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Results of the First Market Functioning Survey concerning Climate Change

- Progress in the Improvement of Market Functioning and Challenges for the Future -

Financial Markets Department

Bank of Japan

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Executive Summary

As the efforts to tackle climate change accelerate globally in recent years, financial markets are expected to play a greater role in terms of financial intermediation. Specifically, financial markets are expected to support industries' efforts to address climate change by reflecting risks and opportunities arising from climate change (climate-related risks and opportunities) in the prices of financial instruments such as stocks and corporate bonds, providing a more conducive environment for the issuance of ESG bonds related to climate change (hereinafter "the ESG bonds"), thereby facilitating funding and investments.

The Bank of Japan has launched the Market Functioning Survey concerning Climate Change with a view to assessing the functioning of Japanese financial markets in tackling climate change and understanding the challenges for improvement. Since climate change is a long-term issue involving various economic stakeholders, the survey will collect views from a broad set of market participants on an annual basis. The first survey was distributed to 663 entities including issuers, investors, financial institutions, and rating agencies, and more than 40 percent of those responded.

In the survey, the respondents provided a view that climate-related risks and opportunities were reflected to a certain degree in the pricing of both stock and corporate bond markets in Japan, although there is room for further reflection in both markets. In order that climate-related risks and opportunities will be reflected more in the prices, many respondents raised issues regarding the availability of information and also the assessment methodologies of climate-related risks and opportunities. The former included "enhancing and/or standardizing information disclosure" and "bridging data gaps on climate-related data," and the latter included "improving transparency in ESG evaluation" and "further developing analysis methodologies." These issues were also raised by many respondents as challenges for increasing the size of the ESG bond market in Japan.

Looking at supply and demand in the ESG bond market, the survey found solid demand for the ESG bonds. As for the motivation behind the ESG bond issuance, respondents emphasized strategic interest for their businesses and investor relations (e.g., improving their reputation, diversifying the investor base) rather than favorable issuing conditions of the ESG bonds. On the investor side, making social and environmental contributions was the most important reason for investing in the ESG bonds. These results suggest that Japan's ESG bond market would further expand with a broader base of issuers and investors by raising their awareness

of those benefits and by reducing the cost of issuing as well as investing in the ESG bonds with more enhanced and standardized information disclosure.

Market stakeholders have already been making efforts to overcome the issues identified in the first survey, such as the availability of information and the assessment methodologies of climate-related risks and opportunities, to further develop the market. The Bank will provide information on the status of market functioning concerning climate change and challenges for the future by continuously conducting this survey while improving its contents. The Bank also intends to contribute to advancing financial markets by following up on efforts made outside of Japan, conducting additional research and analyses on the functioning of financial markets concerning climate change, and communicating and coordinating with relevant stakeholders to develop market infrastructure.

I. Introduction

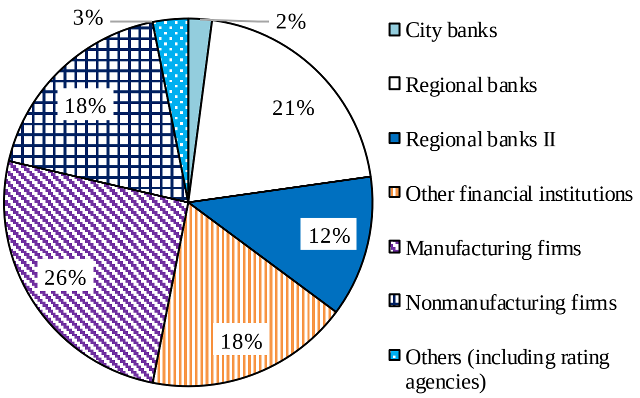
The Bank of Japan launched the Market Functioning Survey concerning Climate Change, which aims to continuously collect views from a broad set of market participants, including not only investors and financial institutions but also business corporates and others, on the functioning of Japanese financial markets in relation to climate change and the challenges for improvement. The views of the market participants were measured quantitatively, by summarizing responses to multiple-choice questions in the survey. The survey also included an open-ended question to collect opinions on challenges for the further development of Japanese financial markets.

Prior to conducting the survey, a public consultation was held from December 2021 to January 2022. The Bank received comments from a wide range of market participants and gained support for its proposals including the survey topics. The survey questions and answer choices were revised to reflect some suggestions gained from that consultation.[1]

The first round of the survey was conducted from April 13 to May 31, 2022. The questionnaire was distributed to 663 entities including financial institutions, business corporates, and rating agencies, and 290 of those responded (i.e., the response rate was 44 percent).

The following is an overview of the survey respondents.

Overview of Respondents (Breakdown by Sector)



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[1] Please see the following documents for details of the public consultation.
Public Consultation on the Market Functioning Survey concerning Climate Change
(https://www.boj.or.jp/en/announcements/release_2021/data/rel211213d1.pdf)
Release of "Final Report on the Results of the Public Consultation on the Market Functioning Survey concerning Climate Change"
(https://www.boj.or.jp/en/announcements/release_2022/data/rel220311b1.pdf)

The Bank is grateful to every respondent and also to the TCFD Consortium (Chair: Kunio ITO, Director of Hitotsubashi CFO Education and Research Center) and other financial associations and organizations for their support, all of which helped the Bank to survey a broad range of entities.

Box 1: Prior Surveys concerning Climate Change in Japan and Abroad

A. Prior Surveys on the Pricing of Climate-related Risks and Opportunities

The extent to which climate-related risks and opportunities are reflected in the prices of financial instruments is not easy to quantify, partly because of the limited availability of relevant data.[2] Accordingly, asking for the views of market participants directly through a survey is considered to be effective. However, only a limited number of surveys, mostly conducted overseas, have included questions which ask market participants about their insights on how climate-related risks and opportunities are reflected in asset prices.

Krueger et al. (2020) surveyed institutional investors on the extent to which stock prices reflect climate-related risks and opportunities. The results indicated that the respondents believed that climate-related risks were somewhat underpriced in their equity valuations on average. Stroebel and Wurgler (2021) collected views from finance academics, professionals, public sector regulators, and policy economists on how asset prices reflect climate-related risks in stock markets, real estate markets, and insurance markets. In the survey results, a majority of the respondents answered that the reflection of climate-related risks in asset prices in those markets was not enough.

Box Chart 1-1: Prior Surveys on Pricing of Climate-related Risks and Opportunities

	Coverage	Outline and Main Results
Krueger et al. (2020)	Investment professionals in investment institutions	✓ Respondents were asked to evaluate the extent to which stock prices reflect climate-related risks and opportunities on a scale from minus two ("valuations much too low"; overpriced) to plus two ("valuations much too high"; underpriced) for each industry. ✓ On average, respondents viewed that valuations are somewhat too high. The results suggest that investors believe climate risks are underpriced.
Stroebel and Wurgler (2021)	Finance academics, professionals, public sector regulators, and policy economists	✓ Respondents answered how current prices reflected climate-related risks in markets with which they are most familiar: stock markets, real estate markets, or insurance markets. ✓ Of the respondents, 60% answered "not enough" for stock markets, 67% for real estate markets, and 42% for insurance markets.

[2] For example, Furukawa et al. (2020) provides a survey mainly focused on the literature of empirical analyses on the interaction between climate change and financial system. As for stocks, the results were mixed -- although many empirical studies found that stock prices reflected mainly transition risks to some extent, other studies showed evidence for mispricing of physical risks.

B. Prior Surveys on Challenges for Improving the Functioning of Financial Markets

There have been a number of surveys in Japan and abroad mainly on investors' views on the challenges for improving the functioning of financial markets concerning climate change. IMF (2021) surveyed asset managers and an asset owner and pointed out that the respondents faced major obstacles such as a lack of data and commonly accepted disclosure standards when integrating climate-related risks into their investment decisions. Regarding climate-related financial disclosure, the Task Force on Climate-related Financial Disclosures (TCFD [2019])[3] found that although progress has been made to improve the availability and quality of climate-related financial information, challenges remained. Those challenges included a lack of standardized industry metrics as well as insufficient data disclosure on scenario analyses and the financial impact of climate-related issues on firms. In addition, the Climate Bonds Initiative (CBI [2020])[4] surveyed issuers of green bonds and noted that respondents viewed the standardization of definitions related to greenness as a major challenge to market expansion while indicating that the major motivations for issuing green bonds were enhancing one's reputation and attracting new investors rather than benefiting from favorable financing conditions.

In Japan, the Ministry of Economy, Trade and Industry (2019) conducted a relevant survey that asked the opinions of fund management organizations. The results of that survey showed that although ESG information was utilized in making investment decisions and in engagement with customers, a majority of the respondents believed information disclosure was insufficient. Moreover, in the results of a survey by the TCFD Consortium (2021), most of the nonfinancial institutions believed that subsidies and preferential or reduced taxation were the most desirable and effective measures of public support for efforts toward a decarbonized society.

Box Chart 1-2: Prior Surveys on Challenges for Improving the Functioning of the Financial Markets

	Coverage	Outline and Main Results
IMF (2021)	Asset managers and an asset owner	✓ A lack of data was considered the most pressing issue when integrating climate-related risks and opportunities into investment decisions, followed by a lack of commonly accepted disclosure standards.

3 The TCFD is a task force established by the Financial Stability Board in 2015 to help identify the information needed to appropriately assess and price climate-related risks and opportunities.
4 The CBI is an international nonprofit organization promoting investment necessary for transition to a low-carbon economy.

TCFD (2019)	Financial institutions, nonfinancial institutions, individuals	✓ Disclosure of climate-related financial information has increased in terms of availability and quality, but is still insufficient for investors. ✓ Improvement in disclosure on the potential financial impact of climate-related issues on firms is needed. ✓ A majority of companies using scenario analysis do not disclose information on the resilience of their strategies.
CBI (2020)	Green bond issuers from a broad range of countries	✓ Reputational benefits and sending signals to the market were ranked as the top motivations for issuing green bonds. In addition, 98% of respondents said that their green bonds attracted new investors. ✓ The cost of funding green bonds was either similar to or lower than vanilla equivalents.
Ministry of Economy, Trade and Industry (2019)	Fund management organizations in Japan	✓ More than 95% of the respondents utilized ESG information in making investment decisions and in engagement. ✓ 85.4% of the respondents recognized that disclosure of ESG information by firms was inadequate.
TCFD Consortium (2021)	Financial institutions and nonfinancial institutions in Japan	✓ The survey, which is conducted regularly, asks the members of the TCFD Consortium about the status of disclosure and its utilization in line with the TCFD recommendations. ✓ There is strong demand from nonfinancial institution for measures to support funding such as subsidies, preferential or reduced taxation, and low-interest loans.

C. Features of the Market Functioning Survey concerning Climate Change Compared with Prior Surveys

Unlike prior surveys, the Market Functioning Survey concerning Climate Change focuses on both 1) the pricing of climate-related risks and opportunities and 2) challenges for improving the functioning of Japanese financial markets. It is also distinctive in terms of its wide coverage of respondents which include not only financial institutions but also business corporates and rating agencies. The Bank intends to contribute to capturing the progress made in the improvement of functioning in the market in tackling climate change and challenges for the future by continuing to conduct the survey.

II. Results of the First Market Functioning Survey concerning Climate Change

A. Pricing of Climate-related Risks and Opportunities in Financial Instruments

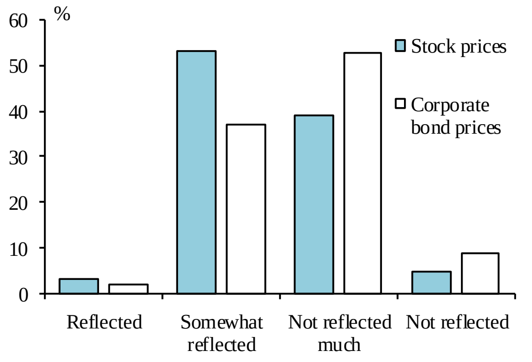
1. Pricing of Climate-related Risks and Opportunities

The survey first asked about the respondents' views on whether climate-related risks and opportunities were reflected in stock prices and corporate bond prices in financial markets in Japan.

The results show that more than 50 percent of the respondents believe that climate-related risks and opportunities were "reflected" or "somewhat reflected" in stock prices and approximately 40 percent believe that the risks and opportunities were "reflected" or "somewhat reflected" in corporate bond prices. That being said, those who consider that the risks and opportunities were "reflected" were limited to about 2 to 3 percent for both stock prices and corporate bond prices.

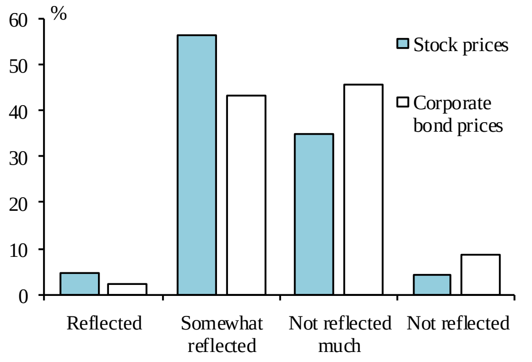
Similar trends were observed with regard to the progress made compared with one year ago. Specifically, about 60 percent of the respondents answered that climate-related risks and opportunities are reflected more or reflected somewhat more than they were one year ago for stocks, and about 50 percent of the respondents gave the same answers for corporate bonds. Yet, less than 5 percent of the respondents answered that the risks and opportunities are reflected more than one year ago for both stock prices and corporate bond prices.

Chart 1: Climate-related Risks and Opportunities in Stock Prices and Corporate Bond Prices in Japan



Note: The total number of respondents was 284 for stock prices and 281 for corporate bond prices (excluding those who did not provide answers).

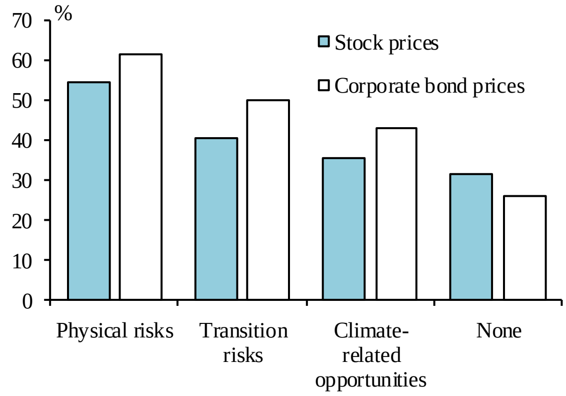
Chart 2: Climate-related Risks and Opportunities in Stock Prices and Corporate Bond Prices in Japan Compared with One Year Ago



Note: The total number of respondents was 284 for stock prices and 281 for corporate bond prices (excluding those who did not provide answers).

With respect to factors not reflected in stock prices and corporate bond prices, more than 50 percent of respondents chose "physical risks," followed by "transition risks" and "climate-related opportunities."[5] Many respondents viewed that these factors were reflected less in corporate bond prices than in stock prices.

Chart 3: Climate-related Risks and/or Opportunities That Are Not Reflected in Stock Prices and Corporate Bond Prices in Japan



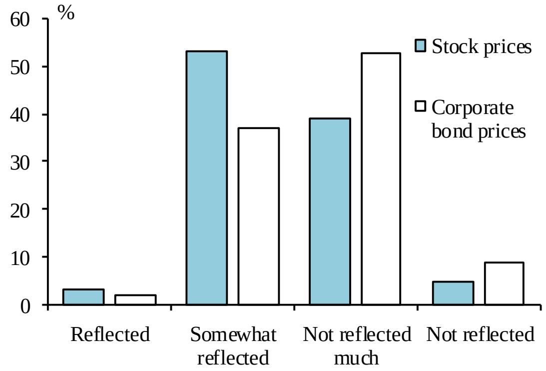
Note: The total number of respondents was 290. Multiple answers were allowed.

[5] "Climate-related risks (physical risks)" refers to the risks that physical phenomena triggered by climate change, such as large-scale disasters or rising sea levels, will have an economic loss on issuers' businesses. "Climate-related risks (transition risks)" refers to the risks of an economic loss on issuers' businesses due to changes in policy, technology, or consumer preference as we move toward a carbon-neutral society. "Climate-related opportunities" refers to profit opportunities and growth opportunities brought about by efforts to respond to climate change issues.

Box 2: Comparison of Stock Prices and Corporate Bond Prices

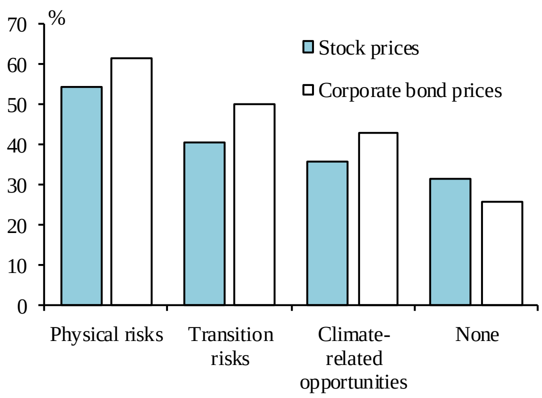
The survey highlighted the differences in the reflection of climate-related risks and opportunities in stock prices and corporate bond prices in Japan. According to the survey, more than half of the respondents chose "reflected" or "somewhat reflected" to the question of whether stock prices reflected climate-related risks and opportunities, whereas more than half chose "not reflected much" or "not reflected" for corporate bond prices. Similar results emerged with regard to the comparison to a year ago. Moreover, the share of responses suggesting that climate-related risks and opportunities are not reflected in prices is higher for corporate bond prices than stock prices for all elements of risks and opportunities.

Box Chart 2-1: Climate-related Risks and Opportunities in Stock Prices and Corporate Bond Prices in Japan (Reposting Chart 1)



Note: The total number of respondents was 284 for stock prices and 281 for corporate bond prices (excluding those who did not provide answers).

Box Chart 2-2: Climate-related Risks and/or Opportunities That Are Not Reflected in Stock and Corporate Bond Prices in Japan (Reposting Chart 3)



Note: The total number of respondents was 290. Multiple answers were allowed.

The difference in the reflection of climate-related risks and opportunities in stock and corporate bonds prices may have arisen from the following differences in the characteristics of those financial assets.

1. Presence of Maturities

Since stocks have no maturity date, they reflect future risks and growth opportunities of the issuer over an infinite horizon. On the other hand, since corporate bonds (excluding particular bonds such as perpetual bonds) have a set maturity date, the degree to which risks and opportunities that might arise past that date are reflected in their prices is limited.

2. Difference in the Size of Upside Potential

An increase in returns (upside) can be expected for stocks as a result of revisions to growth expectations of the issuer after the investment. In contrast, for corporate bonds, the amount of coupons and principal repayments are fixed when issued. Hence, the degree to which corporate bond prices reflect realizations of climate-related opportunities (upside) is more limited than stocks.

3. Difference in the Size of Downside Risks

In the case where climate-related risks materialize and the business or earnings of the issuer is affected (downside), stocks, being equity instruments, may price in such developments at the point where the business or earnings of the issuer is thought to be affected. However for corporate bonds, being debt instruments, the price reaction is muted, unless the effects are significant enough to affect default expectations within the residual maturity.

Looking back at the developments in ESG investments including the pricing-in of climate-related risks and opportunities, those investments first took hold noticeably in equities and they have since expanded to other financial assets including corporate bonds.[6] The fact that climate-related risks and opportunities have been reflected more in stock prices than in corporate bond prices may be due to differences in investor interest owing to those historical circumstances in addition to the abovementioned differences arising from the characteristics.[7]

It is worth noting that credit ratings also play an important role when considering how the effects of climate-related risks and opportunities can be better reflected in default expectations and in turn in corporate bond prices. Recently, rating agencies have enhanced their information disclosure on how they reflect climate-related risks and opportunities in their credit ratings, recognizing that climate-related risks and opportunities are important elements for determining their credit ratings. So far, cases where credit ratings of Japanese issuers were changed reflecting assessments of their climate-related risks and opportunities have been limited. However, as the environment for ESG ratings changes and assessment methodologies used by rating agencies further develop, corporate bond prices might increasingly reflect such changes to credit ratings in the future.

[6] The presence of shareholder rights is a commonly referred reason as to why ESG investing was led by equity investments. Since shareholder rights can be exercised to influence the issuer on ESG-related issues, stocks may have been seen as more conducive to ESG investing than other asset classes.

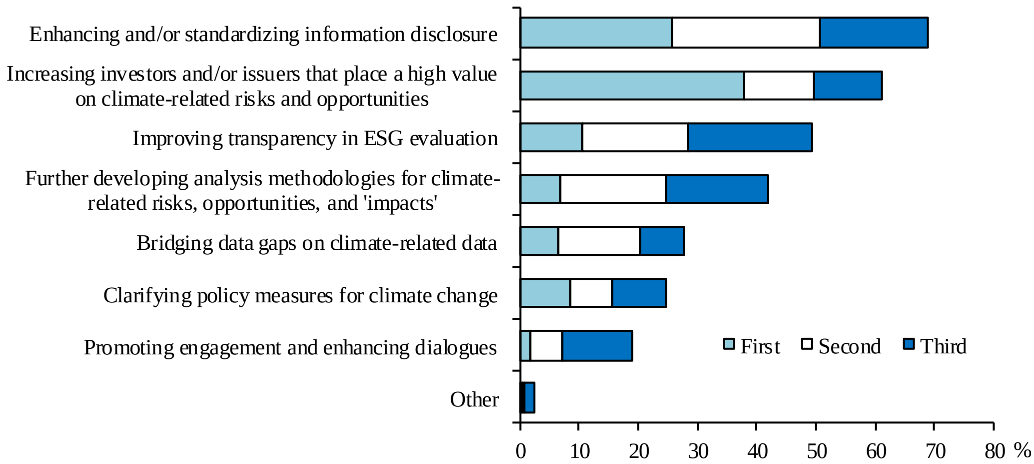
[7] For a review of the developments in ESG investing, see Ikeda and Ogawa (2019).

2. Factors Necessary to Reflect Climate-related Risks and Opportunities

On questions that asked respondents about what would be necessary to reflect climate-related risks and opportunities more in prices of stocks and corporate bonds, about 70 percent of respondents chose "enhancing and/or standardizing information disclosure." About 60 percent chose "increasing investors and/or issuers that place a high value on climate-related risks and opportunities," and about 50 percent chose "improving transparency in ESG evaluation." The questions asked respondents to choose three answers that were most important to them and to rank the answers from first to third, and "increasing investors and/or issuers that place a high value on climate-related risks and opportunities" was raised as first by the largest number of respondents.

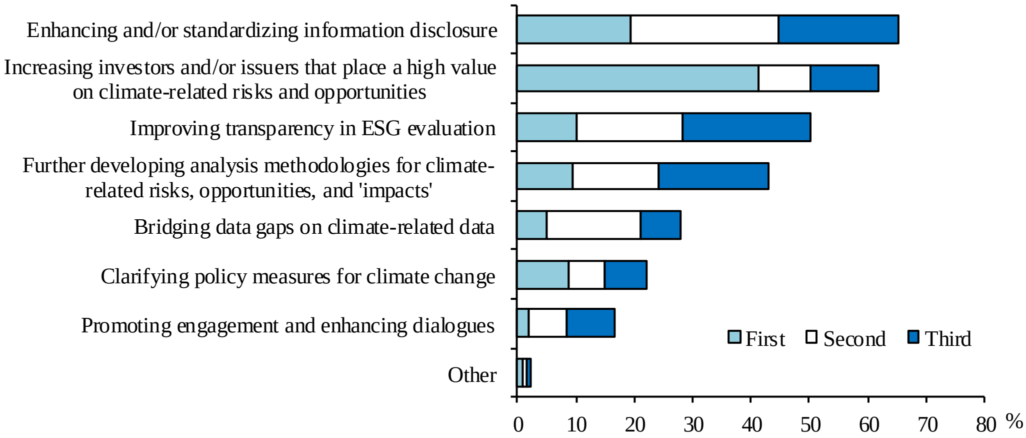
In addition, about 40 percent of respondents chose "further developing analysis methodologies for climate-related risks, climate-related opportunities, and 'impacts'" and about 30 percent noted "bridging data gaps on climate-related data," indicating that answers from the respondents were diverse.

Chart 4: Factors Necessary to Reflect Climate-related Risks and Opportunities More in Stock Prices in Japan



Note: The total number of respondents was 290. The respondents were asked to rank their answers in the order of importance from first to third.

Chart 5: Factors Necessary to Reflect Climate-related Risks and Opportunities More in Corporate Bond Prices in Japan



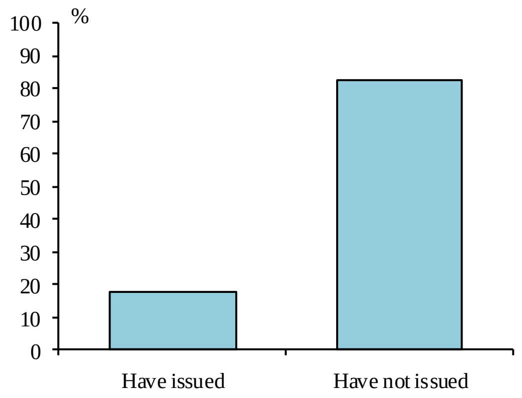
Note: The total number of respondents was 290. The respondents were asked to rank their answers in the order of importance from first to third.

B. Climate Change-related ESG Bond Market

1. Experiences and Purposes of Issuing Climate Change-related ESG Bonds

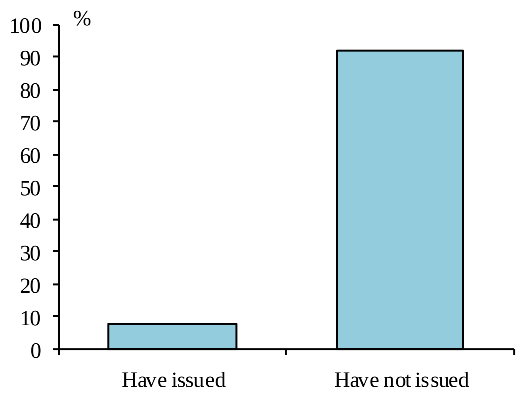
Less than 20 percent of the issuers[8] who responded to questions on whether they had issued climate change-related ESG bonds answered that they had issued those ESG bonds.[9] Less than 10 percent of the issuers had issued the ESG bonds in the past 12 months.

Chart 6: Experience in Issuing Climate Change-related ESG Bonds in the Past



Note: The total number of respondents was 251 (who answered the question on their experience in issuing those bonds).

Chart 7: Experience in Issuing Climate Change-related ESG Bonds in the Past 12 Months



Note: The total number of respondents was 251 (who answered the question on their experience in issuing those bonds).

The issuers who did not issue the ESG bonds in the past 12 months were also asked why they had not issued those bonds (multiple answers were allowed). About 50 percent of them chose "no need to obtain external funds," which was the most common choice, followed by "do not have a project suitable for issuing the ESG bonds" and "fund raising through other means of financing in Japan (e.g., loans) is more favorable than issuing the ESG bonds." Moreover, about 20 percent of the issuers noted that "management and reporting associated with the issuance of the ESG bonds is burdensome" and they "do not have enough expertise to issue the ESG bonds."

In contrast, those who issued the ESG bonds in the past 12 months commonly chose options related to advantages for each entity as a whole in terms of strategic interest for their businesses and investor relations, namely, "issuing the ESG bonds improves the entity's reputation and/or its ability to give explanations to stakeholders," "climate change response became more important in

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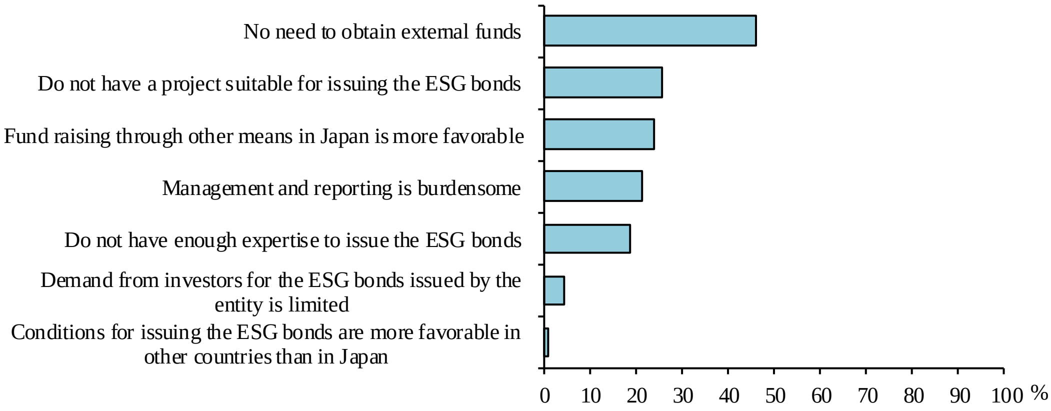
[8] In this round of the survey, "issuers" refers to respondents who answered Question 11.

[9] "Climate change-related ESG bonds" refers to green bonds, sustainability bonds, sustainability-linked bonds with performance targets related to efforts on climate change, and transition bonds that comply with corresponding international standards and/or Japanese government guidelines.

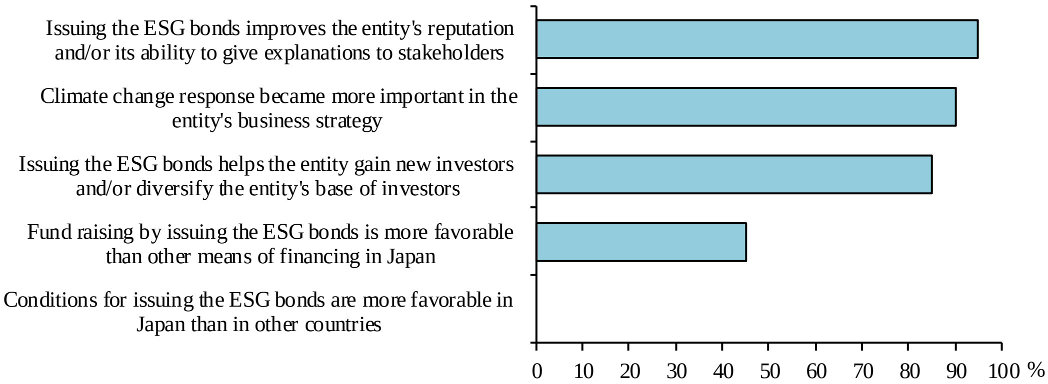
the entity's business strategy," and "issuing the ESG bonds helps the entity gain new investors and/or diversify the entity's base of investors." Only about 40 percent of the respondents chose "fund raising by issuing the ESG bonds is more favorable than other means of financing in Japan."[10]

Chart 8: Reasons for Not Issuing Climate Change-related ESG Bonds in the Past 12 Months



Note: The total number of respondents was 231. They are the respondents who answered that they have not issued the ESG bonds in the past 12 months.

Chart 9: Reasons for Issuing Climate Change-related ESG Bonds in the Past 12 Months



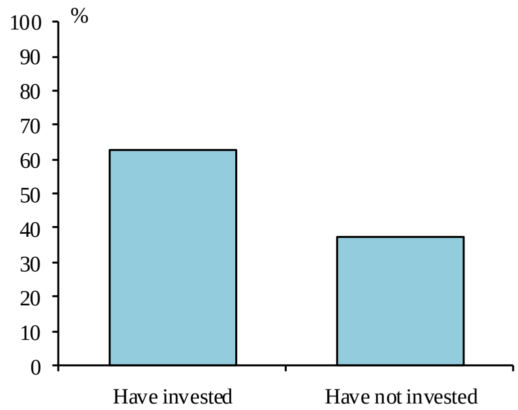
Note: The total number of respondents was 20. Those are the respondents who answered that they have issued the ESG bonds in the past 12 months.

[10] The results of overseas surveys on green bond issuers also show that strategies for overall business and investor relations are prioritized over the conditions for funding (see Box 1).

2. Experience and Purposes of Investing in Climate Change-related ESG Bonds

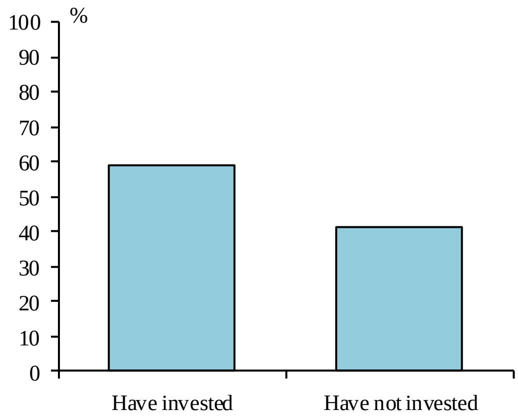
The survey asked the respondents (investors) whether they have invested in climate change-related ESG bonds.[11] More than 60 percent of them answered that they had invested in ESG bonds before, and most of them noted that they had invested in those bonds in the past 12 months.

Chart 10: Experiences of Investing in Climate Change-related ESG Bonds in the Past



Note: The total number of respondents was 173. Those are the respondents who answered to the question on their experience in investing in the ESG bonds.

Chart 11: Experiences of Investing in Climate Change-related ESG Bonds in the Past 12 Months



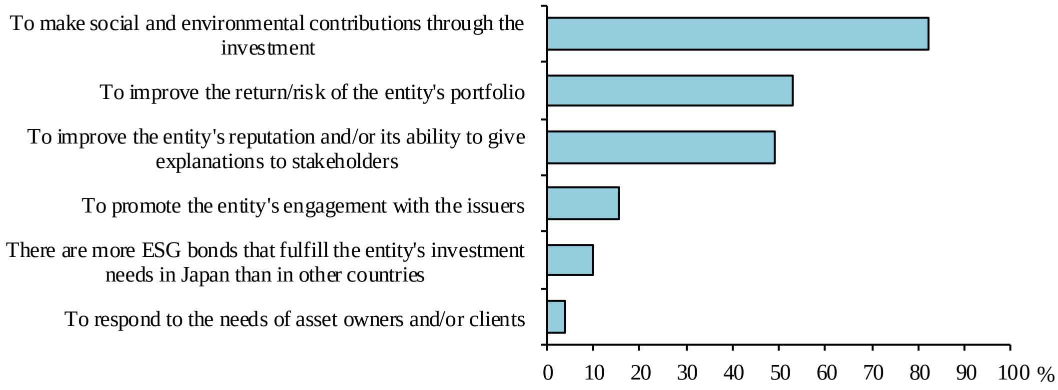
Note: The total number of respondents was 173. Those are the respondents who answered to the question on their experience in investing in the ESG bonds.

About 80 percent of the investors who have invested in ESG bonds in the past 12 months (in the question where multiple answers were allowed) mentioned that they did so "to make social and environmental contributions through the investment." About 50 percent of them noted that they invested in the ESG bonds "to improve the return/risk of the entity's portfolio" and "to improve the entity's reputation and/or its ability to give explanations to stakeholders"

In contrast, the respondents who had not invested in the ESG bonds in the past 12 months noted that they "do not believe the investment will lead to an improvement in the return/risk of the entity's portfolio" and "there is not enough information to make investment decisions including concerns over 'greenwashing'" as their reasons for not having made an investment.

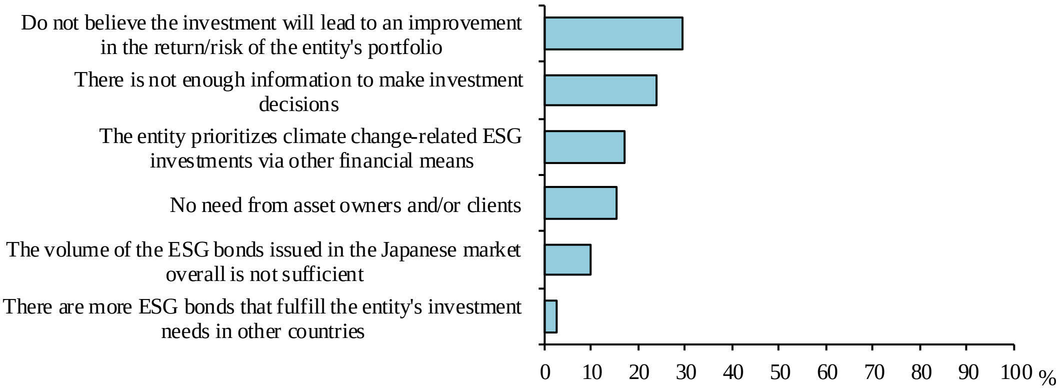
[11] In this round of the survey, "investors" refers to respondents who answered Question 15.

Chart 12: Reasons for Investing in Climate Change-related ESG Bonds in the Past 12 Months



Note: The total number of respondents was 102. Those are the respondents who answered that they have invested in the ESG bonds in the past 12 months.

Chart 13: Reasons for Not Investing in Climate Change-related ESG Bonds in the Past 12 Months



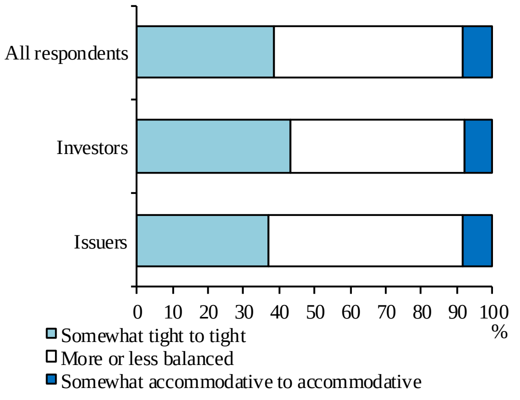
Note: The total number of respondents was 71. Those are the respondents who answered that they have not invested in the ESG bonds in the past 12 months.

3. Supply and Demand Conditions of Climate Change-related ESG Bonds

More than half of the respondents answered that the supply and demand conditions of climate change-related ESG bonds were "more or less balanced." Yet, about 40 percent noted that they were "somewhat tight to tight, whereas only about 10 percent answered that the conditions were "somewhat accommodative to accommodative."

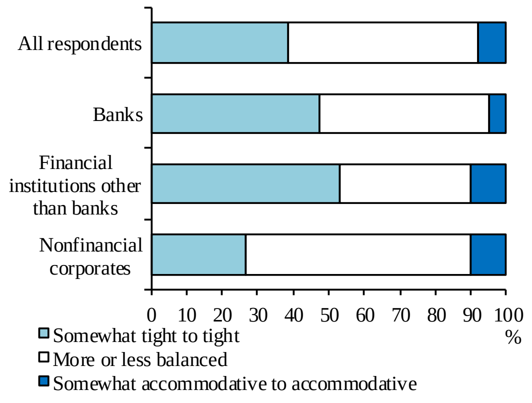
On this point, a somewhat higher number of investors chose "somewhat tight to tight" than issuers. By sector, more financial institutions clearly chose that answer than nonfinancial corporates.

Chart 14: View/Impression on the Supply and Demand Conditions of Climate Change-related ESG Bonds in Japan (by Issuer/Investor)



Note: The total number of respondents was 282. "Investors" represents 169 respondents who provided an answer to the question on their experience in investing. "Issuers" represents 245 respondents who provided an answer to the question on their experience in issuing the ESG bonds (excluding those who did not provide an answer).

Chart 15: View/Impression on the Supply and Demand Conditions of Climate Change-related ESG Bonds in Japan (by Sector)



Note: The total number of respondents was 282, where 101 were banks, 49 were financial institutions other than banks, and 132 were nonfinancial corporates (excluding those who did not provide an answer).

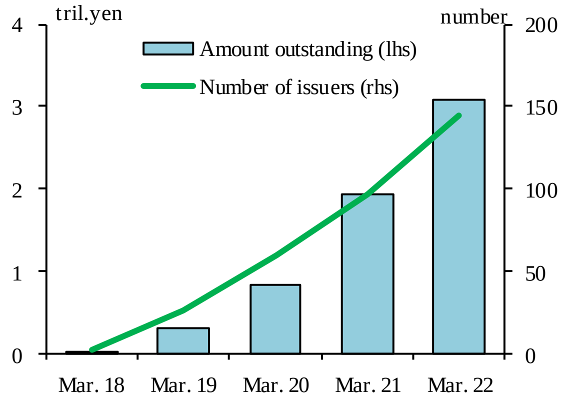
Box 3: Climate Change-related ESG Bond Market in Japan

A. Size and Breakdown of the Climate Change-related ESG Bond Market

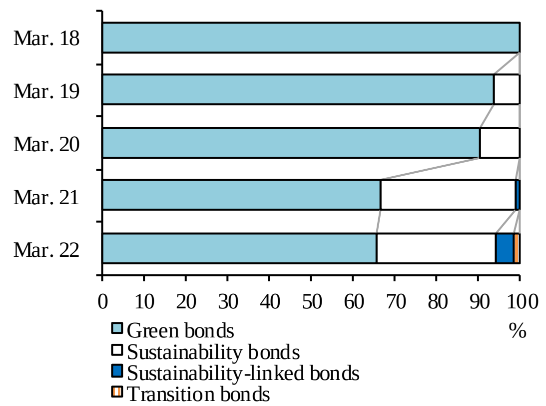
In recent years, the issuance of climate change-related ESG bonds has increased rapidly in the Japanese corporate bond market. The amount outstanding of publically offered bonds issued by private firms has more than tripled during the past two years, and the number of issuers has also increased in a similar fashion. A breakdown by bond type shows that there has been an increase in the issuance of sustainability bonds and transition bonds in addition to green bonds.

Box Chart 3-1: Amount Outstanding, Number of Issuers, and Types of Climate Change-related ESG Bonds in Japan

(Amount Outstanding and Number of Issuers)



(Types of Bonds)

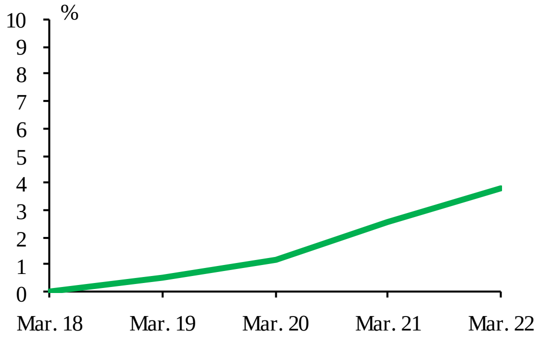


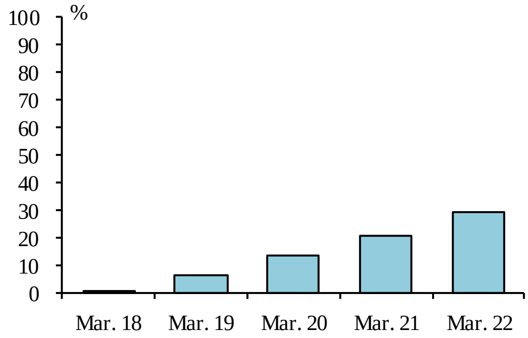
Note:1. "Climate change-related ESG bonds" represents green bonds, sustainability bonds, sustainability-linked bonds, and transition bonds. Those cover publicly offered corporate straight bonds in Japan, including bonds issued by investment corporations and subordinated bonds. (The same applies hereinafter unless specified otherwise.)
2. The number of issuers comprises private corporations and investment corporations with amounts outstanding of climate change-related ESG bonds issued at each point in time. Multiple counting is eliminated.
3. Figures are aggregated at face value. The data are as at month-end.
Sources: Japan Securities Dealers Association (JSDA), "Issuance of SDG Bonds."

That being said, the share of climate change-related ESG bonds in the overall corporate bond market remains low.

Box Chart 3-2: Share of Climate Change-related ESG Bonds in the Japanese Corporate Bond Market

(Amount Outstanding) (Number of Issuers)





Note:1. The figure for the amount outstanding in the overall corporate bond market is the amount outstanding of straight corporate bonds (including bonds issued by investment corporations and subordinated bonds, at face value) in the JSDA's "Issuing, Redemption and Outstanding Amounts of Bonds." The total number of issuers is calculated by the BOJ from that of publicly offered corporate straight bonds (including bonds issued by investment corporations and subordinated bonds) in data provided by Japan Securities Depository Center, Inc.

2. The data are as at month-end.

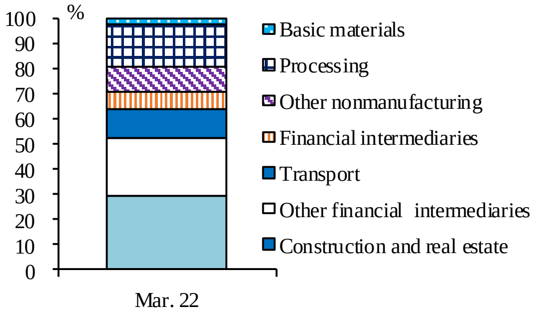
Sources: JSDA, "Issuing, Redemption and Outstanding Amounts of Bonds" and "Issuance of SDG Bonds."

B. Features of Issuers of Climate Change-related ESG Bonds

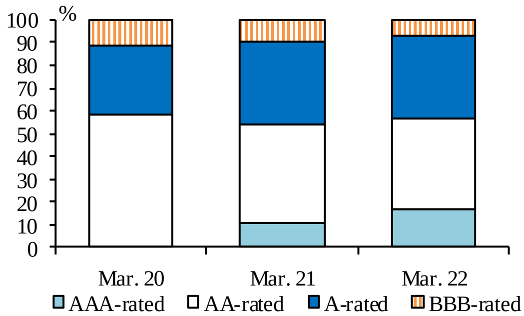
In terms of issuance by industrial sector, construction and real estate, other financial intermediaries, such as leasing firms and subsidiaries of financing firms, and processing firms among manufacturers issue a relatively large proportion of climate change-related ESG bonds.

As for credit ratings, a significant share of issuers are highly rated firms with ratings of AA or higher at the time of issuance. Meanwhile, no firms rated BB or lower have issued the ESG bonds. These findings suggest that relatively highly rated firms have been the main issuers of the ESG bonds.

Box Chart 3-3: Breakdown of Amount Outstanding (by Sector)



Box Chart 3-4: Breakdown of Amount Outstanding (by Credit Rating)



Note:1. "Financial intermediaries" consists of "depository corporations," "insurance and pension," and "financial auxiliaries." "Other financial intermediaries" consists of "nonbanks" and "financial dealers and brokers." "Construction and real estate" includes real estate investment trusts (REITs).

2. Figures are aggregated at face value. The data are as at month-end.

3. Credit ratings are acquired at the time of issuance.

Source: JSDA, "Issuance of SDG Bonds."

C. Prospects and Challenges of the Climate Change-related ESG Bond Market

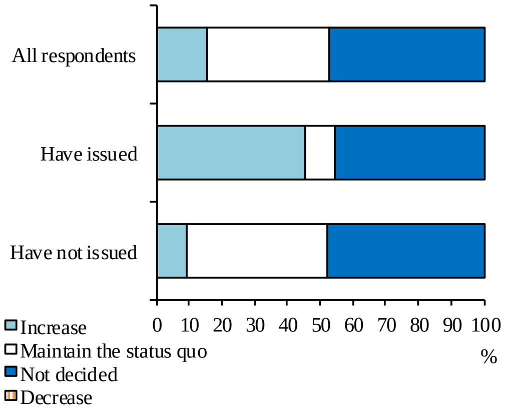
1. Plans for Issuance and Investment

The survey asked respondents about whether they plan to change their issuance of and/or investment in climate change-related ESG bonds in the next 12 months. None of them answered that they planned to decrease their issuance and/or investment.

As for plans for issuance, about 50 percent of respondents answered that they had not decided whether they would make any change to their issuance and about 40 percent of them noted that they would maintain the status quo. That being said, about 20 percent answered that they would increase their issuance. Looking at the responses provided exclusively by those who had already issued the ESG bonds, about 50 percent of them mentioned that they planned to increase their issuance.

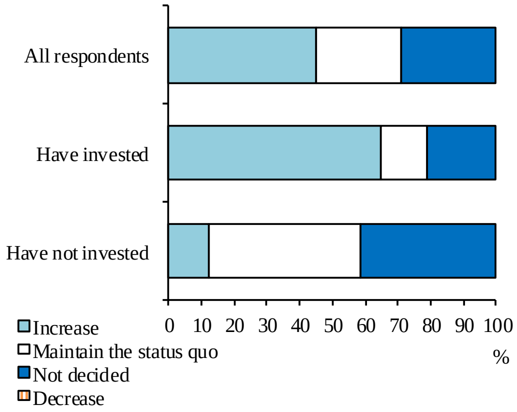
As for plans for investment, about 50 percent of the respondents noted that they would increase their investments in the ESG bonds in the next 12 months, and that answer was chosen by the largest number of respondents. Looking at the responses provided exclusively by those who had already invested in the ESG bonds, more than 60 percent of them mentioned that they planned to increase their investments.

Chart 16: Plans for Issuing Climate Change-related ESG Bonds in the Next 12 Months



Note: The total number of respondents who provided an answer to the question on their experience in issuing was 251. 44 respondents answered that they "have issued" the ESG bonds, and 207 answered that they "have not issued."

Chart 17: Plans for Investing in Climate Change-related ESG Bonds in the Next 12 Months

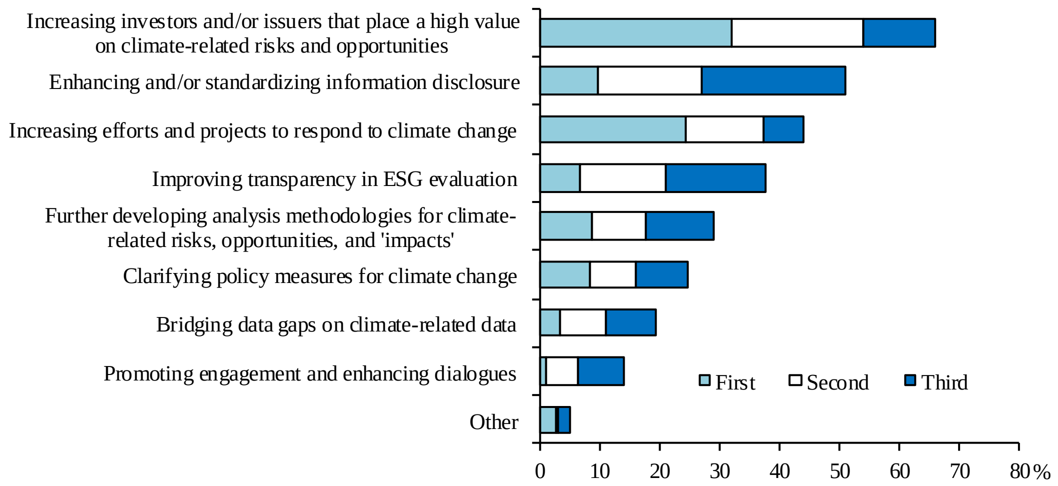


Note: The total number of respondents who provided an answer to the question on their experience in investing was 173. 108 respondents answered that they "have invested" in the ESG bonds, and 65 answered that they "have not invested."

2. Challenges for Increasing the Size of the Climate Change-related ESG Bond Market

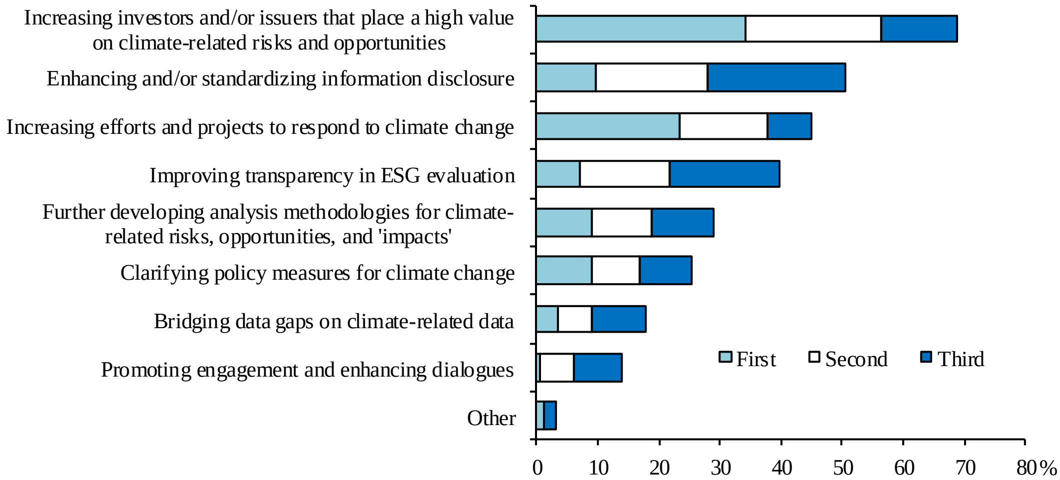
The survey included a question that asked respondents which factors were necessary to increase the size of the climate change-related ESG bond market in Japan. The question asked respondents to choose three answers that were most important and rank them from first to third. The results show that about 70 percent chose "increasing investors and/or issuers that place a high value on climate-related risks and opportunities," which was ranked first by about 30 percent of all respondents. The second most popular choice was "enhancing and/or standardizing information disclosure," followed by "increasing efforts and projects to respond to climate change" and "improving transparency in ESG evaluation." Moreover, about 20 to 30 percent of the respondents chose "further developing analysis methodologies for climate-related risks, climate-related opportunities, and 'impacts'," "clarifying policy measures for climate change," and "bridging data gaps on climate-related data." No major differences were evident in the answering patterns between issuers and investors.

Chart 18: Challenges for Increasing the Size of the Climate Change-related ESG Bond Market in Japan (All Respondents)



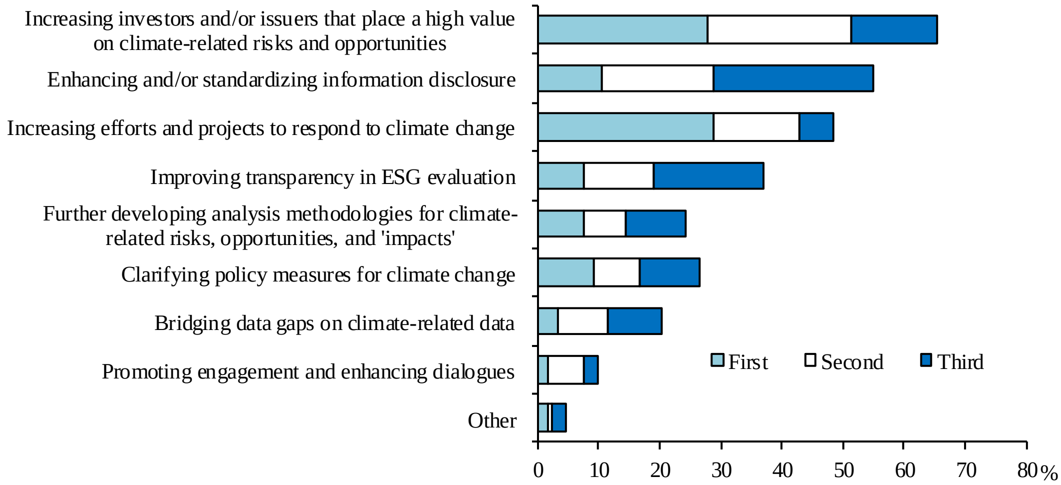
Note: The total number of respondents was 290. The respondents were asked to rank their answers in the order of importance from first to third.

Chart 19: Challenges for Increasing the Size of the Climate Change-related ESG Bond Market in Japan (Issuers)



Note: The total number of respondents was 251. The respondents were asked to rank their answers in the order of importance from first to third.

Chart 20: Challenges for Increasing the Size of the Climate Change-related ESG Bond Market in Japan (Investors)



Note: The total number of respondents was 173. The respondents were asked to rank their answers in the order of importance from first to third.

3. Challenges for the Further Development of Japanese Financial Markets to Contribute to Addressing Climate Change

The survey also included an open-ended question asking for opinions on challenges for the further development of Japanese financial markets to contribute to addressing climate change. A number of responses pointed to issues selected in the question on factors necessary to reflect climate-related risks and opportunities in the prices of financial instruments and challenges regarding the expansion of the ESG bond market, namely "enhancing and/or standardizing information disclosure," "improving transparency in ESG evaluation," and "increasing investors and/or issuers that place a high value on climate-related risks and opportunities."

First, on "enhancing and/or standardizing information disclosure," many respondents requested quantitative information that would require in-depth knowledge -- including greenhouse gas emissions throughout the supply chain, efforts to cut back on such emissions, and effects of climate-related risks and opportunities on corporate earnings -- to be accessible and standardized in a credible manner. Some have noted that standardizing disclosure is efficient and thus preferable from the standpoint of issuers (i.e., disclosing entities), while others have pointed out the importance of disclosure tailored to the attributes of each country/sector/business.

Second, on "improving transparency in ESG evaluation," respondents noted that while ESG ratings are expected to offer a means of assessing the degree of commitment of issuers with tackling climate change, many also point out the need to ensure such ratings are credible. One approach highlighted by many respondents was to establish more specific standards and methods and to develop guiding principles for rating agencies, in addition to the abovementioned measures related to "enhancing and/or standardizing information disclosure."

Third, regarding "increasing investors and/or issuers that place a high value on climate-related risks and opportunities," issuers have called for institutional investors to deepen their understanding of climate change-related issues, while investors have called for issuers to construct group-wide strategies to address climate change. In particular, some expressed the importance for firms, on a firm-wide basis, to clarify problems that may occur without swift action to address climate change or the advantages gained if swift action is taken. Moreover, multiple responses highlight the importance of promoting transition finance (including promoting international recognition), preventing greenwashing, and introducing carbon pricing as a means to widen the investor and issuer base.

The survey underlined the multiplicity of challenges facing the improvement of market functioning with regard to climate change. Yet, there have been steady improvements related to the development of market infrastructure in recent years, such as the enhancement of information disclosure and bridging of data gaps in climate-related data. While respondents evaluate the efforts that have been taken so far as favorable, many expect further efforts for material improvements.

Box 4: Recent Initiatives for Market Developments concerning Climate Finance

As efforts to develop climate finance have progressed globally in recent years, such as enhancing and standardizing information disclosure and improving transparency in ESG evaluation, steady progress has also been seen in Japan as described below.

Box Chart 4-1: Examples of Market Developments concerning Climate Finance in Japan

Mar. 2017	The Ministry of the Environment (MOE) released "Green Bond Guidelines" which seeks to provide issuers, investors, and other market participants with practical guidance, in accordance with globally accepted principles in international Green Bond markets.
Dec. 2018	The Ministry of Economy, Trade and Industry (METI) released "Guidance on Climate-related Financial Disclosure (TCFD Guidance)."
May 2019	The TCFD Consortium was established.
Oct. 2019	The MOE launched the "Green Finance Portal."
Oct. 2019	The TCFD Consortium released "Guidance for Utilizing Climate-related information to Promote Green Investment (Green Investment Guidance)."
Nov. 2019	The JSDA began to release "Issuance of SDG Bonds" which summarizes information on each issued bond on a quarterly basis since 2016 (available only in Japanese).
Mar. 2020	The MOE revised "Green Bond Guidelines."
Jul. 2020	The TCFD Consortium released "Guidance on Climate-related Financial Disclosures 2.0 (TCFD Guidance 2.0)." — The "TCFD Guidance" formulated by the METI in 2018 was revised.
May 2021	The Financial Services Agency (FSA), the METI, and the MOE released "Basic Guidelines on Climate Transition Finance."
Jun. 2021	The Tokyo Stock Exchange revised the "Corporate Governance Code" in order to enhance the quality and quantity of climate-related disclosure based on TCFD recommendations at Prime Market-listed firms.
Jun. 2021	The Expert Panel on Sustainable Finance (EPSF) of the FSA released "Report by the Expert Panel on Sustainable Finance Building A Financial System that Supports a Sustainable Society."
Jul. 2021	The BOJ outlined its basic stance and comprehensive approach to climate change in "The Bank of Japan's Strategy on Climate Change."

Oct. 2021	The TCFD Consortium released "Guidance for Utilizing Climate-related information to Promote Green Investment 2.0 (Green Investment Guidance 2.0)."
Oct.2021 onward	The METI began to formulate sector-specific technology roadmaps for the transition to decarbonization, with the aim of promoting climate transition finance.
Jan. 2022	The Japan Exchange Group (JPX) released "First Report from the Sustainable Finance Platform Development Working Group."
May 2022	The BOJ made its first disclosure that took into account the recommendations by the TCFD.
Jun. 2022	The Working Group on Corporate Disclosure of the Financial System Council released "Report by the Working Group on Corporate Disclosure of the Financial System Council."
Jul. 2022	The Financial Accounting Standards Foundation established the Sustainability Standards Board of Japan.
Jul. 2022	The MOE revised the "Green Bond Guidelines" and established "Sustainability-Linked Bond Guidelines."
Jul. 2022	The Technical Committee for ESG Evaluation and Data Providers, etc. of the EPSF of the FSA released "Report by the Technical Committee for ESG Rating and Data Providers - Toward the Development of Markets through Further Improvement of the Quality of ESG Assessment and Data -."
Jul. 2022	The FSA released "Code of Conduct for ESG Evaluations and Data Providers (Draft)."
Jul. 2022	The EPSF of the FSA released "Second Report by the Expert Panel on Sustainable Finance - Financial systems that open up a new sustainable society -."
Jul. 2022	The JPX launched "ESG Bond Information Platform."

III. Conclusion (Key Findings and Future Efforts)

The first Market Functioning Survey concerning Climate Change collected responses from a broad set of market participants including investors, financial institutions, business corporates and other entities. The survey results made it possible to grasp the functioning of Japanese financial markets in tackling climate change and the challenges for further improvement. The key findings are as follows.

As for the pricing of climate-related risks and opportunities in financial instruments, the respondents viewed that climate-related risks and opportunities were reflected to a certain degree in both stock and corporate bond prices in Japan, although there is room for further reflection. "Physical risks," "transition risks," and "climate-related opportunities" were all pointed out as elements that respondents believed were not adequately reflected in the pricing. In order that climate-related risks and opportunities will be reflected more in the prices, many respondents raised issues regarding the availability of information and also the assessment methodologies of climate-related risks and opportunities. The former includes "enhancing and/or standardizing information disclosure" and "bridging data gaps on climate-related data," and the latter includes "improving transparency in ESG evaluation" and "further developing analysis methodologies."

Regarding the current status of the climate change-related ESG bond market, over 60 percent of respondents who answered the relevant survey question had experience in investing in the ESG bonds, while less than 20 percent had experience in issuing the ESG bonds. Also, more respondents viewed the supply and demand conditions of the ESG bonds as "somewhat tight to tight" compared to "somewhat accommodative to accommodative," implying solid demand for the ESG bonds.

As for the reasons for issuing the ESG bonds, the respondents emphasized strategic interest for their businesses and investor relations such as the reputational and strategic importance to their businesses and the diversification of their investor bases, rather than favorable issuing conditions of the ESG bonds. On the other hand, many respondents mentioned as reasons for not issuing the ESG bonds limited funding needs such as no need for external funds or a lack of suitable projects. Some also pointed to the management and reporting burden associated with the issuance of the ESG bonds or a lack of expertise as other reasons. Making social and environmental contributions was the most popular reason for investing in the ESG bonds, while many of the respondents were also mindful of improving investment returns.

Concerning the challenges for advancing the climate change-related ESG bond market in Japan, many respondents pointed out issues such as "enhancing and/or standardizing information disclosure" and "improving transparency in ESG evaluation," similar to the challenges in further factoring climate-related risks and opportunities into the prices of financial instruments.

These results suggest that Japan's climate change-related ESG bond market would further expand with a broader base of issuers and investors by raising their awareness of abovementioned benefits. In addition, reducing the cost of issuing the ESG bonds and making investment decisions by standardizing information disclosure and improving the transparency of ESG evaluations may also contribute to invigorating the market.

Market stakeholders have already been making efforts to overcome the challenges identified in the first survey (e.g., availability of information and assessment methodologies of climate-related risks and opportunities) to further develop the market. Since climate change is a global issue, efforts to address climate change are expected to accelerate globally, including those related to improving the functioning of financial markets.

The Bank will provide information on the progress made in market functioning concerning climate change and future challenges by conducting the survey continuously while improving its contents. The Bank also intends to contribute to advancing financial markets by following up on efforts made outside of Japan, conducting additional research and analyses on the functioning of financial markets concerning climate change, and communicating and coordinating with relevant stakeholders to develop market infrastructure.

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Appendices

A. The First Market Functioning Survey concerning Climate Change: Survey Questions

1. Market Functioning (All Respondents)

(1) Stock Market

Question 1

Do you think risks and opportunities brought about by climate change (hereafter, climate-related risks and opportunities) are reflected in the stock prices of issuers in the Japanese stock market?

☐ Yes (Reflected)
☐ Somewhat yes (Somewhat reflected)
☐ Somewhat no (Not reflected much)
☐ No (Not reflected)

Question 2

Compared to a year ago, do you think climate-related risks and opportunities are reflected more in the stock prices of issuers in the Japanese stock market?

☐ Yes
☐ Somewhat yes
☐ Somewhat no
☐ No

Question 3

Are there any climate-related risks and/or opportunities that you think are not reflected in the stock prices of issuers?

(Choose all that apply, unless you choose (4))

☐ (1) Climate-related risks (Physical risks[1])
☐ (2) Climate-related risks (Transition risks[2])
☐ (3) Climate-related opportunities[3]
☐ (4) None (Climate-related risks and opportunities are reflected in the stock prices)

Question 4

Which of the following do you think are necessary to reflect climate-related risks and opportunities more in the stock prices of issuers in the Japanese stock market in future?

(Choose three answers that are most important to your entity and rank them from first to third)

☐ Increasing investors and/or issuers that place a high value on climate-related risks and opportunities
☐ Bridging data gaps on climate-related data
☐ Enhancing and/or standardizing information disclosure
☐ Further developing analysis methodologies for climate-related risks, climate-related opportunities, and 'impacts'
☐ Improving transparency in ESG evaluation (e.g., more transparency in evaluation methodologies and clarifying the relationship with credit ratings)
☐ Promoting engagement and enhancing dialogues

☐ Clarifying policy measures for climate change
☐ Other (please explain:)

(2) Corporate Bond Market

Question 5

Do you think climate-related risks and opportunities are reflected in the corporate bond prices of issuers in the Japanese corporate bond market?

☐ Yes (Reflected)
☐ Somewhat yes (Somewhat reflected)
☐ Somewhat no (Not reflected much)
☐ No (Not reflected)

Question 6

Compared to a year ago, do you think climate-related risks and opportunities are reflected more in the corporate bond prices of issuers in the Japanese corporate bond market?

☐ Yes
☐ Somewhat yes
☐ Somewhat no
☐ No

Question 7

Are there any climate-related risks and/or opportunities that you think are not reflected in the corporate bond prices of issuers?

(Choose all that apply, unless you choose (4))

☐ (1) Climate-related risks (Physical risks[1])
☐ (2) Climate-related risks (Transition risks[2])
☐ (3) Climate-related opportunities[3]
☐ (4) None (Climate-related risks and opportunities are reflected in the corporate bond prices)

Question 8

Which of the following do you think are necessary to reflect climate-related risks and opportunities more in the corporate bond prices of issuers in the Japanese corporate bond market in future?

(Choose three answers that are most important to your entity and rank them from first to third)

☐ Increasing investors and/or issuers that place a high value on climate-related risks and opportunities
☐ Bridging data gaps on climate-related data
☐ Enhancing and/or standardizing information disclosure
☐ Further developing analysis methodologies for climate-related risks, climate-related opportunities, and 'impacts'
☐ Improving transparency in ESG evaluation (e.g., more transparency in evaluation methodologies and clarifying the relationship with credit ratings)
☐ Promoting engagement and enhancing dialogues
☐ Clarifying policy measures for climate change
☐ Other (please explain:)

Question 9

Which of the following is the closest to your entity's view/impression about the supply and demand conditions of climate change-related ESG bonds[4] in Japan?

☐ Somewhat tight to tight
☐ More or less balanced
☐ Somewhat accommodative to accommodative

Question 10

Which of the following do you think are necessary to increase the size of the climate change-related ESG bond market in Japan?

(Choose three answers that are most important to your entity and rank them from first to third)

☐ Increasing efforts and projects to respond to climate change
☐ Increasing investors and/or issuers that place a high value on climate-related risks and opportunities
☐ Bridging data gaps on climate-related data
☐ Enhancing and/or standardizing information disclosure
☐ Further developing analysis methodologies for climate-related risks, climate-related opportunities, and 'impacts'
☐ Improving transparency in ESG evaluation (e.g., more transparency in evaluation methodologies and clarifying the relationship with credit ratings)
☐ Promoting engagement and enhancing dialogues
☐ Clarifying policy measures for climate change
☐ Other (please explain:)

Notes: 1. "Climate-related risks (physical risks)" refers to the risks that physical phenomena triggered by climate change, such as large-scale disasters or rising sea levels, will have an economic loss on issuers' businesses (e.g., damage to facilities and/or difficulty in continuing with business due to climate disasters and impact on business due to climate change in a longer term such as rising sea levels and rising sea temperatures).

2. "Climate-related risks (transition risks)" refers to the risks of an economic loss on issuers' businesses due to changes in policy, technology, or consumer preference as we move toward a carbon-neutral society (e.g., changes in policies such as those regarding carbon pricing, technological developments, and delays in changing business models in response to heightened consumer preference for "green" instruments).

3. "Climate-related opportunities" refers to profit opportunities and growth opportunities brought about by efforts to respond to climate change issues (e.g., resource efficiency and cost savings, adoption of low-emission energy sources, and development of new products and services).

4. "Climate change-related ESG bonds" refers to green bonds, sustainability bonds, sustainability-linked bonds with performance targets related to efforts on climate change, and transition bonds that comply with corresponding international standards and/or Japanese government guidelines.

2. Purpose of Issuance of/Investment in Climate Change-related ESG Bonds (by Entity Type)

(Questions for Issuers)[5]

Question 11

Have you ever issued climate change-related ESG bonds[4] in Japan?

☐ Yes (Issued)
☐ No (Have not issued)

Question 12

Have you issued climate change-related ESG bonds in Japan in the past 12 months (from April 2021 to March 2022)?

☐ a. Yes (Issued)
☐ b. No (Have not issued)

If you chose "a" in Question 12, please answer Question 13-a. If you chose "b," please answer Question 13-b instead.

Question 13-a

Why did you choose to issue climate change-related ESG bonds in Japan as a means of financing?

(Choose all that apply)

☐ Climate change response became more important in the entity's business strategy
☐ Issuing the ESG bonds improves the entity's reputation and/or its ability to give explanations to stakeholders
☐ Issuing the ESG bonds helps the entity gain new investors and/or diversify the entity's base of investors
☐ Fund raising by issuing the ESG bonds is more favorable than other means of financing in Japan (e.g., loans)
☐ Conditions for issuing the ESG bonds are more favorable in Japan than in other countries
☐ Other (please explain:)

Question 13-b

Why did you not choose to issue climate change-related ESG bonds in Japan as a means of financing?

(Choose all that apply)

☐ No need to obtain external funds
☐ Do not have a project suitable for issuing the ESG bonds
☐ Demand from investors for the ESG bonds issued by the entity is limited
☐ Do not have enough expertise to issue the ESG bonds
☐ Management and reporting associated with the issuance of the ESG bonds is burdensome
☐ Fund raising through other means of financing in Japan (e.g., loans) is more favorable than issuing the ESG bonds
☐ Conditions for issuing the ESG bonds are more favorable in other countries than in Japan
☐ Other (please explain:)

Question 14

How are you planning to change the issuance of climate change-related ESG bonds in Japan in the next 12 months (from April 2022 to March 2023)?

☐ Increase (including newly issuing the ESG bonds)
☐ Maintain the status quo (including continuing not to issue any ESG bonds at all)
☐ Decrease
☐ Not decided

(Questions for Investors)[5]

Question 15

Have you ever invested in climate change-related ESG bonds[4] in Japan?

☐ Yes (Invested)
☐ No (Have not invested)

Question 16

Have you invested in climate change-related ESG bonds in Japan in the past 12 months (from April 2021to March 2022)?

☐ a. Yes (Invested)
☐ b. No (Have not invested)

If you chose "a" in Question 16, please answer Question 17-a. If you chose "b," please answer Question 17-b instead.

Question 17-a

Why did you choose to invest in climate change-related ESG bonds in Japan?

(Choose all that apply)

☐ To improve the return/risk of the entity's portfolio
☐ To make social and environmental contributions through the investment
☐ To promote the entity's engagement with the issuers
☐ To improve the entity's reputation and/or its ability to give explanations to stakeholders
☐ There are more climate change-related ESG bonds that fulfill the entity's investment needs in Japan than in other countries
☐ To respond to the needs of asset owners and/or clients
☐ Other (please explain:)

Question 17-b

Why did you not choose to invest in climate change-related ESG bonds in Japan?

(Choose all that apply)

☐ Do not believe the investment will lead to an improvement in the return/risk of the entity's portfolio
☐ The volume of the ESG bonds issued in the Japanese market overall is not sufficient
☐ There is not enough information to make investment decisions including concerns over 'greenwashing'

☐ The entity prioritizes climate change-related ESG investments via other financial means in Japan (e.g., providing loans)
☐ There are more climate change-related ESG bonds that fulfill the entity's investment needs in other countries than in Japan
☐ No need from asset owners and/or clients
☐ Other (please explain:)

Question 18

How are you planning to change the investment on climate change-related ESG bonds in Japan in the next 12 months (from April 2022 to March 2023)?

☐ Increase (including newly investing in the ESG bonds)
☐ Maintain the status quo (including continuing not to invest in any ESG bonds at all)
☐ Decrease
☐ Not decided

Notes: 4. "Climate change-related ESG bonds" refers to green bonds, sustainability bonds, sustainability-linked bonds with performance targets related to efforts on climate change, and transition bonds that comply with corresponding international standards and/or the Japanese government's guidelines.

5. If your entity is both an issuer and an investor, please answer both parts of the questions (for issuers and for investors) in Section 2.

3. For the Development of the Markets (All Respondents)

Question 19

If you have any opinion on what is needed for Japanese financial markets to develop further to contribute to addressing climate change, considering the developments observed overseas, please describe that below.

(Opinions)

4. Publication of the name of your entity (All Respondents)

Question 20

Please specify whether you approve the disclosure of the name of your entity in the list of survey respondents if the Bank of Japan decides to publish the list.

☐ Approve disclosure of the name
☐ Do not approve disclosure of the name

B. The First Market Functioning Survey concerning Climate Change: List of Respondents (The Respondents which Approved to Disclose Their Participation in the Survey)

- ADVANTEST CORPORATION
- AISIN CORPORATION
- Amundi Japan Ltd.
- The Aomori Bank, Ltd.
- Asahi Life Asset Management Co., Ltd.
- Asahi Mutual Life Insurance Company
- Asset Management One Co., Ltd.
- The Awa Bank, Ltd.
- The Bank of Fukuoka, Ltd.
- The Bank of Kyoto, Ltd.
- The Bank of Okinawa, Ltd.
- The Bank of Toyama, Ltd.
- The Bank of Yokohama, Ltd.
- BESTERRA CO., LTD
- BIPROGY Inc.
- BROTHER INDUSTRIES, LTD.
- The Chiba Bank, Ltd.
- The Chugoku Bank, Limited
- The Chugoku Electric Power Company, Incorporated
- The Chukyo Bank, Limited
- COMANY INC.
- COSMO ENERGY HOLDINGS COMPANY, LIMITED.
- DAI-ICHI CUTTER KOGYO K.K.
- Dai-ichi Life Holdings, Inc.
- Daiichi Life Realty Asset Management Co., Ltd.
- Daishi Hokuetsu Bank, Ltd.
- THE DAITO BANK, LTD.
- DAIWA HOUSE INDUSTRY CO., LTD.
- Daiwa Real Estate Asset Management Co. Ltd.
- Daiwa Securities Group Inc.
- DENSO CORPORATION
- Dexerials Corporation
- DKS Co. Ltd.
- The Ehime Bank, Ltd.
- Eisai Co., Ltd.
- Electric Power Development Co., Ltd.
- EPCO Co., Ltd.
- ESPEC CORP.
- FA Daiichi Asset Management Inc.
- THE FIRST BANK OF TOYAMA, LTD.
- Fukoku Capital Management, Inc.
- THE FUKUOKA CHUO BANK, LTD.
- Furukawa Electric Co., Ltd.
- Goldman Sachs Asset Management Co., Ltd.
- The Gunma Bank, Ltd.
- The Hachijuni Bank, Ltd.
- HC Asset Management Co., Ltd.
- The Higashi-Nippon Bank, Limited
- The Higo Bank, Ltd.
- Hirogin Holdings, Inc.
- Hitachi, Ltd.
- Hitachi Zosen Corporation
- The Hokuriku Bank, Ltd.
- The Hokuto Bank, Ltd.
- HONDA TSUSHIN KOGYO CO., LTD.
- THE HOWA BANK, LTD.
- The Iyo Bank, Ltd.
- Japan Airlines Co., Ltd.
- JAPAN BIOMASS POWER Co., Ltd.
- Japan Credit Rating Agency, Ltd.
- Japan Exchange Group, Inc.
- Japan Hotel REIT Advisors Co., Ltd.
- JAPAN POST BANK Co., Ltd.
- JAPAN POST HOLDINGS Co., Ltd.
- Japan Pulp & Paper Co., Ltd.
- Japan REIT Advisors Co., Ltd.
- JFE Holdings, Inc.
- JPMorgan Asset Management (Japan) Ltd.
- The Juhachi-Shinwa Bank, Ltd.
- THE KAGAWA BANK, LTD.

- The Kagoshima Bank, Ltd.
- THE KANAGAWA BANK, LTD.
- KANEMATSU CORPORATION
- Kansai Mirai Bank, Limited
- The Keiyo Bank, Ltd.
- Kirayaka Bank, Ltd.
- Kirin Holdings Company, Limited
- The Kiyo Bank, Ltd.
- KOKUSAI ELECTRIC CORPORATION
- KONICA MINOLTA, INC.
- The Kumamoto Bank, Ltd.
- LONE STAR JAPAN ACQUISITIONS LTD
- LOTTE CO., LTD.
- Manulife Investment Management (Japan) Limited
- MEIDENSHA CORPORATION
- Meiji Yasuda Asset Management Company Ltd.
- Meiji Yasuda Life Insurance Company
- THE MICHINOKU BANK, LTD.
- Mitsubishi Chemical Group Corporation
- Mitsubishi Research Institute, Inc.
- Mitsubishi UFJ Financial Group, Inc.
- Mitsubishi UFJ Morgan Stanley Securities, Co., Ltd.
- Mitsubishi UFJ Trust and Banking Corporation
- Mitsui Fudosan Co., Ltd.
- The Miyazaki Bank, Ltd.
- Mizuho Financial Group, Inc. / Mizuho Bank, Ltd.
- Mizuho Securities Co., Ltd.
- MS&AD Insurance Group Holdings, Inc.
- MU Investments Co., Ltd.
- THE NAGANO BANK, LTD.
- The Nanto Bank, Ltd.
- Nikko Asset Management Co., Ltd.
- NIPPON PILLAR PACKING CO., LTD.
- NIPPON STEEL CORPORATION
- Nippon Yusen Kabushiki Kaisha
- The Nishi-Nippon City Bank, Ltd.
- Nissay Asset Management Corporation
- Nomura Asset Management Co., Ltd.
- Nomura Real Estate Asset Management Co., Ltd.
- The Norinchukin Bank
- OBAYASHI CORPORATION
- The Ogaki Kyoritsu Bank, Ltd.
- THE OITA BANK, LTD.
- Oki Electric Industry Company, Limited.
- THE OKINAWA KAIHO BANK, LTD.
- Okura Industrial Co., Ltd.
- Rating and Investment Information, Inc.
- RICOH COMPANY, LTD.
- RIKEN VITAMIN CO., LTD.
- THE SAIKYO BANK, LTD.
- The San-in Godo Bank, Ltd.
- Schroder Investment Management (Japan) Limited
- SEIBU HOLDINGS INC.
- Sekisui Chemical Co., Ltd.
- Sekisui House Asset Management, Ltd.
- The Senshu Ikeda Bank, Ltd.
- THE SHIGA BANK, LTD.
- The Shikoku Bank, Ltd.
- Shikoku Electric Power Company, Incorporated
- Shimadzu Corporation
- THE SHIMANE BANK, LTD.
- Shinsei Bank, Limited
- THE SHIZUOKA BANK, LTD.
- THE SHIZUOKA CHUO BANK, LTD.
- Showa Sangyo Co., Ltd.
- SMBC Nikko Securities Inc.
- Societe Generale Securities Japan Limited
- Sompo Asset Management Co., Ltd.
- Sompo Holdings, Inc.
- SPARX Group Co., Ltd.
- SUMITOMO CHEMICAL COMPANY, LIMITED
- SUMITOMO HEAVY INDUSTRIES, LTD.
- Sumitomo Life Insurance Co.

- Sumitomo Mitsui Banking Corporation
- Sumitomo Mitsui Construction Co., Ltd.
- Sumitomo Realty & Development Co., Ltd.
- Sustainable Fitch
- SUZUKI MOTOR CORPORATION
- TAIHEIYO CEMENT CORPORATION
- TAIJU LIFE INSURANCE COMPANY LIMITED
- THE TAIKO BANK, LTD.
- TAISEI CORPORATION
- T&D Holdings, Inc.
- TEIJIN LIMITED
- T-Gaia Corporation
- The Toho Bank, Ltd.
- Tohoku Electric Power Company, Incorporated
- Tokio Marine Holdings, Inc.
- THE TOKUSHIMA TAISHO BANK, LTD.
- Tokyo Electric Power Company Holdings, Incorporated
- TOKYO GAS CO., LTD.
- Tokyo Kiraboshi Financial Group, Inc.
- Tokyo Tatemono Co., Ltd.
- TOLI Corporation
- Tsukuba Bank, Ltd.
- UACJ Corporation
- WIN-Partners Co., Ltd.
- The Yamagata Bank, Ltd.
- Yamaguchi Financial Group, Inc.
- YASKAWA Electric Corporation
- The Yokohama Rubber Company, Limited
- The 77 Bank, Ltd.

(and 118 other entities)