Insuring Doomsday:
*Insurance Implications Arising from Catastrophic Events*

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I. Introduction

Jane called up about three in the morning, to tell us of a great fire they saw in the City. ... Jane comes and tells me that she hears that above 300 houses have been burned down tonight by the fire we saw, and that it is now burning down all Fish Street, by London Bridge. Diary of Samuel Pepys, September 1, 1666.

The Great Fire of London of 1666 destroyed 13,200 houses, 87 churches, St. Paul’s Cathedral and most government buildings. Burning for three days, the fire left almost 90% of the city’s 80,000 inhabitants homeless. Tinniswood, By Permission of Heaven: The Story of the Great Fire of London (2003). The devastation experienced by Londoners in the Great Fire of 1666 ultimately led to the creation of the first fire insurance company – the Insurance Office – which formed fire brigades to put out fires in the buildings they insured. https://www.irmi.com/articles/expert-commentary/the-worlds-first-insurance-company. Other insurance companies (including the predecessor to Royal Sun Alliance) also sprung up and began selling fire insurance policies which provided indemnification for losses – much like first party property policies today.

Even though modern insurance was born from a major disaster, catastrophic losses akin to the Great Fire of London continue to present unique challenges for the insurance industry. Without proper foresight, a single catastrophe or series of catastrophic events can easily bankrupt an otherwise profitable insurer. See e.g. http://www.tbo.com/news/business/william-poe-reflects-on-collapse-of-tampa-based-insurance-firm-182775. Since catastrophic losses are relatively rare, the pricing of insurance to cover these risks is extremely difficult. Indeed, the infrequency of catastrophic losses for individual insurance companies means that insurers often do not have the claims history and experience needed to effectively and accurately underwrite such risks. See Born & Viscusi, The Catastrophic Effects of Natural Disasters on Insurance Markets, p. 56 (Springer Science 2006).

This article will discuss how insurance companies traditionally prepare for catastrophes using available underwriting and claims tools in connection with both first and third party losses. It will also discuss how insurance companies are beginning to prepare for the catastrophic threat of this generation: climate change.

II. Insurance Companies and Catastrophes

In 2016, economic losses from natural and man-made disasters totaled approximately $158 billion – a $64 billion increase from 2015. $150 billion of these losses (95%) was attributable to natural disasters and $8 billion (5%) to man-made disasters. Among the sources of these losses were earthquakes in Taiwan, Japan, Ecuador, Italy, and New Zealand ($20 billion in losses); Hurricane Matthew, which affected the eastern Caribbean and southeastern United States ($8 billion in losses); flooding in the southern United States, Europe, and Asia ($10 billion in losses); and wildfires in Canada ($3.9 billion in losses). Of the $158 billion in natural and man-made disasters in 2016, about $49 billion (31%) was insured. Swiss Re, Preliminary Sigma Estimates: Total Losses From Disasters Events Rise (News Release December 15, 2016).

In their effort to manage the devastating impact of these disasters, insurers have traditionally employed a multi-pronged approach to prepare for and respond to catastrophic losses. While much of insurers’ efforts focused on underwriting, insurers also used claims-based strategies to try to deal with catas-
Insurance Coverage and Claims

A. First Party Property Insurance

1. Underwriting Strategies

When discussing natural disasters and insurance, the main focus is usually on first party property insurance because natural catastrophes often do not allow for the transfer of liability to a third party responsible for the loss.

In the case of first party property insurance, insurers employ various underwriting strategies to prepare for and hedge against catastrophic losses. The most drastic is to simply stop selling insurance for a particular type of loss or in a location where the risk is deemed unacceptable. For instance, in 1956, a study by the American Insurance Association confirmed that flood insurance was no longer commercially viable in the United States. For that reason, by the 1960’s, almost all insurers stopped selling primary flood insurance in the U.S. See A Chronology of Major Events Affecting the National Flood Insurance Program, p. 7 (AIR Dec. 2005). Similarly, after more than a decade of poor economic performances following Hurricane Andrew in 1992, a number of domestic insurers made the business decision to simply stop selling homeowners insurance in Florida. http://money.cnn.com/2005/08/01/news/economy/hurricane_insurance/index.htm?section=money_latest. While ceasing to sell insurance is an effective way for insurers to avoid unacceptable risks, such a decision typically results in a transfer of liability to taxpayers in a manner that many find regressive and unfair.

A much less draconian strategy employed by insurers to prepare for catastrophes is to rely on computer modeling to assess potential catastrophe exposures. Insurers often must use modeling to evaluate potential catastrophic losses because relying on claims experience can be ineffective since natural disasters are infrequent events which produce no losses in most years and large losses in a few years. See Catastrophe Exposures and Insurance Industry Catastrophe Management Practices, pp. 10-11 (American Academy of Actuaries June 2001). Advances in computer modeling products by companies such as RMS and CoreLogic® have significantly improved the ability of insurers to prepare for natural disasters. See Traub, The Impact of Catastrophic Events in the Insurance Industry, pp. 9-11 (FDCC March 2013). Along with improved computer modeling comes more appropriate pricing of risks with catastrophic loss exposure. Use of other underwriting tools such as earthquake sub-limits and hurricane deductibles also help insurers manage potential catastrophic losses.

In addition, insurers employ a number of risk spreading strategies to help prepare for potential catastrophic losses. The traditional risk spreading approach is reinsurance. However, as reinsurance has become less commercially available for potential catastrophic losses, insurers have turned to the financial markets to spread these risks, such as reliance on catastrophe (CAT) bonds. See Catastrophe Exposures, pp. 16-17. In fact, by 2014, the market for CAT bonds had risen to $20 billion annually. While CAT bonds are the dominant alternative to reinsurance, other insurance-linked securities have also been developed to help insurers spread the risk of catastrophic losses.

Certain government-sponsored programs provide additional assistance to the insurance industry in spreading risk associated with natural disasters. In the case of the National Flood Insurance Program (NFIP), primary flood insurance is underwritten and backed entirely by the federal government. While the NFIP has essentially taken over this segment of the flood insurance market which insurers find too risky, a growing number of insurers now offer excess flood insurance, which provides an additional layer of protection to resi-
The California Earthquake Authority (CEA) is another government sponsored program that assists with risk spreading for catastrophes. Following the 1994 Northridge earthquake, 93% of California homeowners’ insurers had stopped writing earthquake insurance or severely limited its availability. In response, the California Legislature created the CEA which developed a “mini” earthquake policy to provide limited earthquake coverage with high deductibles. According to the CEA, 75% of California homeowners’ insurers now offer the CEA “mini” earthquake policy as a supplement to their first party property policies. http://www.earthquakeauthority.com/whoweare/Pages/history.aspx.

Finally, many insurers offer loss control and risk management services to policyholders which are specifically designed to identify and mitigate potential sources of damage before they escalate into a catastrophic loss. See e.g. http://www.businesswire.com/news/home/20061002005280/en/AIG-Private-Client-Group-Introduces-Complimentary-Residential#.WIKI0-p_O7s.email; see also http://www.aig.com/individual/insurance/private-client-group. These services often include engineering and inspection services designed to decrease the chance that the insured will suffer a catastrophic loss.

2. Claims Strategies

Insurers also utilize various claim-based strategies to deal with catastrophes. For instance, many insurers have dedicated CAT teams which travel to affected areas to provide on-site claims assistance to insureds. Harkening back to the fire brigades formed following the Great Fire of London, these CAT teams also provide policyholders access to services to mitigate losses that have already begun.

In examining the changing nature of catastrophic risks, the insurance industry has also become increasingly focused on catastrophic risk management modeling to spot emerging risks and identify effective strategies to better assist corporate risk managers in proactively responding when a disaster occurs. Analyzing how risk managers can shape their insurance programs to protect their investments and reduce the consequences of a disaster, some insurers have developed proposed risk management best practices and guidelines for catastrophic management pre-planning and post-event communication. See ACE Global Catastrophe Survival Guide: New Challenges to Casualty Risk Management (News Release April 5, 2012).

Insurers rely on legal strategies as well to help provide certainty regarding what component of catastrophic loss-related damages are covered or excluded. In this regard, many states have adopted the efficient proximate cause doctrine for first party property losses. Under this rule, “where there is a concurrence of different causes, the efficient cause – the one that sets others in motion – is the cause to which the loss is to be attributed, though other causes may follow it, and operate more immediately in producing the disaster.” Sabella v. Wisler, 27 Cal.Rptr.689, 695 (Cal. 1963) (quoting 6 Couch, Insurance, §1466 (1930)). In theory, this doctrine should assist insurers in making first party claims decisions by creating clarity when deciding whether a particular cause of loss is covered (such as wind) or whether the cause of loss is excluded (such as flood). In practice, though, use of disparate approaches and analyses by different courts has created significant confusion for insurers.

For example, the Washington Supreme Court held that “where a peril specifically insured against sets other causes in motion … produc[ing] the result for which recovery is sought, the loss is covered, even though other events within the chain of causation are excluded from coverage.” McDonald v. State Farm Fire & Cas. Co., 837 P.2d 1000, 1004 (Wash. 1992). This approach places primary importance on whether the cause of loss was the first in a series of events. So, if the first cause in a series of events is covered, the loss is likely covered. In California, however, the “efficient proximate cause” of the loss is the “predominating” cause of the loss, not
necessarily the cause that happened first. See Garvey v. State Farm Fire & Cas. Co., 257 Cal.Rptr.292, 297 (Cal. 1989). Courts in these and other states with different “spins” on the efficient proximate cause doctrine make it very difficult for insurers to apply the rule across state lines. See Saxe, et al., A Disaster Waiting to Happen: Insurance Coverage Issues for Catastrophic Losses, pp. 4-6 (ABA Seminar March 2012).

In response to this uncertainty, insurers have developed anti-concurrent cause (ACC) provisions. These provisions are designed to clarify when first party losses – particularly those involving natural disasters – are covered. A typical ACC provision provides:

We will not pay for loss or damage caused directly or indirectly by any of the following. Such loss or damage is excluded regardless of any other cause or event that contributes concurrently or in any sequence to the loss. ISO Form CP1030 – 10/12.

Many courts have enforced ACC provisions included in first party property policies. See e.g. Arctic Slope Reg’l Corp. v. Affiliated FM Ins. Co., 564 F.3d 707, 711-712 (5th Cir. 2009) (inasmuch as the ACC provision is “not ambiguous,” the court found no coverage for a storm surge claim following Hurricane Rita); TNT Speed & Sport Center v. American States Ins. Co., 114 F.3d 731, 733-734 (11th Cir. 1997); Amherst Country Club, Inc. v. Harleysville Worcester Ins. Co., 561 F.Supp.2d 138, 154 (D. N.H. 2008). There are some courts, however, that have refused to enforce ACC provisions to the extent they conflict with the reasonable expectations of the insured or are otherwise contrary to public policy. See e.g. Murray v. State Farm Fire & Cas. Co., 509 S.E.2d 1, 14 (W.V. 1998) (enforcing an ACC provision would frustrate the reasonable expectations of the insured); Howell v. State Farm Fire & Cas. Co., 267 Cal.Rptr. 708, 714-715 (Cal.App. 1990) (insurer is not permitted to contract around the efficient proximate cause doctrine which has been codified by the Legislature). On the whole, though, ACC provisions have been an effective claims-based strategy for insurers trying to clarify their coverage obligations when faced with catastrophic losses. See Preferred Mut. Ins. Co. v. Meggison, 53 F.Supp.2d 139, 142 (D. Mass. 1999) (noting that the “vast majority of states” uphold ACC clauses).

B. Third Party Liability Insurance

When discussing man-made disasters and insurance, the main focus is typically on third party liability insurance. Unlike natural disasters, man-made catastrophes lend themselves to a transfer of liability to the third party responsible for causing the loss. As noted, however, man-made disasters affecting liability insurance are a much smaller percentage of the total catastrophic losses than natural disasters.

To hedge against catastrophic liability losses, liability insurers use a number of strategies. Exclusions, for example, are employed to significantly limit or avoid insurer liability for various types of potential catastrophic losses. Indeed, liability policies often exclude coverage for pollution, earth movement/subsidence, lead, electromagnetic fields, fungi/mold and bacteria. Some insurers have drafted specialized or manuscript exclusion endorsements to limit coverage for specific catastrophic events arising from “communicable” risks, such as avian (bird) flu, the Zika virus, and Severe Acute Respiratory Syndrome (SARS). See e.g. http://www.reuters.com/article/us-health-zika-insurance-idUSKCN0WK1Q6; see also http://www.insurancejournal.com/magazines/features/2006/05/22/70448.htm. Likewise, D&O and E&O policies often exclude coverage for “bodily injury” and “property damage.” Since most catastrophic losses result in either “bodily injury” or “property damage” claims, this exclusion significantly limits application of D&O and E&O policies to catastrophic losses. Liability insurers also minimize the potential impact of catastrophic losses through the use of aggregate limits, sub-limits, liability deductibles, SIRs and by including defense cost exposure within the limits of the policy.

As for risk transfer strategies to address catastrophic losses, liability insurers rely on subrogation, reinsurance, as well as quota share policies in which different insurers share a layer of excess liability cover-
Like first party insurance, there are also some liability insurance government programs that apply when insuring a loss is not commercially viable. The FAA Aviation Insurance Program instituted following the 9/11 terrorist attacks falls into this category. The FAA program makes insurance products available to the United States domestic aviation industry for certain potential catastrophic risks – such as war and terrorism – that cannot be adequately serviced by the commercial insurance market. https://www.faa.gov/about/office_org/headquarters_offices/ash/ash_programs/aviation_insurance/.

III. The Global Catastrophe On The Horizon: Climate Change

While the insurance industry has been fairly successful in responding to catastrophic losses to date by relying on various underwriting and claims-based strategies, the twenty-first century may present challenges unlike any previously seen. Scientists generally accept that hotter and drier environments will raise the risk of wildfires in some regions, whereas increased precipitation will increase the risk of flooding in others. Some involved in catastrophe modeling believe that climate change could effectuate a 2% to 5% increase in hurricane peak wind speeds over the next 20 years. http://www.iii.org/issue-update/climate-change-insurance-issues. This has led insurance industry leaders, like the President of the Reinsurance Association of America, to warn “that global warming could bankrupt the industry.” http://www.latimes.com/opinion/op-ed/la-oe-linden-insurance-climate-change-20140617-story.html.

While climate change has become a hotly debated political issue, as a whole, the insurance industry is convinced that climate change is real and that it presents a clear and present danger for insurers. In fact, the Geneva Association – a think tank whose members include the world’s largest insurers – has acknowledged climate change as a real phenomenon:

The frequency and severity of natural catastrophes and extreme events has radically increased since the turn of the century, causing major economic losses and human suffering. Societal resilience and loss mitigation requires the involvement and cooperation of multiple actors: governments, corporations, individuals as well as the insurance sector. https://www.genevaassociation.org/research/topics/climate-risk.

In its most recent research paper discussing the need for a public-private partnership to address the risks of climate change, the Geneva Association went even further, stating: “It is generally accepted that climate change is one of the reasons for the rising frequency and severity of natural catastrophes and extreme events…” https://www.genevaassociation.org/media/952146/20160908_ecoben20_final.pdf.

Given the potentially dire economic consequences that climate change presents to global markets, the insurance industry has been at the forefront in developing strategies to respond to this phenomenon. For instance, many insurers have instituted education programs for their insureds which provide instruction to help policyholders decrease their carbon footprint. To encourage reduction of carbon emissions (purported to be a significant cause of climate change), a number of homeowners insurers provide discounts for homes that are certified as “green”. Similarly, some auto insurers offer hybrid and alternative fuel discounts as well as Pay-As-You-Drive (PAYD) programs which reward drivers for driving fewer miles per year. Also, environmentally conscious policyholders can now purchase rebuild options from some insurers which cover the increased cost associated with rebuilding using the most up-to-date “green” technology.

The significant risk climate change presents to the insurance industry has, on occasion, pitted insurers against government actors. For instance, insurers have long criticized government subsidies of property insurance or flood insurance premiums in high risk coastal or fire locations since they promote construction in areas that may not be appropriate given the risks posed. A number of state governments have, on the other
hand, increased insurance regulations, including requiring insurers to report on a yearly basis on the efforts being made to prepare for the potentially catastrophic effects of climate change.

One of the most interesting disputes over climate change that arose between the insurance industry and government agencies occurred in 2014 when various members of the Farmers Insurance Group of Companies filed 9 class action lawsuits against almost 200 Chicago-area municipal entities. The suits alleged that the municipal entities were not doing enough to prepare sewers and storm water drains for storms caused by climate change. As a result, the Farmers entities asked for reimbursement of claims paid to policyholders which were allegedly caused by the failure of municipal entities to prepare for the effects of climate change. The Farmers entities voluntarily dismissed the lawsuits and issued a statement asserting that the short-lived litigation had the desired effect: “We believe our lawsuit brought important issues to the attention of the respective cities and counties, and that our policyholders’ interests will be protected by the local governments going forward.” http://www.chicagotribune.com/news/local/breaking/chi-chicago-flooding-insurance-lawsuit-20140603-story.html.

Others industry leaders have also signaled their intent to take affirmative steps to confront the potential catastrophic risks presented by climate change and its impact on global insurance markets. For example, Lloyd’s of London (the world’s oldest and biggest insurance market) has called on domestic and international insurers to incorporate climate change in their computer modeling. https://www.theguardian.com/business/2014/may/08/lloyds-insurer-account-climate-change-extreme-weather-losses. Most major insurers have developed programs specifically designed to address climate change, both in their own operations and in connection with their policyholders. Notably, the Geneva Association continues to issue reports and white papers focusing on climate change and insurance.

While efforts within the insurance industry to confront climate change are commendable, if this emerging global problem is as significant as many suspect, much more will have to be done. Experience tells us that when certain insurance risks are no longer commercially viable, governments are forced to step in and fill the void. In the case of climate change, the risks – particularly of increased frequency of natural disasters – may require governments to assume an even greater role in dealing with potential climate-related catastrophes. If that is indeed what is required, the work being performed by the insurance industry through the Geneva Association may be a good place to start.

IV. Conclusion

Throughout the twentieth century, the insurance industry has been fairly innovative in developing strategies that have allowed insurers to remain commercially viable in the face of an increased frequency of devastating natural and man-made disasters. To date, these strategies have focused on underwriting, risk spreading, claims-focused innovations (like the ACC), and, on occasion, government sponsored insurance. To the extent catastrophic losses continue to increase due to climate change or other causes, the insurance industry will likely need to become even more innovative. Better computer modeling, proactive catastrophe management plans, additional risk spreading and claims-based strategies, as well as focused public-private partnerships are some of the ways the insurance industry can confront the anticipated challenges of this century. In the face of the available scientific research regarding climate change, the only strategy that is too risky for the insurance industry is to do nothing. Fortunately, the industry appears to be well-poised to continue taking a leadership role in developing forward-looking strategies to manage emerging catastrophic risks in the twenty-first century.