

The Roof is on Fire: Wildfire Modeling and Insurability in the CA Insurance Marketplace

CAS Seminar on Reinsurance

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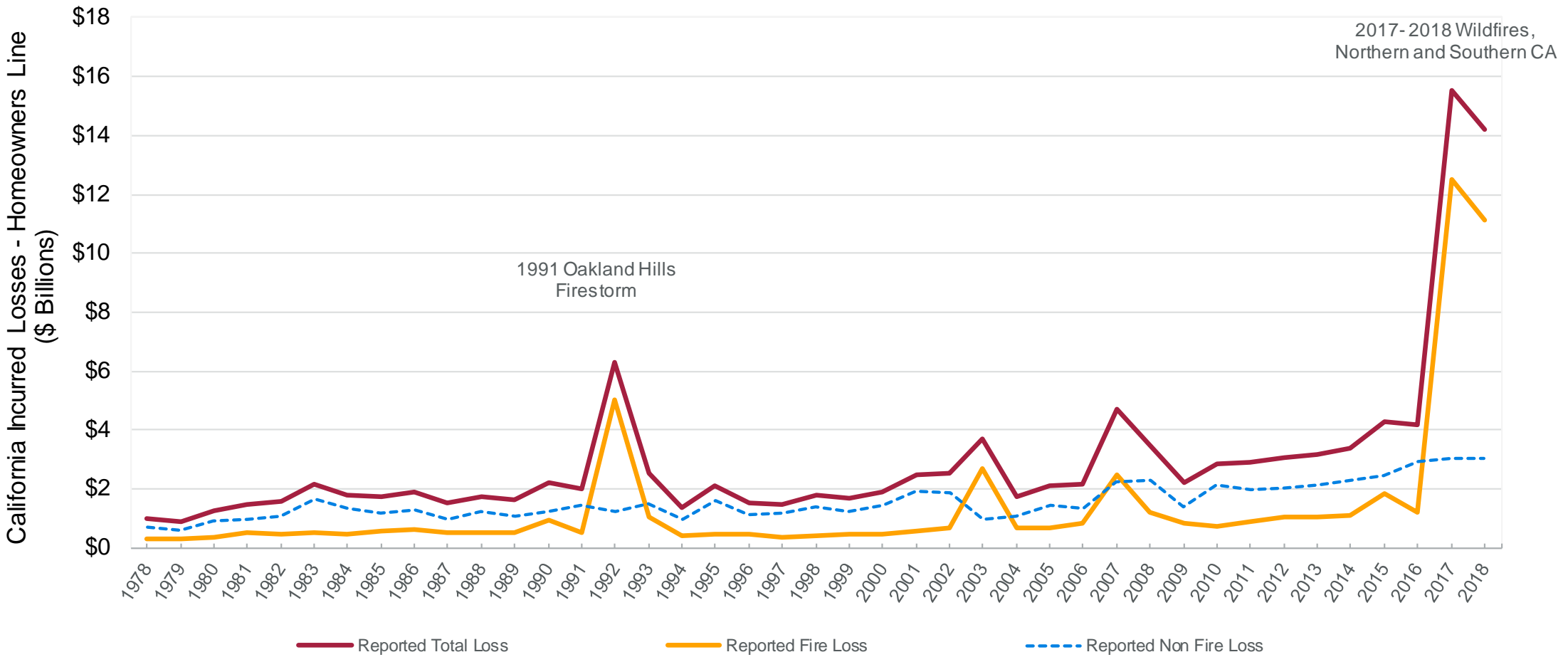




Historical Homeowners Data

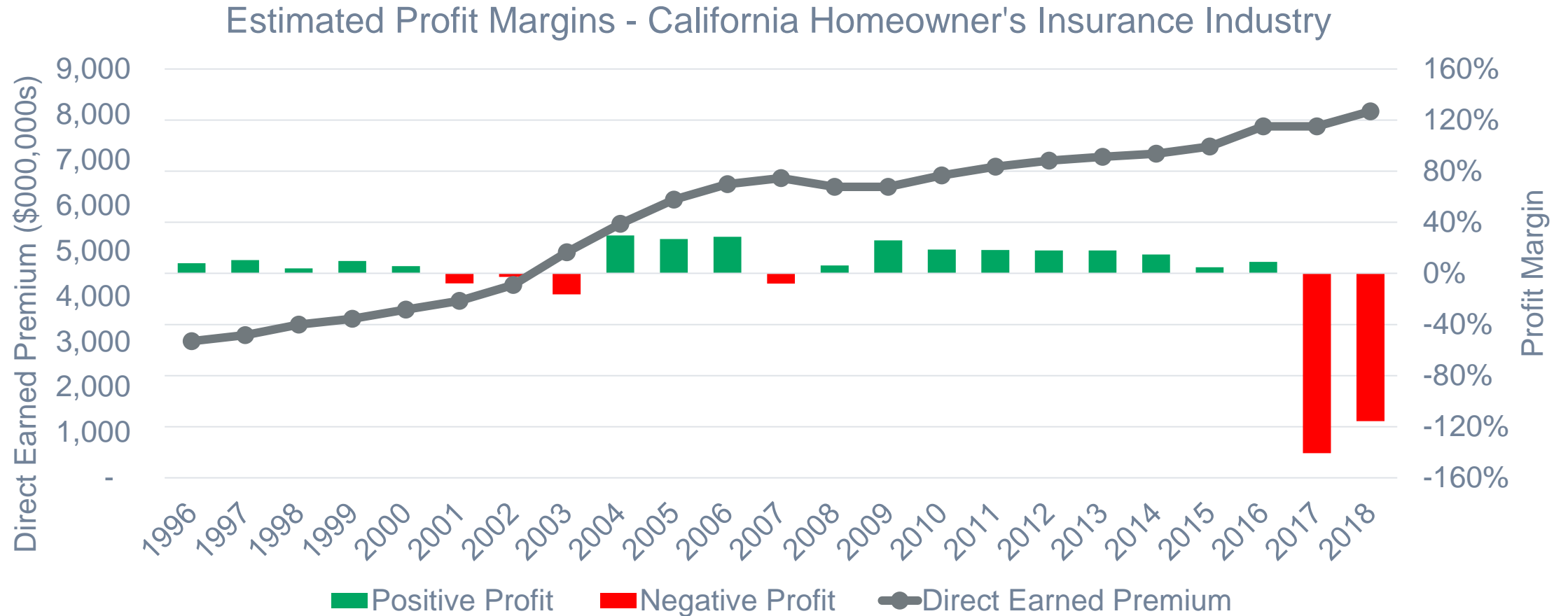
Volatility of Historical Data

- Wildfire insured loss experience can be highly volatile, rendering historical loss data potentially unreliable.



Source: Milliman estimates, based data from ISO and SNL.com

Homeowner's Insurance Profitability



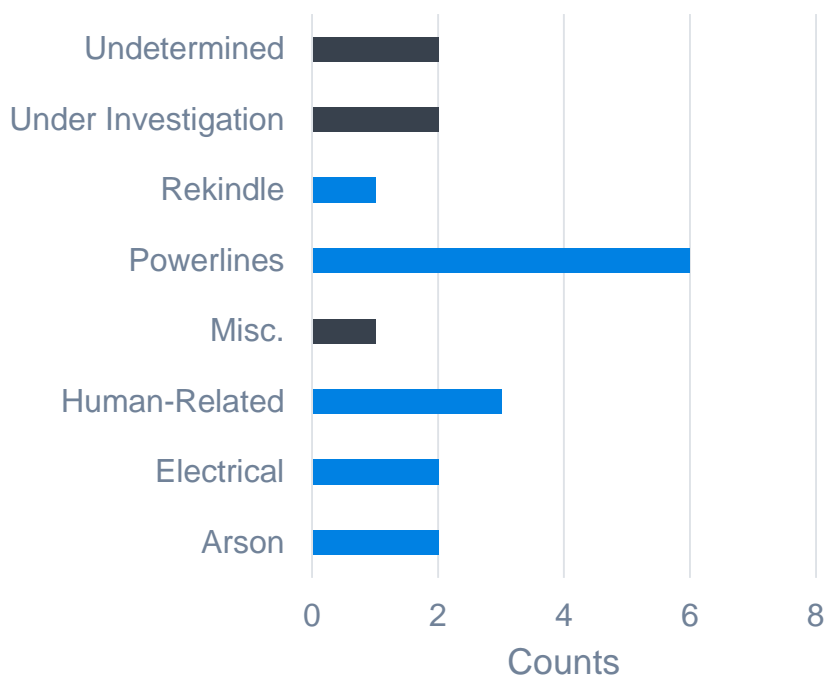
Source: Milliman Estimates, based on P&C Combined Industry Annual Statement data from SNL



Causes of Wildfire

Fire Ignition


- Natural causes have not yet been determined to be the cause of any of the top 20 most destructive wildfires in California



Top 20 Most Destructive California Wildfires

FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1 CAMP FIRE (Under Investigation)	November 2018	Butte County	153,336	18,804	85
2 TUBBS (Electrical)	October 2017	Napa & Sonoma	36,807	5,636	22
3 TUNNEL - Oakland Hills (Rekindle)	October 1991	Alameda	1,600	2,900	25
4 CEDAR (Human Related)	October 2003	San Diego	273,246	2,820	15
5 VALLEY (Electrical)	September 2015	Lake, Napa & Sonoma	76,067	1,955	4
6 WITCH (Powerlines)	October 2007	San Diego	197,990	1,650	2
7 WOOLSEY (Under Investigation)	November 2018	Ventura	96,949	1,643	3
8 CARR (Human Related)	July 2018	Shasta County, Trinity County	229,651	1,614	8
9 NUNS (Powerline)	October 2017	Sonoma	54,382	1,355	3
10 THOMAS (Under Investigation)	December 2017	Ventura & Santa Barbara	281,893	1,063	2
11 OLD (Human Related)	October 2003	San Bernardino	91,281	1,003	6
12 JONES (Undetermined)	October 1999	Shasta	26,200	954	1
13 BUTTE (Powerlines)	September 2015	Amador & Calaveras	70,868	921	2
14 ATLAS (Powerline)	October 2017	Napa & Solano	51,624	783	6
15 PAINT (Arson)	June 1990	Santa Barbara	4,900	641	1
16 FOUNTAIN (Arson)	August 1992	Shasta	63,960	636	0
17 SAYRE (Misc.)	November 2008	Los Angeles	11,262	604	0
18 CITY OF BERKELEY (Powerlines)	September 1923	Alameda	130	584	0
19 HARRIS (Undetermined)	October 2007	San Diego	90,440	548	8
20 REDWOOD VALLEY (Powerline)	October 2017	Mendocino	36,523	546	9

***Structures include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.
 ***This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.



2/19/2019

California Catastrophe Adjustment

- California has a “prior approval” rate regulation scheme for most lines of insurance (governed by Proposition 103)
- According to the California Code of Regulations (2644.5):
 - Catastrophe losses are based on a multi-year long-term average of catastrophe claims
 - Minimum 20-year average is required for homeowners multiple peril fire
 - Adjustments for changes in historical and prospective exposure to catastrophes due to mix of business changes are required
 - Net cost of reinsurance may not be included in the rate



Overall Rate Level – Catastrophe Load Example

Accident Year Ending	Catastrophe Losses Other Than Theft and Liability (Note 1)	Non-Catastrophe Losses			Total (2) + (3) + (4)	Wildfire Catastrophe Load (1) / (5)
		Liability (Note 1)	Theft (Note 1)	Other (Note 1)		
1987	\$0	\$7,460,811	\$6,137,320	\$22,361,588	\$35,959,719	0.0%
1988	0	7,810,484	6,191,151	\$27,927,647	41,929,282	0.0%
1989	0	4,216,022	6,517,086	\$23,157,234	33,890,342	0.0%
1990	0	6,743,182	6,388,857	\$39,113,875	52,245,914	0.0%
2013	1,193,611	1,130,945	18,787,120	\$153,403,014	173,321,079	0.7%
2014	11,404,043	5,807,048	16,334,793	\$150,425,371	172,567,212	6.6%
2015	86,496,186	16,660,300	14,742,038	\$163,358,588	194,760,926	44.4%
2016	8,175,426	10,858,139	11,993,390	\$166,865,292	189,716,821	4.3%
2017	928,260,209	5,115,399	8,286,423	\$156,236,008	169,637,830	547.2%
Total, 1987-2016	\$425,746,435	\$149,568,991	\$320,481,328	\$2,761,435,847	\$3,231,486,167	13.2%
Total 1988-2017	\$1,354,006,644	\$147,223,579	\$322,630,432	\$2,895,310,268	\$3,365,164,278	40.2%
Total	\$1,354,006,644	\$154,684,390	\$328,767,752	\$2,917,671,855	\$3,401,123,997	39.8%

- Post-2017 catastrophe to non-catastrophe ratios (CAT adjustments) increased substantially for a number of carriers
- Cat loads can vary widely from year to year, depending on which years are included in the average.
- The experience from recent years may increase these loads considerably.
- This method only allows insurers who have incurred losses to change rates. Those with large exposure, who have not had the losses, cannot raise rates.

Source: Rate filing of major California Insurer

Rate Activity- 2014 to 2019

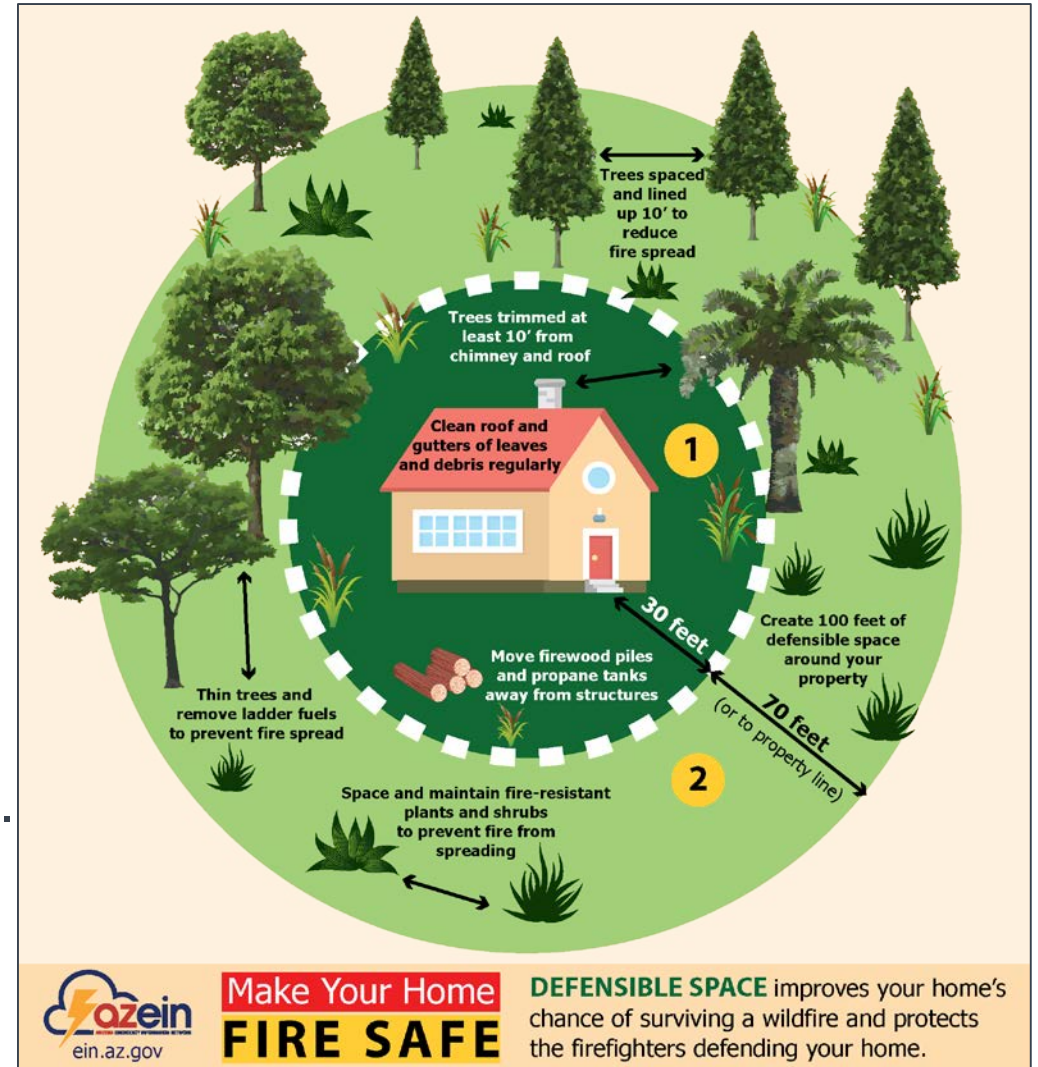
Group	Direct WP in millions	Approved Rate Change %					
	2017	2014	2015	2016	2017	2018	2019
State Farm Group	\$1,367	-3.0%	0.0%	-5.4%	0.0%	6.9%	0.0%
Farmers Insurance Group	\$1,261	2.6%	6.6%	5.6%	0.0%	6.3%	6.3%
CSAA Insurance Group	\$520	0.0%	0.0%	0.0%	-5.8%	6.9%	0.0%
Auto Club Enterprises Insurance Group	\$499	0.0%	6.9%	6.9%	0.0%	0.0%	0.0%
Liberty Mutual Group	\$484	0.0%	0.0%	1.5%	5.9%	4.0%	3.0%
Allstate Insurance Group	\$484	0.0%	0.0%	-14.6%	0.5%	0.5%	6.8%
United Services Automobile Association Group	\$392	-14.5%	0.0%	7.6%	0.0%	16.0%	7.2%
Mercury General Group	\$387	11.9%	0.0%	6.9%	0.0%	0.0%	0.0%
Nationwide Corporation Group	\$344	5.7%	0.0%	0.8%	4.7%	7.2%	5.2%
Travelers Group	\$251	0.0%	0.0%	0.0%	0.0%	0.0%	6.9%
Chubb Ltd Grp	\$235	3.3%	0.0%	2.6%	0.0%	4.5%	18.1%
American Family Insurance Group	\$103	0.0%	0.0%	5.0%	0.0%	0.0%	7.5%

- Most top California homeowner's insurance carriers have requested rate increases
- Many of the above have seen increases in rate indications, some significant

Source: RateFilings.com RateWatch, as of 5/7/2019

Underwriting and Eligibility Restriction

- Where carriers cannot charge the indicated rate, they may restrict eligibility or non-renew policies.
- Typical underwriting restrictions include:
 - Roof clear of leaves or combustible debris
 - Firewood Stored 30 feet from homes
 - No overhanging trees
 - Spacing of Plants
- By encouraging loss mitigation strategies, insurance plays an important role in loss reduction.



Non-renewals and Premium Increases

California Department of Insurance Consumer Complaint Data

- CDI complaint data shows significant increase in consumer complaints in designated counties.
- Complaints have also risen in other counties, so the relationship between wildfire risk and complaints is unclear.
- CDI is sensitive to this issue and insurers should be prepared to act accordingly.

Type of Consumer Complaint	2010	2011	2012	2013	2014	2015	2016	2017	2018	Comparison of 2018 to 2010 (%)
Renewal Issues: Designated Counties	41	99	122	116	138	133	143	194	276	573% increase
Renewal Issues: Statewide	70	176	220	225	251	219	239	298	378	73% of the complaints received are from high risk designated counties*
Premium Increase Issues: Designated Counties	54	120	62	117	137	116	171	120	175	224% increase
Premium Increase Issues: Statewide	84	195	130	170	210	203	281	199	276	63% of the complaints received are from designated counties*

Source: Testimony of Joel Laucher, California Department of Insurance, to the California Office of Planning and Research

Designated High Risk Counties Are: Alpine, Amador, Butte, Calaveras, El Dorado, Humboldt, Lake, Lassen, Mariposa, Mendocino, Mono, Nevada, Plumas, Santa Cruz, Shasta, Sierra, Siskiyou, Tehama, Trinity, Tuolumne

The Residual Market

FAIR Plan Policies In Force

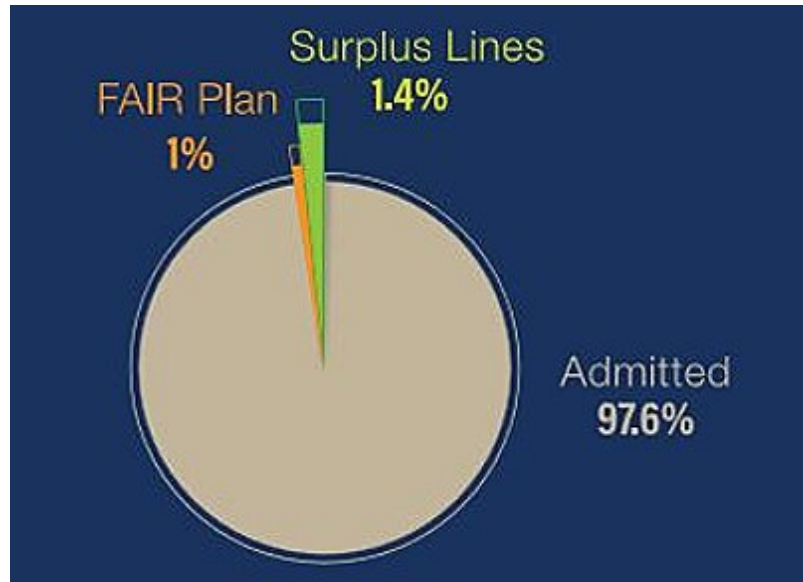
(1)	(2)	(3)	(4)	(5)	(6)	(7)
FireLine Score	Policy Count by Fireline Score					
	2012	2013	2014	2015	2016	2017
0	102,087	98,966	96,084	93,080	89,556	84,800
1-5	11,738	12,466	13,434	14,428	15,041	15,329
6-10	9,555	10,643	12,003	13,455	14,912	17,296
11+	5,009	5,265	5,748	6,186	6,534	6,939
Total	128,389	127,340	127,269	127,149	126,043	124,364

- Customers who cannot obtain insurance from private insurers have two options in California – either obtain a policy from the FAIR plan, or from a non-admitted surplus lines carrier.
- Prior to 2017, FAIR plan was experiencing significant growth in the most catastrophe exposed areas.
- In 2017, FAIR plan issued a moratorium on new business policies. Insurance Commissioner Dave Jones issued a cease and desist order to ensure the plan would stay open to new business.

Source: Fair Plan rate filing

The Non-Admitted (Surplus Lines) Market

- The Surplus Lines market has also experience rapid growth, which may be indicative of growing availability issues in the admitted market.
- Despite growth in the Fair Plan and Non-Admitted market, the market share among admitted carriers remains large.



Sources: SF Chronicle, Surplus Line Association of California

Surge in surplus

When California homeowners can't get insurance from "admitted" carriers regulated by the Department of Insurance, they sometimes turn to surplus lines carriers, which have seen a rise in business since 2016. This chart shows the number of policies and premiums charged by surplus carriers on California homeowners policies each year.

Year	No. of policies written	Premiums on those policies
2009	14,116	\$46,092,611
2010	13,684	\$45,461,114
2011	13,517	\$44,164,128
2012	15,619	\$51,640,085
2013	21,812	\$61,097,141
2014	30,500	\$77,590,841
2015	37,120	\$91,959,997
2016	31,107	\$77,828,895
2017	44,973	\$110,596,890
2018	49,370	\$122,423,171
2019*	19,389	\$52,631,689

*Through March 31. For the same period last year, they sold 10,021 policies with \$21,617,546 in premiums.

Source: Surplus Line Association of California



Thank you

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