California Proposition 103: Cause or Curse

Injecting New Thoughts Into An Old Debate

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1 Introduction & Overview

1.1 My First Impression of California

1986 was a big year in my life: I first came to this country in that year, and also spent my first Thanksgiving with a host family in Madison, Wisconsin, per the

thoughtful arrangements of the International Student Office for foreign students like me.

I honestly have no memory of what we ate on that date (maybe because I'm not crazy about the taste of turkeys) but clearly remembered the conversation after the dinner, when one host family member told me that in this country, California was viewed as a "Pioneer state" or "Trend setter" in many ways.

Almost 40 years later the unofficial titles of "Pioneer state" and "Trend setter" still stick with me, even though I am less naive now and understand not everyone likes California: It certainly depends on who you talk to. Madison is a very liberal town, so hearing positive views of California is only natural there.

1.2 Insurance in California: Pioneer or Laggard?

We now also live in the age of quantumological superpositioning, which means, in its simplest terms, that nobody, no entity or no place is consisted of one side or one dimension. There are always two or more sides to be considered simultaneously.

This of course applies to California, the richest and the largest (in population and size of economy but not in geographic size, which is smaller than Alaska and Texas) state in the Union. There is one law that makes California far from being a pioneer but rather a laggard behind most others.

Indeed, if we think of property-casualty insurance as a passenger train, then the one for Californians has been stopped in an old station since 1988, with outdated train schedules printed on non-recyclable papers, a red signal that says "STOP!" all the time, plus legacy tracks that do not match the width of tracks in most other states.

Worse still, some Californians are still standing in front of the old train, finger pointing at anyone thinking of moving the train just inches away from the

old station when most other states have managed to drive into the 21st century toward modernizing regulations of property & casualty insurance with market oriented, competition based pricing, less direct state price control, fewer measures in micro-management or micro-intervention, and higher regulatory efficiency.

I normally take pride in being a balanced analyst, deliberately shying away from voicing extreme opinions. However, when it comes to California's Proposition 103 for regulating property and casualty insurance, I find it hard to be equally critical of both sides, meaning I won't have a 50-50 split in my criticism of both parties. With a few exceptions, the "Pro-103" camp has far more problems than the "Con-103" camp, despite its more than 35 years of existence.

In my view, Prop. 103 has little to offer in terms of adding *any* value to insurance consumers, insurers and regulators alike — ironically even with the biggest "advantage" that the law was sold for: protecting insurance consumers (or "policyholders" using insurance terminology) from the allegedly "excessive, arbitrary" and "unjustified" insurance rates charged by insurers. To the best of my knowledge, few other state laws failed so miserably at their missions like Prop. 103 did.

The law has been a major liability to citizens in the Golden State and turns California into an outlier in the nation. Unfortunately, without major regulation overhaul we can only expect bigger and more severe losses as time goes on with climate change, more catastrophes, more insurers demanding for rate hike like recently did by State Farm as well as by reinsurance companies.

1.3 An Uneasy Conclusion

I do not come to the above conclusion easily, because evaluating a law regulating a highly mature industry is not an easy feat, let alone a historical law existing not by itself but by numerous research, opinions, comments, criticisms

and debates that have come with it. With 103, not only are there debates but heated ones with both sides being passionate and intense.

Note that when I say "both sides," I do not mean just parties and entities inside California, but throughout the country.

To make sure my views can stand the test of time, I have done extensive readings for months since 2023, going back to 1980s or even earlier like the 1979 California Supreme Court decision in *Royal Globe Insurance Company* v. *Superior Court* to understand drivers behind the so called "Liability insurance crisis." I have also made frequent encounters with the McCarran-Ferguson Act in 1945, which clarified that states should continue to regulate and tax the business of insurance and affirmed that the continued regulation of the insurance industry by the states was in the public's best interest, plus a limited exemption for the "business of insurance" from federal antitrust laws, as long as the conduct is regulated by state law and meets certain conditions.

In addition to reading broadly, I have also been checking on both sides' (i.e., the pro- and con-103 sides) opinions and research. Hardly a day goes by without my reading and thinking about politics, science, geographic locality, climate change, law and justice, finance, statistics, features of insurance, and economics related to Prop 103, either with the debate or with my own ideas of changing insurance as we know it. There are numerous times when I thought I had exhausted the reading list, something else came out either from my new inquiries to Perplexity.AI or from one article leading to another. It is this "chain of readings" that may take longer to finish but also may lead to solid accumulation of knowledge.

2 Insurance Regulations: What Exactly Do We Want?

It may sound ridiculous, but I argue many problems with the pro-103 camp may have derived from their misunderstanding or simply not knowing why we need insurance regulation in the first place.

So why do we need regulation in the first place? With every state having an insurance commissioner heading the insurance department, one would assume that we are crystal clear about what we want from insurance regulation. Unfortunately that is not necessarily the case. When it comes to establishing, modifying and improving insurance regulations, many state legislatures and regulators do not know exactly what goals they should be pursuing, judging by their regulatory moves already taken or proposed to take. Without knowing or setting the right goals, no wonder we have seen weak or counter-productive laws like Prop 103 in the largest state of California.

A note of organization of this lengthy section: Since regulators are presumably in the best position to tell us why we need insurance regulations, I will begin by introducing and critiquing what they have to say, which involves so many related issues that require a long detour. I will then switch to how private businesses see regulation, and highlight the topic of regulation versus market failures. This section ends with my own four "Pros" of Pro-science, Pro-Justice, Pro-Competitive Efficiencies and Pro-Innovations as the goals of insurance regulation.

2.1 How Regulators See Regulation

When I asked Perplexity.AI the question of what the goals are of insurance regulation, this unique AI chatbot always offers several sources on which its answers are based. This time the first source is NAIC or National Association of

Insurance Commissioners, the U.S. standard-setting and regulatory support organization created and governed by the chief insurance regulators from the 50 states, the District of Columbia, and five U.S. territories.

In its well-written brief document "State Insurance Regulation," more particular in the Section "The Purpose and Structure of Insurance Regulation," NAIC claims a very simple goal: "The fundamental reason for government regulation of insurance is to protect American consumers."

A later sentence gives a bit more detail: "Conceptually insurance regulation is very simple. The public wants two things from insurance regulators. They want solvent insurers who are financially able to make good on the promises they have made and they want insurers to treat policyholders and claimants fairly. All regulatory functions will fall under either *solvency regulation* or *market regulation* to meet these two objectives." (emphasis added).

2.1.1 Laws & Regulations Protect All Stakeholders

Despite being one of the most authoritative sources of insurance regulations, I do not find the NAIC goal particularly attractive. Not that it is wrong, as protecting consumers is certainly one goal of regulation, but it is incomplete and prone to misleading or misreading, creating the impression that the laws are only for consumers — when in fact they should protect all stakeholders in insurance businesses.

The notion of government serving people is far better known than the notion of laws protecting all stakeholders. So many governmental officers so many times have taken it for granted that their jobs are to serve people — but narrowly translated "people" into "consumers," thanks implicitly to the famous notion of "government of the people, by the people, for the people" from Abraham Lincoln's Gettysburg Address, delivered on November 19, 1863. The logic works straight-

forward: If governments serve the people, governmental regulations must protect citizen consumers.

But laws differ from inspiration speeches. Instead of setting moral and idealistic principles, laws set rules of the game and emphasize justice and equal treatment of all individuals — including government. The Fifth Amendment's Due Process Clause and the Fourteenth Amendment's Equal Protection Clause both speak for the states to practice equal protection.

This article from Cornell law school says it well: "Equal protection forces a state to govern impartially — not draw distinctions between individuals solely on differences that are irrelevant to a legitimate governmental objective."

So, here we have it: When it comes to insurance regulation, equal protection means the distinction between insurers and consumers is irrelevant, as government protection aims to protect all stakeholders.

The International Association of Insurance Supervisors (IAIS) defines insurance stakeholders as "all groups and individuals who have an interest in insurance supervision and regulation or who are affected by the activities of the IAIS and shall be interpreted as broadly as possible."

Following the equal protection doctrine does not mean that we ignore that some insurers had and will treat consumers unfairly. The problem is hard to ignore as there are numerous lawsuits and complaints filed by policyholders against their insurers. According to Bard, "a 2019 NAIC study estimated that 1.7 million lawsuits and complaints were filed against property and casualty insurers in the United States in 2018."

But let us not lose sight of the fact that some consumers can and will deal *unfairly* with insurers (e.g., through fraudulent claims, misrepresentation of information, or abusive behavior towards insurance company staff) as well. We may not hear those stories frequently because cases involving an individual con-

sumer are not as "newsworthy" as those involving insurers. However, laws and regulations cannot turn a blind eye to the problems.

According to this article on insurance and data science, "Claims fraud in the U.S., health insurance notwithstanding, costs taxpayers $400 billion per year." This speaks loudly that insurers need protection just as much as consumers do.

In fact, insurers stand to gain more from legal protection as states intervene in insurers' business far more frequently than in the affairs of individuals.

2.1.2 From Solvency Regulation to Earning Fair Returns

The NAIC goal cited earlier does include "solvency regulation" to offer *some* protection of insurers, although its focus is more on consumers, for the simple reason that a bankrupted insurer will inevitably put its policyholders at higher risk, while a financially stable insurer reduces that risk.

Here is a real-life example how "solvency regulation" can be misused. Prop 103, in its original language as the ballot measure, asked that "Between November 8, 1988, and November 8, 1989, rates and premiums reduced pursuant to subdivision (a) may be only increased if the commissioner finds, after a hearing, that *an insurer is substantially threatened with insolvency*." (Emphasis added).

In plain English, no insurer in California was allowed to raise premium for one year *unless* it could prove to state commissioner that it faced real or "substantial" danger of bankruptcy without raising rate.

This article from Consumer Watchdog later told us that "The California Supreme Court unanimously upheld the rollback but struck down the 'substantially threatened with insolvency' standard. The court substituted a 'fair rate of return' constitutional standard, leaving it to the Commissioner to determine on a company-by-company basis."

The change made by California Supreme Court was significant, as it raised

(or more accurately reiterated) the constitutional level of protection for insurers. It means that on the one hand, insurers must keep sufficient capital to honor their commitments to policyholders (as demanded by solvency regulation), while on the other hand their right of earning a fair rate of return is also protected, above and beyond merely surviving a bankruptcy, now or in the future.

2.1.3 Constitutionality of Forced Premium Rollback

But there is evidence that even the highest court in California stopped short of annihilating injustice against insurers by unanimously upholding the premium rollback proposed by Prop. 103 in 1988. Arbitrarily forcing insurance premium to return to an earlier level has questionable constitutionality, especially when both the author of Prop 103 and the Supreme Court failed the burden of proof to show why California insurers deserved the penalty (a de facto confiscation), perhaps by proving that insurers deliberately charged "excessive, unjustified, and arbitrary rates" as Prop 103 alleged, above and beyond getting a fair rate of return?

The Fifth Amendment says that "No person shall be... deprived of life, liberty or property without due process of law; nor shall private property be taken for public use without just compensation." It is also a long-held notion that the Constitution requires a company to earn a fair rate of return when states set prices — even though state direct price control is getting rarer today.

The Court did not bother to cite evidence in favor of its ruling, although I doubt they could find anything even if they had tried. They could, however, defend themselves by citing the billion dollar savings in Californians premium allegedly due to Prop 103, as Consumer Watchdog and CFA (Consumer Federation of America) have been doing. I will explain why they are wrong and their arguments are weak in the science section later.

For now, there have been numerous studies and statistics showing the key

factors driving up the property & casualty insurance unavailability and unaffordability prior to 1988 were largely beyond the control of P&C (i.e., Property & Casualty) insurers in California. At the minimum, the liability insurance crisis in the mid-1980s was caused by a multitude of factors, not simply reducible to insurers' greed and/or the "passing-through mentality" as repeatedly claimed by the Pro-103 camp.

Let me cite and discuss the findings that concern and demystify the liability insurance crisis below.

2.1.4 A Perfect Storm of Liability Crisis

This article by the International Center for Law & Economics, ICLE takes us back to 1979, when the California Supreme Court ruled in *Royal Globe Insurance Company v. Superior Court* that "gave an accident victim the right to bring a claim for punitive damages against another person's liability insurer if the victim felt that the insurer had engaged in unfair claims settlement practices" as summarized by this research brief from the RAND Corporation in 2001.

Even though in 1988 (the same year that Prop 103 became the law) the California Supreme Court reversed its decision in 1979, the damages from the so-called "Royal Globe doctrine" were already done by the time the ballot measure 103 entered the election.

The aforementioned ICLE article tells a story of "an explosion in insurance-related litigation, as the number of auto-liability claim filings in California Superior Court rose by 82% between 1980 and 1987, and the severity of claims rose by a factor of four. As would be expected, the state's auto-insurance premiums likewise followed suit, rising 69.8% from $4.3 billion in 1984 to $7.3 billion in 1987."

The RAND Corporation research brief also find that "the adoption of a Royal

Globe doctrine affected both the severity and the frequency of bodily injury claims. Moreover, the 'shadow effects' from a potential Royal Globe suit led insurers to make higher compensation payments than they otherwise would have, while increased attorney representation in bodily injury claims affected both compensation payments and claims of economic loss."

This Wikipedia article offers an big picture summary of the stories: "The liability insurance crisis in the United States of America refers to a volatile economic period during the mid-1980s. During these years, until about 1990, rising insurance premiums and an unavailability of coverage for several types of liability insurance led to a crisis that has been attributed, among others, to the *expansion of tort doctrines for insurer liability* and the *McCarran-Ferguson exemption from antitrust laws*." (Emphasis added).

"During the period from 1984 to 1987, premiums for general liability increased from about $6.5 billion to approximately $19.5 billion."

"Various theories among academics, government, insurers, consumers, and regulators have been put forth regarding the causes of the crisis:

1. Collusion: The argument that the crisis was engineered by insurance companies themselves, through price-fixing and/or manipulation of insurance reserve accounts.

2. Losses: Decrease in interest rates and investment returns forced insurance companies to raise premiums in order to make up for the loss of profitability.

3. Litigation: The proliferation of tort litigation and large settlements drove the cost of liability insurance premiums to excessive levels.

4. Reinsurance: Disruption of supply in reinsurance markets cited as a contributing factor."

I will talk more about collusion, but for now, at least three things are clear from above: (1) The crisis was not limited to California but the entire nation, although Prop. 103 represents the most extreme response triggered by the national crisis; (2) It was a perfect storm of multiple forces taking shape simultaneously rather than a conspiracy by a few greedy insurers; and (3) for California, the largest and most direct cause was the 1979 California Supreme Court decision in *Royal Globe Insurance Company* v. *Superior Court*, where the court gave an accident victim the right to bring a claim for punitive damages against another person's liability insurer if the victim felt that the insurer had engaged in unfair claims settlement practices. This is known as the "Royal Global" doctrine in 1979 and unsurprisingly it had a direct bearing on liability coverage availability and affordability to millions of Californians, so many lawsuits brought up that the California Supreme Court later reversed its ruling, in the same year when Prop 103 became the law.

2.1.5 Advantages of Multiple Regulatory Goals

I have argued that rules and regulations protect all insurance stakeholders. But here is more: Good regulation does not only protect all stakeholders or *people*, it also protects and promotes *things* such as competitions, justice, science and innovations, as I will discuss later.

Listing multiple entities and activities as goals has one advantage: There is no need to assume that everything is perfectly aligned with everything else. Instead, it allows conflict of goals to exist as they do in real life. For example, a singular goal of protecting consumers is logically resonant only if we assume that protecting insurers *is the same as* protecting consumers, since insolvent insurers put consumers in danger as they may not find another insurer they like or with the same terms.

On the other hand, when we consider insurers and policyholders separately, we implicitly acknowledge that the two goals may not always match. For example, the best interest of consumers may demand for the lowest premiums possible – like Prop 103 essentially did, which may bring unjustified losses to insurers.

2.2 How Businesses See Regulation

After discussing and debating regulators' view of regulation, let's listen to what private business has to say. This article lists four main goals or functions: (1) maintain insurer solvency; (2) protect insurance consumers; (3) make insurance available to people who, because they are poor risks, might otherwise be unable to get it and (4) finally regulate premium rate.

The four goals are not mutually exclusive. Regulating premium rate can impact the other three goals directly or indirectly, for example. Once again, unlike the singular goal from NAIC, these multiple goals are not required to work with each other smoothly.

My personal favorite is this public policy paper of NAMIC (National Association of Mutual Insurance Companies) entitled "Regulation of Property/Casualty Insurance: The Road to Reform." It claims its goal is to "consider what is the best insurance regulation for *all constituents*, including consumers, taxpayers, insurance companies, agents and others affected by the insurance underwriting process." (Emphasis added).

This is the most inclusive in terms of stakeholders or entities. My own thinking seems to go to the other extreme: It does not name any particular stakeholders at all. Instead, it focuses on functionalities or "things." Bear in mind though this difference is only in form rather than in spirit, as all stakeholders are embedded in functions.

2.3 Regulation and Market Failures

One interesting argument emerges from the con-103 camp by critics like David Appel at Milliman, an actuarial research and consulting firm. His report correctly points out that "There is a well-established consensus among scholars of insurance regulation that government regulation of the prices of insurance products reduces consumer welfare and stability in the insurance marketplace," even though unfortunately, "price control regimes remain an intrinsic part of the regulatory systems of many states."

But Appel also argues in the same report that "regulation is necessary only when there are demonstrable market failures that regulation could reasonably and efficiently address." This may have gone too far, even though the idea is common among some economists.

Consider this research that discusses the so called "minimum standards" in health insurance imposed by government. Don't be fooled by the name, minimum standards are actually demanding and costly. Real life examples include "state requirements that mental health benefits be included in employer-provided health insurance packages and Federal proposals for a 'Patients' Bill of Rights' that would impose minimum standards on HMOs."

Anyway, the author finds that minimum standards could be "associated with an 8 percentage point (25%) decrease in the proportion of the population with coverage in the affected market, with no evidence of substitution toward other, unregulated sources of insurance coverage."

Addressing market failures *is* an important function of government regulation, although that does not mean that regulation can only be invoked *after* a demonstrable market failure. We can do better by proactively preventing, rather than passively ameliorating, failures. However, the smart way to go is not through imposing the well-meaning but counterproductive "minimum standards" that run

the gamut from health to property-casualty insurance.

More often than not, government overregulation arises from, as the name implies, doing too much and too direct by government itself, bypassing industrial resources altogether, when smart regulation works *with* the market. Simple examples include rules encouraging education and knowledge spreading to reduce adverse selection caused by asymmetry of information; and setting deductibles, co-payments, and coverage limits to reduce moral hazard caused by the mentality of abusing money paid by others such as insurers.

2.4 Regulation as Four "Pros"

In my view, the goals or functions of insurance regulations are to satisfy four functionalities or four "Pros:" Pro-Science, Pro-Justice, Pro-Competitive Efficiencies and Pro-Innovations.

Each "Pro-" function is desirable on its own; each is also necessary but insufficient on its own. The four Pros are complementary to each other, and amalgamating them into a functional framework is more of an art than a science.

Having a multitude of goals is also why there are numerous ways insurance regulators can go wrong — not everyone is capable of playing a balanced game. The fundamental problem with Prop 103 is the author's taking an extreme pro-consumer stance — at the cost of antagonizing insurers and other stakeholders, which in the end has damaged the welfare of consumers.

Unlike the singular goal of NAIC, my four Pros do not hide the potential conflicts between different goals or priorities. They highlight the key role played by trading off multiple goals across jurisdictions and over time.

In what follows I will discuss how each "Pro" works to bring both values and limits to insurance regulation.

3 Science, Insurance and Insurance Regulation

Recall the goals of "four Pros" for insurance regulation: Pro-Science, Pro-Justice, Pro-Efficiency, and Pro-Innovations. I should point out that these four Pros are also the guiding principles for insurance business, especially for the revolutionary insurance that aims to fundamentally change the industry as we know it — to be discussed in another white paper.

The good news therefore is that once you understand the four Pros, you will have a "magic stone" capable of hitting two birds at the same time, making insurance (including its unique features and its business model to be discussed in this section and the next four) and insurance regulations both better off than they are now.

A quick forecast for the "Insurance Revolution" coming in another white paper: Proscience will be a crucial theme of changes. I will discuss how the legacy insurance significantly slows down the adoption of InsurTech and other science and technologies, essentially limiting them to claim processing when they should have been popularized throughout, from underwriting to claim settling.

3.1 Science = the Greatest Common Denominator

You may ask why Pro-Science goes first? My answer is to ask a question back: What *is* science?

According to this Wikipedia page, modern science has three major branches: the *natural sciences*; the *social sciences* and the *formal sciences* (e.g., logic, mathematics, and theoretical computer science), which studies formal systems governed by axioms and rules and not relies on empirical evidence as the other two do. Many people are less familiar with it than with natural and social science.

Now, at the risk of over-simplifying matters, let's say natural science deals

with human interactions with the nature; social science governs human interactions with each other, and formal science handles the more abstract interactions of rules, logic and ideas — the metaphysics interactions if you will, where the lines between science and philosophy becomes blurred.

Here is my synopsis point: Insurance is a rare industry that involves all three branches of science, either alone with one branch or more likely with two or more branches at the same time, making science the biggest common denominator of insurance.

Behind the broad insurance-science links is the wide variety of risks that insurance is designed to handle. Let us begin with risks that may come to many people's minds first: natural disasters like earthquakes, floods, hurricanes, and wildfires. These catastrophes share one thing in common: They call for good and better natural science to discover new ways we humans can follow to gain an upper hand in the constant game with the nature.

But natural disasters are not the only thing that natural science can help, healthcare and life insurance also benefit from progresses in natural science, medical science in particular. Our life expectancy and our health status are all impacted by the magic power of science.

Building homes near the Wildland-Urban Interface (WUI), something that perhaps too many American families have done, has also changed human relationships with nature. To better protect ourselves in living in WUI, we need more knowledge from domains of natural science.

Note, for the sake of easy exposures, I have presented one branch of science at a time, as if one risk extactly corresponds one branch of science. In reality it is far better and far more efficient to deal with one risk using inputs from natural, social, and formal science. This idea of "joint scientific forces" also applies to the discussions below.

Next let's think of risks arising from human interactions. Perhaps the most dramatic example of risk in human interaction comes from the most common type of traffic accident: collisions between two (or more) motor vehicles that represented 63% of injuries, 71% of injury crashes, and 71% of all incidents according to National Safety Council. In a collision it is never just two motor vehicles "kissing" each other, but rather is a risky and hazard way of human interaction — both before and after the collision. How to best prevent and handle its aftermath calls for the intervention of social (and other branches of) science.

The list of social science taking a crucial position in insurance can be endlessly long, most of them will be discussed later in more details: the entire Property-Casualty insurance, liability insurance, social inflation, catastrophic demand surge and price gouging, tort reform, no-fault law, antitrust law and its insurance exemption, policyholders cross-subsidy, insurance cycle and cash flow underwriting, policy deductible and coinsurance, moral hazard, the third party payment problem, adverse selection, unlimited personal injury protection (PIP), and government intervention of insurance business.

Finally think of insurance related debates like the one between the pro- and con-103 camps. Any societal debates fall into the social science domain. But once again natural and formal science can and will enter the game, especially formal science, the one that deal with abstract subjects like math, statistics, data science, actuarial science, logic, and cause and effect, can make a vital difference in guiding us through the mist of facts mingled with noises, as I will show you in the last section.

In fact, when I decided to put the pro-science goal first, one reason is highly pragmatic: Formal science can help us find out who is more correct than wrong in the historical pro- and con-103 debate.

Words on the organization of this long part of the white paper: My original

plan was to put everything into a single section. If you ask what I really want to talk about in a big picture view, then I have two questions or issues to address: (1) What make insurance special and unique that call for the power of science. I build a list of 10 "things" that can all use science for a help; (2) How science, especially formal science, can help us arrive at clear and right conclusions from the seemingly messy pro- and con-103 debate.

Of the two, the first is general while the second is more like a case study that demonstrates the power of formal science.

The only problem I ran into in the middle of writing it is that four unique "things" out of the 10 are too big and require their own sections — not jam into a single section. More specifically, the topics of social inflation, insurance cycle and cash flow underwriting, residual insurance market and reinsurance, will take up Sections 4, 5, 6 and 7. The "case study" part will take Section 8.

Readers just need to keep in mind that Sections 4 to 7 are all parts of first general discussion, while Section 8 is the case study.

3.2 10 Unique Things in Insurance

There have been authors discussing what make insurance special and unique, and they often touched one or two good points but to the best of my knowledge, no one has yet to assemble an integrated, coherent and complete list. No offense intended, some authors fit the old saying in China that a blind man could feel parts of an elephant, but might still walk away not knowing he just touched an elephant 盲人摸象.

Learning from their lessons, I will put together 10 unique insurance characteristics and point out why each of them can be benefited from science. The takeaway is the same: Science helps insurance as well as insurance regulation. To make scientific regulations, make scientific insurance first.

I will list in random order the 10 features below, with the last four (in boldfaced letters) discussed in separate sections.

1. Antitrust Law and Insurance Exemption
2. The weak link among insurers
3. The catastrophic demand surge
4. The social game of insurance
5. The selection competition
6. The insurance cross-subsidy
7. **Social inflation & tort reform**
8. **The insurance cycle & cash flow underwriting**
9. **The residual insurance market**
10. **The reinsurers and reinsurance**

3.2.1 The Insurance Exemption of Antitrust Law

Despite the common assumption, banks are not exempt from federal antitrust law as the Supreme Court's decision in *United States v. Philadelphia National Bank*, handed down sixty years ago, made clear. The insurance industry on the other hand has been historically exempted from certain antitrust laws under the McCarran-Ferguson Act in 1945. This act exempts the "business of insurance" — not business of insurers — from antitrust review, allowing insurers to engage in activities that are part of the business of insurance and regulated by state law without facing federal antitrust scrutiny.

Some critics do not like this exemption. California Prop 103, for example, repealed the insurance industry's exemption from antitrust laws and instituted a regulatory system to protect consumers from "arbitrary" and "colluded" insurance rates.

How would science say about the right way of looking at this matter? A good place to start is to find what the McCarran-Ferguson act is about.

This article by the Insurance Information Institute or III, an insurance insider, tells us why the exemption should *not* be repealed in a rush.

"The limited antitrust exemption under McCarran-Ferguson allows insurers to pool historic loss information so that they are better able to project future losses and charge an actuarially based price for their products. It also allows for joint development of policy forms."

First of all, antitrust laws are designed to promote and protect competition in the marketplace, ultimately benefiting consumers. They are also preventing collusion, which is a secretive agreement to work together to influence the market through price fixing, synchronized advertising, or sharing insider information. It often takes place "within an oligopoly market structure, where there are few firms and agreements that have significant impacts on the entire market or industry," according to a Wikipedia page.

This means it is unusual for an antitrust law to allows insurers to exchange critical data regarding losses, develop standardized policy language, and participate in state guaranty funds, among other activities. There must be good reason or reasons for lawmakers to give a (limited or partial) green light for insurers to have seemingly "collusive behaviors."

I say limited green light because as the article by Insurance Information Institute or III points out, "The act does not exempt insurers from state antitrust laws, which explicitly prohibit insurers (and all businesses) from conspiring to fix

prices or otherwise restrict competition. The McCarran-Ferguson Act in no way results in any kind of restraint on competition."

"The act's exemption applies only if three conditions are met:

- The insurer's action pertains to 'the business of insurance'
- The action must be regulated by state law
- The action must not be designed to boycott, coerce or intimidate."

But still, what are the potential benefit for insurers to be given this privilege? The same III article says it well: "The net effect of the limited exemption under McCarran-Ferguson is actually to *increase competition by giving small insurers, who otherwise would have too little data to develop actuarially credible (i.e. statistically reliable) rates, the tools to compete with larger insurers* who have much more data on which to base rates. The principle is simple: better data produce rates that are more accurate, and rates that are accurate are fairer to consumers. The fact that a larger number of insurers can secure the data they need to compete under McCarran means that consumers are afforded more choices, not fewer." (Emphasis added).

In other words, the exemption is given for scientific reasons. Sharing historical loss information can help place anyone, big or small, new or old, on a level playing field. It creates the same advantage as the big data for data scientists to work on, instead of collusion and giving a few big insurers an unfair competitive advantage. It *adds* competitive strength to the smaller and new guys in the market, which can strengthen competition.

Nonetheless, there will always be conspiracy theories to look at the world through a dark lens. Some had blamed insurers' collusion for the liability insurance crisis in the 1980s, prior to Prop 103.

This academic writing published on the Ohio State Law Journal made some interesting observations. Let's hear how the author used simple but powerful logic to question the conspiracy theorists.

"The weakness of the conspiracy theory is that *it cannot explain how a market that recently was characterized by intense price competition has turned anticompetitive*. During the four years prior to 1983, for example, commercial liability insurance was widely available at level prices, notwithstanding the double digit inflation that prevailed during the period. *Maintaining a nationwide cartel in an industry as unconcentrated as property/casualty insurance would be extremely difficult*, as this recent history suggests." (Emphasis added).

Honestly, the above logic is not entirely convincing because collusion agreements can be reached among previous competitors or rivals — just as long as they benefit more from collusion than from rivaling. That said, the author did have a point that collusion is harder among many competitors than in an oligopoly market featuring a few big players.

Another good point about collusion is made by David Appel in his 2001 report in response to CFA report published in the same year, where he points out that "Collusion, however, is unlikely to raise prices even in concentrated markets if there are no entry barriers: potential entry effectively deters non-competitive behavior. Entry barriers are low for new insurers, and existing insurers generally could readily expand their writings in new states or lines of business."

The following argument has more power, especially the one by George Priest: "Finally, the current crisis not only involves the affordability of coverage, but its availability as well. Liability insurance for certain risks-directors and officers, nurse-midwives, day-care centers, bars and restaurants, obstetricians practicing in certain settings-*was unavailable at any price for months* at a time in some states during 1986. As George Priest has suggested, *it would be a strange cartel*

indeed that exercised its monopoly power by refusing to sell its product to some of those who wished to purchase it, even at very high prices. In short, the conspiracy explanation for the liability insurance crisis is both theoretically implausible and empirically unproven." (Emphasis added).

Indeed, while conspiracy theorists may explain price control to set price artificially high, making it unaffordable to consumers, it is unavailability that cause trouble with their theory. What is the point of collusion and price control if nothing to sell at all? But this was indeed what happened in the liability crisis: Insurance was unavailable at *any* price.

3.2.2 Insurers' Weak Link

This article notices a difference in systematic risk such that "banks operate within a system, namely the banking system, while insurers do not. Banks are institutionally interconnected; they operate through direct balance sheet exposure to each other in the form of unsecured and secured interbank lending."

"Insurers are not institutionally interconnected; they are stand-alone operators in institutional terms. There exists no 'insurance system', and no 'central insurer' comparable to a central bank."

The article should have mentioned that banks and insurers also are subject to different regulation systems. Banks are federally regulated, while insurers are primarily regulated by the states. Federal laws and regulations apply everywhere in the entire United States, including all 50 states and U.S. territories. On the other hand, state laws and insurance regulations apply only within the borders of the particular state. Accordingly, insurers and their agents are required to obtain a state license, while banks are not.

Insurance regulation at the state level can bring a hidden advantage. It effectively turns the 50 states and other territories into a national field experiment

to allow learning and finding the best insurance regulation scheme, not a simple copy-and-paste but to take a few pages from each other's playbook.

Anyway, lacking institutional connections among insurers means each insurer must deal with risks alone, not depending on others to help them with risky troubles. They can't for example borrow from each other to pay the claims filed by their own policyholders when needed (although they can buy reinsurance to cover a part of risks to a third party, which is another topic to be discussed later.)

Each insurer must have sufficient statutory reserves to pay claims, as mandated by state regulations. These reserve requirements are based on actuarial calculations, creating yet another field for science, especially formal science and social science. The reserves are to ensure insurers meeting their obligations to policyholders. For example, most states' insurance legal minimum reserve requirements are somewhere from 8 to 12 percent of anticipated claims.

In a way, we may say insurers are forced to work with formal or actuarial science more than with institutional alliance.

3.2.3 The Social Game of Insurance

I will cite words from this article exploring how insurance has a deeply embedded social side, another thing that makes insurance unique. "Although insurance companies are privately owned and operated, their decisions have a widespread impact on the public. Health insurance is a prime example of the public and private intermingling despite the insurance policy being a private contract between the policyholder and the insurance company."

"Moreover, there may be thousands, tens of thousands or hundreds of thousands of policyholders who rely on the insurance company's decisions."

"Should the policyholder have a heart attack, they are not going to merely wait

for death. No, instead they'll be rushed to the hospital and treated. However, if they cannot pay, then the hospital now has the responsibility to recoup the money from elsewhere."

"So, everyone has skin in the game when it comes to insurance: all policy-holders, the hospital, the physicians and nurses, the insurance company, and non-policy holders who are residents of the particular U.S. state."

The last statement of "everyone has a skin in the game" is an excellent point, which explains why insurance is subject to heavy regulations and also implies that the only way to play the game safe and well is to rely on social, formal and natural science to help us understand patterns of human interactions, where people's interests go together and where they go apart, where is the weakest link, what moves lead to more collective gains than loss. Simply put, science helps us figure out the best ways and best moves to regulate insurance interactions.

Of course, other financial services like banks and investment firms are in the social game as well. But insurance, especially property-casualty insurance, beats them by working with more people, dealing with more, bigger and deeper uncertainties, and involving longer time relationships.

3.2.4 The Business Model of Selection Competition

This is a longer story as it involves the core business model of insurers. We can still use the same comparison between insurers and banks.

Let's begin with banks. Depositors' money are banks' full liability on their balance sheet, meaning banks are obligated to repay the depositor the full amount on demand, plus interest, dollar by dollar. This liability stays no matter how long the money is kept in a bank. If a bank cannot pay in full, FDIC will kick in.

Insurers' business model seems the same but really is different. Insurance premium is paid in advance by policyholders, much like rents or tuition. Let's

say a policyholder paid $2,000 for annual premium, the money is initially listed on the insurer's balance sheet as "unearned premium," which is liability — just like banks do for depositor's money. Unlike banks however, the insurer has the right to turn the $2,000 slowly but surely into "earned premium" everyday until at the year end. Then the entire $2,000 become earned premium — if there is no claim filed by the policyholder throughout the year.

Say the unlucky guy has an accident at the end of the second month, or 60 days after paying the $2,000 annual premium. Then the insurer will have earned premium equal to

$$\text{Earned Premium} = \frac{\text{Total Premium}}{365} \times \text{Number of Days Elapsed}$$

or for this particular policyholder, the insurer will have earned

$$\text{Earned Premium} = \frac{2000}{365} \times 60 \approx \$328.76$$

In the rare event that the policyholder decided to quit his policy, the insurer will have $1,671.24 ($\$2,000 - \$328.76$) returned to the policyholder, who still own the unearned premium.

But we can forget about the formula, an easier way to understand is to think that insurers work like landlords. You pay rent ahead of time just like you pay insurance premium ahead of time. Also like landlords, insurers earn your premium everyday. If you lost your job and needed to move out of the house or apartment before the end of lease, say on the 15^{th}, landlord will only refund you half month's rent plus the months you have not lived through — if you did not break anything in the room.

Why bother with this discussion? Because there is something called "selection competition" that only applies to insurers but not banks. In a way, banks

are like most (but not all) community colleges with an open-door policy, accepting almost anyone with a high school diploma or a GED, plus proof of residency and ability to pay tuition and fees.

Insurers however are like landlords: They can afford to be picky about who their renters are, especially in a sellers' market. The goal and preference are the same for landlords as well as for insurers: To pick the best renters (or policy-holders) who are not troublemakers, who won't set the house on fire, who won't randomly file complaints against the landlord or insurers, and most importantly, who pay rents (premiums) on time.

Some critics have problems with the way the system works. In the report wholeheartedly promoting California Prop 103 published in 2001, Robert Hunter of Consumer Federation of America (CFA) cited New York insurance Commissioner Benjamin R. Schenck as saying that "In insurance there is one form of competition that seldom exists in other products or services. That is selection competition the ability of an insurer to affect its success, not by the price or quality of its products, but by selecting its customers in a fashion that will give it an advantage over its rivals... Selection competition should have few admirers. It is capable of denying to some people the opportunity to buy insurance at all in a day when many forms of insurance have become legal and practical necessities."

I see several problems here. First of all, selection competition is quite common, not "seldom exists." From competitive sports to businesses to financial services and education, many industries often get to choose whom to serve or who can join. Why? Because selection often works faster than training. The entire business of higher education is in a game of selection competition, where the best high school students are constantly being picked first by elite colleges. The selection competition is not one time deal, neither, as for example in college sports coaches can find and invite the promising players currently in other college to

transfer to them, which, with exceptions, usually works better than training the existing pool of talents. Also instead of having "few admirers," people are paying the game enthusiastically, sometimes getting into it too much that they cheat to win in the competition.

Secondly, selection competition is rarely separated from price and quality of the supply side, unlike Schenck said that "not by the price or quality of its products." The reason is simple: The picking goes both ways. When one party is selecting the best candidates, the candidates are also selecting what is the best for them. In the end, selection competition works just like any other competitions: It favors those with more desirable properties to offer, including better price and quality.

Finally, the purpose of selection competition is not to deny "some people the opportunity to buy insurance at all" like Schenck claimed. Instead, the general aim is to win competition. For insurers, the specific aim is to reduce expected loss.

Quick words on three related concepts of "loss cost," "loss ratio" and "expected loss ratio." Loss cost is measured in dollars to cover claims and the costs associated with adjusting those claims. The name is accurate because a policyholder's "loss" is an insurer's "cost" to pay the claim.

The next two ratios are both against earned premium but differ in that the loss ratio measures past performance, and the expected loss ratio is used to project future claims relative to earned premiums.

I cite an example from Investopedia for illustrating the loss ratio: "if a company pays $80 in claims for every $160 in collected premiums, the loss ratio would be 50%."

Mackinac.org has a good definition of expected loss ratio: "The expected loss is equal to the probability that a loss will occur times the cost of the loss. For

example, if there is a 1 percent chance that your house will burn down during the year, and it will cost $100,000 if it does burn down, then the expected loss is equal to 1 percent of $100,000, or $1,000 per year. Most people are risk-averse and therefore will purchase insurance even if the premium is a little more than the expected loss, rather than self-insure or take on the risk themselves. This is generally the case because individuals cannot easily spread the risk of the loss on their own."

"Insurance companies earn a profit by spreading the risk and charging a little more than the expected loss. If an insurer has 1 million customers, then it can expect that a large number of houses will burn down, but if it has calculated the risk correctly, then it can expect to have enough money from premiums to make the payments."

The above works the same as landlords, except most landlords can only rent out a few properties. Still, by selecting the best renters who won't set the house on fire, landlords save money by cutting down the risk of damaging their properties. Like landlords, insurers want to find policyholders who are "boring" or "eventless": They won't file any claim so their premium will be literally "earned" completely by insurers at the end of policy period.

As long as the right of making a reasonable amount of profit is protected by laws and regulations, transparent game of selection competition should be protected as well, as it is a fundamental part of the business model for insurers.

One reality is that as the competition goes on, the pool of the best risks gradually gets smaller, those coming late in the game or having less market power will have to pick the best risks remaining — with a higher premium payment if possible. In a way this is like shopping in a supermarket: The first shopper gets the best chance of picking the freshest vegetable than the next shopper and so on. The difference is that late shoppers do have a chance to ask for higher premium

to compensate their extra risk working with the less ideal policy applicants.

If insurers did their job right, they will make the number of claims as small as possible from their pools of policyholders, so they will earn as much premium as possible. Those who are claimless through the end of their policy periods have no right to ask their money back.

But here is what science can help, especially the formal science, which will help insurers identify the best candidates to write policy to.

3.2.5 Insurance Cross-Subsidy

Cross subsidy is common in many industries. Formally, this accounting article defines it as "the practice of funding one product with the profits generated by a different product." But it really can include the same product charged over different consumer groups. One good example is utility companies charging higher rates of electricity to commercial and industrial customers to subsidize lower rates for residential customers, ensuring basic energy services are affordable for all.

Cross-subsidy can be controversial but insurers have a unique advantage: They do not have to set artificial price differential based on identities like utility firms do (e.g., commercial users pay a higher price to subsidize residential users). In insurance, cross-subsidy can be done gently, quietly and voluntarily. This is because it is based on future unpredictable risky events that nobody is totally immunized or exempted. Insurers just have to find a pool of policyholders with lower chance of filing claims. But even if some have accidents and their own premiums are insufficient to cover their claims, insurers won't have to go insolvent because other policyholders, by merely not filing claims of their own, are giving their helping hands to insurers without causing a fuss.

Property-casualty insurers have another advantage: their pools of risk are required either by law (e.g., auto liability insurance) or by business (e.g., for home-

owners by the mortgage firms). This helps eliminate or reduce adverse selection (i.e., people with higher risk rush to sign up for insurance, leading to higher costs for the insurer).

The only situation where insurance cross-subsidy is unfair is when all policyholders will pay the same premium regardless of their level of risk. When someone has 10% chance to commit DUI (driving under influence), it is only fair for her to pay a lower premium than someone else with a 60% chance of DUI. This is where formal or more accurately actuarial science can help: predicting people's chance of making a future claim based on a multitude of factors. Data science is poised to improve the prediction based on large data.

But when it comes to cross-subsidy, the key difference is between a *voluntary* and an *involuntary* cross-subsidy. When consumers are charged different premiums based on their risk levels, all are voluntarily subsidizing each other in the event of loss — without explicit prior consent. Otherwise they are involuntarily forced to do so and that creates problems. Only voluntary subsidy lasts long.

3.2.6 Demand Surge & Price Gouging (DSPG)

A unique challenge faced by insurers but not so much by banks is to deal with two things after a natural disaster: demand surge and price gouging. The latter refers to the practice of increasing the prices of goods, services, or commodities to a level much higher than is considered reasonable or fair, usually after a demand or supply shock. It is often seen as exploitative and unethical.

As this NPR conversation in March 2023 tells us, in the eyes of economists price gouging does not exist, only demand-supply-based price surge. This goes too far and shows theoretical arrogance. A better approach is to accept the non-zero probability of its existence for some suppliers under some occasions, and leave the case discovery and case confirmation to the courts.

From now on, I will use “DSPG” to refer to both demand surge and price gouging.

Unlike other features, DSPG is the only vulnerability entirely caused by being a member (or more accurately the institutional end user) of local and global supply chains, a part of real economy, not just a financial service intermediary. This has significant implications for the insurance revolution, as I will discuss in another white paper.

This Milliman article in January 2022 talked about two catastrophes: DSPG and inflation after the pandemic. It points out that property insurers “are used to localized demand surges resulting from major natural catastrophes” but “not usually across all sources of property loss, and across the entire country,” which however is the scenario we are observing since 2023.

The drivers for demand surge according to Milliman include (1) “Size of event and amount of work required.” in a given area after a major disaster.” (2) “Lack of materials and supply shortages.” (3) “Lack of materials and supply shortages.” (4) “Lack of providers and contractor shortages.” and (5) “Lack of claims adjusters.”

As a real-life example, in California, although the CPI (Consumer Price Index) only increased 7.3% in 2022 from 2021, residential construction costs disproportionately increased by roughly 34%, due to pandemic and global supply chain disruption and labor shortages, which are beyond insurers’ control and are hard to predict ahead of time.

Science can definitely help us predict and prepare for a demand surge. This article from a practitioner tells us that “Better science via storm tracking and CAT modeling allows retailers and suppliers to better prepare for the recovery efforts. When Hurricane Harvey hit the Gulf of Mexico coast in August 2017, retailers in Houston had 10 times their regular inventory of drywall within weeks of the storm dissipating.”

In the future, the vision in an insurance revolution is to turn insurers into the (global and local) supply chain leaders, not just an end user, to better control the DSPG problem and make catastrophic insurance more efficient. This can completely change the game of catastrophe insurance when insurers no longer sit there waiting for contractors, suppliers to tell them how much the cost will be and when the project will be finished. They are in charge of the whole thing.

4 Social Inflation & Tort Reform

Insurance fraud is always illegal, but there is something else that is totally legitimate yet may cause bigger problems for insurance companies.

Almost every adult in a modern society knows what inflation looks like, but few would have knowledge of "social inflation" — unless they are insurance insiders. That's because insurers are among the first to feel the direct and large impacts of social inflation, more than banks do.

Social inflation is driven by factors such as increasing litigation, broader definitions of liability, more plaintiff-friendly legal decisions, and larger compensatory jury awards. It can also be influenced by changing social attitudes about corporations and new medical advancements.

Ultimately, social inflation is a way of economic redistribution and leads to higher insurer claim payouts and loss ratios (see later on this conception), which can result in increased insurance premiums for consumers and businesses.

To prove the existence of social inflation, all we need is to watch the news. This report by Insurance Journal in March 2022 cites an actuarial analysis that concludes social inflation added more than $20 billion to the cost of commercial auto claims over a decade. Another report in January 2023 also citing an actuarial analysis commissioned by The Doctors Co. to say that social inflation

accounts for 8% to 11% of all medical malpractice losses for carriers that insure physicians.

Our discussion is made easy by a NAIC (National Association of Insurance Commissioners) article that offers an authoritative summary of the issues related to social inflation published in August 2023.

Another important earlier document came from Insurance Research Council in 2020 based on analysis of data and trend before the emergence of the pandemic.

A third document is from a report published by an insurance industry insider, Casualty Actuaries Society in 2023 entitled "Social Inflation and Loss Development - Update." It extends previous analyses through the end of 2021 and, among other things, find that one metric indicator of social inflation "decreased significantly after calendar year 2019... We believe the decrease was driven primarily by the pandemic, in part, due to slowdowns in tort dispositions and backlogs in cases... a certain level of social inflation remains baked into industry results, even in 2020 and 2021."

In other words, pandemic slowed down people driving, which in turn decreased social inflation — but not completely, as we still see it even in the peak time of the pandemic.

This article by Travelers.com lists four social inflation drivers. The first is the so called "nuclear jury verdicts:" "From 2015 to 2020, the median cost of a jury award over $10 million increased by 35%, from $20 million to $27 million." The public has been used to seeing these bombshells, which implicitly raised the social expectation from legal litigation.

The second is negative sentiment toward big corporations: "67% of jurors believe companies knowingly sacrifice safety to make more profit. At the same time, most jurors (89%) believe companies should always have to do more than

just meet government safety standards. Furthermore, 88% of jurors think that companies should take all precautions, no matter how impractical or costly, to ensure the safety of their products."

The third is changes in the legal environment to eliminate caps of the amount plaintiffs could obtain in damages. Some states eliminated monetary caps altogether, while others increased the length of time a case can be filed.

Finally, plaintiff attorneys' tricks, tactics and marketing contributed to social inflation. Attorneys are spending about $1 billion for 15 million advertisements per year in both digital and offline channels. They also use analytics to track down judges favoring more generous awards.

4.1 Shocking Numbers of Nuclear Verdicts

To get a sense of the size of the social inflation problem, consider something called "Nuclear verdicts" and their impacts. According to NAIC, a nuclear verdict is "jury verdicts exceeding $10 million in punitive and compensatory awards."

An academic research published in Journal of Insurance Regulation in May 2023 tells a real life story: "In 2017, two women were killed in a car crash when a driver traveling at over 90 mph ran a red light. The family sued the bar that allegedly served the driver an excessive amount of alcohol. In 2021, a Texas jury awarded the family $300 billion in punitive damages."

The article also finds that "In 2021, there were 24 jury verdicts awarded in excess of $100 million. These verdicts totaled $309 billion. These verdicts can have several adverse effects. For example, they may reduce funds available to companies for safety and mitigation strategies, discourage innovation, lead to greater out-of-pocket insurance and claims costs, or lead to bankruptcy. Additionally, nuclear verdicts could reduce the capacity of the global insurance market."

4.2 Third Party Litigation Funding TPLF

Another social inflation driver is Third-Party Litigation Funding (TPLF). GAO.Gov defines as "an arrangement in which a funder who is not a party to the lawsuit agrees to help fund it. Funders may get a pay off on their investment if the suit is successful."

TPLF has an outsized effect on social inflation. Litigation funding has become a $17 million industry worldwide, with just over half that amount spent in the United States. A Swiss Re report found that third-party litigation funding is "'contributing to growing loss ratios for excess liability, commercial auto, medical malpractice and general liability' and leading to increased premiums for consumers."'

The TPLF financing is typically for plaintiffs, who do not have to repay the funding if their lawsuit is not successful. It can benefit underfunded plaintiffs in pursuing their cases, but it is also expensive and may deter plaintiffs from accepting a settlement offer.

I would add another driver of social inflation: the expected — but legally binding — large claim payment listed in insurance policies. Having an insurance policy that promises half a million (or more) of claim payout serves as a "bait" to attract even higher prices from the insurance litigation. This is the same logic that smaller business (e.g., mom and pop shops) tend to attract fewer lawsuits than major corporations, other things equal.

The III and IRC article tells more details how TPLF has changed the game of legal battle involving insurance. It "involves an outside entity that provides funds to a plaintiff in exchange for a percentage of the amount ultimately received, whether a settlement or jury award. If the lawsuit is unsuccessful, the plaintiff is under no obligation to repay the funds provided."

With TPLF, plaintiffs are no longer in a rush to reach a settlement sooner

rather than later, but are willing to wait — until defendants agree to a higher settlement amount.

4.3 Defining Social Inflation

According to NAIC, "Social inflation is a term that describes how insurers' claims costs are increasing above general economic inflation." Simply put, it is the inflated amount of claims awarded by courts that insurers must pay to compensate the loss by a plaintiff, the party that initiates a lawsuit in civil court.

The article by Insurance Information Institute & the Casualty Actuarial Society simply call social inflation "as excessive inflation in the size of claims."

What makes social inflation challenging is that, in addition to the usually large sum of money, it is also hard to predict. Nobody knows what the jury's verdict is ahead of the time.

It is called "social" to differentiate it from economic inflation. It is also to highlight the changing social attitudes and preferences about who is responsible for the loss and how much should be paid to compensate the loss.

4.4 Impacts of Social Inflation

"The lines of business most affected by social inflation include commercial auto (especially the trucking industry), professional liability, product liability, and directors and officers liability insurance. A 2022 study by the Insurance Information Institute and the Casualty Actuarial Society found that 'social inflation accounted for $20 billion in commercial auto liability claims between 2010 and 2019.' There is also mounting evidence that the impact of social inflation is also starting to impact personal auto lines."

"Social inflation may appear to only affect insurers, but the costs can also

trickle down to consumers and spread throughout the economy. For example, businesses and consumers could see the higher costs resulting from litigation being passed onto them by way of higher insurance premiums."

Also according to NAIC, "A September 2022 study by the Institute for Legal Reform found that nuclear verdicts were most frequently found in product liability (23.6%), auto accident (22.8%) and medical liability (20.6%) cases.

4.5 Proposed Solutions & Tort Reform

"Proposed solutions to social inflation include robust local corporate social responsibility (CSR) campaigns to counteract anti-corporate bias and maintain a positive image in local communities."

The authors of the aforementioned academic research believe, and I also agree, that "given the scale of this issue, it is likely that state and federal government intervention will be needed. Some states have already taken action to limit damage awards, increase the standard of proof required to receive awards, and allow the use of bifurcated trials."

The good news is that according to the Triple I and IRC report, "Over the last several decades, many states have enacted tort reforms intended to enhance the predictability, stability, and affordability of state civil justice systems. A centerpiece of many tort reform efforts have been limits on compensation for noneconomic damages, often referred to as pain and suffering. According to one account, 38 states had enacted caps on noneconomic damages by 2019."

However, the bad news is that "Caps on non-economic damages have been fiercely opposed by trial lawyers representing personal injury claimants. The supreme courts of at least eight states with caps on noneconomic damages have overturned the reforms."

There are also attorney advertising increases: "Dramatic increases in attor-

ney advertising have led to more frequent attorney involvement in some types of insurance claims, increases in claim frequency, and expectations of larger settlements and jury awards."

The irony is that the higher jury awards will serve as the best cases for attorney advertising. Every time someone won a multi-million dollar suit, it will undoubtedly cited by attorneys as a proof of the possibility of winning a legal lottery — and the snowball will roll to get bigger.

Interestingly, per the same III and IRC article, "the prices per click paid by law firms for online advertising are the highest prices paid by any advertisers," while the top three most expensive Google Adwords Keywords are "Lawyer" ($564 per click), "Attorney," ($499 per click) and "Insurance" ($359 per click).

There are different opinions on whether tort reform works on social inflation or not. According to this article, "a tort has been defined as a civil 'wrong' other than a breach of contract—that causes injury, for which a victim can get a judicial remedy, usually in the form of damages."

Tort reform refers to proposed changes in the civil justice system that aim to reduce the ability of victims to bring tort litigation or to reduce damages they can receive.

Some target at the TPLF: "Disclosure and regulation of third-party litigation funders is another potential solution to reign in social inflation. Currently, TPLF is a largely unregulated industry in most states."

4.6 A Case Study of Michigan Auto Insurance

To see how tort reform may do to reduce social inflation, consider this public policy paper that provides interesting facts about Michigan auto insurance.

"In a 2010 RAND Corporation study, economist Paul Heaton found 'in 2007, average total auto insurance premiums in Michigan were 17 percent higher than

those in the rest of the country ($928 versus $795)"' and "Michigan has consistently had some of the country's highest insurance rates, ranking among the top 15 states every year since 2003."

"Michigan is one of 12 no-fault insurance states. Under no-fault insurance schemes, drivers are limited in their ability to sue for recovery of non-economic losses, such as damages for pain and suffering. In return for this limitation, the driver's insurance company pays for economic losses, such as medical expenses and lost wages, regardless of who was at fault."

"In another 2010 RAND study examining the no-fault system, Heaton and co-authors James Anderson and Stephen Carroll found that no-fault states have higher premiums than tort law states, generally due to higher medical costs in no-fault states."

It seems that tort system works better than no-fault system, because when both parties fight in court, the estimated loss goes down as people expect the opposing party will contest the demand and claim facts. In that sense, parties become mutual constraints to each other.

Now, consider the unlimited personal injury protection (PIP) law: "Michigan's ... is the only state that requires consumers to purchase unlimited personal injury protection (PIP), which provides extremely generous reimbursement benefits for medical costs and lost wages."

"Anderson, Heaton, and Carroll ask why auto insurance costs more in Michigan... The authors developed a model that used 72 variables to capture claimant demographics, accident circumstances, and reported injuries, and found that it costs 57 percent more to settle a Michigan claim for personal injury than the same injury would cost in another state. ... So why are injury costs so high in Michigan? ... Michiganders are much more likely to use expensive treatments, such as hospital and emergency room services, X-rays, and CT scans, and to

recover wage-loss payments."

Clearly, having an uncapped "PIP medical payments and generous wage-loss payments mandated under Michigan law" are responsible for the ultra high auto insurance claim cost.

Learning from the history of tort reform, insurers would prefer limits on both the number and the dollar amount of tort litigation cases to control social inflation, which inevitably trickles down to consumers as insurers will raise premium after suffering from social inflation. Social science should help us move in that direction by demonstrating social inflation only benefits a few members of the society but leads to the reduction of total social welfare.

5 Residual Insurance Market

Having a residual market as the last resort is another unique feature in insurance but not in banking. Most ordinary insurance consumers have no knowledge nor the need to learn it. It is however an important part of the insurance market.

5.1 A Closer Look at the FAIR Plan

One of the best diagnoses of an insurance crisis is to look at changes in the number of "last resort" insurance policyholders. Every state in the US has such a plan, often referred to as a "residual market" or "assigned risk" plan, which are designed to provide (primarily property & casualty or P&C) insurance to individuals or businesses unable to obtain standard coverage.

In a summary of key points about the FAIR (Fair Access to Insurance Requirements) Plan in California, Perplexity.AI tells us that "the FAIR Plan is not a state agency or a public entity, and it does not receive public or taxpayer funding. It is a *syndicated fire insurance pool* comprised of all insurers licensed to conduct

business in California." (Emphasis added).

Note the word "syndicated" simply means "collaborative" or collective. In plain English, we can simply quote the "About" Page of the FAIR Plan website that says, "All licensed property/casualty insurers which write basic property insurance required by Insurance Code sections 10091(a) and 10095(a) are members of the FAIR Plan. The FAIR Plan issues policies on behalf of its member companies. Each member company participates in the profits, losses and expenses of the Plan in direct proportion to its market share of business written in the state."

In other words, if a homeowner had regular insurance plan but later lost it, they can switch to FAIR and their new policy will be jointly written by the same insurer PLUS all insurers authorized to write property policies in California.

For example, say Joe's home was insured by State Farm before 2018. After his home was burned down by the Camp fire in 2018, State Farm covered his losses according to the terms in the policy but then told Joe that they won't renew his policy for 2019. Out of luck and out of his wits, Joe was told by State Farm that he should try FAIR. Sure enough, Joe receives his new FAIR policy in 2019.

Because the policy is between Joe and FAIR, Joe never sees the name of State Farm on his new policy. But this is for a good reason: State Farm won't put its name on the new contract because the new policy is much more expensive and covers far fewer perils than Joe's old policies up to 2018.

It is not clear whether all the authorized insurers in California are *mandatory* to join FAIR, although that is less important given the fact that all authorized insurers *are* currently in the FAIR Plan. Apparently no insurers wanted to be left out, which typically means they are not expecting loss by joining the plan.

This article from Amwins.com offers more details of what are covered by FAIR plan:

- Owner-Occupied: One- to four-unit dwellings in which the owner lives in at

least one of the units.

- Seasonal Rental: Dwellings that are rented for less than one year.
- Rentals: One- to four-unit dwellings that are rented to a tenant for a period of at least one year.
- Condominium Owners: Personal property and improvement for a condominium unit owner.

FAIR Plan commercial fire policies are also available for:

- Habitational buildings with five or more units, including apartment buildings, hotels, motels, etc.
- Retail shops.
- Manufacturing companies.
- Office buildings.
- Buildings under construction from the ground up (both residential and commercial).
- Farms and wineries (coverage does not include crops and livestock).

And, for anyone with a FAIR Plan dwelling policy, earthquake coverage may be purchased for:

- One- to four-unit residential dwellings.
- Mobile and manufactured homes.
- Condominiums (for help repairing interior walls, flooring, fixtures, and windows).

- Renters (protection for personal belongings and cost of living elsewhere during repairs).

While FAIR Plan will support homeowners regardless of a property's fire risk, not everyone qualifies. For example, the Plan "does not cover vacant homes that are unoccupied for 50% of the year, homes with existing damages that have not been repaired and homes that are tied to illegal activity based on state and federal laws," per the article by Bankrate.com.

5.2 Recent Changes of FAIR

"The state has ordered increases in coverage limits and required that the plan offer no-fee options for monthly payment plans and premiums paid by credit card or electronic transfer of funds."

"In 2021, higher deductible options ($15,000 and $20,000), extended dwelling coverage of 25% (not to exceed $3 million), and increased fair rental value limits were also added. And, most recently, coverage limits on commercial policies more than doubled – potentially increasing to $20 million per location later this year."

This article from Orange County Register on May 19, 2023 tells us that FAIR "is seeking a nearly 50% increase in its dwelling-fire rate."

The FAIR Plan has reached an agreement to increase its commercial coverage limit to $20 million, aiming to improve access to fire insurance coverage for businesses.

"The plan is a nonprofit and does not publicly disclose its financial information, but it has $1.4 billion in 'aggregate loss retention,' a measure of coverage for excess losses, such as those from a bad wildfire."

A quick note on aggregate loss retention: It places a cap on the annual amount a company retains for all claims covered during the policy year. Aggregate loss

retention is not the same as coverage limit. The aggregate retention is set at an amount high enough that losses are not likely to exceed it in most years, and it is a cap on the annual amount a company retains for all claims covered.

5.3 Is FAIR In Danger of Insolvency?

Some are concerned that the FAIR Plan may face insolvency as it is underfunded. Michael Wara, a climate and energy lawyer and researcher at the Stanford Woods Institute for the Environment, has predicted that ""If the FAIR plan were a regular insurer, the insurance department would have to step in and shut it down because it's so undercapitalized" as cited by this KQED report in November 2023.

Wara may not be right on this because FAIR is not a regular insurance platform. As this article on Calmatters.org points out, "The plan is also legally required to refill its coffers by levying a surcharge on major insurers if it runs out of money." This means although FAIR may be undercapitalized at any specific time, it has the legal power to ask its members to put more money in if needed.

But FAIR may not always need that. Remember FAIR is not subject to the same ratemaking regulations as other insurance lines governed by Prop 103, so it can increase its premium without "prior approval" and risking public hearings. Finally, FAIR is also not subject to the same rating system like other regular insurers are. If you check its website, you will see that "The FAIR Plan has not been rated or evaluated by A.M. Best," a prominent and influential credit rating agency specializing in the insurance industry. It is the largest credit rating agency in the world focusing on the insurance sector and operates in over 100 countries according its website.

5.4 Why We Don't Want Fast Growth of FAIR

It should be clear from the above that FAIR is meant to be the last resort option for insurance, not normal or regular insurance. It also provides temporary coverage, not long lasting insurance solutions. Insurers may dislike it because they may end up losing money from writing policies to high risk individuals or homes (and also because they are forced into the plan by the law). Insureds hate it because it's expensive and provides only incomplete or limited coverages. Some have called it an "unfair" plan.

If nobody likes it, no wonder we have reason to be concerned when its policies grow very fast. According to this CDI page, FAIR Plan has 20% growth from the last year. Although the FAIR Plan accounts for only about 3% of California's insurance market, it still has approximately 330,000 residential policies as of September 2023, and worse still, it mostly insures properties in high-wildfire-threat areas, whose owners can't get insurance elsewhere.

With so many high risk policyholders however, more growth means more risks for FAIR plan as well. As of October, the FAIR Plan had an exposure of $290 billion, a nearly sixfold increase from the $50 billion of exposure it had in 2018.

This is why FAIR Plan can serve as one of the diagnoses of California insurance crisis, just like in other states. We can simply see the number of policyholders under the residual market. Commissioner Lara was right to set a goal of shrinking the size of FAIR policyholders.

5.5 A Legal "Victory" for FAIR Users?

A recent court ruling for the FAIR plan and also for the CDI Commissioner is from Los Angeles Superior Court Judge Curtis A. Kin on November 27, 2023 that upholds the Insurance Commissioner's ability to order additional coverages

including accidental discharge or overflow of water or steam; premises liability; incidental workers' compensation; theft; falling objects; weight of ice, snow, or sleet; freezing; and loss of use, including coverage for additional living expenses and fair rental value. These are typically included in a standard comprehensive homeowners policy, but not offered under the FAIR Plan's limited fire policy.

Quick words on the "Difference in Condition" or the "DIC" policy: It complements a FAIR Plan policy by providing additional protection and filling in coverage gaps left by the main policy. The DIC policy is essentially an add-on insurance policy that offers more comprehensive coverage than the FAIR Plan policy. It covers perils and liabilities that are not included in the FAIR Plan policy, such as water damage, theft, and liability coverage.

The well-meaning court ruling points to a bad direction for the performance of insurance market because residual market like FAIR plan in California has little competition. In fact, if one wonders how a market without competition would look like, look no further than FAIR. Knowing consumers have no other choice, and knowing it is not governed by Prop 103, FAIR can increase its rate without offering more coverage to the policyholder.

5.6 FAIR Plan & South Carolina Experience

This opinion essay on May 9, 2020 correctly points out that "California's Insurance Commissioner wants to expand the state's FAIR Plan by offering comprehensive homeowners coverage; this is a bad idea."

The author, Ron Cassesso, points out problems with the "Difference-in-Condition" or the DIC policies "that cover a broad range of common homeowner coverages, other than fire, that can be coupled with a FAIR Plan policy. A FAIR Plan comprehensive homeowners policy would cost more than the sum of the two policies and does not solve a problem, in fact it creates one. By ordering the FAIR Plan to

offer coverages that it has no infrastructure for or expertise in will only increase the rates on all existing policyholders."

I believe Cassesso has a point in that "DIC + FAIR" package would cost policyholders more, simply because FAIR costs more than standard plans. I am not sure if it's right to say that asking "FAIR to offer coverages that it has no infrastructure for or expertise in will only increase the rates on all existing policyholders." The reason is simple, the insurers in FAIR are the same licensed and authorized insurers that normally would write fire policies outside FAIR. For example, State Farm is in FAIR but State Farm certainly has the resources to provide wildfire coverage in California.

"It also dis-incentivizes new entrants to the insurance market. As fewer insurers compete for business, consumer choice is limited and prices increase." Again I am not sure how FAIR or DIC + FAIR would discourage new insurers. If anything, it is Prop 103 that has done that — by not allowing them the privilege of sharing loss information with the existing insurers for one thing.

Cassesso introduces us to ideas from South Carolina, many of them however are prohibited by Prop 103 in California.

"First, policymakers allowed for the use of modeling in setting rates. By using relatively stable annual average costs from the models, insurers can offer a more stable pricing methodology."

Using climate-informed models developed to predict quantifiable amounts of insurance risk is banned under California law, despite their availability and used in other high-risk areas. As a result, insurers in California are setting rates based on their losses over the preceding 20 years, which may not fully capture recent increases in risk, such as those related to climate change and wildfires.

"Second, the cost of reinsurance – essential to enabling insurance companies to provide coverage in catastrophe-prone areas – was permitted in ratemaking."

Proposition 103 in California prohibits insurance companies from considering their reinsurance costs when setting rates for California homeowners. I will discuss more on this in the next section.

"Third, insurers were incentivized with premium tax credits to write new policies in catastrophe-prone areas." This I believe is a good idea, although may not be a game-changing incentive.

"Fourth, tax credits for low-income families offset the expense of property insurance." This I believe is also workable.

"Fifth, the establishment of state tax-free savings plans allowed consumers to save for catastrophes." This is in the same line of tax credits.

"Lastly, grants assisted property owners in mitigating loss to protect their homes." If the grant money is used in risk prevention then it is expected to pay well.

"As a result of these efforts in South Carolina, 62 percent of customers relying on the state's insurer of last resort transitioned back to the voluntary market, saving homeowners money and keeping the market competitive."

The above transition rate (62%) in South Carolina is impressive, but California can do even better if we add more risk prevention and mitigation steps to the South Carolina pool of ideas. As we will see in the section on the Pro- and Con-103 debate, California has actually installed many measures besides Prop 103, which help explain why the Golden State has managed to keep the insurance rate low.

6 Insurance & Reinsurance

In my opinion, not allowing reinsurance cost in ratemaking for insurers is the most laughable part of Prop 103. The lesson is clear: Regulators should

understand the industry they are regulating on. Yet if you don't understand reinsurance, you don't really understand insurance.

6.1 Insurance vs Reinsurance: Demand Side Differences

To understand how ridiculous this term is, we must understand what reinsurance is and why it is a vital part of the insurance business model.

This excellent article explains the key differences between insurance and reinsurance on the demand side. "The retail buyers of insurance contracts are not savvy about the functioning of the insurance industry. This is the reason why in the retail insurance industry, branding plays a huge role."

On the other hand, "when insurance companies choose a reinsurer, they do it on a purely statistical basis. Brand preference and brand recall have very little influence on the decision-making process."

In other words, insurers spend much money to advertise because people buying insurance rely on brand names to shop. Reinsurance companies on the other hand are selling reinsurance contract to insurers, who are savvy and look for "hot deals" more than "hot brands."

Ask yourself when was the last time you saw an ad by a reinsurer, especially in mass direct-to-consumer advertising. Chances are you won't remember any.

The demand side difference entails two consequences. First, government, especially state governments as insurance is regulated by each state, generally have *tighter* insurance regulations to protect the unsophisticated shoppers there. Regulations for reinsurers are not as tight.

Secondly, insurers shopping for lower prices has turned reinsurance industry into a largely commoditized market, meaning reinsurance contracts are standardized, interchangeable, and marketable objects, stripping away unique characteristics and brand identity, like many farming products are.

6.2 Insurance vs Reinsurance: Catastrophes

It is an open secret that insurers need reinsurers especially for protection in the time of natural disasters. The same article from Management Study Guide explains why reinsurers face most risk in catastrophes.

"A person purchasing insurance wants to protect themselves in the event of a single adverse event. However, when an insurance company purchases a reinsurance policy, it is done to protect itself from a large number of claims arising simultaneously."

A quick note: It is inaccurate to say individuals buying insurance for "a single adverse event" because a policy typically covers *multiple* adverse events. But the words about reinsurance protecting insurers from paying out a large number of claims arising at the same time are absolutely right. So are the following words: "A large number of claims can arise together *only if there is some kind of catastrophe*. Hence, it can be said that reinsurance is generally undertaken to protect against some kind of natural calamity or catastrophe." (Emphasis added).

So here we are: Insurers need reinsurance to help them cover catastrophic losses, which may very well be too much for insurers themselves to take. In the end, reinsurance can spread risk for insurers just like insurance can spread risk for individuals.

This is why Proposition 103's preventing insurers from taking reinsurance cost into premium formula makes little sense from the very beginning. It's like California telling McDonald's they can sell "Big Breakfast" but their fluffy scrambled eggs must go free — even though eggs are an inseparable part of the breakfast menu. Now, if McDonald's voluntarily decides to let the eggs go free, that would be a business decision — but not forced by state law. Rules like that are unfair today just as they were in 1988, and turned Prop. 103 into a laughably bad law.

One reason for Prop 103 I heard is that reinsurers operate on a global scale,

their rates potentially reflect risks across the United States and the world, not just in a state where insurers are seeking rate increases. But that theory is wrong because reinsurance companies can determine their costs in individual states.

The funny point here is that reinsurance actually does policyholders a favor, otherwise insurers would have to cut down the number of policies they can write as they worry about not having enough money to pay for the large influx of disaster claims. That would hurt the insurance market as a whole and drive more people involuntarily to the inefficient and "unfair" FAIR plan.

Reinsurance helps insurers as well. Among other things, it stabilizes their finances. Without reinsurance, the revenues and profits of insurance companies would witness a lot of ebbs and flows. The reason is that insurers pay reinsurance premiums that would reduce revenues in normal years. But when a catastrophe hits, reinsurers will cover a part of claims, which helps bring insurers' revenue back to the normal level. The end result is that reinsurance enables predictable cash flows over good times and bad times.

6.3 Troubles with Reinsurance After Catastrophe

As fundamental as reinsurance is to insurance, the discussion on reinsurance I have read tends to romanticize the situation a bit, creating an impression that with reinsurance finding affordable insurance will be easy even after a catastrophe.

In reality this is not true. Reinsurance does help pay claim payouts even with a catastrophe, because insurers have been paying reinsurance premium before catastrophe. But life does not stop at the crisis. Challenge remains when the survivors are trying to find new or renewed insurance policies.

This is the story with residents of Paradise of Northern California Butte county, which became famous as the deadliest Camp file in 2018 killed 85 people

and destroyed 11,000 homes there. What would happen to the residents afterwards?

With reinsurance, policyholders are better covered by insurers. Consider Tom and Tamara Conry, whose house was barely touched by the Camp fire according to this NPR report in 2019. Their insurer, American Reliable, a member of ECM Insurance Group, did provide coverage for their living in a hotel and then in a rental apartment. But the Conrys had no reason to be happy because their insurer notified them in December 2019 that it wasn't renewing the couple's homeowner's coverage.

They are not alone, this KCRA report covering Paradise five years later in 2023 also tells us that "Homeowners report now paying premiums that are near or exceeding $10,000 a year when they used to pay thousands of dollars less annually." It becomes clear that "the California Fair Access to Insurance Requirements (FAIR) Plan, is quickly becoming the only option left for people in Paradise."

The moral of the story is that reinsurance follows the same rule of insurance: When there are losses, whether individual or catastrophic, insurers and reinsurers will pay to cover you and get you back to where you were. Afterwards however, expect premium to go up — if you are lucky enough that insurers decide to keep you.

6.4 Reinsurers' Perfect Storm

Why can't reinsurers do more and do better after disasters than they are doing now? The short answer is they face their own perfect storm of troubles or risks. For one thing, the link between climate change and reinsurance is undoubtedly strong. Scientific studies find more than 70% of the catastrophes which took place within the past 30 years were impacted by climate change in one form or the other.

But that strong link puts reinsurers on the spot where they may not want to be. I find this article on climate change and reinsurance interesting. It first points out reinsurance is the most impacted business by climate change as insurers ultimately insure their risks with a reinsurance company while "the reinsurance company is the one that actually has to pay out cash."

To say "the reinsurance company is the one that actually has to pay out cash" is not entirely accurate, as reinsurers typically *share* the burden of catastrophic losses with the insurer rather than paying all losses alone, especially with the catastrophic excess reinsurance. This works like insurance deductibles.

On the other hand, it is true that reinsurance companies cannot further reinsure the risks, so they are the last entities facing all catastrophic losses. The article is also totally right to point out that "because of climate change, the correlation between past events and future events is reducing."

This in and of itself is a risk. The article offers some good and convincing figures: " (T)he reinsurance industry faced claims totaling to $600 billion between 1980 and 2014. However, the same industry has now paid claims of more than $200 billion in both 2020 and 2021." In other words, in the recent two years, the claim losses increased much higher than those from the more remote 35 years.

It is also accurate to say that climate change "is still a nascent phenomenon. Hence, there isn't enough data available to accurately adjust the catastrophe models in order to include the risks."

It is further pointed out that "claims related to climate change are *sporadic*...Since almost all the components are *unpredictable*, adjusting the premiums to deal with this situation becomes quite difficult." (Emphasis added).

It has something to do with how much further back we go. Other things equal, the closer data to today, the higher the climate change risks as the change is relatively new.

A good example: According to the data from E&E news, "in the 20 years from 2003 through 2022, wildfires burned an average of 1 million acres a year in California" according to analysis of data from the State Department of Forestry and Fire Protection."

"But in the six years from 2017 through 2022, California wildfires burned an average of 1.8 million acres a year and destroyed or damaged nearly 51,000 structures in total."

"If data for only the past 30 years are taken into account, the risks seem to be much greater than when we take into account the total available data."

This is why some experts believe that the reinsurance companies have only accounted for half of the risks they actually face.

It's not that the reinsurers are not aware of the negative impact of climate change risks, but they are limited in what they can do about it, especially in raising their prices to offset these losses. "This is because the reinsurance industry is largely commoditized. Hence, lower premiums are amongst the main ways in which reinsurers attract customers. Hence, if a company raises its premium too much, it will end up losing customers. However, if they do not raise their premium enough their probability will be impacted."

Once again, keep in mind that reinsurance companies cannot further reinsure the risks, they are the last line of defense for this unpredictability. This forces them to raise premium — but slowly.

"Some reinsurance companies have already started increasing their premiums by 3% to 5% every year on account of climate change. This could mean an approximate 100% increase in premiums over the next decade or so. The increasing premiums are causing the size of the reinsurance market to shrink because more and more insurance companies are finding it very expensive to opt for reinsurance."

7 A New Model of Insurance Cycle

Insurance cycle is a complicated issue, especially concerning its cause, which involves interest rate, competition, loss costs, inflation, and uncertainty.

7.1 An Extreme View of the Cycle

Let's begin with this article from the Consumer Watchdog website dated August 1, 2000 and entitled "Insurance Crisis: How Insurance Companies Periodically Disrupt the Economy and Why," which describes how insurance crisis is shaped by changes in interest rate:

"When interest rates are increasing, investment income from premiums produces a high return. Under such conditions, insurance companies reduce their prices and solicit and underwrite greater risks to attract capital for investment. When interest rates are low, however, and investment yields are correspondingly reduced, the industry increases premiums to maintain profit levels. This is known as the 'insurance cycle.'"

Some of the points they make will become clearer later, when I will introduce a more complete insurance cycle of my own.

In another paragraph, the author alerts us that "it is critical to recognize the fundamental shift in the structure of the 250-year-old property/casualty insurance industry. Initially, insurance pools served as a mechanism for mutual risk sharing. Modern insurance companies, however, are *financial institutions seeking to maximize profits*, just like banks and savings and loans. While the sale of insurance–the underwriting process–is the principal source of revenue for insurance carriers, the income from investing those premiums is the principal source of profits for the industry." (Emphasis added).

7.2 Debating Consumer Watchdog

The above represents an extreme view in two senses: First, it claims that it is insurers who will disrupt the economy through insurance crisis, while the more realistic and more established view is that the "insurance cycle" is a part of a larger economic cycle. For example, this article in Insurance Journal points out that "The insurance industry, like any other, experiences economic cycles that can significantly impact growth. These cycles are often a reflection of broader economic trends."

7.2.1 Inflation and Insurance Crisis

Consider the current insurance crisis in California, there is little doubt that we had a post-pandemic inflation first, followed by the homeowner insurance crisis.

Let us see some financial figures to be convinced.

According to an article in Nber.org, "The annual inflation rate, as measured by the Consumer Price Index, was 1.7 percent in February 2021 but rose to more than 5 percent in June 2021. It continued rising for another year, peaking at about 9 percent in June 2022."

Now look at the insurance side. The NAIC (National Association of Insurance Commissioners) latest report of P&C insurance shows that nationwide the industry still had a $7.3 billion underwriting *gain* in 2021, meaning insurers collected more premium than paying claims and other business expenses. It only moved into the negative territory at $4.4 billion underwriting *loss* in 2022.

If we look at another measure of underwriting performance, the "combined ratio," which measures total money flowing out of an insurance company, then P&C insurers still managed to have 99.8% even in 2022, which means a tiny amount of profit for the entire industry, as anything below 100% indicates un-

derwriting profit.

7.2.2 Investment Income as Source of Profit

Secondly, Consumer Watchdog also reduces insurers to pure financial operators or investors, constantly and single-mindedly maximizing investment income through leveraging interest rate fluctuations, taking advantage of the fact that "the income from investing those premiums is the main source of profits for the industry", according to the author.

A quick technical note: Consumer Watchdog was right about investment income being the principal source of insurers' profits.

According to the latest NAIC Mid-year 2023 report on P&C insurance industry, from 2014 to the first half 2023, the entire P&C insurance industry has always had investment gains, with the minimum of $27.4 billions and maximum $42.9 billions. Meanwhile the "combined ratio" for the P&C industry is commonly used to measure underwriting profitability. A combined ratio below 100% indicates that the company is making an underwriting profit, while a ratio above 100% means a underwriting loss, meaning it is paying more money to cover claims than it is receiving from premiums.

The same NAIC Mid-Year 2023 Report, which contains historical numbers from the past 10 years, shows only two years (2017 & 2023) had combined ratio above 100% and the rest all above 96% but below 100%. This means most years P&C insurers have good news from both underwriting side (small) and investment side (considerable) in terms of making profits.

7.2.3 Insurers Work in Two Worlds

However, Consumer Watchdog missed an important part of picture: Insurers are not just financial investors but must work in both worlds: financial world

and real economy world. When insurers underwriting or selling its products to the right consumers at the right prices, it is a part of real economy as well as financial operation.

In the real economic world, insurers must constantly control losses from underwriting; otherwise they will have a direct bearing on underwriting profit and, in turn, on total profit. This is so because according to this document on CAS-ACT.org, the official website of the Casualty Actuarial Society, insurers' total profit is "roughly the sum of underwriting gains plus investment gains less income taxes." Therefore, anything that hurts underwriting profit also hurts total profit.

7.2.4 Interest Rate Works Both Ways

Extreme views tend to be simplistic and deterministic, which is true for Consumer Watchdog. It paints a simplistic picture that everything in insurance cycle is shaped or triggered by interest rate. But if we are to learn anything from the current insurance crisis, it is to bear in mind that there are a multitude of factors contributing to the cycle and crisis. High interest rate acted as a trigger but other factors may join the force.

Another side of the same coin is that interest rate not just impacts investment income (i.e., the asset side on insurers' balance sheet) but also claims obligation (i.e., the liability side of the balance sheet). This holds particularly for property and casualty (P&C) carriers, where premiums may lag behind the rate of inflation, impacting profitability and liquidity.

After pointing out problems with Consumer Watchdog, a more complete and unbiased introduction of the insurance cycle is warranted.

7.3 Fact of Life or Crisis Trigger?

An insurance cycle has periods of "soft" and "hard" market conditions in a cyclical way, each lasting several years. The words of "soft" and "hard" roughly refer to "friendliness" and "unfriendliness" to insurance consumers — with opposite impacts on insurers. A soft market is friendly to consumers, but "hard" to insurers' profit: The premium rates are stable or falling and insurance is readily available in a soft market, while insurer profits are decreasing. On the other hand, a hard market is less friendly to insurance buyer but "soft" or "gentle" to insurers, as rates rise, coverage harder to find but friendly to insurers as their profits are increasing.

In other words, what is "soft" to consumers is "hard" to insurers; what is "hard" to consumers is "soft" to insurers in terms of profit.

This Wikipedia page correctly states that "all industries experience cycles of growth and decline, 'boom and bust.' These cycles are particularly important in the insurance and reinsurance industry as they are especially unpredictable."

For this reason, "Lloyd's Franchise Performance Director Rolf Tolle stated in 2007 that 'mitigating the insurance cycle was the 'biggest challenge' facing managing agents in the next few years." Some, however, believe that the cycle is a fact of life and inevitable due to the intrinsic uncertainty in insurance.

It remains an unsettled issue whether we can predict and prevent the cycle or leave it as a fact of life and live with it. I would argue against the possibility of complete "prediction and prevention" simply because, as I will propose later, the insurance cycle is fundamentally caused by uncertainty, while making complete and accurate predictions implies certainty. However, it is still possible to make conditional prediction and do much in mitigation.

7.4 What Shapes the Cycle, Competition or Interest Rate?

While Consumer Watchdog presents an extreme view of everything caused by interest rate, among industry insiders the dominant theory says the cycle is caused by insurers' competition.

This article from Insurance Information Institute or III puts it clearly: "A dominant factor in the P/C insurance cycle is intense competition within the industry."

The theory works like this: All insurers, including life insurers and P&C insurers, won't let their premium money sit in a safe deposit box to collect dust. Instead, they all invest premium in the financial market, and a big trunk of the money is invested in the interest sensitive fixed income financial products such as bonds issued by governments and corporations, Treasury bills and others. These are debt instruments paying a fixed amount of interest, with the principal returned to the investor at maturity. They are not equities or stocks with ownership interest in an entity or firm.

Investing premiums in the financial market is a win-win game because financial market loves insurers as they are deemed "deep pocket" long-term investors, while insurers also win from interest payment that is typically higher than the interest paid by banks.

In my view the "competition" thesis lacks a trigger. Insurers compete with each other constantly, but only changes in interest rate will lead to a cyclic pattern of results. More accurately, insurance cycle arises from interaction of interest rate change and insurers competition. To the extent that the competition often starts with rate change, we may say the latter is more important than the former.

But that's just one way for insurance cycle to appear, and it works when there is no dramatic change on the underwriting side. Our current insurance crisis teaches us that when claims inflation is larger than general inflation, un-

derwriting losses are likely to trigger a cycle. See more later on this.

7.5 Investment Focuses of Life vs Non-Life Insurers

A non-crucial issue is that life insurers invest more heavily in the fixed income financial products like government and large corporate bonds, while P&C insurers are less heavy there. The Office of Financial Research says that "Compared to life insurers, P&C insurers hold a higher portion of their investment portfolios in equity securities, alternative investments, cash, and short-term investments." In 2022, P&C insurers invested 27% of their assets in stocks and 55% in bonds for example.

This by the way explains why life insurance does not have the same insurance cycle as non-life insurers, thanks to the large base of similar risks (i.e., people) in life insurance, which allows for more accurate prediction of claims (we all die above certain age limit) and minimizes the risk that the insurance cycle poses to the business.

7.6 Insurers' Two Sources of Income

All insurers have two sources of income. This differs from banks that largely depend on "interest rate spread" for profit. For example, banks charge higher interest rates for their loans than the rate they pay on deposits, and the difference between the two rates contributes to the bank's profit. To use a simplified example: When Joe deposits his money into his checking account at Bank of America, the bank pays him 2 cents per dollar. But when Joe needs a loan for repairing his roof, the bank charges him 8 cents per dollar of the loan.

Having two sources of income brings financial flexibility. An insurer may have an "underwriting loss" when it has more claims to pay than it has collected

in premiums, but its total income may still be positive thanks to its investment income gains that more than offset its underwriting loss.

Having two sources of income however also makes things more complicated, especially in (1) how insurers handle the interaction of two sources and (2) how they set their competition strategy. The first works like the old prediction from Federal Reserve New York in 1986 said: "As interest rates rise, company can lower premiums to meet the same future claims because the interest accumulated with premiums will be greater."

But things do not stop there, as insurers also may change their competition strategy. When interest rate is higher, their investment income is higher — other things equal. Insurers then may compete to lower their premiums — even though doing that might hurt underwriting profit. The hope is to attract more customers to their "book of business," which brings in more premium income to be invested in the financial market. The opposite holds when interest rate is low.

Like I said earlier, either way, in the story so told, interest rate, more than competition, plays the crucial leading role, as fixed income investment is always sensitive to changes in interest rate, the latter can trigger changes in competition behaviors.

This of course does not exclude competition, which does play a role in the sense that some "naive insurers offer cover at unrealistic rates, and established businesses are forced to compete or risk losing business in the long term" as the Wikipedia page points out. In so doing, sometimes some insurers would set the price so low that may endanger them for insolvency. Regulators may also see it as a sign of attempted predatory pricing. If the rate was too high, it was assumed to be an indication of the intent to earn monopoly profits.

7.7 Cash Flow Underwriting & Investment Income

Cash flow underwriting is a fundamental part of insurance cycle. An insurance cycle without cash flow underwriting is boring, and cash flow underwriting without insurance cycle is infeasible to have.

This article of Freshbooks.com talks about how P&C insurers purposely lower premium to attract more consumers so to have the cash to invest in steady and attractive investment market.

"Cash Flow underwriting is when insurance companies offer plans with a pricing strategy that aims for quantity over quality. This requires them to sell policies below cost to bring in more insurance customers."

In other words, in cash flow underwriting the goal is not to make an underwriting profit but rather to get the cash from paid premium and then to invest the cash in a financial market. The hope is to have higher investment income that more than offsets underwriting loss.

I find the words from the the Fed New York article in 1986 interesting. It takes us back by saying "cash flow underwriting" practice was traditionally regarded as unsound, as "Investment income, in this view, is considered a buffer against unexpected underwriting losses, not a source of cashflow for anticipated claims costs." However, the investment risk averse P&C company "was seriously undermined by the unusually high level of interest rates in the late 1970s and early 1980s."

The lesson was clear: Investment income is no longer just a safety buffer, it is an independent and sound source of income for insurers — thanks to the health financial market in the US.

Back to the Freshbook.com article, "This strategy is usually enacted in a soft market when the economic cycle is in a weakened state. During these economic conditions, it is more difficult to bring in mainstream consumers. To combat this,

insurance companies lower their pricing for insurance policies. This is especially true in highly competitive markets."

Say, a car insurance company sells an insurance policy to someone with three accidents on his record. If the insurer decided to charge the owner $1,800 in premium, but the guy gets in another accident that costs the insurer $2,500 then the guy is a net loss on the book — unless the investment income from his $1,800 is $700, which will make the insurer break even, and anything bigger than that will be profit.

The key point here is to "create better consumer affordability and may help people with barriers to credit access." This brings good news to some consumers who normally would have a hard time getting any insurance coverage.

"Instead of banking on a small number of higher-priced safe premiums at safer risk, they're going for a larger number of lower-cost premiums at higher risk."

An even better news I would say is that insurers are engaging in this cyclic behavior *on their own*, without being forced by regulators like Prop 103. The thing works like a chain: When one insurer lowers its premium rate, other insurers will follow the suit so to maintain their market shares.

In the end, we see an insurance cycle may bring something good to consumers, not always lead to an insurance crisis.

7.8 Government Figures on Investment Income

Federal government of course is aware of the cash flow underwriting practice. This General Accounting Office Statement before the Subcommittee of Oversight Committee on Ways and Means House of representative on April 28, 1986 tells us a few key points about cash flow underwriting.

"Property/casualty companies have used a pricing strategy which sacrificed

underwriting profit margins in order to generate cash for investment purposes. As a result of this strategy, the property/casualty industry has made, depending upon whose estimates are used, between $50 and $75 billion in net gains over the last 10 years."

For some real-life statistics of how investment income more than offsets underwriting loss: "over the 5-year period 1980-1984, when the industry's claims and expenses exceeded premiums by about 9 percent, its underwriting loss was about $45 billion. Even so, the industry had $82 billion in investment gain which, when offset against its underwriting losses, resulted in a net gain of about $37 billion."

Another interesting data point is that from 1976 to 1985, "While property/casualty companies had about $65 billion in underwriting losses, they also earned about $140 billion from their investments during this l0-year period. Overall, the industry had a net gain of about $75 billion."

"Even if we adjusted our figures to exclude unrealized gains and to include policyholder dividends (the approach used by the industry for its calculation), the industry's net gain for this 10-year period would still be $51 billion."

7.9 New Story, New Theory

I believe the best explanation of what shape the insurance cycle won't be fixed at any one thing but more likely multiple things. Even the cycle itself and its features are subject to change as time goes on. Old theory fits the story before but not today.

One good example is that California and Florida are both in a "hard" market today and yet insurers are not growing their profits even though insurance consumers face low affordability and availability.

Nobody is happy. But why? The answer is loss costs. You may say the old

theory of insurance cycle fits the old story before pandemics, when there was no natural disasters or catastrophes, no global supply chain disruptions and no labor shortage. Under those circumstance, everything would be shaped by interest rate changes — like Consumer Watchdog argued.

In a new model fitting the new reality today, insurance cycle is fundamentally caused by uncertainty, especially uncertainty that causes large loss costs (i.e., claim cost, allocated loss adjustment expenses), which makes underwriting cycle (another name for insurance cycle) inevitable, even with fixed income financial products that generate more or less predictable income.

As this Wikipedia page tells us that the uncertainty is inherent, because insurers face the challenge of matching insurance prices to future losses. It is the latter that cannot be known ahead of time, for sure.

But it also means that we must go back to the real economic world and bring underwriting risks into the picture, not just interest rate risk in the financial world. The fact of the matter is, under certain circumstances underwriting loss costs still have a big impact on insurance cycle, even bigger than just interest rate.

Another side of the same coin is that interest rate impacts not only the asset side (through investment income), but also the liability or obligation side, because it affects the cost of fulfilling claims in good faith. Say that the rebuilding cost for a house destroyed by wildfires before inflation was $500,000 but will become $670,000 in California — after taking into account the 34% increase in residential construction costs after inflation. The extra $170,000 would have to be paid if the policy coverage were based on the replacement cost value rather than the actual cash value.

As we can see, the (potentially dramatic) increase in claim costs after inflation may be much higher than the extra investment income from higher interest, plus

the former is unpredictable especially during catastrophes.

The current inflation period tells a different story: Insurers have significantly raised their premiums even when the interest rate is much higher than before. This is better described by the following prediction by the same Fed New York article: "If costs of settling claims are expected to rise through time, a higher premium or investment return will be necessary to cover future costs."

The moral of the story is that loss cost predicts premium rates better than interest rate, especially with catastrophes, especially with unexpected risks.

In its simplest terms, the insurance cycle refers to the same boom-and-bust periods commonly seen in most, if not all, businesses or industries. What make it special for insurance is that the cycle and its periods are especially unpredictable due to the underlying risk uncertainty.

7.10 Limits of InsurTech

But there are other ways to turn insurance into a multi-risks, multi-hazards field, which calls for timely and constant scientific guidance, even above and beyond data science.

Consider climate change. Insurers are more directly impacted by climate change compared to banks. This PWC report says it well: "Consideration of climate change's effects on insurance has focused primarily on physical impacts, namely property and crop damage. However, there's also reason for concern about life and long-term carrier liabilities."

8 Regulatory Lessons from the Prop 103 Debate

Assessing and evaluating the historical debate is best done as a part of the "Proscience" theme, given that science is the greatest common denominator as

I discussed before. I will single out more specifically the irreplaceable role of formal science, which is true not just in theory but in practice, manifested by the palpable difference in scientific rigor between authors who respect actuarial science and others who do not, despite all being actuaries by training.

8.1 Old Debate, New Scientific Scrutiny

In what follows, I will focus on four analytical reports, two by David Appel of Milliman (in 2001 and 2004), one by authors from the International Center for Law & Economics (ICLE) in 2023, and finally one by the Consumer Federation of America (CFA), which has a series of reports over the years, but I will only use the one written in 2001, upon which Appel offered his critique in the same year and also a follow-up in 2004.

Unlike Appel and ICLE, the CFA reports do not respond to the questions and criticisms from the con-103 camp — despite that they had the time and plenty of opportunities to do so.

This old report in December 2001 from the Business Insurance.com brought us back to when Appel first reported his findings at the National Association of Insurance Commissioners winter meeting in Chicago, and "J. Robert Hunter, an actuary who is director of insurance for the Consumer Federation of America in Washington," was clearly aware of the Appel's findings. Yet he only offers a very brief comment: "Mr. Hunter said after the NAIC meeting: 'I think it is a very light analytical response, though it took six months.'"

How long the analysis has taken is largely irrelevant and in fact, the longer it took to be prepared, the more seriously it could be treated — other things equal. I also believe calling Appel's analysis "very light" misses the point. Light or heavy, the key is to hit the point. If the analysis fills the bill, being light is a virtue, not a deficiency, because it is easier to read and to understand. In my view, Appel's

two reports are the best we have seen so far on the topic.

The only other comment from Hunter in the Business Insurance.com report was this: "'The insurance companies don't deny all the good things that happened after Prop. 103. That kills their oft-stated argument that increased regulation causes all sorts of bad things, like higher rates for consumers, lower profits for insurers and sharply increased numbers of assigned risks and uninsured motorists,' he said."

But that was a *business* comment, not an *analytic* respond that we need most from an actuary. Still, I noticed his phrase at the beginning that "all the good things that happened after Prop. 103." This is interesting because Appel has said the same thing: Many other changes after Prop 103 made positive impacts toward reducing loss costs of the insurers in California, which then brought down the premium rate. More details later.

The only "problem" with the two reports of Appel is that they are somewhat dated. I was happy to find the well-written white paper by ICLE, dated on November 6, 2023, which provides a much needed update on the debate. Unfortunately, although it adds many good points to the debate, its focus is still on auto insurance, at least in its data analysis part. It is in my opinion the homeowner insurance crisis we currently witness that has issued the "death blow" to the old and stubborn law.

8.2 Three Introductory Reflections

Before presenting more specific observations and suggestions, there are three things that are best covered now.

8.2.1 A Quick Rundown on Prop 103

I won't beat around the bush but will give my quick thoughts on Prop 103: It is a Soviet style, full blown "Big brother" regulation regime featuring detailed and thorough state control of insurance prices and insurers.

When I read Prop 103 and other related writings from the pro-103 camp, I can't help but think of Mao Zedong and, more recently, Mao's spiritual heir Xi Jinping. Harvey Rosenfield, the author of the ballot measure, could have a heart-to-heart conversation with Xi Jinping if they met (too bad Xi does not speak much English), as they both see eye-to-eye on the necessity of tight state control and share a deep-seated distrust of private enterprises. Like Xi, Rosenfield tried — and succeeded — to pull the insurance regulation in the Golden State backward, from an "Open competition" system to an extreme version of "Prior approval" system.

My view may sound extreme but is really no more than counterbalancing rebuttal to the extreme stance of the pro-103 promoters. Also, having a negative view of the existing law is not the same as holding an extreme stance in the debate, because there is another party involved. Finally, my suggestions concerning future regulation reform are mostly neutral.

8.2.2 The "Spirit" of Prop 103

Here is another thought that came to me recently. I walked by the law school at UC Berkeley campus several times, and noticed the banner on two lampposts that reads: "It is the spirit and not the form of the law that keeps justice alive!" by Earl Warren, who according to Perperxity.AI "was an American attorney, politician, and jurist. He served as the 30^{th} governor of California from 1943 to 1953 and as the 14^{th} Chief Justice of the United States from 1953 to 1969."

I must, respectively, disagree with the late Warren, even though I am aware of

the long "letter versus spirit" legal debate. There are too many thinkers, speakers, and authors needlessly giving up one thing to emphasize another, in the general format of "It is *this*, but not *that*!" The truth is justice lives both in spirit and in form (or letter), and most importantly, the two do not have to be mutually exclusive, as we can see from the following hypothetical example.

Warren was speaking for his own job because interpreting the spirit of the constitution and laws is what Supreme Court justices do to keep justice alive. However, at the grassroots law enforcement level, police officers need clear letters and numbers to follow. For example, on a road with a speed limit sign of 50 MPH, a duty bound police officer might issue a ticket to anyone driving at 65 MPH or even at 60 MPH, even under broad sunlight and even when the road is almost empty. That is the way the officer keeps justice alive, because following the letters "50 MPH" *is* following the spirit of law: Treating everyone the same and maintaining the consistent authority of laws — not to be compromised or changed by particular weather or road conditions. Simply put, a law is a law!

I cite this example to make another highly relevant point: There *is* a "spirit" in Proposition 103, which is called "purposes" by Section 8(b) of the California Insurance Code, that *is* more important than the form of the written law, so important that the law says that purposes "shall not be amended by the Legislature" unless it is approved by *two thirds* of the legislature or "approved by the electorate."

If I must put the spirit down into words, the best I can come up with is this: "Active, direct, and detailed state control works better than market in protecting insurance consumers."

I have no problem with state regulations in general, but with the three adjectives: "Active, direct, and detailed" in front of the "state control," which also should be replaced by "state regulation." The difference is that the best "regulators" work with insurers as partners in serving insurance consumers, and treat insurers and

consumers fairly by the same laws and regulations; while "controllers" put themselves in a superior position above everyone else, and treat insurers sometimes like enemies.

It is also such a "spirit" that pushes Rosenfield and his Consumer Watchdog not only to reject, but to attack anyone with a reform proposal, including the Commissioner: "Commissioner Lara sold out Californians in exchange for a 'promise,' negotiated behind closed doors, that the insurance industry will start behaving itself once it gets the go-ahead to charge homeowners and renters hundreds or even thousands of dollars more every year."

It is still the same spirit that drives Rosenfield to misread the law that he helped to draft: Prop 103. This article from the Insurance Journal says with a telling title: "Prop 103's Author Isn't the Final Word on What Prop 103 Says." It points out a few places where Rosenfield has misread the law, including whether the law grants the power to the Insurance Commissioner to force insurers like State Farm to reverse its decision of not renewing existing homeowner policies.

In my view, Rosenfield's misreading is not an accident, but reveals what the "spirit" of the law should be in his mind.

8.2.3 Debating with Power

The other point I want to make comes from the 2005 movie "Coach Carter" I recently watched. It was based on the true story of Richmond High School basketball coach Ken Carter (payed by Samuel L. Jackson), who made headlines in 1999 for suspending his undefeated high school basketball team due to poor academic results.

Whether you saw the movie or not, I would bring the following scenes from the movie to your attention. At the beginning of the film, shortly after Carter arrived at Richmond High and met his "rowdy, rude, and disrespectful" players

(according to the Wikipedia page) who constantly used the term "nigga" or "nigger," one of the particularly aggressive and drug dealing players named Timo Cruz said something very disrespectful to Carter. The coach then asked Cruz to leave the gym right away or "before I help you leave!" Apparently nobody had ever said anything like that to Cruz before. The angry Cruz threatened the coach that he would "lay your ass out!" After Carter quickly said "I don't think so," the sly Cruz pretended to leave and suddenly punched Carter's face. The well prepared — and more powerful — Carter quickly caught his fist and used just one hand to force Cruz's body to turn around, with his back facing his coach now and being pushed to the wall.

Outpowered by Carter, Cruz could not move and could only warn Carter that teachers were not supposed to mistreat their students. That warning did not work, as Carter simply reminded him that "I am not a teacher, just your basketball coach!"

The movie shows that Cruz — and the other players observing the whole scene — all learned the lesson and stopped messing around with Carter. Cruz later turned himself into an excellent college basketball player with full scholarship.

The lesson here is that sometimes we must use force to fight the force — anything else would fall short of efficiency, at least in the short run. The reality is simple: If Carter were not able to force Cruz out of the gym, not many players would take the new coach seriously.

But this logic also applies to a debate: After one side persistently presented extreme views for a long time, the audience is more likely to be convinced by more powerful counterarguments. And that is what I will do to bring a scientifically more powerful analysis from the con-103 camp — after presenting the summary points first.

8.3 The Bird's Eye View: Observations & Suggestions

For those who lack the patience or interest to read the entire section, I will present my observations and suggestions upfront. Not all these points will have their own subsections later, as some are self-illustrating. The two main analytic issues 1 & 4 will receive more attention.

8.3.1 Observations from the Past

Note in what follows, "ratemaking" is an industry term that means premium price determination. "Loss costs" are the money insurers must pay to cover claims and other costs.

1. The biggest regulatory lesson from California is that risk reduction, not state imposed rates, works. Californians have accomplished many loss preventive and risk mitigation changes since the liability insurance crisis in the 1980s, it is these preemptive changes that decreased the loss cost for insurers, which in turn lowered premiums.

2. Talking about how much Californians saved in auto premium without factoring in loss cost, like the CFA reports had done, is misleading and is like comparing the ranges of two Teslas without considering one is in the warm California and another in the freezing Canada. The key question we should ask is "What Californians' premium would be if we take Californians' loss cost into account?" like the reports by Appel and International Center for Law & Economics have done.

3. A state with tight governmental control over ratemaking will have a high regulatory "friction," which not only weakens or even decouples the link between expected loss costs and premium but also forces insurers to raise premiums in "non-friction" states. Insurers' loss in California could be compensated

by cross-state subsidy alone, plus the state's big base of consumers also attracts insurers.

4. Let actuaries and data scientists do their jobs without imposing a uniform rate-setting formula, unless it is proven that the system is corrupted or broken. One reason state controlled ratemaking lowers underwriting efficiency is that California had 44,190 insurance sales agents as of May 2022 according to the Bureau of Labor Statistics, and every agent every day is assessing expected loss costs of their clients, it is impossible for one Commissioner to match their quality.

5. Talking about impacts of Prop 103 in isolation of other changes is also misleading, leading to the attribution error for the pro-103 camp. California has essentially been a story of lowering loss cost. The right question therefore is "What are the things that California has done right to help reduce our loss costs?" again as Appel and ICLE have done.

6. Unlike Appel, I am willing to accept a small but non-zero *residual* contribution of Prop 103 (and an unfriendly CDI) in keeping the auto insurance rate low in California, through constant rejection of rate hikes to lower insurers' expectation.

7. Turning the insurance commissioner into an elected position has proven to be a wrong move toward lowering public welfare and efficiency. It brings extra politics into ratemaking to slow it down and drive science out.

8. California should adopt the "Property and Casualty Model Rating Law" of NAIC (GL1775): "*A competitive market is presumed to exist* unless the commissioner, after hearing, determines that a reasonable degree of competition does not exist in the market and the commissioner issues a ruling to that

effect." (Emphasis added). But competition kills excessive premium and makes collusion much harder, if not impossible.

9. The key reform needed for the "public intervenors" system is to make it work similar to "Consumer Reports" that is funded by a mix of sales of publications and website subscription, plus grants and donations from foundations. They can question rate proposals anytime they want, but must convince the public to come along and to pay for their campaigns — not to be funded by insurers. In a fair game, every player should face risk and uncertainty. Asking insurers to pay for public campaigns unfairly reduces intervenors' financial risk.

10. The catastrophic model has been allowed in FAIR and for the California Earthquake Authority (CEA), it should be allowed in the P&C ratemaking as well — unless the state can prove that catastrophes are irrelevant to P&C insurance in California.

11. If catastrophic model is allowed, reinsurance cost should be allowed in ratemarking, as insurers buy reinsurance mostly for catastrophes.

12. Practices such as forcing insurers to waive the rate approval deadline, imposing a uniform rate of discounts, and mandatory public hearing based on request rate increases (e.g., 7% for personal line and 15% for commercial lines) are examples of state coercion and bullying.

8.3.2 Suggestions for the Future

1. History teaches us anytime there is a crisis, regulators and regulation become a hot topic and people have the impulse to look at regulators for a quick fix. This means regulatory debate is unlikely to end either now or in the future. Regulators should always prepare themselves for the next crisis,

collecting data and conducting scientific research so that when a crisis hits, they have something to show and to educate the public, not being driven away by entrenched interests or uninformed emotions.

2. The key in assessing regulatory efficiency is in maintaining both high *availability* and high *affordability*. But the two goals were not born equal, more attention should be given to the former than the latter. Many state regulators have not heeded the warning signs of lower availability, which is directly reflected in the size of the residual market.

3. Keeping high availability matters because government has the power to acquiesce insurers to "rate suppression," all the way until an insurer decided to leave the jurisdiction, forcing many policyholders into the residual market — by then the problem would be harder to fix.

4. Commissioners should fundamentally treat insurers as partners in the service of the insurance consumer, not enemies. Most insurers are law-abiding citizens most of the time, but may use nonrenewals as the most potent way of protesting against unfriendly regulators. Don't force them to take that step.

5. Switching from a "jurisdiction-focused" regulations to "people/entity focused" regulation. Regulators should get to know insurers better and keep a record of their ratemaking filing quality. Some good filers can be given the regulatory green light or put on a "fast track," but watch closely for bad filers.

6. Consider a list of names with convicted insurance frauds with an amount over $1 million for personal line insurance and $1.5 or $2 million for commercial line insurance. These people can still get insurance but their rights will be limited (e.g., not allowed to suit others in an insurance related case).

This is similar to the list of serial rapists but not open to the public, only known to CDI. This is necessary because a few bad guys actively seek insurance frauds, but they will raise the whole premium level for the state.

7. Establishing a Ratemaking Advisory Committee under the Commissioner, made up of actuaries, data scientists, InsurTech representatives, industry insiders like the Triple-I, and consumer representatives. Their job is to make rate approval recommendations to the Commissioner and to speed up the process.

8. CDI should actively sponsor scientific research to gather evidence on efficient and effective regulation and guide it for regulatory reform. I wish California leads the country by science, not by radical political opinions. There will always be different opinions, but government sponsored third party research should help citizens get the truth and fact-based views.

9. Establishing an Insurance Regulation Reform and Innovation Committee inside CDI to facilitate regulatory reform toward promoting science, efficiency, justice and innovations.

8.4 Unpacking Prop 103

A quick overview of Proposition 103 is due before getting into a more detailed assessment of the debate.

Prop 103, formally known as "Insurance Rate Reduction and Reform Act," opened itself with the following statements: "Enormous increases in the cost of insurance have made it unaffordable and unavailable to millions of Californians. The existing laws inadequately protect consumers and allow insurance companies to charge excessive, unjustified and arbitrary rates."

The Consumer Watchdog uses the antagonists' language to describe Prop. 103: "In 1988, Californians *revolted* against *excessive* auto, homeowner and business insurance premiums and passed Proposition 103." (Emphasis added).

The law was rapidly drafted with a singular goal of protecting insurance consumers in California. In the middle of pursuing such a well-meaning cause, it went radical and attacked insurers and their alliances, labeling them all as "greedy" when the truth is more complicated and blame everything on insurers when many factors were beyond their control. This established the legal preamble for the law to emphasize heavy state hands on governmental price control, allowing detailed and thorough micro-interventions throughout the entire business processes from start to finish, leaving little breathing space for the insurers and dragging consumers down to a crisis of affordability and availability.

8.4.1 Revisiting the Liability Insurance Crisis

It is impossible to discuss Prop 103 without looking back at the "Liability insurance crisis" in the 1980s. Some of the Prop 103 claims are accurate. I checked into the history more than three decades ago and found that there were "enormous increases in the cost of insurance" that undoubtedly created both *affordability* and *availability* of insurance problems for Californians.

The problem is in the causes of the 'liability insurance crisis' — not just in California but in the entire country at that time. Before I go to the details, words from a legal scholar from Ohio State Law Journal are interesting to quote here.

"Complex issues are often debated in simple terms. Simple arguments can pose dramatic questions and draw public attention to the issues involved; but they may also deprive public debate of the depth necessary for an accurate understanding of the problem at hand."

This Forbes Council member puts the liability crisis against the backdrop of

insurance cycling of a *hardening*, with "an increase in premiums and a decrease in coverage availability, and *softening*, a decrease in premiums and greater availability of coverage."

It tells us that "In the mid-1980s, the U.S. experienced a hardening of the market so significant it was labeled the Liability Crisis. From 1984 to 1987, it was reported that general liability insurance premiums increased 250%. *A perfect storm of events* provoked this increase, including lower investment returns, a more litigious society, which increased lawsuits and settlements, and reinsurance supply disruptions." (Emphasis added).

The situation was bad enough to make "Time Magazine titled their March 24, 1986 issue 'Sorry, America, Your Insurance Has Been Canceled.'"

8.4.2 Words from NAIC and Academic Studies

At the core of Prop 103 is to protect insurance consumers. If consumers could benefit from active, direct, and thorough insurance price control by the state, all shall be well. Unfortunately, as we will see later from rigorous actuarial analyses, the law has had the opposite impacts.

To understand why, we begin with the fundamental question if insurers operate in a competitive market. The answer is easy to find. The NAIC (National Association of Insurance Commissioners) model rating law (GL1775) clearly states: "A competitive market *is presumed to exist* unless the commissioner, after hearing, determines that a reasonable degree of competition does not exist in the market and the commissioner issues a ruling to that effect." (Emphasis added).

Presuming a competitive insurance market has profound implications. This Brookings.edu article states that "Auto insurance is a competitive industry. It certainly is not characterized by monopoly, the traditional basis for price and entry regulation. Nor is the product so complicated that it requires government to set

rates to protect consumers. Indeed, because it is what I would call a 'plain vanilla' financial product—in large part because insurance policies have been standardized through forms regulation—consumers are easily able to use the Internet to shop for auto (and other types of) insurance. In facilitating price comparisons, the Net is making and will continue to make auto insurance—and the financial services industry more broadly—even more competitive."

"In short, from an economic perspective, there is no basis for regulating rates. Furthermore, there is no evidence from either the AEI-Brookings study or in the academic literature of which I am aware indicating that either prices or profits in states that rely on markets to set rates—rather than regulation—are *excessive*." (Emphasis added).

What would happen if we read the market wrong? Let us consider a real life case in California.

8.4.3 Revisiting the Use of Credit Score

Insurers have long identified three factors on making claims of bodily injury and property damages: age/gender, credit score, and geography. The use of credit score is federally allowed by the Fair Credit Reporting Act (FCRA), which says insurance companies have a "permissible purpose" to look at your credit information without your permission.

One concern for using the score is discrimination against with low income, to the extent that people with lower score tend to be poor, which has shown in a survey by Consumer Federation of America in 2020. Indeed, some consumer advocates believe using credit scores is an unfair practice, and some states prohibit insurance companies from refusing to issue a new policy based solely on credit information, as this short FAQ sheet from Wisconsin Office of the Commissioner of Insurance tells us.

Four states in the nation, California, Hawaii, Massachusetts, and Michigan, prohibit the use of credit scores to determine auto insurance premiums, according to this article on June 15, 2023.

Strictly speaking, prohibiting insurers from using the scores completely, just because *some* bad drivers have low income, is throwing the baby out with the bath water. We can call it "Guilty by association" or "Association fallacy," which has been deemed invalid in the court of law, and it should be in insurance.

The key is whether the credit score is *exclusively* used against low-income people. This Triple-I background article offers useful information. First, "According to Fair Isaac (FICO), 95 percent of all U.S. personal lines insurers use insurance scores to help in underwriting and rating."

Just because many insurers using it does not necessarily mean it is right. So, here comes the second fact: For most insurers, "insurance scores are not the sole factor used to underwrite and price insurance. In auto insurance, other factors are combined with insurance scores, including geographical area, previous crashes, and age and gender (in some states). In homeowners insurance, other factors include the home's age and construction, location and proximity to water supplies for firefighting, and proximity to flood risks."

Third, and perhaps most importantly from a scientific perspective, empirical research throughout the years yields consistent results.

This data mining study in 2003 confirms that a relationship between credit score and insurance losses "exists even after many other variables have been taken into account."

In a study sponsored by Texas Department of Insurance on December 30, 2004, using individual policyholder data, it finds that "The average credit scores for Whites and Asians are better than those for Blacks and Hispanics."

Although there is a relationship between income and credit scores, it is not

linear in the sense that "the moderate income level populations tend to be over-represented in the worse than average credit score categories and underrepresented in the better than average credit score categories."

Regarding age and credit score, "younger people having worse credit scores than older people. The best average credit scores are for individuals older than 70."

The more authoritative source came in July 2007 from the Federal Trade Commission (FTC) reported to Congress that examined how insurance scores impacted the "availability and affordability" of auto insurance. The most important finding is stated as follows: "Credit-based insurance scores are effective predictors of risk in automobile policies. They are predictive of the number of claims consumers file and the total cost of those claims. The use of scores is therefore likely to make the price of insurance better match the risk of loss posed by the consumer. Thus, on average, higher-risk consumers will pay higher premiums and lower-risk consumers will pay lower premiums."

Furthermore, to answer the most important question regarding the use of a credit score in relation to consumer welfare, the FTC report stated very clearly: "The use of credit-based insurance scores may result in benefits for consumers. For example, scores permit insurance companies to evaluate risk with greater accuracy, which may make them more willing to offer insurance to higher-risk consumers for whom they would otherwise not be able to determine an appropriate premium."

Finally, the report clears off the racial and ethnical interpretation of credit score: "Credit-based insurance scores appear to have little effect as a 'proxy' for membership in racial and ethnic groups in decisions related to insurance." The reason is that "The relationship between scores and claims risk remains strong when controls for race, ethnicity, and neighborhood income are included

in statistical models of risk."

A more recent report of Triple I says "A 2017 report from the Arkansas insurance department shows the impact of insurance scoring on calculations of the final premium in 2016 for some 3.4 million personal lines policies. In nearly 55 percent of those policies, the use of credit information resulted in a *decrease* in the final premium. In 19.8 percent of cases, it resulted in an *increase*. Still, credit scoring was a *neutral* factor — meaning it did not affect the outcome — in the remaining 25.7 percent of policies."

8.4.4 A Case of Reinventing the Wheel

We have been talking about the conceptual validity and empirical evidence of using credit scores for insurance underwriting. But California goes further by not only prohibiting the use of credit score but imposing the state determined ratemaking formula with three mandated factors: driving records, annual miles driven and years of driving experience.

This is trying to reinvent the wheels. One feature of the state mandatory factors is a heavy focus on things from the past. But that is not the only problem.

This interesting insurance agency post tells us how one of the mandatory rating variables, annual miles driven, is "impossibly difficult to validate... Today we are getting closer to having real technology that can transmit vehicle data directly from your car to your insurance company using telematics devices... But back in 1998, there was no way to determine how many miles a consumer drove their vehicle... agents, consumers, and in some cases insurance companies themselves use this rating variable as a way to either collect more rates or reduce rates to get competitive... So, if you want to sell a policy as an agent you simply set the annual miles lower, or if you're a consumer and you want to pay less, you tell your insurance company I only drive 4,000 miles annually... It costs an insur-

ance company a lot of money to call out every month to take odometer readings, and the regulations say that the value is whatever the insured says it is — no arguments. There are examples in the market where an insurance company writes a policy at 12,000 annual miles and at renewal another agent quotes them, but to earn the business they set the rate at 10,000 annual miles to get a lower rate. Upon renewal of the 2_{nd} term, another agent quotes the same insured with the original company, but at 8,500 to earn the business."

It seems to be a big mess that could have been avoided. CDI has no need to reinvent the wheels on that front, and should follow what Jesus has said, "Give to Caesar what is Caesar's, and to God what is God's" (Mark 12:17).

But that is easier said than done, as the author of Prop 103 sees insurers as a bunch of liars, trying to get as much money as possible from policyholders. Only prior approval can stop them.

8.4.5 A Rigid "Prior Approval" Regime

Strictly implemented "prior approval" regime of insurance rates has been criticized and circumvented by the majority of jurisdictions according to the 2010 report of Property Casualty Insurers Association of America (PCI): "Currently, 38 states and the District of Columbia have less restrictive rating laws in place, which take on different forms, i.e., flex-rating, file-and-use, use-and-file, no-file or no rating law. While most of these states have operated this way for many years, 11 states (Alaska, Connecticut, Georgia, Massachusetts, Nebraska, New Mexico, New York, North Dakota, Oklahoma, Rhode Island, and Texas) modernized their personal auto and/or homeowners insurance rate regulatory systems within the last decade."

California has been an outlier when it comes to P&C insurance price regulation in the nation, even among the four states (California, Florida for homeown-

ers' insurance only, Hawaii and Massachusetts with a hybrid model) that have adopted the "modified prior approval" according to Google Bard, which says that there is *no* complete prior approval regime in the country, only modified version.

However, digging just a little deeper, it becomes obvious that California is indeed a full-blown prior approval state, as there is no water-down in Prop. 103 to make it fit a modified prior approval regime. Compared to full prior approval, in a modified system, regulators have shorter deadlines and simplified procedures for reviewing rate proposals to balance consumer protection with market flexibility. In some cases, modified systems allow for minor rate adjustments without prior approval, such as those based on inflation or changes in specific policy features.

This interesting insurance agency post tells the discounts that are available elsewhere but not in California: (1) Advanced purchase discount applicable to those who request a quote and purchase a policy in advance of its effective date. (2) Homeownership discount. (3) Occupation discount. (4) Education discount. (5) Volunteer discount. (6) Non-drinker discount. (7) Portable Renewal Discounts or Discounts for Having Insurance. (8) Discounts if you buy Increased Limits. (9) Discounts if you Pay-in-Full. (10) Discounts if you pay using electronic funds transfer. These consumers outside California are always being marketed to new pricing ideas, new options, and new ways for insurance companies to earn their business.

8.5 Assessing the Prop 103 Impacts: "He Said, She Said?"

At the first glance, both sides presented seemingly equally strong evidence to support their causes, leading us to the typical and familiar dilemma of "He said, she said." Scientific thinking, however, helps see through the mist.

The core question to be answered by those supporting and opposing 103 is this: Did the law help or hinder insurance consumers in California? The pro-103

side must prove that the law has helped insurance consumers, while the con-103 side must prove otherwise.

Notice the question focuses squarely on insurance consumers, and ignores the welfare of insurers and other stakeholders altogether. This is because the author of Prop 103 and CFA (Consumer Federation of America) are only interested in protecting and benefiting consumers and nothing else. While this is a problematic way of assessing the quality of laws and regulations, it is also the best way to defeat the pro-103 arguments — if we can prove they are even faulty on the consumer side.

8.5.1 Crisis? What Crisis? The CFA Findings

Still, the views have been totally opposite. Harvey Rosenfield, the author of 103 with his organization Consumer Watchdog, has not been active in conducting quantitative research, but the Consumer Federation of America (CFA) has — by starting off and ending at claiming Prop 103 as a model or the best law for all other states to follow.

In a 2019 report on auto insurance regulation, the CFA authors opened with seemingly shocking premium payment figures: "Since 1989, the average expenditure on auto insurance by Californians has increased by 12.5%, while the average increase across the country has been 61.1%, nearly five times that faced by California drivers. When it comes to the cost of liability insurance, the state-mandated portion of coverage, Californians paid 5.7% less in 2015 than they paid in 1989 (without any adjustment for inflation), while the nationwide average increased by 58.5%."

They came to the most stunning conclusion that "Over the past 30 years, no set of state rules has been as beneficial to its resident drivers as the consumer protections put in place by California voters in November 1988 through

Proposition 103. We calculate that California drivers have saved $154 billion in auto insurance premiums as a result of voters' decision to adopt the 1988 ballot initiative."

The above is not the first study by CFA. One earlier report in 2001 started by listing eight standards of excellence in regulation, and later claimed that "What is it about Proposition 103 that is so remarkable? It meets all our standards as shown in this report." I skipped the standards, as they were made up based on the qualities they believed California Prop 103 had possessed.

Now, let us assume that the pro-103 side has made a valid case comparing the before- and after-103 premium payments and proven that 103 significantly reduced Californians' insurance premium, how about comparing California with another state?

8.5.2 Golden State vs. Sunshine State

Even though there are 49 other states plus Washington, D.C., there are three special reasons to compare California with Florida. First, both states are huge property and casualty insurance markets. According to the latest report on the first half of 2023 ending June 30 by the National Association of Insurance Commissioners or NAIC, "California recorded the greatest market share at 11.4% and DPW increased 7.4% YoY. Both Texas and Florida recorded the next highest market share at 9.7% and 9.5%, respectively, and each saw premium increases of more than 16. 0%."

In other words, California is the largest P&C insurance market, judged by insurance revenues collected by insurers, while Florida is the third.

Note DPW = Direct Premium Written and is the total amount of premiums collected by an insurance company from policyholders and thus represents the growth of an insurance company's business during a specific period and is cal-

culated before any deductions, such as reinsurance premiums, are made.

YoY = year-on-year, and is used to compare a certain measure from one year to the same period in the previous year in percentages. For example, if an insurance company's DPW increased by 9. 6% year-on-year, it means that the DPW for the current year is 9.6% higher than it was in the previous year.

The next reason to compare the two states is that both are vulnerable to recurring natural disasters (hurricane in Florida; earthquake and wildfire in California), although see first what Milliman has to say about the two types of disaster.

In a report on California wildfire conundrum by Milliman.com on November 27, 2018The same Milliman.com source also said something important: "It may be that wildfires are to California what hurricanes are to Florida...But the similarities end with a fundamental difference: 84% of wildfires are caused by human activity. In other words, many wildfires are preventable, while hurricanes are not. The economic losses from California's two major wildfires in October 2017 are estimated to comprise two-thirds of the economic costs for wildfires globally in all of 2017. In light of that fact, Benjamin Franklin's axiom, 'An ounce of prevention is worth a pound of cure,' may have increased resonance for wildfires."

"Another stark contrast between California wildfires and Florida hurricanes is that Florida has developed a far more robust scientific and legal framework to deal with hurricane risk. Grounded in science and engineering, catastrophe models have been developed during the past few decades to assist insurers in pricing and managing risk for hurricane coverage. In 1995, Florida created the Florida Commission on Hurricane Loss Projection Methodology (FCHLPM), comprised of a panel of experts in the fields of insurance, statistics, engineering, and meteorology. Under state statutes, insurance companies are only permitted to use catastrophe models that have passed the muster of the FCHLPM."

"By contrast, California insurance law for property insurance as dictated by

Proposition 103 remains primitive. Insurance companies are prohibited from using wildfire catastrophe models to set overall prices, and must use historical averages instead. This has the potential to lead to pricing that is not fully reflective of actual risk, and insurance companies may be reluctant to insure policies in wildfire-prone locations within the state... there are no laws or panel of experts in place to ensure model accuracy or reliability for risk differentiation...On the underwriting front, there are no laws permitting the CDI to regulate underwriting rules of insurance companies."

The final factor making the comparison more interesting is regulatory approaches. This article by Route Fifty tells us that "California and Florida have historically managed their home insurance markets very differently. While California has heavily regulated home insurance rates to keep costs down, Florida has put up public money to back the state-sponsored insurer of last resort."

Let us do a simple comparison in how much insurance consumers are paying for insurance in the two states. This report on January 3, 2024, tells us that in Florida, homeowner's insurance has increased 102% in the last three years and costs three times more than the national average. The average cost of home insurance in the Sunshine State in 2023 was about $6,000, the highest average premium in the U.S.

Worse still, according to Insurance Information Institute, the homeowner insurance crisis in Florida is expected to continue with a double-digit rate increase in 2024, but hopefully lower than the 42% Floridians saw in 2023.

In terms of dealing with the insurance crisis, this report says lawmakers in Florida are getting creative: One proposed bill is looking to help reduce insurance costs for homeowners in the state by barring "insurance carriers from placing a coverage limit on a home that would include the value of the land the house sits on, and it would require insurance companies to offer policies that cover only the

unpaid principal on a mortgage." This is not a constructive step, and we can take a better approach, like I will in another white paper on insurance revolution.

Now let us look at California: In a state where wildfires have wrought billions of dollars in damage, the average cost of home insurance is nearly one-third less than the national average according to an article on Route Fifty.com, which cites Nerdwallet.com that says "The average cost of homeowners insurance in California is $1,300 per year, or $108 per month. That's less than the national average of $1,820."

The picture looks much brighter in the Golden State than the Sunshine State. How do we explain the difference? It seems hard to deny the statistics and financial figures that California has the right to brag about their premiums are lower than national average — even though its cost of living was higher. What has been going on? The answer is to make right attribution.

8.5.3 Attribution Error Everywhere: A Real Life Story

Science determines whether we have made the right attributions. But science is not a god, who will simply declare what is right and wrong. Science requires efforts to arrive at the right conclusion, and since attribution must be updated whenever the situation changes, science is a continuous and endless endeavor.

Here is a real life example: I was doing dog-sitting for a family member during the holidays last year. There is a middle school called Stanley nearby. At first, I tried to stay away from entering the school with a beautiful large lawn perfect for dogs, as I saw numerous signs that say "No dogs any time," which clearly mean that the school is off-limit for dogs. However, I quickly noticed that the school is literally a "dog park" as many dog owners take their pets there.

This is a simple question: How do we explain the fact that real people acting against the rules? It seems reasonable that these dog owners are not good law-

abiding citizens, and they are to be blamed and perhaps disciplined by police issuing tickets.

Being a curious guy, I chatted with a few fellow dog-owners and came to the right attribution: The school just hates dogs leaving poops on campus. Therefore, the silent but real reason is that since these dog owners have been good at cleaning up after their pets, school has no problem with them.

Here, we have things that are directly observable (e.g., the rules posted everywhere but also dogs everywhere on campus) and things that are observable but may be ignored (a clean campus with no dog poops). The funny thing is that it is the things most would ignore that matter the most.

This applies to the debate of 103 as well. As we will see, it is the things that Prop 103 has been silent about that has kept California insurance premium low. It is a good thing that we have the con-103 camp to dig out deeper to bring more facts and insights into the debate.

8.5.4 Appel's Simple Logic

I want to single out two reports of David Appel of Milliman, a prominent and reputable actuarial consulting firm, who has brought science into the debate and exposed the vulnerabilities in the CFA reports.

In his 2001 report, soon after the CFA report was published, Appel offered point-to-point counterarguments. Three years later, in 2004, Appel published another report with similar conclusions.

Appel's logic is simple: Comparing premium payments across states and across years is meaningless without introducing the so called "loss cost" insurers must pay. More accurately, "expected loss costs," as Appel quoted David Cummins at Wharton saying: "Insurance premiums in a competitive market are driven by expected loss costs. Loss costs are determined by accident rates, the costs of

auto repairs and medical care, and the legal liability rules, *none of which are under the direct control of insurers*." (emphasis added).

The nice thing he did was to use the same logic of CFA to defeat it — after introducing loss costs into the model. I will not duplicate the whole work, but will only focus on the biggest claim by CFA: California consumers have saved over $23 billion since 1988 under Proposition 103.

Let us see how they arrived at the magic figure of $23 billion savings with simple logic: "(A)bsent Proposition 103, the annual rate of change in auto insurance premiums in California (CA) would have equaled the rate of change in the US excluding California (USX). Since auto premiums in USX increased approximately 33% between 1989 and 1998, while in CA they were relatively stable (decreasing approximately 10% in the last year), the savings under this logic have been substantial."

To put it in simpler terms: CFA says Prop 103 saved California, without Prop 103 we Californians would have to pay the same higher premium (by 33%) like the rest of the country from 1989 to 1998. The fact that the California premium had been stable tells us that Prop 103 had worked big time.

8.5.5 Counterfactual Predictions

This is called "counterfactual prediction," which predicts what *would have happened* if we did not have something that has indeed happened. Prop 103 makes a perfect example: We all know it passed to be the law in California in 1988, but we can still ask what *would* have happened if Prop 103 did not exist. It is a good mental exercise that can stop us from taking things for granted and appreciate the existing things more.

But there is also a trap associated with counterfactual thinking: We may believe that there is just one thing missing, when, in fact, several things may be

missing. It is a trap because it leads us to an error in attribution.

I will use a hypothetical example to illustrate the point: Say a patient who had been in a deep coma for a week prior to the 9/11 terrorist attacks in the East Coast. Doctors decided that he needed a surgery that can only be performed in New York while he was in California. A flight from SFO to Kennedy Airport was scheduled on the same day of September 11, 2001. His flight was cancelled in the last minute, but nobody explained to him why. He thought he just missed one important flight — when in fact the whole US aviation system was put on halt after what happened in the World Trade Center. He apparently made a wrong attribution by missing a bigger picture.

This is again the danger in counterfactual thinking: You may think you missed one thing, when in fact you missed more. The pro-103 folks did exactly that: They honestly believe Prop 103 was the only happened in 1988.

This article by International Center for Laws & Economics has used the logic of counterfactual prediction to arrive at the same conclusion as Appel. Before we go to details, note this article makes a good point that "Prop. 103 has created an insurance market that struggles to work efficiently even in the best of times and is virtually impossible to sustain in periods of acute stress."

The logic is simple and involves the following equation:

$$\frac{A}{B} = \frac{C}{D} \tag{1}$$

At this time, an elementary school student could probably tell you the following:

$$\frac{A}{B} \times D = C \tag{2}$$

Now, all we need is to replace letters A, B, C, and D to meaningful names to

solve real world problems. In our case, A = Premium of California (P_{CA}), B = Loss Cost of California (L_{CA}, C = Premium of All States Except CA (P_{USX}) and finally D = Loss Cost of All States Except CA (L_{USX}). Replacing the letters, we have Eq. 3 corresponding to Eq. 1 but with substantial meanings:

$$\frac{P_{\text{CA}}}{L_{\text{CA}}} \approx \frac{P_{\text{USX}}}{L_{\text{USX}}} \tag{3}$$

This means the ratio of premium over loss cost is roughly the same for California and the rest of the country. ICLE writes it as an equation, not an approximation. I believe the latter allows some residual random difference between California and the rest of the country, so the two ratios won't be exactly the same. Note California premium and California loss costs are known, what is unknown is the national premium without CA. More accurately, it is the *counterfactual premium* that is unknown, not actual premiums that can be found quickly for each state and then add up to national without CA.

But Eq. 3 allows us to get the *counterfactual estimate* of the premium for the country without CA. Because only California passed Prop 103 but not other states, we want to know how much national premium would be if the whole country had Prop 103, denoted by $\hat{P}_{\text{USX}}$. For that, we can use Eq. 4:

$$\frac{P_{\text{CA}}}{L_{\text{CA}}} \times L_{\text{USX}} \approx \hat{P}_{\text{USX}} \tag{4}$$

Using the formula, ICLE finds that "if the rest of the country (USX) had passed Prop 103 in 1989, consumers would have paid more than $218 billion in additional auto insurance premiums."

The same logic can be applied to get the counterfactual estimate of California premium had the Golden State not passed Prop 103. We just need to rearrange Eq. 4 to Eq. 5:

$$\hat{P}_{CA} \approx L_{CA} \times \frac{P_{USX}}{L_{USX}} \tag{5}$$

ICLE then finds that "the estimate of California premiums if we remove the effects of Prop 103 on California, indicate that Californians would have saved nearly $25 billion if they had not passed Prop 103."

8.5.6 What Really Happened After Prop 103

I have introduced ICLE's quick counterfactual calculations above. But note, ICLE's work is about 20 years later than David Appel, who is the first introducing loss costs into the analysis.

In his Figure 1 of the 2001 report, Appel shows that indeed the average auto liability premiums per vehicle for CA and USX differ obviously, proving that CFA did not lie there. His Figure 2 however shows something CFA never looked, but should have: the average loss costs per vehicle for CA and USX.

His Figures 3 & 4 then put the two things together, first for USX and then for CA. Sure enough, for USX the average premium largely follows the average loss costs, shown in Figure 3 but not for CA. Figure 4 shows the two things do not go together. More specifically the average premium stays pretty flat from 1989 to 1998 (the latest data point for his 2001 report), while the average loss cost was *higher* than average premium from 1989 to 1993 but *lower* from 1994 5o 1998.

8.5.7 Decoupling Rates from Losses

Of course, we now know what Appel finds for CA is not an accident or even unique to California, because another academic study has shown that in tightly regulated markets insurers let ratemaking decoupled from risk and simply let other less tightly regulated states cross-subsidize the states with regulatory fric-

tions (e.g., California), which however entails in distortions and injustice in risk sharing across states.

This cross-state subsidy and rate-loss decoupling happened indeed in California, as Appel's reports have shown. On Page 44 of the 2001 report, right after presenting Figure 4 for California, where the loss cost and premium indices were mismatched, Appel has the following to say:

"The post-Proposition regulatory environment in California could have induced insurers to *defer rate reductions in response to declining costs*; in effect, insurers may have retained the increased profits *as a hedge against future regulatory risk*. A rational insurer, acting in its individual self interest, could easily require a higher expected profit margin in response to the increased uncertainty associated with the Proposition 103 regulatory regime." (Emphasis added).

Here is how it works: With Prop. 103, when loss costs are above premium (i.e., when insurers failed to collect enough premium to cover claims and other costs), insurers will have underwriting losses caused by state rate suppression, like we have seen in California. Now, underwriting loss could also arise from insurer's under-estimating loss costs. The difference is that in a competitive market insurers can quickly raise premium to fix the problem. With Prop. 103 rate suppression, CDI would either deny rate hike or would authorize it too slow and by too little.

Insurers do have an easy but "sly" solution for rate suppression: waiting for their time to come! That is, when loss costs go down below the premium (i.e., when insurers collect more premium than needed to cover claims and other costs), insurers will quietly keep the underwriting profits/gains without saying anything — and also without lowering premium as they would normally do in a competitive market.

In that sense, Appel did not describe the California situation completely ac-

curate: Instead of using the underwriting gain to hedge for future risk, insurers look at the underwriting gains as a way to *compensate* their previous underwriting loss. Of course this is a minor issue and the same gains can be used either way.

Someone may say that in the end, California insurers still broke even despite Prop 103. But I hope you see the difference. Prop 103 has distorted the competition driven market self-adjustment and decoupled the competition driven link between premium and cost base. This is the biggest problem of Prop 103 for driving science and competition out.

The Brookings paper has these words for rate suppression: "... rates have been suppressed below levels that would obtain in a freely competitive environment. On the surface, this may look like a good deal for consumers, but closer study reveals deeper problems. For one thing, rate suppression not only discourages entry by new insurers, but encourages existing insurers to leave—which in fact has occurred in both New Jersey and Massachusetts. Meanwhile, many more of those insurers who remain operate only in a single state (either as standalone companies or subsidiaries of national firms that are formed to limit financial exposures to the parent companies). In Massachusetts, for example, in 1982 all top ten auto insurers in the state were national firms, but in 1998 this was true for only 3 of the top 10. A similar pattern has existed in New Jersey: five of the nation's top 10 auto insurers do not do business in the state. The net result from restrictive rate regulation is less choice for consumers among less diversified firms."

8.5.8 A Cat-Mouse Game

Once premium is detached from loss costs, state imposed universal rate discount can also be "cheated" by insurers. On Page 30 Appel tells us the following

story:

"California law stipulates that anyone classified as a "good driver" must receive a discount of 20% and may not be denied coverage by any insurer. Since the definition of a good driver was sufficiently liberal to include more than 90% of the drivers in the state, rates declined only negligibly for most drivers. That is, in order to comply with the requirements under the law, insurers tended to increase rates substantially for non-good drivers, so that good driver rates were then 20% below the others, and thus in compliance."

A mouse and cat game that is a waste of time for everyone. The state has itself to blame for being "much ado about nothing," because the majority of insurers in California, just like in other states, have an incentive to scientifically identify the factors that drive up claims, in both frequency and severity, and then change rates accordingly. This is in the tradition and is the equilibrium way of staying and thriving in business (they all have an underwriting department working with actuaries and statisticians for that purpose).

8.5.9 Regressions on Panel Data

Appel has also tested *simple* and *multiple* regression models in his 2001 report. A simple regression contains one dependent (premiums per car year) and one independent (the lagged value of insurance loss costs per car year) variable. Appel gives a footnote on why using the lagged value of insurance loss cost: Insurers' ratemaking depends on a projection of historical costs into the future. Lagged values represent historical loss costs, which will be used as future or expected loss cost for rates.

Appel did not tell us the details how the variables were constructed in his simple regression, although we know he used "data on auto liability rates and costs for 51 jurisdictions over a period of 19 years." Technically, we can have a

total of $51 \times 19 = 969$ observations, with a data structure commonly called "Panel data" also known as "time-series cross-sectional (TSCS) data."

The simplest way of mentally constructing the panel data is to think of one year in a two-dimensional rectangular: Say in 1989 there were 51 states as 51 rows, each contains two columns of average auto liability premiums plus average loss costs. It looks just like a normal Excel spreadsheet. We then expand the one-year data to the other 18 years, turning the two-dimensional rectangular into a three-dimensional rectangular cubiod. You can also think of it as an Excel Workbook containing 19 sheets, with one year data in one sheet.

The key feature of the panel data is to describe behaviors or variations across time and across individuals. In our particular case, since each year contains 51 states but only 19 years, it can be called "short panel." Longer time and more years would make a "long panel." In addition, since all states have measures of the two variables, we say the data is balanced. With missing data on some states, we will have an "unbalanced panel." Finally, both premium variable and loss cost variable are time varying, meaning they change for each year in each state.

I should know all these because I was teaching a course "Panel Data Analysis" to graduate students in Shanghai. But these things are quickly gone if you don't touch them for a while. I had to check with Perplexity.AI this time to refresh my own memory. What I do still remember is that panel data are highly useful as there are panel data everywhere and are analyzed by pooled OLS (the most restrictive), fixed effect, random effect, first differences, and dynamic panel data models.

Appel never mentioned the word "Panel" even once, and also said on Page 37 that "The model we estimated is simple." It's a safe bet therefore that he ignored the panel data structure altogether and simply took the average values across 19 years, effectively reduced it to a cross-sectional data to run his simple regression

on.

The shocking result of the simple regression is that R^2 with only loss costs as the only independent variable has been almost 90%. If you have used regression before, you should know that we do not get such a high R^2 very often. It indicates that the loss costs do have a high explanatory power, in the sense that it explains a large portion of the variance in the dependent variable.

Appel next ran two multiple regression models, which have one dependent variable (the thing to be explained by the model), and several (at least two) independent variables. Multiple regression is used when a dependent variable is influenced by more than one independent variable, and it evaluates the effect of each independent variables on the dependent variable while holding the other independent variable constant.

Appel multiple regression models focus on what impact changes in loss costs during the post-103 years from 1989 to 1998. In order to assess whether Prop 103 helped lower loss costs, he added the dummy variable for California, together with other independent variables thought to influence loss costs, such as percentage Change in the percentage of adults between 18 and 24, average annual percentage change in alcohol consumption per capita, Percentage Change in UM (uninsured motorists) to BI (bodily injury) claim frequency ratio, and the like.

I will skip the details, but the key finding is that California dummy has always had an *insignificant* impact on loss cost. Appel interprets the result as saying that "once other factors simultaneously affecting insurance loss costs are taken into consideration, there is no evidence that Proposition 103 has helped to reduce loss costs in auto insurance."

Appel also did his counterfactual estimations for California and his numbers are lower than that from the ICLE: "The projected premium reductions range from $7.8 billion to $12 billion for auto liability, from $0.8 billion to $2.6 billion for auto

physical damage, and from $8.6 billion to $13 billion overall."

In other words, Californians would have saved almost $8 to $12 billion in auto premium without Prop 103. His figures are more believable than ICLE, which were entirely based on the presumed equation between California and the rest of the nation.

8.5.10 Comments & Suggestions

The analytical framework is well thought of and well executed. I want to make a few comments and suggestions.

A fundamental issue is that the effect of Prop 103, as it is coded by a state dummy, will be confounded with another legal change handed down by the highest court in California. Appel in his report has told the story well:

"By 1988, when the Moradi-Shalal case came before the court, it was clear that the situation had deteriorated considerably. Indeed, the court, in Moradi, said of the previous doctrine: 'Royal Globe may tend to encourage unwarranted settlement demands by claimants, and to coerce inflated settlements by insurers seeking to avoid the cost of a second lawsuit and exposure to a bad faith action.' As a result, Royal Globe was reversed: the Court said 'These articles emphasize the erroneous nature of our holding. . . and the undesirable social and economic effects of the decision (i.e., multiple litigation, unwarranted bad faith claims, coercive settlements excessive jury awards and escalating insurance, legal and other 'transaction' costs)."

I applaud the new ruling, as it shows that the CA Supreme Court was heeding the social and economic impact of the previous ruling and willing to change the interpretation and position. However, it did raise an empirical issue. Since the Moradi change came in the same year of 1988 as Prop 103, strictly speaking we cannot simply create a "CA" state dummy where California is coded "1" and all

other states receive a "0", and then claim that it represents the Prop 103 effect like Appel did in his report.

I believe Appel is aware of the confounding, which may explain why he limits himself to the post-103 years and then refers to the CA dummy as representing the impact of Prop 103 in this particular setting. He must be thinking that since for those years only CA had Prop 103, but no other states did, we are safe to let the state dummy denote Prop 103 effect.

But even there the confounding is not gone completely. The so called "post-103" years are also "post-Moradi" years for lacking a better name, since the ruling in Moradi came in 1988 as well. The two may have opposite effects, such that Prop 103 may increase loss costs while Moradi may decrease them. In the minimum, the CA dummy really captures the joint impacts from *both* Prop. 103 and the Moradi ruling.

Creating another dummy variable for the Moradi effect seems to be the natural solution, but not really. Let me explain why. To separate Moradi-Shalal effect from Prop 103, we include data from 1979 onward, which was when the California Supreme Court's Royal Globe decision took place. "1" will be given to years between 1979 and 1988, while "0" to any year after 1989 (inclusive). On the other hand, Prop 103 dummy will be coded as "1" for 1989 onward, but "0" from 1979 to 1988.

If all we have is data from California, we cannot use the two dummies in the same model due to the "perfect collinearity" or perfect confounding problem. This arises when all cases with a value of "1" on one dummy variable will always have a value of "0" for another dummy, and vice versa.

A national data set is better in the sense that we can use two variables to create one dummy. For example, if the state is CA and the years were 1979 to 1988, the dummy "CASump" denoting California Supreme Court ruling, will

receive a code of "1" but "0" for all other states and all years after Royal Globe ended in 1988. The other dummy CA103 will be "1" only if the state is CA and the years are 1989 onward, otherwise from 1978 to 1988 or any other state it will be "0."

However, the best approach is to create a continuous variable, not another dummy, for the Moradi effect. We simply count the number of auto insurance lawsuits and the amount of the verdict for all states in all years, multiplying the two to get a Moradi variable for each state, each year. For example, say in 1987 California had 20 auto insurance cases and the average verdict amount was $12 million, then the Moradi value for California in 1987 would be $240 million.

This way we don't worry about perfect collinearity between Moradi and CA dummies, and since Moradi will enter the model, its effect is under statistical control, the CA dummy will indeed denote Prop 103 only.

In general, using a continuous variable is better than using dummies because the former allows for a more precise representation of the relationship with the dependent variable, especially when the relationship is not expected to be linear. In addition, the use of continuous variables can help avoid multicollinearity issues that may arise when using dummy variables to represent categorical variables.

Now, rethinking Appel's simple regression on predicting average auto premium by loss costs, adding a dummy variable for California and the Moradi variable makes sense. We may even try to add an interaction between loss costs and the CA dummy to test whether they have a combined effect, or whether the relationship between the loss costs and the average auto premium differs in California versus in other states.

Having a multiple — rather than a simple — regression has the advantage of assessing the change in the dependent variable (Y, in our case the average

auto premium) associated with a one unit change in each independent variable (Xs, in our case the loss costs, Moradi and CA dummy) while holding all other independent variables constant. Our goal is to test whether Prop 103 still has a statistically significant impact on premium after controlling loss costs in a multiple regression model.

In symbols, we have the following, where α is the intercept, β is the regression coefficient and ϵ the residual term:

$$\text{Premium} = \alpha + \beta_1(\text{Loss}) + \beta_2(\text{Moradi}) + \beta_3(\text{CA}) + \beta_4(\text{Loss} \times \text{CA}) + \epsilon \tag{6}$$

The ideal result is to find the CA (i.e., Prop 103) dummy to be *insignificant*, whether alone by itself (i.e., $\beta_3 = 0$) or in the interaction with the loss costs (i.e., $\beta_4 = 0$). It then indicates that, unlike CFA reports have claimed, Prop 103 really has had no statistically significant impact on the average auto premium. Note when a coefficient is insignificant, whether it is positive or negative is not the primary concern.

The conclusion would be convincing, as we have controlled loss costs and Moradi effect, making the core position of the con-103 camp much stronger.

Appel's simple regression model can also be improved by a panel data model instead of reducing the panel data into a cross-sectional data set and then use the OLS (Ordinary Least Squares) regression. This is not the optimal model because it wastes the rich variation in the data. However, what Appel did was a "quick but not dirty" run for getting a sense of how things look like.

8.6 What Has California Done Right to Lower Premium?

After proving the power of loss costs on determining premium, we still must explain why California's auto insurance premium has been so low. Appel shows

another attribution error of pro-103 folks in ignoring changes in California that contributed to lower loss costs, which then translated to lower premium. These people have created the impression that Prop 103 was the only thing that happened in the late 1980s and nothing else mattered.

"A serious analysis of California insurance premiums indicates that Proposition 103 had no meaningful effect on auto insurance costs in California. It has long been clear that the primary determinant of insurance rates and expenditures is the underlying cost of claims."

Further, "the vast majority of the savings to California consumers were due to reductions in auto insurance loss costs, not regulation of prices, and that the loss cost reductions had little to do with Proposition 103."

"California expenditures declined in the 1990's because the three branches of government (executive, legislative and judicial) implemented numerous changes that were intended to control what had been extremely rapidly escalating costs."

The following is directly quoting Appel starting on Page 31:

1. The blood alcohol standard for driving under the influence of alcohol (DUI) was reduced to 0.08 percent in 1990, and enforcement of DUI laws intensified during the 1990s.

2. A mandatory seatbelt law with secondary enforcement was enacted in 1986 and was followed by a change to a primary enforcement law in 1993.41 Seat belt usage increased substantially in the late 1980s and jumped in 1993 (Figure 9). This is a highly significant change inasmuch as the National Highway Traffic and Safety Administration documents the significant effect that seatbelt use has on the medical loss costs of belted versus unbelted victims.

3. Subsidies to the California Automobile Assigned Risk Plan (CAARP) were

substantially eliminated by greater enforcement of requirements that drivers be refused insurance and by a rate increase of more than 95%.

4. In 1996, the state's voters approved a law prohibiting uninsured drivers from suing for pain and suffering, and the Legislature also passed a law permitting vehicle impoundment if a driver is uninsured. Evidence suggests that the number of uninsured drivers declined materially in the late 1990s.

5. The state adopted substantial anti-fraud measures, increasing the insurance department fraud budget by a factor of 10 in the decade between 1989 and 1995.

6. A fundamental change in the California landscape during this time period that clearly had a salutary impact on auto insurance costs: the California Supreme Court's Moradi-Shalal decision in 1988, which prohibited third-party lawsuits for insurer bad faith under the state's Unfair Trade Practices Act.

8.7 Consumer Advocates: Reform & Participation

Consumer Watchdog and other consumer advocates can still play a positive role in improving the insurance market in California — if they improve themselves first.

8.7.1 The Fate of Consumer Watchdog

The author of Proposition 103 has designed the law to allow consumer advocates a perfectly stable source of income: Anytime when they successfully challenged a rate hike request, they will get paid by insurers to compensate for their campaign costs. Unsurprisingly, insurers will raise premium for all policyholders to cover the extra cost.

This makes the life of Consumer Watchdogs too easy, having little or no risk to launch one campaign after another with legally protected right to ask insurers to pay.

CDI tells us that "Proposition 103 authorized a process for the public participation in the administrative process for setting insurance rates. 'Intervenors' who participate in rate filings are allowed to recover costs, expenses, and attorney's fees from insurers, which under law can be passed on to all consumers."

The law did say "Only intervenors that provide a substantial contribution to a rate decision by providing valuable technical input may recover their costs and expenses as well as reasonable attorney's fees." But in reality, once entities like Consumer Watchdog entered the game, they can easily prove their "substantial contribution" and get paid continuously.

It makes more sense for all parties in the competing market to take some risk in promoting their causes. Consumer advocates should be no exception. They should have followed the "Consumer Reports" model, funded by sales of publications and website subscriptions, plus independent grants and donations from philanthropic partners. These partners may include insurers but only on a volunteer basis.

Interestingly, while Consumer Watchdog calls Commissioner Lara "an industry insider," CDI recently released data showing Consumer Watchdog has collected $8.9 million over a decade in compensation for challenging rate increases, not bad income even in California.

If you ask me, Consumer Watchdog is closer than Lara to be an industry insider — to the extent that they are the one receiving legally protected de facto "salaries" from insurers that lead to conflict of interest.

8.7.2 Anyone Can Contribute

That said, our idea is to chase after good ideas more than after a certain group of people. This applies to Consumer Watchdog. Anyone can have good ideas that can help improve insurance and regulation in California. A good example is Rosenfield of Consumer Watchdog.

In a recent article on May 10, 2023, Harvey Rosenfield's recommends to the legislature the following:

(1) Speed up implementation of actions to reduce wildfire risk across the state by allocating new funding sources to assist individual homeowners and communities, such as directing cap and trade dollars to fund home-hardening and defensible space projects, particularly for low- and middle-income Californians.

(2) Require insurance companies to sell insurance to all residential property owners in California who meet state fire-mitigation guidelines.

(3) Impose an annual surcharge on premiums collected by insurance companies when they sell insurance policies to companies that explore for or produce fossil fuels. Connecticut lawmakers are presently considering similar legislation.

(4) Make the FAIR Plan, California's "insurance company of last resort," more accountable to the public by creating a public majority on the FAIR Plan's governing board, which is now controlled by insurance companies.

Some ideas are good, especially the reward to wildfire mitigation and house hardening. Other ideas are subject to discussion and debate. But the good thing is to motivate more stakeholders into the good future.