Reshaping insurance to solve California's wildfire insurance availability issue

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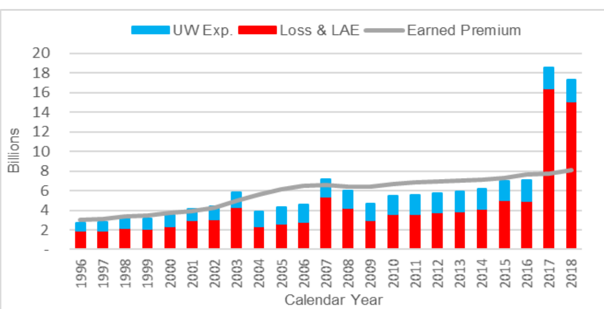
California homeowners insurance

In the wake of California wildfires, homeowners are finding it increasingly difficult to find insurance. Traditional homeowners insurance products are often inflexible[1] and the underwriting and rating are not designed to effectively accommodate the construction boom near wildland-urban interfaces. In addition, California regulations do not allow insurers to include the net cost of transferring wildfire risk through reinsurance in homeowners insurance premiums.

Reinsurance is insurance for insurers, to help them financially respond to large catastrophes like a wildfire or earthquake. Insurers share a portion of the premium with reinsurers to rent capital and reduce the burden of a major event involving multiple policyholders. In California, regulations allow reinsurance costs for earthquakes to be included in insurance rates but not for wildfires or other catastrophes. This penalizes insurance companies who spread the risk of major wildfires, and results in bottom-line loss and expense outstripping premium over the long term. Figure 1 illustrates California homeowners insurance industry annual direct earned premium, incurred loss and loss adjustment expense, and incurred underwriting expense.[2]

Figure 1: California Homeowners Industry Premium vs. Loss and Expense



The years where more than 2,000 structures burned in a wildfire, as per Cal Fire, are apparent in:

- 2003: Cedar and Old fires
- 2007: Zaca, Witch, Harris, Coral, Santiago fires
- 2015: Rough, Butte, Valley, Rocky fires
- 2017: Tubbs, Nuns, Atlas, Thomas, Redwood Valley fires
- 2018: Mendocino, Carr, Camp, Woolsey fires

These are the same years when the California homeowners insurance industry direct incurred loss and expense exceeded direct earned premium, except 2015 where incurred loss and expense came close to but did not exceed earned premium[3].

In a hypothetical scenario where insurers could not buy reinsurance, insurers could instead set aside a portion of their profit in each non-catastrophe year to build up a surplus to pay for catastrophe years. It would take many years of profit to create a surplus large enough to pay for a major catastrophe. The California homeowners insurance industry underwriting profits, before income taxes, since 1996 are illustrated below.[4]

Figure 2: California Homeowners Industry Underwriting Profit (Loss)

Calendar Year	Earned Premium	Incurred Loss & LAE	Loss & LAE Ratio	Underwriting Profit (Loss)	
1996	3.01	1.94	64.6%	0.24	
1997	3.14	1.89	60.2%	0.33	
1998	3.37	2.24	66.4%	0.13	1.25
1999	3.50	2.13	60.8%	0.34	
2000	3.70	2.38	64.3%	0.21	
2001	3.89	3.04	78.2%	(0.30)	
2002	4.24	3.10	73.0%	(0.12)	-1.23
2003	4.96	4.31	86.8%	(0.81)	
2004	5.59	2.33	41.7%	1.66	
2005	6.12	2.81	45.9%	1.65	
2006	6.47	2.77	42.9%	1.86	
2007	6.60	5.33	80.8%	(0.53)	
2008	6.41	4.25	66.3%	0.40	
2009	6.41	2.98	46.5%	1.66	
2010	6.66	3.57	53.7%	1.24	13.72
2011	6.85	3.68	53.7%	1.25	
2012	6.98	3.78	54.2%	1.25	
2013	7.07	3.80	53.8%	1.27	
2014	7.14	4.06	56.9%	1.06	
2015	7.30	4.92	67.5%	0.36	
2016	7.62	4.88	64.0%	0.60	
2017	7.74	16.49	213.1%	(10.89)	-20.13
2018	8.07	15.06	186.6%	(9.25)	
1996 to 2018	132.85	101.76	76.6%	(6.39)	

Five years of profit accumulated from 1996 to 2000 of $1.3 billion were depleted by the subsequent three years of loss from 2001 to 2003 of $1.2 billion, driven by the 2003 wildfires. The subsequent three years of profit accumulated from 2004 to 2006 were enough to pay for the 2007 wildfires. However, profit accumulated from 2004 to 2016 of $13.7 billion was insufficient to pay for $20.1 billion of underwriting loss from the 2017 and 2018 wildfires. Since 1996, the homeowners insurance industry

[1] Traditional homeowners products are rated at an all peril level, rather than a by-peril level that can consider characteristics appropriate for a specific peril in the premium for that peril.

[2] From S&P Global National Association of Insurance Commissioners (NAIC) Annual Statement, for P&C Combined Industry homeowners including company restatements up to 11/21/19. Direct earned premium (DEP), incurred loss and defense and cost containment, commissions, taxes, licenses, and fees (TLF) from California State Page. Adjusting and other (AO), other acquisition (OA), general expenses (GE), other income, as a ratio to DEP from NAIC Insurance Expense Exhibit, applied to California State Page homeowners DEP.

[3] After policyholder dividends are paid and net cost of reinsurance taken into account, it is likely that 2015 experienced a net underwriting loss.

[4] Underwriting profit calculated as DEP - incurred loss and defense and cost containment - AO - commission - TLF - OA - GE + other income, before policyholder dividends and income tax.

underwriting loss outstripped premium resulting in a $6.4 billion net underwriting loss.[5]

Insurance availability issue

The inability for insurers to pass on the net cost of reinsurance, to customers forces them to absorb this cost out of profits. In addition, the California regulatory prescribed insurance ratemaking methodologies do not accommodate maintaining rates high enough to build a catastrophe surplus fund[6]. The long period of perceived profits before the recent 2017 and 2018 wildfire events and time required for the prior approval rate review process in California, may cause homeowners insurance rates to be understated compared to the increased wildfire exposure. Furthermore, the increased wildfire activity has caused reinsurance rates to significantly increase. Not being able to include the cost of reinsurance or the higher cost of capital to protect against the devastating financial impact of wildfires has made the California insurance market less attractive to insurers. Many California insurers are no longer accepting properties with significant exposure to wildfires, diminishing availability for homeowners with wildfire exposure. Many of these homeowners have been turning to the California FAIR Plan.

The FAIR Plan was created by state legislation in July 1968 following the 1960s brush fires and riots. It is an insurance pool established to assure the availability of basic property insurance to Californians unable to obtain homeowners insurance in the voluntary insurance market. The FAIR Plan is a syndicated fire insurance pool comprised of all insurers licensed to conduct property and casualty business in California. The FAIR Plan is not a state agency nor is it funded with public or taxpayer funds. The Plan was established under the Insurance Code (Sections 10090 et. seq) as an insurance placement facility. All property and casualty insurers licensed to write and engaged in writing any component of basic property insurance in homeowners or other dwelling multi-peril policies are members of the FAIR Plan in compliance with Insurance Code Section 10095(a). The Plan issues policies on behalf of its member companies. Each member company participates in the profits, losses, and expenses of the FAIR Plan in direct proportion to its market share of such business written in California.

According to a rate and rule filing submitted by the FAIR Plan in November 2019, the FAIR Plan's policy counts are increasing at a rate of 17% per year. The increase is entirely in wildfire-exposed areas of the state, and the policies in such areas have increased at more than double this rate. The average limit of insurance purchased has also increased 17%, suggesting that more expensive, wildfire-exposed homes are turning to the FAIR Plan. The FAIR Plan's expected average annual loss exposure to wildfires has more than tripled in the past year.[7]

The FAIR Plan's recent rate filing included a review of the FAIR Plan's historical wildfire loss experience and noted the increased frequency and severity. The table in Figure 3 summarizes the California homeowners insurance industry incurred loss by calendar year,[8] the number of structures burned in California as per Cal Fire, and the number of major wildfire on which the California FAIR Plan paid claims.

The number of structures burned increased by more than 35% from the 1990s to the 2000s, and then more than tenfold in the subsequent eight years. As illustrated in the bottom most three rows of Figure 3, from 2000 to 2009 the FAIR Plan recorded twelve wildfire events, and from 2010 to 2018 35 wildfire events. FAIR Plan data prior to 2000 was not available in FAIR Plan's recent rate filing.

Figure 3: Evidence of California Wildfire Increased Frequency and Severity

Year	CA Homeowners Incurred Loss	CA Structures Burned	CA FAIR Plan Wildfire Events	Wildfire Events
1990	2,791	641	NA	Paint
1991	1,980	2,900	NA	Oakland
1992	2,261	636	NA	Fountain
1993	1,958	-	NA	
1994	2,170	-	NA	
1995	1,536	-	NA	
1996	1,547	-	NA	
1997	1,491	-	NA	
1998	1,770	-	NA	
1999	1,686	954	NA	Big Bear, Jones
2000	1,916	-	NA	
2001	2,500	-	NA	
2002	2,514	17	NA	McNally
2003	3,685	3,823	NA	Cedar, Old
2004	1,729	-	-	
2005	2,088	-	-	
2006	2,156	11	-	Day
2007	4,723	2,199	7	Zaca, Witch, Harris, Corral, Santiago
2008	3,494	662	3	Klamath, Basin, Sayre, Mentocito, Senson
2009	2,219	209	2	Station, Jesusita
2010	2,873	-	-	
2011	2,892	-	-	
2012	3,083	-	2	Rush
2013	3,161	112	7	Rim, Powerhouse, Glendale, Spring, Colby
2014	3,396	-	2	
2015	4,257	2,880	5	Rough, Butte, Valley, Rocky
2016	4,159	386	5	Erskine, Sand, Soberanes
2017	15,537	40,550	9	Tubbs, Nuns, Atlas, Thomas, Redwood, Creek
2018	14,176	22,341	5	Mendocino, Carr, Camp, Woolsey
1990-1999	19,191	5,131	NA	
2000-2009	27,023	6,921	12	
2010-2018	53,534	66,269	35	

The FAIR Plan offers a basic dwelling fire insurance policy that covers fire, including wildfire, lightning, smoke, and explosion related to fire. Although the homeowner can purchase optional extended coverage that includes windstorm or hail, riot or civil commotion, damage caused by aircraft or vehicles, volcanic

[5] According to previous Milliman research, "The combined 2017 and 2018 wildfire seasons wiped out about twice the combined underwriting profits for the prior 26 years." Based on industry homeowners data pulled from S&P Global April 2019. http://assets.milliman.com/ektron/Wildfire_catastrophe_models_could_spark_the_changes_California_needs.pdf

[6] The CDI Rate Template uses 20 historical experience years of catastrophe data, that often doesn't account for catastrophes that occur less frequently not in the experience period.

[7] From FAIR Plan rate filing, SERFF filing number MISF-132162411.

[8] 1991-1995 from CDI website http://www.insurance.ca.gov/01-consumers/120-company/04-mrktshare/2014/upload/PrmLssChartHistorical2014wa.pdf. 1996+ from NAIC Annual Statement, California State Page 14, homeowners, incurred loss. Burned structures from major wildfire events from Cal Fire at http://templatelab.com/most-destructive-california-wildfires/.

eruption, and vandalism or malicious mischief, the FAIR Plan policy is not a multi-peril homeowners package policy that provides comprehensive coverages like theft, liability, workers compensation, etc. Homeowners desiring comprehensive package coverages offered by a homeowners policy, but unable to obtain them in the voluntary market due to wildfire exposure, can purchase a Difference In Conditions (DIC) policy from the voluntary market, which wraps around the FAIR Plan policy to provide the extra coverage. Homeowners with difficulty finding insurance can purchase a basic FAIR Plan dwelling fire policy along with a voluntary market DIC policy in order to end up with coverage similar to what they would have had with a voluntary homeowners policy. Not all voluntary homeowners insurance companies offer a DIC, and when they do, it is generally written as an endorsement to the voluntary homeowners policy with a discount applied to the homeowners premium to recognize that the basic FAIR plan policy is providing the fire coverage.

Reshaping insurance

Traditional homeowners insurance products that are priced on an all-perils basis are ill-equipped to measure risk and rate for wildfires, droughts, windstorms, flash flooding, mudslides, tsunamis, and earthquakes, all of which California homeowners are exposed to. In other catastrophe exposed states, we have helped several clients reshape their homeowners insurance products to rate each peril separately, using new technology-based sources of data to collect characteristics specific to each property and location, and catastrophe models to help measure, mitigate, and rate the risk. To do so works most effectively when the rates are designed at a peril level. Completely separating the perils from each other for rating purposes allows the use of advanced techniques and data that is most appropriate to a specific peril.

Californians could use a flexible product that is specific to their needs, offering individual perils ‘a la carte’, high deductible options specific to a peril to keep premiums low, and other options. This flexible by-peril product could decouple the fire peril to provide more DIC options to Californians. The product could provide individual property wildfire exposure scores and tips to improve it, as well as offer fire mitigation services to prepare for and in the event of an oncoming wildfire.

When we create these products, we are guided by Actuarial Standards of Practice that have evolved over time to recognize modern technological techniques, such as using catastrophe models instead of traditional methods of using twenty years of losses to develop catastrophe rates. Actuarial Standards of Practice also recognize modern financing techniques, such as including the net cost of reinsurance and higher cost of capital for catastrophe ratemaking.[9]

California implemented Proposition 103 in 1988, which prescribed insurance ratemaking methodologies and required personal lines insurance rates to be submitted to the CDI for approval. The following updates to the California insurance regulations and ratemaking methodologies could improve voluntary insurer willingness to invest the time and cost to develop and launch voluntary market products insuring catastrophe exposed properties with flexible coverage options, like new DIC products:

- Allow consideration of cost of reinsurance and higher cost of capital in catastrophe ratemaking for wildfire; and
- Update the CDI Rate Template to allow catastrophe models instead of historical experience for rate development.

Although there are DIC offerings in the marketplace today, that with a FAIR Plan policy can provide comprehensive homeowners insurance coverage, updating the regulations to encourage more voluntary market options with more flexibility to the homeowner could go a long way to solving the availability issue. Working together is the easiest path to solving the insurance availability issue.

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[9] Actuarial Standard of Practice 29, 30, 38, 39, 53, and Statement of Principles Regarding Property and Casualty Insurance Ratemaking.