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ESG Criteria Essential to Meeting Fiduciary Duty?

Quantitative analysis of portfolio performance suggests connection to cutting of CO_2 emissions

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Summary

- ESG (Environmental, Social, and Governance) is an approach to Socially Responsible Investment (SRI). However, there are concerns that the requirements for this area may contradict the primary responsibility of the fiduciary – that is, to prioritize the profits of the principal or beneficiary. The definition which is gradually becoming more widespread is that if SRI investment performance is not subordinated by the approach to investment management, then it can be assumed that fiduciary duty has not been compromised.

- PRI, The United Nations Environment Programme Finance Initiative (UNEP FI), and the Generation Foundation jointly published a report in April 2017 entitled "Fiduciary Duty in the 21st Century, Japan Roadmap", which outlines how to respond to ESG issues, while also presenting background information and proposals. According to the 2017 report, Japan is behind in the development of ESG investment compared to other countries, but there is growing interest in ESG issues, especially the question of corporate governance.

- This report examines the factor of CO_2 emissions per unit of sales, and analyzes the relationship to corporate performance, reaching the conclusion that there may be some kind of relationship between level of emissions and corporate performance. We performed a quantitative analysis on this relationship and found that the 5.5-year return on a portfolio consisting of companies with a high rate of decrease in emissions is at 19.5%, just slightly above the return on companies whose emissions decreased overall. In contrast, 5.5-year return on companies with a high rate of increase in emissions is at 13.1%. Returns on companies which experienced a major increase in emissions are conspicuously low.

- This report is a version of the original report created by our Policy Research Department. In this version, we include only those parts of the Fall Quarterly Survey dealing specifically with Japan: Chapters 4, 5, and 6 (renumbered here as Chapters 1, 2, and 3).

IMPORTANT DISCLOSURES, INCLUDING ANY REQUIRED RESEARCH CERTIFICATIONS, ARE PROVIDED ON THE LAST TWO PAGES OF THIS REPORT.

1. Japan Roadmap

1.1 Summary

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This report examines the factor of CO_2 emissions per unit of sales, and analyzes the relationship to corporate performance, reaching the conclusion that there may be some kind of relationship between level of emissions and corporate performance. We performed a quantitative analysis on this relationship and found that the 5.5-year return on a portfolio consisting of companies with a high rate of decrease in emissions is at 19.5%, just slightly above the return on companies whose emissions decreased overall. In contrast, 5.5-year return on companies with a high rate of increase in emissions is at 13.1%. Returns on companies which experienced a major increase in emissions are conspicuously low.

1.2 Proposals

Proposals for Japan which appear in PRI's "Fiduciary Duty in the 21st Century" are categorized according to the related governmental organization. Proposals cover the following five areas: (1) stewardship and engagement, (2) corporate governance, (3) ESG disclosures and guidance for pension funds, (4) corporate disclosure, and (5) leadership on the part of asset owners.

(1) Stewardship and engagement

The Financial Services Agency should apply a stewardship code to financial services organizations and monitor them to ensure compliance. The Financial Services Agency should also require that institutional investors and corporations holding Japanese stocks disclose the results of their having exercised voting rights. In addition, results of voting rights exercised according to revised proposals associated with their code should also be disclosed by financial services organizations. The disclosure of results of financial services organizations having exercised their voting rights will lead to revitalization of the market. Hence disclosure should be made mandatory.

It is hoped that Japanese institutional investors will implement cooperative engagement. Meanwhile, the Financial Services Agency should continue working on means of ensuring that they do so. For this purpose guidelines should be updated.

Corporate pension funds should all be given a stewardship code, and said code should be adopted as the basic investment policy. In addition, whether or not an organization has endorsed a code should also be disclosed, as well as their reasons for having failed to do so in cases where they have not.

(2) Corporate governance

The corporate governance code should be kept up to date, and undergo a review once every three years in order that it can properly function as a system of compliance. Meanwhile, corporations should continuously improve the condition of corporate governance along with stake holders.

As regards cross-shareholdings and mutual holdings, corporate governance codes should require the disclosure of not only holdings for strategic reasons, but a more detailed disclosure of the status of the grounds for retaining said holdings or for exercising voting rights.

(3) ESG disclosures and guidance for pension funds

Japanese pension funds should publicly announce their investment policies either in the form of adopting or endorsing a stewardship code or in communications to beneficiaries.

The Ministry of Health, Labour and Welfare should carry out guidance in which it is made a requirement for the pension fund investment process to take into consideration ESG criteria from the viewpoint of fiducial duty. Moreover, the Ministry should urge pension funds to sign onto a stewardship code or the PRI.

(4) Corporate disclosure

The Ministry of Economy, Trade and Industry, and the Financial Services Agency should reconsider the contents and comparability of ESG information disclosure by Japanese corporations, as well as its usefulness to institutional investors.

The Japan Exchange Group should produce ESG information disclosure guidelines for listed companies.

(5) Leadership on the part of asset owners

The GPIF should set itself up as an example for other market participants by making efforts toward the development of best practices for ESG integration in selection of investment managers and monitoring, investment policy, governance, and engagement with investment destination companies.

The GPIF should demonstrate leadership in resolving issues associated with corporate governance such as the question of cross-shareholdings and mutual holdings, and support mutual engagement.

2. CO_2 Emissions Standards and Corporate Performance

2.1 Background of the Analysis

The major assumption behind ESG criteria is of course related to the future value of the corporation and investment performance. However, at this point in time empirical analysis of ESG oriented investments is insufficient. As regards the previously mentioned document, "Fiduciary Duty in the 21st Century", the effect of corporate governance on investment performance can be verified, but the relationship between social and environmental issues and investment performance in many cases remains unclear. In order to investigate whether there is a relationship between ESG criteria and corporate performance, we performed an analysis of the relationship between one environmental factor (E), that of CO_2 emissions[1], and corporate performance of Japanese companies listed on the stock market.

Concretely speaking, two types of factors were used in our analysis – the level of CO_2 emissions per unit of sales in FY2014, and growth or decline in said factor in comparison with the previous fiscal year. As for corporate performance, we looked at return on assets (ROA) and return on equity (ROE), as well as stock returns (expressed as "return" in the below).

2.2 Average Level of ROA & ROE

We divided corporations used in our analysis of ROA and ROE into two groups based on the median value of the level of CO_2 emissions per unit of sales and growth or decline in the quantity of emissions. We then examined average levels of ROA and ROE for companies in each group.

(1) Level of CO_2 emissions per unit of sales

First we divide corporations into two groups based on the median value of the level of CO_2 emissions per unit of sales. Then we compare the average values of ROA and ROE for each group. This brought us results showing that ROA and ROE were high in all fiscal years for corporations in the group with lower CO_2 emissions, while differences in ROE were especially large in FY2013 and FY2014 (Chart 1). Meanwhile, when we examine the difference in average values, we see that there is a statistically significant difference at significance level 0.05 for ROA in FY2013, FY2015, and FY2016, and for ROE in FY2013, FY2014, and FY2016. This suggests that there is some kind of relationship between the level of CO_2 emissions, and ROA & ROE.

Level of CO_2 Emissions per Unit of Sales, and ROA & ROE **Chart 1**

Group			Number of Companies	ROA (%)				ROE (%)			
				FY2013	FY2014	FY2015	FY2016	FY2013	FY2014	FY2015	FY2016
Low level of emissions			272	3.6	3.7	3.6	4.0	8.6	8.0	7.6	8.8
High level of emissions			272	2.9	3.1	3.0	3.2	6.4	5.4	6.2	7.0
Difference in average values of t-test (both sides): p-value				(0.007)	(0.063)	(0.047)	(0.005)	(0.000)	(0.026)	(0.119)	(0.006)
Breakdown	Industrial Factor	Low Level		2.7	2.9	2.6	2.7	6.0	5.9	5.0	5.8
		High Level		2.9	3.0	2.7	3.1	5.6	6.1	5.2	6.0
	Corporate Factor	Low Level		0.9	0.8	1.0	1.3	2.5	2.1	2.5	3.0
		High Level		0.1	0.1	0.2	0.1	0.8	-0.6	1.0	1.0

Source: Ministry of Economy, Trade and Industry "Environmental Report Plaza", Toyo Keizai Inc.; compiled by DIR.

Using the same 547 companies from which we originally collected data, we next looked at the average value (annual) of CO_2 emissions per unit of sales by industry. Here we find that CO_2 emissions differ

[1] Data used regarding CO_2 emissions was captured from the METI Environmental Report Plaza website and compiled by the DIR Research Management Department

greatly from industry to industry, with banks (7 companies in our sample) at 0.06t/million yen, wholesaling (24 companies) at 0.11t/million yen, petroleum and coal products (5 companies) at 11.84 t/million yen, and electricity & gas (17 companies) at 18.33 t/million yen. If we group companies based on the level of their CO_2 emissions, differences in industrial makeup arise. This may have some kind of influence on the amount of CO_2 emissions, and on the relationship between ROA and ROE. Here we perform an analysis which takes into consideration the factor of type of industry.

We performed a breakdown of individual corporate ROA based on average ROA of the industry each company belongs to, and then on the differences in the ROA of affiliated industries as compared to individual company ROA. We call the former grouping the industrial factor and the latter grouping the corporate factor. We can also perform a breakdown on an investment portfolio by using the composition ratio by industry to look at a portfolio's average ROA by industrial factor and corporate factor. Then by finding the weighted average of the industrial composition ratio for affiliated industry ROA, we can calculate the industrial factor of the portfolio's overall ROA. Meanwhile, ROE can be broken down in the same way by industrial factor and corporate factor.

Looking at the results we see that there are many fiscal years in which the industrial factor showed a somewhat higher level of CO_2 emissions, while the corporate factor clearly has a lower level in each fiscal year (Chart 1, lower side).

The reason that ROA and ROE are higher when emissions levels are lower is that the corporate factor is stronger for the lower levels of CO_2 emissions. Even when we remove the industrial factor from the equation, results still strongly indicate some kind of relationship between the level of CO_2 emissions and ROA & ROE.

(2) Increase or decrease of level of CO_2 emissions per unit of sales

Next, we considered the year-to-year increase or decrease in CO_2 emissions per unit of sales by calculating the average value of ROA and ROE of corporations which experienced a decrease in CO_2 emissions, as well as corporations which experienced an increase in CO_2 emissions. The result indicated that ever since FY2014, ROA has been high during each fiscal year for corporations which experienced a decrease in CO_2 emissions (Chart 2). As for ROE, corporations which experienced a decrease in CO_2 emissions in FY2014 and FY2016 exhibited the highest results. However, in FY2013, corporations which experienced an increase in CO_2 emissions had the highest ROE, while in FY2015, both groups exhibited the same levels. But with the exception of ROE in FY2014, each fiscal year shows both groups with ROA & ROE levels which were not that much different from each other. Meanwhile, an examination of differences between ROA & ROE at significance level 0.05 showed no statistical significance in any of the fiscal years under consideration.

As in the case of our analysis of emissions levels, we performed a breakdown of ROA & ROE base on the industrial factor and the corporate factor. The breakdown is shown in the lower half of Chart 2. Here, the group showing a decrease in emissions revealed a higher ROA in FY2014, with the corporate factor contributing the most to this result.

Increase or Decrease of Level of CO_2 Emissions per Unit of Sales, and ROA & ROE **Chart 2**

Group			Number of Companies	ROA（%）				ROE（%）			
				FY2013	FY2014	FY2015	FY2016	FY2013	FY2014	FY2015	FY2016
Decrease in emissions			388	3.2	3.5	3.4	3.7	7.4	7.3	6.9	7.9
Increase in emissions			153	3.4	3.0	3.1	3.4	7.7	5.2	6.9	7.7
Difference in average values of t-test (both sides): p-value				(0.492)	(0.120)	(0.417)	(0.396)	(0.551)	(0.225)	(0.956)	(0.696)
Breakdown	Industrial Factor	Decrease in emisisons		2.8	3.0	2.7	2.9	6.0	6.0	5.3	6.0
		Increase in emssions		2.7	3.0	2.6	2.8	5.5	5.9	4.7	5.6
	Corporate Factor	Decrease in emisisons		0.4	0.6	0.7	0.7	1.4	1.3	1.6	2.0
		Increase in emssions		0.7	0.0	0.5	0.6	2.2	-0.7	2.2	2.0

Source: Ministry of Economy, Trade and Industry “Environmental Report Plaza”, Toyo Keizai Inc.; compiled by DIR.

As for ROE, situations differed in each fiscal year, with no completely stable factors. As for ROA, even when we remove factors arising from differences in industry, we can still see a possible relationship between increase and decrease in emissions. As was seen in the results of our examination discussed in the previous section, there is always the possibility that said difference may be a mere coincidence.

2.3 Average Level of Return

In order to analyze average return, we divided companies subject to the analysis into two groups based on the median level of CO_2 emissions per unit of sales and increase/decrease of emissions, and then analyzed returns at the time investments of equal amounts were carried out in the companies associated with the two groups. In this section we present the results of this analysis. The analysis looks at annualized returns (referred to as full-term returns in the below) on investments performed at the beginning of 2012 and held for 5.5 years up to the end of June 2017.

1) Level of CO_2 emissions per unit of sales

Full-term returns on companies in the two groups based on the median level of CO_2 emissions per unit of sales tended to be higher for those with a low level of emissions (see totals shown in Chart 3). The difference in returns has a statistically significant difference at significance level 0.05, suggesting that there is some kind of relationship between the level of emissions and return on investment.

Level of CO_2 Emissions per Unit of Sales, and Returns **Chart 3**

Group	Number of Companies	Annualized Return (%)			
		Total	(p-Value)	Industrial Factor	Corporate Factor
Low level of emissions	272	22.5	(0.000)	16.6	5.9
High level of emissions	272	17.8		15.4	2.5

Source: Ministry of Economy, Trade and Industry “Environmental Report Plaza”, Toyo Keizai Inc., Tokyo Stock Exchange; compiled by DIR.
Note: The p-value is the significance probability obtained from examination of both sides with difference in returns set at zero.

In order to perform a more detailed consideration, we calculated returns on investments of equal amounts made at the beginning of each calendar year and held until the end of the same year. In this case calendar years 2012 and 2013 we see a difference of more than 10%pt between returns on investments in companies with a low level of emissions and those with a high level of emissions. However in 2016 and 2017 (through the end of June) there is almost no difference in returns on the two groups. Considering the fact that emissions from FY2014 are utilized in the analysis, and that the difference in returns between the two groups of investments is larger in earlier years 2012 and 2013, we can evaluate the process of the market’s development into one with higher eco-efficiency. The data also suggests that this same factor is evident in the difference in returns.

Next we calculated full-term returns with the companies used in this analysis divided into four separate groups based on level of emissions from lowest to highest (there were 136 companies included in each of the four quantiles). The distribution of returns from the first to the fourth quantile was as follows: 22.6%, 22.4%, 19.4%, and 16.2%. Here we can see how returns become higher as the level of CO_2 emissions per unit of sales becomes lower.

Next we perform a breakdown in the same way we did previously in the ROA & ROE analysis, only this time looking at returns in terms of the industrial factor and the corporate factor. The returns on investments in each of the individual companies were broken down according to industry affiliation (industrial factor returns) and excess return in comparison to return based on industry affiliation (corporate factor return). Concretely speaking, the breakdown of returns is performed by calculating a portfolio's industrial factor returns. The affiliated industry's return is the growth rate of the Tokyo Stock Exchange's industrial indices, which is used to find the weighted average of the composition ratio by industry.

Chart 3 presents the results of this analysis, which indicate that the total of full-term returns on investments in companies with a low level of emissions are higher than those having a high level of emissions. However, while corporate factor returns associated with lower levels of emissions are 5.9%, those with high level of emissions are at 2.5%. This is considered to be highly influential on the results. It therefore follows that even when we remove the factor of differences in industrial composition, investments in companies with lower levels of CO_2 emissions have a higher return than those with higher levels of CO_2 emissions. Furthermore, we can also state that the results of this analysis of full-term returns suggest that the level of CO_2 emissions per unit of sales has a relationship with the level of returns.

(2) Increase or decrease of level of CO_2 emissions per unit of sales

Next, using the year-to-year increase or decrease of level of CO_2 emissions per unit of sales, we calculated full-term returns on investments in companies whose emissions decreased and in companies whose emissions increased, and found that returns were higher in the case of companies whose emissions decreased than on those whose emissions increased (totals shown in Chart 4). The difference in returns as seen in this comparison has a statistically significant difference at significance level 0.05. In other words, this indicates that there is a relationship between the increase or decrease of level of CO_2 emissions per unit of sales and returns.

Meanwhile, when we calculated returns on investments of equal amounts made at the beginning of each calendar year and held until the end of the same year, we found that between calendar year 2012 and 2014, and more recently in 2017, returns on investments in companies whose emissions decreased were higher, especially in 2013 and 2014. This suggests that, since our analysis utilized increase and decrease in emissions in FY2014, which is the year that activities to increase eco-efficiency first gained value on the market, it is possible that this development found itself manifest in the difference in returns as was also seen in our analysis of emissions levels. Meanwhile, as for years 2015 and 2016, returns on investments in companies whose emissions increased were high, but the difference in returns was minor.

Increase or Decrease in Level of CO_2 Emissions per Unit of Sales, and Returns **Chart 4**

Group	Number of Companies	Annualized Return (%)			
		Total	(p-Value)	Industrial Factor	Corporate Factor
Decrease in emissions	388	21.0	(0.010)	16.0	5.0
Increase in emissions	153	18.2		15.9	2.3

Source: Ministry of Economy, Trade and Industry "Environmental Report Plaza", Toyo Keizai Inc., Tokyo Stock Exchange; compiled by DIR.
Note: The p-value is the significance probability obtained from examination of both sides with difference in returns set at zero.

As a reference we also calculated full-term returns with companies divided into four separate groups as was done in our analysis of emissions levels. Companies which experienced a year-to-year decrease of level of CO_2 emissions per unit of sales were divided into two groups based on the extent of the decrease – those with a large decrease (194 companies), and those with a small decrease (194 companies). Meanwhile, the next two groups were composed of companies which experienced a year-to-year increase in level of CO_2 emissions per unit of sales – one with a large increase (76 companies), and the last group with a small increase in emissions (77 companies). Returns for each of the four groups were as follows: large decrease 23.2%, small decrease 18.6%, small increase 18.2%, and large increase in emissions 18.3%. The group with the highest returns was the one with the largest decrease in emissions, whereas the remaining three groups had return of similar amounts. This may indicate that the market has begun to highly evaluate companies which have been able to make major decreases in their CO_2 emissions per unit of sales.

Next we perform a breakdown of returns based on the industrial factor and the corporate factor. Here also, returns based on the industrial factor were about the same, while full-term returns were high for the corporate factor group showing a decrease in emissions. It appears that the difference in the level of returns in the corporate factor group is influential (Chart 4 right side). It therefore follows that when giving consideration to differences in industrial composition as well, increase or decrease of level of CO_2 emissions per unit of sales may be related to returns. Meanwhile, the fact that only returns on companies with a large rate of decrease in emissions are clearly higher suggests that data showing major change in CO_2 emissions per unit of sales has a relationship with returns.

2.4 Return on Weighted Average of Market Capitalization

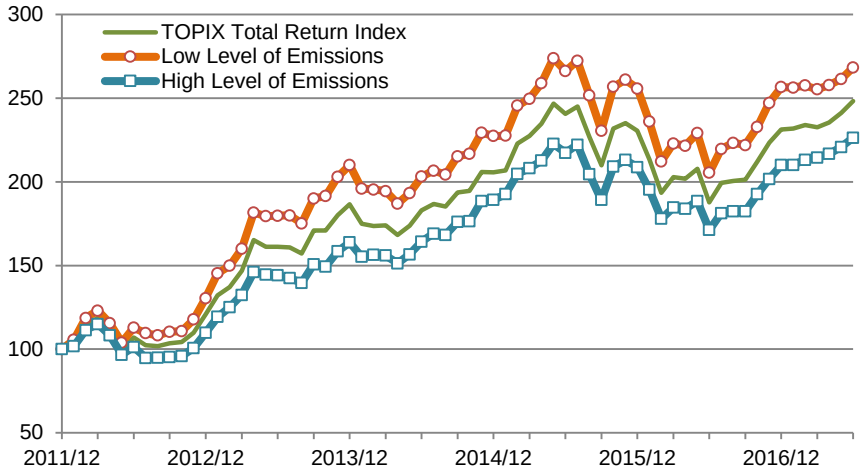
Lastly, we divided sample companies into two groups – one based on the median value of the level of CO_2 emissions per unit of sales, and the other based on increase or decrease in emissions. Then for each of these groups we analyzed the return on weighted average of market capitalization. The current chapter outlines those results. When a weighted average of return is performed in relation to market capitalization, it goes without saying that corporations whose market capitalization is large carry the most influence. Hence there is the danger that the relationship of returns to level of emissions and increase or decrease will become difficult to discern. However, when engaging in actual investment operations, it is quite common when putting together a portfolio to take into consideration the market capitalization of all investee companies. When analyzing the relationship between level of emissions or increase and decrease of emissions and investment performance, weighted average of market capitalization must also be considered. Therefore, we have calculated and analyzed monthly return on weighted average of market capitalization for a period of 5.5 years starting from the beginning of calendar year 2012 through end June 2017 for each company associated with the two groups mentioned above which we have created for the purpose of analysis.

1) Level of CO_2 emissions per unit of sales

First we divided companies to be analyzed based on the median value of the level of CO_2 emissions per unit of sales into two groups and calculated their return on weighted average of market

capitalization. Next we created an index of returns, with calculation results as of the end of 2011 set at 100. The index of corporations with a low level of emissions (a total of 272 companies) maintains a level higher than the TOPIX Total Return index, which indicates the direction of the entire market (Chart 5). In contrast, the index of corporations with a high level of emissions (a total of 272 companies) is at a level lower than the TOPIX Total Return index. We can see here how different levels of emissions have generated a difference in index performance. Meanwhile, the annual rate of return over a period of 5.5 years, which we established for the purpose of our analysis, is at 19.7% for the low level emissions group and 16.0% for the high level emissions group in contrast to 18.0% registered by the TOPIX Total Return index. This may indicate that the market is highly evaluating companies with high eco-efficiency, while making a lower evaluation of companies with low eco-efficiency, and that this difference has become apparent in the return indices.

Level of CO_2 Emissions per Unit of Sales, and Trends in Return Indices (End 2011 = 100) **Chart 5**



Source: Ministry of Economy, Trade and Industry "Environmental Report Plaza", Toyo Keizai Inc., Tokyo Stock Exchange; compiled by DIR.

In considering investment performance, a balanced view of risk and return is required. Here risk is understood as the annualized standard deviation of monthly returns, and when we divide returns by risk, we arrive at the figure 1.01 for low level emissions, and 0.93 for high level emissions. This tells us that return on risk is higher in the case of low level emissions. This indicates that inclusion of data on the level of CO_2 emissions per unit of sales may contribute to improvement in investment performance.

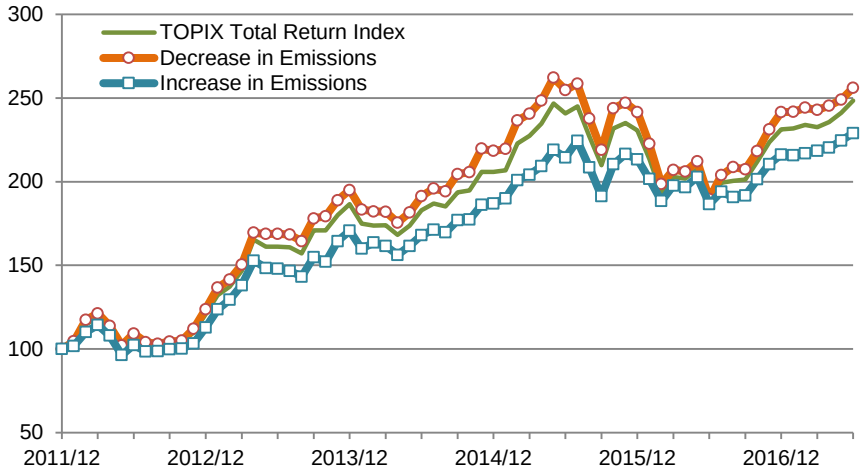
In order to gain an even more detailed understanding of the relationship between the level of CO_2 emissions per unit of sales and the 5.5 year period of returns which we established for this analysis, we calculated 5.5-year returns with the companies used in this analysis divided into four separate groups based on level of emissions from lowest to highest. There were 136 companies included in each of the four quantiles. The distribution of returns from the first to the fourth quantile was as follows: 20.2%, 19.2%, 16.3%, and 15.7%. Here we can see a linear relationship between the level of CO_2 emissions per unit of sales and returns. These results also reinforce the sense that there is a relationship between the level of CO_2 emissions and investment performance.

(2) Increase or decrease of level of CO_2 emissions per unit of sales

Next, we create an index of returns that expresses the increase or decrease of the level of CO_2 emissions per unit of sales. In this case we can see that the index of companies whose emissions have decreased (a total of 388 companies) maintains a level above that of the TOPIX Total Return index. The difference is especially pronounced between the middle of the year 2013 and the middle of 2015 (Chart 6). On the other hand, the index of companies whose emissions have increased (a total of 153 companies) is at a level below that of the TOPIX Total Return index. The extent to which the index

falls below TOPIX is especially pronounced between the middle of the year 2013 and the end of 2015. These results may be influenced by emissions data from FY2014. The 5.5-year period return is 18.7% for decrease in emissions as compared to 16.3% for increase in emissions.

Increase or Decrease in Level of CO_2 Emissions per Unit of Sales, and Trends in Return Indices (End 2011 = 100) **Chart 6**



Source: Ministry of Economy, Trade and Industry "Environmental Report Plaza", Toyo Keizai Inc., Tokyo Stock Exchange; compiled by DIR.

Next we divide companies whose emissions have decreased into two groups based on the median value of the rate of decrease. Here we find that the 5.5-year return on a portfolio consisting of companies with a high rate of decrease in emissions is at 19.5%, just slightly above the return on companies whose emissions decreased overall. In contrast, we divide companies whose emissions have increased into two groups based on the median value of the rate of increase, and find that the 5.5-year return on companies with a high rate of increase in emissions is at 13.1%. Returns on companies which experienced a major increase in emissions are conspicuously low. Here we see that information, such as a major reduction or increase in emissions, can contribute to the improvement of investment performance.

3. Conclusion

The year 2015 was a major turning point for ESG investment. In 2015 the U.S. Department of Labor made a decision on ESG investment and fiduciary duty, concluding that if an approach to investment taking ESG criteria into consideration can promise superior investment results, then it is not inconsistent with fiduciary duty. Meanwhile, PRI, which originally proposed ESG investment, published a report entitled "Fiduciary Duty in the 21st Century" in which the organization expressed the opinion that failure to consider ESG requirements should be considered a violation of fiduciary duty. Then in Japan, GPIF signed a statement in 2015 announcing its participation in PRI, and that it would consider ESG in the investment process. The events of the year 2015 were highly influential on ESG investment in each of the countries considering it. In other cases, subsequent developments suggest that there may have been influence.

The assumption behind ESG criteria is of course that it will influence the future value of the corporation and investment performance. This report does not go so far as to explore the causal relationship, but does examine the factor of CO_2 emissions per unit of sales, and analyzes the relationship to corporate performance, reaching the conclusion that there may be some kind of relationship between level of emissions and corporate performance.

There are numerous surveys and empirical analyses being implemented throughout the world attempting to clarify the relationship between ESG factors and corporate performance, but no final conclusions have been reached. More studies of these sorts will likely be performed in the future, as it is necessary to clarify which ESG factors are influential and how they can be used to improve investment performance. Furthermore, in order to do so it is also necessary to strengthen the disclosure process of ESG information related to the future value of corporations, and to establish a database containing this data. ESG investment will likely expand in the future, and is expected to make a contribution to improvements in investment performance and corporate sustainability, as well as economic growth.