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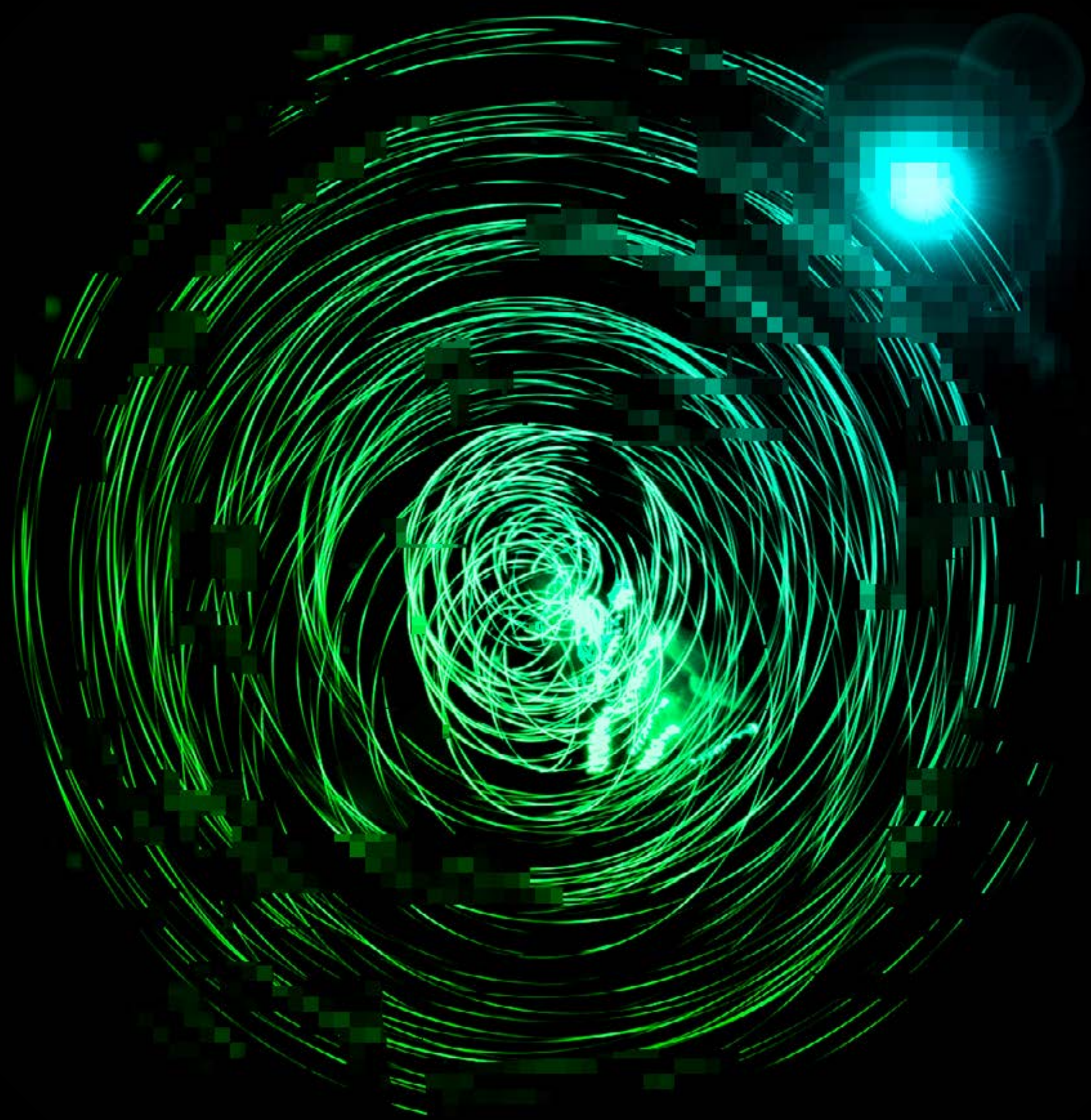


Climate risk: Regulators sharpen their focus

Helping insurers navigate the climate risk landscape

Deloitte Center *for* Financial Services

Contents

Key messages

- Extreme weather-related events are increasing with each passing year, both in terms of frequency and severity. This has shone a brighter regulatory spotlight on climate-related risks for insurers.
- A majority of regulators surveyed by Deloitte were either unaware or not fully convinced about how prepared insurers are to deal with climate-related risks.
- While severe weather-related losses could stress insurer financials and stoke stability concerns, rising insurance premiums and reduced coverage in response to climate-related risks may undermine availability and affordability of coverage.
- Balancing solvency concerns with consumer needs will likely be a major challenge when it comes to covering climate-related exposures, likely requiring more information on the costs of perils for carriers and regulators alike.
- Insurers have an opportunity to more effectively communicate around climate risk management strategies and performance measurement through more standardized disclosure. This enhanced disclosure can help reassure regulators and other stakeholders about their ability to withstand extreme weather events and effectively transition to a low-carbon economy.
- Carriers can improve their climate readiness by raising the profile of such risks while taking an enterprise-wide approach to assessing their impacts and working closely with customers, regulators, and public policy makers to develop programs that support greater resilience to climate-related risks.

Intensifying climate-related risks may prompt more insurer regulation

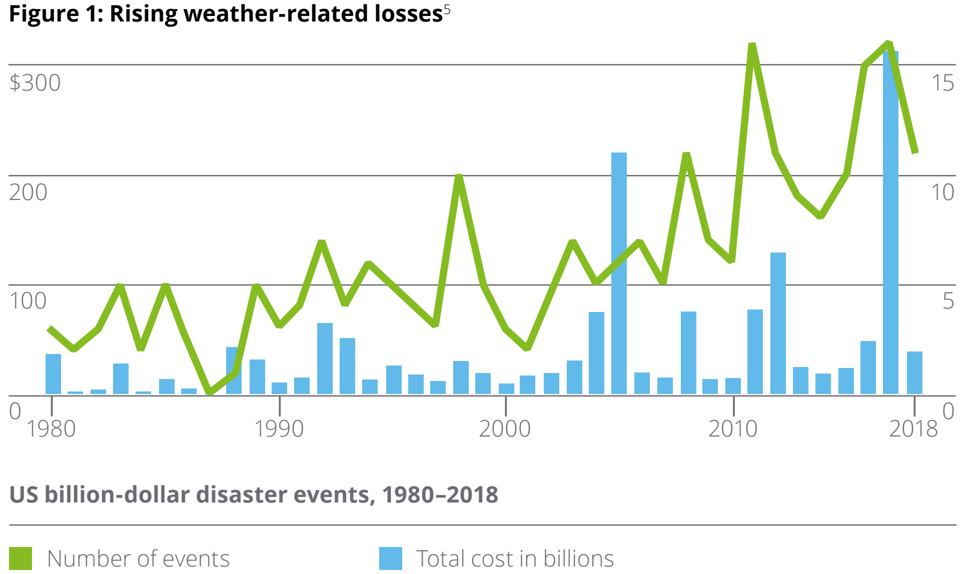
The number of natural disasters causing US$1 billion or more in damages has been on a steady rise for more than a decade and a half.

The escalating frequency and severity of extreme weather-related events—from wildfires in the United States, to record heat waves in Europe, to floods in Japan—have shone a brighter regulatory spotlight on climate-related risks for insurers. One federal regulator in the United States went so far as to suggest that the potential damage from climate change could end up being as severe as the fallout from the mortgage crisis triggering the 2008 financial crisis.[1] In fact, Prudential Regulatory Authority, UK's insurance regulator, has gone ahead and added climate risk to insurers' stress tests in a bid to achieve greater financial resilience.[2]

The number of natural disasters causing US$1 billion or more in damages has been on a steady rise for more than a decade and a half (see figure 1). Insurance payouts for natural catastrophe events in 2017 and 2018 stood at US$219 billion, the highest ever for a consecutive two-year period, according to Swiss Re.[3] The Camp Fire in California in November resulted in insured losses of US$12 billion and was the costliest event ever across the globe.[4]

There's no letup in sight. Indeed, the *Insurance Regulator State of Climate Risks Survey* (see "Methodology"), conducted by the Deloitte Center for Financial Services, found that a majority of US state insurance regulators expect climate-related risks for insurers to increase in the next five to 10 years. While the impact was expected to rise across all types of climate-related risks, physical risks

Figure 1: Rising weather-related losses[5]



Source: BlackRock Investment Institute, with data from NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters, October 2018.

were seen to be most impacted, with 19 of 27 regulators anticipating such exposures to somewhat or significantly increase in that same time frame (see figure 2).

With losses mounting, insurers can no longer avoid or postpone addressing the impact of changing climate on their underwriting, pricing, and investment decisions, as well as their bottom lines. Losses linked directly or indirectly to climate-related risks are likely to keep increasing, so from a regulatory standpoint, the question becomes whether insurers are doing enough to predict and manage the exposure to their underwriting and investment portfolios and financial stability.

Responses to the annual mandatory National Association of Insurance Commissioners (NAIC) Climate Risk Disclosure Survey,[6] conducted by California and other US states, reveal some of the actions insurers are taking or planning to implement to respond to increasing climate-related risks. Primary insurance business in property and casualty, where the direct impact of climate-related risks would probably be the highest, is priced annually, providing carriers with the ability to respond to spikes in losses by raising rates or simply not writing policies in high-risk areas.

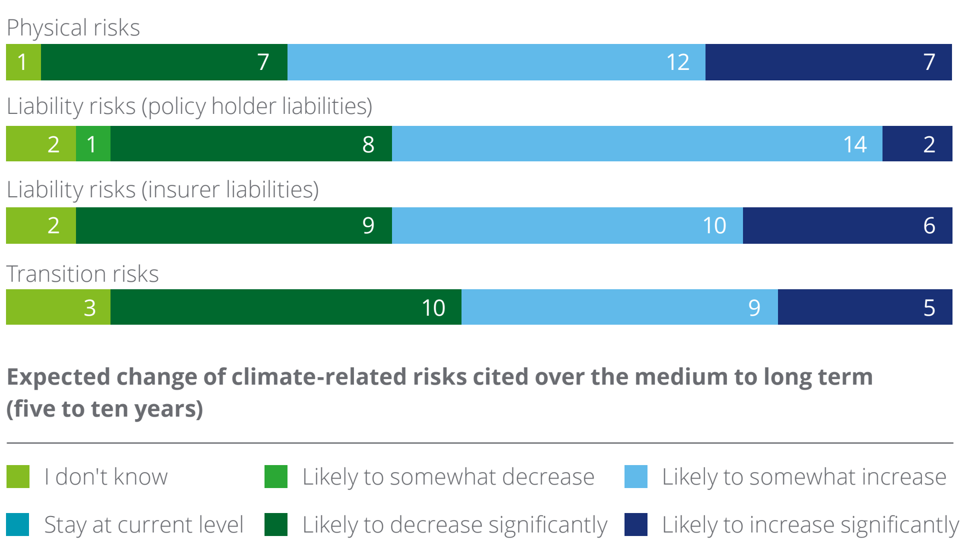
However, the potential for major events to overwhelm insurer capacity to absorb climate-related losses is very real. For example, Merced Property & Casualty Company in 2018 was unable to pay out all claims due to the wildfires in California and was pushed into insolvency.[7]

At the same time, insurers have to watch out for liability losses arising out of climate change. According to an article in the *Zurich Claims Quarterly Journal* in spring 2018, from a perspective of Directors and Officers (D&O) liability insurance, it is more than likely that there will be an increase in claims in the future as a result of companies failing to adequately manage the risk of climate change on their business and to disclose these risks to investors.[8]

Since the first state insurance commissioner was appointed in New Hampshire in 1851, the primary responsibility of US insurance regulators has been—and continues to be—

Spiraling insurance premiums and reduced or even total withdrawal of coverage in certain areas could lead to an availability and affordability crisis for consumers.

Figure 2: Majority of surveyed insurance regulators expect all types of climate-related risks to increase over the medium to long term



Source: *Insurance Regulator State of Climate Risks Survey*, Deloitte Center for Financial Services, 2019. Total respondents equals 27.

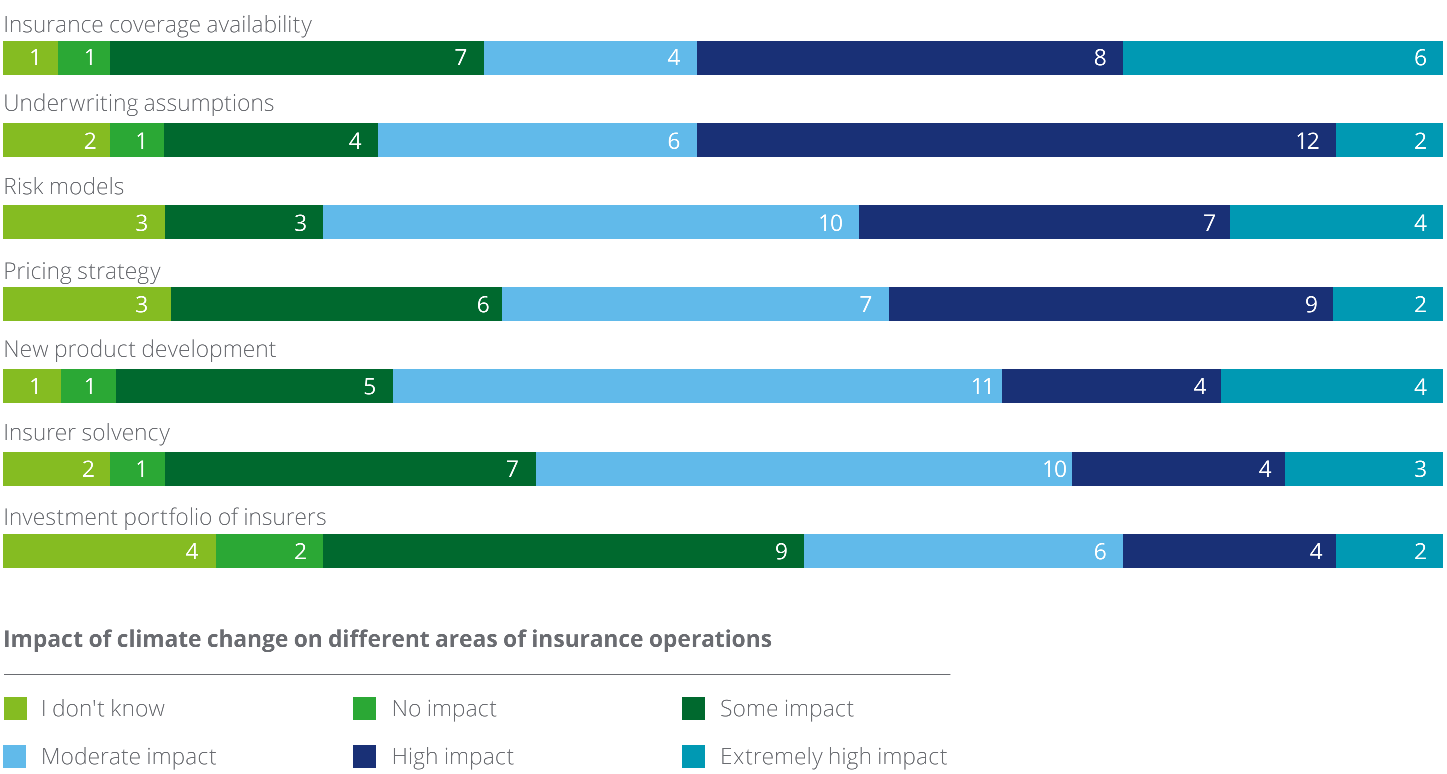
consumer protection. "The fundamental reason for government regulation of insurance is to protect American consumers," states the NAIC.[9] Balancing the risk of insurer solvency with the need for affordable coverage thus is a major challenge for regulators in this scenario.

While regulators are becoming concerned about insurer solvency in the face of increasingly severe weather-related losses, most are also sensitive to the possibility that spiraling insurance premiums and reduced or even total withdrawal of coverage in certain areas could lead to an availability and affordability crisis for consumers.[10]

The conundrum faced by insurers, regulators, and lawmakers is well highlighted by the example of rising risk of hurricanes in Texas. An actuarial analysis conducted by the Texas Windstorm Insurance Association (TWIA), a residual market pool for those in counties along the Texas coast unable to obtain coverage from the voluntary market for wind and hail damage, indicated that its residential coverage rates were inadequate by 32 percent, and its commercial rates were inadequate by 37 percent as of August 2018. Subsequently, TWIA filed for a proposed rate increase of 10 percent for 2019 with the Texas Department of Insurance (TDI).[11]

However, while acknowledging the importance of actuarial soundness of TWIA, state Governor Greg Abbott put the rate increase on hold until June 2019 to preclude any negative impact it could have on the people of the Gulf Coast.[12] At the same time, lawmakers from the coastal regions of Texas

Figure 3: Coverage availability and underwriting assumptions were cited by respondents as areas having the highest impact due to climate change



Source: *Insurance Regulator State of Climate Risks Survey*, Deloitte Center for Financial Services, 2019. Total respondents equals 27.

believed that the 10 percent rate increase was "unfair, excessive and unreasonable" for coastal residents who had been impacted by Hurricane Harvey.[13]

This concern was reflected in the areas identified by the regulators that were expected to be impacted by climate change. More than half of the regulators surveyed (14 out of 27) indicated that climate change was likely to have a high impact or an extremely high impact on coverage availability and underwriting assumptions (see figure 3).

US state regulators and lawmakers thus are watching the implications of climate-related risks very carefully and are becoming increasingly concerned about how well insurers are managing them. Deloitte surveyed and spoke with regulators to get a sense of how satisfied they are with insurer handling of climate-related risks and what they expect to do in response.

There is no doubt that more information—through more effective disclosure—would help regulators in assessing the effectiveness of insurer actions to mitigate climate-related risks. And that could very well be the starting point of increased climate risk regulations.

Methodology: *Insurance Regulator State of Climate Risks Survey*
To better understand regulators' views on climate-related risks, the Deloitte Center for Financial Services conducted the Insurance Regulator State of Climate Risks Survey in May 2019. All 56 member jurisdictions of the NAIC were invited to participate in the online survey. We received a total of 27 responses representing 19 member jurisdictions of the NAIC. That included multiple responses from a few jurisdictions, with two jurisdictions having three respondents and four having two respondents. Responses are reported only in aggregate.

Respondents, for the most part, represented senior staff and leadership within the insurance departments of regulatory agencies, with 23 of 27 respondents self-identifying in various leadership roles (see figure 4).

Almost one-half of the respondents held executive leadership positions. Product regulation and actuarial services roles were the next highest represented areas (see figure 5).

Figure 4: Respondent roles

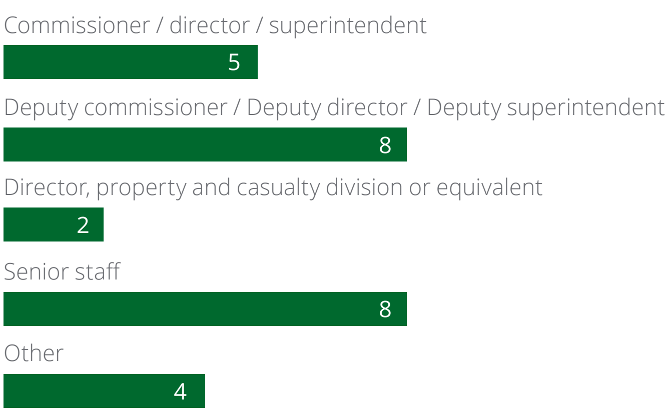


Figure 5: Respondent functions

Source: *Insurance Regulator State of Climate Risks Survey*, Deloitte Center for Financial Services, 2019. Total respondents equals 27.

Regulators unaware of or unconvinced about insurer preparedness

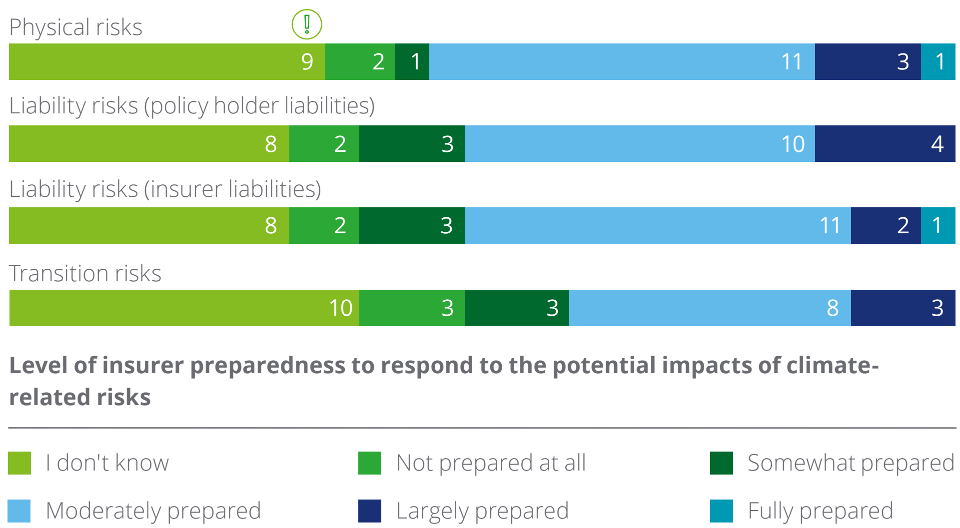
As rising climate-related losses threaten the viability of insurers' books of businesses and investment portfolios,[14] many regulators either are not aware of how prepared carriers are to deal with this threat or are not fully confident that they are indeed prepared.

The information on insurer preparedness to deal with climate-related risks is considered vital by regulators in upholding their mandates. Yet, one-third of responding regulators said they did not know how well the insurers are prepared to deal with the potential impacts of climate-related risks on financial stability. Among those who were aware, only up to four respondents answered that insurers were largely or fully prepared (see figure 6).

Similarly, one-third did not know whether current insurer risk models were up to the challenge of capturing and testing climate-related risks. Among those who knew, eight regulators said it was good, while only two said the models are very good, and no respondent rated them as excellent (see figure 7).

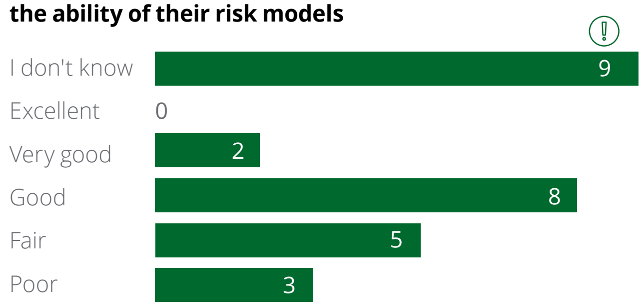
Clearly, there is room for insurers to better disclose and showcase the efficacy of any activities and actions they may be taking to assess and mitigate climate-related risks. This could help reassure regulators about insurers' ability to withstand extreme weather events, defend underwriting and pricing decisions made in response, and possibly head off more onerous mandatory disclosures down the road.

Figure 6: Respondents believe opportunity exists for insurers to better disclose and showcase their climate risk preparedness



A third of the regulators surveyed did not know how prepared insurers were to respond to potential impacts of climate change on their financial stability.

Figure 7: Respondents believe opportunity exists for insurers to better demonstrate the ability of their risk models



A third of the regulators surveyed did not know whether current insurer risk models were up to the challenge of capturing and testing climate-related risks.

Source: *Insurance Regulator State of Climate Risks Survey*, Deloitte Center for Financial Services, 2019. Total respondents equals 27.

At the NAIC's 2018 Fall National Meeting, Washington Insurance Commissioner Mike Kreidler, who chairs NAIC's Climate Risk and Resilience© Working Group, said greater disclosure of climate-related risks is important to keep regulators, policy holders, and investors informed about insurer capacity to handle such critical exposures.[15]

Indeed, our survey found that a significant majority of state regulators feel it is of high importance for insurers to provide disclosures in accordance with the TCFD recommendations (see figure 8).

In fact, eight of 27 regulators Deloitte surveyed said their state insurance departments were somewhat or very likely to increase reporting requirements around climate-related risks as soon as the next two to five years (see figure 9).

An equal number of respondents were on the other side of the spectrum, answering that their departments were somewhat or very unlikely to increase reporting requirements. Anecdotally, a few regulators felt climate risk metrics were still evolving across industries and preferred to be cautious about increasing reporting requirements in the short to medium term.

The move toward increased disclosures is being seen around the globe as well. For example, the UK's Prudential Regulatory Authority evaluation of climate risk disclosures under Pillar 3[16] and Australia's Prudential Regulation Authority (APRA) have both put in place more stringent requirements for enhanced disclosure from financial institutions on actions taken to mitigate climate-related risks.

Of course, while disclosures are seemingly a necessary starting point, they alone may not suffice in protecting consumers against climate-related losses. Regulators may also seek to probe the disclosures to examine the soundness of the assumptions underlying the scenario analyses and insurer expectations of potential losses. For example, catastrophe modeling is a complex process that is influenced by numerous

Figure 8: Regulators surveyed believe it is important for carriers to provide disclosures around the TCFD recommendations

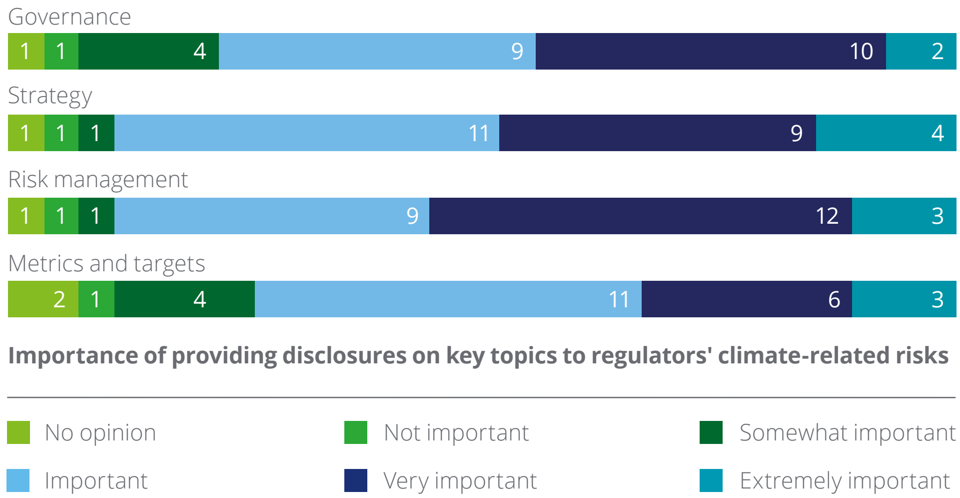
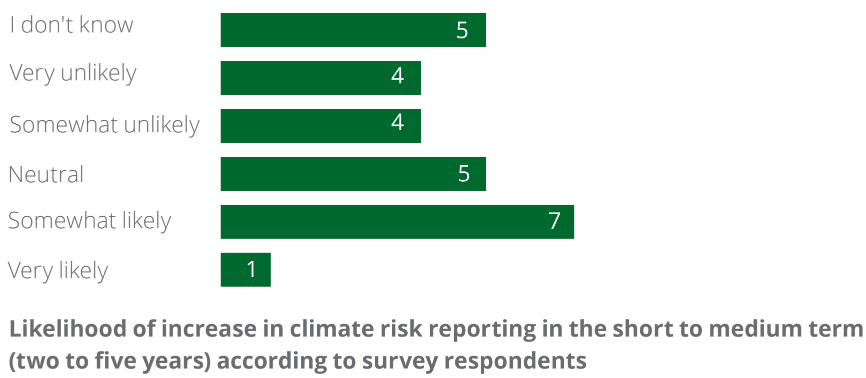


Figure 9: Expectations of regulators surveyed regarding the change in climate risk reporting in the short to medium term (two to five years)



Source: *Insurance Regulator State of Climate Risks Survey*, Deloitte Center for Financial Services, 2019. Total respondents equals 27.

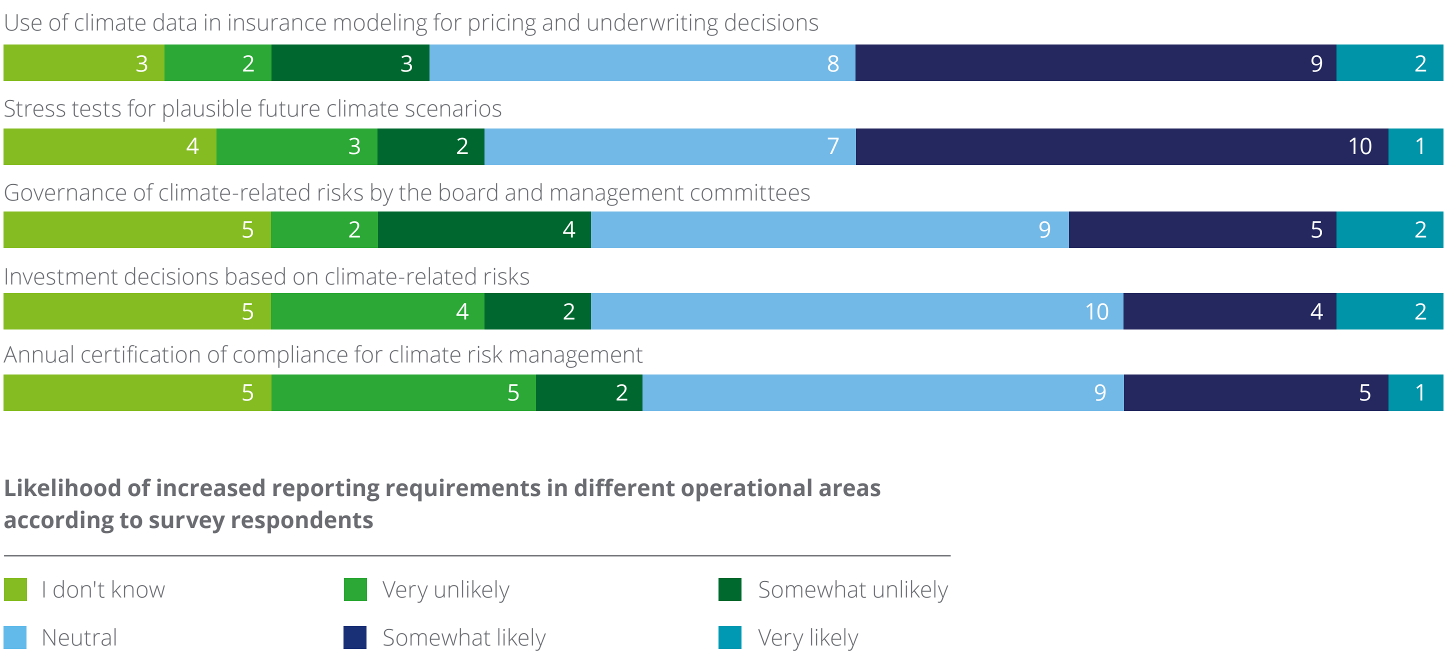
Regulators may also seek to probe the disclosures to examine the soundness of the assumptions underlying the scenario analyses and insurer expectations of potential losses.

estimates and assumptions. And, while the components of the catastrophe models are usually consistent across different risk modelers, assumptions underlying those components could differ due to subjective judgments of climatologists leading to variance in predicted losses.[17]

It is thus likely that regulators will at some point start requiring more of insurers in the way of disclosure and its components and assumptions, including stress tests of a wide range of plausible climate-change scenarios and a determination of how climate data is used in risk modeling for pricing and underwriting decisions (see figure 10).

At the same time, more may be asked of insurers in terms of steps taken to prevent worsening climate-related losses, including adaptation activities to mitigate the impact of such risks.

Figure 10: Reporting requirements could increase in the form of stress tests for climate scenarios and use of climate data for modeling.



Source: *Insurance Regulator State of Climate Risks Survey*, Deloitte Center for Financial Services, 2019. Total respondents equals 27.

What should insurers consider doing to address climate-related risks?

The regulator survey helped uncover several possible actions that carriers could implement—both within and outside the organization—to boost their climate readiness over the long term. The survey results were supplemented by interviews with rating agencies and leading environmental and risk management experts to identify opportunities for insurers to become more resilient to climate-related risks, including the following actions.

1. Raise the profile of climate risk in the organization

A report published by Ceres in 2017 found that 38 percent of the insurers surveyed had assigned the responsibility of sustainability performance to their senior executives. This was twice the number compared to Ceres's assessment in 2014. However, the figure was still considerably lower when compared to other industries. The report also found that none of the carriers had linked executive compensation to any sustainability performance metrics.[18]

An engaged board working closely with senior management on climate issues can help focus an entire organization on the risks involved, while assuring that adequate resources are allocated to accurately assessing and then mitigating them. Hence, carriers should look to bring oversight of climate-related risks directly under the board of directors or executive committee if they aren't already doing so.

Companies should establish a clear governance structure, including the creation or assignment of dedicated roles, at executive as well as staff levels, to evaluate the potential impacts of climate-related risks, as well as embed ongoing climate risk assessment and mitigation efforts across the company, including underwriting, pricing, reserving, investing, and even in new product development.

Figure 11. Insurer opportunities to improve long term climate risk preparedness

1. Raise the profile of climate risk in the organization
2. Improve assessment of climate risk using advanced analytics
3. Take an enterprise-wide view while managing climate risks
4. Work with policy holders and policy makers to alleviate climate risk exposure
5. Work with administrative agencies to develop climate-resilient public policies

Source: Deloitte Center for Financial Services, 2019.

The goal would be to make climate risk top of mind for everyone in the organization, right from the board to all employees, so that its assessment becomes pervasive, while enabling more informed decisions about what to do to contain such exposures.

2. Improve assessment of climate risk using advanced analytics

The inherent uncertainty of a changing climate, combined with the diversity and rising frequency of perils, may render the historical loss data that catastrophe models rely upon less useful for future loss projections.

A number of insurers and reinsurers are already actively engaging with the climate science community to remain current about the latest data and loss control advances. Yet carriers could increase their outreach and internal research to comprehend the limitations of the assumptions in the catastrophe models they are using and how such uncertainties may be magnified by climate-related variables.

Advanced analytics could further help companies in assessing historical weather records, insured property data, and assumptions regarding future climate conditions to improve risk selection and pricing. Augmenting climate-change models with big data/social media information and predictive analytics also has a huge potential to significantly broaden risk assessment considerations.

QBE Insurance Group, for example, has partnered with Jupiter, an InsurTech that offers weather analytics, to leverage its data and analytics across business areas such as underwriting, pricing, and resilience management.[19]

3. Take an enterprise-wide view while managing climate risks

Companies should include climate risk assessment more consistently in their broader enterprise risk management (ERM) framework, which can help in identifying and correlating impacts across different lines of business as well as investments. This would give carriers a holistic view of climate risk exposure, thereby helping top management in decision making.

At the same time, such an approach could include organization-wide stress tests of a broad range of plausible climate-change scenarios to determine capital and liquidity implications and prepare for any eventuality.

4. Work with policy holders and policy makers to alleviate climate risk exposure

Educating clients on climate-related risks and encouraging policy holders for taking steps to reduce losses were the top two ways suggested by the state regulators surveyed to enhance insurer preparedness in the longer term.

Taking lessons from usage-based insurance in the auto business, carriers can incentivize policy holders who invest in mitigating climate-related risks and containing related claims through adaptation measures. Incentives can include discounts in premiums

or financial assistance to policy holders to help finance mitigation efforts.

There are a few examples already of insurers working with policy holders to manage climate-related risks. USAA, for instance, offers premium discounts for homeowners in seven US states who take safety steps[20] to protect their houses from wildfires.[21]

Another large national insurer, Travelers, in association with Wildfire Defense Systems, is offering a value-added service to its California home and landlord policies. This service helps policy holders to tape vents and apply fire retardants at their homes to mitigate risks from wildfires.[22] Such policies and/or services not only reduce losses for insurers but also help to build climate-resilient communities.

Individual insurers can also leverage and support industrywide efforts to educate policy holders and lawmakers about how to fortify properties against severe weather events. The president and CEO of the Insurance Institute for Business and Home Safety, Roy E. Wright, testified before Congress in May 2019 that while "the forces of Mother Nature will not be constrained, much of the damage caused by severe weather is avoidable."[23] For example, the Institute posted on its website earlier this year guidance on how homeowners can prevent damage from wildfires.[24]

5. Work with administrative agencies to develop climate-resilient public policies

To achieve development of public policies that support greater resilience to climate-related risks, insurance companies should collaborate with governments, regulators, and other key stakeholders to encourage measures for sustainability.

The importance of taking these actions was highlighted by Sharanjit Paddam, Head of ESG risk at QBE Insurance Group, in an interview with Deloitte: "One of the difficulties of this [climate risk] problem is the interaction between environmental and social challenges. For example, if you have a house that is built on a flood plain, then insurance will become more and more expensive over time and living in the house will become less desirable. The house price will fall and consequentially people with less income or wealth would buy that house.

"That means," he added, "over time we may see socially vulnerable segments of the population living in environmentally vulnerable homes. Ultimately, this exacerbates both environmental and social vulnerability, which is a very undesirable outcome, and we have to start thinking about how we decouple these environmental and social outcomes so that our socially vulnerable people have safe houses."

Insurers could work with administrative agencies and builder associations more closely to discourage development in high-risk zones. Similarly, building design and materials used for development should be able to withstand the climatic threats in that region. Retrofitting homes to make them more resilient to natural catastrophes could be incentivized through government programs.

In short, rather than making premiums unaffordable, which can lead to a rise in the number of uninsured, insurers could work proactively with administrative agencies to develop preventive and adaptive public policies supporting a climate-resilient future.

There's no time like the present

Climate risks present a significant challenge for the insurance industry, since they are likely to increase over time. Finding a balance between ensuring affordability and availability and managing financial stability may get tougher for insurers if extreme weather conditions continue to escalate.

Insurers should therefore focus on fortifying their assessment of climate-related risks while taking long-term actions to alleviate and mitigate such exposures—from incentivizing the right behaviors among customers, to making climate-related risks a high priority for all employees, to facilitating the development of climate-resilient public policies. They should take a holistic approach toward managing climate-related risks by integrating them as a part of their enterprise risk management efforts and considering the challenges and opportunities to both sides of the balance sheet.

Finally, insurers should take steps to better demonstrate their climate readiness to regulators, analysts, and customers. This can help both insurers and regulators create a more level playing field and a stable market for all stakeholders involved.

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