

The Need to Modernize California Wildfire Insurance Regulation with Climate Science

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Executive Summary: Recent fire seasons have been the worst in California's modern history. Beyond causing unprecedented damage to property and loss of life, the California wildfire crisis has also exposed serious issues within the state's home insurance market. State regulation prevents insurers from incorporating the projected climate change-driven increases in wildfire, in policy pricing. Unable to adequately price for wildfire risk, many insurance companies have withdrawn from wildfire-prone areas. Meanwhile, companies that concentrated their policies in these areas have gone insolvent, as they failed to diversify their wildfire risk. Lack of access to reliable insurance leaves many homeowners vulnerable to significant financial losses. To ensure a healthy insurance market that is resilient to climate change-driven disaster, California legislators should revise the insurance code to authorize the use of 1) catastrophic modeling and reinsurance costs and 2) modern climate data and forecasting techniques to rate set for wildfire risk. However, adoption of these new methodologies for rate setting must be accompanied with independent oversight to protect consumers and responsibly regulate new science-based policies.

I. Introduction

Wildfires have always been a part of the natural landscape of California. In recent years, however, the fire season has started earlier, lasted longer, and burned larger areas every year (California Department of Forestry and Fire Protection, 2020). Though some blame rural development and poor forest management for this trend, scientists believe the primary driver is the drier, hotter climate brought about by climate change (Abatzoglou, 2016). Recent research has shown that climate change has more than tripled the number of acres burned in the Western United States since the 1980s (Abatzoglou, 2016).

The impact of these disasters is severe. For example, researchers found the combination of direct losses, health costs, and indirect losses due to economic disruption for the 2018 fire season alone cost California over \$100 billion dollars (Wang, 2020). Considering the 2020 fire season was the largest in California's modern history, this price tag is only

likely to grow (California Department of Forestry and Fire Protection, 2020).

In this new environment, it has become impractical for insurers to continue business as usual. Recently, insurance companies have begun experiencing repeated and severe losses due to wildfires which are only projected to get worse (Scott, 2019). Many companies have chosen to withdraw altogether from the high-risk markets found in wildfire-prone areas (California Senate Committee on Insurance, 2020).

Many Californians residing in areas with high wildfire risk struggle to get or renew home insurance policies (Quinton, 2019). Since most lenders require insurance of assets, mortgaging a home is impossible without insurance. Meanwhile, existing homeowners without home insurance are exposed to substantial financial risk. Since one in seven homes in California are located in high or extreme fire risk areas, the issue of insurance availability is only expected to worsen, pressing the

need for government intervention (Karapiperis, 2018).

The idea behind an insurance system is to mitigate society's collective risks. When done responsibly, insurance can improve resilience against natural disasters, which are expected to only increase in frequency due to climate change (World Meteorological Organization, 2021). California's insurance regulations, however, were not designed with the effects of climate change in mind and ultimately prohibit the use of climate science in risk modeling (Cal. Code Regs. Tit. 10, § 2644.5). Today, these regulatory policies further an anti-scientific system incapable of adapting to the increasing threat of wildfire.

To achieve a more effective insurance system, California must address the regulatory barriers that suppress the use of climate science. California legislators should revise insurance regulation to base rate-making procedures around modern wildfire forecasting and risk modeling that accounts for the extraordinary nature of disasters driven by climate change.

II. The Unique Challenge of Insuring against Climate Change

Historically, the insurance industry has not treated wildfires the same way it treats other types of major disasters such as earthquakes and hurricanes. Rather, wildfires are typically covered along with other kinds of fire damage (e.g. kitchen fires) under standard multi-peril home insurance policies (Cal. Ins. Code § 2070-2084). However, unlike the random risk of kitchen fires, wildfire risk is geographically correlated and presents a challenge to the standard model of risk diversification, the practice of bundling diverse assets to minimize the probability of large pay-outs. Binding many policies in the same geographic region does not diversify wildfire risk in the same way it diversifies other multi-peril risks like kitchen fire risk. If an insurance company constructs a portfolio of geographically correlated multi-peril policies in a region prone to wildfires, the company's risk of insolvency becomes dangerously high.

The Merced Property and Casualty Co. is an extreme example (California Department of Insurance, 2018), Merced was expanding into areas around Paradise, California in 2017, a time when many other insurers were refusing to issue or renew policies in the area. Even though Merced was an "admitted" insurer, defined as being regulated and financially backed by the state, no regulation prohibited the company from concentrating wildfire risk like this. In 2018, Merced's claims from the Camp Fire surpassed \$63 million, far exceeding the \$23 million available to pay out those claims. Merced went insolvent shortly thereafter. Beyond Merced, analyses suggest that across Californian insurers, losses from the 2017 and 2018 fire seasons alone outpaced accumulated profits from 2004 to 2016 (Scott, 2019).

Repeated losses of this nature jeopardize the financial health of these companies, the collapse of which would have far reaching consequences for California residents. To avoid this collapse, California must treat wildfire risk appropriately as a disaster risk. Just as damage from floods and earthquakes are insured or reinsured through specially diversified portfolios, so too must wildfires.

III. Legislative Barriers to Sustainable Insurance Policy

Ideally, home insurance premiums would reflect the expected cost of accidental property damage, and insurers' portfolios would be diversified to minimize the risk of insolvency. In practice, though, there are several barriers embedded into Californian insurance code preventing insurers from achieving this ideal. Proposition 103, passed in 1988, requires insurance companies to get prior approval from the California Department of Insurance before any rate increase. It is often difficult for insurers to meet the law's requirements for justification to increase premiums, even when increases would bring premiums closer to a reflection of true risk (Franzier, 2021). In fact, in spite of the state's extreme wildfires, Californian homeowners enjoy home insurance premiums 35% lower than the national average (National Association of Insurance Commissioners, 2018).

Rate setting is restricted in other unsustainable ways as well. Though disaster reinsurance, essentially

insurance for insurance companies, is often the difference between a safely diversified and geographically concentrated portfolio, insurance companies are not allowed to use the cost of reinsurance as justification for their rates (Cal. Ins. Code §623). When reinsurers raise rates to contend with climate-driven increases in disaster risk, Californian insurers are squeezed. Additionally, only loss history from at least the past 20 years is allowed as justification for premiums (Cal. Code Regs. Tit. 10, § 2644.5). Historical data however is often not reflective of current risk as threat and severity of wildfires continue to grow. While individual characteristics of a property such as the building materials and surrounding vegetation can be used to establish fire risk, ultimately anticipated climate-driven increases to wildfire severity cannot.

Unable to appropriately price wildfire risk, the only remaining option for responsible insurance companies is to completely withdraw from high-risk markets. Evidence suggests that withdrawal is indeed happening. In the 1960s, the California Fair Access to Insurance Requirements (FAIR) established a home insurance plan for homeowners who cannot find insurance in the private market. FAIR plans do not provide comprehensive coverage, are significantly more expensive and are not designed to serve as a primary insurance market in the state (Cassesso, 2020). Nevertheless, between 2019 and 2020, enrollment in this “last resort” policy increased by over 50%, suggesting a surge in homeowners who cannot find or renew a policy (Flavelle, 2020). In response, state legislators have passed various laws seeking to curb insurance companies’ non-renewals, particularly in the state’s most vulnerable areas. California Senate Bill 824 and Senate Bill 894, both introduced in 2018, required insurers to renew policies in areas impacted by a disaster for one year and at least two years if the property suffers a total loss. Roughly one million homeowners are protected through annual renewals of SB 824 provisions (California State Senate Committee on Insurance, 2020). However, this arrangement does not constitute a long-term solution. Unable to appropriately price in these markets, insurers will inevitably withdraw from them.

In 2019, Senate Bill 292 was introduced as the first step toward a long-term solution. SB 292 aimed to offer a compromise between insurer and consumer interests. The bill would have allowed insurance companies to incorporate the costs of reinsurance as well as future climate forecasting into their rates. In return, insurance companies would have to make their policies more available in high-risk areas and reward risk mitigation efforts via reduced premiums. Unfortunately, however, the bill was effectively gutted after opponents argued that it violated the ratemaking procedures established by Proposition 103 (California Senate, 2020).

The government’s focus on consumer protection is well motivated. A recent study found that wildfires disproportionately affect vulnerable populations, including poor people and people of color (Davies, 2018). This trend is only expected to strengthen in step with California’s housing crisis as the prices of homes in metropolitan, low-fire risk areas continue to skyrocket (Ellis, 2020). However, as it stands today, California has opted for short-term solutions at the cost of a sustainable insurance infrastructure. Unless corrective action is taken, the insurance market for high-risk communities may collapse entirely, harming the very Californians which the state’s hard line of consumer protection aims to serve.

IV. Revising state insurance code to incorporate modern climate modeling techniques

California’s restriction on using climate change forecasts in insurance rate setting is not only anti-scientific, but dangerous. As discussed, this policy has created a system incapable of weathering anticipated wildfire disasters. There are several steps California legislators can take to create a more sustainable insurance system that ultimately protects more Californians.

First, taking the example of earthquake insurance, the California Earthquake Authority is permitted by the California Department of Insurance (CDI) to incorporate both catastrophic reinsurance costs and catastrophe or CAT modeling, a tool to simulate losses from a natural disaster, in establishing insurance rates. The CDI should authorize the expansions of both of these practices to high wildfire

risk policies. In high-risk areas, this approach would both increase homeowners' access to insurance and allow insurers to properly diversify that risk. Expanded use of CAT modeling could also inform mitigation efforts and prevent the spread of future wildfires.

Second, the CDI should permit the use of climate data and forecasting in ratemaking. The California state government has sponsored efforts in the past to better understand how climate affects wildfire risk in the state. For example, the Fourth Climate Change Assessment, published in 2018, included reports that applied climate data and modeling to offer a science-driven view of the actual wildfire risk California faces (Nylen, 2018; Westerling, 2018). Even more precise and accurate risk assessment could be achieved by utilizing modern technologies, such as advanced image processing techniques for satellite images, and utilizing larger and more detailed data sets for predictive climate modeling. Indeed, several firms have emerged in the last decade focused on quantifying the risk climate change poses to client companies. The technologies used by these firms allow future risk projection not just for broad regions but also to specific assets, a capability that could prove useful in the private insurance sector. California legislators should revise

state insurance code to enable the CDI to not only permit but also encourage insurers to leverage these climate-aware risk models in their ratemaking. As climate change poses one of the greatest challenges of the 21st century, it is only reasonable that we use 21st century tools and technology to face it.

Of course, the integration of climate forecasting into underwriting procedures will require oversight and transparency. The CDI, under Proposition 103's provisions, is well-positioned to provide that oversight and in exchange for permitting climate forecasting into ratemaking, could require insurers to disclose the climate data and forecasting techniques they use. Additionally, the CDI's Climate and Sustainability Branch, established in 2019, which works with climate scientists, consumer groups, and insurance experts could develop regulation delineating appropriate use of climate forecasting.

California should choose to be a leader by adopting and safeguarding science-based policies in its insurance market. Doing so will not only protect some of the state's most vulnerable residents, but this pro-science regulatory approach can demonstrate how policy actions informed by climate intelligence can create a society resilient to disaster.

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