engaged with large companies, have companies with a low ownership ratio of controlling shareholder's, and companies that actively disclose information through integrated reports and other means.
- In “Chapter 3: Causal Analysis of the Effects of Engagement,” we extracted a group of companies that have a trend similar to that of the engaged companies using the propensity score matching (PSM) method, and performed causal analysis using the Difference in Differences (DID)\* Method. Specifically, we measured corporate value-related indicators, including market capitalization (Market Cap), PBR and Tobin’s q, as well as non-financial KPIs aligned with dialogue themes, such as ESG Scores, Presence of GHG Emissions Reduction Targets, and Percentage of Female Board Members, to confirm if engagement brought about any improvements. In addition, to further improve the accuracy of the analyses, we also considered “pre-trends.”

(Note)\*Analysis method used in our “Research Study concerning Share Lending Effects on Markets,” the results of which were published in FY2023

- As a result of causal analyses, it became clear that portfolio companies that engaged improved their corporate value-related indicators (e.g., PBR) and non-financial KPIs (e.g., Presence of GHG Emissions Reduction Targets, Number of Independent Outside Directors) more than portfolio companies that did not engage (control group), through dialogue on “Climate Change” and “Board Structure, Self-evaluation.” In addition, dialogue on “Cross-shareholdings” revealed a relative improvement in KPIs directly related to the themes, such as a decrease in “Cross-shareholding Ratio.”
- Broken down by company size, we found that Small companies’ KPIs often relatively improved through engagement. On the other hand, there were almost no cases where KPIs deteriorated as a result of engagement. In summary, these findings indicate that dialogue between the GPIF’s external asset managers and their investee companies is likely to contribute to the corporate value enhancement of investees, along with the improvement of their sustainability improvements such as decarbonization and diversity.

## Causal Analysis of the Effects of Engagement—Themes & KPIs Showing Significant Outcomes—

	Theme	KPI (Outcome)	Significance level	Estimated effect	Positive/Negative	
Overall	E1: Climate Change	Tobin's q	1%	0.07	Positive	
		PBR	1%	0.11	Positive	
		Presence of GHG Emissions Reduction Targets	1%	0.08	Positive	
		Carbon Intensity Scope 2	1%	-5.29	Positive	
	G1: Board Structure, Self-evaluation	PBR	5%	0.11	Positive	
		Natural Logarithm of Market Cap	5%	0.06	Positive	
		Total Shareholder Return	5%	3.80	Positive	
		# of Independent Outside Directors	5%	0.15	Positive	
	G3: Capital Efficiency	Total Shareholder Return	5%	3.68	Positive	
	G4-1: Cross-shareholdings	Cross-shareholding Ratio	5%	-0.01	Positive	
	SG1: Diversity	Natural Logarithm of Market Cap	1%	0.08	Positive	
	Large	B1: Management & Business Strategies	ROE	1%	2.01	Positive
Equity Spread			1%	2.24	Positive	
B3: Shareholders' Meeting-related Matters		Natural Logarithm of Market Cap	5%	0.14	Positive	
		FTSE ESG Score	1%	-0.24	Negative	
E1: Climate Change		Carbon Intensity Scope 2	5%	-8.28	Positive	
SG1: Diversity		PBR	1%	0.38	Positive	
Mid		E1: Climate Change	Tobin's q	5%	0.06	Positive
		G1: Board Structure, Self-evaluation	Total Shareholder Return	5%	5.76	Positive
	G4-1: Cross-shareholdings	Cross-shareholding Ratio	1%	-0.01	Positive	
	Small	E1: Climate Change	Tobin's q	5%	0.09	Positive
			PBR	5%	0.15	Positive
			Presence of GHG Emissions Reduction Targets	5%	0.13	Positive
			Carbon Intensity Scope 2	5%	-8.16	Positive
	G1: Board Structure, Self-evaluation	Natural Logarithm of Market Cap	5%	0.08	Positive	
		ROE	5%	1.38	Positive	
		Equity Spread	5%	1.33	Positive	
		FTSE ESG Score	1%	0.20	Positive	
		# of Independent Outside Directors	5%	0.19	Positive	
G3: Capital Efficiency		Natural Logarithm of Market Cap	5%	0.09	Positive	
Total Shareholder Return	1%	8.28	Positive			
SG1: Diversity	% of Female Employees in New Hires	5%	6.17	Positive		

(Note) For “Positive/Negative,” we assigned “Positive” to those whose partial regression coefficient indicated KPI improvement and “Negative” to those indicated worsening KPI.

## Introduction

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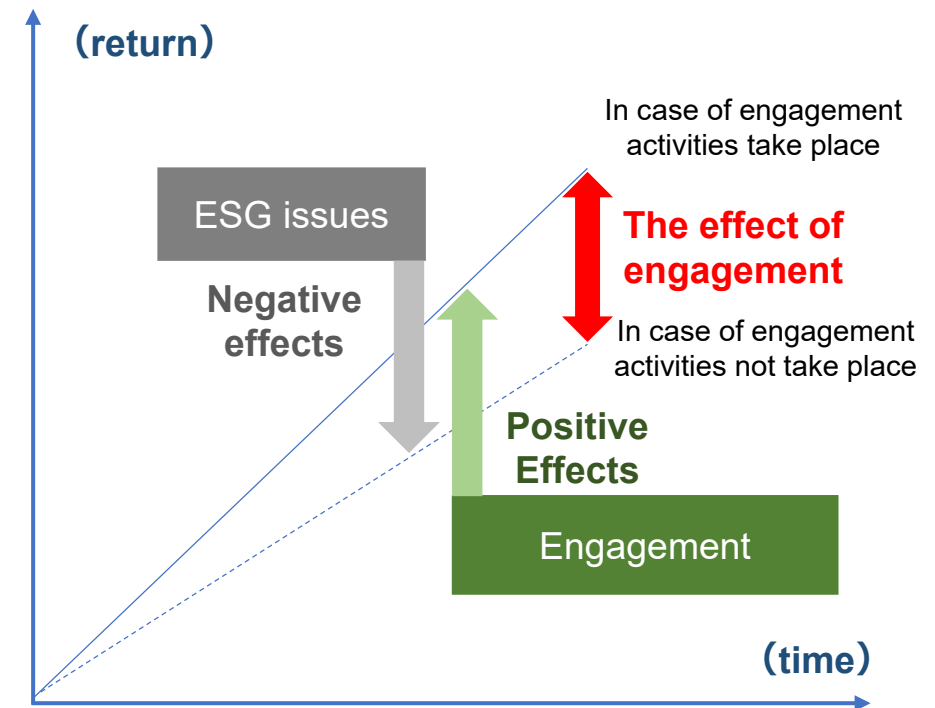


# **Chapter 1: Project Overview**

# 1-1 Objectives of this project

- GPIF is institutionally not allowed to directly invest in equities, and outsources dialogue with investee companies and the exercise of voting rights to external asset managers.
- For GPIF, which invests widely and diversifies across the capital market over the ultra-long term, to secure stable returns, it is important that the corporate value of each investee continuously increases, and thus the capital market as a whole grows in a sustainable and stable manner.
- For this reason, GPIF requests its asset managers to conduct constructive dialogue (engagement) with investee companies, including on ESG issues, in order to promote the improvement of investee companies' corporate value and the sustainable growth of the market. In recent years, GPIF has been making various efforts to promote engagement activities of asset managers.
- Although it will take a long time for the expected effects to materialize, a considerable amount of time has passed since the start of GPIF's stewardship activities, and data has been accumulated, so the purpose of this project is to evaluate the effects of engagement to date.

**Figure 1.1 Image of the effect of engagement**

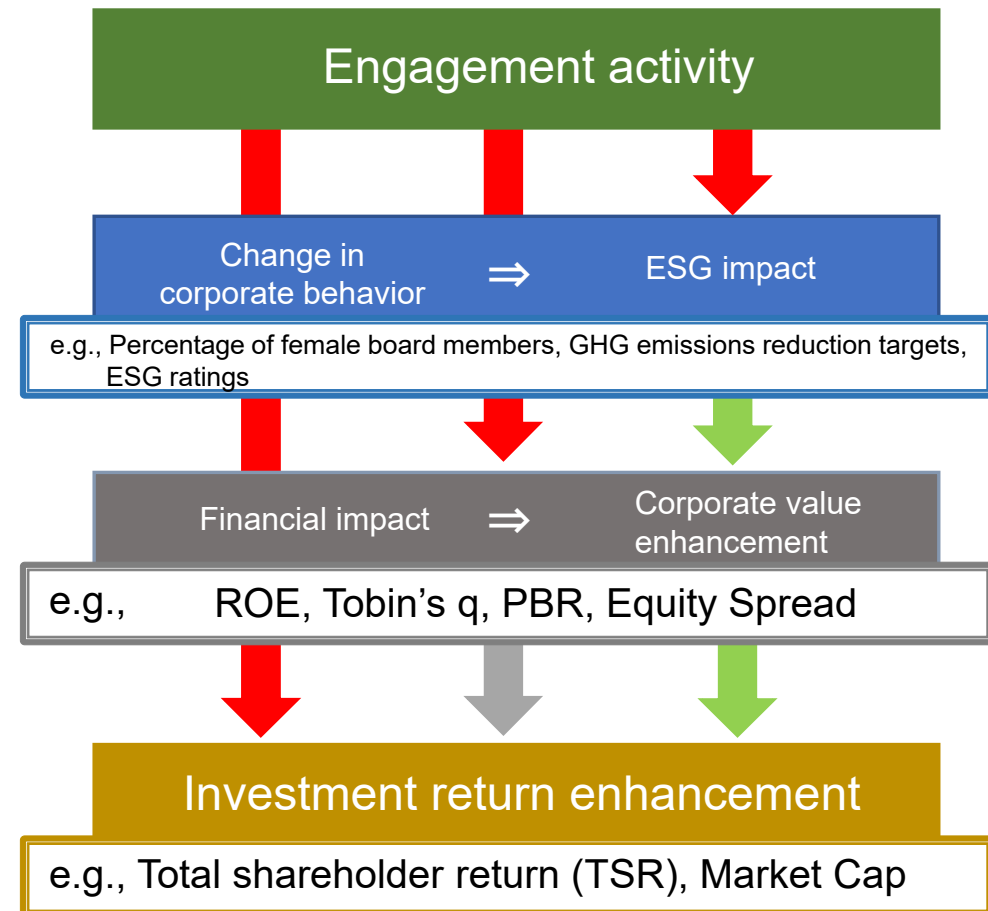


# 1-1 Objectives of this project

- As shown in Figure 1.2, various pathways can be assumed before engagement leads to improvements in corporate value and investment returns.
- The purpose of this project is to demonstrate what kind of behavioral changes have been brought about in the investee companies, or whether ESG performance or corporate value have been improved by the engagement of asset managers, based on a statistical causal inference method on various indicators (i.e., financial and share price indexes, ESG scores, GHG emissions reduction targets, specific ESG factors including the percentage of female board members).
- The analysis uses engagement records reported by asset managers from fiscal years 2017 to 2022\*. In addition to evaluating the effects of engagement, we collected and analyzed data on engagement provided by the asset managers to understand the actual state of engagement.
- This enables us to identify issues and other matters concerning our past efforts and to improve future activities.

(\* ) The number of dialogues in FY2022 is the total number at the end of December.

**Figure 1.2 Conceptual diagram showing how engagement activities lead to an increase in Investment Return**





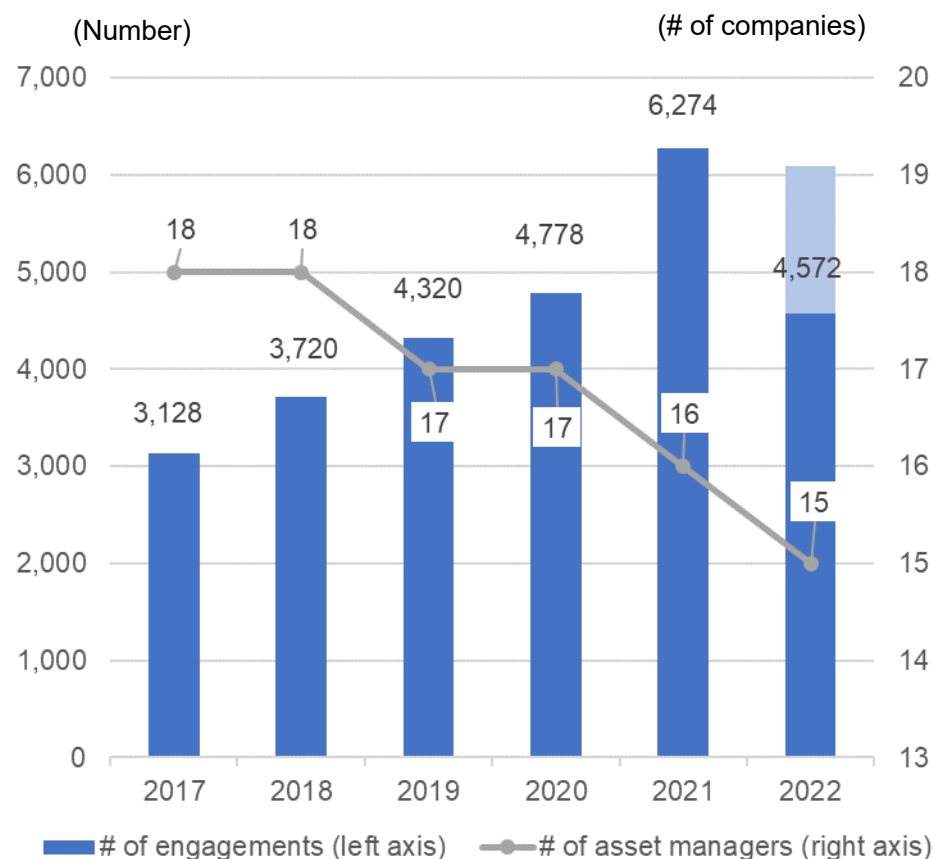
# 1-2 Details of engagement-related data—Analyzed data

- The analysis covers the results of 26,792 engagements conducted by 21 funds of GPIF’s external asset managers from FY2017 to FY2022 (for FY2022, until the end of December, 2022). The number of funds fluctuated due to fund additions and withdrawals.

**Figure 1.3: List of funds (asset managers) included in the analysis**

	Name of Fund	Sub contractor	A/P	Engagement-Enhanced
1	Asset Management One Co., Ltd.		P	○
2	Nomura Asset Management Co., Ltd.		P	
3	BlackRock Japan Co., Ltd.		P	
4	Sumitomo Mitsui Trust Asset Management Co., Ltd.		P	○
5	Mitsubishi UFJ Trust and Banking Corporation		P	
6	Resona Asset Management Co., Ltd.		P	○
7	Goldman Sachs Asset Management Co., Ltd.*		P	
8	Asset Management One Co., Ltd. (Active 1)		A	
9	Asset Management One Co., Ltd. (Active 2)		A	
10	Invesco Asset Management (Japan) Limited		A	
11	Capital International K.K.		A	
12	Schroder Investment Management (Japan) Limited		A	
13	Taiyo Pacific Partners LP	○	A	
14	FIL Investments (Japan) Limited		A	○
15	Sumitomo Mitsui DS Asset Management Company, Limited		A	
16	Lazard Japan Asset Management K.K		A	
17	Russell Investments Japan Co., Ltd.		A	
18	Eastspring Investments Limited*		A	
19	Dimensional Fund Advisors L.P.*	○	A	
20	Nikko Asset Management Co., Ltd*		A	
21	JPMorgan Asset Management (Japan) Limited*		A	

**Figure 1.4: Changes in the Number of Dialogues and Funds (in Each Fiscal Year)**



(Note 1) The asterisk (\*) indicates funds that have been already withdrawn as of March 2023. “A” stands for active fund and “P” for passive fund.

(Note 2) FIL Investments and Nomura AM are selected both as active and passive fund managers but engagement data is not differentiated. We classified FIL Investments as an active fund manager and Nomura AM as a passive fund manager.

(Note 1) The number of dialogues in FY2022 reached 4,572 as of the end of December (a), and 6,096 for the whole year (a×4/3).

(Note 2) The numbers of analyzed funds are as of the end of each fiscal year.

# 1-2 Details of engagement-related data—Dialogue themes

- GPIF reclassified 26,792 engagements into 38 themes, based on the content of the dialogue with asset managers. In some cases, multiple themes were discussed in a single engagement; therefore, the number of theme-based engagements came to 48,077 in total.

**Figure 1.3 Number of Dialogues by Theme  
(Cumulative Total from FY2017 to FY2022)**

Theme		Number	Theme		Number
1	B1: Management & Business Strategies	6725	20	S7: Others (S)	331
2	B2: Financial Strategies	2423	21	G1: Board Structure, Self-evaluation	6960
3	B3: Shareholders' Meeting-related Matters	1913	22	G2: Risk Management	288
4	B4: Human Capital	1229	23	G3: Capital Efficiency	2386
5	B5: Others	247	24	G4-1: Cross-shareholdings	1503
6	E1: Climate Change	4566	25	G4-2: Parent-Subsidiary Listing	277
7	E2: Deforestation	131	26	G4-3: Minority Shareholder Rights (Others)	76
8	E3: Water Stress, Water Security	124	27	G5-1: Takeover Defenses	880
9	E4: Biodiversity	261	28	G5-2: Remuneration	953
10	E5: Pollution & Resources	113	29	G5-3: Corporate Governance (Others)	4302
11	E6: Waste Management	133	30	G-6: Anti-corruption	71
12	E7: Environmental Opportunities	707	31	G7: Tax Transparency	0
13	E8: Others (E)	600	32	G8: Others (G)	0
14	S1: Human Rights & Communities	541	33	ES1: Supply Chain	867
15	S2: Product Liability	206	34	SG1: Diversity	1886
16	S3: Health & Safety	206	35	ESG1: Disclosure	3129
17	S4: Labor Standards	395	36	ESG2: Misconduct	1086
18	S5: Controversial Sourcing	1	37	ESG3: ESG Ratings (Scores)	42
19	S6: Social Opportunities	206	38	ESG4: Others	2313

## 1-3 Previous study—Active Ownership (2015)

- The study focuses on engagement activities provided by a major institutional investors to listed companies in the U.S. from 1999 to 2009 (613 companies, 2,152 themes). Engagement success rate was 18%, and the average time from initial engagement to success was approximately 18 months. The success rate of engagements for E and S themes was 13%, lower than the 24% success rate on G themes.
- Engagement is more likely to occur with large companies, companies that are performing poorly, and companies with poor governance. Engagement is also more likely to occur with companies where socially conscious institutional investors (e.g., pension funds, activists) have a large share.
- If an asset manager had successfully engaged with a target company in the past, the success rate of engagement with the same company is higher. Collaboration with other asset managers particularly contribute to the success of engagement on ES themes. Collaborative engagement is more effective in the ES-themed issues, compared to CG-themed.
- ESG engagement experienced a 2.3% in cumulative excess returns in the year from the first engagement. Successful engagement generated +7.1% in cumulative excess returns, which gradually started to plateau after one year. Positive market reactions to successful engagement are particularly noticeable in Corporate Governance- (+8.6%) and Climate Change (+10.3%)-themed engagements.
- The study compared the performance, profitability, efficiency, shareholder ratio share price volatility of target companies, and governance change of a successful and failed engagement case by using the Difference in Differences (DID) Method. In cases where ES engagement for a company succeeded, the company's ROA and sales per capita improved significantly after one year compared to where it failed. Institutional investors, pension funds, and SRI funds increased their shareholding ratio of in the company one year after successful ES engagement. Furthermore, two years after in successful engagement cases on all ESG themes, companies' corporate governance structure improved.
- Where ESG engagement was successful, ESG-related activism increased shareholder value, and even where engagement failed, such activism improved social and public welfare, provided it did not destroy the company's corporate value, . When engagement (particularly ES-related) was successful, companies with poorer governance began to focus on improving their governance and performance. Unlike hedge fund activism, responsible investment initiatives are cooperative rather than confrontational.

Elroy Dimson , Oğuzhan Karakaş, Xi Li. *Active Ownership. The Review of Financial Studies*

# 1-3 Previous study—“Selection and Effects of Environmental and Social Engagement by Institutional Investors” (2023)

- Based on 2,832 engagement records provided to Japanese companies by four asset managers (FIL Investments (Japan) Ltd., Amundi Japan Ltd., Tokio Marine Asset Management Co., Ltd., and Fukoku Capital Management, Inc.) from 2017 to 2020, Tokyo Institute of Technology’s Inoue Research Group examined what types of companies were selected by institutional investors to engage and what changes were brought about in those companies through engagement using Difference in Difference (DID) and other methods.
- The results show that institutional investors focus on engaging companies with high investment ratio in their investment portfolio, and that companies receiving governance engagement often overlap with those receiving environmental and social engagement. In addition, among investee companies that receive governance engagement, companies with high capital efficiency or good information disclosure on governance system as well as environmental and social issues also receive environmental and social engagement by institutional investors.
- From analysis of the effects of engagement, it was found that companies that received engagement on environmental aspects established their long-term CO2 emissions reduction targets afterwards, and achieved a significant reduction in their post-engagement CO2 emissions. This kind of environmental effect was not observed in companies that received governance engagement only, indicating that the effect was specific to environmental engagement.
- On the other hand, the percentage of female board members increased after the engagement at both companies that only received social engagement or governance engagement. It was confirmed for companies that repeatedly received governance engagement, the impact on corporate value (Tobin’s q) improved, while no significant improvement was observed at companies that received environmental and social engagement. It was also found that while environmental and social engagement improved each aspect, it did not reduce shareholder value and did not violate the fiduciary responsibility of institutional investors.
- The contribution of this study is, based on engagement activity data from multiple institutional investors, that active funds conduct more actively on engagement on environmental and social aspects compared to passive funds, and that such engagement activities are actually effective in improving the environmental and social aspects of the target companies.

**Kexin Lin, Yosuke Kimura, Kotaro Inoue. “Selection and Effects of Environmental and Social Engagement by Institutional Investors.” *RIETI DP***



## 1-3 Previous study —“Does Paying Passive Managers to Engage Improve ESG Performance?” (2023)

- This study analyzed two ESG improvement initiatives implemented by GPIF from 2017 to 2018: specifically (1) investing in best-in-class type passive investment indexes (FTSE Blossom Japan Index and MSCI Japan ESG Select Leaders Index) made up of Japanese companies with high ESG scores, and (2) introducing “Engagement-Enhanced Passive Investment” funds in its portfolio.
- The study used the records of more than 3,700 dialogues from 2018 to 2022 held by Asset Management One (AM One), one of the Engagement-Enhanced Passive Investment fund managers, with its investee companies, and analyzed if the provided engagements affected the companies’ post-engagement ESG scores. The companies were classified into an engaged group (treated group) and an unengaged group (control group), and the impact of engagement or lack thereof on ESG scores (treatment effect) were measured using the Difference in Differences (DID) Method. The results show that companies that AM One engaged through dialogue had particularly pronounced improvements especially in FTSE ESG scores, and these score improvements were primarily realized through dialogue on E (Environment-related) themes.
- Next, the research uses an event study method to examine the stock price responses of companies included in the best-in-class type passive investment indexes selected by GPIF for improving their ESG scores (or excluded for deteriorating ESG scores). As a result of examination, stock responses are positive in both cases when companies are included in FTSE or MSCI indexes, and the opposite is true when companies are excluded.
- These findings confirmed that the ESG scores of engaged companies improved significantly compared with non-engaged companies after GPIF started include “Engagement-Enhanced Passive Investment” funds. This is evident from the widening difference in ESG scores between engaged and non-engaged companies since the start of engagement in 2018. It was also confirmed that the stock prices of companies whose ESG scores improved and were included in the best-in-class index increased when their inclusion was made public. In other words, if their ESG score improved through engagement with institutional investors, that company would benefit from a rise in share price, and the index as a whole would be expected to rise. It was suggest that the two initiatives by GPIF are likely to contribute to the improvement of Japanese companies' ESG performance in a complementary manner like “the two wheels of a cart.”

Marco Becht, Julian Franks, Hideaki Miyajima, Kazunori Suzuki. “Does Paying Passive Managers to Engage Improve ESG Performance?” *RIETI DP*



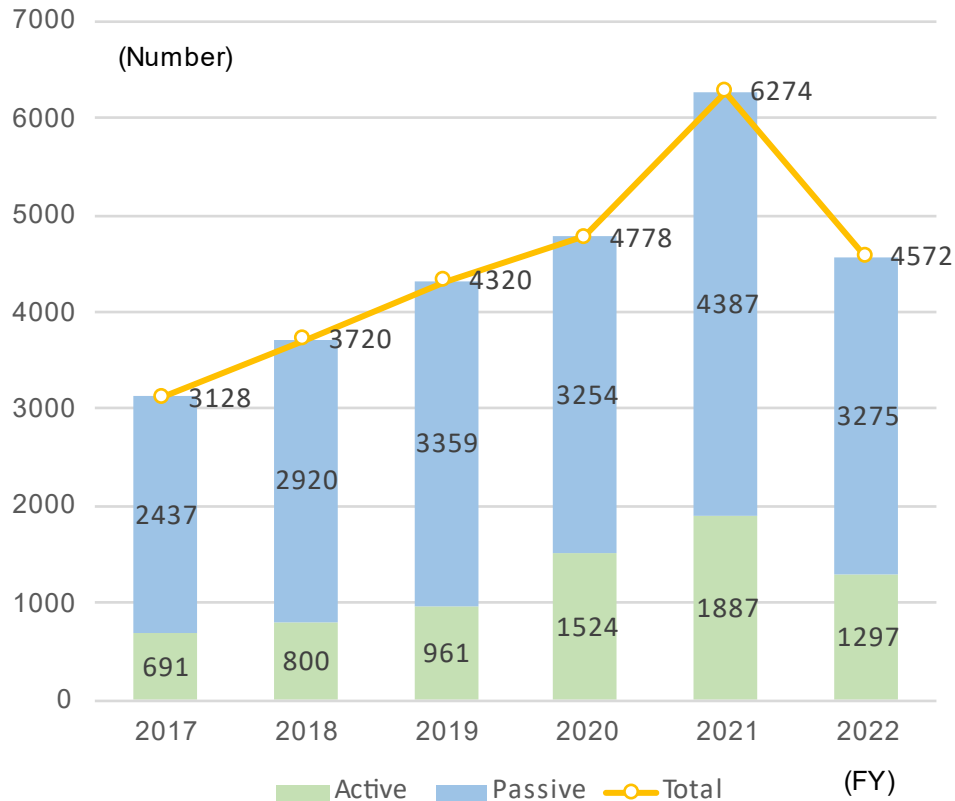
# **Chapter 2: Descriptive Analysis of Engagements**



# 2-1 Number of dialogues held by asset managers—Overall/By passive funds and active funds

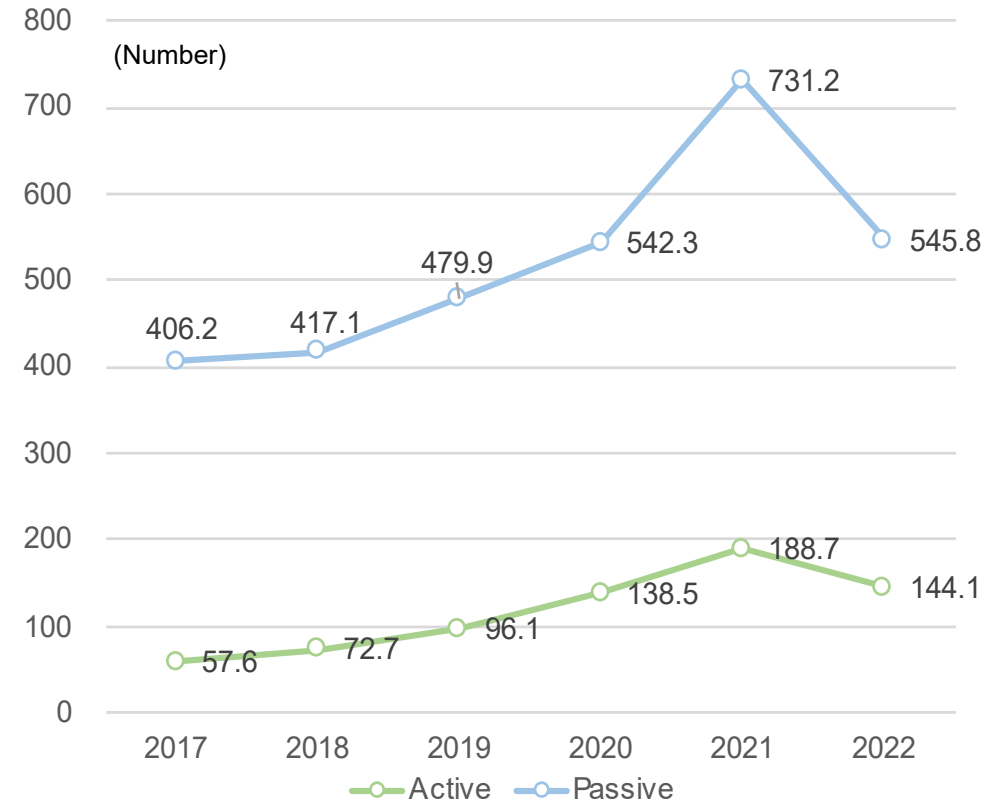
- From FY2017 to FY2022 (for FY2022, until the end of December, 2022), the number of dialogues by both passive fund and active fund managers had mostly been on the rise. The increase was especially noticeable in the number of dialogues per fund.

**Figure 2.1 Number of Dialogues by Passive Funds and Active Funds**



(Note) The number of dialogues in FY2022 is the total number at the end of December.

**Figure 2.2 Number of Dialogues per Fund**

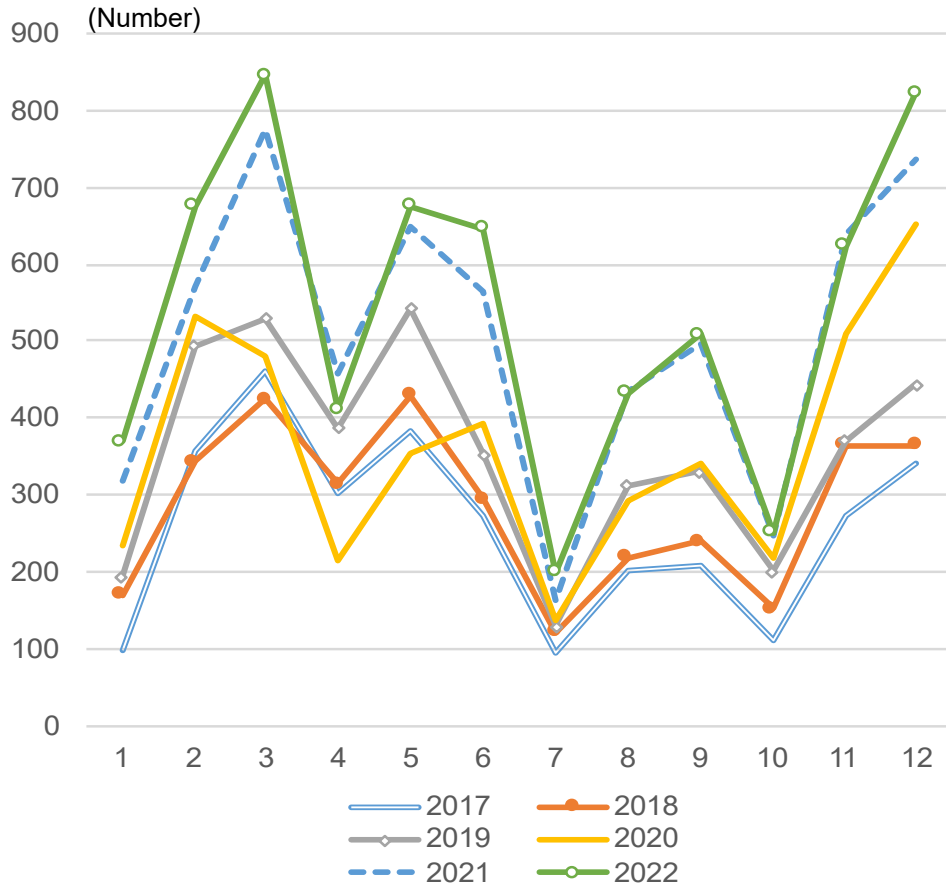


(Note 1) The number of dialogues in FY2022 is the total number at the end of December.

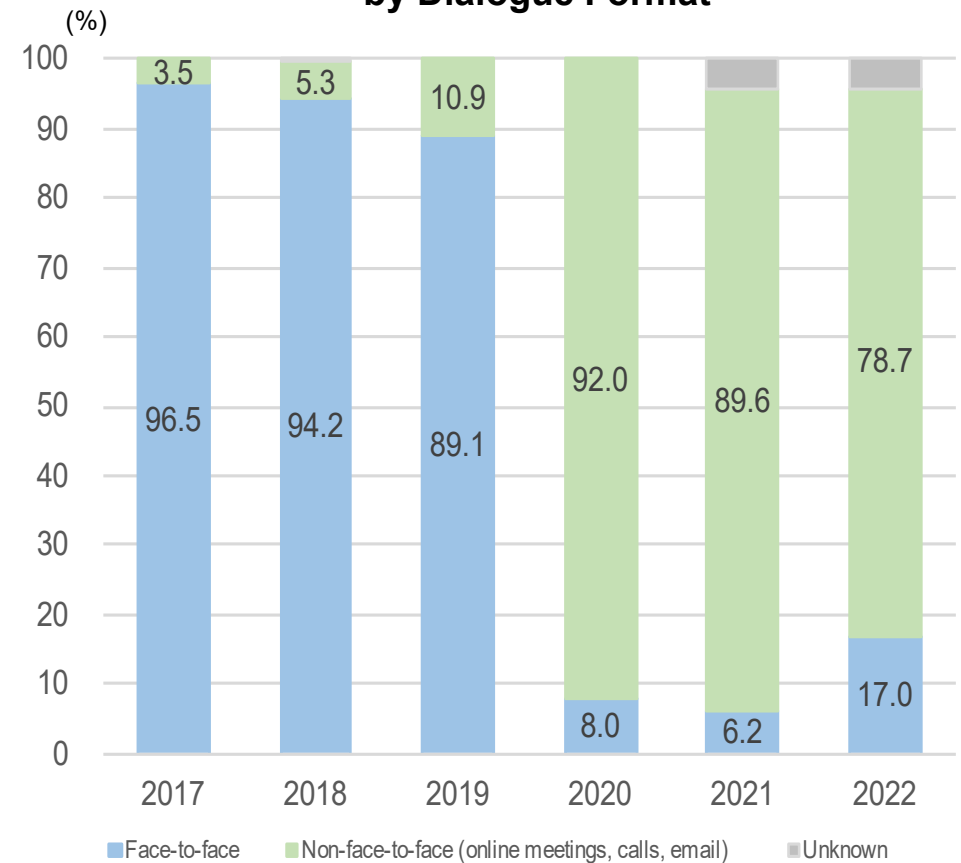
# 2-1 Number of dialogues held by asset managers—By month/dialogue format

- The number of dialogues tended to increase at the end of each calendar year and each fiscal year, while remaining low during the summer and autumn.
- Due to the COVID-19 pandemic, the number of non-face-to-face dialogues such as online meetings has increased rapidly. In FY2022, the number of face-to-face dialogues are on the rise again.

**Figure 2.3 Changes in the Number of Dialogues by Month**



**Figure 2.4 Changes in the Number of Dialogues by Dialogue Format**



(Note) The number of dialogues in FY2022 is the number at the end of December.





## 2.1 Number of dialogues held by asset managers—By type of investee company attendees

- The percentage of dialogues in which Chairman/CEO and Board member(Internal director)/Executive officer participate has been gradually increasing in recent years. In particular, the Chairman/CEO often participates in dialogues with active fund managers.
- On the other hand, passive fund managers are leading in the number of dialogues in which outside directors participate, even though the number of dialogues itself has been rather small.

**Figure 2.5 Number of Dialogues Attended by Top-Level Corporate Managers of Investee Companies** (# of dialogues)

(FY)		2017	2018	2019	2020	2021	2022	Total
Chairman/ CEO	Passive	304	338	414	437	697	532	2,722
	Active	119	130	161	286	308	272	1,276
	Overall	423	468	575	723	1,005	804	3,998
Board member (*)/ Executive officer	Passive	797	1,032	1,317	1,170	1,615	1,181	7,112
	Active	277	315	371	473	679	419	2,534
	Overall	1,074	1,347	1,688	1,643	2,294	1,600	9,646
General manager	Passive	554	689	677	799	916	694	4,329
	Active	110	122	147	358	420	271	1,428
	Overall	664	811	824	1,157	1,336	965	5,757
A position lower than General manager	Passive	759	840	917	774	1,058	801	5,149
	Active	152	192	243	312	381	253	1,533
	Overall	911	1,032	1,160	1,086	1,439	1,054	6,682
Outside director	Passive	19	21	34	74	101	67	316
	Active	9	1	4	14	12	7	47
	Overall	28	22	38	88	113	74	363
Others		28	40	35	81	87	75	346
Total		3,128	3,720	4,320	4,778	6,274	4,572	26,792

**Figure 2.6 Ratio of Dialogues Attended by Top-level Corporate Managers**

(FY, %)		2017	2018	2019	2020	2021	2022	Total
Chairman/ CEO	Passive	12.5	11.6	12.3	13.4	15.9	16.2	13.9
	Active	17.8	17.1	17.4	19.8	17.1	22.3	18.7
	Overall	13.6	12.7	13.4	15.4	16.2	17.9	15.1
Board member (*)/ Executive officer	Passive	32.8	35.3	39.2	36.0	36.8	36.1	36.2
	Active	41.5	41.4	40.1	32.8	37.7	34.3	37.2
	Overall	34.6	36.6	39.4	35.0	37.1	35.6	36.5
General manager	Passive	22.8	23.6	20.2	24.6	20.9	21.2	22.1
	Active	16.5	16.1	15.9	24.8	23.3	22.2	20.9
	Overall	21.4	22.0	19.2	24.6	21.6	21.5	21.8
A position lower than General manager	Passive	31.2	28.8	27.3	23.8	24.1	24.5	26.2
	Active	22.8	25.3	26.2	21.6	21.2	20.7	22.5
	Overall	29.4	28.0	27.1	23.1	23.3	23.4	25.3
Outside director	Passive	0.8	0.7	1.0	2.3	2.3	2.0	1.6
	Active	1.3	0.1	0.4	1.0	0.7	0.6	0.7
	Overall	0.9	0.6	0.9	1.9	1.8	1.6	1.4

(Note 1) The number of dialogues in FY2022 is the number at the end of December.

(Note 2) Figure 2.6 shows the numbers obtained by dividing each number of dialogues in Figure 2.5 by the number of dialogues by passive funds, active funds, and all dialogues.

(\*) Internal director

## 2-1 Number of dialogues held by asset managers—By market cap category

- Looking at the market cap categories (ranking) of the engaged investee companies, both the number of dialogues and companies show that dialogues have been actively held with top-ranking companies by market cap.
- Looking at the average number of annual dialogues per company shows that, the average number of dialogues per year for most investee companies excluding the top 401 companies by market cap, is around three (3), showing a small difference among companies.

**Figure 2.7 Number of Dialogues & Engaged Companies by Market Cap Category**

Market Cap Categories (ranking)	# of dialogues (1)						# of engaged companies (2)						(1) / (2) 2022
	2017	2018	2019	2020	2021	2022	2017	2018	2019	2020	2021	2022	
1-200	1,246	1,620	1,779	1,917	2,601	1,977	189	195	190	190	192	194	10.2
201-400	769	882	938	1,114	1,260	1,012	168	167	158	167	180	176	5.8
401-600	413	369	525	530	744	482	140	113	128	132	143	131	3.7
601-800	211	251	313	346	443	317	84	93	100	101	118	100	3.2
801-1,000	152	178	223	216	306	219	74	60	70	70	83	70	3.1
1,001-1,200	100	107	164	181	245	141	41	48	53	57	62	47	3.0
1,201-1,400	71	86	119	114	150	100	34	39	45	30	40	36	2.8
1,401-1,600	40	54	42	75	99	78	19	23	27	27	33	22	3.5
1,601-1,800	22	31	45	41	53	53	21	20	21	17	15	17	3.1
1,801-2,000	13	22	15	42	85	32	13	14	12	16	17	11	2.9
2,001-	1	1	13	24	10	1	1	1	5	9	4	1	1.0
<b>Total</b>	<b>3,038</b>	<b>3,601</b>	<b>4,176</b>	<b>4,600</b>	<b>5,996</b>	<b>4,412</b>	<b>784</b>	<b>773</b>	<b>809</b>	<b>816</b>	<b>887</b>	<b>805</b>	<b>5.5</b>

(Note) The numbers were calculated based on investee companies constituting TOPIX in each fiscal year. Therefore, please note that each of the total values is different from those shown on other slides.

## 2-2 Dialogue themes by asset managers—Overall

- Looking at the trends in the number of dialogues by theme, it can be seen that while some themes (G1: Board Structure, Self-evaluation, B1: Management & Business Strategies) consistently have a high proportion, others (E1: Climate Change) have increased significantly in recent years.

**Figure 2.8: Changes in the Ratio of Respective Themes in All Dialogues—Overall**

Theme	2017	2018	2019	2020	2021	2022	Total	Theme	2017	2018	2019	2020	2021	2022	Total
B1: Management & Business Strategies	16.8%	11.6%	12.2%	12.7%	13.5%	18.0%	14.0%	G1: Board Structure, Self-evaluation	12.9%	14.2%	17.7%	15.5%	14.6%	11.2%	14.5%
B2: Financial Strategies	6.2%	6.1%	3.6%	4.3%	4.5%	6.7%	5.0%	G2: Risk Management	0.7%	0.3%	0.9%	1.0%	0.4%	0.4%	0.6%
B3: Shareholders' Meeting-related Matters	9.9%	5.2%	2.6%	3.2%	2.8%	3.8%	4.0%	G3: Capital Efficiency	6.0%	5.6%	4.6%	3.7%	5.0%	5.7%	5.0%
B4: Human Capital	1.6%	2.8%	2.0%	1.4%	3.1%	3.9%	2.6%	G4-1: Cross-shareholdings	1.4%	2.5%	3.8%	4.7%	2.8%	2.7%	3.1%
B5: Others	0.9%	0.3%	0.2%	0.8%	0.6%	0.3%	0.5%	G4-2: Parent-Subsidiary Listing	0.2%	0.3%	1.0%	0.7%	0.5%	0.6%	0.6%
E1: Climate Change	1.6%	5.2%	6.8%	10.3%	12.8%	13.3%	9.5%	G4-3: Minority Shareholder Rights (Others)	0.3%	0.1%	0.3%	0.2%	0.0%	0.0%	0.2%
E2: Deforestation	0.0%	0.3%	0.4%	0.5%	0.2%	0.2%	0.3%	G5-1: Takeover Defenses	4.1%	3.3%	2.6%	1.4%	0.9%	0.8%	1.8%
E3: Water Stress, Water Security	0.3%	0.6%	0.4%	0.2%	0.1%	0.1%	0.3%	G5-2: Remuneration	1.9%	2.5%	2.6%	1.7%	2.1%	1.3%	2.0%
E4: Biodiversity	0.1%	0.5%	0.8%	0.4%	0.4%	0.9%	0.5%	G5-3: Corporate Governance (Others)	8.9%	9.6%	9.8%	9.4%	8.3%	8.2%	8.9%
E5: Pollution & Resources	0.0%	0.1%	0.3%	0.3%	0.3%	0.2%	0.2%	G-6: Anti-corruption	0.2%	0.5%	0.3%	0.0%	0.0%	-	0.1%
E6: Waste Management	0.1%	0.1%	0.4%	0.5%	0.2%	0.1%	0.3%	G7: Tax Transparency	-	-	-	-	-	-	-
E7: Environmental Opportunities	0.6%	0.8%	1.0%	1.8%	2.0%	1.7%	1.5%	G8: Others (G)	-	-	-	-	-	-	-
E8: Others (E)	1.1%	1.7%	0.9%	1.5%	1.0%	1.5%	1.2%	ES1: Supply Chain	0.8%	1.2%	1.3%	2.2%	2.5%	1.7%	1.8%
S1: Human Rights & Communities	0.2%	0.6%	0.8%	1.2%	1.6%	1.5%	1.1%	SG1: Diversity	2.9%	3.6%	3.9%	4.7%	4.0%	3.7%	3.9%
S2: Product Liability	0.2%	0.3%	0.4%	0.8%	0.5%	0.3%	0.4%	ESG1: Disclosure	11.2%	5.1%	4.9%	4.4%	7.2%	7.7%	6.5%
S3: Health & Safety	0.0%	0.3%	0.3%	0.6%	0.5%	0.6%	0.4%	ESG2: Misconduct	3.3%	3.7%	3.7%	1.9%	1.5%	0.9%	2.3%
S4: Labor Standards	0.8%	1.8%	1.2%	1.0%	0.5%	0.1%	0.8%	ESG3: ESG Ratings (Scores)	0.2%	0.0%	0.1%	0.0%	0.2%	0.0%	0.1%
S5: Controversial Sourcing	-	-	-	0.0%	-	-	0.0%	ESG4: Others	4.3%	8.1%	6.8%	5.8%	4.2%	0.7%	4.8%
S6: Social Opportunities	0.2%	0.1%	0.2%	0.5%	0.5%	0.7%	0.4%	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
S7: Others (S)	0.2%	0.7%	1.2%	0.6%	0.6%	0.6%	0.7%								

(Note) Changes by fiscal year. Based on the number of dialogues from April 2017 to the end of December 2022. Heatmaps were created for the respective fiscal years.

## 2-2 Dialogue themes by asset managers—Overall

- The number of dialogues by theme is shown in the figure below.

**Figure 2.9 Changes in the Number of Dialogues by Theme—Overall**

(# of dialogues)

Theme	2017	2018	2019	2020	2021	2022	Total	Theme	2017	2018	2019	2020	2021	2022	Total
B1: Management & Business Strategies	742	702	909	1,176	1,733	1,463	6,725	G1: Board Structure, Self-evaluation	571	856	1,323	1,428	1,875	907	6,960
B2: Financial Strategies	276	366	267	400	572	542	2,423	G2: Risk Management	32	19	67	88	52	30	288
B3: Shareholders' Meeting-related Matters	440	315	196	294	356	312	1,913	G3: Capital Efficiency	264	338	344	340	641	459	2,386
B4: Human Capital	72	170	152	126	392	317	1,229	G4-1: Cross-shareholdings	61	151	285	430	360	216	1,503
B5: Others	38	19	13	77	73	27	247	G4-2: Parent-Subsidiary Listing	9	18	73	66	66	45	277
E1: Climate Change	73	314	507	949	1,643	1,080	4,566	G4-3: Minority Shareholder Rights (Others)	14	9	25	18	6	4	76
E2: Deforestation	2	16	32	42	26	13	131	G5-1: Takeover Defenses	181	200	192	131	113	63	880
E3: Water Stress, Water Security	13	35	31	19	16	10	124	G5-2: Remuneration	83	150	191	155	270	104	953
E4: Biodiversity	4	31	60	40	54	72	261	G5-3: Corporate Governance (Others)	392	581	730	871	1,066	662	4,302
E5: Pollution & Resources	2	5	21	27	39	19	113	G-6: Anti-corruption	7	33	24	2	5	0	71
E6: Waste Management	5	6	33	47	30	12	133	G7: Tax Transparency	0	0	0	0	0	0	0
E7: Environmental Opportunities	26	49	76	165	254	137	707	G8: Others (G)	0	0	0	0	0	0	0
E8: Others (E)	47	104	66	137	127	119	600	ES1: Supply Chain	37	74	100	204	315	137	867
S1: Human Rights & Communities	8	36	58	115	203	121	541	SG1: Diversity	129	217	293	438	507	302	1,886
S2: Product Liability	7	19	28	72	59	21	206	ESG1: Disclosure	495	309	369	407	927	622	3,129
S3: Health & Safety	2	21	23	56	59	45	206	ESG2: Misconduct	145	221	273	180	197	70	1,086
S4: Labor Standards	36	106	86	96	62	9	395	ESG3: ESG Ratings (Scores)	8	2	6	2	21	3	42
S5: Controversial Sourcing	0	0	0	1	0	0	1	ESG4: Others	190	487	509	534	536	57	2,313
S6: Social Opportunities	8	7	12	50	70	59	206	<b>Total</b>	<b>4,426</b>	<b>6,028</b>	<b>7,465</b>	<b>9,239</b>	<b>12,808</b>	<b>8,111</b>	<b>48,077</b>
S7: Others (S)	7	42	91	56	83	52	331								

(Note) Based on the number of dialogues from April 2017 to the end of December 2022. Changes by fiscal year. Heatmaps were created for the respective fiscal years.

## 2-2 Dialogue themes by asset managers—Passive funds vs active funds

- Among passive funds, the top dialogue theme by ratio was “G1: Board Structure, Self-evaluation,” followed by “B1: Management & Business Strategies” and then “E1: Climate Change.”
- Among active funds, the top dialogue theme by ratio was “B1: Management & Business Strategies,” followed by “B2: Financial Strategies” and then “G1: Board Structure, Self-evaluation.” The overall ratio of B category themes for active funds was higher than that for passive funds (Passive: 22%, Active: 38%).

**Figure 2.10 Top 10 Dialogue Themes by Ratio in All Dialogues (among Passive Funds)**

Theme	Ratio
G1: Board Structure, Self-evaluation	16.2%
B1: Management & Business Strategies	12.2%
E1: Climate Change	10.4%
G5-3: Corporate Governance (Others)	9.4%
ESG1: Disclosure	6.0%
G3: Capital Efficiency	5.3%
ESG4: Others	5.1%
B3: Shareholders’ Meeting-related Matters	4.0%
SG1: Diversity	3.9%
G4-1: Cross-shareholdings	3.0%

(Note) The theme ratios are those in the total number of dialogues from April 2017 to the end of December 2022.

**Figure 2.11: Top 10 Dialogue Themes by Ratio in All Dialogues (among Active Funds)**

Theme	Ratio
B1: Management & Business Strategies	19.4%
B2: Financial Strategies	11.5%
G1: Board Structure, Self-evaluation	9.1%
ESG1: Disclosure	8.2%
G5-3: Corporate Governance (Others)	7.7%
E1: Climate Change	6.8%
ESG4: Others	4.1%
SG1: Diversity	4.0%
G3: Capital Efficiency	4.0%
B3: Shareholders’ Meeting-related Matters	3.8%

(Note) The theme ratios are those in the total number of dialogues from April 2017 to the end of December 2022.



## 2-2 Dialogue themes by asset managers—Passive totals

- Looking at the totals for passive funds, “G1: Board Structure, Self-evaluation” accounted for the largest share of all dialogue themes.
- Changes in the past few years include significant increases in dialogue on “E1: Climate Change” and “B1: Management & Business Strategies.”

**Figure 2.12 Changes in the Ratio of Respective Themes in All Dialogues—Passive Totals**

Theme	2017	2018	2019	2020	2021	2022	Total	Theme	2017	2018	2019	2020	2021	2022	Total
B1: Management & Business Strategies	15.2%	8.0%	9.9%	10.8%	12.1%	17.9%	12.2%	G1: Board Structure, Self-evaluation	13.4%	16.0%	20.4%	18.4%	16.6%	10.9%	16.2%
B2: Financial Strategies	4.8%	5.0%	1.3%	0.9%	2.5%	4.8%	2.9%	G2: Risk Management	0.6%	0.1%	0.9%	1.1%	0.4%	0.3%	0.6%
B3: Shareholders' Meeting-related Matters	10.5%	5.0%	1.9%	2.8%	3.2%	4.5%	4.0%	G3: Capital Efficiency	6.3%	5.7%	5.2%	3.7%	5.1%	6.5%	5.3%
B4: Human Capital	1.4%	3.0%	2.0%	1.6%	3.3%	4.4%	2.8%	G4-1: Cross-shareholdings	1.4%	2.6%	3.4%	4.1%	3.0%	2.6%	3.0%
B5: Others	0.5%	0.2%	0.1%	0.3%	0.4%	0.3%	0.3%	G4-2: Parent-Subsidiary Listing	0.2%	0.3%	1.0%	0.8%	0.6%	0.6%	0.6%
E1: Climate Change	2.1%	6.4%	8.1%	11.7%	13.6%	13.4%	10.4%	G4-3: Minority Shareholder Rights (Others)	0.4%	0.2%	0.4%	0.2%	0.1%	0.0%	0.2%
E2: Deforestation	0.1%	0.3%	0.5%	0.6%	0.2%	0.1%	0.3%	G5-1: Takeover Defenses	4.6%	3.8%	3.0%	1.7%	1.1%	0.9%	2.1%
E3: Water Stress, Water Security	0.4%	0.7%	0.5%	0.2%	0.1%	0.1%	0.3%	G5-2: Remuneration	2.1%	2.6%	2.8%	2.1%	1.8%	1.1%	2.0%
E4: Biodiversity	0.1%	0.7%	1.0%	0.4%	0.4%	0.9%	0.6%	G5-3: Corporate Governance (Others)	9.0%	9.0%	9.1%	10.0%	9.3%	9.5%	9.4%
E5: Pollution & Resources	0.1%	0.1%	0.3%	0.3%	0.3%	0.3%	0.3%	G-6: Anti-corruption	0.2%	0.7%	0.4%	0.0%	0.1%	-	0.2%
E6: Waste Management	0.1%	0.1%	0.5%	0.5%	0.3%	0.1%	0.3%	G7: Tax Transparency	-	-	-	-	-	-	-
E7: Environmental Opportunities	0.4%	0.6%	0.8%	1.6%	1.7%	2.0%	1.3%	G8: Others (G)	-	-	-	-	-	-	-
E8: Others (E)	0.8%	1.8%	0.7%	1.5%	0.9%	1.7%	1.2%	ES1: Supply Chain	1.1%	1.5%	1.6%	2.7%	2.7%	1.9%	2.1%
S1: Human Rights & Communities	0.2%	0.7%	1.0%	1.4%	1.9%	1.8%	1.3%	SG1: Diversity	3.1%	4.0%	4.6%	5.2%	3.3%	3.1%	3.9%
S2: Product Liability	0.1%	0.3%	0.4%	0.9%	0.5%	0.3%	0.4%	ESG1: Disclosure	12.3%	5.0%	4.8%	4.1%	6.1%	6.2%	6.0%
S3: Health & Safety	0.1%	0.4%	0.4%	0.8%	0.6%	0.6%	0.5%	ESG2: Misconduct	3.6%	4.2%	3.9%	2.2%	1.5%	0.9%	2.4%
S4: Labor Standards	0.5%	0.9%	0.5%	0.9%	0.5%	0.1%	0.5%	ESG3: ESG Ratings (Scores)	0.2%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%
S5: Controversial Sourcing	-	-	-	-	-	-	-	ESG4: Others	4.0%	8.9%	7.4%	5.4%	4.7%	0.7%	5.1%
S6: Social Opportunities	0.2%	0.1%	0.1%	0.5%	0.5%	0.9%	0.4%	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
S7: Others (S)	0.1%	0.7%	1.2%	0.5%	0.8%	0.7%	0.7%								

(Note) Changes by fiscal year. Based on the number of dialogues from April 2017 to the end of December 2022. Heatmaps were created for the respective fiscal years.



## 2-2 Dialogue themes by asset managers—Totals of Engagement-Enhanced Passive Investment funds

- Among Engagement-Enhanced Passive Investment funds, the tendencies observed were almost same as those in regular passive funds.

**Figure 2.13 Changes in the Ratio of Respective Themes in All Dialogues—  
Total of Engagement-Enhanced Passive Investment Funds**

Theme	2017	2018	2019	2020	2021	2022	Total	Theme	2017	2018	2019	2020	2021	2022	Total
B1: Management & Business Strategies	16.0%	8.6%	6.7%	10.6%	9.6%	15.2%	10.9%	G1: Board Structure, Self-evaluation	10.6%	10.1%	19.1%	16.9%	17.2%	11.9%	15.1%
B2: Financial Strategies	0.6%	0.3%	1.1%	1.1%	3.3%	5.3%	2.4%	G2: Risk Management	1.2%	0.2%	1.2%	1.1%	0.2%	0.5%	0.7%
B3: Shareholders' Meeting-related Matters	4.3%	6.8%	1.2%	1.1%	1.5%	4.2%	2.7%	G3: Capital Efficiency	12.0%	11.3%	9.5%	4.2%	4.3%	5.9%	6.7%
B4: Human Capital	0.4%	0.2%	0.0%	0.6%	2.8%	5.3%	2.0%	G4-1: Cross-shareholdings	2.0%	3.1%	3.0%	3.6%	3.0%	1.8%	2.8%
B5: Others	0.3%	-	0.0%	0.3%	0.4%	0.3%	0.3%	G4-2: Parent-Subsidiary Listing	0.1%	0.6%	1.5%	0.8%	0.4%	0.5%	0.7%
E1: Climate Change	2.4%	7.5%	7.6%	10.6%	12.0%	12.2%	9.9%	G4-3: Minority Shareholder Rights (Others)	0.1%	0.1%	0.4%	0.2%	0.1%	0.1%	0.1%
E2: Deforestation	-	0.7%	1.2%	1.1%	0.4%	0.2%	0.6%	G5-1: Takeover Defenses	7.1%	5.9%	4.6%	2.2%	1.3%	0.9%	2.8%
E3: Water Stress, Water Security	0.1%	0.1%	0.2%	0.1%	0.1%	0.1%	0.1%	G5-2: Remuneration	1.7%	1.7%	1.9%	3.0%	2.3%	1.1%	2.0%
E4: Biodiversity	0.1%	0.8%	1.5%	0.7%	0.6%	1.6%	0.9%	G5-3: Corporate Governance (Others)	8.6%	6.5%	4.0%	3.9%	5.2%	5.8%	5.3%
E5: Pollution & Resources	0.1%	-	0.2%	0.4%	0.6%	0.5%	0.4%	G-6: Anti-corruption	-	0.1%	-	0.0%	-	-	0.0%
E6: Waste Management	0.1%	0.1%	0.8%	0.7%	0.4%	0.1%	0.4%	G7: Tax Transparency	-	-	-	-	-	-	-
E7: Environmental Opportunities	-	0.5%	0.2%	1.8%	2.3%	2.9%	1.7%	G8: Others (G)	-	-	-	-	-	-	-
E8: Others (E)	0.3%	0.6%	0.2%	1.3%	0.7%	1.0%	0.8%	ES1: Supply Chain	0.7%	1.6%	1.8%	3.1%	3.6%	3.0%	2.7%
S1: Human Rights & Communities	0.2%	1.7%	2.0%	1.6%	2.0%	2.5%	1.8%	SG1: Diversity	3.8%	4.2%	5.2%	7.3%	3.9%	4.9%	4.9%
S2: Product Liability	0.2%	0.3%	0.5%	0.9%	0.5%	0.1%	0.4%	ESG1: Disclosure	19.7%	7.5%	7.2%	5.7%	8.5%	7.8%	8.5%
S3: Health & Safety	-	0.1%	0.1%	0.4%	0.9%	0.9%	0.5%	ESG2: Misconduct	4.6%	5.2%	4.4%	2.3%	1.6%	0.8%	2.6%
S4: Labor Standards	0.3%	1.9%	1.0%	1.1%	0.5%	-	0.7%	ESG3: ESG Ratings (Scores)	-	-	-	0.0%	0.1%	-	0.0%
S5: Controversial Sourcing	-	-	-	-	-	-	-	ESG4: Others	2.4%	11.5%	11.4%	10.5%	8.9%	1.1%	7.7%
S6: Social Opportunities	-	0.1%	-	0.4%	0.6%	1.5%	0.6%	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
S7: Others (S)	0.1%	0.3%	0.1%	0.3%	0.3%	0.1%	0.2%								

(Note) Changes by fiscal year. Based on the number of dialogues from April 2017 to the end of December 2022. Heatmaps were created for the respective fiscal years.



## 2-2 Dialogue themes by asset managers—Active Totals

- Looking at the total of active funds, “B1: Management & Business Strategies” and “B2: Financial Strategies” were the central themes of dialogue.
- Similar to the overall tendencies, the number of dialogues on “E1: Climate Change” increased. However, this increase became notable only after FY2020.

**Figure 2.14 Changes in the Ratio of the Respective Themes in All Dialogues—Active Totals**

Theme	2017	2018	2019	2020	2021	2022	Total	Theme	2017	2018	2019	2020	2021	2022	Total
B1: Management & Business Strategies	21.6%	23.5%	20.6%	17.6%	18.2%	18.5%	19.4%	G1: Board Structure, Self-evaluation	11.4%	8.3%	7.7%	7.9%	8.4%	12.0%	9.1%
B2: Financial Strategies	10.6%	9.5%	11.8%	13.0%	10.7%	12.5%	11.5%	G2: Risk Management	1.2%	1.0%	0.9%	0.6%	0.4%	0.6%	0.7%
B3: Shareholders' Meeting-related Matters	8.3%	5.9%	5.5%	4.1%	1.4%	1.9%	3.8%	G3: Capital Efficiency	4.9%	5.4%	2.4%	3.6%	4.6%	3.1%	4.0%
B4: Human Capital	2.2%	2.1%	2.0%	0.7%	2.2%	2.5%	1.9%	G4-1: Cross-shareholdings	1.2%	2.0%	5.5%	6.1%	2.3%	2.9%	3.5%
B5: Others	2.0%	0.8%	0.4%	2.2%	1.1%	0.5%	1.2%	G4-2: Parent-Subsidiary Listing	0.4%	0.1%	0.8%	0.4%	0.3%	0.5%	0.4%
E1: Climate Change	0.2%	1.4%	2.1%	6.6%	10.3%	13.1%	6.8%	G4-3: Minority Shareholder Rights (Others)	0.2%	0.1%	0.3%	0.1%	0.0%	0.1%	0.1%
E2: Deforestation	-	-	0.1%	0.1%	0.1%	0.3%	0.1%	G5-1: Takeover Defenses	2.6%	1.6%	1.1%	0.8%	0.2%	0.5%	0.9%
E3: Water Stress, Water Security	-	0.1%	-	0.1%	0.1%	0.1%	0.1%	G5-2: Remuneration	1.2%	2.0%	1.6%	0.7%	3.2%	1.8%	1.9%
E4: Biodiversity	0.1%	0.1%	0.3%	0.5%	0.5%	0.7%	0.4%	G5-3: Corporate Governance (Others)	8.3%	11.7%	12.4%	7.9%	5.2%	4.2%	7.7%
E5: Pollution & Resources	-	0.1%	0.1%	0.3%	0.2%	-	0.2%	G-6: Anti-corruption	0.1%	-	-	-	-	-	0.0%
E6: Waste Management	0.2%	0.1%	0.3%	0.5%	0.1%	0.3%	0.3%	G7: Tax Transparency	-	-	-	-	-	-	-
E7: Environmental Opportunities	1.1%	1.6%	1.8%	2.2%	3.0%	0.9%	1.9%	G8: Others (G)	-	-	-	-	-	-	-
E8: Others (E)	1.7%	1.3%	1.6%	1.4%	1.3%	0.8%	1.3%	ES1: Supply Chain	0.2%	0.4%	0.3%	1.0%	1.5%	1.1%	0.9%
S1: Human Rights & Communities	-	0.1%	0.1%	0.9%	0.4%	0.7%	0.5%	SG1: Diversity	2.4%	2.3%	1.3%	3.7%	6.1%	5.5%	4.0%
S2: Product Liability	0.3%	0.2%	0.3%	0.6%	0.5%	0.3%	0.4%	ESG1: Disclosure	7.7%	5.4%	5.5%	5.3%	11.0%	12.2%	8.2%
S3: Health & Safety	-	0.1%	0.1%	0.1%	-	0.5%	0.1%	ESG2: Misconduct	2.4%	1.8%	2.9%	1.4%	1.6%	0.7%	1.7%
S4: Labor Standards	1.9%	4.7%	3.5%	1.4%	0.5%	0.2%	1.7%	ESG3: ESG Ratings (Scores)	0.1%	-	0.3%	0.0%	0.4%	0.1%	0.2%
S5: Controversial Sourcing	-	-	-	0.0%	-	-	0.0%	ESG4: Others	5.3%	5.3%	4.6%	6.6%	2.6%	0.9%	4.1%
S6: Social Opportunities	0.2%	0.2%	0.4%	0.7%	0.8%	0.3%	0.5%	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
S7: Others (S)	0.4%	0.6%	1.2%	0.8%	0.3%	0.5%	0.6%								

(Note) Changes by fiscal year. Based on the number of dialogues from April 2017 to the end of December 2022. Heatmaps were created for the respective fiscal years.





## 2-2 Dialogue themes by asset managers—By industry sector

- Looking at the themes by industry sector, a similar trend was observed across the board, such as a high ratio of “B1: Management & Business Strategies” and “G1: Board Structure, Self-evaluation.”
- However, the focused themes varied among sectors: in energy resource, electricity and gas sectors, dialogues were held more frequently on “E1: Climate Change” than on other themes; in the food sector, on “E4: Biodiversity”; in the retail sector, on “ES1: Supply Chain”; and in the banking sector, on “G3: Capital Efficiency” (see next page). These results suggest that asset managers engage in dialogue with an awareness of materiality depending on the industry (companies).

**Figure 2.15 Ratio of Respective Themes in All Dialogues—Totals for Each industry Sector (1)**

Theme	Food	Energy Resources	Construction & Materials	Raw Materials & Chemicals	Pharmaceutical	Automobiles & Transport Equipment	Steel & Non-ferrous Metals	Machinery	Electrical Appliances & Precision Instruments	IT & Services, Others	Electric Power & Gas	Transportation & Logistics	Commercial & Wholesale Trade	Retail Trade	Banks	Financials (EX Banks)	Real Estate
B1: Management & Business Strategies	12.0%	13.8%	11.9%	12.5%	16.5%	13.1%	13.5%	11.9%	16.4%	15.6%	7.6%	14.5%	13.3%	14.3%	14.5%	15.2%	15.1%
B2: Financial Strategies	4.0%	4.9%	6.3%	4.8%	3.5%	4.3%	2.9%	5.0%	5.8%	5.6%	3.3%	5.2%	5.4%	4.5%	4.3%	6.1%	4.9%
B3: Shareholders' Meeting-related Matters	2.2%	3.1%	4.3%	3.5%	3.8%	3.5%	4.4%	3.9%	3.9%	3.8%	10.5%	1.8%	5.1%	1.9%	6.6%	3.9%	3.5%
B4: Human Capital	2.6%	0.7%	2.4%	1.8%	4.3%	1.4%	0.9%	1.4%	2.3%	4.4%	0.9%	3.4%	3.0%	4.5%	2.6%	2.9%	3.3%
B5: Others	0.4%	0.5%	0.4%	0.4%	1.3%	0.4%	0.3%	0.6%	0.5%	0.8%	0.5%	0.4%	0.5%	0.3%	0.1%	0.2%	0.5%
E1: Climate Change	7.0%	33.5%	8.5%	9.6%	1.7%	12.3%	16.1%	9.4%	6.4%	4.0%	29.6%	14.3%	13.3%	5.3%	8.8%	8.2%	6.8%
E2: Deforestation	2.0%	-	0.1%	0.6%	-	0.1%	-	0.2%	0.0%	0.2%	0.1%	-	0.3%	0.8%	-	-	0.1%
E3: Water Stress, Water Security	0.6%	0.3%	0.4%	0.5%	0.2%	0.1%	0.0%	0.3%	0.2%	0.2%	0.3%	0.1%	-	0.1%	-	0.1%	0.5%
E4: Biodiversity	4.1%	-	0.4%	1.0%	0.4%	0.1%	0.3%	0.1%	0.1%	0.2%	-	0.3%	0.2%	1.3%	0.0%	0.3%	0.3%
E5: Pollution & Resources	0.6%	0.3%	0.1%	0.5%	-	0.3%	0.5%	0.2%	0.0%	0.2%	0.4%	0.3%	0.1%	0.4%	-	-	0.3%
E6: Waste Management	0.9%	-	0.1%	0.8%	-	0.3%	0.4%	0.2%	0.2%	0.1%	0.3%	0.1%	-	0.8%	-	-	-
E7: Environmental Opportunities	0.9%	2.6%	1.4%	2.3%	-	3.1%	1.4%	3.6%	2.0%	0.5%	1.1%	0.7%	0.9%	1.0%	0.2%	0.8%	1.8%
E8: Others (E)	1.4%	2.1%	1.0%	1.6%	0.7%	2.4%	1.1%	1.7%	1.3%	0.6%	2.3%	1.4%	1.2%	0.9%	0.7%	0.4%	1.6%
S1: Human Rights & Communities	1.0%	1.1%	0.7%	0.8%	0.5%	0.9%	1.0%	0.6%	0.7%	0.9%	0.9%	1.3%	1.5%	1.7%	4.8%	0.2%	1.3%
S2: Product Liability	1.0%	-	0.1%	0.6%	2.5%	0.8%	0.2%	0.4%	0.3%	0.4%	0.3%	0.3%	0.0%	0.5%	-	0.3%	0.3%
S3: Health & Safety	0.9%	-	0.6%	0.3%	3.3%	0.1%	0.4%	0.3%	0.1%	0.6%	0.2%	0.8%	0.1%	0.4%	0.0%	0.3%	0.3%
S4: Labor Standards	0.3%	0.2%	1.7%	0.6%	0.3%	0.1%	0.5%	0.7%	0.5%	1.9%	0.1%	1.0%	0.8%	1.3%	0.0%	0.1%	1.5%
S5: Controversial Sourcing	-	-	-	-	-	0.0%	-	-	-	-	-	-	-	-	-	-	-
S6: Social Opportunities	0.5%	-	0.4%	0.3%	3.3%	-	-	0.3%	0.5%	0.7%	0.1%	0.3%	0.1%	0.4%	0.2%	0.3%	0.6%
S7: Others (S)	1.3%	0.3%	0.5%	0.4%	1.2%	0.3%	0.6%	0.5%	0.6%	0.9%	0.3%	1.1%	1.0%	1.1%	0.7%	0.8%	0.7%

(Note) Based on the number of dialogues from April 2017 to the end of December 2022. The ratios are for dialogue themes within the respective sectors. Heatmaps were created for the respective sectors. Based on the sectors used in the TOPIX-17 Series. The values were calculated based on the investee companies constituting TOPIX at the time of dialogue.

# 2-2 Dialogue themes by asset managers—By industry sector

**Figure 2.15 Ratio of Respective Themes in All Dialogues—Totals for Each industry Sector (2)**

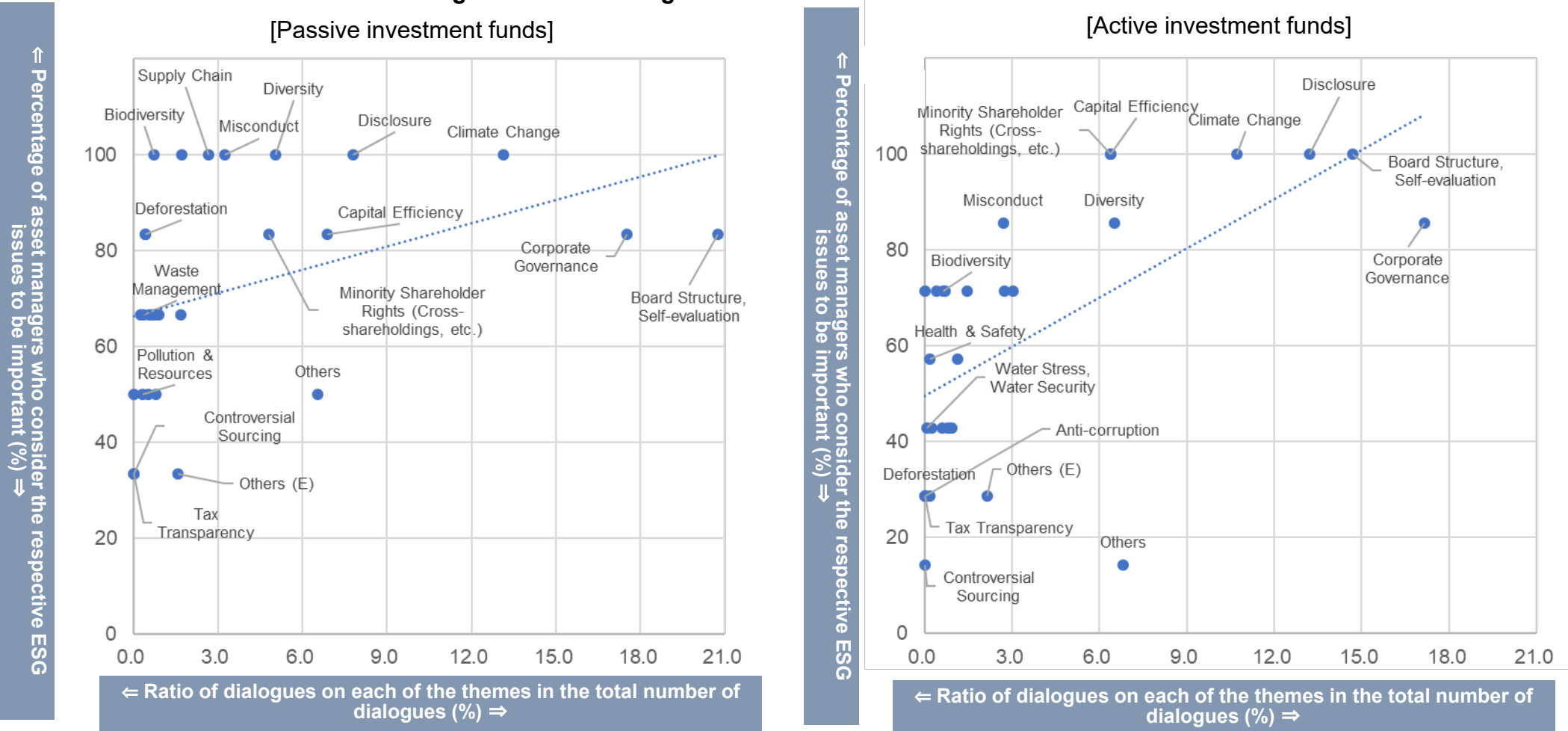
Theme	Food	Energy Resources	Construction & Materials	Raw Materials & Chemicals	Pharmaceutical	Automobiles & Transport Equipment	Steel & Non-ferrous Metals	Machinery	Electrical Appliances & Precision Instruments	IT & Services, Others	Electric Power & Gas	Transportation & Logistics	Commercial & Wholesale Trade	Retail Trade	Banks	Financials (EX Banks)	Real Estate
G1: Board Structure, Self-evaluation	12.4%	11.7%	14.2%	14.8%	11.6%	15.4%	15.4%	14.7%	14.7%	15.6%	15.1%	14.5%	14.4%	14.3%	12.9%	18.1%	16.8%
G2: Risk Management	0.7%	-	0.5%	0.7%	1.2%	0.5%	0.3%	1.3%	0.4%	0.6%	0.8%	0.6%	0.5%	0.4%	0.4%	0.9%	0.3%
G3: Capital Efficiency	2.9%	6.5%	6.2%	4.5%	2.5%	2.8%	4.1%	5.3%	5.9%	4.7%	1.8%	5.8%	4.5%	5.1%	10.0%	4.9%	4.0%
G4-1: Cross-shareholdings	3.8%	0.7%	5.1%	3.1%	2.4%	2.9%	3.7%	2.4%	2.4%	3.0%	0.9%	4.3%	3.4%	1.3%	5.9%	3.2%	3.5%
G4-2: Parent-Subsidiary Listing	0.7%	0.3%	0.3%	0.7%	0.8%	0.4%	1.1%	0.1%	0.4%	1.0%	0.1%	0.5%	0.8%	1.1%	0.0%	0.2%	0.5%
G4-3: Minority Shareholder Rights (Others)	0.0%	0.8%	0.3%	0.2%	-	0.2%	0.1%	0.1%	0.1%	0.2%	0.1%	0.1%	0.2%	0.1%	0.0%	-	0.4%
G5-1: Takeover Defenses	4.6%	1.3%	1.4%	2.5%	3.8%	0.8%	3.9%	3.1%	1.1%	1.6%	-	2.2%	1.4%	1.2%	0.2%	0.6%	2.9%
G5-2: Remuneration	2.2%	0.7%	1.9%	2.0%	3.3%	1.8%	2.3%	2.2%	2.3%	2.2%	1.5%	1.7%	1.9%	1.6%	1.5%	2.8%	1.6%
G5-3: Corporate Governance (Others)	8.1%	3.9%	9.8%	9.3%	11.0%	9.1%	8.2%	9.6%	10.6%	10.0%	8.0%	6.8%	7.8%	7.0%	7.4%	7.7%	7.8%
G-6: Anti-corruption	-	-	0.1%	0.0%	0.2%	0.2%	-	0.0%	0.1%	0.1%	0.1%	0.1%	0.2%	-	1.4%	0.1%	-
G7: Tax Transparency	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
G8: Others (G)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ES1: Supply Chain	4.5%	0.3%	1.7%	1.9%	0.6%	3.1%	0.9%	1.2%	2.0%	1.1%	0.1%	0.9%	2.3%	6.6%	0.0%	0.1%	1.6%
SG1: Diversity	4.2%	2.0%	3.5%	4.1%	4.1%	3.6%	3.4%	4.5%	4.4%	5.3%	1.7%	3.8%	3.5%	4.7%	2.4%	4.5%	3.7%
ESG1: Disclosure	5.6%	3.9%	6.2%	6.6%	8.3%	5.6%	5.0%	6.6%	7.3%	7.1%	2.4%	5.0%	6.7%	7.6%	4.2%	7.3%	6.1%
ESG2: Misconduct	0.3%	0.7%	4.4%	1.5%	0.5%	6.5%	3.1%	1.9%	1.8%	1.9%	4.7%	1.6%	0.9%	1.2%	2.6%	4.2%	2.2%
ESG3: ESG Ratings (Scores)	0.1%	-	-	0.1%	-	0.0%	0.0%	0.3%	0.1%	0.1%	-	0.1%	0.0%	0.1%	0.1%	-	0.1%
ESG4: Others	6.1%	3.9%	3.3%	5.3%	6.4%	3.4%	3.9%	5.3%	4.8%	3.9%	4.0%	4.6%	4.7%	6.2%	7.4%	5.2%	4.9%
<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

(Note) Based on the number of dialogues from April 2017 to the end of December 2022. The ratios are for dialogue themes within the respective sectors. Heatmaps were created for the respective sectors. Based on the sectors used in the TOPIX-17 Series. The values were calculated based on the investee companies constituting TOPIX at the time of dialogue.

# 2-3 “Critical ESG issues” mentioned by GPIF’s asset managers and their dialogue themes

- Every year, GPIF conducts a survey with its asset managers on their “critical ESG issues.” For each ESG issue, GPIF calculated the percentage of asset managers that consider the issue to be important and the number of dialogues they engaged in on the respective themes from FY2017 to FY2022 (by the end of December 2022), and mapped the results.
- The results suggest that active fund managers tend to focus their dialogues more on important themes compared to passive fund managers. However, it is important to note that the scope (number of companies) of companies that will be significantly affected varies greatly depending on the theme.

**Figure 2.16 Ratio of Respective Themes in All Dialogues by Asset Managers, and Percentages of Asset Managers Who Mentioned the Theme as a “Critical ESG Issue”**





## 2-4 Investee companies engaged by asset managers through dialogue

- Companies that engage in frequent number of dialogues not only have a large market capitalizations, but also tend to face some kind of issue, such as shareholder proposals. On the other hand, since many of the companies that have not conducted dialogue have a parent company or major shareholder.

**Figure 2.17 Top Companies by Number of Dialogues in Each Fiscal Year (Top 10 Companies by Number of Dialogues)**

(Market Cap: in 100 million yen, #: Number of Dialogues)

2017			2018			2019			2020			2021			2022		
Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#
Fuji Film	21,846	26	Mitsubishi Materials	3,842	33	LIXIL	4,214	44	Kansai Electric Power	11,246	45	Mitsubishi UFJ	100,983	48	Mitsubishi Corp.	69,284	38
Ricoh	7,829	24	SUBARU	19,402	28	Takeda	52,146	35	Mizuho FG	40,603	36	Toshiba	20,141	42	Mizuho FG	47,687	29
Mitsubishi Corp.	45,508	22	Nissan Motor	38,333	25	INPEX	8,903	28	Ricoh	8,373	33	Kansai Electric Power	10,786	36	Toyota	306,722	27
Nippon Paint HD	12,707	19	Nippon Steel	18,569	23	JR Kyushu	4,876	27	JR Kyushu	4,049	29	Mizuho FG	39,790	36	Kansai Electric Power	12,119	26
Maxell	1,105	18	Alpine	-	23	Sekisui House	12,325	27	IHI	3,473	27	Sumitomo Corp.	26,517	35	Mitsubishi UFJ	107,579	25
Tohoku Electric Power	7,146	18	Honda	54,252	22	Nissan Motor	15,051	27	Mitsubishi Heavy Industries	11,636	27	Mitsubishi Corp.	68,358	35	Kyushu Electric Power	3,590	22
INPEX	19,244	18	Ricoh	8,619	21	Kirin HD	19,537	27	Sekisui House	16,254	27	Mitsui O.S.K.	12,376	32	Mitsui & Co., Ltd.	63,578	22
Nissan Motor	46,597	18	Toray	11,533	21	House Foods	17,839	25	ITOCHU	56,850	27	Seven & i	51,529	32	J-POWER	3,901	21
Teijin Limited	3,961	17	Sekisui House	12,653	21	Suzuki	12,692	23	JFE	8,375	26	Hitachi	59,692	32	Sumitomo Mitsui FG	72,831	21
Shionogi	17,798	17	Mitsubishi Corp.	48,879	21	ZHD	16,782	23	Nippon Steel	17,928	26	Nomura	16,659	30	Tokyo Electron	75,650	21

(Note) The companies featured in the list are TOPIX constituent companies. The market caps are as of the end of each fiscal year. Where multiple companies had the same number of dialogues, those with a smaller market cap are placed higher on the list, and only the top 10 companies are listed for each FY. The company name is based on "Meigara Ryakusho"(which means abbreviation of stock name) of QUICK.

**Figure 2.18 Non-engaged Companies that Receive No Dialogue Each Fiscal Year (Top 10 Companies by Market Cap)**

(Market Cap: in 100 million yen, #: Number of Dialogues)

2017			2018			2019			2020			2021			2022		
Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#	Company name	Market cap	#
Japan Post Bank	64,260	0	NEXON	15,527	0	Japan Post Bank	44,865	0	NEXON	31,890	0	Japan Post Bank	36,933	0	Japan Post Bank	39,963	0
Toyota Industries	20,984	0	A Holdings	9,395	0	Terumo	28,254	0	Renesas	20,792	0	NEXON	26,368	0	Oracle Japan	12,224	0
Suntory BF	15,975	0	Nissan Chemical	7,554	0	A Holdings	12,573	0	JPX	13,918	0	Toyota Tsusho	17,915	0	Kintetsu Group HD	8,132	0
Sharp	15,889	0	Konami G	6,895	0	Oracle Japan	12,100	0	Oracle Japan	13,849	0	Oracle Japan	10,902	0	KOEI TECMO HD	8,026	0
NEXON	15,532	0	Asahi Intecc	6,763	0	Resonac	9,564	0	ZOZO	10,191	0	ZOZO	10,238	0	Kobayashi Pharmaceutical	6,314	0
Japan Post Insurance	14,970	0	Sharp	6,496	0	Hulic	7,400	0	ACOM	8,221	0	TOHO	8,644	0	Zensho HD	6,078	0
A Holdings	10,049	0	USS	6,434	0	ACOM	7,008	0	Kobe Bussan	8,112	0	Sharp	7,031	0	USS	5,898	0
Hulic	7,698	0	ACOM	6,305	0	Renesas	6,655	0	Iida Group HD	7,879	0	USS	6,450	0	Hakuhodo DY	5,824	0
ACOM	7,566	0	Toho Gas	5,286	0	Sharp	6,052	0	Hitachi Construction Machinery	7,626	0	Japan Airport Terminal	5,207	0	ITO EN	5,340	0
SGHD	7,445	0	Shizuoka Bank	5,186	0	Nippon Shinyaku	5,957	0	Toho Gas	7,213	0	ACOM	4,997	0	ACOM	4,997	0

(Note) The companies featured in the list are TOPIX constituent companies. The market caps are as of the end of each fiscal year. Note that the list only shows companies with which GPIF's external asset managers have not had any dialogue, and does not mean that the listed companies do not have dialogue with investors. The company name is based on "Meigara Ryakusho"(which means abbreviation of stock name) of QUICK.



# 2-5 Dialogue attendees from investee companies—Composition ratios by theme

- Looking at the attendees from investee companies by dialogue themes, the top theme in the Chairman/CEO attendee category was “B1: Management & Business Strategies.” Outside directors frequently attended dialogues on “G1: Board Structure, Self-evaluation” and on Corporate Governance (Others), indicating that the ratio of dialogue themes differs depending on the positions of the corporate attendees.

**Figure 2.19 Ratio of Respective Themes in All Dialogues—Dialogue Attendees from Investee Companies**

Theme	Attendee Position					Theme	Attendee Position				
	Chairman/CEO	Board member (*)/Executive officer	General manager	A position lower than General manager	Outside director		Chairman/CEO	Board member (*)/Executive officer	General manager	A position lower than General manager	Outside director
B1: Management & Business Strategies	22.4%	14.2%	17.2%	11.5%	11.2%	G1: Board Structure, Self-evaluation	12.9%	15.5%	23.9%	14.6%	13.1%
B2: Financial Strategies	5.5%	5.3%	2.2%	5.3%	4.4%	G2: Risk Management	0.7%	0.6%	0.4%	0.6%	0.5%
B3: Shareholders' Meeting-related Matters	2.8%	4.0%	3.2%	3.3%	5.4%	G3: Capital Efficiency	6.4%	5.1%	1.8%	4.2%	4.9%
B4: Human Capital	3.7%	2.6%	2.6%	2.4%	1.8%	G4-1: Cross-shareholdings	1.3%	3.2%	1.6%	4.3%	3.2%
B5: Others	0.9%	0.5%	0.4%	0.3%	0.3%	G4-2: Parent-Subsidiary Listing	0.5%	0.6%	0.4%	0.6%	0.6%
E1: Climate Change	7.0%	8.7%	3.4%	11.6%	10.7%	G4-3: Minority Shareholder Rights (Others)	0.1%	0.1%	—	0.2%	0.2%
E2: Deforestation	0.1%	0.3%	—	0.3%	0.4%	G5-1: Takeover Defenses	1.0%	2.2%	3.1%	1.8%	1.7%
E3: Water Stress, Water Security	0.1%	0.2%	0.1%	0.4%	0.3%	G5-2: Remuneration	1.4%	2.1%	4.0%	2.0%	1.9%
E4: Biodiversity	0.3%	0.6%	0.1%	0.6%	0.6%	G5-3: Corporate Governance (Others)	10.1%	9.3%	22.4%	8.1%	7.7%
E5: Pollution & Resources	0.2%	0.2%	0.1%	0.2%	0.4%	G-6: Anti-corruption	0.1%	0.1%	—	0.1%	0.3%
E6: Waste Management	0.3%	0.2%	0.1%	0.3%	0.3%	G7: Tax Transparency	—	—	—	—	—
E7: Environmental Opportunities	1.2%	1.5%	0.1%	1.3%	1.5%	G8: Others (G)	—	—	—	—	—
E8: Others (E)	1.1%	1.2%	0.4%	1.3%	1.2%	ES1: Supply Chain	1.0%	1.8%	0.9%	2.2%	1.9%
S1: Human Rights & Communities	0.7%	1.0%	0.3%	1.2%	1.5%	SG1: Diversity	3.2%	3.8%	2.9%	3.9%	4.3%
S2: Product Liability	0.3%	0.4%	0.1%	0.4%	0.6%	ESG1: Disclosure	6.0%	5.8%	2.3%	6.6%	7.8%
S3: Health & Safety	0.4%	0.4%	0.1%	0.5%	0.4%	ESG2: Misconduct	1.9%	2.3%	1.3%	2.0%	2.8%
S4: Labor Standards	0.9%	0.9%	—	0.9%	0.6%	ESG3: ESG Ratings (Scores)	0.1%	0.1%	—	0.1%	0.1%
S5: Controversial Sourcing	—	0.0%	—	—	—	ESG4: Others	3.8%	3.8%	3.5%	5.5%	6.5%
S6: Social Opportunities	0.5%	0.5%	0.4%	0.3%	0.4%	<b>Total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
S7: Others (S)	0.8%	0.8%	0.1%	0.6%	0.6%						

(Note) Based on the number of dialogues from FY2017 to the end of December 2022.  
The ratios are for the respective themes in the respective attendee categories. Heatmaps were created for the respective attendee categories.  
(\*) Internal director

## 2-6 Selection of investee companies to engage through dialogue (Probit analysis)—Analysis method

- This Probit analysis investigated the likelihood of investee companies to receive engagement by asset managers by using data from FY2016 onwards.
- It estimated which factors influence the probability of receiving engagement by asset managers using the following estimate equation.

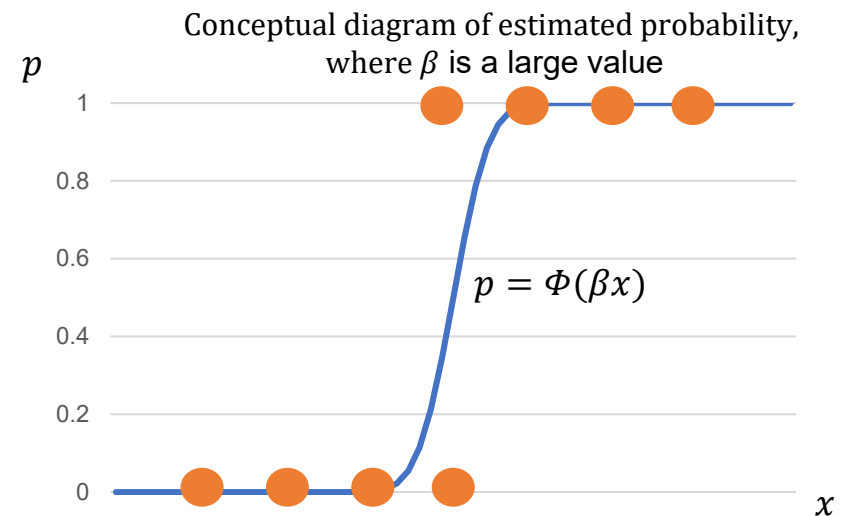
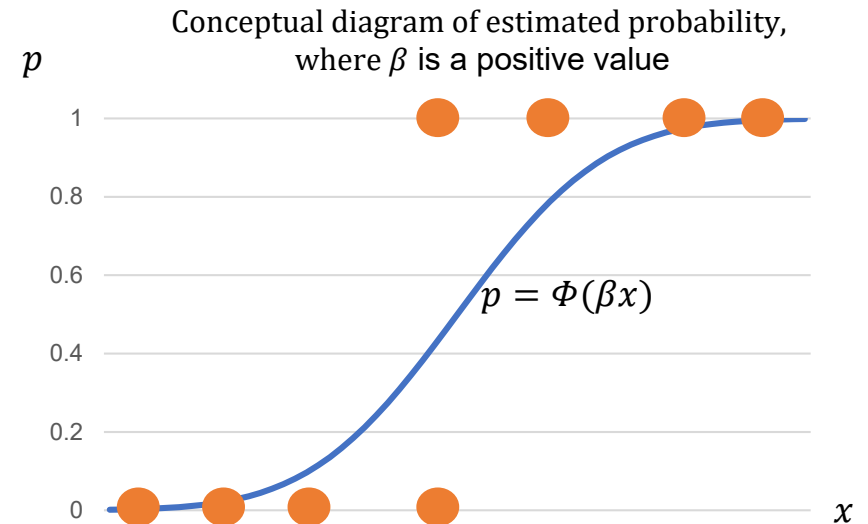
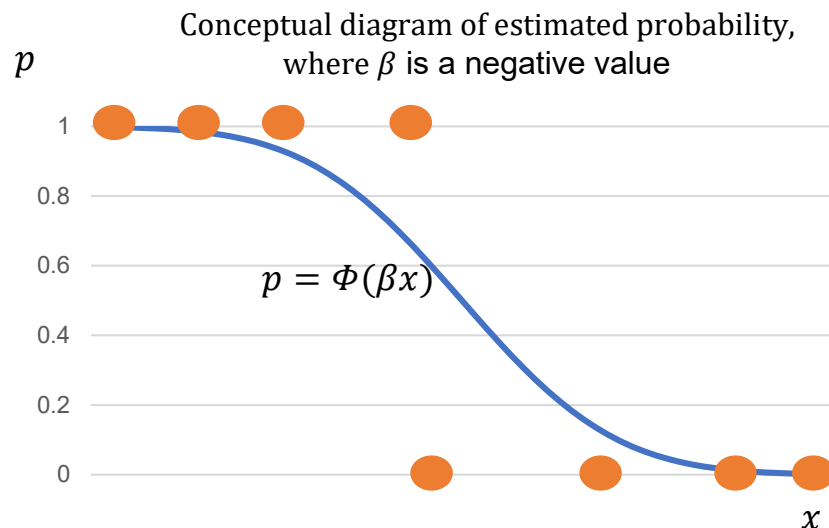
$$p_{it} = \Phi\left(\beta_0 + \sum_k \beta_k x_{it,k}\right)$$

- $p_{it}$ : Probability of Company  $i$  receiving engagement in FY  $t$
  - $\Phi$ : Cumulative distribution function of standard normal distribution
  - $\beta$  : Parameter to be estimated  
If this parameter is a positive value, it means that there is a positive correlation between the relevant variable and the company's probability of receiving engagement.  
If it is a negative value, it means that there is a negative correlation between the relevant variable and the company's probability of receiving engagement.
  - $x_{it,k}$ : Explanatory variable
- Explanatory variables used in this analysis are as below:
    - Natural logarithm of Market Cap; FTSE ESG Score; FTSE Pillar Scores for E, S and G; Natural Logarithm of Total Assets; Average Equity Return over 3 Years; Ratio of Shares Held by Controlling Company; Cross-shareholdings Ratio; Percentage of Independent Outside Directors; Presence of Takeover Defense; Total Payout Ratio; Current Profit Margin on Sales; Total Asset Turnover; Financial Leverage; Cash & Deposits/Total Assets; Total Debts/Total Assets; Presence of GHG Emissions Reduction Targets; Carbon Intensity Scores 1&2; Presence of Released Integrated Reports; TOPIX Categories (1–100, 101–500, 501–1000, or other); and Sector (of 17 Sectors).
    - For the numerical values listed above, missing values were filled in with “0” and flags were created indicating the missing value for each variable.

## 2-6 Selection of investee companies to engage through dialogue (Probit analysis)—Analysis method

- As a specific example, cases with one variable are considered.  

$$p_{it} = \Phi(\beta x_{it})$$
- For  $p$ , the points at 0 and 1 (● in each figure) are observed in the actual data.
- Estimate its correlation with  $x$  in ways that successfully explain the data.
- $\beta$  : Parameter to be estimated  
 If the parameter is a positive value, it means that there is a positive correlation, and a negative value means a negative correlation.  
 If the absolute value of the parameter is large, the correlation is strong.





# 2-6 Selection of investee companies to engage through dialogue (Probit analysis)—Overall

- In general, companies that are larger, have a lower ownership of the controlling company, and actively publish integrated reports are more likely to receive engagement by asset managers.

**Figure 2.20 Probit Analysis Results (Overall)—Company’s Characteristics**

Explanatory variable (Other than Sector, FY & Missing Flag)	B1: Management & Business Strategies	B2: Financial Strategies	B3: Shareholders’ Meeting-related Matters	E1: Climate Change	G1: Board Structure, Self-evaluation	G3: Capital Efficiency	G4-1: Cross- shareholdings	S1: Human Rights & Communities	SG1: Diversity	ESG1: Disclosure
Natural Logarithm of Market Cap	0.13 ***	0.03	0.05	0.09 *	0.13 ***	-0.04	0.06	0.12	0.16 ***	0.24 ***
Natural Logarithm of Total Assets	0.17 ***	0.33 ***	0.21 ***	0.25 ***	0.25 ***	0.36 ***	0.25 ***	0.14 ***	0.13 ***	0.08 ***
Average Equity Return over 3 Years	0.35	0.17	0.11	0.82 *	0.32	0.19	1.09 **	1.08	0.08	0.09
Ratio of Shares Held by Controlling Company	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***
Cross-shareholding Ratio	-0.18	0.06	0.12	-0.24	-0.09	0.53 ***	1.90 ***	0.21	-0.17	-0.67 ***
Percentage of Independent Outside Directors	0.87 ***	0.38 **	1.27 ***	0.24	0.35 **	0.55 ***	0.19	0.42	0.30 *	0.54 ***
Presence of Takeover Defense	-0.06	-0.08	0.20 ***	-0.07	0.13 ***	-0.08	0.14 **	-0.07	-0.04	0.10 **
Total Payout Ratio	0.00	0.00	0.00	0.00	0.00 **	0.00	0.00	0.00	0.00	0.00
Current Profit Margin on Sales	-0.01 ***	-0.01 **	0.00	-0.01 **	0.00	-0.01 **	-0.02 ***	-0.01	0.00	0.00
Total Asset Turnover	-0.05	0.00	-0.03	0.03	-0.05	-0.17 ***	-0.22 ***	-0.24 **	0.15 ***	0.05
Financial Leverage	0.00	0.00	0.00	-0.01 **	0.00	0.00	-0.03 ***	-0.02	-0.01 **	-0.01 *
Cash & Deposits/Total Assets	0.34 **	0.50 ***	0.37 **	-0.27	0.43 ***	0.37 **	-0.37	-0.31	-0.04	0.17
Total Debts/Total Assets	0.06	-1.29 ***	-0.07	-0.13	-0.11	-1.37 ***	-0.72 ***	-0.11	-0.42 ***	-0.15
Presence of GHG Emissions Reduction Targets	0.20 ***	0.13 **	-0.05	0.11 **	0.03	-0.04	0.11 *	-0.04	0.05	-0.02
Carbon Intensity Scopes 1&2	0.00 **	0.00 **	0.00	0.00 ***	0.00 *	0.00	0.00	0.00	0.00	0.00 **
Presence of Released Integrated Reports	0.14 ***	0.10 **	0.14 ***	0.33 ***	0.24 ***	0.03	0.21 ***	0.03	0.29 ***	0.19 ***
FTSE ESG Score	0.27	0.06	0.58 **	0.28	0.08	0.39	-0.20	0.81 *	0.18	-0.02
FTSE Pillar Score (E)	-0.04	-0.05	-0.22 ***	0.05	0.00	-0.15 *	0.10	-0.25 *	-0.01	0.01
FTSE Pillar Score (S)	-0.07	0.01	-0.21 **	-0.10	-0.02	-0.11	0.07	-0.20	-0.08	0.03
FTSE Pillar Score (G)	-0.02	0.04	-0.09	-0.04	0.03	-0.04	0.10	-0.26 *	-0.03	0.02
TOPIX 101-500	-0.11	0.02	-0.10	-0.07	-0.07	0.41 ***	0.18 **	0.05	-0.14 *	-0.07
TOPIX 501-1000	-0.30 ***	-0.03	-0.25 **	-0.36 ***	-0.34 ***	0.33 ***	-0.13	-0.27	-0.45 ***	-0.34 ***
TOPIX constituent companies after 1000	-0.57 ***	-0.33 **	-0.40 ***	-0.79 ***	-0.69 ***	-0.10	-0.45 ***	-0.89 ***	-0.95 ***	-0.62 ***

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) The TOPIX categories in the figure are based on those used for TOPIX 1–100.





## 2-6 Selection of investee companies to engage through dialogue (Probit analysis)—Overall

- In “E1: Climate Change,” companies in the energy resource, electricity and gas, and other sectors with relatively high GHG emissions tended to receive engagement frequently.
- In “S1: Human Rights and Communities,” regional and other banks tended to frequently receive engagement concerning their local communities.

**Figure 2.21 Probit Analysis Results (Overall)—By Sector**

Explanatory variable (Sector)	B1: Management & Business Strategies	B2: Financial Strategies	B3: Shareholders' Meeting-related Matters	E1: Climate Change	G1: Board Structure, Self-evaluation	G3: Capital Efficiency	G4-1: Cross- shareholdings	S1: Human Rights & Communities	SG1: Diversity	ESG1: Disclosure
Food	-0.17 **	-0.02	-0.04	0.30 ***	0.17 **	0.00	0.11	0.27 *	-0.06	-0.02
Energy Resources	-0.15	-0.22	-0.28	0.69 ***	-0.30	0.02	-1.12 ***	0.29	-0.29	-0.24
Construction & Materials	-0.06	0.19 ***	0.12	0.25 ***	-0.02	0.15 **	0.24 **	-0.07	-0.06	0.10
Raw Materials & Chemicals	-0.05	-0.07	0.06	0.27 ***	0.09	0.08	0.01	-0.11	-0.07	0.07
Pharmaceutical	-0.15	-0.62 ***	-0.31 **	-0.76 ***	-0.48 ***	-0.28 **	-0.40 **	-0.36 *	-0.42 ***	-0.12
Automobiles & Transport Equipment	-0.03	-0.03	0.11	0.49 ***	0.10	-0.16	0.03	0.04	-0.06	0.04
Steel & Non-ferrous Metals	0.05	-0.25 **	0.21 *	0.50 ***	0.22 **	0.29 ***	0.27 **	0.11	0.18	0.31 ***
Machinery	-0.07	0.11	0.17 **	0.40 ***	0.07	0.18 **	0.02	-0.15	0.07	0.20 ***
Electrical Appliances & Precision Instruments	-0.03	-0.04	0.06	0.00	-0.01	0.15 **	-0.10	-0.36 **	-0.12	0.10
Electric Power & Gas	-0.39 ***	-0.21	0.70 ***	0.61 ***	0.00	-0.24	-0.67 ***	-0.07	-0.46 **	-0.56 ***
Transportation & Logistics	0.01	0.13	-0.26 **	0.49 ***	-0.04	0.30 ***	0.05	0.09	0.03	-0.05
Commercial & Wholesale Trade	-0.17 **	-0.05	-0.03	0.10	0.00	0.12	0.14	0.05	-0.24 **	0.00
Retail Trade	-0.20 ***	-0.20 **	-0.42 ***	-0.05	-0.06	0.14	-0.26 *	0.37 **	-0.05	-0.07
Banks	-0.52 ***	-0.55 ***	-0.32 **	-0.15	-0.79 ***	0.00	0.27	0.88 ***	-0.26	-0.30 **
Financials (EX Banks)	-0.49 ***	-0.22 *	-0.39 ***	-0.37 **	-0.43 ***	-0.47 ***	-0.36 **	-1.19 ***	-0.20	-0.19
Real Estate	-0.02	0.02	-0.15	0.03	-0.18 *	0.05	-0.03	-0.06	-0.15	0.03

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) The numbers in the list are relative values compared to “IT & Services, Others” as the baseline, set at 0.



# 2-6 Selection of investee companies to engage through dialogue (Probit analysis results)—Passive funds

Figure 2.22 Probit Analysis Results (among Passive Funds)—Company’s Characteristics

Explanatory variable (Other than Sector, FY & Missing Flag)	B1: Management & Business Strategies	B2: Financial Strategies	B3: Shareholders’ Meeting-related Matters	E1: Climate Change	G1: Board Structure, Self-evaluation	G3: Capital Efficiency	G4-1: Cross- shareholdings	S1: Human Rights & Communities	SG1: Diversity	ESG1: Disclosure
Natural Logarithm of Market Cap	0.03	-0.05	0.05	0.02	0.08 **	-0.11 **	0.02	0.08	0.08	0.20 ***
Natural Logarithm of Total Assets	0.29 ***	0.32 ***	0.18 ***	0.27 ***	0.27 ***	0.39 ***	0.24 ***	0.13 **	0.15 ***	0.12 ***
Average Equity Return over 3 Years	0.55	0.59	0.32	0.86 *	0.69 **	0.50	1.38 **	1.29 *	0.15	-0.28
Ratio of Shares Held by Controlling Company	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***
Cross-shareholding Ratio	0.17	0.44 **	0.18	-0.02	0.00	0.66 ***	2.01 ***	0.34	-0.12	-0.45 **
Percentage of Independent Outside Directors	1.06 ***	0.53 ***	1.36 ***	0.34 *	0.29 **	0.47 ***	0.02	0.60 **	0.15	0.48 ***
Presence of Takeover Defense	-0.02	-0.04	0.24 ***	-0.04	0.14 ***	-0.09	0.19 ***	-0.04	-0.01	0.14 **
Total Payout Ratio	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Current Profit Margin on Sales	-0.02 ***	-0.01 **	-0.01	-0.01	0.00	-0.01	-0.01	-0.01	0.00	0.00
Total Asset Turnover	-0.02	-0.09	-0.06	0.07	-0.07 *	-0.15 ***	-0.28 ***	-0.27 **	0.18 ***	0.10 **
Financial Leverage	0.00	0.00	0.00	-0.01 **	0.00	0.00	-0.03 ***	-0.02 *	-0.01 *	0.00
Cash & Deposits/Total Assets	-0.04	0.38 *	0.20	-0.18	0.39 **	0.25	-0.86 ***	-0.26	-0.17	-0.22
Total Debts/Total Assets	-0.42 ***	-1.31 ***	0.02	-0.11	-0.15	-1.44 ***	-0.51 **	0.09	-0.47 ***	-0.28 *
Presence of GHG Emissions Reduction Targets	0.14 ***	0.16 ***	-0.06	0.11 *	0.01	-0.04	0.12 *	-0.09	0.09	0.00
Carbon Intensity Scores 1&2	0.00	0.00	0.00	0.00 ***	0.00	0.00	0.00	0.00	0.00	0.00
Presence of Released Integrated Reports	0.15 ***	0.16 ***	0.10 **	0.37 ***	0.25 ***	0.04	0.24 ***	0.05	0.28 ***	0.21 ***
FTSE ESG Score	0.25	0.39	0.46 *	0.34	0.17	0.36	-0.20	0.96 **	0.20	0.15
FTSE Pillar Score (E)	-0.09	-0.14	-0.19 **	0.02	-0.03	-0.13	0.11	-0.30 **	-0.01	-0.06
FTSE Pillar Score (S)	0.00	-0.13	-0.17 *	-0.10	-0.04	-0.08	0.09	-0.26	-0.05	0.00
FTSE Pillar Score (G)	-0.03	-0.05	-0.04	-0.05	0.01	-0.04	0.09	-0.29 **	-0.02	-0.05
TOPIX 101-500	-0.07	0.12	-0.09	-0.10	-0.07	0.48 ***	0.33 ***	-0.01	-0.06	0.00
TOPIX 501-1000	-0.31 ***	0.03	-0.24 **	-0.45 ***	-0.33 ***	0.33 ***	0.00	-0.36 *	-0.40 ***	-0.28 **
TOPIX constituent companies after 1000	-0.65 ***	-0.23	-0.39 ***	-0.82 ***	-0.67 ***	-0.11	-0.24	-0.98 ***	-0.85 ***	-0.54 ***

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) The TOPIX categories in the figure are based on those used for TOPIX 1-100.

# 2-6 Selection of investee companies to engage through dialogue (Probit analysis results)—Passive funds

**Figure 2.23 Probit Analysis Results (among Passive Funds)—By Sector**

Explanatory variable (Sector)	B1: Management & Business Strategies	B2: Financial Strategies	B3: Shareholders' Meeting-related Matters	E1: Climate Change	G1: Board Structure, Self-evaluation	G3: Capital Efficiency	G4-1: Cross- shareholdings	S1: Human Rights & Communities	SG1: Diversity	ESG1: Disclosure
Food	-0.05	0.09	0.04	0.27 **	0.20 **	0.00	0.22 *	0.29 *	-0.02	0.19 **
Energy Resources	0.02	-0.22	-0.10	0.81 ***	-0.24	0.02	-1.20 ***	0.38	-0.19	-0.11
Construction & Materials	0.01	0.14 *	0.19 **	0.31 ***	-0.01	0.11	0.21 *	-0.12	-0.05	0.24 ***
Raw Materials & Chemicals	0.06	-0.03	0.09	0.36 ***	0.12 *	0.12	0.09	-0.07	-0.02	0.19 **
Pharmaceutical	-0.09	-0.54 ***	-0.16	-0.79 ***	-0.37 ***	-0.22 *	-0.18	-0.38 *	-0.20	0.10
Automobiles & Transport Equipment	-0.05	-0.15	0.18 *	0.45 ***	0.11	-0.21 *	-0.10	0.12	-0.05	0.12
Steel & Non-ferrous Metals	0.17	-0.17	0.32 ***	0.56 ***	0.19 *	0.34 ***	0.35 **	0.07	0.19	0.31 ***
Machinery	0.06	0.11	0.23 ***	0.41 ***	0.13 *	0.11	0.04	-0.13	0.08	0.37 ***
Electrical Appliances & Precision Instruments	0.03	0.08	0.06	0.03	0.00	0.10	-0.06	-0.32 **	-0.10	0.30 ***
Electric Power & Gas	-0.20	0.09	0.83 ***	0.70 ***	0.08	-0.27	-0.46 **	-0.07	-0.40 **	-0.38 **
Transportation & Logistics	0.20 **	0.13	-0.28 **	0.60 ***	0.02	0.29 ***	0.08	0.14	0.12	0.09
Commercial & Wholesale Trade	-0.08	0.01	0.05	0.12	0.03	0.10	0.24 *	-0.02	-0.20 *	0.09
Retail Trade	-0.04	-0.17	-0.34 ***	-0.06	-0.07	0.19 **	-0.12	0.21	-0.04	0.11
Banks	-0.49 ***	-0.47 ***	-0.22	-0.11	-0.82 ***	-0.12	0.15	0.86 ***	-0.19	-0.18
Financials (EX Banks)	-0.36 ***	-0.61 ***	-0.33 **	-0.36 **	-0.45 ***	-0.68 ***	-0.67 ***	-1.39 ***	-0.14	-0.09
Real Estate	0.23 **	-0.12	-0.07	0.15	-0.19 *	0.06	-0.04	-0.23	-0.09	0.25 **

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.  
(Note 2) The numbers in the list are relative values compared to "IT & Services, Others" as the baseline, set at 0.

# 2-6 Selection of investee companies to engage through dialogue (Probit analysis results)—Active funds

Figure 2.24 Probit Analysis Results (among Active Funds)—Company’s Characteristics

Explanatory variable (Other than Sector, FY & Missing Flag)	B1: Management & Business Strategies	B2: Financial Strategies	B3: Shareholders’ Meeting-related Matters	E1: Climate Change	G1: Board Structure, Self-evaluation	G3: Capital Efficiency	G4-1: Cross- shareholdings	S1: Human Rights & Communities	SG1: Diversity	ESG1: Disclosure
Natural Logarithm of Market Cap	0.26 ***	0.09 *	-0.02	0.24 ***	0.29 ***	0.08	0.18 **	0.29 *	0.29 ***	0.21 ***
Natural Logarithm of Total Assets	0.02	0.30 ***	0.29 ***	0.20 ***	0.05	0.22 ***	0.20 ***	0.23 *	0.03	0.05
Average Equity Return over 3 Years	-0.10	-0.01	-0.02	0.94	-0.33	-0.47	0.41	-2.04	-0.08	0.59
Ratio of Shares Held by Controlling Company	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.01 ***	-0.02 **	-0.01 ***	0.00 ***
Cross-shareholding Ratio	-0.84 ***	-0.35 *	-0.40	-0.97 ***	-0.42 *	0.16	0.89 ***	-0.32	-0.06	-0.96 ***
Percentage of Independent Outside Directors	0.45 ***	0.21	0.61 **	-0.14	0.07	0.42 *	0.31	-0.68	0.58 **	0.24
Presence of Takeover Defense	-0.14 **	-0.09	0.00	-0.23 *	-0.05	-0.03	0.01	-0.53	-0.15	0.01
Total Payout Ratio	0.00	0.00	0.00	0.00	0.00 **	0.00	0.00	0.00	0.00	0.00
Current Profit Margin on Sales	-0.01 **	-0.01 *	0.00	-0.02	0.01	-0.04 ***	-0.04 ***	0.01	0.00	-0.01
Total Asset Turnover	-0.12 **	0.09	0.03	-0.03	0.03	-0.19 **	-0.05	0.03	0.04	-0.04
Financial Leverage	-0.02 **	-0.02 *	-0.02	-0.05 ***	0.00	0.00	-0.02	-0.02	-0.01	-0.01
Cash & Deposits/Total Assets	0.71 ***	0.67 ***	0.70 **	-0.29	0.28	0.40	0.37	-0.04	0.21	0.71 ***
Total Debts/Total Assets	0.60 ***	-1.06 ***	-0.47 *	-0.10	-0.11	-1.19 ***	-1.11 ***	-0.89	-0.26	0.01
Presence of GHG Emissions Reduction Targets	0.21 ***	0.07	0.03	0.14 *	0.06	0.04	0.21 **	0.55 ***	0.09	-0.04
Carbon Intensity Scores 1&2	0.00 *	0.00 *	0.00	0.00 ***	0.00 ***	0.00	0.00 **	0.00	0.00	0.00 ***
Presence of Released Integrated Reports	0.11 **	0.00	0.22 ***	0.08	0.15 **	0.00	0.13	-0.02	0.24 ***	0.11 *
FTSE ESG Score	0.36	-0.24	0.54	0.07	-0.33	0.51	-0.07	0.28	-0.11	-0.51 *
FTSE Pillar Score (E)	-0.11	0.02	-0.16	0.08	0.15	-0.23 *	0.04	-0.11	0.09	0.18 *
FTSE Pillar Score (S)	-0.14	0.15	-0.21	-0.08	0.05	-0.19	-0.01	-0.04	-0.08	0.12
FTSE Pillar Score (G)	-0.05	0.08	-0.14	0.07	0.14	-0.05	0.05	-0.20	0.03	0.19 *
TOPIX 101-500	-0.15 **	0.02	-0.07	-0.14	-0.33 ***	0.11	-0.10	0.28	-0.24 **	-0.24 ***
TOPIX 501-1000	-0.16	-0.02	-0.27	-0.16	-0.53 ***	0.22	-0.16	0.27	-0.34 **	-0.26 *
TOPIX constituent companies after 1000	-0.29 **	-0.30 *	-0.34	-0.55 **	-0.86 ***	-0.07	-0.66 **	-3.47	-0.87 ***	-0.54 ***

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.  
(Note 2) The TOPIX categories in the figure are based on those used for TOPIX 1–100.

## 2-6 Selection of investee companies to engage through dialogue (Probit analysis results)—Active funds

Figure 2.25 Probit Analysis Results (among Active Funds)—By Sector

Explanatory variable (Sector)	B1: Management & Business Strategies	B2: Financial Strategies	B3: Shareholders' Meeting-related Matters	E1: Climate Change	G1: Board Structure, Self-evaluation	G3: Capital Efficiency	G4-1: Cross- shareholdings	S1: Human Rights & Communities	SG1: Diversity	ESG1: Disclosure
Food	-0.07	-0.11	-0.29	0.20	-0.11	-0.08	0.03	-0.17	-0.22	-0.33 **
Energy Resources	-0.18	-0.10	-0.42	0.34	-0.71 **	-0.03	-0.93 *	-4.88	-0.99 **	-0.47
Construction & Materials	-0.16 *	0.23 ***	0.03	-0.05	0.09	0.22 *	0.18	0.06	-0.11	-0.12
Raw Materials & Chemicals	-0.06	-0.03	-0.09	0.01	0.10	-0.04	-0.14	-0.42	-0.13	-0.06
Pharmaceutical	-0.13	-0.45 ***	-0.50 **	-0.77 ***	-0.84 ***	-0.71 **	-0.98 ***	-0.43	-1.01 ***	-0.27 *
Automobiles & Transport Equipment	-0.01	0.11	-0.28 *	0.30 *	0.12	-0.02	0.15	-0.58	-0.01	0.01
Steel & Non-ferrous Metals	-0.06	-0.17	0.21	0.43 **	0.42 ***	0.08	0.12	0.34	-0.05	0.17
Machinery	-0.11	0.09	0.00	0.38 ***	0.04	0.28 **	0.01	-0.44	-0.07	-0.14
Electrical Appliances & Precision Instruments	0.05	-0.07	0.07	-0.01	0.02	0.22 **	-0.31 **	-0.60 *	-0.29 ***	-0.11
Electric Power & Gas	-0.45 ***	-0.26	0.53 ***	-0.03	-0.30	-0.15	-1.45 ***	-0.31	-0.34	-0.70 ***
Transportation & Logistics	-0.32 ***	0.12	-0.19	0.05	-0.40 ***	0.16	0.04	-0.60	-0.25	-0.22 *
Commercial & Wholesale Trade	-0.25 ***	-0.05	-0.28 *	0.16	-0.01	0.07	-0.19	0.39	-0.26 *	-0.03
Retail Trade	-0.28 ***	-0.13	-0.42 **	0.05	0.04	-0.03	-0.48 **	0.90 ***	-0.07	-0.29 ***
Banks	0.00	-0.33	-0.43	0.12	-0.16	0.19	0.45	0.44	-0.48	-0.11
Financials (EX Banks)	-0.39 ***	0.25 *	-0.27	-0.13	-0.12	0.28	0.21	-0.15	-0.01	-0.19
Real Estate	-0.38 ***	0.15	-0.21	-0.17	0.03	-0.05	-0.03	0.63	-0.19	-0.35 **

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) The numbers in the list are relative values compared to "IT & Services, Others" as the baseline, set at 0.



# **Chapter 3: Causal Analysis of the Effects of Engagement**

# 3-1 Details of analysis method—Overview

- After dividing the companies into groups of similar companies by using propensity scores, the effects of causal analysis were evaluated using the framework of the Difference in Differences (DID) Method.

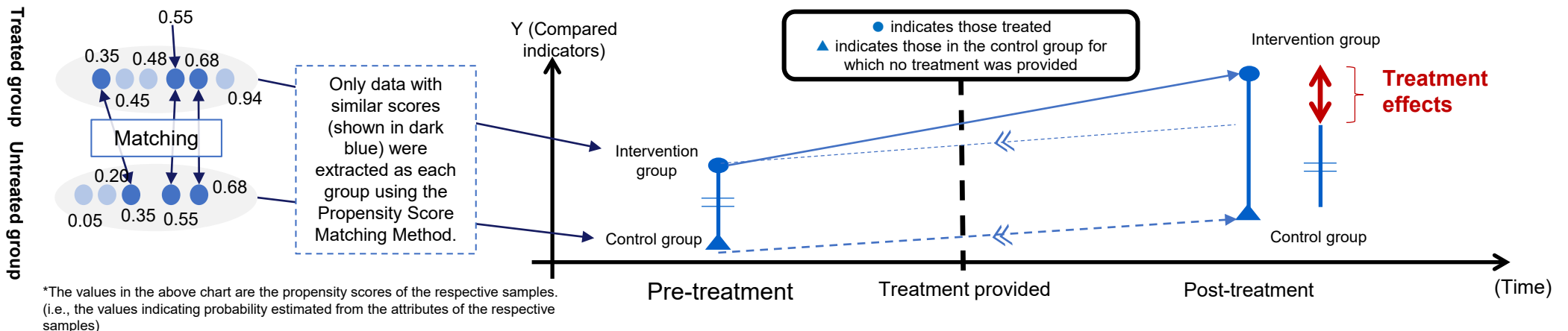
## Propensity Score Matching

- The Propensity Score Matching (PSM) Method is a method used to analyze the effect of a treatment when there is an intervention group and an untreated control group, to eliminate bias in the results caused by variables that affect both groups.
- Specifically, in order to select a control group with similar attributes to the intervention group in which the treatment was performed, multiple variables are used to determine “the probability that the treatment will be performed (propensity score)” for each data item, and data with a score similar to the intervention group data is searched from the untreated group and matched.

## Difference in Differences (DID) Method

- The Difference in Differences (DID) Method is a method to estimate the effects of the treatment to be investigated by identifying and comparing the differences between the pre-treatment and post-treatment status of the intervention group (treated group) and the control group (untreated group).

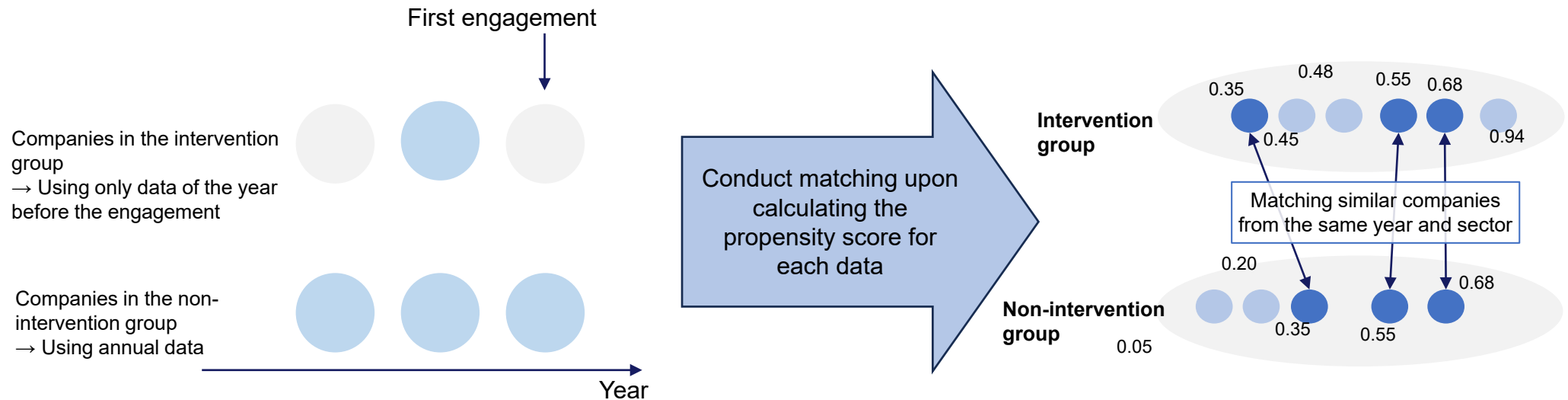
\*In the following descriptions, “improve,” “increase,” “worsen,” and “decrease” in the analysis results using the DID Method refer to the difference between the pre-engagement and post-engagement status of the engaged company (intervention group) and the non-engaged company (control group), or relative changes between the two.



\*The values in the above chart are the propensity scores of the respective samples. (i.e., the values indicating probability estimated from the attributes of the respective samples)

# 3-1 Details of analysis method—Specific settings for propensity score matching

- The intervention group consisted of companies that received engagement (with a specific theme/by a specific asset manager) at least once within a certain period covered by the data, and the control group consisted of those that had never received any engagement.
- Prior to the study, we processed data (winsorized) on the companies' market cap and net profit margin on sales by aligning the data for the top 5% point or more (and the bottom 5% or less) to 5%.
- We limited the samples to those which belong to the top 1000 companies of TOPIX, and conducted matching yearly to select the companies with nearest propensity scores for each of the intervention groups.
  - For the intervention group, data from the year before the first engagement was used.
  - For the control group, annual data for the relevant year was used.
  - Matching was conducted to ensure that a matched would be selected from the same year and industry sector.



\*The values in the chart are the propensity scores of the respective samples. (i.e., the values indicating probability estimated from the attributes of the respective samples)



# 3-1 Details of analysis method—Specific settings for propensity score matching

- Estimated probabilities of receiving engagement in the next year were calculated as propensity scores, using the Probit model.

$$p_{it} = \phi(\beta_0 + \sum_k \beta_k x_{it,k})$$

- $p_{it}$ : Probability of Company  $i$  to receive engagement in FY  $t + 1$
- $\phi$ : Cumulative distribution function of standard normal distribution
- $\beta$  : Parameter to be estimated
- $x_{it,k}$ : Explanatory variable

- The variables used for matching are as below:
  - Natural Logarithm of Market Cap, Natural Logarithm of Total Assets, Current Profit Margin on Sales, Cash & Deposits/Total Assets, Total Debts/Total Assets, Financial Leverage, Average Equity Return over 3 Years, Ratio of Shares Held by Controlling Company, TOPIX Category (1–100, 101–500, 501–1000, or other), Sector
- On some themes, the related variables were additionally used.

Additional Variables Used for Each Theme

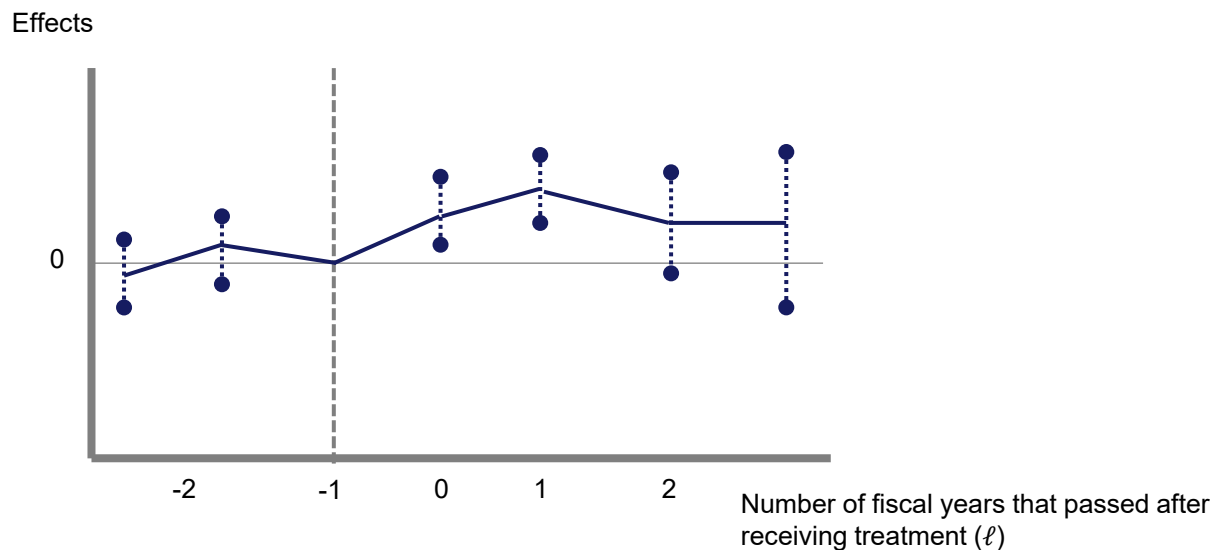
B1: Management & Business Strategies	No variable added	G3: Capital Efficiency	Cross-shareholding Ratio
B2: Financial Strategies	Total Payout Ratio	G4-1: Cross-shareholdings	Cross-shareholding Ratio
B3: Shareholders' Meeting-related Matters	No variable added	S1: Human Rights and Communities	No variable added
E1: Climate Change	Presence of GHG Emissions Reduction Targets	SG1: Diversity	Percentage of Female Board Members and Statutory Auditors
G1: Board Structure, Self-evaluation	Percentage of Independent Outside Directors	ESG1: Disclosure	Presence of Released Integrated Reports

# 3-1 Details of analysis method—Detailed settings of propensity score matching

- For companies matched according to the method described in the previous section, data for all relevant years were used for analysis.
  - To prevent the outlier effect, data from the top 1% point or more (and from the bottom 1% point or less) was truncated for the explained variable.
- Regression analysis was performed using a regression equation aligned to the timing of intervention (Sun-Abraham estimator\*), while using company fixed effects and fiscal year fixed effects.

$$Y_{it} = \alpha_i + \lambda_t + \sum_k \sum_{\ell \neq -1} \beta_{\ell,k} D_i[G_i = k] D_{it}[t - k = \ell] + \varepsilon_{it}$$

- The average effects were estimated by using the weighted average of  $\beta_{\ell,k}$ .
- Furthermore, the effects manifested over time can be confirmed by aggregating  $\beta_{\ell,k}$  for each  $\ell$ .



- $Y_{it}$ : Explained variable
- $\alpha_i$ : Company fixed effects (baseline for each company)
- $\lambda_t$ : Fiscal year fixed effect (relevant fiscal year-specific shock)
- $\beta_{\ell,k}$ : Parameter to be estimated,
- $D_i[G_i = k]$ : Dummy variable that takes 1 in the case where the company which indicates the difference between the intervention group and the control group after  $\ell$  years since receiving the intervention in Fiscal Year  $k$  received the first engagement in FY  $k$ , and 0 in other cases
- $D_{it}[t - k = \ell]$ : Dummy variable that takes 1 after  $\ell$  fiscal years have passed after the company received the first engagement in the case where the first engagement year was FY  $k$ , and 0 in other cases
- $\varepsilon_{it}$ : Error term (the sum of other effects not represented in the model)

- Analyses based on the above framework were conducted upon dividing the companies in the intervention groups into sub-samples based on their TOPIX category and asset managers' attributes.

(\*) Sun Liyang, and Sarah Abraham. "Estimating dynamic treatment effects in event studies with heterogeneous treatment effects." *Journal of econometrics* 225.2 (2021): 175-199.

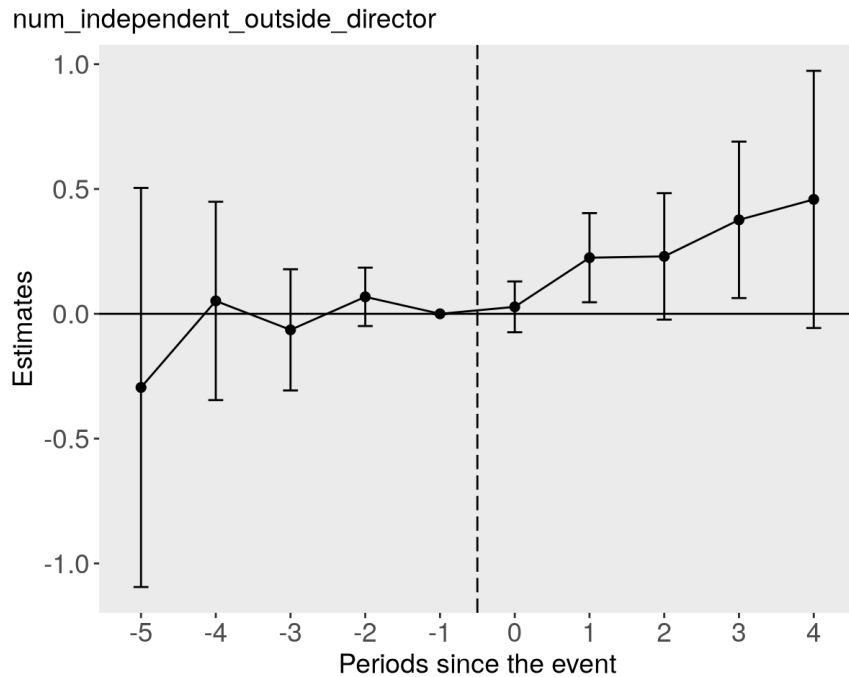
# 3-1 Details of analysis method—Consideration of “pre-trends”

- If an event study plot shows a pre-trend, it is highly likely that bias due to the pre-trend has not been removed.

## Case where the effects were adequately identified\*

The difference between the intervention group and the control group beforehand is close to 0, and after the engagement the difference is significantly different from 0.

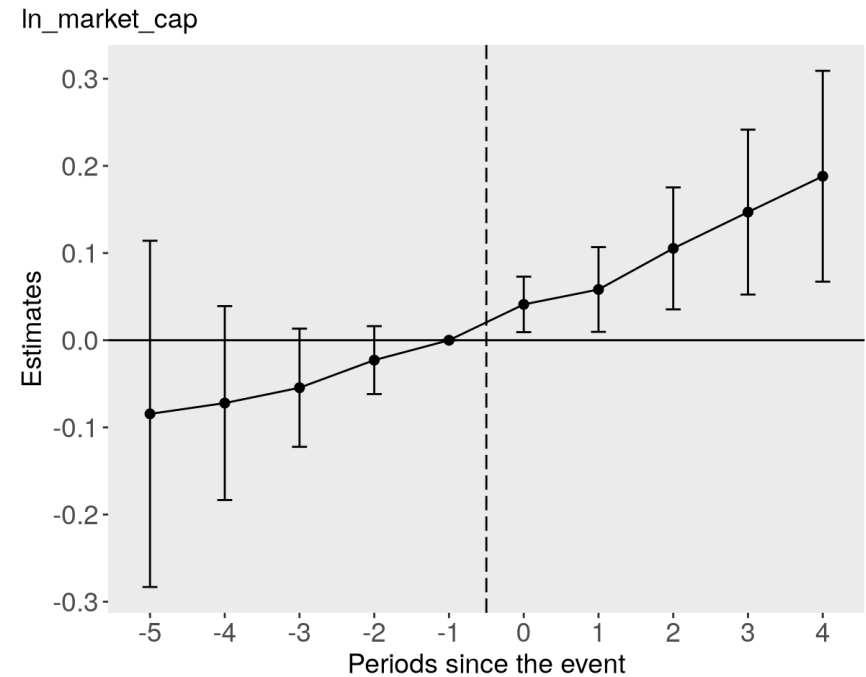
Post-engagement estimated value 0.19 p-value 0.021 (5% significance level)  
 Pre-engagement estimated value 0.0065 p-value 0.95 (not significant)



## Case where a pre-trend was observed\*\*

The difference between the intervention group and the control group before engagement is significantly different from 0, and the post-engagement effect can be interpreted as simply a continuation of the pre-trend.

Post-engagement estimated value 0.18 p-value 0.00016 (5% significance level)  
 Pre-engagement estimated value 0.098 p-value 0.03 (5% significance level)



\* Analysis conducted for the companies in TOPIX category 501–1000 on the theme of “G1: Board Structure, Self-evaluation,” where Number of Independent Outside Directors was the explained variable

\*\* Analysis conducted for the companies in TOPIX category 1–100 on the theme of “SG1: Diversity,” using Natural Logarithm of Market Cap as the explained variable

## 3-2 Items subject to causal analysis—Dialogue themes

- From the viewpoint of accuracy and their importance, the dialogue themes analyzed were limited to 10 themes based on the following conditions.
  - Excludes those whose dialogue theme includes “others”
  - Choosing at least one theme from E, S, and G
  - Choosing the top 10 themes by number of dialogues after considering the above two conditions

**Figure 3.1 Dialogue Themes Subject to Analysis**

Theme	Number	Included in the analysis	Theme	Number	Included in the analysis
1 B1: Management & Business Strategies	6725	<input type="radio"/>	20 S7: Others (S)	331	
2 B2: Financial Strategies	2423	<input type="radio"/>	21 G1: Board Structure, Self-evaluation	6960	<input type="radio"/>
3 B3: Shareholders' Meeting-related Matters	1913	<input type="radio"/>	22 G2: Risk Management	288	
4 B4: Human Capital	1229		23 G3: Capital Efficiency	2386	<input type="radio"/>
5 B5: Others	247		24 G4-1: Cross-shareholdings	1503	<input type="radio"/>
6 E1: Climate Change	4566	<input type="radio"/>	25 G4-2: Parent-Subsidiary Listing	277	
7 E2: Deforestation	131		26 G4-3: Minority Shareholder Rights (Others)	76	
8 E3: Water Stress, Water Security	124		27 G5-1: Takeover Defenses	880	
9 E4: Biodiversity	261		28 G5-2: Remuneration	953	
10 E5: Pollution & Resources	113		29 G5-3: Corporate Governance (Others)	4302	
11 E6: Waste Management	133		30 G-6: Anti-corruption	71	
12 E7: Environmental Opportunities	707		31 G7: Tax Transparency	0	
13 E8: Others (E)	600		32 G8: Others (G)	0	
14 S1: Human Rights & Communities	541	<input type="radio"/>	33 ES1: Supply Chain	867	
15 S2: Product Liability	206		34 SG1: Diversity	1886	<input type="radio"/>
16 S3: Health & Safety	206		35 ESG1: Disclosure	3129	<input type="radio"/>
17 S4: Labor Standards	395		36 ESG2: Misconduct	1086	
18 S5: Controversial Sourcing	1		37 ESG3: ESG Ratings (Scores)	42	
19 S6: Social Opportunities	206		38 ESG4: Others	2313	



# 3-2 Items subject to causal analysis—Setting of explained variables (KPIs)

- We set the explained variables (KPIs) based on the idea that multiple routes are assumed from engagement to achieving enhancement of corporate value, as described in “1-1 Objectives of this project.”
- Specifically, we use Tobin’s q, PBR, Natural Logarithm of Market Cap, Total Shareholder Return, ROE, Equity Spread, and FTSE ESG Score as common KPIs, after considering whether there was sufficient data existed in the scope and period of analysis. Then, we set the expected change in corporate behavior as a KPI. For “ESG1: Disclosure,” there was no adequate KPI data specific to this theme for each of the dialogue themes.

**Figure 3.2 List of Explained Variables (KPIs)**

Common KPI		Theme	Theme-specific KPI	Theme	Theme-specific KPI
Tobin’s q	+	B1: Management & Business Strategies	Dividend Payout Ratio	G1: Board Structure, Self-evaluation	FTSE Pillar Score (G)
PBR			Total Payout Ratio		% of Independent Outside Directors
Natural Logarithm of Market Cap			Net Cash Ratio		# of Independent Outside Directors
Total Shareholder Return		B2: Financial Strategies	Dividend Payout Ratio	G3: Capital Efficiency	% of Female Board Members and Statutory Auditors
ROE			Total Payout Ratio		% of Female Members in the Board of Directors
Equity Spread			Net Cash Ratio		
FTSE ESG Score		B3: Shareholders’ Meeting-related Matters	FTSE Pillar Score (G)	G4-1: Cross-shareholdings	FTSE Pillar Score (G)
			% of Independent Outside Directors		Dividend Payout Ratio
			# of Independent Outside Directors		Total Payout Ratio
		E1: Climate Change	FTSE Pillar Score (E)	SG1: Diversity	Net Cash Ratio
			Presence of GHG Emissions Reduction Targets		FTSE Pillar Score (G)
			Carbon Intensity Scope 1		Cross-shareholding Ratio
			Carbon Intensity Scope 2		% of Female Board Members and Statutory Auditors
		S1: Human Rights and Communities	Carbon Intensity Scopes 1&2	ESG1: Disclosure	% of Female Employees in New Hires
			FTSE Pillar Score (S)		% of Female Employees in the Workforce
					Difference in Average Years of Employment between Male Employees and Female Employees
					% of Female Managers in All Management Positions
					% of Female Members in the Board of Directors
					None

## 3-3 Assumptions and points to note regarding the analysis

- We conducted analysis only on the top 1000 TOPIX companies by market cap because we were able to secure sufficiently large sample sizes of the engaged companies and non-engaged companies and the availability of sufficient data used for KPIs.
- In order to examine whether engagement effects appear differently depending on company size (market cap), we conducted analyses on sub-samples from the Large, Mid, and Small company categories, in addition to analyses on the entire sample (the top 1000 companies).
- We defined the year of first engagement since FY2017 as (the year of) intervention, but engagement effects were not considered for companies that had engaged before FY2017 or that received engagement multiple times.
- In this analysis, the changes in KPIs since the first engagement from fiscal 2017 as the effect of engagement. There may have been cases in which managers of active funds sold the company's shares after the engagement, but the effectiveness of engagement continued to be measured without taking into account such possibilities.
- Most of the large companies in particular received engagement before, and depending on the theme or KPI, the effect of pre-trends remained even after adjusting the data by using propensity scores in some cases. We therefore interpreted the analysis results using only companies that had no pre-trend.

# 3-4 Interpretation of analysis results

- The results of each analysis are shown on the following pages.
- Effects on the explained variable for each analysis population are shown in the "Estimated effect" column.
  - Differences in changes between pre-engagement and post-engagement for the engaged companies(intervention group) vs the non-engaged companies (control group) are shown.
  - The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.
  - For most explained variables, the absolute difference between pre-engagement and post-engagement is indicated, but when the logarithm is taken, the rate of change is shown.
    - The example below suggests that in the top 1000 TOPIX companies, Tobin's q increased by 0.05 as a result of engagement.
    - The example below suggests that the market capitalization of the top 1000 TOPIX companies increased by 6% as a result of engagement.
- An “✓” marked in the “Pre-trend” row indicates cases in which there is concern that the matching failed to level pre-trends between the intervention group and the control group.
  - Cases that showed a pre-trend were not used in interpreting the results because their estimated values are likely to have been biased.
  - An “✓” was inserted in the “Pre-trend” row for cases in which the difference between the intervention group and the control group before engagement was at a significance level of 5%, and for other cases, the row was left blank.

Excerpts from analysis examples on the theme of “G1: Board Structure, Self-evaluation”

Explained variable	1-1000		Large		Mid		Small	
	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
Tobin's q	0.05*		0.09		0.03		0.07*	
Logarithm of Market Cap	0.06**		0.10	✓	0.02		0.08**	

## 3-5 Analysis results—Overall (B1: Management & Business Strategies)

- In the TOPIX 1–1000, Mid (101–500) and Small (501–1000), there were no KPIs that significantly increased/decreased after engagement compared with non-engaged companies (control group).
- On the other hand, for analysis of only the Large (1–100), engaged companies, ROE and Equity Spread in the engagement group significantly increased by 2.01% and 2.24% points, respectively, after engagement compared with the control group.

**Figure 3.3 Analysis Results of “B1: Management & Business Strategies” (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
				Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.04	✓	0.12	✓	0.00	✓	0.07 **	✓
C	PBR	0.04	✓	0.23	✓	0.06		0.04	✓
C	Natural Logarithm of Market Cap	0.03	✓	0.08	✓	-0.01	✓	0.06 *	✓
C	Total Shareholder Return	1.09		-2.62		-0.18		0.50	
C	ROE	-0.16		2.01 ***		-0.19	✓	-0.53	
C	Equity Spread	-0.17		2.24 ***		-0.19	✓	-0.63	
C	FTSE ESG Score	-0.02	✓	0.36 *		-0.04		-0.10	
T	Dividend Payout Ratio	-0.97		-1.01		-0.74		-0.74	
T	Total Payout Ratio	-0.32		-0.47		0.31		-1.40	
T	Net Cash Ratio	0.00		0.02 *		0.00		-0.01	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.



# 3-5 Analysis results—Overall (B2: Financial Strategies)

- Across all models, no KPIs significantly increased/decreased after engagement compared with the control group.

**Figure 3.4 B2: Financial Strategies (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	-0.03		-0.11		-0.04		0.01	
C	PBR	-0.06		-0.11		-0.07		0.02	
C	Natural Logarithm of Market Cap	0.00		0.05		-0.01		-0.03	
C	Total Shareholder Return	-0.55	✓	-5.12		1.93	✓	-1.13	
C	ROE	0.15		0.44		-0.12		0.19	
C	Equity Spread	0.18		0.43		-0.09		0.18	
C	FTSE ESG Score	0.05		0.13		-0.03		0.15	
T	Dividend Payout Ratio	-1.21		-3.69		-0.39		0.28	
T	Total Payout Ratio	1.51		2.25		3.66		-0.87	
T	Net Cash Ratio	0.00		0.00		0.00		-0.01	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Overall

## (B3: Shareholders’ Meeting-related Matters)

- In the TOPIX1–1000 and the Mid categories, no KPIs significantly increased/decreased after engagement compared with the control group.
- On the other hand, for Large, Natural Logarithm of Market Cap in the intervention group significantly increased compared with the control group.
- These results suggest that the increase in ESG Score was smaller in the engagement group than in the control group. This may be related to the fact that in a sub-sample of large companies, the intervention group had already high ESG Score with little room to increase, whereas in the control group, ESG Score was low before engagement, so it would be relatively easier to increase.

**Figure 3.5 B3: Shareholders’ Meeting-related Matters (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.02		0.19 *		0.02		0.04	
C	PBR	0.07		0.24		0.02		0.16	
C	Natural Logarithm of Market Cap	0.04		0.14 **		0.06		0.01	
C	Total Shareholder Return	0.33		2.91		0.91		0.27	
C	ROE	0.39		1.78		-0.73	✓	0.44	
C	Equity Spread	0.39		1.80		-0.72	✓	0.42	
C	FTSE ESG Score	-0.07		-0.24 ***		-0.10		0.22 *	
T	FTSE Pillar Score (G)	-0.05		-0.11		-0.06	✓	0.24 *	
T	% of Independent Outside Directors	0.01		-0.01		0.01		0.02 *	
T	# of Independent Outside Directors	0.14		-0.20		0.16		0.17	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Overall (E1: Climate Change)

- In the engagement group, many KPIs increased/decreased significantly compared with the control group.
- In TOPIX 1–1000 and Small categories, Tobin’s q, PBR, and Presence of GHG Emissions Reduction Targets increased significantly in the intervention group compared with the control group, while Carbon Intensity Scope 2 decreased significantly.
- In Large, Carbon Intensity Scope 2 decreased significantly in the intervention group compared with the control group.
- In Mid, Tobin’s q increased significantly in the intervention group compared with the control group.

**Figure 3.6 E1: Climate Change (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
				Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.07 ***		0.10 *		0.06 **		0.09 **	
C	PBR	0.11 ***		0.14		0.08		0.15 **	
C	Natural Logarithm of Market Cap	0.03	✓	0.10 **	✓	0.02	✓	0.04	
C	Total Shareholder Return	-1.45	✓	1.58		-2.95	✓	-2.34	
C	ROE	-0.59		-0.64		-0.43		0.47	
C	Equity Spread	-0.59		-0.57		-0.43		0.45	
C	FTSE ESG Score	-0.01		-0.07		-0.01		0.15 *	
T	FTSE Pillar Score (E)	-0.05		-0.06		-0.04		0.19 *	
T	Presence of GHG Emissions Reduction Targets	0.08 ***		-0.02		0.08 *		0.13 **	
T	Carbon Intensity Scope 1	6.04		2.27		3.51		-4.36	
T	Carbon Intensity Scope 2	-5.29 ***		-8.28 **		-4.79 *		-8.16 **	
T	Carbon Intensity Scopes 1&2	-3.55		-5.60		-4.47		-10.39	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Overall (S1: Human Rights and Communities)

- Across all models, no KPIs significantly increased/decreased after engagement compared with the control group.

**Figure 3.7 S1: Human Rights and Communities (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
				Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.02		-0.01		-0.02		0.19	
C	PBR	0.07		0.04		0.01		0.55 **	✓
C	Natural Logarithm of Market Cap	-0.01	✓	0.01		0.02	✓	-0.08	✓
C	Total Shareholder Return	-5.04 *	✓	-6.59		-7.39 **	✓	10.04	
C	ROE	-0.31		-0.58		0.08		-1.15	
C	Equity Spread	-0.27		-1.07		0.17		-1.53	
C	FTSE ESG Score	-0.04		-0.14 *	✓	0.03		-0.11	
T	FTSE Pillar Score (S)	-0.02		-0.14		0.06		-0.16	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Overall

## (G1: Board Structure, Self-evaluation)

- In the intervention group, many KPIs increased significantly compared with the control group.
- In TOPIX 1–1000, PBR, Natural Logarithm of Market Cap, Total Shareholder Return, and Number of Independent Outside Directors increased significantly in the intervention group compared with the control group.
- In Mid, Total Shareholder Return increased significantly in the intervention group compared with the control group.
- In Small, Natural Logarithm of Market Cap, ROE, Equity Spread, FTSE ESG Score, and Number of Independent Outside Directors increased significantly in the intervention group compared with the control group.

**Figure 3.8 G1: Board Structure, Self-evaluation (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.05 *		0.09		0.03		0.07 *	
C	PBR	0.11 **		0.08	✓	0.10		0.12	
C	Natural Logarithm of Market Cap	0.06 **		0.10	✓	0.02		0.08 **	
C	Total Shareholder Return	3.80 **		-3.34		5.76 **		3.29	
C	ROE	0.49		-0.10	✓	-0.20	✓	1.38 **	
C	Equity Spread	0.46		-0.09	✓	-0.22	✓	1.33 **	
C	FTSE ESG Score	0.09 *		0.18	✓	0.03		0.20 ***	
T	FTSE Pillar Score (G)	0.06		0.22 *		0.01	✓	0.13	
T	% of Independent Outside Directors	0.00		0.01		0.00		0.01	
T	# of Independent Outside Directors	0.15 **		0.08		0.11		0.19 **	
T	% of Female Board Members and Statutory Auditors	0.00		0.00		0.00		0.00	
T	% of Female Members in the Board of Directors	0.53		0.75		0.07		-0.50	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Overall (G3: Capital Efficiency)

- In TOPIX1–1000, Total Shareholder Return increased significantly in the intervention group compared with the control group.
- In Small, Total Shareholder Return and Logarithm of Market Cap increased significantly in the intervention group compared with the control group.

**Figure 3.9 G3: Capital Efficiency (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.02		-0.07		0.03		0.07	
C	PBR	0.02		-0.14		0.00		0.14 *	
C	Natural Logarithm of Market Cap	0.01		-0.05		-0.01		0.09 **	
C	Total Shareholder Return	3.68 **		3.87		0.05		8.28 ***	
C	ROE	0.24		-0.52		0.55		0.66	
C	Equity Spread	0.18		-0.51		0.51		0.80	
C	FTSE ESG Score	0.02		-0.01		0.02		0.05	✓
T	FTSE Pillar Score (G)	0.01		-0.01		0.00		0.04	✓
T	Dividend Payout Ratio	-0.81		-2.31		-0.85		-0.38	
T	Total Payout Ratio	-1.11		-4.87		2.35		-7.75	
T	Net Cash Ratio	-0.01		-0.01		0.00		-0.01	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Overall (G4-1: Cross-shareholdings)

- In TOPIX 1–1000 and Mid categories, Cross-shareholding Ratio decreased significantly in the intervention group compared with the control group.

**Figure 3.10 G4-1: Cross-shareholdings (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
				Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	-0.01		0.01		-0.02		0.00	
C	PBR	-0.01		0.07		-0.05		0.08	
C	Natural Logarithm of Market Cap	0.04		0.08		0.03		0.03	
C	Total Shareholder Return	2.23		1.79		1.42		5.38	
C	ROE	-0.06		-0.79		0.14		0.57	
C	Equity Spread	-0.09		-0.74		0.08		0.58	
C	FTSE ESG Score	-0.07		-0.18		-0.07		0.24 *	
T	FTSE Pillar Score (G)	-0.04		-0.12		-0.04		0.15	
T	Cross-shareholding Ratio	-0.01 **		0.00		-0.01 ***		-0.01	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “√” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Overall (SG1: Diversity)

- In TOPIX 1–1000, Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.
- In Large, PBR increased significantly in the intervention group compared with the control group.
- In Small, effects were observed in KPIs related to the engagement themes, and Percentage of Female Employees in New Hires increased significantly in the intervention group compared with the control group.

**Figure 3.11 SG1: Diversity**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.05		0.15 *		0.00		0.06	
C	PBR	0.10 *		0.38 ***		-0.03		0.12	
C	Natural Logarithm of Market Cap	0.08 ***		0.18 ***	✓	0.05		0.07	
C	Total Shareholder Return	1.14		0.35		1.99		0.52	
C	ROE	0.23		0.07		-0.18		1.64 *	
C	Equity Spread	0.17		-0.15		-0.16		1.68 *	
C	FTSE ESG Score	-0.02		-0.13		-0.03		0.06	
T	% of Female Board Members and Statutory Auditors	0.00		0.00		0.01		0.00	✓
T	% of Female Employees in New Hires	-0.01		0.52		-0.35		6.17 **	
T	% of Female Employees in the Workforce	0.05		0.23		-0.28		2.95	
T	Difference in Average Years of Employment between Male Employees and Female Employees	-0.77		-0.81		-1.38		5.02 *	
T	% of Female Managers in All Management Positions	0.20	✓	0.27	✓	0.17		0.46	
T	% of Female Members in the Board of Directors	1.07 *		0.75		1.12	✓	2.04 *	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.



# 3-5 Analysis results—Overall (ESG1: Disclosure)

- Across all models, no KPIs significantly increased/decreased after engagement compared with the control group.

**Figure 3.12 ESG1: Disclosure (Overall)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	-0.03		-0.07		-0.06		0.05	
C	PBR	-0.01		-0.01		-0.08		0.17	
C	Natural Logarithm of Market Cap	0.02	✓	0.09		-0.02	✓	0.04	
C	Total Shareholder Return	-3.22		-5.56		-2.47		-2.57	
C	ROE	-0.43		0.13		-0.56		-0.28	
C	Equity Spread	-0.45		0.06		-0.62		-0.01	
C	FTSE ESG Score	0.03		0.00		0.04		0.07	✓

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among passive funds (B1: Management & Business Strategies)

- In Small, PBR and Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.

**Figure 3.13 B1: Management & Business Strategies (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.06 **	✓	0.06	✓	0.00	✓	0.13 ***	✓
C	PBR	0.10 *	✓	0.11	✓	0.03	✓	0.19 **	
C	Natural Logarithm of Market Cap	0.02	✓	0.04	✓	-0.04	✓	0.09 ***	
C	Total Shareholder Return	1.56		-6.49		1.36		2.92	✓
C	ROE	-0.18		1.75 *		-0.55		-0.45	
C	Equity Spread	-0.18		1.92 *		-0.56		-0.40	
C	FTSE ESG Score	0.03		0.10		0.03		-0.02	
T	Dividend Payout Ratio	0.83		-0.26		0.83		3.83	
T	Total Payout Ratio	4.22		2.06		3.32		7.66	
T	Net Cash Ratio	0.00		0.00		0.00		-0.01	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among passive funds (B2: Financial Strategies, passive funds)

- Across all models, no KPIs significantly increased/decreased after engagement compared with the control group.

**Figure 3.14 B2: Financial Strategies (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	-0.01		-0.15 *		0.04		0.05	
C	PBR	-0.02		-0.21		0.02		0.07	
C	Natural Logarithm of Market Cap	0.01		-0.01	✓	0.03		-0.03	
C	Total Shareholder Return	0.62		-7.92 *		2.95	✓	4.89	
C	ROE	0.32		-0.11		0.17		0.69	✓
C	Equity Spread	0.41		-0.09		0.15		0.71	✓
C	FTSE ESG Score	0.08		0.19		0.01		0.11	
T	Dividend Payout Ratio	-1.08		-0.90		-0.22		-3.90	
T	Total Payout Ratio	2.77		5.26		6.02		-4.65	
T	Net Cash Ratio	-0.01	✓	-0.01		-0.01		0.00	✓

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among passive funds (B3: Shareholders’ Meeting-related Matters)

- In Mid, Tobin’s q increased significantly in the intervention group compared with the control group.

**Figure 3.15 B3: Shareholders’ Meeting-related Matters (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.02		0.04		0.08 **		0.00	✓
C	PBR	0.05		0.04		0.12 *		0.01	
C	Natural Logarithm of Market Cap	0.04		0.05		0.08 *		0.05	✓
C	Total Shareholder Return	2.00		-2.64		5.78 *		-1.31	
C	ROE	0.21		0.72		-0.63		2.48 *	
C	Equity Spread	0.22		0.67		-0.60		2.45 *	
C	FTSE ESG Score	-0.01		-0.16 *		-0.02		0.29 **	✓
T	FTSE Pillar Score (G)	0.00		-0.11		0.01		0.18	
T	% of Independent Outside Directors	0.00		-0.01		0.00		0.02	
T	# of Independent Outside Directors	0.05		-0.26		0.11		0.09	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Among passive funds (E1: Climate Change)

- In TOPIX1–1000, Tobin’s q and PBR increased significantly while Carbon Intensity Scope 2 decreased significantly in the intervention group compared with the control group.
- In Mid, PBR increased significantly after engagement.
- In Small, Presence of GHG Emissions Reduction Targets increased significantly after engagement.

**Figure 3.16 E1: Climate Change (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.06 ***		0.07		0.04 *		0.05	
C	PBR	0.10 **		0.09		0.09 **		0.07	
C	Natural Logarithm of Market Cap	0.02	✓	0.08 *	✓	0.01	✓	-0.01	
C	Total Shareholder Return	-1.97	✓	1.86		-4.90 **	✓	1.50	
C	ROE	-0.27	✓	-0.83		-0.03		0.69	
C	Equity Spread	-0.29	✓	-0.81		-0.03		0.63	
C	FTSE ESG Score	0.03		-0.04		0.06		0.06	
T	FTSE Pillar Score (E)	-0.02		-0.12		0.01		0.01	
T	Presence of GHG Emissions Reduction Targets	0.06 *		-0.07		0.06		0.18 ***	
T	Carbon Intensity Scope 1	3.71		3.63		6.17		-11.29	
T	Carbon Intensity Scope 2	-4.84 **		-6.13 *		-4.32		-8.28 *	
T	Carbon Intensity Scopes 1&2	-7.32		-3.43		-3.42		-17.71 *	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among passive funds (S1: Human Rights and Communities)

- Across all models, no KPIs significantly increased/decreased after engagement compared with the control group.

**Figure 3.17 S1: Human Rights and Communities (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.01		0.03		-0.03	✓	0.12	
C	PBR	0.06		0.12		-0.02	✓	0.43 **	✓
C	Natural Logarithm of Market Cap	0.00	✓	0.03		0.02	✓	-0.08	
C	Total Shareholder Return	-5.93 **	✓	-3.06		-10.45 ***	✓	14.93	
C	ROE	0.02		-0.08		-0.04		0.82	
C	Equity Spread	0.02		-0.21		0.11		0.84	
C	FTSE ESG Score	-0.08 *		-0.18 **	✓	-0.03		0.02	
T	FTSE Pillar Score (S)	-0.04		-0.20 *	✓	0.07		-0.18	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among passive funds (G1: Board Structure, Self-evaluation)

- In TOPIX1–1000, Tobin’s q, PBR, Natural Logarithm of Market Cap, Total Shareholder Return and Number of Independent Outside Directors increased significantly in the intervention group compared with the control group.
- In Small, Tobin’s q, Natural Logarithm of Market Cap, ROE, Equity Spread and Number of Independent Outside Directors increased significantly in the intervention group compared with the control group.

**Figure 3.18 G1: Board Structure, Self-evaluation (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
				Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.06 **		0.11	✓	0.04		0.11 ***	
C	PBR	0.15 **		0.23 **	✓	0.10		0.09	
C	Natural Logarithm of Market Cap	0.06 **		0.08	✓	0.03		0.08 **	
C	Total Shareholder Return	3.79 **		-1.01		4.11		3.52	
C	ROE	0.43	✓	0.83	✓	-0.17	✓	1.63 **	
C	Equity Spread	0.42	✓	0.85	✓	-0.19	✓	1.58 **	
C	FTSE ESG Score	0.06		0.13		0.02		0.12	
T	FTSE Pillar Score (G)	0.06		0.11		0.04		0.12	
T	% of Independent Outside Directors	0.01		0.02		0.01		0.01	
T	# of Independent Outside Directors	0.16 ***		0.15		0.15 *		0.17 **	
T	% of Female Board Members and Statutory Auditors	0.01		0.01		0.00		0.00	
T	% of Female Members in the Board of Directors	0.45		0.89		0.27		-1.88 *	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Among passive funds (G3: Capital Efficiency)

- In TOPIX 1–1000, Total Shareholder Return and ROE increased significantly in the intervention group compared with the control group.
- In Small, PBR, Natural Logarithm of Market Cap, Total Shareholder Return, ROE and Equity Spread increased significantly in the intervention group compared with the control group.
- The outcomes observed in the TOPIX1–1000 largely resulted from the effects of the Small category comprising small-cap stocks.

**Figure 3.19 Analysis Results of “G3: Capital Efficiency” (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.03		-0.04		0.04		0.07 *	
C	PBR	0.06		-0.03		0.03		0.19 ***	
C	Natural Logarithm of Market Cap	0.03		-0.01		0.01		0.10 **	
C	Total Shareholder Return	3.95 **		3.49		0.67		8.68 **	
C	ROE	0.84 **		-0.47		0.60		2.18 ***	
C	Equity Spread	0.71 *		-0.43		0.62		2.14 ***	
C	FTSE ESG Score	0.00		0.01		-0.01		0.08	
T	FTSE Pillar Score (G)	0.00		-0.03		-0.02		0.13	
T	Dividend Payout Ratio	-0.64	✓	-2.86		0.38		-3.49	✓
T	Total Payout Ratio	-0.45		0.95		3.26		-5.74	
T	Net Cash Ratio	0.01		-0.01		0.01		0.01	✓

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.



## 3-5 Analysis results—Among passive funds (G4-1: Cross-shareholdings)

- In TOPIX1–1000, PBR and Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.
- In Large, Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.
- In Mid, Cross-shareholding Ratio decreased significantly in the intervention group compared with the control group.
- In Small, Tobin’s q, PBR, Natural Logarithm of Market Cap, and FTSE ESG Score increased significantly in the intervention group compared with the control group.

**Figure 3.20 G4-1: Cross-shareholdings (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.03		0.03		0.01		0.11 ***	
C	PBR	0.09 ***		0.12 *		0.03		0.21 ***	
C	Natural Logarithm of Market Cap	0.07 **		0.13 **		0.03		0.15 ***	
C	Total Shareholder Return	-0.55		-3.09		-1.87		7.32	
C	ROE	0.02		0.55		-0.36		0.49	
C	Equity Spread	0.10		0.58		-0.25		0.47	
C	FTSE ESG Score	-0.08		-0.26 *		-0.08		0.35 ***	
T	FTSE Pillar Score (G)	-0.07		-0.19 *		-0.05		0.13	
T	Cross-shareholdings Ratio	-0.01		0.00		-0.01 **		0.00	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “√” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among passive funds (SG1: Diversity)

- In TOPIX1–1000 Tobin’s q, PBR and Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.
- In Large, PBR and Natural Logarithm of Market Cap increased significantly in the intervention group. On the other hand, FTSE ESG Score decreased significantly in the intervention group compared with the control group.
- In the Mid category, Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.

**Figure 3.21 SG1: Diversity (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.07 **		0.10		0.03		0.04	
C	PBR	0.14 ***		0.31 **		0.09 *		0.03	
C	Natural Logarithm of Market Cap	0.09 ***		0.16 ***		0.08 **		0.06	
C	Total Shareholder Return	0.99		-0.61		0.81		1.06	
C	ROE	0.69		0.16		0.72		2.06 *	
C	Equity Spread	0.68		0.04		0.73		2.09 *	
C	FTSE ESG Score	-0.07		-0.19 **		-0.09 *		0.08	
T	% of Female Board Members and Statutory Auditors	0.00		0.00		0.00		0.00	
T	% of Female Employees in New Hires	0.15		1.87		-0.70		1.57	✓
T	% of Female Employees in the Workforce	0.05		0.46		-0.55		2.26	
T	Difference in Average Years of Employment between Male Employees and Female Employees	-0.84		-1.29		-0.93		3.29	
T	% of Female Managers in All Management Positions	0.17		-0.54		0.43		0.54	
T	% of Female Members in the Board of Directors	0.80		1.34		0.45		1.31	✓

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among passive funds (ESG1: Disclosure)

- Across all models, no KPIs significantly increased/decreased after engagement compared with the control group.

**Figure 3.22 ESG 1: Disclosure (among Passive Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.00		-0.12		-0.02		0.06	
C	PBR	0.06		-0.02		0.01	✓	0.11	
C	Natural Logarithm of Market Cap	0.00	✓	0.09 *		-0.01	✓	0.00	
C	Total Shareholder Return	-1.33		-1.83		-0.71		-0.76	
C	ROE	-0.76		1.20		-0.87		-0.85	
C	Equity Spread	-0.76		1.39		-0.84		-1.06	
C	FTSE ESG Score	0.08		-0.06		0.12 *		0.10	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among active funds (B1: Management & Business Strategies)

- In the Small category, Total Payout Ratio decreased significantly in the intervention group compared with the control group.

**Figure 3.23 B1: Management & Business Strategies (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	-0.01	✓	0.03	✓	-0.03		-0.03	
C	PBR	0.06	✓	0.07	✓	0.07		0.01	
C	Natural Logarithm of Market Cap	0.01	✓	0.06	✓	0.00	✓	-0.02	
C	Total Shareholder Return	-0.35		-0.14		-0.34		-1.58	
C	ROE	-0.51		-0.28		-0.01	✓	-0.85	
C	Equity Spread	-0.51		-0.23		-0.09	✓	-0.92	
C	FTSE ESG Score	-0.16 ***	✓	-0.31 ***	✓	-0.11 *		-0.18	
T	Dividend Payout Ratio	0.63		-0.04		3.93		-6.12	✓
T	Total Payout Ratio	-2.59		3.07		6.03		-18.53 **	
T	Net Cash Ratio	-0.01 *		-0.02		-0.01		-0.01	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among active funds (B2: Financial Strategies)

- Across all models, no KPIs significantly increased/decreased after engagement compared with the control group.

**Figure 3.24 B2: Financial Strategies (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
				Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	-0.03		0.01		-0.05 *	✓	-0.05	
C	PBR	-0.05		0.01		-0.09 *		-0.05	
C	Natural Logarithm of Market Cap	0.02		0.06		0.02		0.00	
C	Total Shareholder Return	1.95		6.06 *		1.12	✓	-1.77	
C	ROE	0.05		0.48		-0.17		-0.27	
C	Equity Spread	-0.05		0.56		-0.11		-0.47	
C	FTSE ESG Score	-0.05		-0.14		-0.07		0.15	
T	Dividend Payout Ratio	-2.85		-2.85		-1.78		2.00	
T	Total Payout Ratio	-4.02		-8.87	✓	-4.50		4.03	
T	Net Cash Ratio	0.00		0.00		0.00		0.00	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among active funds (B3: Shareholders’ Meeting-related Matters)

- In Large, Natural Logarithm of Market Cap increased significantly while Number of Independent Outside Directors decreased significantly in the intervention group compared with the control group.
- In Small, ROE and Equity Spread decreased significantly in the intervention group compared with the control group.

**Figure 3.25 B3: Shareholders’ Meeting-related Matters (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.06 *		0.09		-0.08		0.12 *	
C	PBR	0.05		0.06		-0.15		0.18	
C	Natural Logarithm of Market Cap	0.06 *		0.15 **		0.02		0.10	
C	Total Shareholder Return	2.47		-1.26		4.58		5.74	✓
C	ROE	-0.91		0.77		-0.98		-2.84 **	
C	Equity Spread	-0.94		0.88		-1.01		-3.06 **	
C	FTSE ESG Score	-0.01		0.00		0.02		-0.06	
T	FTSE Pillar Score (G)	0.02		0.13		-0.06		-0.06	
T	% of Independent Outside Directors	0.00		-0.02		0.02		-0.01	
T	# of Independent Outside Directors	-0.05		-0.43 **		0.10		0.00	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Among active funds (E1: Climate Change)

- In TOPIX1–1000, Tobin’s q, PBR and Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.
- In Large, Tobin’s q, PBR and Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.
- In Mid, Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.

**Figure 3.26 Analysis Results of “E1: Climate Change” (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin’s q	0.06 **		0.11 **		0.02		0.06	
C	PBR	0.10 **		0.20 ***		0.02		0.08	
C	Natural Logarithm of Market Cap	0.09 ***		0.10 **		0.07 **		0.15 *	
C	Total Shareholder Return	1.91		3.22		1.11		-2.01	
C	ROE	-0.58		-0.50	✓	-0.68		-1.89	
C	Equity Spread	-0.62		-0.53	✓	-0.70		-1.87	
C	FTSE ESG Score	-0.04		-0.06		-0.02		0.11	
T	FTSE Pillar Score (E)	0.01		-0.02		0.04		0.12	
T	Presence of GHG Emissions Reduction Targets	0.03		-0.02		0.03		0.04	
T	Carbon Intensity Scope 1	-11.86		16.75		-11.97		24.91	
T	Carbon Intensity Scope 2	-4.13 *		-2.63		-2.01	✓	-9.04	
T	Carbon Intensity Scopes 1&2	-21.69		9.84		-20.52		8.53	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among active funds (S1: Human Rights and Communities)

- In Mid, Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.
- For Small, estimation was not possible due to the number of observed values.

**Figure 3.27 S1: Human Rights and Communities (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	-0.03		-0.03		0.04		NA	✓
C	PBR	-0.04		-0.08		0.08		NA	✓
C	Natural Logarithm of Market Cap	0.00		-0.03		0.14 **		NA	✓
C	Total Shareholder Return	2.27		-5.08		2.88		NA	✓
C	ROE	-1.51 *	✓	-2.96 *		-0.48		NA	✓
C	Equity Spread	-1.47 *	✓	-2.88 *		-0.10		NA	✓
C	FTSE ESG Score	-0.13		-0.03		-0.17		NA	✓
T	FTSE Pillar Score (S)	-0.11		0.15		-0.22		NA	✓

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

(Note 3) “NA” indicates that the number of observations (number of engagements) is limited and analysis is not possible.



# 3-5 Analysis results—Among active funds (G1: Board Structure, Self-evaluation)

- In Small, Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group. On the other hand, FTSE ESG Score decreased significantly in the intervention group compared with the control group.

**Figure 3.28 G1: Board Structure, Self-evaluation (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.02		-0.02		0.03	✓	0.06	
C	PBR	0.01		-0.01		-0.02		0.04	
C	Natural Logarithm of Market Cap	0.05 *	✓	0.05		0.03	✓	0.12 **	
C	Total Shareholder Return	-0.89		-3.09		-0.58		2.16	
C	ROE	-0.27		-0.33		-0.35	✓	1.17	
C	Equity Spread	-0.17		-0.31		-0.36	✓	1.02	
C	FTSE ESG Score	-0.06		-0.10		-0.01		-0.20 ***	
T	FTSE Pillar Score (G)	-0.06		-0.15 *		-0.02		-0.15 *	
T	% of Independent Outside Directors	-0.01		-0.01		0.00		-0.02	
T	# of Independent Outside Directors	0.11		0.07		0.11		0.07	
T	% of Female Board Members and Statutory Auditors	0.00		0.01		0.00		0.01	
T	% of Female Members in the Board of Directors	0.32		0.75		-0.08		2.59 *	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Among active funds (G3: Capital Efficiency)

- In TOPIX1–1000, Net Cash Ratio decreased significantly in the intervention group compared with the control group.
- In Small, Net Cash Ratio decreased significantly in the intervention group compared with the control group.

**Figure 3.29 G3: Capital Efficiency (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.03		0.01		0.06	✓	0.03	
C	PBR	0.03		-0.06		0.05	✓	0.01	
C	Natural Logarithm of Market Cap	0.01		-0.06		0.04		0.00	
C	Total Shareholder Return	2.11		-2.97		2.52		2.81	
C	ROE	0.07		-1.67	✓	0.64		0.02	
C	Equity Spread	-0.03		-1.64	✓	0.64		0.00	
C	FTSE ESG Score	-0.05		-0.29 **	✓	0.03		0.25	✓
T	FTSE Pillar Score (G)	-0.02		-0.04		0.06		0.05	
T	Dividend Payout Ratio	-2.36		-2.63		1.19		-10.45	
T	Total Payout Ratio	-7.00		-9.41		7.17	✓	-38.05 *	
T	Net Cash Ratio	-0.03 ***		-0.03		-0.02		-0.05 ***	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among active funds (G4-1: Cross-shareholdings)

- In Small, Natural Logarithm of Market Cap decreased significantly in the intervention group compared with the control group.

**Figure 3.30 G4-1: Cross-shareholdings (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	-0.01		-0.01		0.01		-0.17	
C	PBR	-0.04		-0.07		0.01		-0.24	
C	Natural Logarithm of Market Cap	0.01		-0.04		0.08 *		-0.17 **	
C	Total Shareholder Return	2.32		2.55		3.47		-0.76	
C	ROE	-0.36		-0.75		0.30		-0.85	
C	Equity Spread	-0.22		-0.77		0.35		-0.80	
C	FTSE ESG Score	-0.07		-0.15		-0.03		-0.03	
T	FTSE Pillar Score (G)	-0.04		0.04		-0.07		0.00	
T	Specified Investment Shares/Net Assets	-0.01		-0.01		-0.01 *		-0.01	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “√” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

## 3-5 Analysis results—Among active funds (SG1: Diversity)

- In TOPIX1–1000, Percentage of Female Board Members increased significantly in the intervention group compared with the control group.
- In Small, Percentage of Female Employees in New Hires increased significantly in the intervention group compared with the control group.

**Figure 3.31 SG1: Diversity (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.00		-0.02		-0.03		0.05	
C	PBR	-0.09		-0.02		-0.25		0.15	
C	Natural Logarithm of Market Cap	0.03	✓	0.06		0.00		0.12	
C	Total Shareholder Return	-1.25		-1.83		-1.09		-10.52	
C	ROE	-0.57		0.30		-1.07	✓	0.37	
C	Equity Spread	-0.63		0.24		-1.26 *	✓	0.36	
C	FTSE ESG Score	0.02		0.07		0.03		-0.24	
T	% of Female Board Members and Statutory Auditors	0.01 **		0.02 *		0.00		0.01	
T	% of Female Employees in New Hires	-0.67		-1.41		-0.92		5.57 **	
T	% of Female Employees in the Workforce	-1.07		-2.31		-0.68		3.24 *	
T	Difference in Average Years of Employment between Male Employees and Female Employees	-0.13		1.04		-0.73		0.74	✓
T	% of Female Managers in All Management Positions	-0.55	✓	-0.30		-0.88 *		-0.10	✓
T	% of Female Members in the Board of Directors	0.73		0.86		0.47		0.23	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “✓” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.

# 3-5 Analysis results—Among active funds (ESG1: Disclosure)

- In Small, Natural Logarithm of Market Cap increased significantly in the intervention group compared with the control group.

**Figure 3.32 ESG1: Disclosure (among Active Funds)**

Common/ Theme- specific (C/T)	KPI	Overall (1–1000)							
		Overall (1–1000)		Large		Mid		Small	
		Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend	Estimated effect	Pre-trend
C	Tobin's q	0.03		0.04		0.01		0.04	
C	PBR	0.03		-0.01		0.01		0.17	
C	Natural Logarithm of Market Cap	0.05		0.01		0.04		0.13 **	
C	Total Shareholder Return	-4.83 *		-4.67		-5.01		-3.10	
C	ROE	-0.12		-1.36		0.23		0.65	
C	Equity Spread	-0.13		-1.38		0.53		0.60	
C	FTSE ESG Score	-0.03		-0.06		0.02		0.00	

(Note 1) The asterisk (\*) in the figure indicates significance; \*\*\* stands for a significance level of 1%, \*\* for 5%, and \* for 10%.

(Note 2) An “√” in the “Pre-trend” column indicates the suggested existence of a pre-trend at a significance level of 5%.



# Chapter 4 Summary of Causal Analysis and future challenges

(Note) From the next page onwards, we will summarise the results of the analysis covering all asset management companies. We will not comment on the analysis of active and passive investments separately.

# 4-1 Implications drawn from analysis results

- Among the cases in which there was no pre-trend, there was a significant improvement in KPIs of the engagement group compared with the control group. On the other hand, virtually no engagement brought about significantly negative effects on KPIs. By company size, there were relatively many cases where significant improvement in KPIs was confirmed due to engagement in Small.

**Figure 4.1 Causal Analysis of the Effects of Engagement (Summary Table)**

	w/o pre-trend						With pre-trend	Total	
	1% significance		5% significance		10% significance				No significance
	Positive effect	Negative effect	Positive effect	Negative effect	Positive effect	Negative effect			
Overall (1–1000)	5	0	6	0	4	0	76	11	102
Large	3	1	2	0	5	1	78	12	102
Mid	1	0	2	0	2	0	80	17	102
Small	2	0	10	0	11	1	69	9	102

**[KPIs directly related to each theme (Key Examples)]**

- ✓ Among companies that received engagement concerning “E1: Climate Change,” we saw an increase in Presence of GHG Emissions Reduction Targets and a decrease in Carbon Intensity Scope 2, both of which are climate change-related.
- ✓ After engagement related to “G1: Board Structure, Self-evaluation,” an increase in Number of Independent Outside Directors was observed, while in Small, trends including an improvement in ESG Score were observed.
- ✓ After engagement related to “SG1: Diversity,” an increase in Percentage of Female Employees in New Hires was observed in Small.

**[Performance-related KPIs (Key Examples) ]**

- ✓ After engagement related to “E1: Climate Change,” positive effects in PBR and Tobin’s q were suggested.
- ✓ After engagement related to “G1: Board Structure, Self-evaluation,” positive effects in Natural Logarithm of Market Cap, PBR and Total Shareholder Return were observed.
- ✓ After engagement related to “SG1: Diversity,” a positive effect in Natural Logarithm of Market Cap was observed in the “Overall” subjects, while an increase in PBR was suggested in Large.

# 4-1 Implications drawn from analysis results

**Figure 4.2 Causal Analysis of the Effects of Engagement—Themes & KPIs Showing Significant Outcomes—**

	Theme	KPI (Outcome)	Significance level	Estimated effect	Positive/Negative	
Overall	E1: Climate Change	Tobin's q	1%	0.07	Positive	
		PBR	1%	0.11	Positive	
		Presence of GHG Emissions Reduction Targets	1%	0.08	Positive	
		Carbon Intensity Scope 2	1%	-5.29	Positive	
	G1: Board Structure, Self-evaluation	PBR	5%	0.11	Positive	
		Natural Logarithm of Market Cap	5%	0.06	Positive	
		Total Shareholder Return	5%	3.80	Positive	
		# of Independent Outside Directors	5%	0.15	Positive	
	G3: Capital Efficiency	Total Shareholder Return	5%	3.68	Positive	
	G4-1: Cross-shareholdings	Cross-shareholding Ratio	5%	-0.01	Positive	
	SG1: Diversity	Natural Logarithm of Market Cap	1%	0.08	Positive	
	Large	B1: Management & Business Strategies	ROE	1%	2.01	Positive
Equity Spread			1%	2.24	Positive	
B3: Shareholders' Meeting-related Matters		Natural Logarithm of Market Cap	5%	0.14	Positive	
		FTSE ESG Score	1%	-0.24	Negative	
E1: Climate Change		Carbon Intensity Scope 2	5%	-8.28	Positive	
SG1: Diversity		PBR	1%	0.38	Positive	
Mid		E1: Climate Change	Tobin's q	5%	0.06	Positive
		G1: Board Structure, Self-evaluation	Total Shareholder Return	5%	5.76	Positive
	G4-1: Cross-shareholdings	Cross-shareholding Ratio	1%	-0.01	Positive	
	Small	E1: Climate Change	Tobin's q	5%	0.09	Positive
			PBR	5%	0.15	Positive
			Presence of GHG Emissions Reduction Targets	5%	0.13	Positive
			Carbon Intensity Scope 2	5%	-8.16	Positive
	G1: Board Structure, Self-evaluation	Natural Logarithm of Market Cap	5%	0.08	Positive	
		ROE	5%	1.38	Positive	
		Equity Spread	5%	1.33	Positive	
		FTSE ESG Score	1%	0.20	Positive	
		# of Independent Outside Directors	5%	0.19	Positive	
G3: Capital Efficiency		Natural Logarithm of Market Cap	5%	0.09	Positive	
		Total Shareholder Return	1%	8.28	Positive	
SG1: Diversity		% of Female Employees in New Hires	5%	6.17	Positive	

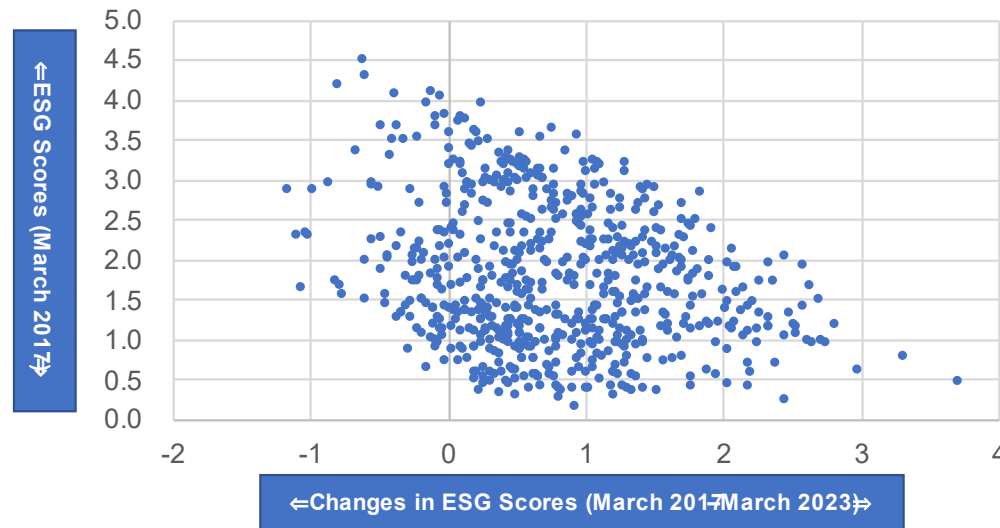
(Note) For “Positive/Negative,” we assigned “Positive” to those whose partial regression coefficient indicated KPI improvement and “Negative” to those indicated worsening KPI.



# 4-1 Implications drawn from analysis results

- For FTSE ESG score, the effects of engagement were not as strong as expected. This can be attributed to the fact that companies that received early engagement from asset managers tended to have higher original scores, and the upper limit of the score (5 points) limited the scope for score improvement.

**Figure 4.3 Changes in FTSE ESG Score—Changes from March 2017 to March 2023—**



(Note) Only companies with FTSE ESG score as of March 2017 and March 2023 were plotted

- The results of the analysis of engagement results by theme showed that many did not achieve a significance level of 1%, 5% or 10%, which was likely due to the following possibilities.
  - ✓ The number of KPIs that allowed for sufficient analysis period and coverage was limited, and thus, KPIs that matched the engagement content might not have been established.
  - ✓ Particularly for large companies, almost all had already received engagement before the analysis, and the difference in characteristics between the intervention group and the control group might not have been completely eliminated even with propensity score matching and pre-trend analysis.
  - ✓ Engagement with one company might have spillover effects on the actions of other companies, resulting in no difference in outcomes between the intervention group and the control group.

## 4-2 Issues to consider in the future

① This analysis did not consider the status of each fund's share. However, active funds may sell their shares of companies that responded poorly to engagement. Regarding the engagement of active funds that have the option of selling, we continued to measure the engagement effects even after the sale. Some say that this approach does not appropriately measuring the engagement capabilities of active funds.

➤ **For active funds, an analysis reflecting the status of stock holdings may also conducted.**

② In this analysis, funds entrusted by GPIF to external asset managers were divided into active investment and passive investment according to their investment formats. However, some asset managers offer both active and passive investment products and there may be cases where engagement records between the active and passive investment were not clearly separated.

➤ **In order to examine the characteristics of engagements by active investment funds, it is possible to extract and analyze data of only asset managers specialized in active management.**

③ When the same company has received engagement multiple times, the effect may be different from that of a one-time engagement. However, this analysis was conducted by setting the time of the first engagement as the starting point and did not consider the effects of subsequent engagements. Furthermore, we did not differentiate dialogue attendees whether they are with regard to top managers and middle managers from investee companies, even though such a difference in attendee category may cause differences in corporate behavior after engagement.

➤ **An analysis that takes into account the number of engagements or the categories of dialogue attendees from investee companies may be considered.**



## **Appendix**

- 1. Descriptive Statistics**
- 2. Definitions of Data**
- 3. Project for Measuring the Effects of Stewardship Activities and ESG Investment**



# 1. Descriptive Statistics

Name of variable	Number of data items in and after FY2017	Mean value	Standard deviation	Minimum value	Representative value			
					25th percentile	50th percentile	75th percentile	Maximum value
Tobin's q	5,911	1.64	1.94	0.43	0.94	1.08	1.61	34.39
PBR	5,910	2.17	3.95	0.12	0.78	1.19	2.2	162.98
Market Cap	5,914	636,757	1,571,423	16,048	86,707	179,585	505,276	36,260,060
Total Shareholder Return	5,914	8.95	37.21	-88.83	-13.82	3.02	24.12	453.54
ROE	5,811	8.65	15.11	-441.18	5.08	8.5	12.7	157.32
Equity Spread	5,811	2.51	15.19	-447.14	-1.19	2.38	6.68	150.98
FTSE ESG Score	5,487	2.21	1.01	0	1.4	2	3	4.8
FTSE Pillar Score (E)	5,487	1.89	1.34	0	0.8	1.8	3	5
FTSE Pillar Score (S)	5,487	1.88	1.26	0	0.8	1.7	2.8	5
FTSE Pillar Score (G)	5,487	2.93	0.83	0	2.3	3	3.5	5
Total Assets	5,914	3,207,197	19,907,451	1,481	122,891	301,578	997,072	386,799,477
Average Equity Return over 3 Years	5,617	0.02	0.06	-0.4	-0.02	0.02	0.06	0.36
Ratio of Shares Held by Controlling Company	5,645	9.25	16.69	0	0	0	17	89
Cross-shareholding Ratio	5,914	0.09	0.11	-0.02	0.01	0.05	0.12	2.04
Percentage of Independent Outside Directors	5,908	0.34	0.13	0	0.25	0.33	0.42	1
Number of Independent Outside Directors	5,908	3.25	1.4	0	2	3	4	12
Dividend Payout Ratio	5,517	44.02	84.49	0	23.8	31.2	43.7	2,885.80
Total Return Ratio	5,517	64.44	348.14	0	26.72	37.54	59.63	23,976.47
Current Profit Margin on Sales	5,914	6.77	10.18	-84.91	2.83	5.31	9.21	288.29
Financial Leverage	5,911	3.62	8.65	1.04	1.52	1.96	2.91	262.8
Percentage of Female Board Members and Statutory Auditors	5,913	0.1	0.08	0	0.05	0.08	0.14	0.56
Cash & Deposits/Total Assets	5,911	0.19	0.14	0	0.09	0.16	0.26	0.94
Total Debts/Total Assets	5,911	0.49	0.22	0.04	0.33	0.47	0.64	1.17
Presence of GHG Emissions Reduction Targets	5,914	0.33	0.47	0	0	0	1	1
Carbon Intensity Scope 1	5,595	113.91	467.62	0	7.03	14.92	35.16	7,855.11
Carbon Intensity Scope 2	5,595	40.15	69.21	0	10.37	21.08	45.82	1,674.78
Carbon Intensity Scopes 1&2	5,595	154.06	485.02	0.49	20.26	40.7	87.62	7,869.61
Net Cash Ratio	5,309	-0.01	0.26	-0.82	-0.18	0	0.17	0.85
Presence of Released Integrated Reports	5,914	0.33	0.47	0	0	0	1	1
Percentage of Female Employees in New Hires	2,320	31.35	16.7	0	18.59	28.32	40	100
Percentage of Female Employees in the Workforce	2,869	25	15.83	0	13.3	20.4	32.64	93.68
Difference in Average Years of Employment between Male Employees and Female Employees	2,655	-17.53	18.11	-81.23	-29.12	-17.98	-6.25	143.33
Percentage of Female Managers in All Management Positions	2,940	7.98	7.67	0	2.71	5.38	10.5	57.35
Percentage of Female Members in the Board of Directors	3,688	11.1	8.6	0	6.67	11.11	15.38	55.56

# 1. Descriptive Statistics

Name of variable	Number by fiscal year						
	2016	2017	2018	2019	2020	2021	2022
Tobin's q	985	984	987	990	976	979	995
PBR	984	984	986	989	976	979	996
Market Cap	985	984	987	990	977	980	996
Rate of Return Including Dividends	985	984	987	990	977	980	996
ROE	959	946	972	975	965	964	989
Equity Spread	959	946	972	975	965	964	989
FTSE ESG Score	727	719	947	953	948	956	964
FTSE Pillar Score (E)	727	719	947	953	948	956	964
FTSE Pillar Score (S)	727	719	947	953	948	956	964
FTSE Pillar Score (G)	727	719	947	953	948	956	964
Total Assets	985	984	987	990	977	980	996
Average Equity Return over 3 Years	958	964	966	970	965	963	789
Ratio of Shares Held by Controlling Company	981	981	980	976	971	972	765
Cross-shareholding Ratio	985	984	987	990	977	980	996
Percentage of Independent Outside Directors	975	982	985	990	976	979	996
Number of Independent Outside Directors	975	982	985	990	976	979	996
Dividend Payout Ratio	938	960	945	903	846	927	936
Total Return Ratio	938	960	945	903	846	927	936
Current Profit Margin on Sales	985	984	987	990	977	980	996
Financial Leverage	984	984	985	990	976	980	996
Percentage of Female Board Members	985	984	987	990	976	980	996
Cash & Deposits/Total Assets	985	984	987	990	976	979	995
Total Debts/Total Assets	985	984	987	990	976	979	995
Presence of GHG Emissions Reduction Targets	985	984	987	990	977	980	996
Carbon Intensity Scope 1	915	920	930	933	940	953	919
Carbon Intensity Scope 2	915	920	930	933	940	953	919
Carbon Intensity Scopes 1&2	915	920	930	933	940	953	919
Net Cash Ratio	878	870	880	892	883	885	899
Presence of Released Integrated Reports	985	984	987	990	977	980	996
Percentage of Female Employees in New Hires	-	299	384	424	424	380	409
Percentage of Female Employees in the Workforce	-	326	446	495	505	534	563
Difference in Average Years of Employment between Male Employees and Female Employees	-	304	416	463	458	498	516
Percentage of Female Managers in All Management Positions	-	346	465	505	520	534	570
Percentage of Female Members in the Board of Directors	-	453	603	651	654	661	666

## 2. Definitions of Data

Name of variable	Data source	Unit	Definitions
Tobin's q	Calculated from various sources		$(\text{Market Cap (Outstanding Shares)} + \text{Total Debts}) / \text{Total Assets}$
PBR	QUICK	Times	Use "PBR (Consolidated preferred)". Market Cap (based on Common Shares) / Owned Capital (on a Quarterly Basis) (however, include Owned Capital only when it is a positive value);
Market Cap	QUICK	Million yen	The calculation reference value is the number of outstanding shares; if the shares are newly issued in the relevant market for which the reference value cannot be obtained, the value is zero (0); and the number of outstanding shares is the number of shares on an ex-rights basis on the day. (Not the number of outstanding shares at the end of the period); those not included are treated as missing; market caps (outstanding shares)
Total Shareholder Return	Calculated from various sources	%	Annual Total Shareholder Return. Calculated by summing daily rates of return into the monthly rates of return, and then into the annual rate of return. If the (daily) Total Shareholder Return is R: Monthly Total Shareholder Return = $\{(R1/100) + 1\} * \{(R2/100) + 1\} * \dots * \{(Rn/100) + 1\} - 1$ * 100 R1, R2, and Rn indicate the Total Shareholder Return on the 1st, 2nd and final business day of the month, respectively.
ROE	QUICK	%	Use "Return on Equity (ROE)". $(\text{Current profits} / \text{Number of fiscal months}) / \{(\text{Owned capital} + \text{Owned capital [of the first half]}) / 2\} * 100$ ,
Equity Spread	Calculated from various sources	%	ROE - Cost of Equity. Cost of Equity was calculated by using CAPM based on the (daily) average values over 5 years for the following items. The Cost of Equity at the end of the previous fiscal year was used. <ul style="list-style-type: none"> <li>•Risk-free Rate : Interest rate of Japan 10-year Government Bonds</li> <li>•β: TOPIX β by TOPIX-17 Series-specific</li> <li>•Market Risk Premium: Expected Earnings Yield of TOPIX</li> </ul> *The number of days used for calculating the average values over 5 years: 1,225 days, obtained by the average number of annual business days of 245 days (for the calculation period of FY2008 to FY2022) × 5 years
FTSE ESG Score	FTSE		ESG Score based on FTSE Russell's score model
FTSE Pillar Score (E)	FTSE		E Pillar's score based on FTSE Russell's score model
FTSE Pillar Score (S)	FTSE		S Pillar's score based on FTSE Russell's score model
FTSE Pillar Score (G)	FTSE		G Pillar's score based on FTSE Russell's score model
Total Assets	QUICK	Million yen	Use "Total Assets".
Average Equity Return over 3 Years	Nikkei Inc.	%	Daily average value of the total returns of the shares over 3 years until the end of the latest accounting period (including dividends)
Ratio of Shares Held by Controlling Company	Nikkei Inc.	%	Ratio of Shares Held by Controlling Company (company that holds over 15% of the shares)
Cross-shareholding Ratio	Calculated from various sources	%	Specified Investment Shares (of the relevant company + of its subsidiaries)/Net Assets
Percentage of Independent Outside Directors	Calculated from various sources	%	Number of Independent Outside Directors/Number of Directors
Number of Independent Outside Directors	QUICK	Number of persons	Use "Independent Directors Out Of Outside Directors". The number of outside directors who are designated as independent directors as of the date of the information update



## 2. Definitions of Data

Name of variable	Data source	Unit	Definitions
Dividend Payout Ratio	Calculated from various sources	%	The dividend payout ratio of the relevant fiscal year. Must be released by the company. Obtained from the quarterly reports. However, for Dividend Payout Ratios, any negative value was treated as a missing value (the process used in cases when a company in the red provides dividends) and, in cases where the dividend payout ratio was missing and the value of “Current Net Income/Current Profits attributable to Owners of Parent” was also missing or negative, we treated the values as missing. In addition, if the Dividend Payout Ratio was missing, the parent company had positive profits, and the total annual dividend was positive or left blank, the calculation was made using “Total Amount of Annual Dividends (0 was entered into the blank spaces) / Profits Attributable to Owners of Parent.”
Total Payout Ratio	Calculated from various sources	%	(Total annual dividends + Annual amount of treasury stock repurchases) / Net income attributable to owners of parent
Net Profit Margin	QUICK	%	Use “Net Income to Net Sales Ratio”.
Financial Leverage	QUICK	Times	Use “Financial Leverage”.
Percentage of Female Board Members and Statutory Auditors	Calculated from various sources	%	Number of Female Board Members and Statutory Auditors / (Number of Female Board Members and Statutory Auditors + Male Board Members and Statutory Auditors)
Presence of GHG Emissions Reduction Targets	MSCI		Presence or non-presence of established GHG emissions reduction targets for 2030 onwards of companies comprising ACWI IMI constituent companies + major corporate bonds issuers
Carbon Intensity Scope 1	S&P	tCO <sub>2</sub> e (*)	Emissions/ USD 1 million revenue Greenhouse gas (GHG) emissions from sources that are owned or controlled by the company (categorised by the greenhouse gas protocol) relative to the company's revenue
Carbon Intensity Scope 2	S&P	tCO <sub>2</sub> e(*)	Emissions/ USD 1 million revenue Greenhouse gas (GHG) emissions from the consumption of purchased electricity, heat, or steam by the company (categorized by the greenhouse gas protocol), relative to the company's revenue. Emissions are calculated using a location-based methodology i.e. using grid emission factors for each region.
Carbon Intensity Scopes 1&2	S&P	tCO <sub>2</sub> e(*)	Emissions/ USD 1 million revenue Carbon Intensity Scope 1 & Carbon Intensity Scope 2
Net Cash Ratio	Calculated from various sources	%	(Liquidity on Hand - Interest-bearing Debts / Total Assets)

## 2. Definitions of Data

Name of variable	Data source	Unit	Definitions
Presence/Non-presence of Released Integrated Reports	CORPORATE VALUE REPORTING LAB		CORPORATE VALUE REPORTING LAB “List of Organizations in Japan Engaged in the Publication of Self-Declared Integrated Reports (2022)”
Percentage of Female Employees in New Hires	MSCI	%	This data represents percentage of women employees in new hires
Percentage of Female Employees in the Workforce	MSCI	%	This data represents the percentage of women employees in total workforce
Difference in Average Years of Employment between Male Employees and Female Employees	MSCI		This data represents the percentage difference in average employment years for female to male employees
Percentage of Female Managers in All Management Positions	MSCI	%	This data represents the percentage of women employees in senior management (managers and above)
Percentage of Female Members in the Board of Directors	MSCI	%	This data represents the percentage of women directors on the company's board of directors

\* tonnes of carbon dioxide equivalent





# Measuring the Effects of Stewardship Activities and ESG Investment

	Project theme	Specific content of the project (Example)
Measuring the effects of stewardship activities	(1) Evaluation of the effects of engagement <b>Released in May 2024</b>	Study on the causation between the engagement and improvement of ESG performance / corporate value
	(2) Analysis of the exercise of voting rights by investment managers <b>To be released in FY2025</b>	Trend analysis in voting behavior differences for companies with which they have a potential conflict of interest and other investee companies
Measuring the effects of ESG investment	(1) Study on ESG factors contributing to the improvement of corporate value and investment return <b>To be released in FY2024</b>	Study on causation between ESG factors and improvement in corporate value/ investment return
	(2) Evaluation of the effects of passive equity investment based on ESG indexes <b>To be released in FY2025</b>	Analysis of the effects of ESG investment on corporate behavior

