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November 15, 2021

Steven E. Seitz
Director
Federal Insurance Office (FIO)
U.S. Department of the Treasury

Attention: Elizabeth Brown, Senior Insurance Regulatory Policy Analyst
FR Doc. 2021- 18713

Dear Director Seitz:

On behalf of the Climate Change Joint Task Force with the American Academy of Actuaries,¹ I appreciate this opportunity to provide the following comments regarding the Federal Insurance Office (FIO) request for information (RFI) on the FIO's future work relating to the insurance sector and climate-related financial risks, as noticed by the Treasury Department in the *Federal Register* on August 31, 2021. Our responses to select questions are organized according to the order posed in the Notice.

Executive Order on Climate-Related Financial Risk

- 1. Please provide your views on how FIO should assess and implement the action items set forth for FIO in the Executive Order on Climate-Related Financial Risk.*

We suggest FIO first take the description of action items in the Executive Order and map to measurable goals, define the information that is needed to have a baseline for measurement, and put in place a means to monitor improvement. The next step is to work on a plan to encourage implementation of practices that will measurably move from the baseline toward the goals.

FIO's Initial Climate-Related Priorities

- 2. Please provide your views on FIO's three climate-related priorities and related activities, particularly with regard to whether there are alternative or additional priorities or activities that FIO should evaluate regarding the impact of climate change on the insurance sector and the sector's effect on mitigation and adaptation efforts.*

FIO has articulated three very broad goals that can encompass most aspects of what insurers do. It would be helpful if FIO could consider a refinement of the definition of its goals to focus them so various stakeholders are in a position to understand and respond to FIO's priorities. In addition, the goals should point toward measurable items such that progress can be articulated,

¹ The American Academy of Actuaries is a 19,500-member professional association whose mission is to serve the public and the U.S. actuarial profession. For more than 50 years, the Academy has assisted public policymakers on all levels by providing leadership, objective expertise, and actuarial advice on risk and financial security issues. The Academy also sets qualification, practice, and professionalism standards for actuaries in the United States.

providing a baseline and movement.

In order to better facilitate measurable progress toward the goals, FIO might instead articulate the priorities as follows:

Insurance Supervision and Regulation. Assess gaps in the overall supervision of the insurance industry in regard to the stability of the insurance sector related to climate impacts. Areas of focus for this assessment include enterprise risk management (ERM), data, disclosures, modeling, and forward-looking assessments. [To replace the original FIO proposal—*Insurance Supervision and Regulation*: Assess climate-related issues or gaps in the supervision and regulation of insurers, including their potential impacts on U.S. financial stability. Maintaining the financial stability of the insurance sector will involve identifying and filling gaps (if any) in insurance supervision with a focus on assessing climate-related financial risks. This will include monitoring the integration of climate-related financial risks into insurance supervisory practices and regulatory frameworks, as well as assessing whether sufficient data, methodologies, and tools exist to manage the solvency of insurers and to protect them against the long-term risk of climate change. To that end, FIO plans to assess supervisory practices and resources, including but not limited to examination policies and procedures, solvency assessment and techniques, data availability and integrity, public disclosures, modeling, and forward-looking assessments (e.g., scenario analysis, stress testing). FIO will consult with individual state insurance regulators and the NAIC during its assessment of such supervisory practices and resources.]

Insurance Markets and Mitigation/Resilience. Focus on the affordability and availability of insurance, particularly for consumers in traditionally underserved populations as well as mitigation strategies to improve resilience. The words “green investment” may be part of this focus as well. The rate adequacy of the insurance markets can either be addressed within this goal or within the Insurance Supervision and Regulation goal. [To replace the original FIO proposal—*Insurance Markets and Mitigation/Resilience*: Assess the potential for major disruptions of private insurance coverage in U.S. markets that are particularly vulnerable to climate change impacts; facilitate mitigation and resilience for disasters. Growing evidence indicates that climate change may be associated with a decline in the availability and affordability of insurance provided by the private sector (i.e., private insurance coverage) in certain markets. The creation and expansion of insurers of last resort by individual U.S. states and the federal government highlights this problem. FIO intends to examine the insurability of disasters that are produced or exacerbated by climate change, including wildfires, hurricanes, floods, wind damage, and extreme temperatures. Additionally, traditionally underserved communities and consumers, minorities, and low- and moderate-income persons may have disproportionate challenges in obtaining affordable property insurance to cover the risks posed by climate-related disasters; further declines in available and affordable insurance could exacerbate the inequities that these persons face. This situation underscores the need to identify solutions to address the growing protection gap exacerbated by climate change. Therefore, FIO also intends to assess the availability and affordability of insurance coverage in high-risk areas, particularly for traditionally underserved communities and consumers, minorities, and low- and moderate-income persons. Beyond analyzing potential insurance market disruptions, FIO intends to look at solutions, including identifying best practices for mitigation that can then increase post-disaster resilience, including solutions that can help ensure sufficient availability and affordability of insurance for consumers in light of increasing climate-related disaster risk. In addition, FIO will examine the role of insurers in supporting climate resilience in critical infrastructure, as well as in supporting green investment initiatives.]

Insurance Sector Engagement. Insurers assisting meeting climate goals generally through underwriting, investment, and business operations; and insurers’ underwriting and investment

practices assisting in reducing emissions of greenhouse gases specifically. [To replace the original FIO proposal—*Insurance Sector Engagement*: Increase FIO's engagement on climate-related issues; leverage the insurance sector's ability to help achieve climate-related goals. FIO plans to increase its engagement on climate-related issues and take a leadership role in analyzing how the insurance sector may help mitigate climate-related risks. Throughout this work, FIO will engage with stakeholders, including through this RFI. Additionally, the insurance sector has the ability to shape industries, products, and practices through its functions in the financial markets and broad understanding of risk. Thus, it can influence climate-related activity of other sectors of the U.S. economy. FIO therefore will engage with the insurance sector to assess how the sector may help achieve national climate-related goals, including mitigation, adaptation, and transition to a lower carbon economy. This could include insurance sector consideration of underwriting activities, investment holdings, and business operations to support a low emissions economy. It also could encompass insurance sector transition of its operational and attributable greenhouse gas (GHG) emissions. In addition, FIO plans to consider ways to address the lack of common methodology and standardization in measuring financed emissions, particularly those of non-public companies in which the insurance sector underwrites and invests. Currently, only one state has passed legislation that is intended to leverage the insurance sector's ability to affect GHG emissions.]

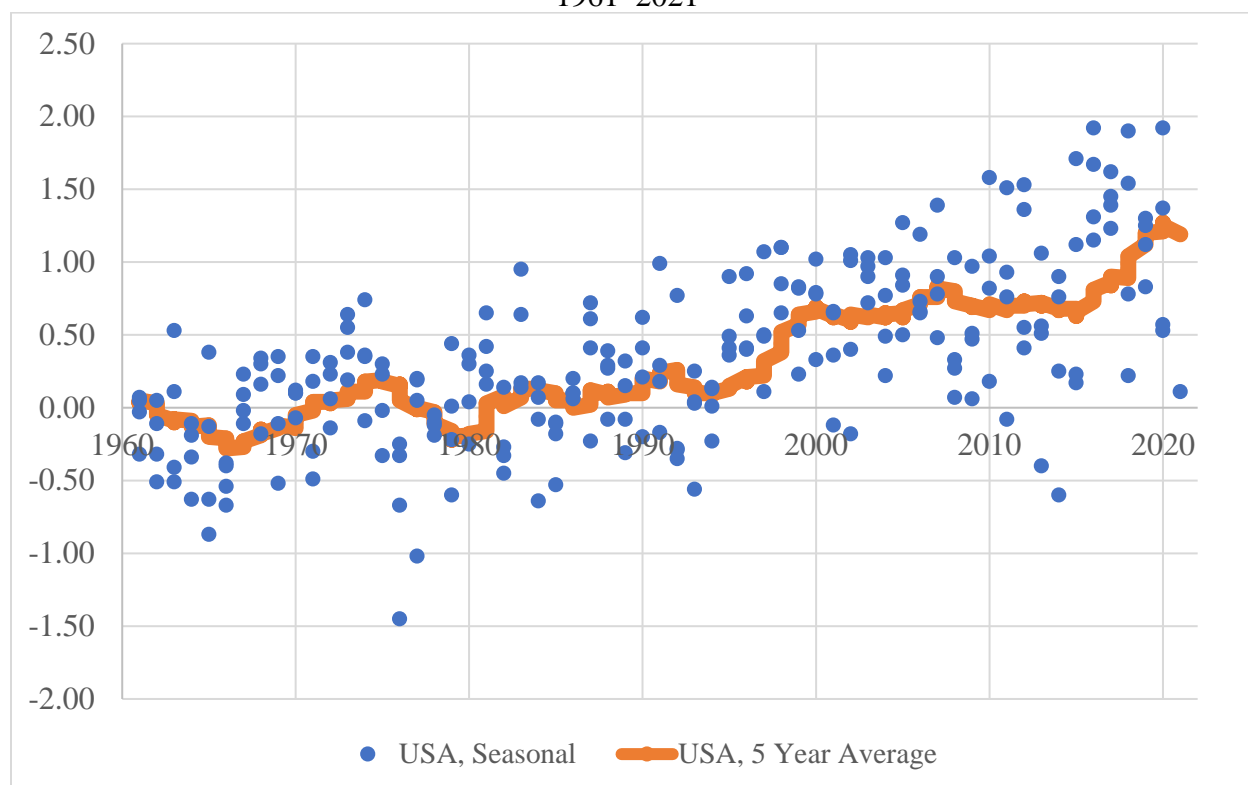
Climate-Related Data and FIO's Data Collection and Data Dissemination Authorities

- 3. What specific types of data are needed to measure and effectively assess the insurance sector's exposures to climate-related financial risks? If data is not currently available, what are the key challenges in the collection of such climate-related data? In your response, please provide your views on the quality, consistency, comparability, granularity, and reliability of the available or needed data and associated data sources.*

Data requirements will vary by type of insurer, the lines of business that an insurer writes, and potentially the geographic regions in which it provides coverage. As a result, the types of data may be specified in general, but may not apply to all insurers. In addition, the data requirements will vary based upon which particular one of the FIO's goals is being addressed. The data to assess the insurance sector's exposure to climate-related financial risks for short-term horizons may be more asset-based for life insurers and more geographic- and directly climatic-based for health and property/casualty insurers. By "directly climatic" data, we are referring to trends in temperature, precipitation, and wind that might also introduce different levels and kinds of risks, as the [Actuaries Climate Index](#) makes apparent.

The Actuaries Climate Index® v 1.1—created and maintained by four North American actuarial associations, including the Academy—documents changes in extreme occurrences of six climate-related elements of weather and sea level. The index, a measure summing the observations across all of the six elements, covers the U.S. and Canada, and breaks results down for 12 regions, seven in the U.S. While the index generally shows increasingly extreme climatic conditions since the end of the reference period, 1961–1990, it also reveals the variability in those increases—both by element and by region.

Actuaries Climate Index: Continental United States
1961–2021



Source: American Academy of Actuaries calculations of data downloaded from <https://actuariesclimateindex.org/data/>, November 11, 2021

For the longer-term horizons, the data for all insurers will be both geographic- and asset-based information. Longer-term horizons might also be better understood with data on the historical evolution of climate-related risks, over time and geographic regions. Estimates of risk might be based on the losses experienced historically as a result of changing climatic conditions, as discussed and defined by the Academy's 2020 publication, *The Actuaries Climate Risk Index*. A preliminary model, the Actuaries Climate Risk Index v 1.0, provides estimates for the property losses during the period 1991–2016 that could be attributed specifically to changing climate, controlling for changes in exposure.

The work on the Actuaries Climate Risk Index also revealed the need for improved access to high-quality, publicly available data on losses from climatic events. While the National Oceanic and Atmospheric Administration's (NOAA's) Storm Events Database appears to provide comprehensive data on losses due to climatic events, on closer inspection there are significant gaps and widespread underreporting. Finding ways to improve the quality of this data so that it approaches the level of quality reflected in the NOAA Billion-Dollar Weather and Climate Disasters Database would make analysis required to assess and monitor changes in climate risk much more feasible. FEMA's National Fire Center data on fires, including wildfires, is a valuable, underutilized resource because of limits to its accessibility.

For transition risk, additional data elements—beyond those normally tracked for the monitoring of climate change—and compilations of those additional elements will help with monitoring the status and improvement. These can illustrate the gradual loss of fossil fuel insureds, the risk of stranded assets, the effect on supply chains as a result of the transition (e.g., how the automobile manufacturing industry is impacted when oil falls out of favor), and changes in mortality rates due to particular specific climate impacts. Carbon footprint data from insurers (with regards to

their own footprint or that of their invested assets) may be available through the disclosures that some companies are preparing.

Finally, some data that would be essential to project the impacts longer term may not currently be captured in insurers' administrative systems (for example, consistent cause of death codes for climate-related deaths, location of death, etc.). Clear guidance could enable insurers to start monitoring so they and regulators can better understand climate risk for their insured population, as compared to the risks to the general population.

4. *What are the key factors for the insurance sector in developing standardized, comparable, and consistent climate-related financial risk disclosures? In your response, please discuss whether a global approach for disclosure standards needs to be adopted domestically for insurers. Please also address the advantages and disadvantages of current proposals to standardize such disclosures, such as those set forth by the Task Force on Climate-Related Financial Disclosures or the NAIC's Insurer Climate Risk Disclosure Data Survey.*

The Climate Related Financial Disclosure (CRFD) Work Group of the Academy has been undertaking research examining climate disclosures as they apply specifically to insurers. In the first part of that research, presented to the National Association of Insurance Commissioners (NAIC) in December 2020 and January 2021, we examined the climate-related financial disclosures currently being completed by about 70% of the U.S. insurance market (measured by direct premiums written) which respond to the NAIC Climate Risk Disclosure Survey.² That survey consists of nine Yes/No questions, with eight narrative responses required to elaborate. In the second part of that research, with results expected during the first quarter of 2022, we are assessing options suggested for moving forward with improved disclosures.

Our research to date has revealed several characteristics of the disclosure protocol in place for insurers since 2010:

- A. Insurers have generally been increasing their Yes answers, indicating greater awareness of and responsiveness to climate risks;
- B. There exists substantial variability in the narrative responses both by type of insurance product and by size of the company;
- C. It is difficult to extract information from the narrative responses with which to create benchmarks or otherwise compare the performance of any individual company to others; and
- D. A relatively small proportion of insurers—less than 30% of companies—are responding robustly to the current survey.

As a result of our work with the NAIC Climate Risk Disclosure Survey, we have identified several key tasks to be accomplished in the second part of our project, based in part on a comparison of the current NAIC survey with the guidelines of the Task Force on Climate-related Financial Disclosures (TCFD) and the Carbon Disclosure Project (CDP) survey:

- A. Examine two gaps:
 - a. Gap between most robust survey responses and the requirements of TCFD and/or CDP
 - b. Gap between most robust and less robust survey responses
- B. Assess different possible methods of encouraging more robust, informative responses from insurers, including:
 - a. Careful construction and testing of questions

² <http://www.insurance.ca.gov/0250-insurers/0300-insurers/0100-applications/ClimateSurvey/> .

- b. More guidance for preparers
 - c. More Yes/No and/or multiple-choice questions
5. *Please provide your views on how FIO's data collection and dissemination authorities should be used by FIO to research, monitor, assess, and publicize climate-related financial risk and other areas of the insurance markets that are affected by climate change.*

We recommend FIO start with a project roundup based upon the answers to this survey of the existing work and data sources in order to make sure that any data collection activities are not duplicative of other work. FIO may be able to provide a combination of a reference library of what information is available and already compiled in addition to determining if there are gaps that it can fill.

6. *What are the likely advantages and disadvantages of a verified, open-source, centralized database for climate-related information on the insurance sector? Please include in your response the types of information, if any, that may be most useful to disseminate through such a database and the key elements in the development and design of such a database.*

Currently most insurers and insurance stakeholders spend considerable time weighing the strengths and weaknesses of various publicly available information. While climate information from NOAA and from the Global Historical Climate Network (GHCN) are very good, geographic and temporal coverage is uneven. Reanalysis data, such as the ERA-5 data from the European Centre for Medium-Range Weather Forecasts, complement that data and allow for improved monitoring of climatic conditions. We have mentioned above the need for improved information on losses—economic and insured.

Insurance Supervision and Regulation

7. *How should FIO identify and assess climate-related issues or gaps in the supervision and regulation of insurers, including their potential impact on financial stability? In your response, please address insurance supervision and regulations concerning: (a) Prudential concerns, (b) market conduct regarding insurance products and services, and (c) consumer protection. In addition, please discuss how FIO should assess the effectiveness of U.S. state insurance regulatory and supervisory policies in addressing and managing the climate-related financial risks with regard to the threat they may pose to U.S. financial stability, including identifying (1) the major channels through which climate-related physical, transition, and/or liability risks may impact the stability of the U.S. insurance market, and (2) the degree to which insurers' business models could be affected by each category of risk and the relevant time horizons for such effects.*

This is a very broad question, and to truly answer it would require delving into the work that FIO may end up taking upon itself to define its role.

- a. Prudential concerns. After defining the time horizon over which it intends to address the regulation of both individual insurers and the industry as a whole, FIO may be better able to identify if there are currently gaps in supervision and regulations. In addition, FIO may want to consider whether the focus is on a by company/group basis or is more broadly related to systemic concerns.

More specifically, solvency issues/risks would be more appropriately split between insurance contracts and investments, and by line of business. For property and casualty

(P&C) insurance, contract risk is best addressed by catastrophe models, not by a balance sheet approach.

The NAIC's Catastrophe Risk (E) Subgroup is already examining this issue, so it might be advisable for FIO to begin any work here by reaching out to the NAIC. The most challenging catastrophe model issue may be validation of the relatively new and evolving models beyond hurricane that deal with climate (e.g., wildfire, flood, and convective storms including hail). FIO assistance in projects to provide centralized validation of catastrophe models for climate-related perils may be an appropriate approach. Another approach might be public/private partnerships, evaluating highway loss data and possible new building codes for fire and windstorm hazards.

One caveat to the argument that catastrophe models are the best way to assess climate risk for P&C insurance is un-modeled or under-modeled risk: What impacts of climate risk are not being captured by the models and what is the extent of their effects? Models are changing rapidly to reflect this and consideration should be made to small and midsized companies' lack of bandwidth to adopt as quickly as others. Other than adjusting models, companies are using other approaches to quantification (e.g., additional risk loads, underwriting scores by peril), so regulators should take a holistic view in assessing. Another facet to modeling is stress testing and scenario testing of climate risk. Non-U.S. companies are further along in this exercise, with much attention paid to Representative Concentration Pathways (RCP), a set of greenhouse gas concentration trajectories adopted by the International Panel for Climate Change (IPCC). FIO validation of natural catastrophe models could be extended to incorporate the evaluation of RCP modeled trajectories for greenhouse gases (or other such scenarios/ models in the industry).

The ability to re-underwrite and reprice (and change the product terms) on an annual basis has a material impact on P&C industry exposure to climate risk. An insurer can largely avoid developing risks that it understands, so the issue is whether the P&C insurers understand these risks. That is addressed via catastrophe models combined with stress testing and scenario testing.

For health and life insurance, the links between climate change and adverse events has been much less studied than is true for P&C insurance. While there is work underway on many of these issues, the impact of climate change on contract risk is less clear, whether on the long-duration contracts of life or the short-duration contracts of health.

For investments and climate change risk, the issues relate to industry sector, type of investment, and duration of the returns. Short- to medium-term debts are less of a climate issue, as current credit ratings should be able to incorporate any short- to medium-term climate-related investment loss issues. Long-term debt with poor liquidity may be an issue depending on the industry sector. The biggest risk may be real estate and other relatively illiquid investments, such as privately placed investments. The importance of liquidity and time horizon is paramount. If investments are sold as they are downgraded, then risk is only the loss after a downgrade. If held to maturity (due to a strategic decision or because of no secondary market), then duration determines the amount of climate-risk disclosure. For example, a mortgage on oceanfront property that matures in five years has far less risk of investment loss than one that matures in 30 years, if they are illiquid. Similarly, a five-year mortgage on a new gas station is less of an issue than a 30-year mortgage, as gasoline-powered cars will still be a major portion of total cars in five years but maybe not in 30. Finally, if there are analyses that assume no change in investment

mix by industry sector, they are flawed, as such an assumption is based on investment departments never incorporating new information.

Transition risk is receiving attention on the investment front. For example, the New York State Department of Financial Services (NY DFS) partnered with the 2Degree Investing Initiative and published a report, *An Analysis of New York Domestic Insurers' Exposure to Transition Risks and Opportunities from Climate Change*, on June 10, 2021, which notes the impact that stranded assets may have on insurers' investment portfolios. Studies like this may be of value, but need to be considered cautiously—for example, asset-backed securities, government bonds, and mortgage securities were not captured in the NY DFS analysis. Similarly, investment managers are developing tools and metrics to assess the “riskiness” of portfolios with respect to brown vs. green investments. FIO support to both insurers and regulators in navigating this landscape relative to disclosures and risk assessment could prove valuable.

- b. Market conduct. FIO should also consider whether the concern of supervision and regulation is related to price, availability, or other specified impact on the consumer in general or of particular products. The issues related to climate may be interwoven with other concerns beyond climate, so the interdependence of climate and other matters such as inequitable impacts will need to be articulated.
- c. Consumer protection. Consumer protection is also greatly influenced by market conduct concerns.
- d. Interdependence of insurance and other industries. The major channels through which climate-related physical, transition, and/or liability risks may impact the stability of the U.S. insurance market. The broader issue of the interdependence of the financial stability of the insurance industry on various climate changes that occur, for example, in particular insured industries. FIO may consider this question when examining how it is defining gaps in supervisory goals related to prudential supervision.

* * *

8. *Please identify the key structural issues that could inhibit the ability of insurance supervisors to assess and manage climate-related financial risk in the insurance sector (e.g., accounting frameworks, other standards). What barriers could inhibit the integration of climate-related financial risks into insurance regulation?*

Rather than classifying these as major barriers, consider them as challenges to the supervisors:

- Time horizons embedded within core financial statements. This is a combination of accounting frameworks as well as general approaches of many financial statement preparers.
- Global nature of larger insurers. Larger insurers have multiple jurisdictions to consider related to supervision, financial statement preparation, and operating approaches. The multi-jurisdiction approach could be a challenge for the insurers themselves as well as FIO.
- Multiple frameworks under which climate change risk disclosures are produced and evaluated. The existence of multiple frameworks (NAIC Climate Disclosure Survey, Task Force for Climate-Related Financial Disclosures guidelines, the Carbon Disclosure Project survey, and the Sustainability Accounting Standards Board guidelines, among

others) creates difficulties in comparing disclosures across companies, and duplication of effort for companies subject to multiple requirements.

9. *What approaches used by other jurisdictions or multi-national organizations should FIO evaluate that would help inform it about existing supervisory and regulatory issues and gaps concerning climate-related financial risks? Please describe these approaches, including their advantages and disadvantages, as well as available data sources on these approaches.*

The European Union asks all listed companies with more than 500 employees to complete an assessment consistent with the TCFD guidelines annually. The UK requires all “premium listed” companies with more than 500 employees to complete a TCFD assessment and, beginning in 2022, plans to require all listed companies with more than 500 employees to complete a version of a TCFD assessment. The Carbon Disclosure Project invites companies to participate in its annual survey, an assessment based on multiple-choice questions covering virtually all of the areas required by the TCFD, with the exception of stress tests. Required submission of assessments eliminates gaps in information provided, but it also may produce unduly large burdens on companies with limited internal resources for compiling such assessments. Making available more resources to assist companies in the completion of the assessments may be advisable. Further, the TCFD guidelines invite comments on a wide range of areas but with little standardization of responses. As our analysis of responses to the NAIC survey reveals, a lack of standardization in responses makes it difficult for regulators and or stakeholders to assess the progress of any individual company or to establish baselines for judging that progress. Exploring surveys like that of the CDP may be helpful in yielding more useful information from the disclosures.

The Prudential Regulatory Authority (PRA) in the United Kingdom has promulgated a framework to guide companies related to governance, appetite and targets, scenario testing risk mitigation, and disclosures that some insurers have found helpful in thinking through climate issues.

Insurance Markets and Mitigation/Resilience

10. *What factors should FIO consider when identifying and assessing the potential for major disruptions of insurance coverage in U.S. markets that are particularly vulnerable to climate change impacts?*

The time horizon for viewing disruptions to the availability and affordability of insurance coverage is a determining factor on how to focus this response. Property insurers are most vulnerable in the short term to climate change impact related to currently measured elements of climatic conditions. Additional impacts on longer-term horizons will affect other insurance coverages such as health, liability, and life.

As mentioned above, a measure of particular climate impacts, the Actuaries Climate Index® v 1.1, created and maintained by four North American actuarial associations, including the Academy, documents changes in extreme occurrences of six climate-related elements of weather and sea level. The index, a measure summing the observations across all of the elements, covers the U.S. and Canada, and breaks results down for 12 regions, seven in the continental U.S. While the index generally shows increasingly extreme climatic conditions since the end of the index reference period, 1961–1990, it also reveals the variability in those increases—both by element and by region. In 2020, the Academy published a preliminary model, the Actuaries Climate Risk

Index v 1.0, providing estimates for property losses during the period 1991–2016 that could be attributed specifically to changing climate, controlling for changes in exposure.

- 11. What markets are currently facing major disruptions due to climate change impacts? What markets are likely to be at risk for major disruptions due to climate change impacts in the future? When discussing markets at risk for future disruption, please estimate the likely time horizons (e.g., 5, 10, 20, or more years) when these disruptions may occur.*

The time horizon for viewing disruptions to the availability and affordability of insurance coverage varies by coverage. Property insurers are most vulnerable in the short term to climate change impact related to currently measured elements of climatic conditions. Additional impacts on longer-term horizons will affect other insurance coverages such as health, liability, and life. In addition, as fossil fuel sectors potentially decline, there may be impacts on their insurers as well as the insurers of related industries such as aviation, transportation, and automotive.

- 12. Climate change is currently exacerbating economic losses caused by weather-related disasters and is projected to cause further damage in the future. Please provide information on the actions that insurers have taken in response to the threat of increased economic losses from climate-related disasters, including how insurers are incorporating mitigation and resilience considerations into their business operations, as well as what other strategies or solutions that insurers or U.S. regulators may want to explore that would help insurers mitigate the impact of climate change and build resilience.*

No response provided.

- 13. To what extent, if any, are models (whether internal proprietary models, open-source models, or third-party vendor models) used in the underwriting process to consider the impact of climate change? How do these models affect pricing of insurance products and business decisions (e.g., level of catastrophe exposure, utilization of reinsurance)? What are the best practices for model validation?*

Many property insurers use catastrophe models within the underwriting process in part to determine issues related to concentration of risk combined with determination of the catastrophe portion of the premium. These models are also used by reinsurers for underwriting of contracts as well as in determining the reinsurance price including rate and attachment. These uses cover a short-term time horizon and do not build in longer-term impacts of climate change. Specific considerations include the following:

- Performing validation of catastrophe models. The model governance structure for some companies incorporates a model validation framework for catastrophe models. In addition, a technical analysis of hurricane storm surge risk may be performed outside of the vendor catastrophe models as an additional validation to determine which risks are appropriately being reflected.
- Aligning ceded reinsurance to reflect non-peak perils (often insurers focus on reinsurance purchased by the California Earthquake Authority or by Florida's Citizens Property Insurance Corporation, but additional perils may need consideration where the models are newer such as wildfires, winter storms, and drought).
- Consider whether geographies may now be essentially uninsurable (e.g., property within 1 mile of south Florida coast).

14. *How should FIO assess the availability and affordability of insurance coverage in U.S. markets that are particularly vulnerable to climate change impacts? In your response, please discuss how to balance maintaining insurer solvency with the need to address the availability and affordability of insurance products responsive to perils associated with climate-related risks, particularly for traditionally underserved communities and consumers, minorities, and low- and moderate-income persons.*

As FIO looks at impacts of availability and affordability in both the short term and long term on vulnerable and underserved populations, consider the example of the National Flood Insurance Program (NFIP). Flood peril for many reasons has been considered an uninsurable risk as in its current form it is a threat to insurer solvency. The NFIP struggles with the various considerations of collecting an affordable premium balanced with covering the costs of the program. Please see further details about the NFIP in the Academy's monograph, [The National Flood Insurance Program: Challenges and Solutions](#). For a discussion of comparable issues in dealing with wildfires, see the Academy's paper, [Wildfire, An Issue Paper: Lessons Learned from the 2017–2018 California Events](#).

15. *In what areas have public-private partnerships or collaborations among state or local governments been effective in developing responses to climate change that may be taken by the insurance sector or insurance regulators? How can FIO evaluate the potential long-term or permanent effects on the insurance sector of such public-private partnerships or state and local collaborations to address climate-related risks? How should FIO consider state insurance regulatory efforts on consumer education related to climate risks?*

Some of the issues related to the financial impacts of climate change on property are embedded in land-use issues, as that is where development occurs. See a good description of these issues in recent Academy publications related to [wildfire](#) and [flood](#).

Insurance Sector Engagement

16. *Please provide your views on additional ways that FIO should engage with the insurance sector on climate-related issues.*

While not part of the industry sector, the Academy has completed and has many work streams in progress which might be useful to FIO as it seeks to develop a plan of action. Whether it is dealing with flood insurance or wildfires, the climate index or solvency, we have information and expertise we would be happy to share. Please feel free to contact us if we might provide further information.

17. *How should FIO assess the efforts of insurers, through their underwriting activities, investment holdings, and business operations to meet the United States' climate goals, including reaching net-zero emissions by 2050? For example, what steps should the insurance sector be taking to help improve transparency, comparability, and assessment of Scope 1, Scope 2, and, to the extent possible, Scope 3 GHG activities?*

No response provided.

18. *What role or actions might states take to encourage the insurance sector's transition to a low emissions environment and an adaptive and resilient economy? In your response, please discuss whether efforts by states to encourage the development of new insurance products, to promote*

sustainable investment and underwriting activities, and to address protection gaps created by climate-related financial risks might facilitate this transition.

No response provided.

General

19. Please provide any additional comments or information on other issues or topics that may be relevant to FIO's work on insurance and climate-related risks.

No response provided.

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The American Academy of Actuaries appreciates this opportunity to provide comments to the FIO. We hope these observations are helpful, and we welcome further discussion. If you have any questions about our comments, please contact Rob Fischer, the Academy's casualty policy analyst, at fischer@actuary.org.

Sincerely,

Lisa Slotznick
Chair
Climate Change Joint Task Force
American Academy of Actuaries

Michelle Young
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