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Global Insurance Perspectives on Climate Change

INTRODUCTION

Evolving climate change data presents an ominous trend that has the potential to upend historical assumptions of actuarial science. For example, in the last several years global risk markets have weathered historically significant losses: total global economic losses in 2017 were the highest insured losses ever at $138 billion,[1] and 2018 was another costly year, with the fourth-highest total volume of insured losses since 1980.[2] Natural catastrophe losses increased by 26.5 percent in 2020 from the previous year.[3] In 2017 alone, the United States was battered by 16 separate billion-dollar disasters: three tropical cyclones, eight severe storms, two inland floods, a crop freeze, drought and wildfires — only 2011 saw as many billion-dollar disasters.[4] Studies from around the world have also reported a pronounced uptick in severe heatwaves.[5] These events included a heatwave across Asia, droughts in Africa, and flooding in South America.[6]

Increased property claims as a result of natural disasters are forcing insurers to re-evaluate underwriting strategies.[7] For example, insurers are investing significantly in building state of the art climate models to better understand global warming's impact, as well as rebalancing their premiums and pricing strategies. And it is not just property and casualty insurance that warrants reevaluation. Climate change is now leaking into directors and officers risk, life insurance risk and other areas. Insurers will have to continue to adapt their risk forecasts, premium structures, investment strategies, and claims handling practices to remain competitive in a market increasingly complicated by climate change. This paper seeks to explore the impacts of climate change on insurance claims and risk modeling.

COVERAGE ISSUES

D&O Coverage

Climate change litigation presents substantial risks to directors and officers liability insurers (D&O insurers). To date, the primary risk to which D&O insurers, and their policyholders, have been exposed are lawsuits alleging that a corporation has not properly disclosed its climate-change related vulnerabilities to investors under state and federal regulations. Such lawsuits were bolstered by the Securities and Exchange Commission's February 2010 "Guidance Regarding Disclosure Related to Climate Change,"[8] which clarified that existing securities regulations potentially impose wide-ranging disclosure obligations regarding the costs of complying with environmental laws, pending climate change-related lawsuits, and risks to the corporation's business model.

For example, in *Meyer v. Jinkosolar Holdings Co.*,[9] the Second Circuit Court of Appeals held that a group of shareholders could proceed with their "greenwashing" lawsuit alleging that a manufacturer of solar panels made materially misleading statements in its prospectus issued as part of its public offering regarding its compliance with environmental laws at its production facilities in China. Similarly, in *Loritz v. Exide Techs.*,[10] shareholders alleged that Exide Technologies violated §§ 10(b) and 20 of the Securities Exchange Act and §§11 and 15 of the Securities Act by failing to fully and promptly disclose the extent to which Exide's battery recycling operations were emitting high levels of arsenic into the air and polluting groundwater.

In the highest-profile suit to date — *New York v. Exxon Mobil Corporation* — New York sued Exxon Mobil for investor fraud concerning its "management of risks posed to its business by climate change regulation."[11] Specifically, Exxon publicly represented that it was accounting for

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climate change's impacts on its asset valuations as part of its strategic planning, when in fact it was using different valuations for internal planning purposes.[12] A similar case — *Von Colditz v. Woods et. al.* — was brought more recently by an ExxonMobil shareholder in Texas Northern District Court.[13] The lawsuit names several current and former Exxon executives and board members as defendants, including current CEO Darren Woods and former CEO, Rex Tillerson.[14] The complaint accuses the company and executives of misleading investors regarding how much risk climate change posed to the company's assets.[15] The complaint alleges federal securities law violations, breach of fiduciary duty, and waste.[16] A similar shareholder class action was brought against a utility company in Southern California alleging misrepresentations regarding exposure to wildfire risk.[17]

Beyond disclosure-related lawsuits, corporate directors and officers owe fiduciary or quasi-fiduciary duties to the corporations they serve requiring them to act in the corporation's best interests.[18] Some legal academics have suggested that the failure to "manage and mitigate climate risk may constitute a breach of the director's duties to the corporation" and that view could filter its way to the courts.[19] Derivative actions against corporations pose a potential risk to insurers if shareholders overcome the "business judgment rule" and successfully connect directors' or officers' failure to mitigate climate impacts with resulting harm to the corporation, such as reputational harm, missed investment opportunities, loss of market share, or diminished value of securities.

Commercial General Liability Coverage

The generally broad coverage afforded under commercial general liability policies (CGL) —typically that the insurer will pay for "damages" "because of 'bodily injury' or 'property damage'" — leaves insurers potentially vulnerable to a broad variety of liability claims for both personal injury and property damage as a result of climate change. As discussed below, the interplay between traditional CGL policy exclusions, such as intentional acts and pollution exclusions, has yet to be fully tested in U.S. courts.

Insuring Agreement

The *AES Corp. v. Steadfast Ins. Co.*, 283 Va. 609 (Va. 2012) case is an early example of a traditional CGL coverage analysis applied to a climate change related fact pattern. In *AES*, a native Alaskan community brought claims against AES, an energy company that engaged in energy-generating activities in the area using fossil fuels, which emitted greenhouse gasses. 725 S.E.2d 532, 534 (Va. 2012). The Alaskan native community alleged that AES's emissions contributed to global warming, causing ice that protected the community's shoreline to melt earlier in the annual cycle, which exposed the shoreline to storm surges, "resulting in erosion of the shoreline and rending the village uninhabitable." *Id.* at 534. AES sought coverage under its liability policy, but the Virginia Supreme Court held that because the Alaskan native community's complaint alleged AES's release of greenhouse gases was intentional, and because AES knew the consequences to the community, the claim did not arise from an "accidental" occurrence and therefore was not covered by the policy. *Id.* at 538.

Pollution Exclusion

To address new and growing coverage issues surrounding climate change, insurers may turn to old coverage defenses. Pollution exclusions have been standard in CGL policies since 1986.[20] Most pollution exclusions are broadly worded, providing that coverage does not extend to "bodily injury" or "property damage" arising out of "actual, alleged or threatened discharge, dispersal, seepage, migration, release or escape of pollutants."[21] Pollutant may be defined broadly, such as including "any solid, liquid, gaseous or thermal irritant or contaminant, including smoke, vapor, soot fumes, acids, alkalis, chemicals and waste.[22]" Since the U.S. Supreme Court ruled in 2007 that carbon dioxide and other greenhouse gases are "air pollutants" within the meaning of the federal Clean Air Act,[23] there is little doubt that greenhouse gases are considered "pollutants" under typical CGL policies. Accordingly, pollution exclusions may provide a vehicle for insurers to

disclaim coverage of climate change related liability. Insurers may argue that claims asserting damages caused by greenhouse gases are excluded from coverage by a pollution exclusion.[24]

Climate Change Exclusion

Pollution exclusions, however, are not a fail-safe means of reducing exposure to climate change related liability. For example, even if greenhouse gasses are pollutants, it is unclear if courts will determine whether the *release* of greenhouse gasses is excluded by pollution exclusions. While the Supreme Court held carbon dioxide is a pollutant within the meaning of the Clean Air Act in *Massachusetts v. EPA*, the Wisconsin Supreme Court held claims arising out of the inhalation of carbon dioxide were not excluded by an insurer's pollution exclusion in *Donaldson v. Urban Land Interests*.[25] Moreover, state and federal courts across the country are split over whether a pollution exclusion covers gradual, unintentional emissions versus only sudden, intentional pollution.[26] Thus, it may be necessary for insurance carriers to consider adding a "Climate Change Exclusion" to their policies.

Excluding coverage of climate change liability presents a potential win-win opportunity for insurers: carriers can reduce their exposure to growing climate change litigation while incentivizing insureds to limit the environmental impact of their potentially harmful operations.[27] Climate Change Exclusions may bar coverage of claims arising from an insured's negative impact on climate change or failure to meet emissions targets.[28] Though climate change litigation remains in its infancy, a few examples provide insight as to how a climate change liability exclusion may have applicability. Though the case was voluntarily dismissed, in *Illinois Farmers Insurance Co. v. Metro Water Reclamation District of Greater Chicago*, an insurer brought claims against a local government on behalf of property owners who incurred losses following a rainstorm.[29] The complaint alleged the local governments had acknowledged that climate changed existed and that it caused increased frequency and intensity of rainfall, yet failed to take steps to mitigate the problem.[30]

While the *Steadfast* case turned on a pleading issue, cases alleging climate change liability will likely plead negligence theories and be subject to varying approaches in different jurisdictions. Accordingly, a climate change specific exclusion may mitigate a liability carrier's risk while encouraging insureds to rethink their greenhouse gas emissions and environmental impact.

Property Insurance

Property insurance risk represents the likely point of landfall for risks presented by a changing climate. Based upon NAIC data, Florida alone already accounts for 76 percent of all property insurance lawsuits in the United States.[31] California has seen a spate of wildfire related claims in recent years due to abnormal drought conditions. If we continue to see an increase in the severity of storms, higher water levels, and more severe droughts, insurers should plan for even more insurance coverage litigation, particularly in coastal states.

Coverage and Mitigation Options

Insurers are beginning to provide coverage products that respond to the reality of climate change by adjusting premiums based on the amount of climate risk an insured's activities creates.[32] For example, some products, such as "pay-as-you-drive" automobile insurance policies, adjust premiums based on the frequency at which an insured emits pollutants or greenhouse gases.[33] In turn, some carriers offer "green rebuilding" insurance that incentivizes policyholders to rebuild to strict environmental standards after a loss.[34] Similarly, some property insurers provide premium discounts for insuring LEED-certified buildings.[35]

In the face of rising extreme weather events and claims, insurers may also implement strategies to reduce risk for the clients and exposure for themselves. For example, some property insurers provide homeowners insurance policyholders with access to wildfire defense services that deploy professionals to an insured's home when a wildfire is approaching to assist in relocating valuables.[36]

Pricing Issues

Obviously, climate change is likely to have the greatest impact on property insurance, particularly with the increasing frequency and severity of catastrophic events. For about 30 years, property insurance underwriters have relied on catastrophe modeling to predict the frequency and likelihood of catastrophic losses. Catastrophe models make probabilistic predictions of financial risk due to catastrophic events by simulating those events with a specific annual rate as derived from historical data. Other components of these models include hazard modules to predict the nature and severity of the events, vulnerability modules to develop loss ratios, and exposure modules to identify exposed properties.

Underwriters have obviously been concerned about the impact of climate change on catastrophe models for some time due to the underlying changes in historical data. To some extent, of course, ongoing impacts of climate change will be implicitly incorporated into the data supporting these models. But as climate impacts continue and possibly accelerate, catastrophe models may not catch up. Although scientists have also developed useful modeling of climate change impacts, "for many extreme perils the natural variability to date is larger than the underlying climate change tendency."[37] In other words, as helpful as catastrophe models have been to insurers, the variability of catastrophic events is still greater than the increases that can be confidently predicted in climate change models.

One possible solution that has been identified is a move to parametric insurance and risk pooling.[38] Parametric insurance offers pre-specified payouts based upon a type of trigger event, especially a specific type of catastrophic event such as a hurricane, and has been used with some success in parts of the Caribbean. These types of policies have the potential benefit of making losses more predictable and efficient to adjust. An insurer need only verify the magnitude and type of the event, obtain a proof of loss, and then the payout is predetermined. Of course, pricing of parametric insurance suffers from some of the same historical data problems as traditional indemnity insurance based on catastrophe models. However, it has the potential to provide at least a partial solution to the problems of predictability and severity, and the reduction in transaction costs could partially offset increasing losses. To the extent that parametric priced policies are litigated, it could lead to a new species of coverage litigation designed to pinpoint the severity of a particular storm, and thus increase the contracted payout.

Life Insurance

Life insurance risks are also impacted by climate change. The obvious risk is that temperature extremes threaten human life via exposure to the elements. More subtle risks are present as well. For example, the Intergovernmental Panel on Climate Change has identified four major areas where human morbidity and mortality are closely coupled to climate.[39] First, vector-borne diseases (e.g. malaria, dengue) and water-borne diseases (e.g. cholera) are closely linked to local weather conditions. Second, mortality rates are tied to natural disasters like flash floods — and these disasters often carry secondary effects through disruptions to sanitation systems and other critical infrastructure. Wildfire and other climate related risks to air quality also pose acute threats to people with respiratory conditions. Increased probability of both heat and cold related mortality (exposure) are also of growing concern. The first widely published climate attribution study found a link between climate change and the 2003 European heatwave that "resulted in widespread heat-related deaths across Western Europe."[40] These unfortunate modern realities have the potential to upset historical modeling associated with life insurance risk.

DEVELOPING ATTRIBUTION SCIENCE TO PROVE CAUSATION

Not only are plaintiffs developing new legal theories to fight climate change, but a (relatively) new area of science is forming that may help plaintiffs prove foreseeability and causation and thereby advance their theories before the court. Event attribution "is the science that seeks to determine the extent to which anthropogenic climate change has altered the probability or magnitude of the particular weather event or class of weather events."[41] Through widespread collection of data on traditional climate patterns, individual weather events, advanced computer modeling, and statistics, event attribution promises to increase our ability to quantify human pollution's effects on climate

change and individual weather events, e.g. hurricanes, floods, or wildfires.[42] For example, one recent study concluded that approximately $8 billion of the $60 billion in economic damages caused by Hurricane Sandy in 2012 was attributable to sea level rise driven by anthropogenic climate change.[43]

Event attribution may revolutionize climate change litigation in at least two ways. First, an increased knowledge of the links between human activities and climate change could expand the "duties" that those "with specializ[ed] knowledge about climate-related risk" owe to others.[44] The impacts of climate change could become a "reasonably foreseeable" result of polluting or carbon-intensive processes, thus opening the door to liability in negligence.[45] Event attribution, thus, also has the potential to implicate traditional intentional acts exclusionary provisions to the extent it demonstrates specialized knowledge of climate-related risk on the part of insureds.

A second way event attribution may radically change climate change litigation is in the area of legal causation.[46] Based on these methods, plaintiffs will attempt to prove that defendants were the "cause" of plaintiffs' damages. To be sure, event attribution is not sufficient to establish legal causation under existing common-law tort concepts. Event attribution and other modeling methods only purport to measure the likelihood that greenhouse gases or other pollutants increase the risk of particular types of future events in the aggregate. It is impossible to "fingerprint" the various harmful compounds released into the atmosphere — that is scientists cannot tell from where two identical greenhouse gas molecules originated once they have mixed in the atmosphere.[47] Thus, event attribution could not establish that a particular past act by a particular defendant caused a plaintiff's damages. However, this problem has led some legal scholars to suggest that courts or legislatures adopt strict liability, as is common under other pollution statutes like CERCLA,[48] or a "market share" theory of liability to deal with the unusual "causal" issues effecting climate change litigation. If legislatures or the judiciary were to act on this view, insurers could see a wave of litigation rivaling or exceeding the wave of CERCLA-related lawsuits in the 1980s, although as noted, the pollution exclusions adopted in response to CERCLA litigation may hold back the climate change tide to some extent.

REGULATORY ISSUES

Disclosure of climate change liabilities is becoming a global norm. French regulators now require institutional investors, including insurers, to disclose in detail how their organizations are managing the risks posed by climate change and the steps they are taking to reduce the environmental impact of their investment portfolio.[49] The Brazilian government recently surveyed 75 percent of Brazil's insurers and is in the process of developing regulations for improving disclosure of climate change related risks and promoting the integration of environmental risks into the underwriting of specific insurance policies.[50]

In the United States, the National Association of Insurance Commissioners (NAIC) has adopted similar standards.[51] The NAIC asked insurers with more than $500 million worth of premium revenue to produce an annual Insurer Climate Risk Disclosure Survey — analyzing the insurer's financial exposures to climate change and its responses to those risks; however, the request is only mandatory in California, Connecticut, Minnesota, New Mexico, New York, Pennsylvania, and Washington.[52] The NAIC published a report based on those insurers who responded to the survey that found "a broad consensus among insurers that climate change will have an effect on extreme whether events."[53]

At the state level, California has taken a particularly aggressive posture towards insurer disclosures. The California Department of Insurance released its Climate Risk Carbon Initiative (CRCI), in which the Department evaluated California insurers' exposure to climate change.[54] The department asked all insurance companies doing business in California to voluntarily divest from thermal coal enterprises (such as coal-fired power plants) as such investments risked becoming stranded assets with little value.[55] The department also required insurers with more than $100 million worth of annual premium revenue to publicly disclose their investments in oil, gas, and coal companies given the significant financial risks posed by such investments.[56] At the time of the department's report, California insurers had over $528 billion in fossil-fuel related

investments.[57] Disclosure requirements such as these potentially obligate insurers to disclose vast amounts of information, as well as the insurers' ties to certain industries, which could be used against the insurer in future litigation.

OPPORTUNITIES FOR INSURERS

Much of this paper has focused on the *risk* climate change poses to insurers. However, climate change also presents a major opportunity for insurers to help communities manage risk and recover from disaster in a business-friendly way. Historically, insurers have generously invested in technology and processes that help communities recover from natural disasters. In the same way, many insurers are investing in the development of technology that helps our environment recover from climate change.[58] Insurers are also expanding their presence in growing economies with less mature insurance industries. Even insurance regulators are recognizing the opportunities "green" investments offer insurers by working with other regulators and industries to reduce regulatory barriers to investments in "green" technology.[59]

In recognition of the opportunities climate change poses, 16 of the world's largest insurers (totaling 10 percent of the world's written premiums and $5 trillion in assets under management) have partnered with the United Nations Environment Programme to create a new series of risk development tools to better understand climate change's effects on the insurance industry.[60] These tools "will make use of the latest climate science, including some of the most advanced, forward-looking scenarios available."[61] The goal is to help insurers incentivize risk reduction, accurately price risk, make less risky investments, and continue their important work as the "financial shock absorber" for local communities, businesses, and governments. Further, the tools promise to help insurers "seize unprecedented business opportunities in climate action" and "ensure an insurable, resilient and sustainable world."[62]

Climate change presents another opportunity for insurers: greater expansion into undeveloped insurance markets. In recent years, the opportunities for growth in countries with emerging insurance markets, combined with uneven growth and stricter regulations in established markets, have prompted carriers to focus their attention away from traditional markets.[63] The proportion of global GDP belonging to the E7 countries[64] has been increasing over the past 20 years. In addition, the debt and liquidity crunch — caused by the 2008 financial crisis — continues to affect developed countries much more than emerging ones.[65] It is currently estimated that the E7 countries will be responsible for 47 percent of the global GDP growth from 2006 to 2020.[66] The G7 countries,[67] on the other hand, are projected to contribute less than 24 percent of the global GDP growth during that time period.[68] In 2018, insurance premiums only grew at a rate of 1.9 percent in advanced markets; in developing markets, insurance premiums grew at a much higher rate of 6.1 percent.[69] Governments in some emerging economies have also started encouraging the development of insurance markets. For example, the Philippines recently tried to encourage the growth of "micro-insurance" in the country through regulatory reform, which resulted in 20 percent of families purchasing some form of insurance — among the highest rates in the region.[70]

CONCLUSION

Continually shifting climate change risk realities have the potential to impact claims handling and litigation management in a number of industry sectors. In line with insurers' primary functions, insurers should continue to work with their trusted advisers to understand and manage the additional risk presented by climate change. Insurers further have a unique role to play in the global effort to mitigate and adapt to climate change, as both providers of risk protection and as major investors managing $30 trillion of assets.

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