



2021 Update on New York Domestic Insurers' Management of the Financial Risks from Climate Change

AN ANALYSIS OF NAIC CLIMATE RISK
DISCLOSURE SURVEY RESPONSES AND
OTHER REPORTING

July 2022

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Disclaimer

If the New York State Department of Financial Services (“DFS”) receives a Freedom of Information Law (“FOIL”) request for data pertaining to an insurer that DFS considers subject to FOIL under the New York State Public Officers Law, DFS will assert exemptions under FOIL that DFS deems applicable in response to that request to protect the confidentiality of the data, and notify the insurer of such request.

Executive Summary

A. Introduction

The New York State Department of Financial Services (“DFS”) views climate change as a source of potentially wide-ranging and material financial risks to its regulated entities. To support the efforts of New York domestic insurers (“insurers”) to address this emerging challenge, DFS issued [Guidance for New York Domestic Insurers on Managing the Financial Risks from Climate Change](#) (“Guidance”). The Guidance details DFS’s supervisory expectations for insurers’ management and disclosure of their financial risks from climate change (“climate risks”).

DFS is engaged in an ongoing effort to evaluate insurers’ climate risk management practices and provide resources that will accelerate the industry’s progress. In 2021, DFS analyzed the responses submitted by insurers in 2020 to the National Association of Insurance Commissioners (“NAIC”) [Climate Risk Disclosure Survey](#) (“Survey”), as well as Task Force on Climate-Related Financial Disclosures (“TCFD”) reports provided by insurers in lieu of Survey responses (together with the Survey responses submitted in 2020, “2020 responses”). DFS issued a report in July 2021, [New York Domestic Insurers’ Management of the Financial Risks from Climate Change](#) (“2020 Report”), containing the results of this analysis and examples of good practices described in the 2020 responses.

This latest report contains the results of DFS’s review and analysis of the Survey responses and TCFD reports of 85 insurance groups and 10 unaffiliated insurers submitted in 2021 (“2021 responses”), as well as their progress when compared to the 2020 responses captured in the 2020 Report. Five of the eight Survey questions were grouped into three themes that are most relevant to the Guidance – Risk Culture and Governance, Risk Management, and Modeling and Scenario Analysis – and the responses were analyzed. Insurers were rated as “Yet to Start,” “Early Stage,” “Making Progress,” and “Good Progress” using a rating framework included in the Appendix. Numeric values were assigned to the ratings with “Yet to Start” as 1 and “Good Progress” as 4.

B. Application of Disclosure Materials

DFS will continue to conduct yearly reviews of insurers’ Survey responses and other disclosure materials. In general, DFS intends to use the results of its analysis to:

1. Understand insurers’ overall status in identifying, assessing, and managing climate risks,
2. Identify good practices that can be shared with the industry,
3. Support risk-based supervision by identifying insurers that appear to lag, generally or in a specific area, compared to their peers,
4. Verify compliance of the implementation of the supervisory expectations set forth in the Guidance with the existing timeline, and
5. Inform the establishment of future timelines for implementation of the remaining supervisory expectations set forth in the Guidance.

DFS plans to review insurers’ Survey responses due on November 30, 2022, to monitor whether insurers have implemented DFS’s expectations relating to board governance, and have specific plans in place to implement DFS’s expectations relating to organizational structure, by August 15, 2022.

C. Insurers’ Status and Progress on Managing Climate Risks

Overall, insurers have taken steps to integrate the consideration of climate risks into their governance frameworks and risk management processes. Insurers rated “Good Progress” have implemented many of the expectations in the Guidance. When weighted by premium, the composite ratings (covering all three themes) and the ratings for Risk Culture and Governance and Risk Management were around 3, in the “Making Progress” category, while the Modeling and Scenario Analysis ratings had a wider dispersion, as shown in Figure i.

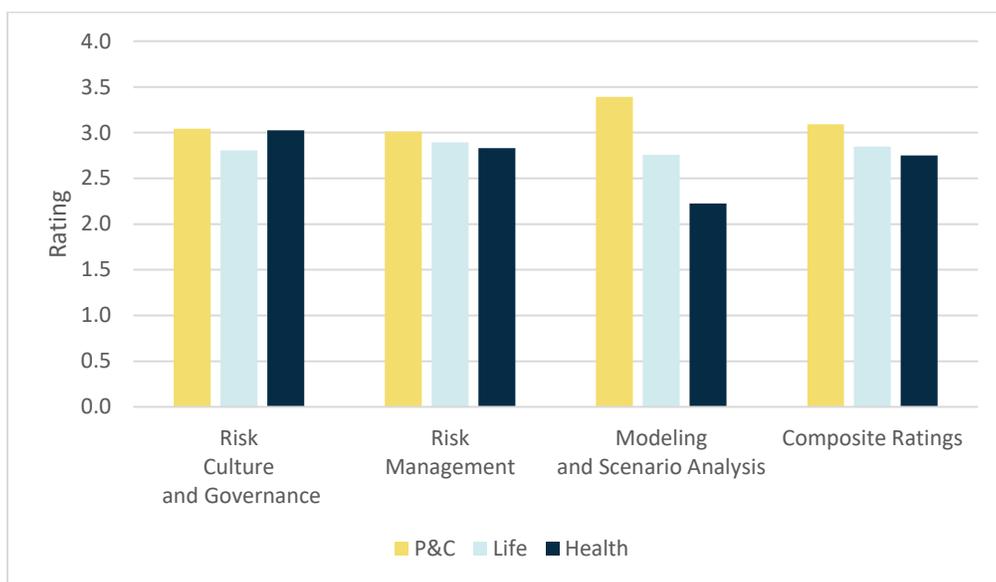


Figure i. Premium-Weighted Ratings for Insurers Across the Three Themes

Compared to the 2020 responses, the 2021 responses showed that a meaningful portion of groups/unaffiliated companies made progress on the five questions that were analyzed, especially related to investments. Most of the improvements came from responses that were rated as “Yet to Start” or “Early Stage” in 2020. Very few of the responses that were rated as “Making Progress” in 2020 advanced to “Good Progress” in 2021. Other selected improvements include:

- More insurers designated risk, finance, and/or investment committees of the boards, instead of, or in addition to, the governance and nomination committee, as responsible for the oversight of climate risks.
- More insurers, including small- to medium-sized insurers, started to integrate climate risks into their existing enterprise risk management (“ERM”) frameworks.

- More insurers have conducted climate scenario analysis or included climate risks in their traditional stress tests, and some have included the process and results of their analysis in their Own Risk and Solvency Assessments (“ORSAs”).
- More companies filed TCFD reports in lieu of responding to the eight Survey questions.
- More insurers have committed to net zero greenhouse gas (“GHG”) emissions in underwriting and/or investment portfolios by 2050 or sooner.

Across property and casualty (“P&C”), life, and health business lines, large groups were often rated as “Good Progress” or “Making Progress,” while a few large P&C and life groups were rated as “Yet to Start” or “Early Stage.” At the same time, some of the smaller P&C and life groups/unaffiliated companies were highly rated. Overall, insurers that responded in both 2020 and 2021 saw meaningful improvements across most, if not all, of the five questions analyzed in this report. Most of the improvement came from groups/unaffiliated companies whose 2020 responses were rated as “Yet to Start” or “Early Stage.”

D. Examples of Good Practices

Risk Culture and Governance

Leading insurers have designated board committees such as risk, finance, investment, audit, and/or nominating and governance as responsible for overseeing the management of climate-related risks and opportunities, and a senior management function such as Chief Risk Officer or Chief Investment Officer as responsible for the management of those risks and opportunities. Leading insurers also established internal cross-functional committees on climate risk with a clear line of sight to the board and senior management.

Business Models and Strategies

Leading insurers considered the medium- to long-term impact of climate risks to inform their strategies – not only to adapt to climate change but also to take advantage of insurers’ expertise and provide solutions. Some insurers have included as part of their strategies proactive support of the low-carbon transition and customer resilience, either through their investments or underwriting.

Risk Management

Leading insurers continued to develop and enhance frameworks for identifying, assessing, monitoring, managing, and reporting climate risks as part of their ERM programs, with clear avenues to escalate material climate risks up to senior management and the board. Leading insurers across all lines of business and all sizes integrated the consideration of climate risks into their control functions. These insurers periodically evaluate the impact of climate change on pricing, operational, strategic, market, regulatory, and liability risk types. Examples of good practices include:

- Using risk dashboards, risk capital allocation, and limit consumption reports to identify material risks.

- Conducting top-down and bottom-up risk assessment processes to identify the impacts of physical and transition risks on assets and liabilities.
- Identifying “risk owners” responsible for providing such updates, including updates relating to changes in risk profile, exposure levels, and mitigation measures.
- Integrating consideration of climate risks across the three lines of defense.
- Including a description in their ORSAs of how they assess potential exposure to climate risks and the impact of that exposure on their financial position and strategy.

Modeling and Scenario Analysis

Leading insurers developed and enhanced models to assess climate risks using a broad range of data. They used climate scenarios analysis over a range of time horizons and pathways to set business strategies and assess underwriting and investment risks. Leading P&C insurers customized commercial catastrophe models to make them more forward-looking and considered the potential impact of physical risks on their underwriting and pricing over decades.

Metrics and Targets

Leading insurers used metrics and time-bound targets to monitor the impact of physical and transition risks on their assets and liabilities. Examples of metrics and targets include dollar amounts or shares of issuers’ revenues in green investments, carbon footprints or implied warming potential of an investment portfolio, climate value at risk for investments, thresholds of revenue generated from underwriting fossil fuel businesses, and revenue generated from sustainable solution products for underwriting.

E. Conclusion

The 2021 responses and TCFD reports showed that insurers have made progress in their assessment and management of climate risks compared to 2020. However, a wide range of sophistication still exists.

- The composite ratings indicate on average the industry was in the “Making Progress” category. Insurers in the “Good Progress” category have implemented many of the expectations in the Guidance.
- More insurers, including small- to medium-sized insurers, have started to integrate climate risks into their existing ERM frameworks and Environmental, Social and Governance (“ESG”) factors into investment decisions. Most of the progress has been made by insurers whose 2020 responses were rated as “Yet to Start” or “Early Stage.”
- Insurers can do more on assigning clear climate risk-related roles and responsibilities, formalizing the integration of climate risks into their risk management frameworks, and evolving the assessment of climate risks to be more quantitative.

DFS will review insurers’ 2022 responses, due on November 30, 2022, to monitor whether insurers have met the expectations set forth in the Guidance relating to board governance and organizational structure.

There are public resources that insurers can use to assist and accelerate their progress, such as the Basel Committee on Banking Supervision's [Climate-related financial risks – measurement methodologies](#), and United Nations Environmental Programme Finance Initiative's [Charting a New Climate](#), [The Climate Risk Landscape](#), and [The Climate Risk Tool Landscape 2022 Supplement](#), which contain information on available data and tools for assessing physical and transition risks.

1. Introduction

The New York State Department of Financial Services (“DFS”) views climate change as a source of potentially wide-ranging and material financial risks to its regulated entities. This is especially true for the insurance industry, where the physical and transition risks resulting from climate change affect both sides of insurers’ balance sheets—assets and liabilities—as well as their business models. To support the efforts of New York domestic insurers (“insurers”) to address this emerging challenge, DFS issued [Guidance for New York Domestic Insurers on Managing the Financial Risks from Climate Change](#) (“Guidance”) detailing DFS’s supervisory expectations for insurers’ management and disclosure of their financial risks from climate change (“climate risks”). As set forth in Section 3.5 of the Guidance, DFS expects insurers to have implemented expectations relating to board governance (Guidance Section 3.6.1), and to have specific plans in place to implement the expectations relating to organizational structure (Guidance Section 3.6.3), by August 15, 2022.

DFS is engaged in an ongoing effort to evaluate insurers’ climate risk management practices and provide resources that will accelerate the industry’s progress. In 2021, DFS analyzed the responses submitted by insurers in 2020 to the National Association of Insurance Commissioners (“NAIC”) [Climate Risk Disclosure Survey](#) (“Survey”), as well as certain insurers’ Task Force on Climate-Related Financial Disclosures (“TCFD”) reports provided in lieu of Survey responses (together with the Survey responses submitted in 2020, “2020 responses”). DFS issued a report in July 2021, [New York Domestic Insurers’ Management of the Financial Risks from Climate Change](#) (“2020 Report”), containing the results of this analysis and examples of good practices¹ described in the 2020 responses.

This latest report contains the results of DFS’s review and analysis of the 78 Survey responses and 17 TCFD reports of 85 insurance groups and 10 unaffiliated insurers submitted in 2021 (“2021 responses”), as well as their level of progress in comparison to the 2020 responses captured in the 2020 Report.

This report uses the same framework² described in the 2020 Report to rate insurers’ responses to five of the eight questions in the Survey: Questions 2, 3, 4, 5, and 8. These questions were analyzed because they cover the themes most relevant to the expectations in the Guidance:

- 1) [Risk Culture and Governance](#) (Question 2) – Policies and operating mechanisms that drive systems toward preventing, mitigating, or adapting to the risks posed by climate change.
- 2) [Risk Management](#) (Questions 3, 4, and 5) – Question 3 covers the process for identifying climate risks. Question 4 covers current or anticipated risks from climate change and how these risks could affect the company’s business. Question 5 covers impact of climate change on investment portfolios.

¹ As practices for managing climate risks are constantly evolving, the term “good practices” is used rather than “best practices.”

² Included in the Appendix.

- 3) Modeling and Scenario Analysis (Question 8) – The use of sophisticated software and practices to address climate change risks, including scenario analysis and stress testing.

Insurers were rated in one of four categories: “Yet to Start,” “Early Stage,” “Making Progress,” or “Good Progress”—and a numeric score was assigned to each rating with 1 as “Yet to Start” and 4 as “Good Progress.” A composite rating was calculated covering the five questions above with equal weights given to all five questions. The composite rating values correspond to the ratings as follows:

- Yet to Start: < 1.5
- Early Stage: 1.5 – 2.5
- Making Progress: 2.5 – 3.5
- Good Progress: > 3.5

In 2022, NAIC updated the Survey to be fully aligned with TCFD. DFS will adapt its analysis methodology accordingly.

2. Application of Disclosure Materials

DFS will continue to conduct yearly reviews of insurers’ Survey responses and other disclosure materials. In general, DFS intends to use the results of its analysis to:

1. Understand insurers’ overall status in identifying, assessing, and managing climate risks,
2. Identify good practices that can be shared with the industry,
3. Support risk-based supervision by identifying insurers that appear to lag, generally or in a specific area, compared to their peers,
4. Verify compliance of the implementation of the supervisory expectations set forth in the Guidance with the existing timeline, and
5. Inform the establishment of future timelines for implementation of the remaining supervisory expectations set forth in the Guidance.

DFS plans to review insurers’ Survey responses due on November 30, 2022, to monitor whether insurers have implemented DFS’s expectations relating to board governance and have specific plans in place to implement DFS’s expectations relating to organizational structure by August 15, 2022. In anticipation of this deadline, DFS’s review of the 2021 responses to Survey Questions 2 and 3 focused on the degree to which insurers have made progress on these expectations.

3. Insurers' Status and Progress on Managing Climate Risks

3.1. Overview across Business Lines

Overall, insurers have taken steps to integrate the consideration of climate risks into their governance frameworks and risk management processes. Insurers rated “Good Progress” have implemented many of the expectations in the Guidance. Many insurers have established board oversight and senior management’s responsibility for managing climate risks and opportunities. Many have also incorporated climate risks into existing ERM functions and processes and have started considering climate risks explicitly in investments and, for P&C insurers, in underwriting. Some insurers have analyzed climate change’s impact on existing risk factors. Some have also conducted climate scenario analysis to varying degrees of sophistication. At the same time, many insurers can do more to assign clear climate-related roles and responsibilities across relevant business functions, formalize and demonstrate with sufficient detail the integration of climate risks into their risk management frameworks, understand how third-party investment managers and model vendors consider climate risks, and advance the assessment of climate risks to be more quantitative.

When weighted by premium, the composite ratings and the ratings for Risk Culture and Governance and Risk Management were around 3 in the “Making Progress” category, as shown in Figure 1. P&C and life insurers were more advanced than health insurers on Climate Risk Management and Modeling and Scenario Analysis. P&C insurers were most advanced in Modeling and Scenario Analysis, which is not surprising given that their liabilities are directly impacted by natural disasters that are often strongly influenced by climate change.

Because more than 15% of the life and health groups/unaffiliated companies and 38% of P&C groups/unaffiliated companies (by number, not premium amount) were new to the Survey in 2021, the progress of the New York insurance industry from 2020 to 2021 is assessed only for those groups/unaffiliated companies that responded in both years.

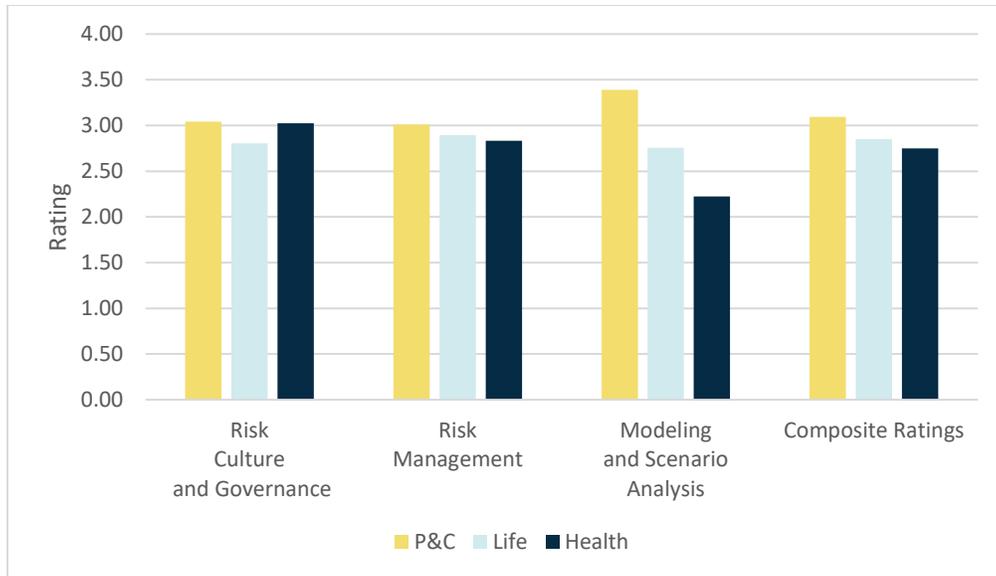


Figure 1. Premium-Weighted Ratings for Insurers Across the Three Themes

Figure 2 and Figure 3 show the composite rating distributions for P&C, life, and health insurers in two ways: (1) the percentages based on the number of groups/unaffiliated companies that responded to the Survey, and (2) the percentages based on the annual countrywide premiums written by those groups/unaffiliated companies. The percentages of groups/unaffiliated companies in the “Good Progress” category based on numbers across all lines of business are smaller than those based on group countrywide premiums. This is because insurers in the “Good Progress” category tend to be part of larger groups and therefore write a greater percentage of premiums. The reverse is true for the percentages in the “Yet to Start” category, as insurers in that category tend to be part of smaller groups or unaffiliated companies.

Despite the general correlation between size and sophistication, there are large groups that were rated much lower than their peers and smaller groups/unaffiliated companies rated higher than their peers. More details of the distribution of ratings can be found in the sections specific to each type of insurer.

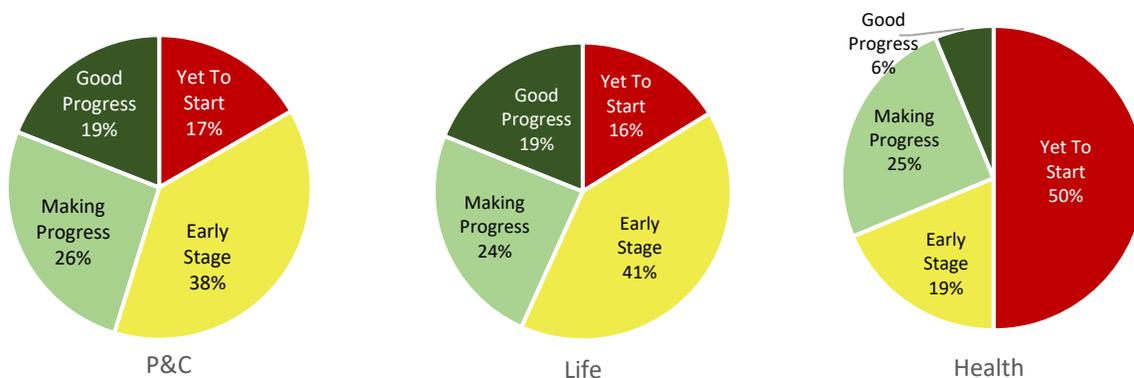


Figure 2. Composite Ratings Across Insurance Lines (Percentage of Groups/Unaffiliated Companies by Number)

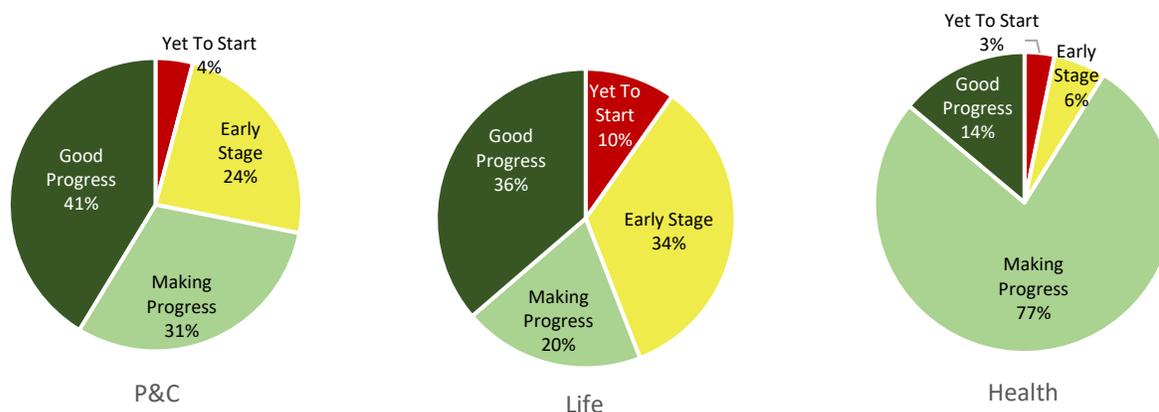


Figure 3. Composite Ratings Across Insurance Lines (Percentage of Groups/Unaffiliated Companies by Aggregate Countrywide Premiums)

Compared to the 2020 responses, the 2021 responses showed that a meaningful portion of groups/unaffiliated companies made progress on the five questions analyzed, especially on Question 5 related to investments. Most of the improvements came from responses rated as “Yet to Start” or “Early Stage” in 2020. Very few rated as “Making Progress” in 2020 improved to “Good Progress.” More details are provided in Section 3.2.

Other observations on insurers’ progress include the following:

- **More insurers designated risk, finance, and/or investment committees of the boards, instead of or in addition to the governance and nomination committee, as responsible for overseeing climate risks**, which showed that climate risks were **mainstreamed** and viewed as impacting the core business rather than a corporate sustainability issue.
- More insurers, including **small- to medium-sized insurers**, started to integrate climate risks into their **existing ERM frameworks**.
- More insurers considered ESG factors in investments. As one indicator, more insurers became signatories of the Principles for Responsible Investments (“PRI”) despite PRI’s new requirement of only allowing insurers’ general accounts to become signatories rather than their affiliated asset managers.
- There was more consistency in the **metrics and targets** that insurers used to assess and manage climate risks.
- More insurers have conducted **climate scenario analysis** or included climate risks in their traditional stress tests. Some have included the process and results of their analysis in their **ORSAs**.
- More companies filed **TCFD reports** in lieu of responding to the eight Survey questions.
- More insurers have committed to **net zero GHG emissions in underwriting and/or investment portfolios by 2050 or sooner**. In addition to being members of the [Net Zero Asset Owner Alliance](#), several insurers have formed or joined the [Net Zero Insurance Alliance](#) in 2021 to support each other in their process of meeting their commitments.

DFS analyzed insurers’ responses to individual questions in the 2020 Survey, as well as their composite ratings, to identify medium to large groups that were laggards relative to their peers of similar premium ranges. Among life insurance groups/unaffiliated companies that were identified as laggards based on their 2020 responses, 38% (by number of groups/unaffiliated companies) improved across more than three questions by one or two rating grades, while another 38% improved across one or two questions. P&C and health groups identified as laggards improved their ratings for one or two questions by one rating grade.

3.2. Analysis by Business Lines

3.2.1. P&C Insurers

Figure 4 shows the distribution of the composite rating categories of P&C groups/unaffiliated companies of different sizes with the percentages being calculated by the number of groups/unaffiliated companies. While more of the largest groups were rated as “Good Progress” or “Making Progress,” a few were rated as “Yet to Start” or “Early Stage.” There were also smaller groups that were highly rated.

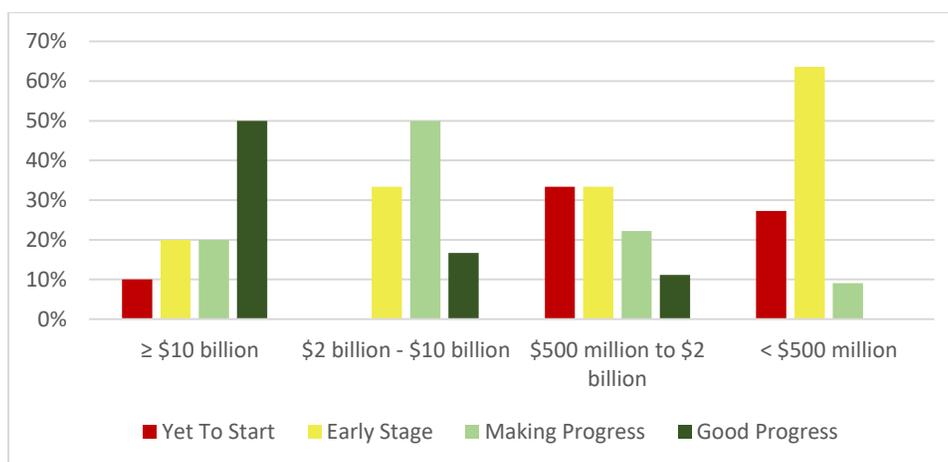


Figure 4. Distribution of Composite Rating Categories of P&C Groups/Unaffiliated Companies by Size (percentages based on the number of groups/unaffiliated companies)

P&C groups/unaffiliated companies that responded in both 2020 and 2021 saw meaningful improvements across all five questions analyzed in this report, as shown in Figure 5. The most significant improvement was found in the responses to Question 5 on climate risks in investments, which happened across all premium volumes. Among the groups/unaffiliated companies whose 2020 responses to Question 5 were rated as “Yet to Start” or “Early Stage,” 33% to 67% in each premium range had a rating increase by one or two as shown in Figure 6.

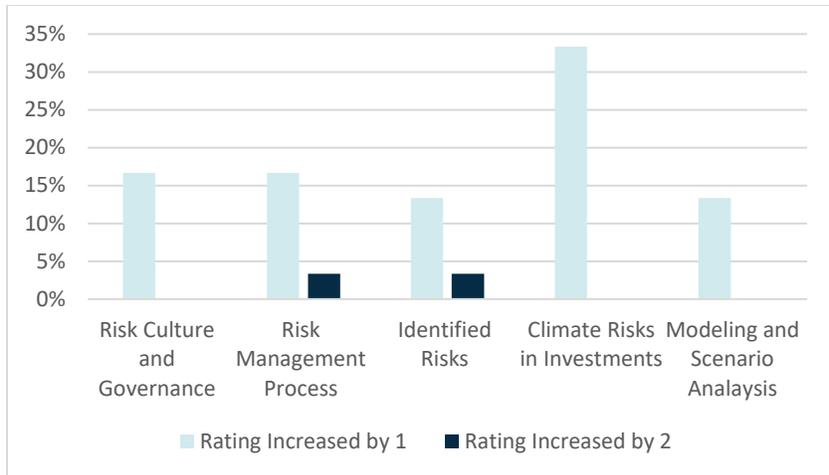


Figure 5. Percentages of P&C Groups/Unaffiliated Companies Whose Ratings Increased by One or Two for the Five Survey Questions from 2020 to 2021

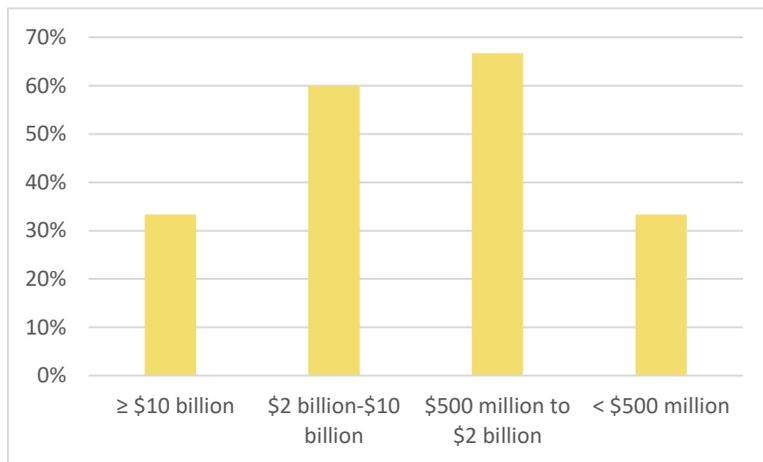


Figure 6. Percentages of P&C Groups/Unaffiliated Companies Rated as “Yet to Start” or “Early Stage” in 2020 that Had a Rating Increase of One or Two in 2021 for Question 5 in Each Premium Range

3.2.2. Life Insurers

Figure 7 shows the distribution of the composite rating categories of life groups/unaffiliated companies of different sizes. Like P&C insurers, larger groups were generally associated with higher ratings, although a few were rated as “Yet to Start” or “Early Stage.”

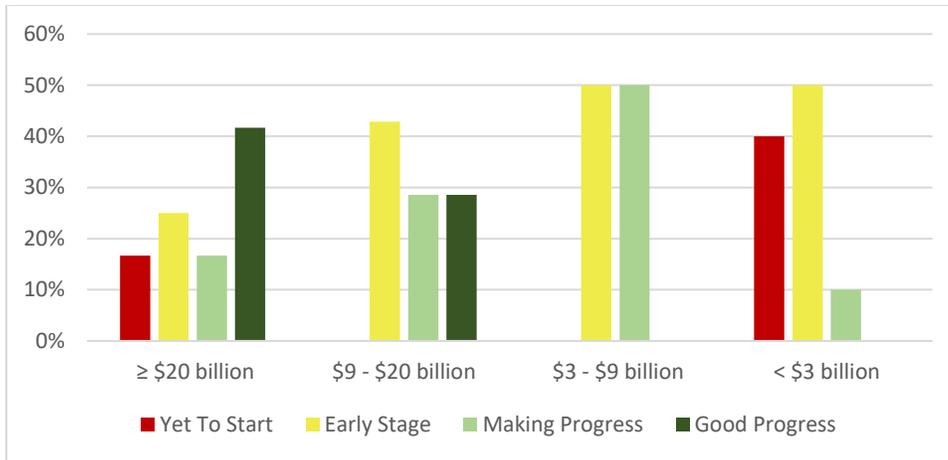


Figure 7. Distribution of Composite Rating Categories of Life Groups/Unaffiliated Companies by Size (percentages based on the number of groups/unaffiliated companies)

Life groups/unaffiliated companies that responded in both 2020 and 2021 also saw meaningful improvements across all five questions analyzed in this report, as shown in Figure 8. The most significant improvement was found in the responses to Question 2 on Risk Culture and Governance, which happened across all premium ranges. Among the groups/unaffiliated companies whose 2020 responses to Question 2 were rated as “Yet to Start” or “Early Stage,” 40% to 60% in each premium range had a rating increase of one or two, as shown in Figure 9.

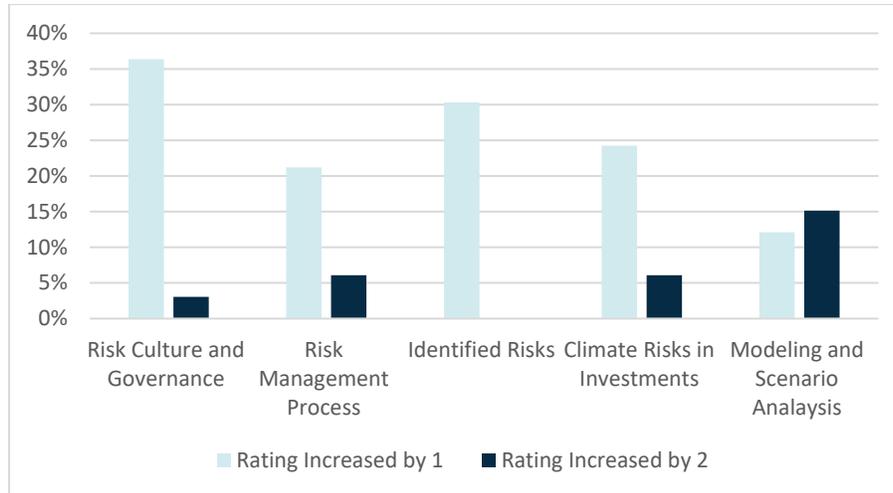


Figure 8. Percentage of Life Groups/Unaffiliated Companies by Number Whose Ratings Increased by One or Two for the Five Survey Questions from 2020 to 2021

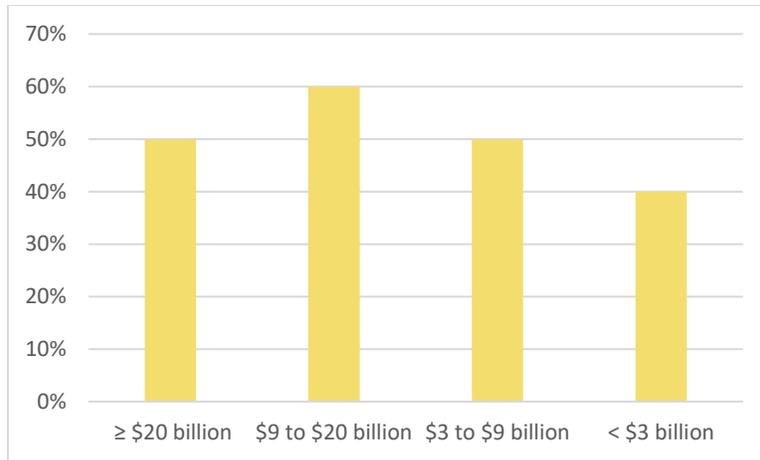


Figure 9. Percentages of Life Groups/Unaffiliated Companies Rated as “Yet to Start” or “Early Stage” in 2020 that Had a Rating Increase of One or Two in 2021 for Question 2 in Each Premium Range

3.2.3. Health Insurers

Figure 10 shows the distribution of the composite rating categories of health groups/unaffiliated companies of different sizes. Only the largest groups were rating as “Good Progress” or “Making Progress.”

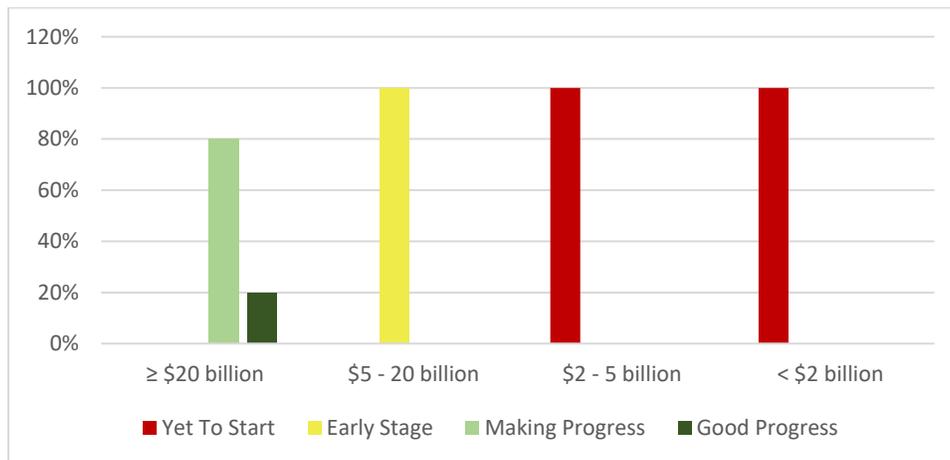


Figure 10. Distribution of Composite Rating Categories of Health Groups/Unaffiliated Companies by Size (percentages based on the number of groups/unaffiliated companies)

Figure 11 shows that health groups/unaffiliated companies that responded in both 2020 and 2021 saw improvements across four out of the five themes analyzed in this report.³ The biggest improvement was found in the responses to Question 3 on Risk Management Process and Question 5 on Climate Risks in Investments. Among the groups/unaffiliated companies whose 2020 responses to Question 3 were rated as “Yet to Start” or “Early Stage,” one was in the larger than \$20 billion premium range and

³ There is no bar for Question 8 on Modeling and Scenario Analysis because there was no improvement in the responses to that question between 2020 and 2021.

another in the \$5 - 20 billion premium range. The ratings of both groups improved by one between 2020 and 2021. A quarter of the groups/unaffiliated companies for the \$2 - 5 billion range improved by one as well, as shown in Figure 12.

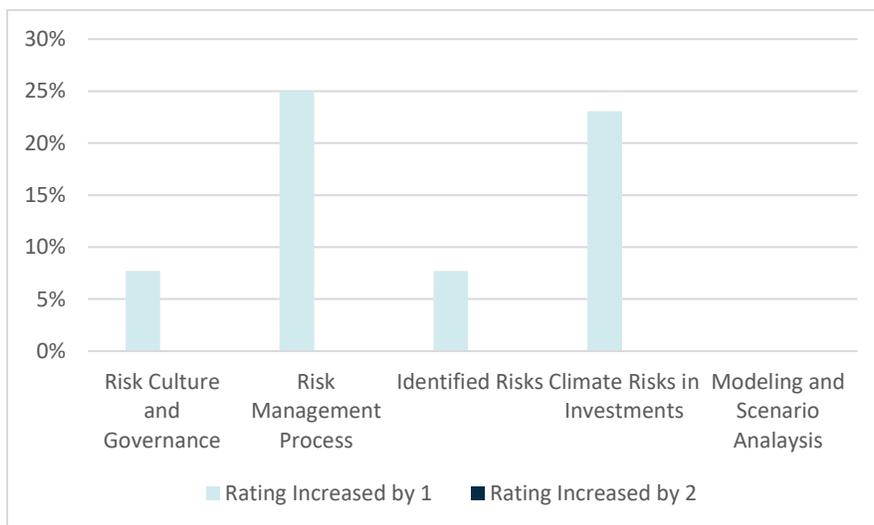


Figure 11. Percentage of Health Groups/Unaffiliated Companies by Number Whose Ratings Increased by One or Two for the Five Survey Questions from 2020 to 2021

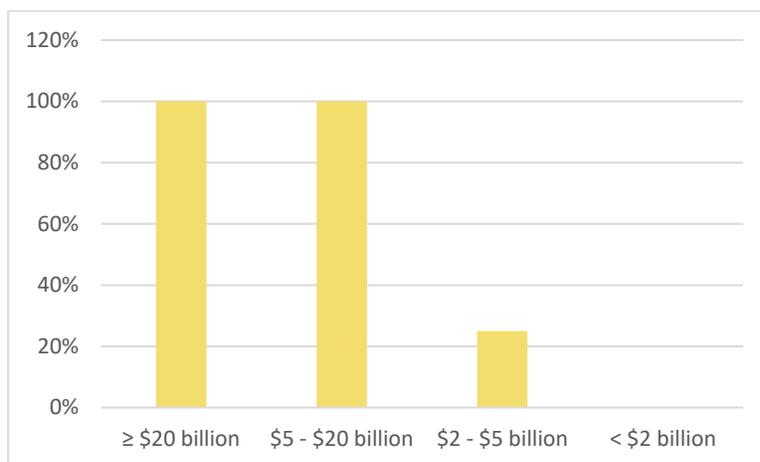


Figure 12. Percentages of Health Groups/Unaffiliated Companies Rated as “Yet to Start” or “Early Stage” in 2020 that Had a Rating Increase of One or Two in 2021 for Question 3 in Each Premium Range

4. Examples of Good Practices

To support insurers’ efforts to manage climate risks, this report provides examples of good practices extracted from insurers’ 2021 responses, along with the expectations in the Guidance that relate to

those practices.⁴ As set forth in the Section 3.1 of the Guidance, DFS expects insurers to take a proportionate approach to managing climate risks, and recognizes that there are differences in size, complexity, business lines, and resources among insurers. Some of the examples described below may not be suitable or practicable for all insurers. The 2021 responses reflect that a growing number of small- to medium-sized insurers are taking steps to integrate the consideration of climate risks into their practices, and examples of those practices are highlighted below in blue. Health insurers are, in the aggregate, at an earlier stage in managing climate risks. To illustrate their progress, examples of good practices from health insurers are highlighted in green.

4.1. Risk Culture and Governance

4.1.1. Board Governance

DFS Expectation – DFS expects each Insurer to **designate a member or committee of the board** as responsible for oversight of the insurer’s management of climate risks... DFS also expects each Insurer to **designate one or more members of its senior management** as responsible for the insurer’s assessment and management of climate risks. [3.6.1. Board Governance, Paragraphs 34, 35]

Example 1 – Board and Senior Management Structure for Climate Risks

- Leading insurers across all lines of business created or designated appropriate committee(s) of the board as responsible for overseeing the management of climate-related risks and opportunities. Examples of such board committees included risk, finance, investment, audit, or nominating and governance committees.
- For senior management, Chief Risk Officers were often the senior management function designated as responsible for managing climate risks and reporting into the corresponding board committee(s). This designation helped to embed such responsibility within the ERM function. For life insurers, where climate risks could have a material impact on investments, Chief Investment Officers were sometimes designated as the relevant senior management function.

DFS Expectation – As climate change could impact multiple business units and require expertise from multiple functions... [one] option is to have a **cross-functional committee** of senior management charged with understanding the changing risk landscape and identifying potential ways to address climate risks. [3.6.1. Board Governance, Paragraph 35]

Example 2 – Cross-Functional Committee Structures

- In a life group, climate change is considered an ERM issue with cross-functional representation. **“Our risk management framework provides strong governance through**

⁴ As the Survey responses and other climate-related disclosures may not capture all the actions that insurers take in managing climate risks, and this report does not contain an exhaustive list of good practices based on those disclosures, not all the expectations in the Guidance have corresponding examples of good practices.

multiple Board and senior management risk committees. The senior management risk committees are established at the enterprise, regional and local levels, as needed, to oversee capital and risk positions, approve asset liability management strategies, and establish certain corporate risk standards. The risk committee structure is designed to provide a consolidated enterprise-wide assessment and management of risk. **The senior management risk committees are comprised of senior leaders from the lines of business and functional areas as appropriate... which ensures comprehensive coverage and sharing of risk reporting.”**

- A health group manages these risks through the ERM Committee, led by its Chief Risk Officer. It provides periodic updates to the Audit Committee of the board of directors.
- A multiline group established an **Emerging Risk Forum “to monitor, assess and analyze climate-related risks,** among other key emerging risks facing the company. The forum is comprised of ... **subject matter experts from across many global geographies and functions** and conducts horizon scanning intended to facilitate cross-functional dialogue, improve information flow across the company, catalyze risk management action and spark product innovation. Within its mandate, the forum considers a range of risks ... associated with climate change, including climate-related insurance liabilities, transition risks and investments.”
- In addition to its cross-functional executive risk management committee, one medium-sized life insurer **established a sustainability working council with membership across key functions and business areas** to recommend and oversee action on sustainability issues, including climate change. Another medium-sized life group **established a Climate Risk working group to develop a detailed strategy with respect to climate risk, and further develop metrics, limits, and overall risk appetite,** while its **cross-functional emerging risk committee** reports to the **executive Risk Committee and board** as part of its ERM function.

4.1.2. Organizational Structure

DFS Expectation – DFS expects insurers to manage climate risks through their **existing enterprise risk management functions,** including risk assessment, compliance, internal control, internal audit, and actuarial functions (collectively, “control functions”) ... and implement reliable risk management processes across lines of business, operations, and control functions, with clear steps to ensure the effectiveness and adequacy of **climate risk integration.** [3.6.3. Organizational Structure, Paragraph 40]

Example 3 – Risk Management Functions

- A P&C group stated that it “identifies, assesses, mitigates, reports and monitors material risks, including climate change, **through our integrated Enterprise Risk and Return Management (ERRM) program.** This enables holistic management of key risks and incorporates risk and return management into our business model. The ERRM program **includes our risk appetite statement, Risk and Return Principles, key risk and return**

categories, governance, modeling, analytics, and transparent management dialogue. Risks that are considered material are escalated to senior management and the Board.”

- A small P&C group “has a process for identifying climate change-related risks and assessing the potential business and financial effects such risks may present. **Risk identification and assessment activities take place as part of the enterprise risk management (ERM) program.** Part of this process includes consideration of the likelihood and potential impact of each key risk. We **include climate change within emerging risks, one of the top risks we review and provide quarterly updates** to our senior management and Risk Committee of the Board. **Climate change and emerging risks are topics on the agenda for each monthly meeting of our Enterprise Risk Management Working Committee.**”
- After formally **incorporating climate change as an “emerged risk” into risk management processes,** a medium-sized life group's **second line of defense,** Corporate Risk & Compliance, “**launched an effort to further deepen and expand our assessment of climate risk across enterprise activities,** including board- and management-level governance, internal policy, risk assessment processes, monitoring, and scenario planning.”

4.2. Business Models and Strategies

Leading insurers consider the medium- to long-term impact from climate risks to inform their strategies – not only to adapt to climate change but also to take advantage of insurers’ expertise and provide solutions. Some insurers have included as part of their strategies proactive support of the low-carbon transition and customer resilience through their core businesses. For example, some insurers set short-, medium-, and long-term goals in investments and/or underwriting in renewable energy, and/or restrictions or divestment from carbon-intensive sectors or projects. In addition to being members of the [Net Zero Asset Owner Alliance](#), several insurers also formed the [Net Zero Insurance Alliance](#) to transition their insurance and reinsurance underwriting portfolios to net-zero GHG emissions by 2050. Leading insurers consider ESG criteria when making investments and view this approach as providing a strategic advantage.

DFS Expectation – DFS expects insurers to be aware of potential changes in their business environment and to **address these risks strategically.** Insurers should consider questions such as: which business areas are exposed to physical or transition risks; the materiality of the risks; [and] **whether affected areas should be continued, scaled back, or adapted...** Insurers can also play an active role in **supporting the low-carbon transition.** DFS encourages insurers to develop strategies to engage with their customers and the companies in which they invest on climate and sustainability issues and to urge those customers and companies to develop transition plans with science-based targets, adapt to climate-related risks, and move toward climate-resilient business models. [3.7. Business Models and Strategies, Paragraphs 41 and 45]

Example 4 – ESG Policy Informs Investment Strategy

- A multiline group stated that it will cap the “Warming Potential”⁵ of its investments to under +1.5°C by 2050. This long-term target is accompanied by an **interim investment-related carbon footprint target** of 20% reduction between 2019 and 2025. It has also implemented a green investment target by 2023 and launched a “Transition Bond” asset class. It plans a medium-term total exit from the coal industry, backed by strict investment and underwriting restrictions, as well as other carbon-intensive industries. It has also **integrated ESG factors into its internal credit ratings** for fixed income investments.
- One medium-sized life group has **established an ESG risk framework and policy that sets investment criteria and standards for engagement** and has taken steps to more effectively incorporate ESG factors into its investment process: “As part of the implementation of the ESG Policy, a cross-functional ESG Committee consisting of representatives from the ...corporate risk, corporate responsibility, legal, compliance, and procurement departments as well as [its affiliated investment manager] analyzes data procured from a specialized ESG data vendor to develop an **ESG Policy Restricted List comprising companies that do not meet our threshold criteria on selected ESG factors**. Environmental factors taken into account include biodiversity and land use, energy and climate change, water stress, and toxic emissions and waste. **The ESG Policy Restricted List has implications for the Companies’ general account investment portfolios as well as their relationships with suppliers and other constituencies**. A portfolio company’s presence on the restricted list can result in a range of actions that may include, for example, divestment, prohibition of new investments or positive engagement with the restricted issuer to attempt to influence its policies.” The group has also identified **climate-related investment opportunities**, leading to investments in green bonds and a variety of renewable energy projects **“based on its standard underwriting criteria and the Companies’ risk/return parameters.”**
- Another medium-sized life group monitors its investment portfolio for climate-related risks and takes steps to diversify and strengthen the resilience of its investment portfolio against climate change: “As an investor of policyholder funds, the Company’s ultimate goal is to fulfill its fiduciary responsibility to invest assets in a prudent manner to meet present and future policyholder obligations, and to maximize the long-term financial return on invested assets. **Integrating ESG factors into investment practices is critical to this responsibility, as we believe this leads to better decisions with respect to the sustainability of an investment and its risk and return profile**, while helping to make a positive financial and social impact. The Company is monitoring its investment portfolio in view of climate-related risks. In this regard, the Company is **taking proactive steps to diversify and strengthen the resilience of its**

⁵ The warming potential is a portfolio-level impact based on a company-level assessment of the intensity of GHG emissions relative to various temperature targets. More information can be found in [Changing Course: A comprehensive investor guide to scenario-based methods for climate risk assessment, in response to the TCFD](#), United Nations Environmental Programme Finance Initiative, May 2019. This insurance group’s approach considered both companies’ absolute and sector-relative contributions to global warming. DFS’s report [An Analysis of New York Domestic Insurers’ Exposure to Transition Risks and Opportunities from Climate Change](#) used a similar approach, without aggregating the temperature alignment at a portfolio level, to arrive at a single number.

investment portfolio against climate change, including continuing to reduce exposure to the coal, oil and gas, and the metals and mining sectors, while increasing investments in alternative energy sources.”

Example 5 – Climate-Related Opportunities in Underwriting Product Development

- A P&C group provides insurance for clean tech companies and renewable energy products and is taking advantage of business opportunities related to new areas of regulatory focus. “[Our] risk appetite, expertise and financial strength enable the company to assume a leadership position in insuring the developing areas of regulated GHG emissions, enhancements to existing products or entirely new product lines required by the potential for increased regulation of greenhouse gases globally, as well as emerging related exposures, such as directors and officers and professional liability.”
- Recognizing that climate change may create opportunities, a multiline group has expanded its "Climate Change Resilience Services" advisory team of climate experts to help clients "tackle their climate change risk and better understand how it might affect their operations, strategy and financial position." It also has expanded its product lines to meet demand arising from transition to a low-carbon economy, such as customized insurance for electric vehicles and renewable power installations.

4.3. Risk Management

Leading insurers continue to develop and enhance frameworks for identifying, assessing, monitoring, managing, and reporting climate risks as part of their ERM programs. Leading insurers across all lines of business are integrating consideration of climate risks into their control functions. This approach is utilized by companies of all sizes.

DFS Expectation – Insurers and other entities that are required to have ERM functions are expected to **address climate risks through their existing ERM functions** and in line with their board-approved risk appetites. [3.8.1. Risk Management Framework, Paragraph 46]

Example 6 – Climate-Related Risk Management Processes

- In connection with its ongoing identification and evaluation of climate change risk, a health group “**regularly reviews the ongoing risks and opportunities related to energy and climate impacts, and other environmental sustainability topics of a material nature to [its] business and its stakeholders.** As part of the periodic ERM updates with the ERM (Enterprise Risk Management Committee) and the Audit Committee, [it] **conducts an exercise to identify and assess its top enterprise risks,** as well as other material and relevant enterprise risks, **which may encompass climate change related risks and opportunities.** As part of this activity, the ERM team facilitates discussions with risk owners to review and assess these enterprise risks. This exercise is intended to consider both conventional and emerging risks. **Once these assessments have been completed, the results are summarized and presented to the ERM and the Audit Committee.** This process

allows for various levels of management to review and provide feedback on the assessments of potential risk impacts, risk velocity, risk mitigation efforts, and risk management maturity.”

- As described by a multiline group, “[e]arly warning indicators are monitored and regularly reported to senior management through **risk dashboards, risk capital allocation and limit consumption reports to identify when climate aspects become material**. Supplemented by quarterly updates, senior management decides the risk management strategy and related actions.” The group also conducts “yearly Top Risk Assessment which helps to identify and remediate significant threats to financial results, operational viability, reputation and delivery of strategic objectives, regardless of whether they can be quantified or not.... **Climate-related factors are included in Top Risk Assessments conducted at operating entity and Group levels.**”
- A medium-sized life group states that “[s]enior management who sit on the **ERM committee, are updated quarterly on all current and emerging risks including climate change**. A sustainability working council of leaders across key functions and business areas throughout the enterprise was established to recommend and oversee sustainability issues, including climate change. **As climate-related risks materialize, ‘risk owners’ are identified and charged with providing the relevant committees with regular updates on changes to the inherent risk level and the status of mitigating initiatives.**”

DFS Expectation – Insurers should have a **process in place that identifies and prioritizes** all reasonably foreseeable and relevant material risks, including climate risks. [3.8.1.1. Risk Identification and Prioritization, Paragraph 47]

Example 7 – Risk Identification Process

- A multiline group’s ERM function “**helps integrate the climate-related risk identification, assessment, quantification, management, monitoring, reporting and mitigating in each LOB, provides senior management with a consolidated view of [its] key risks, and supports embedding of risk management in business processes and in identifying, assessing, quantifying, managing, monitoring, reporting and mitigating [its] risk exposures**, including risks related to changing climate conditions, and tracking societal changes that could impact operations and elevate reputational risks... We conduct risk identification through a number of processes at the business unit and corporate level focused on capturing our material risks. A key initiative is our **integrated bottom-up risk identification and assessment process** which is conducted at the product-line level. In addition, we perform an **annual top-down risk assessment to identify top risks and assign owners** to ensure these risks are appropriately addressed and managed.”
- A life group reported utilizing “an operational risk framework to identify a broad range of risks and their financial and non-financial impact to operations. **These frameworks are subsets of our Enterprise Risk Management program, which includes the requirement to**

periodically identify current and emerging threats and risks, conduct risk and business impact assessments, and determine mitigations when the risk level is considered unacceptable.”

- A health group described its risk identification process as follows: **“The enterprise risk framework and risk catalog are established to identify and proactively monitor, measure and avoid risks, including any climate-related issues.** [The Company] evaluates risks including, but not limited to, pricing, operational, strategic, regulatory, and financial markets risks; climate change factors are integrated into this list depending on relevancy and impact, such as extreme weather events or environmental regulations.”
- In connection with its Enterprise Risk and Return Management program, a P&C group stated that **“Risks and return opportunities are evaluated across six key categories (strategic, insurance, financial, investment, operational, and culture) with climate impacting all six areas.** Increased severe weather has raised loss costs for auto and homeowners insurance, requiring changes in pricing, product coverages, underwriting practices and reinsurance utilization. Impacts will continue to evolve due to the increasing effect of severe weather driven by climate change. Physical and transition risks exist within the investment portfolio, along with opportunities associated with ‘green’ investments and emerging technologies.”

DFS Expectation – DFS expects an insurer’s **control functions**, including risk management, information technology, compliance, internal audit, and actuarial functions, to be integrated for purposes of managing climate risks, to report climate risk issues in a coordinated manner, and to have the appropriate resources and expertise to support their consideration of climate risks. Insurers can use the **“Three Lines of Defense”** model described in the NAIC Financial Condition Examiners’ Handbook or a similar system of checks and balances that is effective and integrated into the insurer’s material business processes. [3.8.1.3. Risk Management and Controls, Paragraph 52]

Example 8 – Integration of Control Functions and Three Lines of Defense

- A multiline group reported that “[c]limate-related risks are addressed as part of an **overarching qualitative and quantitative risk reporting and controlling framework**:
 - As a general principle, responsibility for the **‘First Line of Defense’** ... rests with business managers in the related undertaking. They are responsible for the risks taken and the returns from their decisions.
 - The **‘Second Line of Defense’** consists of independent global oversight functions. These are Risk, Actuarial, Compliance and Legal, which support the Group Board of Management in defining the risk frameworks within which the business can operate.
 - Group Audit forms the **‘Third Line of Defense’**, independently and regularly reviewing risk governance implementation and compliance with risk principles, performing quality reviews of risk processes, and testing adherence to business standards, including the internal control framework.”

- A life group described its risk and control framework as “a **Three Lines of Defense model where everyone is responsible for risk management**. Under this model, the Lines of Business (‘LOB’) and functional management are the first and primary line of defense in identifying, measuring, monitoring, managing, and reporting on risks. Global Risk Management (‘GRM’), which includes Corporate Ethics and Compliance (‘CEC’), forms the second line of defense providing strategic advisory services and effective challenge and oversight to the first line of defense. Internal Audit (‘IA’) serves as the third line of defense, providing independent assurance and testing over the risk and control environment and related processes and controls.”

DFS Expectation – Consistent with the ORSA Manual, DFS expects the **ORSA to describe how the insurer identifies, categorizes, manages, and monitors climate risks**, as well as the insurer’s climate-related **assessment tools and methods** of incorporating new climate risk information to monitor and respond to changes in the insurer’s risk profile due to economic changes, operational changes, or changes in business strategy. [3.8.3. ORSA, Paragraph 69]

Example 9 – Considering Climate Risks in the ORSA

- As part of its ORSA process, a P&C group supplemented climate scenarios developed by the Network for Greening the Financial System to better reflect the company’s own risk profile, especially in the context of physical risk.
- A small life group conducted top-down stress and scenario testing (on earnings and capital), using three climate scenarios, in order “to illustrate potential exposure to [the Company’s] balance sheet from climate-related risks, evaluating potential effects on strategic and financial position as well as identifying options for managing the identified risks and opportunities. While our stress testing is typically conducted over a 5-year time horizon, the climate change scenario is projected over an extended time horizon (using a high-level top-down approach over ~50 years). Results of this stress testing have been summarized in the Company’s ORSA report.”

4.4. Modeling and Scenario Analysis

Leading insurers conduct climate scenario analysis on both underwriting (for P&C insurers) and investments over a range of time horizons and pathways. They develop or enhance models and a broad range of data to assess climate risks. Some P&C insurers also customize catastrophe models to be more forward looking and analyze underwriting scenarios over decades.

DFS Expectation – Insurers should also conduct scenario analysis to inform their strategic planning and determine the impact of climate risks on their overall risk profile and business strategy. Scenario analysis should be used to explore the resilience and vulnerabilities of an insurer’s business model to a range of outcomes. [3.9. Scenario Analysis, Paragraph 73]

DFS Expectation – Insurers should consider the impact of climate risks on their assets and liabilities as part of their scenario analyses, including the following factors to the extent that they are material:

- a. the impact of physical and transition risks,
- b. the evolution of climate risks under various scenarios, including multiple carbon emissions and temperature pathways, different transition paths to a low-carbon economy, as well as a path where no meaningful transition occurs,
- c. the fact that climate risks may not be fully reflected in historical data, and
- d. how climate risks may materialize in the short, medium, and long term depending on the scenarios considered. [3.9. Scenario Analysis, Paragraph 74]

Example 10 – Use of Climate Scenarios Analysis to Set Business Strategy and Assess Underwriting and Investment Risks

- A small P&C group has **partnered with academic and insurance experts** to develop models that help incorporate assessment of climate risk into its underwriting processes. This effort is focusing on a **“merger of Climate models and CAT models”** to assess the impact of climate change on hurricane risk to the company’s property portfolio, as well as producing a **“climate conditioned view of hurricane wind and surge risk** representing potential increase in the frequency of major hurricanes due to climate change.” The objective is to produce **“loss estimates to five deterministic scenario hurricane events representing possible future events impacting the Northeast.”**
- A P&C group also integrates climate considerations into its catastrophe modeling approach: **“The Company uses both internal and third-party models to estimate the potential loss to insured exposure resulting from various catastrophe events and the potential financial impact those events would have on the Company’s financial position and results of operations across its businesses. The Company calibrates its analytical tools to recognize both historical experience and expectation regarding the impact of climate change over the short, medium, and long-term including climatic conditions and catastrophe modeling firms’ proprietary research. The dynamics of climate change and severe weather impact various underwriting and pricing activities across the enterprise. Catastrophe modeling and other analytical tools incorporating climatic assumptions are significant inputs into pricing and underwriting the insurance policies issued by the enterprise, as well as capital requirements.”**
- A medium-sized life group uses stress testing and scenario analysis, among other approaches, **“assesses the financial impact and probability of risks, including climate change, natural disasters, epidemics and related risks. We consider these risks as part of our economic capital calculation, and we utilize stress testing and scenario analysis for risk management and to shape our business, financial and strategic planning activities... We also incorporate environmental risks into our group underwriting process by setting concentration thresholds related to several factors, including natural disaster risks.”** As part of a TCFD assessment, an external consultant **modeled climate change impacts of the**

transition risk in the company’s investment portfolio as well as the climate change impacts on its underwriting practices, using 2°C and > 2°C scenarios across multiple time horizons, based on scenarios developed by the International Energy Agency.

- A health group “evaluated the climate-related scenarios and the level impacts to our company based on a 2-degree scenario (where companies and governments transition to a low carbon economy) and 4-degree scenario (where ‘business as usual’ is maintained) ...**The inputs used in our climate-related scenarios were based on the TCFD physical and transition risk categories.** We assume physical risks would be more prevalent within the 4-degree scenario. However, physical risks, including extreme weather events would still exist in a 2-degree scenario, but would be less severe. [Its] new next generation environmental targets provide the company with a path to support long-term decarbonization of operations and the procurement of renewable energy... **Based on the findings from considering both qualitative and quantitative scenarios related to climate change, we have established environmental targets, identified emissions-reduction projects, pursued LEED certification and ENERGY STAR building ratings, and invested in renewable energy.”**
- A P&C group is implementing scenario analysis to understand its underwriting exposure to both physical and transition risks: “we are also working to develop more forward-looking views of risk, **regularly stress-testing scenarios for the next 10-30 years**, to ensure the best possible coverage and risk mitigation strategies for our policyholders and our businesses. **By looking at a decades-long time horizon, we are better able to project and account for extreme scenarios**, like changes in tropical cyclone frequency and intensity. This type of stress testing **informs [the company’s] understanding of the financial impacts (earnings, capital and liquidity) of various scenarios and combinations of scenarios, allowing for increased confidence that the current portfolio of exposures does not result in a capital or liquidity impact that exceeds established tolerances.**” With respect to transition risks, it has implemented a “climate risk assessment conducted every six months, which assesses climate risks to different business areas over a 30-year horizon, based upon three speed of policy action scenarios (i.e., early policy, late policy, no policy).”

4.5. Metrics and Targets

The Guidance references metrics in several places. For example:

DFS Expectation – Insurers should consider climate risks in setting their risk appetite, tolerances, and limits. Insurers may apply appropriate quantitative tools and metrics and qualitative statements to help establish clear boundaries and expectations for risks that are hard to measure. [3.8.1.2. Risk Appetite, Tolerances, and Limits, Paragraph 48]

Example 11 – Climate-Related Metrics and Targets

Examples of good practices for **investments** include **time-bound targets or disclosed metrics** such as:

- dollar amount or share of issuers' revenues in green investments, transition bonds, or other climate solutions,
- carbon footprint of investment portfolio (in tons of CO₂-equivalent/\$),
- tons of CO₂-equivalent emission avoided (in tons of CO₂-equivalent),
- percentage reduction in carbon footprint of investment portfolio, or by asset class or sector (in %),
- implied warming potential of the investment portfolio (in °C),
- transition risk cost as a percentage of revenue affected under certain temperature scenarios (in %),
- loss in the real asset portfolio due to physical risks such as floods and windstorms (in % or \$), and
- climate value at risk (\$ or % of portfolio).

Example 4 above illustrates a number of these approaches, which are used to inform a group's investment strategy.

Examples of good practices for **underwriting targets** include:

- threshold of revenue generated from underwriting fossil fuel businesses,
- revenue generated from sustainable solution products, and
- number of sustainable solution products.

5. Conclusion

The 2021 responses showed that, although insurers have made progress in their assessment and management of climate risks since 2020, a wide range of sophistication still exists.

- The composite ratings indicate on average the industry was in the "Making Progress" category. Insurers in the "Good Progress" category have implemented many of the expectations in the Guidance.
- More insurers, including small- to medium-sized insurers, have started to integrate climate risks into their existing ERM frameworks, and ESG factors into investments. Most of the progress has been made by insurers whose 2020 responses were rated as "Yet to Start" or "Early Stage." While recognizing that going from "Making Progress" to "Good Progress" takes much more effort than getting started, insurers that have made progress in climate risk management should continue to advance their work.
- Insurers can do more on assigning clear climate risk-related roles and responsibilities, formalizing the integration of climate risks into risk management frameworks, and evolving the assessment of climate risks to be more quantitative.

DFS will review insurers' 2022 Survey responses, due on November 30, 2022, to monitor whether insurers have met the Guidance's expectations on board governance and organizational structure.

There are public resources that insurers can use to assist and accelerate their progress, such as the Basel Committee on Banking Supervision's [Climate-related financial risks – measurement methodologies](#) and United Nations Environmental Programme Finance Initiative's [Charting a New Climate](#), [The Climate Risk Landscape](#) and [The Climate Risk Tool Landscape 2022 Supplement](#), containing information on available data and tools for assessing physical and transition risks. DFS has organized webinars for insurers that cover climate-related governance and organizational structure, as well as climate-related data and tools. Among other resources, recordings of these webinars, as well as DFS's report analyzing insurers' exposure to transition risks and opportunities, are available on DFS's [Climate Change webpage](#).

Appendix – Rating Framework of Insurers’ Survey Responses

Question	Yet to Start	Early Stage	Making Progress	Good Progress
Q1: Internal GHG emission management	Little effort made to reduce emissions.	No formal plan for emission reduction. Efforts made to reduce emissions. No targets or metrics to track progress.	Has a plan for emission reduction that accounts for operational needs and business structure. No clear emission targets or metrics to track progress.	Has a detailed plan for emission reduction that accounts for operational needs and business structure. Emission targets set and progress is tracked.
Q2: Climate policy and governance	No climate policy. Does not view climate change as a risk to the company and does not have analysis to support that position. Governance structure or senior management function (“SMF”) does not consider climate risks. Climate risks not part of ERM.	No climate policy but considers climate change in risk management. Board and SMF not engaged in accountability structure. Climate change is an ERM issue, but only as an operational risk. Has not established climate-related lines of responsibility below SMF.	Has a climate policy. Insurer or insurer’s group has designated a board member or committee, and a SMF, to be responsible for climate risks. Has an internal committee to identify and address climate risks, but committee is not fully cross-functional, or the committee structure is set up but still missing lines of responsibility for climate risks. Limited information provided on climate-related lines of responsibility below SMF.	Has a clear and detailed climate policy. Insurer or insurer’s group has designated a board member or committee, and a SMF in risk, underwriting, and/or investments to be responsible for climate risks. Has an active internal cross-functional risk committee to identify and address climate risks that includes at least underwriting (for P&C) and investment functions. Climate risks fully integrated into ERM process. Details provided on climate-related lines of responsibility below SMF.
Q3: Process for identifying climate risks and impacts on your business	No process in place to identify or assess climate risks. Identification done ad hoc, or responsibility assigned to a third-party.	Process of risk identification and assessment is in place but unclear whether the process addresses climate risks, and details on the process are insufficient. Risk identification and management cover only physical risks or only liabilities for P&C insurers.	Process of climate risk identification and assessment is in place and imbedded in ERM. Some information provided on the process, data, and models used, and which business areas or product lines are considered. Risk identification and management cover only physical risks or only liabilities for P&C insurers. Broad recognition of physical and/or transition risks without linking them to its business.	Process of climate risk identification and assessment is in place and imbedded in ERM and the risk appetite framework. Details on organizational structure, processes, data, and models are provided. Describes how assessment of climate risks informs business strategies and risk mitigation strategies. Impacts of climate risks on branded risk factors beyond operational and reputational risks analyzed. Risk identification and management cover both

				physical and transition risks, and both assets and liabilities.
Q4: Current or anticipated climate risks	Climate risks not identified, and no explanation provided as to why climate change does not pose a risk to the insurer.	Impact of climate risks on some risk factors identified without providing details. Climate risks on investments not considered. Geographic information missing (for P&C insurers).	Some information on impact of climate risks on some branded risk factors and lines of business provided. Geographic information missing (for P&C insurers). Impact of climate risks on investments recognized. Limited information on measures taken to address climate risks provided.	Details on the impact of physical and transition risks on many branded risks factors and various lines of business provided. Geographic details provided (for P&C insurers). Impact of climate risks on investments articulated. Details on measures taken to address climate risks provided.
Q5: Climate risks on investment portfolio?	No consideration of climate risks in investments and no explanation provided as to why the investment portfolio is not exposed to climate risks.	Recognizes climate risks in investments but does not have a separate process for considering them or provides little information on process, data and model, and asset classes. Views climate risks to investments as playing out only in decades.	Considers climate risks in investments and provides some information on the process, data and models, and asset classes. No clear expectations for external managers (if used) regarding climate risks. No metrics or targets in measuring climate risks or opportunities.	Provides details on how climate risks are considered in the investment process and for different asset classes, and describes the data and models used. Has clear expectations for external managers (if used) regarding climate risks. Has metrics and targets in measuring climate risks or opportunities. Often considers interaction between underwriting and investments for P&C insurers.
Q6: Steps to encourage policyholders to reduce climate-related losses (only for P&C insurers)	Has not taken steps to encourage policyholders to reduce climate-related losses.	Provided limited information on steps taken to encourage policyholders to reduce climate-related losses without details on engagement methods or incentives.	Provided some information on steps taken to encourage policyholders to reduce climate-related losses with some information on engagement methods and incentives.	Provided details on steps taken to encourage policyholders to reduce climate-related losses with information on engagement methods and specific incentives. Often has a process for measuring the success of client mitigation efforts.
Q7: Steps to engage key constituencies on the topic of climate change	Has not taken steps to engage constituencies on the topic of climate change	Provided limited information on steps taken to engage constituencies on climate change.	Provided some information on steps taken to engage key constituencies, support research, and engage in public education on climate change.	Provided details on steps taken to engage key constituencies, support research, and engage in public education on climate change. Takes part in industry networks dedicated to the topic of climate change nationally and/or internationally.
Q8: Modeling and scenario analysis	Has not taken actions to	Provided limited information on the models used for	Provided some information on the analytical, catastrophe (for P&C insurers), and risk modeling	Provided details on sophisticated analytical, catastrophe (for P&C insurers),

	<p>model climate risks.</p>	<p>assessing climate risks.</p> <p>No mention of forward-looking data or models.</p>	<p>techniques to assess climate risks.</p> <p>Mostly relies on third-party data and model vendors.</p> <p>No mention of forward-looking data.</p> <p>Has not conducted climate-related scenario analysis or stress tests with a long time horizon.</p>	<p>and risk modeling techniques to assess climate risks.</p> <p>Systematically considers climate risks for various geographical locations of business or investments.</p> <p>Often forms its own view of climate risks rather than relying on third-party data and models.</p> <p>Used forward-looking data or models.</p> <p>Often conducted climate-related scenario analysis or stress tests with a long time horizon and provided details on results.</p> <p>Discussed impacts of climate risks on capital (for P&C insurers).</p>
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Table 1. Framework for Rating Insurers' Responses