



**Report on Financial Institutions' Current Status
of Scenario Analysis based on TCFD
Recommendations and the Related Transition
Plans
(Scenario Analysis Section)**

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1. Approach to the Study

III-1 Approach to the Study

	Survey item	Study policy																																	
Determination of scope	–	<ul style="list-style-type: none"> This study analyzes what kind of risk recognition informs scenario analysis of climate-related risks (transition and physical risks), and what kind of methods are used in each sector for conducting scenario analysis, and considers them with a focus on business differences Accordingly, the scope of the study was determined based on what risks each financial sector recognizes as material, as shown in the table below <table border="1"> <thead> <tr> <th colspan="2" rowspan="2"></th> <th colspan="6">Risk category</th> </tr> <tr> <th>Credit risk</th> <th>Market risk</th> <th>Underwriting risk</th> <th>Liquidity risk</th> <th>Operational risk</th> <th>Reputational risk</th> </tr> </thead> <tbody> <tr> <td rowspan="3">Sector</td> <td>Banking</td> <td>Lending</td> <td>Investment</td> <td>–</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Nonlife insurance</td> <td>Lending</td> <td>Investment</td> <td>Underwriting</td> <td colspan="3" rowspan="2" style="text-align: center;">Not covered by this study</td> </tr> <tr> <td>Life insurance</td> <td>Lending</td> <td>Investment</td> <td>Underwriting</td> </tr> </tbody> </table> <p style="text-align: center;">Covered by this study</p>			Risk category						Credit risk	Market risk	Underwriting risk	Liquidity risk	Operational risk	Reputational risk	Sector	Banking	Lending	Investment	–				Nonlife insurance	Lending	Investment	Underwriting	Not covered by this study			Life insurance	Lending	Investment	Underwriting
		Risk category																																	
		Credit risk	Market risk	Underwriting risk	Liquidity risk	Operational risk	Reputational risk																												
Sector	Banking	Lending	Investment	–																															
	Nonlife insurance	Lending	Investment	Underwriting	Not covered by this study																														
	Life insurance	Lending	Investment	Underwriting																															
Study (1) Risk recognition and implementation status of scenario analysis	Summary of risk recognition and scenario analysis implementation status in each financial sector	<ul style="list-style-type: none"> Summarize the state of risk recognition and scenario analysis implementation status in each financial sector <ul style="list-style-type: none"> ✓ Relevance of risk recognition to implementation of scenario analysis ✓ Content of scenario analysis Gather the requisite information by means of both literature and interview-based surveys <ul style="list-style-type: none"> ✓ Review reports published by financial institutions concerning climate change initiatives (TCFD reports, etc.) ✓ Send questionnaires to the relevant departments (risk management departments, sustainability-related departments, etc.) at financial institutions, then conduct interviews about risk recognition, as well as the background and issues pertaining to scenario analysis 																																	
Study (2) Scenario analysis method	Analysis of differences between financial sectors in terms of scenario analysis method	<ul style="list-style-type: none"> Consider differences between financial sectors in regard to the following matters, and the reasons for those differences <ul style="list-style-type: none"> ✓ Whether or not scenario analysis is conducted ✓ Content of scenario analysis (with a particular focus on risk drivers) <div style="border: 1px dashed gray; padding: 5px; margin-top: 10px;"> <p>[Reasons for focusing on risk drivers]</p> <ul style="list-style-type: none"> In scenario analysis, risk drivers are elements that reflect a financial institution's risk recognition and judgments on level of importance in the form of specific climate change-related phenomena Risk drivers are major elements aligned with other analytical elements; for example, deliberations concerning the choice of analytical indicators and scope are tailored to risk driver settings </div>																																	
Summary	Summary of studies (1) and (2)	<ul style="list-style-type: none"> Summarize implications for future scenario analysis, based on consideration of whether or not differences in scenario analysis between financial sectors arise from differences in business or portfolios 																																	

2. Study (1) Risk Recognition and Implementation Status of Scenario Analysis

III. Details of Study Findings (Scenario Analysis)

III-2 Study (1) Risk Recognition and Implementation Status of Scenario Analysis

Summary of the risk recognition and conduct of scenario analysis in each financial sector by business areas and climate-related risk

▶ The table below summarizes how each sector recognize climate-related risks and whether they conduct scenario analysis, for each business areas and climate-related risks. Differences between sectors are verified on the pages that follow.

Business Areas (risk category)	Climate-related risks	Details of risk recognition*1	Risk recognition			Scenario analysis		
			Banking	Nonlife insurance	Life insurance	Banking	Nonlife insurance	Life insurance
Lending (credit risk)	Transition risks	• Deteriorating business performance of borrowers arising from the transition to a zero-carbon society	●	●	●	●	×	×
	Physical risks (acute)	• Deteriorating business performance of borrowers due to natural disasters • Declining value of collateral assets (banking only)	●	●*2	●	●	● Partial	×
	Physical risks (chronic)	• Deteriorating business performance of borrowers due to changes in the business environment arising from temperature rises, etc.	●*2	●*2	●	● Partial	×	×
Investment (market risk)	Transition risks	• Deteriorating business performance of investees arising from the transition to a zero-carbon society, declining value of securities held	●	●	●	×	●	●
	Physical risks (acute)	• Deteriorating business performance of investees due to natural disasters, declining value of securities held • Falling real estate asset values (nonlife insurance only)	●	●*2	●	×	●*3	●
	Physical risks (chronic)	• Deteriorating business performance of investees due to changes in the business environment arising from temperature rises, declining value of securities held	● Partial	●*2	●*2	×	● Partial*3	●
Insurance underwriting (underwriting risk)	Transition risks	• Increasing insurance payouts associated with liability insurance, etc. (nonlife insurance only)	–	●	×	–	×	×
	Physical risks (acute)	• Increasing insurance payouts due to natural disasters, increasing reinsurance costs (nonlife insurance only) • Increasing insurance payouts due to a rise in the number of deaths from natural disasters, etc. (life insurance only)	–	●	●	–	●	● Partial
	Physical risks (chronic)	• Increasing insurance payouts due to flooding arising from sea level rises, etc., increasing reinsurance costs (nonlife insurance only) • Increasing insurance payouts due to summer heat, infectious diseases, and outbreaks of new pandemics, etc. (nonlife insurance only) • Increasing insurance payouts due to a rise in the number of deaths from heat stroke and infectious diseases arising from temperature rises, etc. (life insurance only)	–	●	●	–	×	●

(*1) Summary of disclosure by financial institutions in each financial sector.

(*2) Confirmed via interviews that some financial institutions recognize this risk as material.

(*3) Confirmed via interviews that some financial institutions conduct scenario analysis for internal management purposes.

Legend

- : Yes (common to all surveyed financial institutions in the relevant sector)
- Partial: Yes (for some surveyed financial institutions in the relevant sector)
- ×: No (common to all surveyed financial institutions in the relevant sector)
- : No relevant operations

3. Study (2) Scenario Analysis methods

III. Details of Study Findings (Scenario Analysis)

III-3 Study (2) Scenario Analysis methods (Credit Risk)**Summary of scenario analysis status in each financial sector**

- The status and content of scenario analysis relating to credit risk are shown below. Scenario analysis is principally conducted in the banking sector.

		Banks	Nonlife insurers	Life insurers
Transition risks	Status	Conducted by all financial institutions	Not Conducted	Not Conducted
	Phenomena covered	Deteriorating business performance of borrowers arising from the transition to a zero-carbon society		
	Risk drivers	Principal focus on carbon price, with multiple factors specific to high-emitting sectors also considered		
	Indicator	Monetary impact on credit costs		
	Scope and granularity	Some borrowers, such as those involved in high-emitting businesses		
	Time horizon	2050		
	Scenarios	NGFS, IEA, etc.		
Physical risks (acute)	Status	Conducted by all financial institutions	Conducted by some financial institutions	Not Conducted
	Phenomena covered	Deteriorating business performance of borrowers due to natural disasters	Deteriorating business performance of borrowers due to natural disasters	
	Risk drivers	Flood disasters (in the case of some financial institutions, wind and flood disasters, forest fires, and drought)	Flood disasters, wind disasters	
	Indicator	Monetary impact on credit costs	Rate of increase in portfolio loss percentages	
	Scope and granularity	Domestic and overseas borrowers (it is inferred that some are excluded)	Top investment and loan portfolios	
	Time horizon	2050 or 2100 (*depending on financial institutions)	2100	
	Scenarios	IPCC, NGFS	IPCC	
Physical risks (chronic)	Status	Conducted by all financial institutions	Not Conducted	Not Conducted
	Phenomena covered	Deteriorating business performance of borrowers due to changes in the business environment arising from temperature rises		
	Risk drivers	Temperature rise		
	Indicator	Monetary impact on credit costs		
	Scope and granularity	Domestic and overseas borrowers (it is inferred that some are excluded)		
	Time horizon	2100		
	Scenarios	NGFS		

**Conducted by all companies" indicates that all three companies surveyed in each financial sector conduct scenario analysis, while "Conducted by some financial institutions" indicates that only some of them do.

III. Details of Study Findings (Scenario Analysis)

III-3 Study (2) Scenario Analysis methods (Market Risk)**Summary of scenario analysis status in each financial sector**

- The implementation status and content of scenario analysis relating to market risk are shown below. Scenario analysis is principally conducted in the nonlife and life insurance sectors.

		Banks	Nonlife insurers	Life insurers
Transition risks	Status	Not Conducted	Conducted by all financial institutions	Conducted by all financial institutions
	Phenomena covered		Deteriorating business performance of investees arising from the transition to a zero-carbon society (using a tool from an external vendor)	Deteriorating business performance of investees arising from the transition to a zero-carbon society (using a tool from an external vendor)
	Risk drivers		See p. 23	See p. 23
	Indicator		(2 financial institutions) Degree of impact on portfolio asset values (1 financial institution) Ability of investees to pay future carbon costs	Degree of impact on portfolio asset values
	Scope and granularity		Shares, bonds, etc.	Shares, bonds, etc.
	Time horizon		2050 (*1 multiple points up to 2050, in the case of some financial institutions)	2050, etc. (including information confirmed via interviews)
	Scenarios		NGFS	NGFS
Physical risks (acute)	Status	Not Conducted	Conducted by all financial institutions, including analysis for internal management purposes	Conducted by all financial institutions
	Phenomena covered		Deteriorating business performance of investees due to natural disasters (using a tool from an external vendor)	Deteriorating business performance of investees due to natural disasters (using a tool from an external vendor)
	Risk drivers		See p. 23	See p. 23
	Indicator		Rate of increase in portfolio loss percentages ^{*2}	Degree of impact on portfolio asset values
	Scope and granularity		Shares, bonds, etc.*2	Shares, bonds, etc.
	Time horizon		2100*2	2050
	Scenarios		IPCC*2	NGFS
Physical risks (chronic)	Status	Not Conducted	Conducted by some financial institutions for internal management purposes	Conducted by all financial institutions
	Phenomena covered		Deteriorating business performance of investees due to temperature rises	Deteriorating business performance of investees due to temperature rises (using a tool from an external vendor)
	Risk drivers		See p. 23	See p. 23
	Indicator		–	Degree of impact on portfolio asset values
	Scope and granularity		–	Shares, bonds, etc.
	Time horizon		–	2050
	Scenarios		–	NGFS

III. Details of Study Findings (Scenario Analysis)

III-3 Study (2) Scenario Analysis methods (Underwriting Risk)**Summary of scenario analysis status in each financial sector**

- The status and content of scenario analysis relating to underwriting risk are shown below. The types of climate-related risk on which implementation focuses differ between sectors.

		Nonlife insurers	Life insurers
Transition risks	Status	Not Conducted	Not Conducted
	Phenomena covered		
	Risk drivers		
	Indicator		
	Scope and granularity		
	Time horizon		
	Scenarios		
Physical risks (acute)	Status	Conducted by all companies	Conducted by some financial institutions
	Phenomena covered	Increasing insurance payouts due to natural disasters (typhoons)	Increasing insurance payouts and benefits due to deaths arising from typhoons, floods, etc.
	Risk drivers	See p. 27	See p. 27
	Indicator	Rate of increase in insurance payouts	Increase in insurance payouts, etc.
	Scope and granularity	Nonlife insurance business	Life insurance business
	Time horizon	2050	2050, 2100
	Scenarios	IPCC	IPCC
Physical risks (chronic)	Status	Not Conducted	Conducted by all companies
	Phenomena covered		Increasing insurance payouts and benefits due to deaths and hospitalization arising from summer heat and heat stroke
	Risk drivers		See p. 27
	Indicator		Increase in insurance payouts and daily benefits during hospitalization
	Scope and granularity		Life insurance business
	Time horizon		2100 (*some financial institutions also include 2050)
	Scenarios		IPCC

**Conducted by all companies" indicates that all three companies surveyed in each financial sector conduct scenario analysis, while "Conducted by some financial institutions" indicates that only some of them do.

4. Consideration of Lending (Credit Risk)

III. Details of Study Findings (Scenario Analysis)

III-4 Lending (Credit Risk) (Overview)

Comparison of whether or not scenario analysis covering lending (credit risk) is implemented in each financial sector and associated risk drivers

- Scenario analysis covering lending (credit risk) is mainly implemented in the banking sector. The banking sector sets wide-ranging risk drivers for scenario analysis focused on physical (acute) risks.

[Overview of risk recognition and scenario analysis by financial sector]

Business Areas (risk category)	Climate-related risks	Sector	Risk recognition		Scenario analysis	
			Yes/No	Judgment on importance*1	Conducted	Risk drivers
Lending (credit risk)	Transition	Banking	Yes	High	Yes	Carbon price
		Nonlife insurance	Yes	Low	No	–
		Life insurance	Yes	Low	No	–
	Physical (acute)	Banking	Yes	High	Yes	There are differences between financial institutions, as shown below (2 financial institutions) Flood disasters (1 financial institution) Wind and flood disasters, forest fires, and drought (1 financial institution) Flood disasters, wind disasters
		Nonlife insurance	Yes	Low	Implemented by some financial institutions	
		Life insurance	Yes	Low	No	
	Physical (chronic)	Banking	Yes	High	Implemented by some financial institutions	(2 financial institutions) Temperature rise
		Nonlife insurance	Yes	Low	No	–
		Life insurance	Yes	Low	No	–

Differences between financial sectors regarding scenario analysis (*1) Confirmed via interviews with some financial institutions.

Classification of difference	Overview of difference	Situation by financial sector
Climate-related risks covered by analysis <small>Details: p. 20</small>	There are differences between financial sectors in the implementation of scenario analysis in regard to all climate-related risks	<ul style="list-style-type: none"> Scenario analysis of transition risks is conducted only in the banking sector Scenario analysis of physical (acute) risks is conducted in both the banking and nonlife insurance sectors (some financial institutions), but not in the life insurance sector Scenario analysis of physical (chronic) risks is conducted only in the banking sector (some financial institutions)
Types of risk drivers covered by analysis <small>Details: p. 21</small>	Risk drivers for physical risks (acute) differ between financial sectors	<ul style="list-style-type: none"> The banking sector analyzes flood disasters (wind and flood disasters, forest fires, and drought), in the case of some banks) as phenomena covered by physical risks (acute) On the other hand, some financial institutions in the nonlife insurance sector analyze flood disasters and wind disasters

III. Details of Study Findings (Scenario Analysis)

III-4 Lending (Credit Risk) (Climate-Related Risks Covered by Analysis)

Verification of differences between financial sectors in regard to the climate-related risks covered by analysis

Differences in regard to climate-related risks covered by analysis

- Scenario analysis of transition risks is conducted **only in the banking sector**
- Scenario analysis of physical (acute) risks is conducted **in both the banking and nonlife insurance sectors (some financial institutions)**, but not in the life insurance sector
- Scenario analysis of physical (chronic) risks is conducted **only in the banking sector (some financial institutions)**

[Categories covered by scenario analysis]

	Transition	Physical: acute	Physical: chronic
Banking	●	●	●Partial
Nonlife insurance	×	●Partial	×
Life insurance	×	×	×

Legend

- : Conducted by all surveyed financial institutions in the relevant sector
- Partial: Conducted by some surveyed financial institutions in the relevant sector
- ×: Not Conducted by all surveyed financial institutions in the relevant sector

Judgments by each sector regarding the climate-related risks covered by analysis*1

Banking sector (mostly implemented)	<ul style="list-style-type: none"> Credit risk is of high business importance, with analysis covering both transition risks and physical risks 				
Nonlife and life insurance sectors (mostly not implemented)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; text-align: center;">Common features</td> <td style="width: 85%;"> <ul style="list-style-type: none"> While both nonlife and life insurers recognize this risk as they deem the impact on their sectors to be low, as loans make up only a small proportion of their investment and lending portfolios For this reason, they place a lower priority on lending in their investment and lending portfolio analysis, and therefore do not prioritize lending as a focus of analysis when considering analytical methods and selecting analysis models (including adopting analysis models that do not cover lending) </td> </tr> <tr> <td style="width: 15%; text-align: center;">Features at the individual financial institution level</td> <td style="width: 85%;"> <ul style="list-style-type: none"> In terms of risk management, financial institutions deem monitoring of the monetary value of exposure to be sufficient In a recent action, financial institutions have begun including lending in measurements of GHG emissions, and plan to take the volume of GHG emissions into account when considering implementing scenario analysis with regard to lending Financial institutions intend to expand the focus of scenario analysis in response to the progressive expansion of the scope of GHG emissions disclosures and target setting in NZAOA^{*2} guidance </td> </tr> </table>	Common features	<ul style="list-style-type: none"> While both nonlife and life insurers recognize this risk as they deem the impact on their sectors to be low, as loans make up only a small proportion of their investment and lending portfolios For this reason, they place a lower priority on lending in their investment and lending portfolio analysis, and therefore do not prioritize lending as a focus of analysis when considering analytical methods and selecting analysis models (including adopting analysis models that do not cover lending) 	Features at the individual financial institution level	<ul style="list-style-type: none"> In terms of risk management, financial institutions deem monitoring of the monetary value of exposure to be sufficient In a recent action, financial institutions have begun including lending in measurements of GHG emissions, and plan to take the volume of GHG emissions into account when considering implementing scenario analysis with regard to lending Financial institutions intend to expand the focus of scenario analysis in response to the progressive expansion of the scope of GHG emissions disclosures and target setting in NZAOA^{*2} guidance
Common features	<ul style="list-style-type: none"> While both nonlife and life insurers recognize this risk as they deem the impact on their sectors to be low, as loans make up only a small proportion of their investment and lending portfolios For this reason, they place a lower priority on lending in their investment and lending portfolio analysis, and therefore do not prioritize lending as a focus of analysis when considering analytical methods and selecting analysis models (including adopting analysis models that do not cover lending) 				
Features at the individual financial institution level	<ul style="list-style-type: none"> In terms of risk management, financial institutions deem monitoring of the monetary value of exposure to be sufficient In a recent action, financial institutions have begun including lending in measurements of GHG emissions, and plan to take the volume of GHG emissions into account when considering implementing scenario analysis with regard to lending Financial institutions intend to expand the focus of scenario analysis in response to the progressive expansion of the scope of GHG emissions disclosures and target setting in NZAOA^{*2} guidance 				

(*1) Confirmed via interviews with some financial institutions.

(*2) The Net-Zero Asset Owner Alliance is an initiative to which some Japanese insurers belong.

Consideration of background to differences

- Decisions on whether to include lending in the scope of analysis are based on each financial institution's judgment, taking into account such matters as perspectives on its importance and constraints on the resources required for analysis

Implications for the future

- In light of the possibility that lending for both the nonlife and life insurance sectors are exposed to the climate-related risks as the banking sector is, there is room for consideration for these financial institutions to expand the scope of scenario analysis if the availability of additional data in due course leads them to deem the impact to be material

III. Details of Study Findings (Scenario Analysis)

III-4 Lending (Credit Risk) (Risk Drivers (Physical Risks: Acute))

Verification of differences between financial sectors in regard to the risk drivers covered by analysis

Types of risk drivers covered by analysis

- The banking sector analyzes **flood disasters (wind and flood disasters, forest fires, and drought)**, in the case of some financial institutions) as phenomena covered by physical risks (acute).
- On the other hand, some financial institutions in the nonlife insurance sector analyze **flood disasters and wind disasters**.

Judgments by each sector in regard to the risk drivers covered by analysis*1

Common to both the banking and nonlife insurance sectors

- With regard to phenomena posing a particularly high disaster risk in Japan, both the banking and nonlife insurance sectors analyze flood disasters as a risk driver.
- Risk drivers subject to analysis are determined on the basis of the severity of the disaster itself and the degree of impact on the financial institution.

Specific to the banking sector (some financial institutions only)

- Some banks envisage the possibility that, in addition to wind and flood disasters within Japan, overseas forest fires would have a major impact, and analyze these as risk drivers

*1 Confirmed via interviews with some financial institutions.



Consideration of background to differences

- The scope of risk drivers covered by analysis is based on each financial institution's judgment, taking into account importance of disaster impacts.



Implications for the future

- Both the banking and nonlife insurance sectors conduct scenario analysis in regard to risk drivers deemed to have a major impact within Japan. As there are differences even within each sector as to whether or not further analysis is conducted, this would appear to be based on each financial institution's judgment. There is room for consideration for financial institutions to expand the scope of scenario analysis in regard to disasters deemed to have a major impact, as data and findings regarding the impacts of climate change (such as the extent of changes in disaster trends resulting from changes in meteorological phenomena, and the extent of impacts of disasters on companies) are enhanced further.

5. Consideration of Investment (Market Risk)

III. Details of Study Findings (Scenario Analysis)

III-5 Investment (Market Risk) (Overview)

Comparison of whether or not scenario analysis covering investment (market risk) is implemented in each financial sector and associated risk drivers

- Whereas scenario analysis covering investment (market risk) is widely conducted in the nonlife and life insurance sectors, where investment has a relatively large impact on business, it is not conducted in the banking sector. Generally speaking, the nonlife and life insurance sectors set the same risk drivers (apart from in some cases).

Business Areas (risk category)	Climate-related risks	Sector	Risk recognition		Scenario Analysis	
			Yes/No	Judgment on importance*1	Conducted	Risk drivers
Investment (market risk)	Transition	Banking	Yes	Low	No	–
		Nonlife insurance	Yes	High	Yes	There are differences between financial institutions, as shown below (1 financial institution) Carbon price (1 financial institution) Carbon price, energy demand and price, GHG emissions (1 financial institution) Carbon price, energy price*4
		Life insurance	Yes	High	Yes	Carbon price, energy price*4
	Physical (acute)	Banking	Yes	Low	No	–
		Nonlife insurance	Yes	High	Yes*2	There are differences between financial institutions, as shown below (1 financial institution) Flooding, wind disasters (1 financial institution) Flooding*4 (1 financial institution) Typhoons*3
		Life insurance	Yes	High	Yes	Flooding, etc.*4
	Physical (chronic)	Banking	Yes	Low	No	–
		Nonlife insurance	Yes	High	Conducted by some financial institutions*3	(1 financial institution) Temperature rise*3
		Life insurance	Yes	High	Yes	Summer heat, etc.*4

(*1) Confirmed via interviews with some financial institutions.

(*2) While some financial institutions do not disclose the details, we confirmed via interviews that they conduct risk analysis for internal management purposes..

(*3) While none of the financial institutions disclose the details, we confirmed via interviews that some conduct risk analysis for internal management purposes..

(*4) Confirmed the details of risk drivers used by 1 financial institution via the interview. We surmise that other financial institutions using the same external tool for analysis use the same risk drivers.

Differences between financial sectors regarding scenario analysis

Classification of difference	Overview of difference	Situation by financial sector
Climate-related risks covered by analysis Details: p. 24	There are differences between financial sectors in the implementation of scenario analysis in regard to all climate-related risks	<ul style="list-style-type: none"> Not Conducted by the banking sector in regard to transition risks or physical risks (acute/chronic) Both the nonlife and life insurance sectors generally conduct scenario analysis in regard to transition risks and physical risks (acute/chronic)
Types of risk drivers covered by analysis Details: p. 25	There are differences in risk drivers (transition risks and physical risks (acute/chronic))	<ul style="list-style-type: none"> With regard to transition risks, the nonlife insurance sector (some financial institutions) analyzes carbon price, energy demand and price, and GHG emissions, while the life insurance sector analyzes carbon price and energy price In the case of physical risks (acute), the nonlife insurance sector analyzes wind disasters and flooding, while the life insurance sector analyzes flooding, etc. Regarding physical risks (chronic), the nonlife insurance sector analyzes temperature rise, while the life insurance sector analyzes summer heat, etc.

III. Details of Study Findings (Scenario Analysis)

III-5 Investment (Market Risk) (Climate-Related Risks Covered by Analysis)
Verification of differences between financial sectors in regard to the climate-related risks covered by analysis

(*2) Includes financial institutions confirmed via interviews to implement analysis for internal purposes.

Differences in regard to climate-related risks covered by analysis

- Scenario analysis of transition risks is **conducted in both the nonlife and life insurance sectors**, but not in the banking sector
- Scenario analysis of physical risks (acute) is **conducted in both the nonlife and life insurance sectors**, but not in the banking sector
- Scenario analysis of physical risks (chronic) is **conducted by some financial institutions in the nonlife insurance sector and by the life insurance sector** as a whole, but not in the banking sector

[Categories covered by scenario analysis]

	Transition	Physical: acute	Physical: chronic
Banking	x	x	x
Nonlife insurance	●	●*2	●*2Partial
Life insurance	●	●	●

Legend

- : Conducted by all surveyed financial institutions in the relevant sector
- : Partial: Conducted by some surveyed financial institutions in the relevant sector
- x: Not Conducted by all surveyed financial institutions in the relevant sector

Judgments by each sector regarding the scope of analysis of climate-related risks*1

Banking sector (does not implement analysis)

- In the banking sector, analysis of investment is a lower priority than analysis of lending, in light of the fact that the sums invested are relatively small compared with the sums lent, as well as scenario data constraints, etc.

Nonlife and life insurance sectors (mostly implement analysis)

- Market risk is of high business importance, with analysis covering both transition risks and physical risks

(*1) Confirmed via interviews with some financial institutions.



Consideration of background to differences

- Decisions on whether to include investment in the scope of analysis are based on each financial institution's judgment, taking into account such matters as perspectives on its importance and constraints on the resources required for analysis
- Due to data constraints, it is difficult for financial institutions to conduct analysis with sufficient precision (reflecting data for individual sectors, etc.), and it is not feasible for financial institutions to eliminate these data constraints single-handedly



Implications for the future

- As in the nonlife and life insurance sectors, there is possibility that investment by the banking sector similarly are exposed to climate-related risks. Even if the small scale of impacts means that analysis relating to investment is a relatively low priority at this stage, there is room for consideration for financial institutions to expand the scope of scenario analysis in accordance with the situation relating to the resources required for analysis and trends in scenario development (such as reflecting parameters for individual sectors), if the availability of additional data in due course leads them to deem the impact to be substantial

III. Details of Study Findings (Scenario Analysis)

III-5 Investment (Market Risk) (Risk Drivers (Transition Risks and Physical Risks))
Verification of differences between financial sectors in regard to the risk drivers covered by analysis

Types of risk drivers covered by analysis

- Both the nonlife and life insurance sectors conduct scenario analysis regarding transition risks and physical risks focused on their investment and lending portfolios*1
- The risk drivers used in the conducted scenario analysis of transition risks and physical risks differ (the risk drivers used in each sector are shown below)

	Risk drivers for transition risks	Risk drivers for physical risks	
		Acute risks	Chronic risks
Nonlife insurance sector	(1 financial institution) Carbon price (1 financial institution) Carbon price, energy demand and price, GHG emissions (1 financial institution) Carbon price, energy price*2	(1 financial institution) Flooding, wind disasters (1 financial institution) Flooding*2 (1 financial institution) Typhoons*3	(1 financial institution) Temperature rise*3
Life insurance sector	Carbon price, energy price*2	Flooding, etc.*2	Summer heat, etc.*2

(*1) See the previous page for details of implementation status.

(*2) Confirmed the details of risk drivers used by 1 company via the interview. We surmise that other companies using the same external tool for analysis use the same risk drivers.

(*3) While none of the financial institutions disclose the details, we confirmed via interviews that some conduct risk analysis internally.

Judgments by each sector in regard to the risk drivers covered by analysis*4

- In analyzing market risk, the financial institutions rely on analysis models (including risk drivers) provided by external vendors, rather than basing them solely on their own resources, due to the cost and resources required for analysis
- When using analysis models from external vendors, the financial institutions check whether those analysis models enable them to conduct analyses that accord with their own risk recognition in regard to transition risks and physical risks (acute/chronic) relating to investment, and use an analysis model that covers risk drivers that have a major impact on Japanese companies

*4 Confirmed via interviews with some financial institutions.



Consideration of differences (considerations based on business models)

- Both the nonlife and life insurance sectors share the same recognition of the importance of market risk, and there appears to be no major difference between the two sectors in terms of their approach for selecting the risk drivers covered by analysis, with the differences in risk drivers that can be seen arising from differences in the analysis models of external vendors. In the interviews, some financial institutions responded that, when choosing an external vendor, they adopted an analysis that broadly accorded with their company's risk recognition; we surmise that this result arises from consideration of the cost and resource perspectives



Implications for the future

- Going forward, there is room for consideration for financial institutions to expand the scope of scenario analysis in regard to phenomena deemed to have a major impact, as data and findings regarding the impacts of climate change (transition risks and physical risks (acute/chronic)) are enhanced further

6. Consideration of Insurance Underwriting (Underwriting Risk)

III. Details of Study Findings (Scenario Analysis)

III-6 Insurance underwriting (underwriting risk) (Overview)

Comparison of whether or not scenario analysis covering insurance underwriting (underwriting risk) is implemented in each sector and associated risk drivers

- In scenario analysis focused on insurance underwriting (underwriting risk), the types of climate-related risk on which implementation focuses differ between sectors. Even with regard to the same climate-related risk, the risk drivers covered differ.

[Overview of risk recognition and scenario analysis by financial sector]

Business Areas (risk category)	Climate-related risks	Sector	Risk recognition		Scenario analysis	
			Yes/No	Judgment on importance*1	Conducted	Risk drivers
Insurance underwriting (underwriting risk)	Transition	Nonlife insurance	Yes	Low	No	–
		Life insurance	No	–	–	–
	Physical (acute)	Nonlife insurance	Yes	High	Yes	Typhoons*2 (hurricanes, storm surges), flooding
		Life insurance	Yes	Low	Conducted by some financial institutions	(1 financial institution) Typhoons, flooding
	Physical (chronic)	Nonlife insurance	Yes	Low	No	–
		Life insurance	Yes	High	Yes	Temperature rise

(*1) Confirmed via interviews with some financial institutions.

(*2) Some nonlife insurers analyze as well as hurricanes and storm surges, in addition to an analysis of typhoons.

Differences between financial sectors regarding scenario analysis

Classification of difference	Overview of difference	Situation by financial sector
Climate-related risks covered by analysis <small>Details: p. 28</small>	There are differences between financial sectors in the implementation of scenario analysis in regard to physical risks (acute/chronic)	<ul style="list-style-type: none"> Scenario analysis of physical (acute) risks is conducted throughout the nonlife insurance sector, but not in the life insurance sector, other than by some financial institutions Scenario analysis of physical (chronic) risks is not conducted in the nonlife insurance sector, but is in the life insurance sector

III. Details of Study Findings (Scenario Analysis)

III-6 Insurance Underwriting (Underwriting Risk) (Climate-Related Risks Covered by Analysis)

Verification of differences between financial sectors in regard to the climate-related risks covered by analysis

Differences in regard to climate-related risks covered by analysis

- Scenario analysis of physical (acute) risks is **conducted by all the nonlife insurance sector**, but not in the life insurance sector, some financial institutions do
- Scenario analysis of physical (chronic) risks is not conducted in the nonlife insurance sector, but **is in the life insurance sector**

[Categories covered by scenario analysis]

	Transition	Physical: acute	Physical: chronic
Nonlife insurance	×	●	×
Life insurance	×	●Partial	●

Legend

- : Conducted by all surveyed financial institutions in the relevant sector
- Partial: Conducted by some surveyed financial institutions in the relevant sector
- ×: Not Conducted by all surveyed financial institutions in the relevant sector

Judgments by each sector regarding the climate-related risks covered by analysis*1

Nonlife insurance sector (reasons for not analyzing chronic risks)

- As underwriting natural disaster risks forms part of nonlife insurance businesses and it is susceptible to natural disasters itself (acute risk) and the sector focuses its energy on analyzing acute rather than chronic risks
- The sector does not analyze chronic risks at this stage, due to the unreliability of climate-related risk analysis in nonlife insurance and the maturity level of analytical methods
- While there is one case within the nonlife insurance sector where chronic risk analysis is conducted for internal management purposes, the validity of the assumptions of these internal models needs verification

Life insurance sector (reasons for not analyzing acute risks)

- The sector deems chronic risks to be greater than acute risks (only some financial institutions within the sector conduct scenario analysis of acute risks)



Consideration of background to differences

- The risks covered by analysis are based on each financial institution's judgment, taking into account matters including perspectives on its importance and the maturity of analysis



Implications for the future

- Both nonlife and life insurance sectors might be exposed to physical risks(acute/chronic). Even if the small scale of impacts means that analysis is a relatively low priority at this stage, there is room for consideration for financial institutions to expand the scope of scenario analysis if the availability of additional data in due course leads them to deem the impact to be substantial

7. Overseas Examples

III. Details of Study Findings (Scenario Analysis)

III-7 Overseas Examples

- ▶ A summary of examples identified among overseas financial institutions that can serve as model cases in terms of creative approaches to analytical methods or the content of analysis, from the perspective of responses to issues identified from the survey of domestic financial institutions and from the results of comparison between them, along with the further sophistication of their scenario analysis.

Example	Sector	Risks	Name of financial institution	Content of scenario analysis
(1)	Banking sector	Transition risks	HSBC (U.K.)	Implements analysis that takes into account such matters as the emissions plans and climate transition plans of borrowers, etc., along with the government support
(2)	Banking sector	Transition risks	Standard Chartered Bank (U.K.)	Implements analysis of customers' repayment ability as part of the transition risks for its retail (mortgage) business
(3)	Nonlife insurance sector	Physical risks	AXA S.A. (France)	Implements analysis on its financial impacts due to the possibility of being unable to provide insurance

III. Details of Study Findings (Scenario Analysis)

III-7 Overseas Examples (Lending) 1/2

Example (1)	<ul style="list-style-type: none"> Implements analysis that takes into account such matters as the emissions plans and climate transition plans of borrowers etc., along with the government support 	Banking sector	Transition risks
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Name of financial institution	HSBC (U.K.)
Content of analysis	<ul style="list-style-type: none"> Transition risk analysis focused on the business corporations of lending partners Analyzes financial impacts on lending partners and impacts on credit costs, taking into account fluctuations in carbon price, etc.
Creative approaches to analysis	<ul style="list-style-type: none"> Analysis of financial impacts of emission costs requires forecasts of not only carbon prices, but also borrowers' emissions. For emissions forecasts, HSBC takes into account the emissions plans of individual companies and has devised a way of reflecting them Rather than assuming that the future emissions by borrowers will fluctuate in a uniform way, HSBC's scenario analysis takes into account the emissions plans and climate transition plans of borrowers, if these are available It also enhances its financial forecasting by reflecting impacts on companies receiving governmental support

Scenario analysis status among Japanese financial institutions

Overview

- Principally take the impacts of carbon price into account in transition risk analysis of borrowers, in the same way

Emissions of borrowers

- Use NGFS and other scenarios, and appear to assume that the emissions of borrowers subject to analysis will fluctuate based on the assumptions included in these scenarios

Points thought to be of reference

- Implements more granular analysis by incorporating the future emissions plans, etc. of borrowers into the analysis
- Refines its financial forecasting by reflecting impacts on companies arising from governmental support

Source: [HSBC Holdings plc Annual Report and Accounts 2023](#)

III. Details of Study Findings (Scenario Analysis)

III-7 Overseas Examples (Lending) 2/2

Example (2)	<ul style="list-style-type: none"> Implements analysis of borrowers' repayment capability as part of the transition risks for its retail (mortgage) business 	Banking sector	Transition risks
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Name of financial institution	Standard Chartered Bank (U.K.)
Content of analysis	<ul style="list-style-type: none"> Transition risk analysis focused on the mortgage portfolio Analyzes impacts of energy price increase and retrofitting cost, etc. on borrowers' capability for repayment
Creative approaches to analysis	<ul style="list-style-type: none"> Evaluates the impacts of transition risks on its mortgage portfolio from the perspective of borrowers' repayment ability Unlike business corporations, retail customers are not thought to be directly impacted by changes in emissions costs due to fluctuating carbon prices, but Standard Chartered analyzes the impacts of transition risks by taking into account the impacts of increase in the burdens on borrowers arising from macroeconomic changes, such as the burden on borrowers due to rising energy prices

Scenario analysis status among Japanese financial institutions

- Do not disclose transition risk analysis focused on the mortgage portfolio

Points thought to be of reference

- Also implements analysis focused on impacts on customers' repayment ability in regard to mortgages

Source: [Standard Chartered Annual Report 2023](#), [GOV.UK website](#)

III. Details of Study Findings (Scenario Analysis)

III-7 Overseas Examples (Insurance Underwriting)

Example (3)	<ul style="list-style-type: none"> Implements analysis on its financial impacts due to the possibility of being unable to provide insurance 	Nonlife insurance sector	Physical risks
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Name of financial institution	AXA S.A. (France)
Content of analysis	<ul style="list-style-type: none"> Physical risk analysis focused on insurance underwriting While applying consistent scenarios with short-term and long-term time horizons, for the long term, AXA analyzes not only its ability to make insurance payouts, but also impacts on its financial impacts due to the possibility of being unable to provide insurance
Creative approaches to analysis	<ul style="list-style-type: none"> Considers and applies consistent scenarios for both short-term (2027) and long-term (2050) time horizons, and analyzes the impacts on its financial situation and earnings. For the short term, AXA analyzes impacts due to rising insurance payouts arising from the impacts of climate change, while for the long term, in addition to these, it analyzes impacts on its financial affairs due to "uninsurability" For the short-term scenario, AXA uses scenarios provided by France's ACPR - Prudential Supervision and Resolution Authority For the long term, AXA uses the IPCC scenarios as the basis for analyzing impacts on the company's financial affairs, earnings, and business itself, with a focus on "uninsurability" (the possibility of being unable to provide insurance) in specific regions as a result of increasing disasters caused by long-term climate change In terms of disclosures, AXA also discloses that the aforementioned initiative has a high level of uncertainty, and that there are many outstanding issues in regard to methodology

Scenario analysis status among Japanese financial institutions

- With regard to analysis of physical risks relating to underwriting by nonlife insurance companies, financial institutions disclose impacts of natural disasters on insurance payouts, but do not disclose impacts on the possibility of being unable to provide insurance

Points thought to be of reference

- For the long term perspective, AXA analyzes not only its ability to make insurance payouts, but also its financial impacts due to the possibility of being unable to provide insurance

Source: [2024 AXA Group Climate and Biodiversity Report](#)