Coverage Neglect in Homeowners Insurance

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Views are our own and do not represent those of the Colorado Department of Insurance

Motivation: A disconnect in homeowners insurance markets

- Surveys: 75% of homeowners believe they have enough coverage to rebuild after a total loss
- Post-disaster reality: Underinsurance is routine. Homeowners express "surprise"

The Press Democrat

Insurance shortfalls hamper Sonoma County fire victims' ability to rebuild

March 25, 2018

Wildfire recovery » Many homeowners hoping to rebuild scrambling over coverage shortfalls with complex consequences

THE SPOKESMAN-REVIEW

Spokane, Washington Est. May 19, 1883

Most Gray and Oregon Road fire victims were underinsured, insurance commissioner says

Oct. 28, 2024 | Updated Mon., Oct. 28, 2024 at 9:55 p.m.

CPR News

Most people who lost homes in the Marshall Fire were underinsured, Colorado insurance regulators say

By Sarah Mulholland · May. 2, 2022, 2:06 pm

Why are Homeowners Routinely Underinsured?

- Do homeowners make informed decisions about insuring against total losses?
  - Relevant because of climate risks
- Underinsurance *could* be rational
  - Self-insuring is cheaper
  - Expect disaster aid or other assistance, face liquidity constraints
- Less rational explanations:
  - Homeowners do not understand how much coverage they need
  - Rely on insurance agent's replacement cost models

Our Data

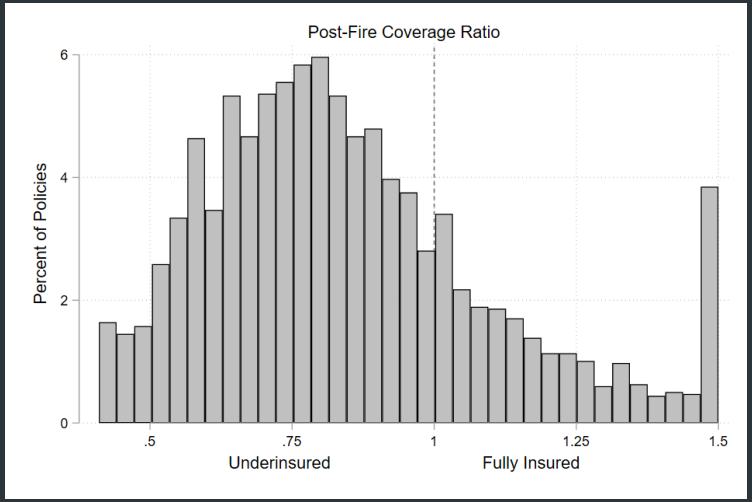
- Introduce unique dataset on over 3,000 policyholders who filed claims in the aftermath of the Marshall Fire in Boulder Colorado:
  - Predominantly minor claims like smoke damage
  - Detailed policy coverages, premiums, and *insurer IDs*
  - Observe limits and claims for each coverage and any extended coverage endorsements. Date policy was renewed and date of inception.
  - Estimate insurer-by-household premium schedules
- Link (anonymized) insured structure address with:
  - County assessor property characteristics data to estimate replacement costs
  - Credit profile with estimated HH income, credit score, and mortgage balances over time
  - Rebuilding permits and sales records

Measuring Underinsurance: Coverages and Replacement Costs

- Costs increased suddenly after the Marshall Fire, so we measure "pre" fire underinsurance
- Coverage A ("structure coverage") is "pre-fire" coverage and coverage A plus inflation protection extended coverages is "post-fire" coverage
- We use RSMeans software to estimate replacement costs as of 2023Q1 based on various property characteristics
  - We adjust using actual rebuilding estimates (post-fire replacement costs)
- Pre-fire replacement costs: Scale down post-fire replacement costs by the RSMeans Denver MSA cost factor increase between 2021Q1 and 2023Q1

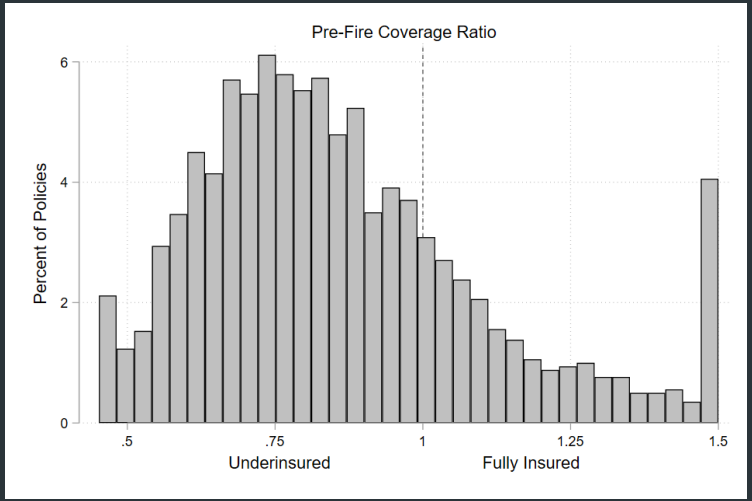
$$R^{Pre(Post)} = \frac{Coverage^{Pre(Post)}}{Replacement^{Pre(Post)}}$$

Underinsurance After the Marshall Fire



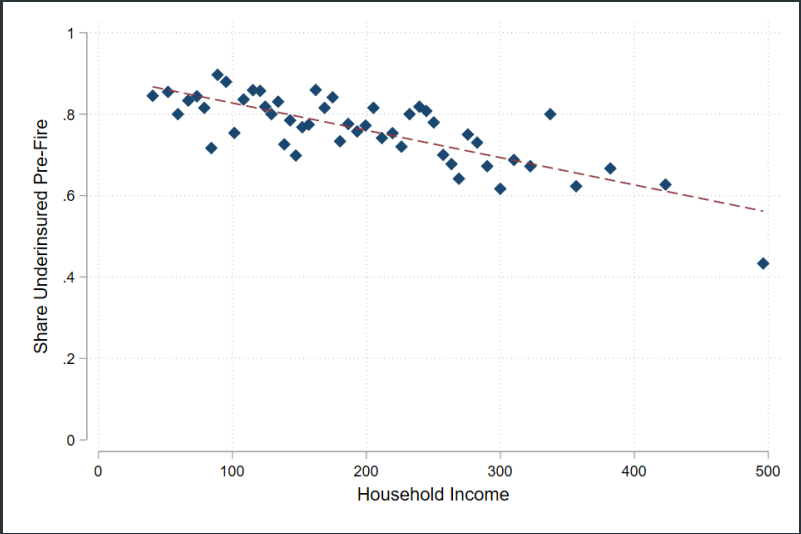
71% of policyholders underinsured after the fire, many severely

Underinsurance Before the Marshall Fire



Underinsurance was similarly widespread before the fire.

Rich and Poor were Both Underinsured



Other mechanisms

- Did policyholders fail to update their coverage over time?
  - No, older policies are no more underinsured than newer ones and coverage keeps up with costs Coverage Changes
- Moral hazard: Do homeowners strategically underinsure to shift risk onto lender?
- Monitoring: Or, do lenders prevent underinsurance through monitoring?
  - No & no, little variation in underinsurance by leverage or mortgage status Mortgage Status
- Is underinsurance driven by adverse selection?
  - No, homeowners with unpriced risks do not buy more coverage Adverse Selection

Best explanation: Three interrelated drivers of underinsurance

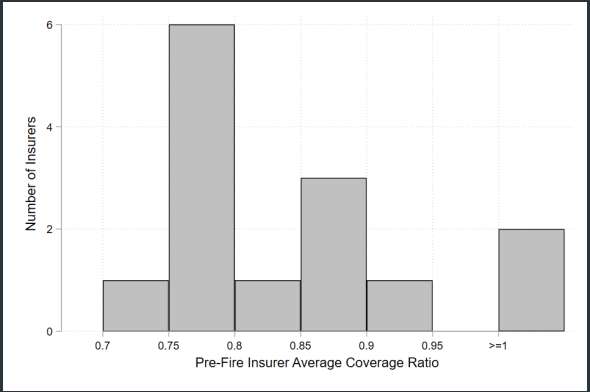
1. Homeowner rely on insurers' replacement cost estimates (**anecdotal evidence**)
2. Wide variation in coverage ratios across insurers – related to insurer characteristics (**direct evidence**)
3. "Coverage neglect": homeowners fail to compare premiums on a coverage-adjusted basis (**direct evidence**)

1: Homeowners rely on insurer's replacement cost estimates

> *"The examined insurers each state that it is the responsibility of the policyholder to select appropriate coverage limits. However, the examinations revealed that...***the policyholder is relying upon the insurers' estimate** *(as calculated using the insurer's replacement cost estimation tool) to select Coverage A limits in a significant number of cases."*
>
> *— California Department of Insurance, 2010*

- There is limited publicly available data to estimate replacement costs
- Agents use third-party software – e.g., CoreLogic Marshall Swift, 360Value, etc...
  - Even the inventor of 360Value has raised concerns that these software products are used in a way that leads to understated replacement costs
- Klein (2018) shows that different insurers estimated replacement costs for the same home to be $607K, $873K, $512K, $554K, $672K

2: Heterogeneity in Average Underinsurance Across Insurers



- Insurer FEs are major predictor of policyholders' coverage ratios
- No evidence of policyholders with certain characteristics (e.g., lower incomes) are sorting into insurers that write less coverage on average

2: Insurer Characteristics Predict Average Underinsurance

100 X Insurer LOO Average Coverage Ratio			
	(1)	(2)	(3)
Num Policyholders (100s)	3.54***		2.61*
	(1.10)		(1.30)
Num Decades in Market		5.70**	2.88*
		(2.15)	(1.55)
Observations	3,089	3,089	3,089
R-squared	0.416	0.330	0.466
Policyholder Characteristics	Y	Y	Y

- Insurers with more policyholders and tenure write higher average coverage ratios
- Suggests a role for "brand" or reputational concerns and soft information in preventing underinsurance

3. The Coverage Neglect Hypothesis

- We propose **coverage neglect** hypothesis as one factor driving underinsurance
  - Homeowners trust recommended coverage limits and shop on headline premiums while *ignoring* coverage differences across insurers
  - With coverage neglect, homeowners receive a different suggested coverage limit from each insurer (R_{ij}) but just shop for the lowest premium

$$U_{ij}^{n} = \sigma_j X_i + \zeta_j - \alpha^{n} p_{ij}(R_{ij}) * R_{ij} + \epsilon_{ij}$$

- Alternative hypothesis: Rational Underinsurance
  - Policyholders know the coverage limit they want (R^*) and choose the insurer who will provide it at the best rate (i.e., shops on \$ / coverage)

$$U_{ij}^{r} = \sigma_j X_i + \zeta_j - \alpha^{r} p_{ij}(R^*) + \epsilon_{ij}$$

Testing for Coverage Neglect

Estimate following multinomial discrete choice model:

$$V_{ij} = \sigma_j X_i + \zeta_j - \alpha^r p_{ij}(R_i^*) - \alpha^n p_{ij}(\widehat{R_{ij}}) + \epsilon_{ij}$$

- Rational underinsurance: Choose lowest $ per coverage at coverage they want ($\alpha^n = 0$)
- Coverage neglect: Choose lowest headline premium at coverage suggested by insurer ($\alpha^r = 0$)
- We can see actual and counterfactual premiums separately using from standardized rate quote data from Quadrant
- FEs account flexibly for insurer brands/pricing. Identifying variation driven by idiosyncratic differences in how insurers price certain property attributes at different amounts of coverage

Policyholders Shop on Headline Premiums, Not Rates

	(1)	(2)	(3)
Coverage-Adjusted Premium (α^r)	1.474***		-1.315*
	(0.346)		(0.798)
Quoted Premium (α^n)		4.503***	4.978***
		(0.839)	(1.081)
Insurer Fixed Effects	Y	Y	Y
Insurer × Policyholder Characteristics	Y	Y	Y
N	43246	43246	43246

Policyholders leave money on the table by not shopping for the best rate

- Independent sensitivity to both coverage-adjusted (α^r) and quoted premiums (α^n) with price elasticities of 0.7 and 2.3, respectively
- Joint test rejects rational underinsurance hypothesis

Coverage Neglect Strongest For Most Price-Sensitive Shoppers

	(1)
Coverage-Adjusted Premium (α^r)	-0.207
	(1.075)
Quoted Premium (α^n)	2.591*
	(1.410)
Shopped X α^r	-1.662
	(1.086)
Shopped X α^n	3.785***
	(1.037)
N	43246
Insurer Fixed Effects	Y
Insurer $\times$ Policyholder Characteristics	Y

- Coefficient on quoted premium larger for those who have changed insurer since buying home ("shoppers")
- Price sensitivity exacerbates coverage neglect
- We see no similar heterogeneity by income or credit

Consequences of underinsurance and coverage neglect

- **Rebuilding**: Instrument for each policyholder's coverage ratio using their insurer's leave-one-out average coverage ratio
  - Underinsurance reduces by 25% the number of rebuilding permits filed within one year of the fire
  - And contributes to over half of the sales of destroyed properties within 18 months post-fire. Recovery
- **Welfare**: Estimates produced by our discrete choice model can be used to infer the welfare effects of a stylized transparency counterfactual that removes coverage neglect:
  - Tilts consumer choice toward higher-utility insurers (where policyholders are less underinsured)
  - Average homeowner better off by $290 per year (10% of annual premiums) Welfare

Conclusion

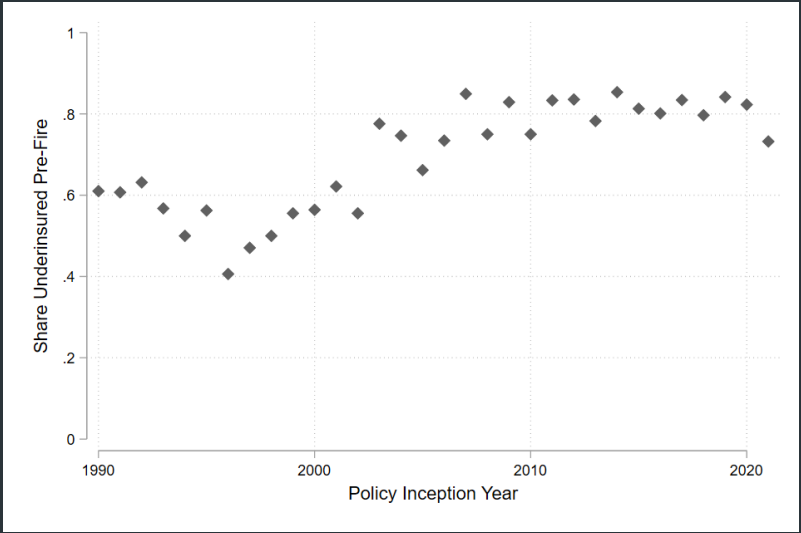
- Underinsurance is widespread while consumers are surprised they do not have enough insurance
- We propose a new mechanism, **coverage neglect**, that explains this phenomenon
  - Insurers vary widely in their typical coverage ratio
  - ... yet, consumers are not sensitive to coverage differences
  - High sensitivity to headline premium makes it in insurers' interest to cut coverage to be more competitive
  - Indeed, coverage neglect is strongest among shoppers
- As total loss events, like wildfires, proliferate, understanding the drivers of underinsurance becomes ever more pressing

Coverage Increases Keep up with Cost Increases...

	Dep variable: % Increase in Coverage A Limit			
	(1)	(2)	(3)	(4)
% Increase in Construction Costs	1.51***	1.47***	1.26***	1.28***
	(0.10)	(0.10)	(0.10)	(0.14)
Observations	2,705	2,705	2,705	2,309
R-squared	0.452	0.470	0.522	0.504
Insurer FE	N	N	Y	Y

Return

and policyholders with older policies are not more underinsured



Return

Little Difference in Underinsurance by Mortgage Status or Leverage

	Dep. variable: 100 X Coverage Ratio			
Has Mortgage = 1	-2.46**	-2.04*	-1.26	
	(1.13)	(1.22)	(1.13)	
Loan-to-Value (%)				
0-10				1.87
				(2.14)
10-20				-0.94
				(1.56)
20-30				-2.53*
				(1.41)
30-40				-3.75***
				(1.37)
40-50				-0.56
				(1.53)
50-60				-1.11
				(1.61)
60-70				-0.04
				(1.95)
70-80				1.16
				(2.26)
80-90				1.93
				(3.46)
90-100				4.37*
				(2.34)
Observations	3,089	3,089	3,089	3,089

Wood Frame Homes are Riskier and Not Priced into Premiums...

Dep. variable:	100 X Total Loss		Premium per $100 Coverage	
	(1)	(2)	(3)	(4)
Wood Frame	50.03***	54.85***	0.005	0.001
	(3.49)	(3.10)	(0.016)	(0.005)
Observations	1,108	1,108	1,108	1,108
R-squared	0.151	0.213	0.000	0.936
Insurer FE	N	N	N	Y
Home Characteristics	N	Y	N	Y
Policyholder Characteristics	N	N	N	Y

...but do not buy more coverage

	Dep. variable: 100 X Coverage Ratio			
	(1)	(2)	(3)	(4)
Wood Frame	-3.34	-0.63	-1.47	
	(2.54)	(2.04)	(1.86)	
Total Loss				2.35*
				(1.35)
Observations	1,108	1,108	1,108	1,108
R-squared	0.002	0.376	0.495	0.496
Insurer FE	N	N	Y	Y
Policyholder Characteristics	N	Y	Y	Y

Return