American Property Casualty Insurance Association℠
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October 21, 2026

Kris DeFrain, MAAA, FCAS, CPCU
Director of Research and Actuarial Services
National Association of Insurance Commissioners (NAIC) Central Office
(via email: kdefrain@naic.org)

RE: NAIC CASTF Second Draft White Paper (U.S. Homeowners Insurance Rate Regulation – A Regulatory Perspective)

Dear Ms. DeFrain,

On behalf of the American Property Casualty Insurance Association (APCIA)[1], thank you for the opportunity to review and provide comments on the second draft white paper, U.S. Homeowners Insurance Rate Regulation – A Regulatory Perspective.

APCIA appreciates the improvements made in the new draft which make it a valuable tool in explaining how the state-based risk-based ratemaking operates in practice. The conclusion that systemic cross-state subsidization is not occurring and commends the NAIC for developing a thoughtful, fact-based resource that helps address misconceptions regarding homeowners insurance ratemaking.

The discussion of global catastrophes and reinsurance market impacts is technically accurate, but it may overstate the practical significance of those effects to readers unfamiliar with insurance ratemaking. We recommend adding context that generally reinsurance is only a small component of the premium and that expected losses typically represent the largest share of homeowners insurance rates. This would help readers understand that, while reinsurance market changes are relevant, they are typically only one of many factors influencing rates. Non-U.S. catastrophe losses and their effects on reinsurance capacity and pricing generally do not have a substantial impact on the U.S. homeowners insurance market.

Sincerely,



Norman Niami, FCAS, MAAA, Affiliate IFoA
Vice President, Actuary, Policy, Research and International
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[1] The American Property Casualty Insurance Association (APCIA) is the primary national trade association for home, auto, and business insurers. APCIA promotes and protects the viability of private competition for the benefit of consumers and insurers, with a legacy dating back 150 years. APCIA represents the broadest cross-section of home, auto, and business insurers of any national trade association. APCIA membership consists of over 1,200 member companies (or over 300 member groups). APCIA member companies P&C countrywide market share is 66% (total 74% commercial lines, 60% personal lines).

From: Ralph Blanchard <rsblanchardiii@gmail.com>
Sent: Tuesday, October 6, 2026 11:10 AM
To: DeFrain, Kris <kdefrain@naic.org>
Cc: Susan Kent <SKent@omig.com>
Subject: Re: Casualty Actuarial and Statistical (C) Task Force Webex Meeting

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Hi Kris,

I noticed that the first page of the paper on Homeowners ratemaking says that "*Regulators use these provisions to hold those filing the rates to the Actuarial Standards of Practice (ASOPs) promulgated by the Actuarial Standards Board (ASB) and the Casualty Actuarial Society's (CAS) Statement of Principles Regarding Property and Casualty Insurance Ratemaking*.". Is that true? I didn't think that state laws pointed to the CAS Statement of Principles. I thought that they instead pointed to state laws on excessive, inadequate and discriminatory. In general, the CAS Statement of Principles aren't viewed as authoritative professional guidance, as the ASOPs don't point directly to those Principles statements as part of the ASOPs.

I may be wrong, but I think that the quoted statement may need to be rechecked.

Ralph

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October 26, 2026

Julie Lederer (MO), Chair
NAIC Casualty Actuarial and Statistical (C) Task Force
c/o Kris DeFrain, Director, Research and Actuarial Department
Via email kdefrain@naic.org

Re: NAMIC Comments on the Draft White Paper

Dear Chair Lederer and Members of the Task Force:

On behalf of our members, the National Association of Mutual Insurance Companies (NAMIC)[1], this letter offers comments on the draft white paper *U.S. Homeowners Insurance Rate Regulation- A Regulatory Perspective.* NAMIC appreciates the opportunity to comment on the revised white paper addressing homeowners insurance rate regulation and cross-state subsidization. We support the paper's direction and appreciate the Task Force's efforts to explain state-based ratemaking and distinguish cross-state subsidization from legitimate differences in risk, pricing assumptions, and financial results.

The revisions strengthen an already valuable document. In particular, we welcome the clearer use of "cross-state" terminology, increased emphasis on actuarial professionalism, distinction among catastrophe-related concepts, and discussion of empirical evidence. We also support the explanations that state-specific pricing assumptions can reasonably differ and that actuarially sound rates in one state and excessive rates in another do not, by themselves, establish cross-state subsidization.

We offer the following targeted suggestions:

1. Clarify state differences and terminology. On Page 2, expand the final sentence beginning "Differences across states" to include coverage requirements and regulatory differences, such as mandated coverage offerings and state-imposed limitations on profit provisions. In the "Market-Wide Distortion" discussion on

[1] *The National Association of Mutual Insurance Companies (NAMIC) is the foremost trade association representing the property/casualty insurance industry. Serving more than 1,300 member companies—including local and regional insurers as well as some of the nation's largest carriers—NAMIC members collectively write $467 billion in annual premiums, representing 61% of the homeowners and 53% of the automobile insurance markets. For more than 130 years, NAMIC has been the leading voice advancing public policy solutions and regulatory frameworks that promote a strong, competitive market and protect our members and their policyholders.*

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page 18, define "regulatory cross-state subsidization" and explain its relationship to "structural cross-state subsidization," or use the latter term consistently if no distinction is intended.

2. Refine the conclusion on page 29. We suggest replacing the final sentence with language that leads with the evidence and preserves appropriate limitations without inviting an unsupported inference about individual insurers: "The available evidence from the CIPR study does not support cross-subsidization as a widespread or systemic phenomenon. These findings should be understood within the scope of the study and should not be generalized beyond the circumstances examined."
3. Make a minor editorial correction. On page 15, insert a comma between "roof characteristics" and "deductible" in the second paragraph.

We appreciate the Task Force's thoughtful consideration of these issues and support its continued work to provide a clear, evidence-based explanation of homeowners insurance ratemaking and regulation.

Sincerely,

Erica Weyhenmeyer

Erica Weyhenmeyer, CPCU, MCM, AIE, WCP
Sr. Policy Vice President- Market Regulation & Workers' Compensation
NAMIC

From: Peter Ott <peter.james.ott@gmail.com>
Sent: Sunday, October 25, 2026 10:30 AM
To: DeFrain, Kris <kdefrain@naic.org>
Subject: Comment on NAIC US Homeowners Rate

Kris,

I wanted to provide some feedback on the paper. I'm a member of the CAS and the AAA but these comments are my own.

1. The paper in general does a lot of careful word-smithing around the definitions of cross subsidization and general reasons insurance prices go up. Said another way, the definition on page 17 of cross subsidization is doing a lot of work here. I think the paper would be stronger if there was a clearer distinction between this definition of cross subsidization and "risk in one state can affect what's paid in another state".

2. Also, condition 2 in the structural cross subsidization is a bit of a stretch. While actuarial rates are governed by the ASOPs to the reflect the expected future costs of the risk classification, the condition is sidestepping the question of rate adequacy. If the actuarial analysis says rates should increase by 10%, 15%, 20%; where do you draw the line to say the current rates are adequate?

3. It goes to my first point about where risks in one state affect what's paid in another state, but the arguments for reinsurance and cost of capital are a bit weak and rely on the paper pre-defining what cross subsidization is. Again, the paper relies on its own definition to prove its point. For example, if the cost of a catastrophe reinsurance treaty goes up by X% after the California wildfires; it's almost impossible to segregate out what portion of the increase came because of the CA specific wildfires. So depending on how you choose to allocate the reinsurance expense, the nominal dollars in Montana would increase. The paper's definition of cross subsidization would say that's fine, but I suspect the average person would be skeptical.

4. The paper could be strengthened if they took the premium definition on page 9 and explained how each component does or does not contain any sort of cross subsidization. Or acknowledge or broader risk factors feed into each element. The largest component of the premium is usually expected losses which should have little to no cross subsidization. It's the other bits that are tricky.

The paper is generally pretty good, but the weakest points in the argument rely on pre-defining cross subsidization narrowly and being a bit vague on the points around how risks in other states affect the price in other states. It would be hard to argue that if the cost of capital goes up because of CAT events, that states in lower risk areas are not nominally paying more. It might be small but it's there.

Thanks,

Peter

From: Roger Sarvate <rsarvate@taylorandmulder.com>
Sent: Thursday, October 15, 2026 3:10 AM
To: DeFrain, Kris <kdefrain@naic.org>
Subject: Comments on NAIC Homeowners Rate Regulation White Paper – Catastrophe Risk and Reinsurance Cost Allocation

Dear Ms. Defrain,

I am writing in response to the NAIC's request for comments on the exposure draft of *U.S. Homeowners Insurance Rate Regulation—A Regulatory Perspective*. My comments relate primarily to Section II.B, particularly the allocation of catastrophe reinsurance costs among states, as well as the related discussions of credibility and catastrophe modeling in Sections III.B.5 and IV.F. While the draft appropriately recognizes the importance of state-specific catastrophe exposure, the limitations of historical experience, and the use of broader data and catastrophe models, I believe it could benefit from further discussion of the practical actuarial challenges involved in combining these sources of information.

The allocation of homeowners reinsurance costs attributable to specific weather-related perils at the state level presents a significant actuarial challenge. Applying a countrywide or companywide distribution of losses by peril to individual states may produce questionable results when the underlying exposures differ substantially. However, relying exclusively on a state's historical distribution of losses by peril may be equally problematic. The absence of significant historical losses from a particular peril does not necessarily imply that the peril presents little or no prospective risk. Recent catastrophes, including the 2023 Lahaina wildfires in Hawaii, illustrate how historically infrequent events can generate substantial losses, particularly in light of changing climatic and environmental conditions. Overreliance on historical state-level experience could therefore understate certain states' catastrophe exposures, potentially shifting a disproportionate share of reinsurance costs to other states with a more established history of losses from those perils.

Ideally, the methodology for estimating state-specific catastrophe risk should balance responsiveness to changing conditions with the need for stable, credible estimates of prospective losses by peril. This could involve combining state-specific historical experience, countrywide experience as a complement of credibility, and forward-looking projections from scientifically sound catastrophe models. For states with limited historical experience, the countrywide complement would need appropriate adjustments to reflect

differences in underlying risk characteristics, while catastrophe model estimates should be rigorously validated and subject to appropriate regulatory review.

The relative credibility weights assigned to these three sources would require careful consideration, particularly where the selections involve actuarial judgment. One alternative would be to treat these weights as parameters calibrated through a formal validation process, evaluating candidate combinations based on their out-of-sample predictive performance. Such validation could consider periods containing relatively unexpected or extreme events, such as the catastrophic inland flooding in western North Carolina caused by Hurricane Helene in 2024, to assess whether the combined estimates adequately account for severe catastrophe risks in regions with limited historical experience of events of comparable magnitude. The objective would not be to fit the methodology retrospectively to these events, but rather to evaluate whether the combined estimates adequately capture the potential for severe losses in areas with relatively limited historical catastrophe experience.

Importantly, estimating state-specific catastrophe losses by peril is not equivalent to allocating the costs of a shared, multistate reinsurance program. As the draft correctly recognizes, the latter should also reflect each state's contribution to the protection being purchased, including expected recoveries and contributions to particular reinsured layers. Nevertheless, reliable state-specific catastrophe risk estimates remain an important input to that allocation. If those estimates misrepresent the relative exposures of individual states, the resulting allocation of reinsurance costs may also be distorted, even where the allocation methodology is otherwise reasonable.

I therefore suggest that the Task Force consider expanding Section II.B, or cross-referencing Section III.B.5, to acknowledge these challenges and the potential value of systematically evaluating the relative credibility and predictive performance of different information sources. The white paper need not prescribe a particular methodology, but a more explicit discussion of these considerations could help clarify how actuarially sound approaches can reduce the risk of unintended cross-state cost misallocation.

Thank you for considering these comments and for the Task Force's work on this important issue.

Best regards,

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Comments on the NAIC Draft White Paper on Home Insurance Rate Regulation:
Exposure Draft of September 25, 2026

October 26, 2026

Thank you for the opportunity to provide follow-up comments on the September 25, 2026 exposure draft of the White Paper on Home Insurance Rate Regulation. I appreciate the substantial improvements made since the prior draft, including:

• Removal of categorical assertions that cross-state subsidization is not occurring;

• Clarification that insurer excess profitability and company-specific conduct fall outside the scope of this paper without being ruled out; and

• More precise distinctions between the intended functioning of regulatory safeguards and the empirical questions that remain open.

The revised draft is materially improved in tone, balance, and alignment with realistic regulatory practice. Nevertheless, several important issues remain where the paper could better reflect actual complexities of ratemaking, regulatory oversight, catastrophe modeling, and credibility procedures. The following summarizes the key remaining recommendations based on attached my in-line comments and my previous August 5, 2026 letter.

1. Avoid Statements that Presume the Efficacy of Regulatory Safeguards Without Empirical Demonstration

The paper often describes layered regulatory, actuarial, and market mechanisms and implies that these mechanisms *prevent* cross-state subsidization. A more accurate formulation is that these mechanisms are *designed* to prevent such outcomes. Regulators' authority, resources, and review depth vary widely across states, and this can materially influence the detection of cross-state cost shifting.

I recommend that the paper clarify more consistently throughout that these safeguards are *intended* to *prevent* insurer attempts at cross-state subsidization, but that further empirical research is required to determine how often they do so in practice.

2. Expand Acknowledgment of Indirect Mechanisms That Can Produce Cross-State Rate Effects

The draft appropriately distinguishes direct loss shifting from broader market impacts, but its treatment of indirect effects—credibility weighting, catastrophe modeling, reinsurance cost allocation, and post-disaster market psychology—remains incomplete.

Key areas where implicit cross-state impacts can occur include the following:

• **Credibility procedures** may import catastrophe loss trends from high-risk states when low-risk-state data are deemed by the insurer to be non-credible.

• **Catastrophe models** can inflate insurers' perception of risk in low-risk states if model settings, vendor assumptions, or model updates disproportionately reflect experience from catastrophe-prone regions.

• **Reinsurance allocations** may burden low-risk states when portfolio-wide treaties are priced primarily by exposure to perils absent from certain states.

• **Post-catastrophe model updates** and **insurer perception effects** can inadvertently raise risk projections outside affected states due to psychological overestimation or "social contagion" within industry practice.

I recommend that the paper explicitly note that the above mechanisms can, if improperly applied, result in rates in one state being influenced by losses in another—even without intentional subsidization—and that regulator scrutiny is essential to prevent this.

3. Recognize that Updated Catastrophe Models Do Not Automatically Represent "Improved Understanding"

The paper often implies that newer catastrophe-model versions inherently reflect scientific improvement. However, updates may incorporate new assumptions, altered methodological choices, or short-term reactions to recent events rather than demonstrably improved long-term accuracy.

I recommend that the paper state that newer models may or may not reflect improved accuracy, and regulators must critically evaluate model assumptions rather than defer to model newness or vendor positioning.

4. Strengthen the Discussion on Reinsurance Allocation and State-Specific Justification

The draft acknowledges that reinsurance is purchased on a portfolio basis and allocated by "expected benefit and risk contribution," but insufficiently emphasizes the risk of misallocation.

The following concerns remain to be addressed:

• A catastrophe in one region may raise global reinsurance prices, but *states with no exposure to that peril should not bear disproportionate reinsurance load increases.*

• Model misconfiguration can cause low-risk states to appear artificially risky in the allocation process.

I recommend that the paper reinforce that reinsurance loadings must be justified on a state-specific basis and that regulators should challenge allocations that appear driven by out-of-state catastrophes absent local peril relevance.

5. Clarify that Reasonable Actuarial Ranges Do Not Automatically Validate an Assumption for a Particular State

The paper emphasizes that different assumptions can be actuarially reasonable. However, a chosen point within a broad range may still be inappropriate for the state being rated, especially if consistently conservative assumptions cluster in certain jurisdictions.

I recommend that the paper affirm that regulators should evaluate whether selected assumptions are *state-appropriate*, not merely within a plausible actuarial range.

6. Address the Risk of Systematic Behaviors that Mimic Cross-State Subsidization or Excess Profitability

While the paper now appropriately notes that insurer "excess profitability" is outside its scope, it should not imply that systematic assumption selection across states—e.g., consistently conservative assumptions in states where the insurer seeks less growth—cannot produce effects that resemble subsidization.

I recommend that the paper acknowledge that patterns of filing behavior may warrant further regulatory inquiry even if they do not meet the paper's strict definition of structural cross-state subsidization. In other words, cross-state subsidization is not the only problem that can potentially justify regulatory attention.

7. Add Greater Nuance Regarding Market Competition and "Follow-the-Leader" Dynamics

The draft's discussion of competitive forces should acknowledge that:

• Insurers often follow "market leaders" in filing strategy, reducing independent competition.

• Herd behavior can cause widespread rate movement based on non-empirical perceptions of risk.

• True competition requires variation in assumptions, product designs, and filing strategies, not convergence toward a single perceived trend.

I recommend that the paper clarify that competition does not always discipline pricing and, in some periods, may be hindered in practice due to "follow-the-leader" dynamics and distorted assumptions post-catastrophe, even though a reasonable number of competitors may still exist in the market.

8. Expand the Discussion on When Accumulated Filing Patterns Warrant Regulator Concern

The draft indicates that a single filing disagreement does not demonstrate subsidization, which is true. But *repeated* disagreements arising from the *same cross-state-influenced assumptions* should be recognized as a potential indicator of systemic issues.

I recommend that the White Paper include a statement that repeated regulatory objections to the same treatment may justify further, in-depth analysis of potential cross-state impacts or excess profitability.

9. Ensure Terminology Reflects Correct and Relevant Usage

As previously noted, the term "homeowners insurance" remains grammatically incorrect. "Home insurance" avoids grammatical issues and better encompasses relevant products such as renters' insurance.

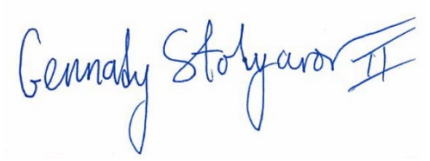
Conclusion

The revised draft represents meaningful progress toward a balanced, accurate treatment of home insurance rate regulation. Additional refinements are needed to ensure that the paper neither presumes away the possibility of cross-state cost shifting nor overstates the degree to which safeguards operate flawlessly in practice.

By incorporating the remaining clarifications above, the White Paper will more accurately reflect the complexities regulators face and will provide a stronger foundation for future empirical research.

I appreciate the Task Force's thoughtful engagement and welcome continued discussion.

Respectfully submitted,



Mr. Gennady Stolyarov II, FSA, ACAS, MAAA, CPCU, ARe, ARC, API, AIS, AIE, AIAF
Lead Actuary, Property and Casualty Insurance
Nevada Division of Insurance

9/18/2026 (Critical Review Comments)

NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

U.S. Homeowners' Insurance Rate Regulation–A Regulatory Perspective

Regulation, Consumer Protection, and Market Dynamics in the Modern Era

Casualty Actuarial and Statistical (C) Task Force

2026

Commented [GS1]: I maintain that this should be "Homeowners' Insurance", "Homeowner Insurance", or "Home Insurance". The term "Homeowners Insurance" is both grammatically incorrect (plural possessive nouns need to end with an apostrophe) and also incorrect in substance (without the apostrophe at the end, the implication is that homeowners are the peril being insured against, rather than the policyholders and beneficiaries of the insurance).

I will use "home insurance" in place of "homeowners insurance" in my markup. The reasons why I prefer this term among the three are that (i) its use could bypass the differences between the NAIC publication conventions and long-established English grammar in regard to the use of the apostrophe, and (ii) not all products to which this paper is relevant provide insurance to owners. For instance, tenants' or renters' insurance could also potentially be subject to cross-subsidization concerns in certain parts of certain states.

Executive Summary

Imagine a hypothetical where a multi-state insurer tries to charge more premium to homeowners in a state with lower risk of natural disasters to make up for heavy losses in a state with higher risk. This paper addresses this scenario, commonly referred to as "cross-state subsidization" and concludes that, under the state-based system of insurance regulation, home insurance~~owners~~ rates are designed and reviewed to reflect the expected future cost of risk in the state where the policy is written, not to intentionally and systemically shift costs from one state's policyholders to another's.

State insurance regulators protect consumers by requiring insurers to justify rates with state-specific data and actuarial analysis. Although the regulatory framework varies by state, insurance rates are generally subject to standards requiring that they not be excessive, inadequate, or unfairly discriminatory. Actuaries evaluate data, assumptions, and methods used to estimate future losses, including inflation, catastrophe risk, and reinsurance costs ~~to ensure alignment with actuarial standards~~. Although not all state laws require actuaries to be involved in the development of filed rates, state insurance laws or regulations often include language mandating that proposed rates be "actuarially sound" or justified by data that is "actuarially credible". Regulators use these provisions to hold those filing the rates to the Actuarial Standards of Practice (ASOPs) promulgated by the Actuarial Standards Board (ASB) and the Casualty Actuarial Society's (CAS) Statement of Principles Regarding Property and Casualty Insurance Ratemaking.

Regulators also oversee how insurers classify risk, ensuring that differences in price are tied to real differences in risk and are not arbitrary or unfair.

~~Under~~ The existing regulatory frameworks in the United States are designed to constrain cross-state subsidization ~~is constrained by~~ with the help of laws, actuarial standards, and markets.

So how would those legal, actuarial, and market challenges play out in the real world for our hypothetical multi-state insurer attempting cross-state subsidization?

First, insurers ~~must~~ support their home insurance~~owners~~ rates with state-specific data and actuarial analysis showing that the rates reflect the expected future cost to cover insured homes in that state.

Regulators review rate filings to identify anything unsupported or inconsistent with the state's actual risk and can challenge the rate, require revisions, or reject the filing altogether. Depending on the state, this process can happen before and/or after the rates go into effect. If an insurer inflates rates to account for losses in another state, it will show up in this review in inflated loss projections, excessive catastrophe loadings, or unsupported expenses.

Regulators look for mismatches between the risk in the state and the costs built into the rate. For example, if an insurer tried to hide cross-state subsidization by charging certain groups more without a risk-based reason, that would likely be deemed excessive or unfairly discriminatory and disallowed.

Second, oversight continues after rates take effect. Follow-up spot checks by regulators ~~to~~ verify insurers are treating their customers fairly and help ensure insurers are actually charging the filed rates, not deviating from what was approved. Even if a rate filing is approved, companies could misapply rating factors, overcharge specific consumers, or use unfiled surcharges. Market conduct exams can catch those real-world deviations and protect consumers by, for example, requiring refunds to consumers, imposing fines or penalties, or requiring changes to rating practices. When a state takes regulatory action against an insurer as a result of a market conduct exam, it notifies regulators in other states where that insurer does business.

Third, competitive market pressures act as a backstop. Insurers that price above the risk of the market *in that state* will lose business to competitors *in that state*, making it difficult to sustain rates that are artificially high.

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These safeguards help explain why concerns ~~claims~~ of cross-state subsidization ~~often~~ may stem from a misunderstanding of how the regulatory system operates. Premiums are forward-looking estimates of future costs, not a way to recover past losses. ~~and d~~Differences across states ~~can~~ reflect local risks, timing, data limitations, or broader economic factors like inflation and reinsurance, not cross-state cost shifting. While major disasters *can* affect costs nationwide indirectly by raising rebuilding costs due to higher costs of materials and labor, or reinsurance prices, those are market-wide effects, not insurers shifting losses from one state to another.

In short, the regulatory system exists ~~is designed~~ so that if an insurer tried to make one state pay for another, multiple layers of regulatory review are designed to ~~would~~ catch it.

Overall, this paper concludes that state-based rate regulation supported by ~~in combination with expectations of~~ actuarial professionalism creates ~~is~~ a holistic core consumer protection system; it ties rates to risk, subjects them to appropriate ~~rigorous~~ review, and helps ensure insurance remains both available and financially sound.

Commented [GS2]: I am still not comfortable with any claims about the level of understanding or misunderstanding of those who believe that cross-state subsidization may be occurring. A more factually accurate statement would be to say that "These safeguards help explain why insurer attempts at cross-state subsidization would face several structural layers of protection designed to prevent them."

Commented [GS3]: I still think that reinsurance prices can pose a concern here. Higher reinsurance prices could redistribute the impact of catastrophe losses from one state to another if the same reinsurance treaty covers both more catastrophe-prone states and less catastrophe-prone states, but the less catastrophe-prone states are charged reinsurance loads that are more than proportional to their own catastrophe risk exposure.

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NAIC NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS

Introduction

Regulators have been asked by legislators, researchers, media, and consumer advocates whether homeowners insurance policyholders in relatively low-risk states are financially subsidizing policyholders in states with high catastrophe exposure. The question is whether insurers spread catastrophic losses across their entire book of business, causing premiums in less disaster-prone states to rise to offset losses sustained in states with recent natural catastrophes.

At the 2026 Spring National Meeting, the NAIC Property and Casualty Insurance (C) Committee adopted the following charge for the Casualty Actuarial and Statistical (C) Task Force:

> ***Draft a white paper that explains how homeowners' insurance rates are regulated across states,[1] with particular attention to public questions and academic claims regarding potential cross-state subsidization of catastrophic losses.***

This white paper is intended to explain the framework of state-based homeowners insurance rate regulation in the United States and to examine how that framework addresses concerns regarding potential cross-state subsidization of catastrophe losses. The paper focuses on the legal, actuarial, regulatory, and market mechanisms that govern the development, review, and oversight of homeowners insurance rates. It discusses how rates are established, how catastrophe risk, reinsurance, credibility procedures, and other ratemaking components are evaluated, and how regulators assess whether rates comply with statutory standards. The paper is designed to provide a regulatory perspective on these issues and to describe the safeguards intended to promote rates that are risk-based, actuarially supported, and consistent with applicable state law. It is not intended to serve as an empirical study of insurer-specific conduct; it does not attempt to determine whether any particular company has engaged in cross-state subsidization; and it does not recommend or endorse any particular actuarial methodology for evaluating the actuarial soundness of rates. Such determinations are appropriately left to the professional judgment of the actuary, based on the specific facts, data, assumptions, and circumstances underlying each filing.

[1] "States" refers to all 56 NAIC member jurisdictions throughout the paper.

Accordingly, this paper should not be interpreted as concluding that insurer-specific cross-state subsidization is impossible or that empirical evidence could never support such a finding. Rather, the focus is limited to explaining how homeowners' insurance rates are regulated across states, with particular attention to safeguards that protect against cross-state subsidization of catastrophic losses.

I. What Is Home Insurance~~owners~~ Rate Regulation?

Home Insurance~~owners~~ rate regulation is the framework through which insurance regulators oversee the rates charged for home~~owners~~ insurance. It governs the filing and review of proposed rates, the actuarial support insurers must provide, the timing of rate implementation, and the regulator's assessment of whether rates are legal and not excessive, not inadequate, and not unfairly discriminatory. Although many insurers operate across multiple states, home insurance~~owners~~ rates are regulated on a state-specific basis.

This section first describes the legal foundations of state-based insurance regulation, explains the core rate regulatory standards, and describes how market forces also impact home insurance~~owners~~ rates.

A. State Rating Statutes and Market Regulation

Insurance regulation in the United States is conducted at the state level rather than the federal level. This decentralized structure traces its legal origin to the Supreme Court's 1944 decision in United States v. South-Eastern Underwriters Association, which held that insurance transactions crossing state lines constituted interstate commerce subject to federal regulation. Congress responded with the McCarran-Ferguson Act of 1945, which explicitly preserved the primacy of state regulation by providing that the continued regulation and taxation of the business of insurance by the several states is in the public interest, and that no act of Congress shall invalidate, impair, or supersede any law enacted by any state for the purpose of regulating the business of insurance.

Within each state, the legislature delegates primary regulatory authority over insurance to the Insurance Commissioner, Superintendent, or Director (collectively, the "commissioner"). That official, whether appointed by the governor or elected by the public, exercises broad authority over market entry and behavior, financial solvency, policy forms, and rates.

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The cornerstone of rate regulation in nearly every American jurisdiction is a three-part standard derived from the All-Industry Bills and later the *NAIC Model Rating Law*, which is adopted across all states with variations~~, across most states~~. Under this standard, insurance rates must be: (1) not excessive, meaning they do not result in unreasonably high profits or financial gains to the insurer; (2) not inadequate, meaning they are sufficient to cover expected losses and expenses and maintain insurer solvency; and (3) not unfairly discriminatory, meaning they do not differentiate among similarly situated risks without actuarial or otherwise justifiable basis.[2]

Each state legislature also defines the rate regulatory filing frameworks which reflect different calibrations of regulatory oversight of the rate filing process itself. These are broadly categorized as prior approval, modified prior approval, flex rating, file and use, use and file, and no file. See "Rate Filing Methods for Property/Casualty Insurance, Workers' Compensation, Title"[3] for definitions. This filing framework varies by lines of business within the state. Included in the architecture of rate regulation are the filing requirements, support of rates (actuarial justification), and review authority.

Rate regulation, as conventionally understood, involves the review of prospective rates that insurers propose to charge. Market conduct regulation addresses a different but complementary set of concerns: whether insurers are, in practice, treating consumers fairly in their claims handling, underwriting, marketing, and billing practices. Market conduct regulation ensures that consumers are being charged premiums in accordance with filed rates and, in coordination or consultation with actuaries, may assess whether rates are excessive, inadequate, or unfairly discriminatory.

Home insurance~~owners~~ rate regulation is a customizable framework for evaluating whether the rates charged to consumers are justified, sustainable, and fair. That framework matters because home~~owners~~ insurance affects not only the private transfer of risk, but also household financial security, mortgage lending, and the stability of insurance markets. Regulatory oversight of rates, forms, underwriting practices, and market conduct provides a layered system of consumer

Commented [GS4]: I still think that saying that "**some**" "state insurance laws specifically prohibit risk classification based upon race, religion, etc." is an understatement. What State insurance law does *not* prohibit such discrimination? The footnote should be stronger and state "substantially all" or "essentially all". Otherwise, there is a risk that the paper will under-emphasize the extent of existing consumer protection in this area.

[2] See state laws for definitions that apply in each state. For example, some state insurance laws specifically prohibit risk classification based upon race, religion, etc.
[3] https://content.naic.org/sites/default/files/model-law-chart-pa-10-rate-filing-methods-for-property-casualty-insurance-workers-comp-title.pdf

protection that compensates for the limitations of consumer sophistication and the vulnerability of individual homeowners to market failure.

B. Homeowners Insurance and the Importance of Market Forces

Insurers consider competitive dynamics when they price homeowners insurance. Thus, the market can discipline homeowners insurance pricing. This works best when there are a large number of insurers active in the home insuranceowners markets and consumers shop around for insurance. Competitive market dynamics are meaningful, but do not always work efficiently because homeowners insurance policies are complex, making comparison between companies difficult, and there are market disruptions such as when there is withdrawal of coverage in high-risk markets, insolvencies following catastrophic events, and persistent availability and affordability problems in coastal and wildfire-exposed regions. There may also be other issues such as areas with vacant properties and high crime rates. Thus, regulatory engagement is a complement to competitive markets in affecting rates for the consumers' benefit.

Competition remains an important discipline on prices, but homeowners insurance presents conditions in which market forces alone may not fully protect consumers, preserve availability, or ensure that rates remain adequate and fair. The next question is how that balance is implemented in practice: how insurers develop home insuranceowners rates, how those rates are supported actuarially, and how regulators evaluate the data, assumptions, and methods underlying them.

II. How Home Insuranceowners Rates Are Built and Reviewed

This section turns to the mechanics of regulatory oversight. Homeowners rates are not arbitrary charges, nor should they beare they retrospective attempts to recover past losses. They are prospective estimates of the cost of providing coverage during a future policy period, supported by actuarial analysis and reviewed against applicable regulatory standards. The price paid for a home insuranceowners policy provides the consumer with protection during the policy period, referred to as risk transfer, whether or not the policyholder has a claim. This is not a flaw of insurance pricing; it is the purpose of insurance. Rates are established before the outcome is known and are intended to fund the expected cost of coverage, the expenses of providing that coverage, the cost of capital and reinsurance needed to support the obligation, and a reasonable return for assuming the risk.

This section explains how those estimates are developed, how state-specific and broader data may be used, and how catastrophe risk and reinsurance are incorporated into the analysis.

A. Homeowners Insurance Rating

Home Insurance~~owners~~ Rating Overview

Homeowners insurance is a promise to cover uncertain future losses. The ultimate cost of an insurance policy is unknown at the time of sale, which complicates the pricing process[4]. As a result, the price consumers pay, referred to as the premium, is calculated based on the expected risk of loss to the home. The premium is an estimate of the future costs associated with transferring risk over the policy period. To support this estimation, insurers pool the risks of many policyholders, which allows losses to be financed by the premiums collected from many insureds. This results in diversification across risks and produces more stable outcomes. The premium is not a mechanism to recoup past losses. Thus, at the end of a policy period, the consumer and the insurer are "even"—the insurer having covered the risk of loss for the policy period and the consumer having paid the premium.

A homeowners insurance premium generally includes provisions for expected losses, loss adjustment expenses, underwriting expenses, and profit and contingencies.

$$Premium = Expected\ Losses + Loss\ Adjustment\ Expenses + UW\ Expenses + Profit\ and\ Contingencies$$

For homeowners insurance, the largest component of the premium is typically the expected losses, also referred to as pure premium or loss cost. This is an estimate of the expected losses over a policy term. Historical loss data is typically used to estimate the expected losses of relatively high-frequency perils, such as fire or water damage. For lower-frequency but higher-severity events, such as hurricanes, wildfires, and earthquakes, insurers may rely on catastrophe models, as discussed in the catastrophe pricing in Section II. The premium is expected to cover future losses; thus, adjustments are made to the historical data to ensure it is predictive of future costs. Trending, the process of adjusting historical data to reflect expected future conditions, is one of the principal tools used in that process. Actuarial Standard of Practice 13[5] (ASOP No. 13),

[4] https://www.casact.org/sites/default/files/old/studynotes_werner_modlin_ratemaking.pdf
[5] https://www.actuarialstandardsboard.org/asops/trending-procedures-propertycasualty-insurance-2/, Effective Date: Nov. 1, 2009.

which is part of a comprehensive set of standards promulgated by the Actuarial Standards Board to govern ratemaking analysis, addresses trending procedures in property/casualty (P/C) insurance and states that actuaries can consider historical insurance and non-insurance data when estimating future expected values. In homeowners insurance, that is especially important because the cost to repair or rebuild a home may change materially between the historical experience period and the future period for which the filed rates are intended to apply. In addition to trending, actuaries adjust historical data for development (the maturation of claims over time) and on-level factors (the conversion of historical premiums to current rate levels).

Insurers also typically refine premiums based on characteristics of the home and the policyholder that are associated with differences in loss experience. These characteristics, known as rating factors, may include such things as the home's construction type, age of the home, geographical location, credit-based insurance score, age, geographical location, and roof type. For example, houses with clay tile roofs tend to be more fire fire-resistant than houses with architectural shingle roofs, and thus usually receive lower premiums if all other characteristics are the same. When developing these rating factors, actuaries consider applicable actuarial standards, including ASOP No. 12[6], Risk Classification. All of these rating factors need to be supported by analysis showing differences in expected loss experience. In addition to expected losses, the premium should also cover the cost of adjusting claims and the expenses associated with issuing, servicing, and administering the policy. Additionally, the premium includes a provision for profit and contingencies, which reflects the need to support the business amid uncertainty. Actuaries consider applicable actuarial guidance, including ASOP No. 30[7], when developing such provisions. The level of that provision may be influenced by expected after-tax investment income and the return required on the capital supporting the insurer's operations.

Commented [GS5]: Add a hyphen in "fire-resistant".

Home Insuranceowners Rating Influences

Although the general actuarial methodology used to determine home insuranceowners premiums is consistent across lines and jurisdictions, home insuranceeeeeowners ratemaking is fundamentally state-based. Expected losses are usually derived from expected state experience

[6] https://www.actuarialstandardsboard.org/asops/risk-classification-practice-areas/, Effective Date: May 1, 2006.
[7] https://www.actuarialstandardsboard.org/asops/treatment-profit-contingency-provisions-cost-capital-propertycasualty-insurance-ratemaking/, Effective Date: Dec. 1, 1997

and from the conditions affecting insured risks in that state, such as local peril exposure, geographic concentration of risk, construction characteristics, legal environment, and claims settlement patterns. However, this does not mean that every input to a home insurance~~owners~~ filing is derived from purely local data or is unaffected by broader market conditions. Some influences on the indicated rate level can extend beyond a single state, even where the filing itself remains state--specific. One example is repair-and-rebuild cost inflation. Home insurance~~owners~~ claim severity is directly affected by the cost of labor, construction materials, transportation, and related rebuilding inputs, some of which can be affected by regional, national, and even worldwide conditions.

Another broader influence is reinsurance. Reinsurance is part of the mechanism through which insurers manage the impact of catastrophes on their enterprise solvency and, consequently, their ability to pay claims. Changes in reinsurance conditions can affect the cost structure underlying home insurance~~owners~~ filings.

Broader inputs may also arise for other components of a home insurance~~owners~~ rate indication. For example, underwriting expense provisions are often supported by company or countrywide analyses rather than a single state's experience alone. Likewise, where company-specific state data is limited, actuaries may supplement that experience with industry data and apply credibility-weighting[8], a technique that blends limited state data with broader experience to produce more reliable estimates of future loss and projected loss trends.

Given that insurance companies derive their profits from both underwriting and investment income, capital market conditions can also affect home insurance~~owners~~ ratemaking. ~~Capital market conditions can also affect homeowners ratemaking, as companies target total return, including both underwriting and investment income.~~ When anticipated investment income is projected to be high, companies often need lower future underwriting profits and vice versa. Higher expected after-tax investment returns can lead to the need for a lower profit provision in the ratemaking process, and ultimately lower rates.

In summary, home insurance~~owners~~ rates are derived based on the expected future cost of losses and expenses associated with the insured risks in the state being rated, including catastrophe

Commented [GS6]: I still maintain that these are areas where potential cross-subsidization can be achieved implicitly, through assumptions that effectively base rates on one state on costs in another state.

[8] ASOP No. 25 provides guidance concerning credibility procedures and relevant experience. The use of broader information does not eliminate the need for the selected data and resulting adjustments to be appropriate for the risks being rated in the state.

exposure where applicable. However, some inputs relevant to a state filing may be influenced by broader economic and insurance-market conditions, including rebuilding-cost inflation, reinsurance conditions, capital market expectations, nationwide expense analyses, and updates to catastrophe models. Regulators reviewing rate filings are expected to examine each element of the ratemaking analysis: the adequacy of the historical period; the credibility procedures used to blend the insurer's state-specific experience with other data or experience; the appropriateness of the assumptions used to bridge from broader datasets to the specific risks of the state in question; the reasonableness of development factors; the appropriateness of trend selection (particularly in a period of rapidly changing loss cost environments); the justification for expense loads; the support for the profit provision; and more. A filing that relies exclusively on nationwide data without any state-specific adjustments, or that applies implausible adjustment factors, raises legitimate regulatory concerns regardless of the ultimate rate level requested. States vary in the depth and formality of this review, but the actuarial framework provides a common language for insurer submissions and for regulatory responses. Two of these influences, catastrophe risk and reinsurance, warrant closer examination because of their significance to home insurance~~owners~~ ratemaking and their relevance regarding cost distributions across states.

Commented [GS7]: Again, these "broader" conditions, if care is not taken to determine how they apply on a state-by-state basis, create a risk of home insurance rates in one state being adversely affected by events in different states that are not likely to occur in that particular state.

B. Catastrophe Pricing and Reinsurance Implications in Home Insurance~~owners~~ Rating

Catastrophe Risk and Pricing

Catastrophe risk is one of the most important and most challenging components of home~~owners~~ insurance ratemaking. Catastrophe risk fits within that same prospective pricing framework described in the home insurance~~owners~~ rating section but requires unique treatment because catastrophe losses are materially different from the types of losses that occur regularly and independently from house to house. A kitchen fire, theft, non-weather water loss, or isolated liability claim may affect one policyholder at a time. In contrast, a hurricane, wildfire, earthquake, tornado outbreak, hailstorm, or other ~~severe weather~~ event can ~~affect~~produce concentrated losses across thousands of policyholders ~~at once~~. That potential for concentrated losses creates pricing, capital, solvency, and reinsurance considerations that are not fully captured by traditional pricing techniques.

Catastrophe losses are not synonymous with all severe weather or other high-severity losses. Certain catastrophe perils, such as hurricanes, earthquakes, wildfires, and severe convective

storms (SCS), are commonly evaluated using catastrophe models, although model availability and usage vary by peril and jurisdiction. Other weather-related or high-severity losses may instead be evaluated using historical experience, other models, scenario analysis, or a combination of methods. Accordingly, "severe weather," "high-severity loss," and "modeled catastrophe peril" should not be treated as interchangeable terms.

Because catastrophe losses ~~are~~ may be relatively infrequent, ~~low-frequency, high-severity,~~ severe, and spatially correlated, ~~traditional~~ historical pricing techniques ~~are generally not appropriate~~may be insufficient on their own for evaluating ~~for~~ these perils. A state may not experience any major hurricane, earthquake, or wildfire losses during a five-, 10-, or even 20-year historical experience period, even though the risk of such an event remains material. Conversely, ~~a state may experience~~ one or more unusually severe events~~, which could~~ may dominate a recent experience period and ~~drive rates up, even to the point of being excessive compared to~~ produce an estimate that is not representative of the long-run expected cost for the~~is~~ risk. ASOP No. 39[9] ~~recognizes that catastrophe losses can cause extreme volatility in historical insurance data and generally require separate treatment in ratemaking~~provides guidance to actuaries in evaluating catastrophe exposure and determining a provision for catastrophe losses and loss adjustment expenses in property/casualty insurance ratemaking. ~~This ASOP~~It defines a catastrophe as a relatively infrequent event or phenomenon that produces unusually large aggregate losses~~,~~ and defines catastrophe ratemaking procedures as procedures that adjust for catastrophe losses in experience data and determine a provision for catastrophe losses and loss adjustment expenses.

For ~~this~~ these reasons, catastrophe risk is often evaluated separately from non-catastrophe home insurance~~owners~~ losses. Non-catastrophe losses may be estimated using several years of historical claim experience, adjusted for trend, coverage changes, claim settlement practices, inflation, and other changes in conditions as described in the prior section. For catastrophe losses, ~~while~~ historical data remain relevant but~~, they~~ may be incomplete or insufficient because the historical period may not include the full range of possible events or may not reflect ~~nor the~~ current exposures~~, based on~~ building characteristics, property locations ~~of the properties~~, and

[9] https://www.actuarialstandardsboard.org/asops/treatment-catastrophe-losses-propertycasualty-insurance-ratemaking/, Effective Date: Dec. 15, 2000.

environmental conditions. For perils for which suitable models are available, ~~C~~catastrophe models are one commonly used method of~~to~~ addressing ~~this~~ these ~~problem~~limitations.

A natural catastrophe model is a computerized process that simulates many scientifically plausible catastrophic events and estimates their financial impact on a portfolio of insured properties. For commonly modeled perils, ~~T~~the catastrophe provision included in the overall indicated rate level in a home insurance~~owners~~ rate filing may be ~~is typically~~ based in whole or in part on the long-term expected annual cost generated by a catastrophe model. Other rate components, such as retained risk or reinsurance provisions, are also often based at least in part on catastrophe models.

Because catastrophe models are complex and rely on specialized scientific and engineering assumptions, their use in ratemaking requires judgment and review. Depending on the purpose and materiality of the model output, applicable actuarial standards, and jurisdiction-specific filing requirements, relevant filing support and regulatory review may address the specific model or models used, the exposure data entered into the model, the treatment of policy terms, the inclusion or exclusion of secondary perils (e.g., storm surge or wildfire smoke), demand surge, loss adjustment expenses, secondary uncertainty, the selection of model options, and any adjustments made to the model results. This list is illustrative and is not intended to suggest that every item is required in every filing by regulation or an ASOP. Other supporting documentation or justifications may also be required, depending on the jurisdiction and the type of catastrophe model being reviewed. ~~A filing that is based at least in part on catastrophe model output should explain which model or models were used, what exposure data were input, how policy terms were reflected, whether secondary perils (e.g., storm surge, wildfire smoke), demand surge, loss adjustment expense, or secondary uncertainty were included, how any model alternative features were selected, or how the model results were adjusted.~~

Commented [GS8]: I recommend inserting this sentence to emphasize that the list of items in this paragraph is also not exhaustive of what regulators *might* request for catastrophe-model explanations or justifications.

Actuaries performing actuarial services involving ~~When using~~ catastrophe models ~~in ratemaking, actuaries~~ should consult applicable standards, including ~~also refer to~~ ASOP No. 38[10], which ~~applies to actuaries~~addresses the selection, use, review, and evaluation of ~~selecting, using, reviewing, or evaluating~~ catastrophe models; ASOP No. 39[11], which addresses the treatment of

[10] https://www.actuarialstandardsboard.org/asops/actuarial-standard-of-practice-no-38-revised-edition/, Effective Date: December 1, 2021.
[11] https://www.actuarialstandardsboard.org/asops/treatment-catastrophe-losses-propertycasualty-insurance-ratemaking/, Effective Date: December 15, 2007.

catastrophe losses in property/casualty ratemaking; and ASOP No. 41[12], which addresses actuarial communications.~~, including models for perils such as hurricanes, earthquakes, severe convective storms (SCS), terrorist acts, and pandemics.~~ As relevant under applicable filing requirements, ~~R~~regulators may also review the vendor model documentation, the insurer's use and validation of the model ~~by the insurer~~, as well as any rating factors, surcharges, ~~and~~or discounts that may have been informed by~~or priced using~~ catastrophe model output.

The use of catastrophe modeling, when used appropriately, is consistent with the broader actuarial principle that rates should reflect expected future costs. ASOP No. 53[13] states that actuaries estimating future costs should select appropriate methods or models, use reasonable assumptions, consider adjustments for changes in conditions, and consider the treatment of catastrophes and reinsurance when those items are reflected in future cost estimates. For example, a home with materially greater wildfire, hurricane, earthquake, or SCS exposure is expected to incur greater losses than an otherwise similar home with lower exposure. Cost-based rating attempts to reflect these differences through rating variables such as territory, construction, roof characteristics deductible, coverage, and mitigation discounts, among other factors.

This risk differentiation is also tied to the regulatory standard that rates should not be excessive, inadequate, or unfairly discriminatory. In actuarial terms, unfair discrimination does not mean that all policyholders pay the same rate. Rather, it generally concerns whether differences in premiums bear a relationship to differences in expected losses and expenses. For catastrophe risk, rating factors such as location, roof characteristics, construction type, or mitigation are often appropriate when supported by data, catastrophe modeling, or other credible evidence showing differences in expected costs.

Cost of Reinsurance

Reinsurance is closely related to catastrophe pricing because catastrophe risk can threaten an insurer's surplus, profitability, and solvency. Reinsurance is insurance purchased by an insurer to transfer part of its risk to a reinsurer. In other words, it is often necessary for insurers to have reinsurance which allows them access to market capital in the event of a catastrophic loss. In home~~owners~~ insurance, catastrophe reinsurance often protects against ~~severe aggregate losses~~

[12] https://www.actuarialstandardsboard.org/asops/actuarial-communications/, Effective Date: May 1, 2011
[13] https://www.actuarialstandardsboard.org/asops/estimating-future-costs-prospective-propertycasualty-risk-transfer-risk-retention/, Effective Date: August 1, 2018.

~~from hurricanes, wildfires, earthquakes, severe convective storms, or other large events.~~ losses on a per-risk basis, losses arising from an individual event or occurrence, aggregate losses over a defined period, or a blend of these structures.

The cost of reinsurance is therefore a legitimate component of the cost of providing home~~owners~~ insurance.[14] However, reinsurance costs must be allocated carefully. Many insurers purchase reinsurance at a portfolio level rather than separately for each state. A single catastrophe reinsurance program may cover home insurance~~owners~~ exposures in multiple states and may respond to losses from multiple perils which has the effect of diversifying the insurer's catastrophic risk. For purposes of allocating reinsurance cost to the states in the reinsurance program, it should not be interpreted that ~~That does not mean~~ the cost should be spread evenly across all policyholders or all states. The actuarially sound approach is to allocate the cost in a manner that reflects the expected benefit and risk contribution of the business being rated. Relevant measures may include modeled catastrophe losses (if the catastrophe model is properly configured to a given state and book of business and does not inflate the risk of loss for a less catastrophe-prone state), expected reinsurance recoveries, contribution to reinsured layers, exposure distribution, premium, coverage, peril, and other risk characteristics.

Commented [GS9]: I recommend adding this caveat to ensure that misapplications of catastrophe models or inflated model estimates in a particular state do not contribute to inflated reinsurance costs for an insurer in that state.

Because the cost of reinsurance ultimately flows into home insurance~~owners~~ rating, fluctuations in the cost of reinsurance can cause home~~owners~~ insurance rates to change, particularly in catastrophe-exposed markets. The reinsurance market is global, with many reinsurers operating internationally to provide coverage for multiple insurers and risks. On a fundamental basis, reinsurance pricing is risk-based, just as for primary insurers, and r~~R~~einsurance protection is not unlimited. ~~;~~ ~~t~~The market generally has limited capacity for taking on risk before reinsurance may become unavailable or unaffordable. Recent loss experience on a global scale can impact reinsurer profitability and short-term capacity. As such, seemingly unrelated catastrophe events can affect U.S. homeowners insurance rates. For example, if a major typhoon were to impact Japan, reinsurers would likely pay out on reinsurance contracts and potentially would have lower capacity in the following years to take on additional risk, even in the U.S. This constrained reinsurance market can drive general reinsurance costs upward, causing U.S. insurers to pay more for their reinsurance, and thus pass these higher costs on to their policyholders. While global events may impact the overall reinsurance market conditions and capacity, the reinsurance cost

[14] A few states do not allow the cost of reinsurance to be considered a component of ratemaking.

for an individual insurer's program remains specific to the risk characteristics of the underlying exposures.

Reinsurance also interacts with the profit and contingency provision and the cost of capital. Catastrophe-exposed homeowners insurance requires capital because actual losses can deviate substantially from expected losses. Reinsurance can provide an insurer with some relief from required capital by transferring tail risk, but it has a cost. Conversely, retaining more catastrophe risk may reduce reinsurance premium but increase required capital and earnings volatility. A rate indication should avoid double-counting by treating modeled losses, reinsurance recoveries, reinsurance premiums, retained risk, and profit or cost-of-capital provisions consistently. ASOP No. 53 specifically states that when reinsurance is reflected in future cost estimates, the actuary should select appropriate methods or models and reasonable assumptions for estimating the cost associated with expected reinsurance arrangements.

In summary, catastrophe pricing in home~~owners~~ insurance should apply~~applies~~ the same risk-based prospective ratemaking framework used for other home insurance~~owners~~ costs, but with additional tools and considerations. Catastrophe models help estimate losses that are too infrequent, severe, and correlated to be measured reliably using only recent historical experience. Reinsurance helps insurers manage the volatility and capital strain created by those losses, and its cost is an appropriate part of home insurance~~owners~~ premiums when it is actuarially supported and allocated in relation to risk and expected benefit. Together, catastrophe modeling, risk classification, reinsurance allocation, and capital provisions support the central ratemaking objective: premiums should be an actuarially sound estimate of ~~reasonably reflect~~ the expected future cost of the risk being transferred during the policy period.

III. What is Cross-State Subsidization?

A. Defining Cross-State Subsidization

It is important for researchers and others to define cross-subsidization. At the May 12, 2026, meeting of the Casualty Actuarial and Statistical (C) Task Force, Mike Goldman (Perr & Knight) identified three distinct claims of cross-subsidization. The first was residual markets, such as the Fair Access to Insurance Requirements (FAIR) plan and the Texas Windstorm Insurance Association, where costs are spread within the same state. The second was cross-state subsidization within national carrier portfolios. The third was a federal cross-subsidization through

Commented [GS10]: If a catastrophe event happens in another country or another state, but that type of catastrophe event does not have a material probability of occurring in the state in question, what recourse do regulators have to push back against an insurer that attempts to raise its rates in the state that is not prone to that type of catastrophe, solely because of the possibly higher costs of reinsurance? I would recommend that this paragraph be expanded to address this question.

Commented [GS11]: Again, I do not think that the paper should conclude that catastrophe pricing by insurers always *does* apply that desired prospective ratemaking framework. A defensible statement can be made that this is what catastrophe pricing *should* do, but in my experience this is the area where home insurance pricing most often falls quite short of being truly risk-based in regard to the risk profile of a specific state.

Commented [GS12]: Together, these provisions are the most likely source of phenomena whereby catastrophe losses in some states lead to rate increases in other states. I still think that the last sentence of this paragraph is overly deferential to the *a priori* assumption that these provisions are always valid and correct.

the National Flood Insurance Program (NFIP) and disaster aid, which can be analyzed with NFIP subsidies. This paper is only focused on the second type.

In theory, cross-state subsidization could be structural and systemic across the market or could be focused on an individual company's actions. For purposes of this white paper, the question is whether there is systemic cross-subsidization between states. Structural cross-state subsidization ~~between states~~ can be described as follows:

> Policyholders in one state systematically pay rates that are inadequate for their own expected costs while policyholders in another state pay more than their expected costs to offset it.

In order for **structural** cross-state subsidization ~~between states~~ to occur, two conditions need to be met:

1. **Market-Wide Distortion:**
   Structural cross-state subsidization is a market-wide phenomenon. If an individual company determines rates in a way that causes one state to subsidize another, and the subsidization exists only within that company's portfolio, that would likely not be considered regulatory cross-state subsidization ~~between states~~ (unless the insurer was of significant, material size). *(Note: This is still an issue regulators address; it just doesn't meet the definition of structural cross-state subsidization.)*

2. **Not-Actuarially-Justified Rates in Both States:**
   If rates in one or both states are determined to be actuarially justified, structural cross-state subsidization ~~between states~~ has not occurred. In a market that is structurally cross-state subsidized, one or more states would experience inadequate rates while other state(s) would experience excessive rates.

The above definition and Task Force charge focus on explaining how homeowners' insurance rates are regulated across states, with particular attention to questions regarding potential cross-state subsidization of catastrophic losses.

Because cross-state subsidization is central to the Task Force's charge, only scenarios involving subsidization are evaluated. Scenarios involving high rates in one or multiple states that do not involve inadequate rates in another state fall outside the definition of cross-state subsidization. If

rates are excessive in one state but actuarially sound in another, the result is more appropriately characterized as excess profitability rather than cross-state subsidization. Cross-state subsidization requires a transfer effect in which policyholders in one state pay rates above their own expected costs to offset rates that are inadequate to cover expected costs in another state. Policyholders paying actuarially sound rates are not subsidized by policyholders in another state merely because an insurer earns higher profits elsewhere. Accordingly, scenarios in which policyholders are charged actuarially sound rates, even if an insurer earns higher profits in another state, are not considered cross-state subsidization under the framework contemplated by the CASTF charge.

Actuarial work inherently involves professional actuarial judgment, ranges of reasonable outcomes, evolving claims experience, and uncertainty. Sometimes, actuarially justified scenarios may lead to the incorrect perception of cross-state subsidization.

Commented [GS13]: Again, this statement appears to automatically take the side of insurers who choose to systematically charge higher rates in certain states, even if the situation falls under the description of "excess profitability".

See my prior example:

"For instance, if in State X an insurer wishes to maintain a large market share and always prices using the low ends of the reasonable ranges of assumptions, but in State Y (where the insurer might not be as concerned about retaining market share) the insurer always prices using the high ends of the reasonable ranges of assumptions, this means that on a systematic basis over time, rates in State Y will be significantly higher than in State X relative to the risk of loss."

B. Mischaracterizations of Cross-State Subsidization

There are numerous scenarios commonly mischaracterized as cross-state subsidization, including the following:

1. Differences in Actuarial Assumptions and Methodologies from One State to Another State

Actuarially justified rates may reasonably differ state by state based on assumptions, credibility treatments, catastrophe loadings, trend selections, development methodologies, expense allocations, reinsurance strategies, or differing views of emerging risk conditions.

Rates in one state may reflect more conservative assumptions or greater provision for uncertainty than rates in another state, while both remain actuarially justified. Actuarial standards do not require uniform assumptions or outcomes across jurisdictions. Reasonable actuarial judgment may support materially different assumptions and levels of conservatism based on each state's unique risk profile, data characteristics, regulatory environment, and market conditions. Consequently, significant differences in indicated or approved rates between states do not, by themselves, imply that one state's rates are more actuarially appropriate than another's. Rather, the relevant consideration is whether

the assumptions and methodologies used for each state are reasonable, adequately supported, and appropriate for that state's risks and circumstances.

Commented [GS14]: The concern is that often the greater conservatism of certain assumptions in one state versus others may be due to the insurer (a) intentionally trying to redistribute premium from one state to another; (b) thinking that the policyholders in the latter state will tolerate higher premiums relative to their risk of loss; or (c) not caring about losing business in a less catastrophe-prone state with more favorable loss experience, due to a companywide directive or reinsurance capacity constraints.

2. Rate Filing Timing Differences and Non-Mandatory Rate Filings

In many jurisdictions, insurers are not required to submit a rate filing unless they are voluntarily revising rates. A company may choose to absorb year-to-year cost fluctuations rather than regularly adjusting rates. Similarly, a company may delay or sequence filings due to operational considerations, such as competing priorities and limited resources, or regulatory considerations, such as the anticipated time needed for review and approval. These timing differences may create temporary differences between indicated and implemented rate levels across states without the systematic transfer of costs from one state's policyholders to another's and therefore, do not constitute~~ting~~ structural cross-state subsidization.

3. Mix of Business Considerations

Differences in rate change decisions across states may also reflect varying growth dynamics within an insurer's portfolio, rather than structural cross-state subsidization ~~between states~~.

When a book of business is experiencing rapid growth, insurers may elect to utilize more conservative pricing assumptions to account for uncertainty associated with changing policyholder composition. Historical experience may also be less predictive for a rapidly growing book of business, as the risks being insured today may differ materially from those reflected in prior years' experience.

Conversely, a shrinking or more stable book of business may support less-conservative assumptions where the insurer believes the underlying risk profile is better understood or more predictable.

As new business enters or existing policyholders exit, the distribution of risks, geographic concentrations, coverage selections, or underwriting characteristics may shift in ways that reduce the predictive value of historical experience.

4. Regulator Disapproval of Rate Filings

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Regulatory actuaries are tasked with reviewing a rate indication based on information provided in the rate filing to determine whether it complies with actuarial, legal, and regulatory standards.

Rate regulation is prospective in nature and evaluates whether the proposed rates are adequately supported under the applicable statutory framework and reasonably reflect the underlying risk.

Importantly, regulatory disagreement does not necessarily indicate that an insurer's proposed rates represent a significant departure from accepted actuarial practice. Reasonable actuarial and regulatory differences may arise even when all parties are operating within accepted actuarial and legal frameworks. Different actuaries may reasonably select different assumptions related to trend, credibility, expense provisions, catastrophe and reinsurance provisions, profit provisions or other relevant assumptions. Additionally, regulatory actuaries are highly familiar with the statutory requirements, market considerations, public policy objectives, approved actuarial methodologies, and other constraints unique to their jurisdiction.

In many cases, a regulator's concern may relate to the sufficiency of supporting data, the reasonableness of selected assumptions, the applicability of a methodology, or compliance with a statutory or procedural requirement unique to the jurisdiction. A filing disapproval may also reflect a determination that additional actuarial support or alternative actuarial treatment is necessary before the proposed rates can be approved.

Examples of situations that could result in filing disapproval without establishing that the proposed rates are not actuarially sound include circumstances where sufficient support was not provided, deadlines for submission of additional information were not met, or statutory and procedural requirements were not satisfied.

Insurance markets perform differently across jurisdictions. A rate that is actuarially sound in one state is often not actuarially sound in another state due to differences in laws, regulations, litigation environments, catastrophe exposure, consumer profiles, risk characteristics, and other market conditions.

The existence of a regulatory disagreement or filing disapproval should not be interpreted as evidence of cross-state subsidization ~~between states~~. Rather, actuarial

Commented [GS15]: As I previously stated, even if assumptions with a rate filing are within some broadly reasonable actuarial range, this does not mean that those assumptions are appropriate for the state in question, and it is ultimately the regulator's responsibility to evaluate this and arrive at a decision consistent with applicable laws.

Commented [GS16]: I still raise the question of what would constitute a sufficient accumulation of disagreements or disapprovals to result in either cross-state subsidization or excess profitability at least being possibilities. If an insurer always proposes treatment X, and the regulator always objects to treatment X on the grounds that treatment X leads to Nevada insureds being rated based on out-of-state considerations, then how many times does that need to happen in order for cross-state subsidization to be seen as a realistic possibility (or at least to not assume that it is *not* happening)?

review is intended to help ensure that rates remain related to risk within the applicable jurisdictional and regulatory framework.

5. Credibility and Use of Non-State Data as the Complement of Credibility

A common challenge in ratemaking is determining the extent to which an insurer should rely on its own experience as compared to broader ~~external~~company, industry, or other supplemental data sources. Actuaries use credibility procedures to determine the appropriate weight to assign to a particular set of insurance data when developing rates. For example, a large insurer with many years of experience in a given state may receive high credibility on its own statewide data, while a smaller insurer or more niche program may rely more heavily on countrywide data or may rely on other benchmarks that are relevant to the product.

ASOP No. 25[15], titled "Credibility Procedures", provides definitions for terms such as credibility, credibility procedure, full credibility, and relevant experience, among other concepts important to actuarial credibility analysis.

Credibility procedures are intended to balance responsiveness to actual experience with the statistical reliability needed to support stable and predictive rate indications. These procedures help reduce volatility and lessen the likelihood that isolated or short-term fluctuations disproportionately affect indicated rates.

When an insurer's statewide experience is not considered fully credible under actuarial credibility procedures, the statewide experience may be weighted together with a complement of credibility, often referred to simply as the "complement". ASOP No. 25 discusses the importance of the complement reflecting relevant experience, including risk characteristics that are reasonably similar to the product being analyzed.

The complement of credibility may include experience from a broader geographic area or from an industry data source, when the insurer's own experience is not considered sufficiently credible. However, the purpose of a credibility-weighted complement is not to transfer costs from one state to another, but rather to improve the statistical reliability and predictive value of the rate indication. The actuarial appropriateness of a complement

[15] https://www.actuarialstandardsboard.org/asops/credibility-procedures/, Effective Date: May 1, 2014.

depends on whether the underlying data is considered relevant to the risks being evaluated, consistent with the principles described in ASOP No. 25.

Commented [GS17]: The paper should note that using catastrophe losses or trends from other states would *not* constitute an appropriate or "relevant" complement of credibility for a state with a very different catastrophe risk profile.

Actuarial literature can be consulted for additional guidance regarding credibility procedures and selection of the appropriate complement.

Because professional judgment is required in determining the appropriate credibility treatment and selection of complement, insurer practices may reasonably differ depending on the circumstances and underlying data. Overreliance on broad averages may obscure meaningful emerging trends, while overreliance on limited experience may produce indications that are less predictive of future costs. Actuaries are expected to apply credibility procedures in a manner consistent with applicable actuarial standards and guidance, including the principles in ASOP No. 25 regarding the use of relevant experience and selection of an appropriate complement. Differences among insurers in the application of credibility procedures or selection of complements do not imply that either insurer's rates are not actuarially sound, nor do such differences, by themselves, establish the existence of cross-state subsidization.

6. Market-Wide Changes in Future Cost Estimates

Changes in rates may also result from evolving assessments of future risk and expected costs rather than cross-state subsidization. Rate indications are routinely updated to reflect new information, including changes in catastrophe models, reinsurance costs, loss trends, rebuilding costs, litigation patterns, and other factors that affect expected future losses and expenses.

These changes are prospective in nature and are intended to estimate the future cost of providing coverage. Although such updates may result in higher indicated rates in one or more states, they do not represent a transfer of costs from policyholders in one state to policyholders in another state. Rather, they reflect revised assessments of the expected costs associated with insuring risks in the applicable jurisdiction.

A common mischaracterization of cross-state subsidization arises when a significant catastrophe in one state contributes to rapidly evolving market conditions that affect

insurers' assessments of future risk across multiple states. Large catastrophe events may influence catastrophe model outputs, reinsurance costs, capital requirements, rebuilding cost assumptions, and other prospective ratemaking inputs. As a result, indicated rates may increase in jurisdictions that did not experience the loss event. Such changes generally reflect updated expectations regarding future costs and risks rather than a transfer of costs from policyholders in one state to policyholders in another.

Commented [GS18]: However, the "updated expectations" may often be exaggerated, mistaken, or metaphorically painting with a broad brush. It is a well-known psychological phenomenon that the occurrence of an adverse event tends to lead to exaggerated perceptions of that event's likelihood of recurrence. Thus, it is entirely possible that after a major disaster, various insurers (and even the public and the media) may develop erroneously high perceptions regarding the risk of that disaster occurring in other jurisdictions.

IV. What State-Based Ratemaking Means for Consumers and Markets—Is there Cross-state Ssubsidization?

Section II explained how home insurance~~owners~~ rates are developed and reviewed: as prospective estimates of expected loss, expense, catastrophe exposure, reinsurance cost, and other elements associated with the risk being insured. This section applies that ratemaking framework to a recurring question in public discussion: whether catastrophe losses in one state are being shifted into rates charged to policyholders in another. The answer requires distinguishing direct loss shifting from broader market effects. State-based ratemaking does not support the direct allocation of one state's catastrophe losses to another state's policyholders, but catastrophe events may still affect broader inputs such as rebuilding costs, reinsurance pricing, capital costs, and catastrophe model assumptions.

Commented [GS19]: It is through these "broader inputs" that there remains a risk of the rates in one state being based on catastrophe events in other states, and more should be said about the desirability of regulators seeking to prevent this.

A. Catastrophe Losses and State-Based Ratemaking

A recurring theme in academic research, media coverage, and consumer advocacy is the concern that home~~owners~~ insurance policyholders in relatively low-risk states may be financially subsidizing policyholders in states with high catastrophe exposure. These sources suggest that insurers spread catastrophic losses across their entire book of business, causing premiums in less disaster-prone states to rise to offset losses sustained in states like California, Florida, or Louisiana.

Several academic studies have examined insurer pricing behavior and rate-change patterns across states following major catastrophe events. Media investigations—particularly following the 2017–2018 California wildfire seasons, Hurricane Ian in 2022, and repeated hurricane seasons in Florida—have amplified these concerns, with reporting suggesting that consumers in other states are bearing costs attributable to coastal or wildfire-zone losses. Consumer advocacy organizations have similarly raised concerns that insurers are insufficiently transparent about cost

allocations and that policyholders lack the information necessary to evaluate whether their premiums reflect local risk or a national pooling of catastrophic exposure.

These concerns deserve serious engagement. However, several important methodological limitations and industry structural features are frequently overlooked in both academic and media treatments of this issue and understanding them is essential to evaluating the subsidization hypothesis fairly.

B. How Insurers Deploy Capital and Reinsurance

While catastrophe pricing is state-specific, as discussed in Section II, insurers deploy capital and reinsurance on an enterprise-wide basis to ensure claims-paying ability regardless of where a catastrophe occurs. A national insurer writing policies in all 50 states maintains a single pool of surplus capital that supports its obligations everywhere and for every line of business it writes. When a hurricane causes billions in losses in Florida, the same surplus that backs policies in Ohio is drawn upon—if necessary—to pay those claims.

Additionally, capital supports the entire company and not just its homeowners' line of business. Most insurers do not write only homeowners' insurance policies, and those few that do rely very heavily on reinsurance because of the extreme risk associated with a monoline portfolio. Like the way carriers manage their adopted risk from policyholders by diversifying their exposure geographically, they also mitigate their risk by writing other types of insurance. Most homeowners' carriers will also sell a wide variety of property and casualty coverages including personal auto and personal umbrella policies. Furthermore, these same carriers may sell a wide portfolio of commercial insurance products including commercial auto and property, plus commercial liability and workers' compensation policies. A carrier's surplus built up by underwriting and investment income associated with all these products is then available to them in the unlikely event of a catastrophic loss.

This enterprise-level capital deployment, however, is not equivalent to Ohio policyholders subsidizing Florida policyholders. The surplus is the insurer's own capital, contributed by shareholders and accumulated from retained earnings. It is the mechanism by which the insurer guarantees its financial promises; it is not a transfer of premium dollars from one state's policyholders to another's.

The reinsurance program layered above the insurer's retained risk functions similarly: reinsurance is purchased at the enterprise level, but its cost is allocated back to individual states based on the catastrophe exposure each state contributes to the reinsurance need. A state with low catastrophe exposure contributes less to the reinsurance cost allocation and, therefore, should have ~~pays~~ a smaller reinsurance load in its rates.

Different layers of reinsurance protection serve different purposes. Per-risk or per-occurrence excess-of-loss treaties respond to large single-event losses. Aggregate covers respond to the accumulation of smaller losses over a policy period. Catastrophe bonds and other capital market instruments provide additional protection against tail events. The cost of each layer is reflected in state-level rates in proportion to the catastrophe exposure that creates the demand for that layer of protection. ~~A consumer in a low-catastrophe state is not paying for a reinsurance program designed to protect against losses in a high-catastrophe stae; they are paying for the portion of the reinsurance program that protects against losses in their own state.~~

C. What Pooling Does (and Does Not) Mean

Insurance is, by design, a pooling mechanism. A home~~owners~~ insurer pools the risks of many policyholders so that the losses of the few are spread across the premiums of the many. This within-state pooling is the core economic function of insurance and is what makes coverage affordable for individual policyholders who could not self-insure against a catastrophic loss.

Cross-state pooling within a national insurer operates on a different principle. The insurer is not pooling the catastrophe losses of State A and State B policyholders together and averaging the cost across both groups. Rather, the insurer is pooling the uncertainty about whether State A losses will be higher or lower than expected, against the uncertainty about whether State B losses will be higher or lower than expected. The insurer benefits from the fact that these two sources of uncertainty are not perfectly correlated. The economic benefit of this diversification accrues primarily to the insurer's shareholders in the form of reduced capital requirements and to policyholders in the form of improved insurer financial stability; it does not translate into State B policyholders paying for State A losses.

D. Indirect Effects: How Catastrophe Losses May Affect Rates Elsewhere

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While direct cross-state premium subsidization does not occur through normal ratemaking, there are legitimate indirect pathways through which a catastrophe in one state can affect premium levels in other states, and these indirect effects are important to acknowledge.

The most significant indirect effect operates through ~~supply~~ supply-chain economics. Following a major catastrophic event, such as a hurricane, wildfire, or flood, the demand for building materials, skilled labor, and construction equipment surges in the affected region. Lumber prices, roofing material costs, drywall, and structural components all experience sharp price increases, driven by both genuine supply constraints and demand concentration in the affected area. These elevated material costs do not remain geographically confined. A homeowner in Indiana filing a non-catastrophic claim, such as a burst pipe, a fallen tree, or a kitchen fire, may find that the cost of repairs has risen meaningfully because the same lumber being used to rebuild Gulf Coast homes is now more expensive everywhere. Insurers writing home insurance~~owners~~ policies across the country may experience increased claim severity in all states following a major catastrophe, and this elevated severity can feed into the loss experience used to support future rate changes nationwide. This is a real, quantifiable, and economically rational indirect linkage between catastrophe losses in one state and premium levels in others, and it deserves recognition in the research literature as a legitimate channel distinct from, and not confused with, direct subsidization.

Catastrophic events can also affect reinsurance pricing globally. A particularly severe hurricane season or a large wildfire loss may increase reinsurance costs for the subsequent policy year, and those increased costs are reflected in rate filings across all states that purchase catastrophe reinsurance — even states that were not directly affected by the event. This is not to compensate reinsurance carriers for losses sustained in a prior event; rather, the severe event serves as an additional data point that could cause reinsurers to adjust their predictions of future loss.

Commented [GS20]: My previous concern remains: if global reinsurance costs rise because of natural disasters, it would still be unreasonable to allocate any increase in those costs to states that have not had and are unlikely to have those disasters. Rather, states that did or are likely to experience those particular types of disasters should be bearing the increase within the insurer's allocation methodology.

As with the rebuilding-cost effects discussed above, this is a market-driven indirect effect, not a regulatory or actuarial mechanism for cross-state subsidization.

Finally, catastrophes provide the opportunity for models to be updated for what is learned about resiliency. Insurers and third-party modelers may calibrate rating values associated with certain types of construction, roof materials, mitigation efforts, etc., and use the revised discounts and factors throughout the country.

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E. Could Companies Hide Cross-State Subsidization?

A more sophisticated version of the cross-state subsidization hypothesis asserts that even if rate filings are state-specific, insurers might use the flexibility within ratemaking to shift value between states in ways that are difficult for regulators to detect. For example, an insurer might inflate the profit provision in low-catastrophe states to build a surplus that effectively offsets losses in high-catastrophe states. Or an insurer might systematically understate the catastrophe load in a high-exposure state by using older, less sensitive catastrophe models, while compensating with higher expense loads in other states.

The Center for Insurance Policy and Research (CIPR) performed a qualitative analysis of rate filings to explore the hypothesis that carriers are subsidizing catastrophic losses incurred in one state with higher rates in another state. If the hypothesis were true, the expectation is rate filings would either 1) directly include out-of-state catastrophe losses in the development of the indicated rate need or 2) indirectly increase the indication by changing methodology (e.g. using more conservatism) after catastrophic loss in another state. The analysis, while qualitative and limited in scope, did not support the hypothesis that carriers are raising rates in one state to support losses in another state.

Minnesota Hail Event: Found No Effect on Iowa Rates

For example, in 2017 there was a hail event (part of a June Derecho) in Minnesota. Iowa rate filings were examined for some companies writing insurance in both Minnesota and Iowa. No Minnesota loss data (or any other out-of-state losses) were reflected in five Iowa rate filings prior to Derecho and six after Derecho. Rate provisions and methodologies were also reviewed to test for any indirect 'cross-state subsidization' via selection of more conservative factors or changes in methodology intended to yield a higher indication in the post event filings.

The methodologies and provisions reviewed were: 1) Indication methodology: number of years of experience, weighting of years; 2) Loss and Trend: development and selection of; 3) Catastrophe provision development including which CAT models were used; 4) Reflection of reinsurance; 5) Development of underwriting profit and contingencies provision; 6) Other expense development; 7) Indicated vs proposed rates; 8) Credibility methodology and the selected complement of credibility; 9) Premium Trend; and 10) Other factors (e.g., Large loss procedure that may be impacted by out-of-state losses). No methodology changes were observed that would

indicate an indirect allocation of losses from the catastrophe events into Iowa rate indications. "Indirect effects" such as reinsurance costs, countrywide expenses or profit provision selection did not appear to be affected by the experience of out-of-state losses. When indications were higher in the post period, the driver was an increase of in-state losses or loss trends. Changes observed were due to companies having more internal experience to rely on, updates to catastrophe models, updated factors such as profit provisions, or other methodology changes that adhere to standard actuarial principles.

With changes to profit provisions, carriers maintained a consistent methodology to develop their profit provisions, but some updated inputs such as the rate of return, which resulted in small changes in the underwriting profit. In some cases, the underwriting profit provision increased from pre-to-post event filings. One carrier increased their profit provision from 6% to 7%. In some cases, the underwriting profit provision decreased: one carrier decreased ~~their~~its profit provision from 7.2% to 5.4% and another from 7% to 5%.

Regarding methodology changes, one company changed its credibility procedure which resulted in a small increase in the credibility attributed to its own statewide data; the complement of credibility was applied to a trended permissible loss ratio (not to loss experience from other states).

Hurricanes Harvey & Irma and 2018 California Wildfires: Found No Effect on Virginia Rates

Using the same methodology, four Virginia rate filings were studied before and four after the hurricanes Harvey & Irma in 2017 and eight filings before and eight after the 2018 California wildfires (7/23/18-8/30/18). Findings in the Virginia rate filings were consistent with the findings from the review of Iowa rate filings: There were no out-of-state losses included in any of the rate filings in Virginia. There were no methodology changes or rate provision selections that would indicate an indirect allocation of loss experience from the catastrophes to Virigina.

While these are only two limited scope case studies, ~~they support this paper's assertion that cross-subsidization is not occurring.~~ CIPR has not found support for the subsidization hypothesis. Analyses of profit provisions, expense ratios, and loss ratios across states have not revealed the systematic patterns that would be expected if insurers were deliberately routing value from low-catastrophe to high-catastrophe states. This does not foreclose the possibility that individual insurers in specific circumstances might engage in such behavior, but the available evidence ~~at~~

~~the industry level~~from the CIPR study, is not consistent with cross-state subsidization as a widespread or systematic phenomenon.

F. How Evolving Catastrophe Models Affect the Debate

One final dimension that is essential to understanding the cross-state subsidization debate is the evolution of catastrophe modeling. Insurers and their actuaries rely on probabilistic catastrophe models to estimate the expected losses from hurricanes, wildfires, earthquakes, and other catastrophic perils. These models, developed and maintained by specialized vendors and insurers, translate meteorological, geophysical, and engineering science into probabilistic loss distributions for any portfolio of insured properties.

Catastrophe models have changed significantly over time, and the transitions between model generations can create ~~apparent discontinuities~~large changes in rate levels~~ that are sometimes misinterpreted as evidence of subsidization or cross-market cost shifting.~~ When a major vendor releases a new version of a hurricane model that substantially increases estimated loss costs for Gulf Coast exposures, insurers using that model will file for rate increases in the affected states. The timing and magnitude of those increases may differ across insurers depending on when they transition to the new model, how much credibility they give to the model versus their own historical data, and how their reinsurance programs respond to the updated loss estimates. A researcher observing this pattern without knowledge of the model transition might incorrectly attribute the rate increases to a redistribution of costs rather than to an improved scientific understanding of the underlying peril.

The practical implication for the subsidization debate is that large, sudden shifts in catastrophe-state rate levels, particularly following a major loss event or a model update, do not indicate that prior rates in those states were subsidized by other states. They indicate that the industry's understanding of the catastrophe risk has changed, and that rates are being updated to reflect that improved understanding. The absence of prior rate increases does not mean policyholders elsewhere were overpaying; it may mean that the risk was systematically underestimated by the best available models at the time.

G. Important Methodological Considerations for Researchers and Media

It is worth flagging several recurring misconceptions that appear in research and reporting on this topic, because they can significantly distort conclusions about cross-state subsidization.

Commented [GS21]: My previous concern remains: What justifies the a prior assumption that a later model necessarily reflects an “improved scientific understanding”, rather than just a different set of assumptions that could be better or worse than those of the preceding model? It is the job of regulators to evaluate the merits of those assumptions, not simply to take for granted that a later model will be more accurate.

Commented [GS22]: Again, I take issue with the assumption that this would necessarily be an “improved understanding”. My previous concern remains: Is it the “understanding of the catastrophe risk” or, rather, the *fear* of the catastrophe risk? Studies of sociological responses in relation to natural and manmade disasters have indicated that humans are systematically prone to exaggerate and over-respond to the risk of disasters that happened recently and to neglect or disregard the risk of disasters that happened in the more distant past. “Social contagion” effects - including signaling within industry peer groups - can amplify those distortions relative to what would be an objective risk perception.

Commented [GS23]: My previous concern remains that this paper assumes that the prior models necessarily underestimated the risk and the new models estimate it correctly - but there is no empirical corroboration of this. It could be that the prior models were more accurate in estimating the risk, and the new models exaggerate it, either inadvertently or due to motivated reasoning and assumptions. Regulatory scrutiny exists to help understand which of these scenarios is likely to be the case.

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1. **Rate Filings Are Not "Exact Rate Needs."**

A rate filing reflects an indicated rate need and the proposed rates. ~~As discussed, a~~Actuarial rate indications involve projecting future (unknown prospective) losses and expenses from historical data using loss development factors, trend factors, and catastrophe load adjustments, and other factors—all of which carry significant uncertainty ~~and some of which can vary depending on the degree of conservatism in estimates~~. The "indicated rate change" in a filing is a single point estimate within a ~~plausible~~ range of reasonable estimates. No actuary, regulator, or researcher knows with certainty how many claims will occur in a future policy period, or what those claims will cost~~, or how the catastrophe environment will evolve. What appears to be an over- or under-indication when examined with a fixed historical dataset may look quite different when evaluated across multiple years or under different model assumptions. Research conclusions based on a single point-in-time snapshot of rate indications should be interpreted cautiously and evaluated against longer time horizons.~~ After-the-fact comparisons of predicted losses to actual losses do not establish that charged rates were excessive or inadequate. The nature of catastrophes alone renders such comparisons moot; a pricing environment that would react each year to the catastrophes that did or did not occur in the year prior would lead to enormous rate swings that would be not only actuarial unsound but also harmful to consumers.

2. **Claim Count Definitions Vary Across Insurers and Datasets.**

Comparisons of claim frequencies~~y~~ across companies or states often~~frequently~~ encounter the problem that insurers define and count claims differently. Some insurers record a claim for each person injured, each site damaged, each coverage affected, etc. Zero-payment claims (opened and closed without indemnity, such as claims below the policyholder deductible or not caused by a covered peril) may or may not be included in reported counts. Researchers using industry databases or statutory filings should account for these definitional differences, as unadjusted comparisons can produce false or misleading conclusions about relative loss frequency and severity, or average claim amounts.

3. **The Indicated Rate vs. Rate Received: A Critical Assumption.**

Commented [GS24]: But to what extent can an *accumulation* of after-the-fact comparisons that all show significant excesses of premiums collected over losses incurred, demonstrate excessive profitability? The paper should not assume that all after-the-fact comparisons are invalid; otherwise, a given rate proposal's claims to be actuarially justified would become non-falsifiable by any amount of empirical data.

Commented [GS25]: I do not think anyone advocates setting rates based on the swings in catastrophe losses from year to year. However, long-term empirical catastrophe loss experience in a particular state should be taken into account. If the future is expected to differ from the past (over a sufficiently long term), specific reasons for such difference should be provided, and still the difference would need to be realistic in magnitude. For instance, it would be unreasonable to project that any state's catastrophe annual average loss experience would increase tenfold overnight. Therefore, long-term empirical loss experience in a state at least sets a benchmark for and constraints on reasonableness of forward-looking estimates for catastrophe losses.

Much of the academic literature on cross-state subsidization implicitly or explicitly assumes that the ~~rate a company files, or the actuarially~~ indicated rate need in a filing, represents the true economic cost of risk in that state, and that any gap between the indication and the filed and/or approved rate must be recovered elsewhere, including (potentially) from policyholders in other states. This assumption does not withstand careful examination. ~~Rate indications are inputs to a regulatory analysis, not binding financial obligations. Insurers regularly file for rate changes that are less than their full indication, particularly in competitive markets. The gap between indicated and implemented rates is not uniformly under-charging—it may reflect competitive pricing, regulatory compliance, or the fact there is a range of reasonable actuarial estimates. Research that uses this gap as direct evidence of cross-state subsidization without accounting for these dynamics is fundamentally flawed.~~First, as previously described, the rate indication in a filing is but one point estimate among a range of reasonable estimates, a range that is likely to include the proposed rate level when it deviates from the filed point estimate indication. Second, even very large insurers write only a small fraction of the policies in any given state. An insurer whose indicated rates are outside the range of their competitors has to consider whether their estimates are missing the mark. State insurance regulators should be skeptical as well. The impacts of going to market at rates that are too competitive or not competitive enough can be catastrophic. An insurer that charges uncompetitive rates could start an adverse selection spiral that ultimately results in the failure of the product and its withdrawal from the market. Needing to account for adverse selection risk in one state but not another does not mean one state's policyholders are subsidizing the other's.

Commented [GS26]: I am not sure that this always applies. The "follow the leader" dynamic is common in the property and casualty insurance industry. If one insurer decides to charge rates that are different from its competitors, that does not mean that this insurer is somehow failing to see what the others are seeing. It may be that this insurer is just deciding not to follow a "market leader" that is mistaken or that has made a presently fashionable decision that will be reversed in a few years' time.

True competition does not mean that all insurers will charge similar rates. Quite the contrary, in a truly competitive market, there will be many rate levels, many options for consumers, and widely varying risk perceptions among insurers. If all insurers start behaving in the same manner and radically change course without a clear empirical signal, so as to raise rates or restrict capacity on profitable business, this is a sign of "social contagion", not beneficial or prudent competition.

4. Catastrophe Pricing Is a State-Level Construct.

A foundational principle of property insurance pricing, and one that is frequently misunderstood in cross-state subsidization discussions, is that catastrophe loss costs are estimated for the state where they are expected to occur. California wildfire claims experience does not enter the rating calculation for a homeowners policy in the Midwest. Each state's rate level is derived from that state's own expected loss experience, adjusted for trend and development (among other things), with catastrophe loads built from catastrophe models calibrated to the geographic exposures within that state. State insurance regulators enforce this principle by requiring that rates be filed and justified on a state-specific basis.

Confusion arises because state insurance rating laws may allow insurers to use both state-specific and other data, such as regional or nationwide data. In practice, an insurer will use state-specific data to the extent it is credible and will supplement it with other credible, relevant information where needed. To be "relevant," that data must be a reasonable estimate of expected losses and expenses for the policies to be written in the state.

This distinction is especially important for catastrophe risk. Updated catastrophe models may incorporate new scientific understanding, new claims information, changes in exposure, or changes in environmental conditions that affect more than one state. For example, a major hurricane in Florida may reveal that certain types of structures perform more poorly than expected, or that loss amplification effects are more significant than previously understood. Though these findings came from experience in Florida, hurricane catastrophe models used across the entire Atlantic coast will be updated to reflect these new learnings, which could ~~increase~~ impact rates in all states with hurricane risk~~states~~. While this may appear at the surface to be cross-state subsidization, there is a distinct difference: this is not insurers using out-of-state losses to increase rates (cross-state subsidization), but rather a best practice of using the latest science – catastrophe events in other states that may teach insurers, modelers, and regulators something new about the risk that is relevant to other states exposed to the same peril.

Commented [GS27]: My previous concern remains: it is a significant and unproven assumption to assert that these changes that affect more than one state are necessarily in the direction of improvement. The burden of proof here is on the insurer and the modeler; we do not know *a priori* that a newer model will be better or especially that it will be reflective of the risk of catastrophe loss in states where the recent disaster(s) did not occur.

When it comes to ~~some~~ certain parts of the insurer's rating plan, such as determining the rates for customers based on their individual risks, insurers are encouraged to use their most credible data, which may include nationwide or regional information on issues such as how fire damages buildings, what roofing materials perform best when neighborhoods burn, etc. When discussing state cross-subsidization, it is the overall indication by coverage or peril that is most ~~important~~relevant and the overall indication is a state-based number. A filing that attempted to recover California wildfire losses through Midwest premiums would be actuarially unsound and unlikely to~~would not~~ survive regulatory scrutiny~~, whether through front-end rate regulation or back-end market regulation~~. The regulatory architecture of state-based insurance oversight, therefore, provides a structural barrier to the kind of direct cross-state subsidization that researchers and media often

allege, while still allowing insurers and regulators to recognize credible, relevant scientific information that improves the assessment of catastrophe risk within each state.

5. **Actuarial standards play an important role in insurance pricing.**

   The vast majority of property and casualty insurance companies use credentialed actuaries to determine pricing. Those actuaries are bound by professional standards and a Code of Conduct and are subject to discipline if they depart materially from those expectations of professionalism. The standards provide guidance about how actuaries should provide a rate that is the expected value of all future costs associated with an individual risk transfer. Precept 8 of the Code of Professional Conduct specifically states that an actuary "shall take reasonable steps to ensure that such services are not used to mislead other parties," which can include regulators. Deliberate implementation of cross-state subsidization while developing rates would be in violation of the ASOPs and actuarial principles which may constitute a violation of the Code of Professional Conduct. Such violations could lead to disciplinary review and/or action by the Actuarial Board for Counseling and Discipline (ABCD).

   For home~~owners~~ insurance, actuaries are not required to provide an attestation as to the appropriateness of rates. However, the actuarial standards are still used by regulators as the expected standard for ratemaking.

6. **Refer to the CIPR website for considerations when using insurance data.**

This section has distinguished the direct allocation of catastrophe losses from the broader market effects that may influence home insurance~~owners~~ rates. That distinction matters because it shows why rate regulation must both recognize genuine cost pressures and require that those costs be reflected through supported, risk-based, and reviewable ratemaking. Section III~~V~~ places that role in the broader architecture of home~~owners~~ insurance regulation: a layered system designed to protect consumers, preserve market stability, and maintain actuarial discipline.

The longstanding statutory standard that insurance rates shall not be excessive, inadequate, or unfairly discriminatory provides a rich foundation for future research in insurance rate regulation, including more in-depth study of cross-subsidization and numerous other topics. Building from

this white paper, research could examine catastrophe exposure, model updates, and proper use of the models; reinsurance practices; insurer capital allocation; market competition; company filed rate changes vs. implemented rate changes; target underwriting profit provisions vs. historical profitability, and more.

V. Conclusion: Rate Regulation as Layered Consumer Protection

Rate regulation is a calibrated system that supplements the competitive market forces that exist in most states with regulatory oversight proportionate to the degree of market imperfection and the magnitude of consumer vulnerability.

The architecture of state-based regulation described in Sections I through IV, with its uniform three-part legal standard for insurance rating, delegation of authority to state insurance commissioners, and diverse rate filing requirements, and with a complement of market conduct oversight, reflects the accumulated wisdom of more than a century of insurance regulatory experience.

Rate regulation can and should ensure that cost trends are accurately measured, that actuarial justification is genuine, that unfair discrimination is absent, and that insurers are not exploiting information asymmetries or market concentration to extract excessive profits.

Present regulatory needs include attention to using sophisticated actuarial staff (as rate filing models and support continue to get more complex) and effective market monitoring. The engagement of the actuarial profession, through its standards, its certifications, and its independent professional obligations, is indispensable to the integrity of the rate regulatory process. Actuaries who conduct rate indication analysis in rate filings occupy a position of public trust and professional obligation, and the regulatory system depends on the actuarial community's commitment to honest, rigorous analysis as a foundation for sound ratemaking.

The home~~owners~~ insurance market faces significant challenges in the years ahead, from increasing catastrophic disasters to rising replacement costs to the evolving legal environment. Rate regulation, when properly designed and effectively administered, will remain an important tool for ensuring that these challenges are met in a manner that protects consumers, maintains

market stability, and preserves the availability of coverage that protects the most important financial asset most American families will ever own.

~~In summary,~~ T~~t~~he goal of property and casualty ratemaking is to predict the rates that need to be charged on a specific cohort of insurance policies that will be written in the future. The application of appropriate actuarial practices and techniques ensures that those rates are adequate, but not excessive or unfairly discriminatory for covering the expected losses and expenses on those policies, while also allowing for a reasonable return for the risk undertaken. Ratemaking is inherently a prediction of unknown future values. To the untrained eye, a year with few severe storms and catastrophic events might make it seem as if the rates were excessive. And a year with many severe storms and catastrophic events might look like the rates were inadequate. But the ratemaking process accounts for such random fluctuation and prices to the expected frequency of, and claim values associated with, these events in any given year.

Insurers typically use their own state-specific experience to the extent possible for ratemaking purposes. But that experience often needs to be supplemented with additional information to make credible predictions about future losses and expenses on policies that haven't yet been written. This supplemental information can include catastrophe models, other insurers' experience and their rates, experience and statistics made available by advisory and rating organizations, and regional or even countrywide experience and statistics. However, it is important to understand that supplemental information ~~is~~must be adjusted and used only to the extent that it helps predict expected losses and expenses on a specific set of policies in a specific state that will be written in the future. An insurer that would attempt to charge excessive rates in one state to make up for inadequate rates in another would be in violation of state insurance laws and their actuaries would be in violation of actuarial standards of practice. Complaints about the insurer's actuaries (e.g., submitted by state insurance regulators) to the Actuarial Board on Counselling and Discipline could result in professional discipline, up to and including the revocation of their credentials and ability to practice. The insurer's proposed rates would be subject to regulatory scrutiny, and the insurer would likely fail to meet their business objectives.

Property and casualty insurance ratemaking is a complex endeavor undertaken by professionals with standards of practice governing their work. Those studying the actuarial soundness of insurance rates, and effectiveness of state-based rate regulation, would produce more accurate

and beneficial research by meeting with state insurance regulators to discuss their methodology and findings as part of their research and in advance of publishing any reports.

Finally, the authors recognize this paper does not conclusively prove that no cross-state subsidization exists between policyholders in any states. That would require significant additional study well beyond the scope of the charge given to the Task Force which produced this paper. Instead, this paper describes the plethora of safeguards in place that serve to prevent cross-state subsidization from occurring.

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