

California Western School of Law  
**CWSL Scholarly Commons**

---

Faculty Scholarship

---

2022

## Is fire insurable?

Kenneth S. Klein  
*California Western School of Law*, [kklein@cwsl.edu](mailto:kklein@cwsl.edu)

Follow this and additional works at: <https://scholarlycommons.law.cwsl.edu/fs>



Part of the [Comparative and Foreign Law Commons](#), [Environmental Law Commons](#), [Housing Law Commons](#), and the [Insurance Law Commons](#)

---

### Recommended Citation

Kenneth S. Klein, *Is fire insurable?*, *Climate, Society and Elemental Insurance: Capacities and Limitations* (Kate Booth, Chloe Lucas & Shaun French eds.) (2022).

Available at: <https://scholarlycommons.law.cwsl.edu/fs/389>

This Book Chapter is brought to you for free and open access by CWSL Scholarly Commons. It has been accepted for inclusion in Faculty Scholarship by an authorized administrator of CWSL Scholarly Commons. For more information, please contact [alm@cwsl.edu](mailto:alm@cwsl.edu), [chirsch@cwsl.edu](mailto:chirsch@cwsl.edu).

## 9 Is fire insurable?

### Insights from bushfires in Australia and wildfires in the United States

*Kenneth S. Klein*

Fire and insurance have been conjoined for a very long time. On 2 September 1666, the Great Fire of London began. Estimates are that when the fire was done four days later, 70,000 of the City's 80,000 inhabitants were homeless. And at least myth – perhaps reality – has it that in the immediate next several years, out of the ashes of that fire the idea of the first fire insurance company germinated to fruition in the mind of Nicholas If-Jesus-Christ-had-not-died-for-thee-thou-hadst-been-damned Barbon (James 1954, pp. 44–45). In the following 450+ years, fire and insurance have taken a journey together in an inter-relationship that continues to evolve.

Today, most homeowners want full and adequate fire insurance, are willing to pay for it, think they have it, and yet do not. Whether 'bush-fire' in Australia or 'wildfire' in the United States, the frequency, intensity, and economic impacts of catastrophic fire events are increasing. The State of California, for example, now essentially has a year-round fire season (CalFire 2021). And the consequence is that dwelling insurance is becoming less affordable, less available, and less adequate. Ubiquitously affordable, adequate, available dwelling insurance is an aspiration that seems more remote now than ever, and yet also more necessary than ever.

#### **Homeowners want to and think they have fully insured their dwellings for fire**

Homeowners want to fully insure their homes, and until disaster strikes, think they have done so. It is postulated that one reason, 'individuals do not buy insurance is that they perceive the probability of a loss to be below their threshold level of concern so that the benefits of insurance exceed the associated premium and search costs' (Kunreuther 2018, p. 143). Depending upon the theorist, this sometimes may be described as an adverse selection problem, or price elasticity. Taken out of economics jargon, it is theorising that one reason there may be uninsured or underinsureds is that individuals do not want to share the cost of someone else's risk.

The theory is intuitively plausible, but apparently at least for homeowners deciding about insuring their dwellings for fire, the theory is wrong.

Amongst homeowners who have dwelling insurance for fire, most want adequate (meaning, full) insurance. And most homeowners who have a choice, choose to insure their dwelling for fire.

Simply put, homeowners typically do not choose to underinsure their dwelling. Most homeowners want to fully insure or over-insure. This is an incidental but important finding of work by economists Benjamin Collier and Marc Ragin (Collier & Ragin 2019, Table 9.3). They studied the National Flood Insurance Program (NFIP) in the United States. It is a public insurance product, sold by private insurance agents. In other words, all insurers offer the same product – the only variable is the agent selling it. Collier and Ragin were interested in the NFIP for this reason – they were trying to study the influence of an insurance agent on the decision of how much insurance to buy. And the NFIP Program lets them control for all other variables. The NFIP offers maximum cover of \$250,000, and a minimum cover of 80% of the estimated rebuild cost or of \$250,000, whichever is less. Collier and Ragin isolated policies with estimated rebuild costs of less than \$250,000. In other words, in these instances, insureds had a choice of 20% underinsuring, insuring to estimated rebuild cost, or over-insuring up to \$250,000. 80% of homeowners either insured to the insurer’s estimated rebuild costs, or over-insured above that. And in Australia a survey of homeowners affected by the ACT bushfires found an identical number – 80% said they were adequately insured (Australian Securities & Investment Commission (ASIC) 2005, p. 63).

And most homeowners – either voluntarily or involuntarily – do insure their homes for fire. ‘Homeowner’ or ‘householders’ insurance, as the product denomination implies, provides cover for the owner of a dwelling in the instance of damage or destruction of the dwelling (Federal Insurance Office (FIO) 2015, pp. 13, 15–20; Australian Competition & Consumer Commission (ACCC) 2020, pp. 12–17). Homeowner insurance may insure both the dwelling and/or the contents of the dwelling. For homes with a mortgage, however, insurance of the structure – the collateral for a mortgage loan – is not a choice; mortgages in both Australia and the United States require the homeowner have insurance of the mortgaged dwelling for fire (ACCC 2020, p. 147; FIO 2015, pp. 3, 15).

Because of the architecture of mortgages in the United States, there almost *always* is fire insurance of the dwelling in place for homes with a mortgage. Most mortgages in the United States provide that if the borrower allows insurance to lapse then the lender will purchase ‘force-placed’ insurance at the borrower’s expense; this insurance protects the lender from a fire loss of collateral (Cronkite 2016, p. 691). There does not appear to be an analogue in Australia to force-placed insurance, where it seems at least theoretically possible for a home under mortgage to have no insurance of the dwelling for fire (ACCC 2020, p. 462).

Nonetheless, the prevalence of insurance of dwellings for fire is exceptionally high and nearly identical in both the United States and Australia. In the

United States, over 90% of homes – perhaps as high as 95% – have homeowner insurance (Insurance Information Institute (III) 2016). In Australia, 89%–96% of homeowners have an insured property (Booth & Tranter 2018, p. 3137; ACCC 2020, p. 269). In other words, the presence or absence of force-placed insurance mechanisms does not seem to impact the likelihood of whether a mortgaged dwelling is insured. In both Australia and the United States, all or almost all mortgaged homes are insured for fire if for no other reason than they have to be.

But also, in both the United States and Australia, the *voluntary* take-up rate for insuring dwellings for fire is exceptionally high. In the United States, from 2011 to 2018, only 59%–66% of homes had a mortgage or line of credit secured by a home (averaging 63%) (United States Census Bureau 2021). Meaning 73.5%–87.8% of homeowners in the United States who have a choice, choose to have dwelling insurance coverage for fire. Similarly, the most recent data from the Australian Government is that 53.7% of homeowners have a mortgage (Australian Institute of Health and Welfare (AIHW) 2020). Meaning 76.2%–91.4% of homeowners in Australia who have a choice choose to have dwelling insurance coverage for fire.

One striking feature of these figures is that the data highlights that for homeowners, there is something different about fire risk in particular, in contrast to flood risk. In the United States, only 13%–15% of owner-occupied homes are insured for flood and for 40% of these homes, flood insurance is required, meaning in the United States only 8.2%–9.6% who have a choice, choose to have flood insurance (III 2016, p. 5; 2021c; Strochak et al. 2018). Australia appears to have a somewhat better penetration of flood cover than the United States, but certainly still nothing like the prevalence of fire cover. In 2008, the Institute of Australian Actuaries reported that insurance for the ‘overflow of rivers and creeks following long duration rainfall’ was ‘becoming more common, although is still far from the norm’ (Institute of Actuaries of Australia (IAA) 2008, p. 1). By 2011, the Insurance Council of Australia (ICA) predicted that by 2013 flood cover could rise to as high as 30% (Australia Government, The Treasury 2011, p. 22, n. 10).

Why is take-up of fire cover different than flood? It seems to be a combination of two factors. First, in both the United States and Australia there seems to be persistent confusion about whether standard home insurance covers flood (Carter 2012, p. 21; III 2017, p. 2, 6, 9). Second, as the Australia Government describes, the core problem is, ‘all home insurance policies include cover for bushfire, earthquake, cyclone and storm, but not flood. ... flood cover has traditionally been excluded from home insurance policies, and only over the last decade has flood cover been made available by a limited number of insurers. Where it is available, consumers are often able to opt-out of flood cover and evidence indicates that, when able to opt-out, many policyholders do so’ (Australia Government, The Treasury 2011, p. 29). Similarly, in the United States, typically flood cover is excluded from mortgage-required and mortgage-compliant dwelling insurance (FIO 2015,

p. 3). All of this suggests that amongst natural disaster hazards, fire risk to owner-occupied dwellings perhaps is unique in that fire ubiquitously is insured both voluntarily and involuntarily.

This conclusion is bolstered by voluntary take-up rates of fire insurance for renters, which starkly contrasts with take-up rates for fire insurance of the dwelling. A renter, by definition, has no ownership interest in the structure, and so only insures their personal property – the contents of the dwelling – for fire. In Australia, three-quarters of renters do not have personal property insurance (Quantum Market Research 2014, p. 11). In the United States, the take-up rates of renters insurance steadily rose from 29% in 2011 to 57% in 2020 (III 2017, p. 4; 2020, p. 11). For some portion of renters in both Nations, landlords require renter's insurance. At this time, there is no data on what percentage of landlords that is. But whatever the percentage, it means that in both Nations, voluntary take-up of renters insurance for fire loss still materially lags the voluntary take-up rates of homeowners for dwelling loss.

All available evidence suggests that homeowners – and uniquely homeowners – want to insure their dwellings for fire, want to fully insure their dwellings for fire, and think they have fully insured their homes for fire. But they haven't.

### **The high frequency of inadequate insurance of dwellings for fire in Australia and in the United States**

Aspirations aside, while it is hard to know with specificity, it appears that most homeowners are underinsured for a total fire loss, probably profoundly so.

Any discussion of underinsurance begins by discussing how it is even possible. There was a time in the United States when 'Guaranteed Replacement Coverage' (GRC) – what in Australia is called 'Total Replacement' – was ubiquitous. The standard in the United States today is 'Full Replacement Coverage' (FRC) – what in Australia is called 'Sum Certain.' Under GRC, if a covered causal event results in a total loss, then the cost to rebuild is covered, regardless of the cost. Under FRC, by contrast, there is a stated coverage limit, which can be increased through the purchase of 'Extended Replacement Coverage,' but either under FRC or under FRC plus an extension, there is a hard cap. If there is a hard cap, then there is the possibility of underinsurance, meaning the amount of insurance proceeds is inadequate to rebuild the lost home in the event of a total loss.

Work done in Australia illustrates the challenge in answering the simple question: What percentage of homeowners have inadequate insurance to rebuild their homes? In 2005, in the wake of the 2003 Canberra fires, when summarising the Australian research, the Australian Securities & Investment Commission (ASIC) decided to investigate the causes of underinsurance and reported that the percentage of homeowners underinsured

by 10% or more had been calculated twice – once as 27.5% and once as 81% (ASIC 2005, pp. 13, 15). ASIC did not opine which number more approximated the truth. Nor to date has any further work been published doing so.

Work in the United States has fared little better. A variety of post-disaster surveys of underinsurance have been done. The consumer advocacy group, United Policyholders, has done a number of post-disaster surveys, finding a range of underinsurance frequencies but generally finding it to be over 50% (United Policyholders survey 2021). One of the early pioneers studying underinsurance, Peter Wells, reported (without transparency as to data or methodology) on his calculations of underinsurance nationwide in the United States over several years (Wells 2007, p. 46). And after the 2008 California wildfires the California Department of Insurance (CDI) performed a Market Conduct Study on underinsurance rates, finding it to be approximately 80% (CDI 2010, pp. 1027–1030).

All of the analysis from Australia and the United States shares one feature – as a stand-alone data point it is subject to critique. Either the analysis is not transparent and replicable, or it is too focused on a specific region in a specific context, or it is contradicted by other contemporaneous work. Yet thought of collectively, the work tells a story. Figure 9.1 is a chart of every extant, public-facing assertion of underinsurance either in the United States or Australia, whether regional or national, whether post-disaster or not:

This chart simultaneously is frustrating and illuminating. The chart highlights how little currently can confidently be known in any granularity

### Reported Percentage Frequency of Homeowner Underinsurance

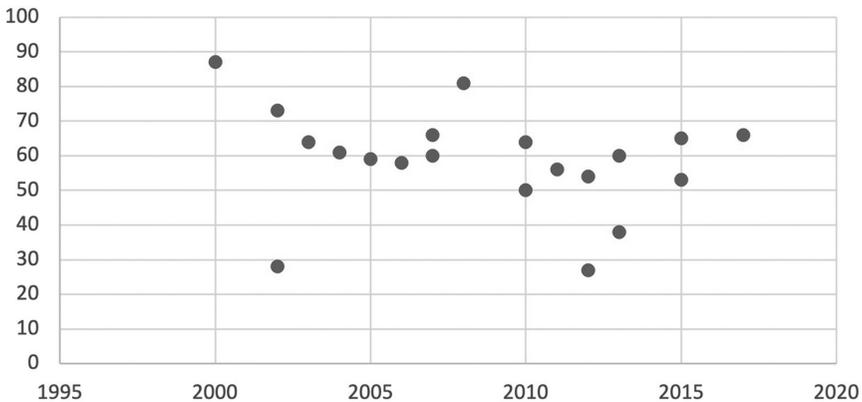


Figure 9.1 United Policyholders

Source: United Policyholders (2021); Fried (2017); Administrative Rulemaking File (2015, pp. 1027–1030); Wells (2007, p. 46); ASIC (2005)

about the pervasiveness of underinsurance. But the chart also makes plain that whatever is going on, it likely is alarming. The possibility of underinsurance seems to be ubiquitous. In other words, most insureds have a coverage limit, and an inadequate one. Because if most homeowners, or even many homeowners, had GRC, then one wouldn't see these high percentages of underinsurance. It simply would not be possible.

One additional data point that is not in this chart is instructive. It is a rate filing by a California insurer after the 2017 Santa Rosa fires (CSAA Insurance Exchange 2018). In the United States, many states require that in order for an insurer to sell a policy at a particular rate, the insurer must file the proposed policy and rate with the State and get state approval (FIO 2015, p. 15). California is one such state (CDI n.d.). The filing by insurer CSAA sought to support a rate increase by detailing the prior claims adjustment experience. And the data provided is consistent with two-thirds of insureds being underinsured, most of them profoundly (by at least 20% or more).

And when one asks, when a homeowner is underinsured, is it by a lot or a little, the news does not get better. The data is sparse. But when the studies go the next step and inquire – when one is underinsured, on average how much is the protection gap? – the answer again is by a lot, likely conservatively on average by at least 20%, more likely by quite a lot more (Klein 2019, pp. 46–50).

So, how does this happen? Most homeowners put little thought into coverage limits. In Australia many homeowners do not seek input. Surveys in Australia suggest 56% of homeowners pick coverage based on their own estimate or the purchase price (which 85% of the time is more than two-years stale), while only 22% rely on the insurer's guidance (Quantum Market Research 2014, p. 17). In the United States, a homeowner simply contacts an agent or broker, goes to a website, or calls a national telephone number, and asks for insurance on their house. The homeowner is asked a few questions, is quoted a policy cover and cost, and a deal is struck.

For the homeowner who wonders whether the cover is adequate, the advice they are given is to ask the insurer. For example, in the United States, the Insurance Information Institute says, '... your insurer will provide a recommended coverage limit for the structure of your home....' (III 2021a; 2021b). The National Association of Insurance Commissioners says, 'Your insurance agent usually will help you decide how much dwelling coverage to buy when you first get homeowners insurance. Your coverage should equal the full replacement cost of your home' (National Association Insurance Commissioners (NAIC) 2010). The website of the Texas Department of Insurance says, 'Your insurance agent can help find out your rebuilding cost.' (Texas Department of Insurance 2021). And the website of the North Carolina Department of Insurance says, 'Below are a few important questions that everyone should ask their agent when purchasing homeowners insurance 1. Do I have enough insurance to rebuild my home if it is destroyed?' (North Carolina Department of Insurance 2022). Australia is no different. In Australia, 'Consumers generally need specialist assistance

to estimate rebuilding costs, but it is often impractical to refer to builders, architects or quantity surveyors. Many insurers now provide consumers with access to web-based calculators.’ (ASIC 2007, p. 10). Or more simply put, most of the time the estimate of the rebuilding cost of a house, if there is one, comes from the insurer. If the estimate is wrong then the insurance is wrong.

But that does not, in and of itself, explain underinsurance. Because there is no precise, mathematical, objective cost for the rebuilding of a home. Until a home is actually being built, it always is an estimate that will to one degree or another, in one direction or another, be wrong.

One would expect, however, that estimates of coverage to break evenly high and low, meaning the rate of underinsurance should group around the 50% line, and distribute evenly above and below. And it does not. [Figure 9.1](#) illustrates that there are dramatically more instances of underinsurance than of over-insurance.

One way to understand underinsurance rates disproportionately clustered above the 50% line is to think of them as akin to the idea in mathematics called a mathematical fallacy. In broadest terms, a mathematical fallacy is when the conclusion of a proof suggests that there is a flaw in the proof, even if the flaw cannot be identified. Think, for example, of a coin flipped 1000 times. 700 times it comes up heads. 300 times it comes up tails. The experiment is repeated. Now the results are 650 heads, 350 tails. It is repeated again. 800 heads. 200 tails. Something is wrong. Maybe the coin is weighted unevenly. Maybe something else is going on. But it bears investigation. Because something may be amiss.

What may be amiss with dwelling insurance? Why are more homes under-insured than over-insured?

In 2007, ASIC reported, ‘Even if a consumer correctly estimates what it would cost to rebuild their home in a one-off total loss, it is almost impossible to know what it will cost to rebuild a home that is destroyed in a mass disaster. The surge in building prices that occurs after a mass disaster can be very unpredictable.’(ASIC 2007, p. 13). This idea – demand surge – also is proffered in the United States (Klein 2019, pp. 69–71). The premise of the proffered explanation – ‘the surge in building prices that occurs after a mass disaster can be very unpredictable’ – bears further study. Catastrophe modelers (creating data streams for vendors who sell costs estimators) contend they *can* predict natural disaster with granularity down to a specific home address (Raizman & Pratt 2021, 1:12;10–1:31:55).

Whether this granularity of modelling is real or not, however, the data suggests that demand surge alone is an inadequate explanation. In the wake of the 2017 Tubbs Fire in California, CoreLogic studied demand surge and found it averaged 15%–30% (Kopperud 2019). In a Market Conduct Study in 2010, the CDI found, however, that approximately 57% of homes that had purchased an extension of their full replacement coverage still were under-insured (CDI 2010, pp. 1027–1030).

If ubiquitous underinsurance is not primarily driven either by demand surge or homeowner choice, then that suggests a new hypothesis: the likely, primary cause of ubiquitous, unintended underinsurance is the estimating tool. Coverage limits are not plucked out of the sky. Rather, insurers estimate rebuild costs using tools in the United States called ‘component cost estimators’ and in Australia called ‘elemental estimating calculators.’

These estimating tools essentially are big data analytics at their finest. Data sets of millions of construction projects and price lists are broken down into individual labour and materials line items, sorted by location and date. These data sets are updated at least quarterly, sometimes more frequently, to capture localised construction cost trends. An insured house is identified as to its elements or components, down to screws and bolts, and then an estimate is built up for the price of building that precise house in that precise location. And, as alluded to above, because of the prevalence of demand surge, other data streams also are involved.

What appears to be happening is that the cost estimating tools informing coverage limits are more often than not simply under-estimating reconstruction costs. Of some frustration is that this is a testable hypothesis, but it has not been tested. There is a moment in time when one knows with precision the cost of building (or rebuilding) a home. That is the moment that construction is actually completed on that home. And at that moment, the home usually is insured. So, at that moment, the estimating tools are deployed. The insurer may not know the actual construction costs of every newly constructed home the insurer insures. But at a minimum, if the home is one that was rebuilt after a total loss, and the rebuild was adjusted under the same insurer that now will insure the new home, the insurer has or had access to the actual cost of building that specific home, which, in turn, means the insurer has a data point allowing it to compare at the same point in time the actual cost of constructing a specific home and the estimated cost to build the same home. A large insurer has access to lots of these data points. Which means an insurer can construct a mature data set from which an insurer can know for its insureds and its estimating tools the frequency of inaccuracy, and the average depth of inaccuracy.

All of this raises two questions: (1) Why would an insurer be open to selling less insurance than a homeowner wishes to buy? (2) Why would an insurer be incurious about how well its estimating tools are working? Each answer is intertwined with the other.

The legal landscape of insurance is complicated, in part because there is not consensus on what precisely insurance is. Is insurance a quasi-public utility to have maximum risk spreading, or is it a variant of a personal security product or is it an ordinary contract? Is the relationship between insurer and insured arms-length, adhesive, or fiduciary? Should insurance markets be free market structures, lightly regulated, or highly regulated? Is insurance a luxury or a necessity? For an insurer, a complex legal and conceptual landscape creates a set of market incentives that may at first glance

be counter-intuitive because it creates an incentive for insurers to – in the context of a single customer – sell less of their product.

Whether they are correct or not, insurers perceive their customer as highly price elastic. And while coverage limits pale in comparison with deductibles as a price determinant, coverage limits do change premiums at least on the margin. In other words, an insurer might conclude that in a highly competitive market with what the insurer perceives as highly price elastic customers, there is market share to be gained by a slight drop in price. And that the downside risk is minimal. Because claims in excess of coverage limits – even suppressed coverage limits – are rare. When those claims are adjusted, in many instances the insured will not challenge the adjustment. When the insured challenges the adjustment, many of those challenges will be settled at a discount. And of those that are not settled, the muddled legal landscape will result in a total or partial victory for the insurer much of the time.

But that muddled legal landscape may not work so well for an insurer if the insurer knows (or is found to be wilfully ignorant of) the (in)accuracy of its own rebuild estimating tools. If an insurer knows about the average error rates of its own estimating tools, then it cannot so easily prevail on a position that the homeowner knowingly contracted for less than full insurance. Until the data is collected, it is impossible to know what it will show. But it is reasonable to speculate that if the data was *good* for the insurer then the insurer would tout it. And if the insurer *thought* the data would be good for the insurer, then the insurer would do the research. The fact that no insurer is touting its data is suggestive. But it is far from definitive. Because in both Australia and the United States, while getting the cover correct requires time and expertise, the onus of error falls on the homeowner (ASIC 2007, p. 7; Klein 2019, pp. 82–97).

There may well be solutions to underinsurance. Two possible solutions are to require insurer transparency about the accuracy of its estimating tools, and/or to require – with clarity – insurers to bear the responsibility for understated coverage limits. But solving underinsurance will do nothing to resolve the increasing unavailability of affordable fire insurance. To the contrary, resolving underinsurance could cause prices to rise.

### **The emerging challenges of affordability and availability of fire insurance of dwellings in Australia and the United States**

While presently – in both Australia and the United States – most homeowners either voluntarily or involuntarily do insure their dwellings for fire, that may not be the state of matters for long. Increasingly, both Nations face issues of availability and affordability.

There is inadequate academic literature defining the precise parameters of affordability and availability of fire insurance of dwellings – either in Australia or in the United States – in the face of the increasing frequency and economic impacts of fires. That said, in both Nations the issues are

considered emergent. For example, on 8 February 2021, the ICA announced that following ‘A range of inquiries and reviews over the past decade focused on issues of insurance affordability and availability in high risk areas or sectors and have identified potential coverage gaps for some groups of consumers and businesses,’ the ICA ‘is undertaking a review of the insurance sector’s options for reforms to improve its contribution to national economic recovery and growth, amid concern from insurers, stakeholders and the community’ (ICA 2021). Similarly, on 19 October 2020 the California Insurance Commissioner convened ‘an investigatory hearing to initiate a series of regulatory actions that will protect residents from the increasing risk of wildfires. ...to stabilize the insurance market while protecting lives and homes, reducing catastrophic wildfire losses, and increasing transparency for consumers’ addressing ‘issues including...[i]nsurance availability and affordability’ (CDI 2020).

The shape of the problem is not hard to understand. Insurers are profit-seeking businesses. Insurers will only write on homes and in communities that are profitably insurable. Insurability requires risks must be random, well-enough understood to make pricing and underwriting possible, diversifiable, and exist in markets with low levels of moral hazard and adverse selection (Kousky & Light 2019, p. 355). The market behaviour of insurers is consistent with fire cover of dwellings increasingly not meeting this standard.

Put another way, as the frequency, intensity, and economic impacts of fire grow, the affordability and availability of fire insurance shrinks. This is inevitable in a market where insurance is unregulated or lightly regulated. As described earlier, insurers have access to sophisticated data analytics tools that allow them to know with increasing confidence both the likelihood of a wildfire or bushfire coming to an individual home address, and the likely economic impact on that structure if it does so. An insurer will be uncompetitive if it does *not* use this data to isolate high-risk addresses and then either decline to offer cover to those addresses or separately cover those addresses priced in high-risk pools. Because a competitor undoubtedly will, and thereby price cut an insurer that doesn’t.

The consequence of this insurer behaviour is pressure on governments to step in with public insurance products as insurance of last resort, or publicly subsidise private insurance products, or step in post-disaster to recompense the losses of the uninsured. A government that creates public insurance products faces the challenge that it may be politically unpalatable to price this insurance as a high-risk pool but may be fiscally reckless not to do so. A government that subsidises private insurance is creating an externality to market forces that both may drive up price and may be politically exposed for the implicit social equity choices embedded in any subsidy program. A government that repetitively steps in post-disaster may create moral hazard behaviours amongst homeowners that reduce take-up rates of insurance – homeowners are less likely to insure large but unlikely losses if they expect that if the loss occurs, then the government will bail them out.

There may be a fourth option. It may be possible to restructure markets to address affordability and availability. This approach would be to remove the vulnerability to price undercutting of an insurer who does not isolate high-risk addresses to an insurer who does. How does one do this? Perhaps by regulation that does not allow ratemaking that accounts for the address of a home. Such a regulation would impose undistorted risk pools, or at least undistorted by property address.

Insurers still could and would rate risk on other vectors. Such as the materials a home is built with. Or whether the home has defensible space around the home. Or the wiring in the walls and its profile for fire risk.

One would expect insurers to still write the risk. Because there are a host of high-value homes in fire-exposed locations, and insurers will not simply walk away from insuring Bondi Beach, NSW, Australia or Malibu, CA, United States.

One would expect the price to be affordable. While not a perfect analogue, this has been the experience of a similar structure in private health-care insurance in the United States under the Affordable Care Act. And while the data is sparse, there is some reason to believe that in the United States, the total cost of even private *All Perils* insurance would be less than 2% of an average homeowner's annual expenses.

But the data and research are sparse. None of this at present can be known with confidence.

## **Conclusions**

Both the governments of Australia and the United States identify a high prevalence either of uninsureds or underinsureds as concerning (FIO 2015, p. 3; ACCC 2020, p. vii; ASIC 2007, p. 2). The title of this chapter poses a question: Is fire insurable? The answer this chapter gives is unsatisfactory: Perhaps.

This chapter tackles only one issue related to insurance responses to wild-fire and bushfire – insurance for rebuilding a home. And this chapter does so largely in cursory fashion. It is important for any researcher to realise that this chapter is only a tree in a larger forest. There is so much more involved in a mass fire event: insurance of out buildings and other structures, personal property, and alternative living expenses; insurance for renters, businesses, farms, and mobile homes; and insurance to mitigate the impacts of displacement of persons and jobs. The policy ripples of fire beyond insurance are mind-boggling. Just to mention a few: relief for the uninsured, health risks, disproportionate impacts on minority communities or across gender lines, mitigation, resiliency, energy policy, climate change, and environmental degradation. Insurance of fire is a book. Fire is a multi-volume set. But ideally this chapter is a primer.

## **References**

Administrative Rulemaking File for Cal. Code Regs, Tit.10, § 2695.183 2015, Ass'n. of Cal. Ins. Cos. v. Jones, 235 Cal. App. 4<sup>th</sup> 1009 (No. B248622).

- Australia Government, The Treasury 2011, *Natural Disaster Insurance Review. Inquiry into flood insurance and related matters*, <[https://treasury.gov.au/sites/default/files/2019-03/p2011-ndir-fr-NDIR\\_final.pdf](https://treasury.gov.au/sites/default/files/2019-03/p2011-ndir-fr-NDIR_final.pdf)>.
- Australian Competition & Consumer Commission (ACCC) 2020, *Northern Australian Insurance Inquiry*, <<https://www.accc.gov.au/system/files/Northern%20Australia%20Insurance%20Inquiry%20-%20Final%20Report%20-%2030%20November%202020.pdf>>.
- Australian Institute of Health and Welfare (AIHW) 2020, *Home Ownership and Housing Tenure*, <<https://www.aihw.gov.au/reports/australias-welfare/home-ownership-and-housing-tenure>>.
- Australian Securities & Investment Commission (ASIC) 2005, *Getting Home Insurance Right: A report on home Building underinsurance*, Report 54, September 2005, <[https://download.A.S.I.C.gov.au/media/1348214/underinsurance\\_report.pdf](https://download.A.S.I.C.gov.au/media/1348214/underinsurance_report.pdf)>.
- Australian Securities & Investment Commission (ASIC) 2007, *Making Home Insurance Better*, Report 89, January 2007, <<https://download.A.S.I.C.gov.au/media/1338332/home-insurance-report-Jan-2007.pdf>>.
- Booth, K & Tranter, B 2018, 'When disaster strikes: Under-insurance in Australian households', *Urban Studies*, vol. 55, no. 4, pp. 3135–3150.
- CalFire 2021, *Incidences*, <<https://www.fire.ca.gov/incidents/2020/>>.
- California Department of Insurance (CDI) 2010, *Administrative Rulemaking File for Cal*, Code Regs, Tit.10, § 2695.183 at 1027–1030, Ass'n. of Cal. Ins. Cos. v. Jones, 235 Cal. App. 4<sup>th</sup> 1009 (2015), (No. B248622).
- California Department of Insurance (CDI) n.d., *Rate Filing Review Process*, <<http://www.insurance.ca.gov/0250-insurers/0800-rate-filings/rate-filing-review-process.cfm>>.
- California Department of Insurance (CDI) 2020, *News Release: Advisory – Commissioner Lara holds investigatory hearing on insurance availability and affordability following wildfires*, <<http://www.insurance.ca.gov/0400-news/0101-advisory/Advisory-008-2020-investigatory-hearing.cfm>>.
- Carter, R.A 2012, 'Flood risk, insurance and emergency management in Australia', *The Australian Journal of Emergency Management*, vol. 27, no. 2, pp. 20–25.
- Collier, B.L & Ragin, M.A 2019, 'The influence of sellers on contract choice: Evidence from flood insurance', *The Journal of Risk and Insurance*, vol. 87, no. 2, pp. 523–557.
- Cronkite, D 2016, 'Force-placed insurance: The lending industry's dirty little secret', *Chicago-Kent Law Review*, vol. 91, no. 2, pp. 687–709.
- CSAA Insurance Exchange 2018 *2017 North Bay Fire Claims*, SERFF filing ID WSUN-131288886, <<https://filingaccess.serff.com/sfa/search/filingSummary.xhtml?filingId=131288886>>.
- Federal Insurance Office (FIO) 2015, *Report Providing an Assessment of the Current State of the Market For Natural Catastrophe Insurance in the United States*, U.S. Department of the Treasury, <[https://asfpm-library.s3-us-west-2.amazonaws.com/NFIP/DeptTreasury\\_Current\\_State\\_\\_Market\\_for\\_Natural\\_Catastrophe\\_Insurance\\_2015.pdf](https://asfpm-library.s3-us-west-2.amazonaws.com/NFIP/DeptTreasury_Current_State__Market_for_Natural_Catastrophe_Insurance_2015.pdf)>.
- Fried, C 2017, *Recent Disasters are a Wake-Up Call to Check Your Homeowner Insurance*, CNBC, <<https://www.cnbc.com/2017/09/05/harvey-is-a-wake-up-call-to-check-your-homeowners-insurance.html>>.
- Institute of Actuaries of Australia (IAA) 2008, *The Insurance of Flood Risks*, <[https://actuaries.asn.au/Library/GIS08\\_Plenary%204\\_Paper\\_Flood%20working%20group\\_The%20Insurance%20of%20Flood%20Risksl.pdf](https://actuaries.asn.au/Library/GIS08_Plenary%204_Paper_Flood%20working%20group_The%20Insurance%20of%20Flood%20Risksl.pdf)>.

- Insurance Council of Australia (ICA) 2021, *New Release: Insurers to Examine Coverage Gaps to Better Support Economic Growth*, <[https://www.insurancecouncil.com.au/assets/media\\_release/2021/210208%20Insurers%20to%20examine%20coverage%20gaps%20to%20better%20support%20economic%20growth.pdf](https://www.insurancecouncil.com.au/assets/media_release/2021/210208%20Insurers%20to%20examine%20coverage%20gaps%20to%20better%20support%20economic%20growth.pdf)>.
- Insurance Information Institute (III) 2016, *How Many Homes Are Insured? How Many Are Uninsured?*, blog, 29 January 2016, The Triple-I Blog, <<https://www.iii.org/insuranceindustryblog/how-many-homes-are-insured-how-many-are-uninsured/>>.
- Insurance Information Institute (III) 2017, *2016 Consumer Insurance Survey, Homeowners Insurance: Understanding, Attitudes and Shopping Practices*, <<https://www.iii.org/sites/default/files/docs/pdf/pulse-wp-020217-final.pdf>>.
- Insurance Information Institute (III) 2020, *2020 Triple-I Consumer Poll*, <[https://www.iii.org/sites/default/files/docs/pdf/2020\\_triple-i\\_consumer\\_poll\\_091620.pdf](https://www.iii.org/sites/default/files/docs/pdf/2020_triple-i_consumer_poll_091620.pdf)>.
- Insurance Information Institute (III) 2021a, *How Much Homeowners Insurance Do I Need?*, <<https://www.iii.org/article/how-much-homeowners-insurance-do-you-need>>.
- Insurance Information Institute (III) 2021b, *Insurance for Your House and Personal Possessions*, <[https://www.naic.org/documents/prod\\_serv\\_consumer\\_guide\\_home.pdf](https://www.naic.org/documents/prod_serv_consumer_guide_home.pdf)>.
- Insurance Information Institute (III) 2021c, *Facts + Statistics: Flood Insurance*, <<https://www.iii.org/fact-statistic/facts-statistics-flood-insurance>>.
- James, P.S 1954, 'Nicholas Barbon—Founder of modern fire insurance', *The Review of Insurance Studies*, vol. 1, pp. 44–47.
- Klein, K.S 2019, 'Minding the protection gap: Resolving pervasive, profound, unintended homeowner underinsurance', *Connecticut Insurance Law Journal*, vol. 25, pp. 34–111.
- Kopperud, G 2019, *How Demand Surge after Natural Disasters May Impact the Cost and Timing of Recovery*, <<https://www.linkedin.com/pulse/how-demand-surge-after-natural-disasters-may-impact-cost-guy-kopperud/?articleId=6590315770293600256>>.
- Kousky, C & Light, S.E 2019, 'Insuring nature', *Duke L. J.*, vol. 69, pp. 323–376.
- Kunreuther, H 2018, 'All-hazards homeowners insurance: Challenges and opportunities', *Risk Management and Insurance Review*, vol. 21, pp. 141–155.
- National Association Insurance Commissioners (NAIC) 2010, *A Consumer's Guide to Home Insurance*, <[www.naic.org/documents/consumer\\_guide\\_home.pdf](http://www.naic.org/documents/consumer_guide_home.pdf)>.
- North Carolina Department of Insurance 2022 *Questions to Ask Your Agent*, <<https://www.ncdoi.gov/consumers/homeowners-insurance/questions-ask-your-agent>>.
- Quantum Market Research 2014, *Understand Home Insurance Research Report*, <[https://understandinsurance.com.au/assets/research/ICA%20Understand%20Home%20Insurance\\_Report.pdf](https://understandinsurance.com.au/assets/research/ICA%20Understand%20Home%20Insurance_Report.pdf)>.
- Raizman, D & Pratt, S 2021, *FHFA Public Listening Session on Climate and Natural Disaster Risk Management at the Regulated Entities*, YouTube, 19 January 2021, Federal Housing Finance Agency, <<https://www.fhfa.gov/Videos/Pages/FHFA-Public-Listening-Session-on-Climate-and-Natural-Disaster-Risk-Management-at-the-Regulated-Entities.aspx>>.
- Strochak, S, Goodman, L & Zhu, J 2018, 'Too many homeowners lack flood insurance, but many buy it voluntarily', blog, 18 September 2018, Urban Wire: Housing and Housing Finance, <<https://www.urban.org/urban-wire/too-many-homeowners-lack-flood-insurance-many-buy-it-voluntarily>>.
- Texas Department of Insurance 2021, *Homeowners Insurance Guide*, <<https://www.tdi.texas.gov/tips/enough-home-insurance.html>>.

United Policyholders 2021, *Roadmap to Recovery Surveys*, <<https://www.uphelp.org/roadmap-recovery-surveys#a>>.

United States Census Bureau 2021, *American Housing Survey Table Creator*, <[https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s\\_areas=00000&s\\_year=2019&s\\_tablename=TABLE1&s\\_bygroup1=1&s\\_bygroup2=1&s\\_filtergroup1=1&s\\_filtergroup2=1](https://www.census.gov/programs-surveys/ahs/data/interactive/ahstablecreator.html?s_areas=00000&s_year=2019&s_tablename=TABLE1&s_bygroup1=1&s_bygroup2=1&s_filtergroup1=1&s_filtergroup2=1)>.

Wells, P 2007, *Insuring to value: Meeting a critical need*, 2nd ed. Cincinnati: The National Underwriting Company.