



Policy for provision of universal wildfire insurance at least cost in California



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CONTEXT

The last two years have seen unprecedented catastrophic wildfires in California. In 2017, wildfires collectively caused at least \$18.0 billion in damages, including \$13.2 billion in insured losses, \$3 billion in other economic losses, and \$1.8 billion in fire suppression costs.¹ In 2018, a total of 8,527 fires burned an area of 1,893,913 acres, the largest area of burned acreage recorded in a fire season.² The largest fire alone, called the Camp Fire, caused damages of \$16.5 billion, with \$12.5 billion of uninsured losses.³ The increased fire risk is an issue not only for California but also the western US in general.

This increased severity has multiple components, including climate change, forest management, and land use practices.⁴ First, climate change has increased the severity and volatility of weather indicators such as rainfall and temperature. Second, reduced logging and forest clearing have resulted in higher forest densities and, therefore, availability of fuel. Third, increasing demographic pressures have resulted in buildings in higher risk areas close to economic centers. All three, in combination, have resulted in not only higher wildfire risk but also higher damages.

¹ See <https://www.artemis.bm/news/california-wildfire-industry-losses-put-at-13-2bn-by-aon-benfield/>

² See <https://gacc.nifc.gov/sacc/predictive/intelligence/NationalYTDbyStateandAgency.pdf>
<https://gacc.nifc.gov/sacc/intelligence.php>

³ See <https://www.nbcnews.com/news/us-news/california-wildfire-was-world-s-costliest-natural-disaster-2018-insurer-n956376>

⁴ See <https://science.sciencemag.org/content/313/5789/940.full>

PROBLEM

The increased risk of wildfire, both in terms of likelihood as well as severity, has resulted in two major issues for home and property owners. First, insurance premiums have gone up significantly, up to 300-500% in many cases, despite preventive measures being taken by homeowners.⁵ Second, the number of non-renewals by insurers has gone up significantly in high risk areas. Thus, not only insurance availability has reduced, but also the available insurance is more expensive, with both factors indicating the increasing difficulties in managing fire risk from the insurers' perspective.

Both of these indicate issues related to the following underlying factors. First, the risks are indeed increasing not only in severity but also in uncertainty; in fact, insurers report that the existing models are no longer effective.⁶ Second, there is a danger of adverse selection – given increasing risks and premiums, only high-risk properties may opt for fire insurance, and lower risk properties may opt out in order to avoid excessive cross-subsidization, which may further increase premiums for the former.⁷ Third, this may create over-reliance on the FAIR scheme, funded by pooling capital from admitted carriers, as a backstop in case private insurance fails to provide coverage.⁸

SOLUTIONS

To address these issues, a necessary condition may be the development of more accurate models of fire risk, so that insurers can not only assess but also price the risk appropriately. In particular, these models may need to be not only more granular – both in space and in time – but also be responsive to the non-stationary weather dynamics due to climate change.⁹ Further, in addition to models that predict fire risk ex-ante, there may be need for models that predict fire risk in real-time. These models are already in development by existing modelers, such as RMS, as well as startups, such as Terrafuse.

Beyond more accurate risk modeling by modelers and subsequent appropriate risk pricing by insurers, there is a clear role for policy, as outlined below.

First, policy needs to ensure that there is robust and guaranteed demand for wildfire insurance, which would then attract ample supply of private insurance. This can be ensured via a mandate for universal wildfire insurance, addressing the issue of adverse selection as described above.¹⁰ This may require separating the wildfire insurance from the general property insurance which typically covers fire,¹¹ a separation similar to the separation of earthquake and flood insurance,¹² and mandating that everyone buys wildfire insurance.

⁵ See <http://www.insurance.ca.gov/0400-news/0100-press-releases/2018/upload/nr002-2018AvailabilityandAffordabilityofWildfireCoverage.pdf>

⁶ See <https://www.gov.ca.gov/wp-content/uploads/2019/04/Wildfires-and-Climate-Change-California's-Energy-Future.pdf>

⁷ See <https://www.sciencedirect.com/science/article/pii/B9780122148507500267>

⁸ See <https://www.cfpnet.com/>. The FAIR scheme, funded by pooling money from admitted carriers, is typically the insurer of last resort in California.

⁹ See <https://www.tandfonline.com/doi/abs/10.3402/tellusa.v28i6.11316>

¹⁰ See <https://www.johnlocke.org/press-release/obamacare-enrollment-shows-evidence-of-adverse-selection/>

¹¹ See <https://www.allstate.com/tr/home-insurance/fire-insurance-coverage.aspx>

¹² See <https://strachota.com/resources/blog/need-separate-flood-insurance-policy/>

Second, this mandate for universal insurance would need to be combined with a mandate for risk-based pricing, so that premiums adequately reflect wildfire risk, and that the issue of moral-hazard is addressed.¹³ A complementary policy may be to institute smarter land use policies that limit development in risky areas or at the very least require more disclosure of risks to potential home buyers. In this context, learnings from the National Flood Insurance Program (NFIP) would be instrumental, where absence of risk-based pricing resulted in properties being built in high-risk areas.¹⁴ In this process, again learning from the NFIP, to avoid crowding out of private insurers, FAIR would need to be the insurer of last resort.¹⁵

Third, while risk-based insurance would ensure that lower income homeowners do not end up building in high risk areas, it does not address the issue of existing lower income housing in high risk areas, especially areas where wildfire has increased recently, especially after houses were built.¹⁶ While a universal market should lower the insurance premium for these homeowners, due to inherent cross-subsidization, the premium may still be unaffordable. In such cases, subsidies may need to be provided based on income levels, for appropriately risk-based premiums.¹⁷

By following on these suggestions, California can ensure that wildfire insurance is universally available, at least cost, with appropriate public-private partnership, where the public resources are used in an additional way without crowding out the private sector. This, of course, does not replace policies focused on wildfire prevention – e.g., forest management and land use practices – as well as wildfire response. However, this is a necessary ingredient of a policy suite to ensure that fire risk is adequately managed via insurance.

ABOUT

Gireesh Shrimali is a Precourt Scholar at the Sustainable Finance Initiative (SFI) at Stanford University. His research focuses on the intersection of policy and finance, in climate in general, and energy in particular. At SFI, he is examining the relationship between climate and financial risks, and how effective policies can be designed to address financial risks being brought about due to the changing climate. The California fires have brought his attention to how this risk can be best managed via insurance policy.

¹³ See http://opim.wharton.upenn.edu/DPLab/papers/workingPapers/Yin_working_Risk%20Based%20Pricing.pdf

¹⁴ See <https://www.artemis.bm/news/nfip-shift-to-risk-based-pricing-a-boon-for-private-markets-and-derisking/>

¹⁵ See <https://publicpolicy.wharton.upenn.edu/live/news/1939-expansion-of-private-flood-insurance-caution-on>

¹⁶ See <http://www.insurance.ca.gov/0400-news/0100-press-releases/2018/upload/nr002-2018AvailabilityandAffordabilityofWildfireCoverage.pdf>

¹⁷ See http://www.opr.ca.gov/meetings/wildfire-commission/2019-06-07/docs/20190607-Item_7_Wildfire_Commission_Executive_Summary_Draft.pdf