S. HRG. 118–345

RISKIER BUSINESS: HOW CLIMATE IS ALREADY CHALLENGING INSURANCE MARKETS

HEARING

BEFORE THE

COMMITTEE ON THE BUDGET UNITED STATES SENATE

ONE HUNDRED EIGHTEENTH CONGRESS

SECOND SESSION

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C O N T E N T S

WEDNESDAY, JUNE 5, 2024

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RISKIER BUSINESS: HOW CLIMATE IS ALREADY CHALLENGING INSURANCE MARKETS

WEDNESDAY, JUNE 5, 2024

COMMITTEE ON THE BUDGET,
U.S. SENATE,
Washington, DC.

The hearing was convened, pursuant to notice, at 10:00 a.m., in the Dirksen Senate Office Building, Room SD–608, Hon. Sheldon Whitehouse, Chairman of the Committee, presiding.

Present: Senators Whitehouse, Merkley, Kaine, Van Hollen, Luján, Grassley, Johnson, Romney, and R. Scott.

Also present: Democratic Staff: Dan Dudis, Majority Staff Director; Kara Allen, Senior Energy and Climate Advisor, Energy Lead.

Republican Staff: Chris Conlin, Deputy Staff Director; Krisann Pearce, General Counsel; Ken Acuña, Professional Staff Member; Jordan Pakula, Professional Staff Member; Ryan Flynn, Budget Analyst.

Witnesses:

The Honorable Glen Mulready, Insurance Commissioner, State of Oklahoma

Mr. Rade Musulin, Principal, Finity Consulting

Dr. Ishita Sen, Assistant Professor of Finance, Harvard Business School

Ms. Deborah Wood, Florida Resident

Dr. EJ Antoni, Research Fellow, Heritage Foundation's Grover Hermann Center for the Federal Budget

OPENING STATEMENT OF CHAIRMAN WHITEHOUSE [1]

Chairman WHITEHOUSE. Good morning everyone. I will call this hearing of the Budget Committee to order, and thank our witnesses for being here, and our Ranking Member of course. More than a year has passed since our hearing on climate havoc in the insurance industry upending housing markets, mortgage markets, and local property tax bases, and spilling out into the broader economy.

That threat is just one of the systemic risks climate change poses to our economy and to our financial system. Since that hearing a year ago, things have gotten worse in insurance markets, and worse for American families that rely on them. Press reporting, risk assessments, and further warnings are piling up. I'd reference in particular the recent cover article of the Economist magazine.

[1] Prepared statement of Chairman Whitehouse appears in the appendix on page 34.

As we heard in those original hearings, you need insurance to get a mortgage. Without a mortgage most of our constituents could not purchase a home. What happens when insurance companies go bust, or don't renew policies, or pull entirely out of a state? Families lose insurance. They can't find a decent policy. They can't afford what's available. Some even pack up and move away.

Some end up with state backed insurers of last resort, which may or may not be solvent. Some end up with small insurers, which may or may not have the resources to pay claims. This is what we've begun to see in multiple states. One is Florida. Ten percent of our nation's homeowners live in Florida. Florida homeowners pay on average over $6,000 for insurance, the highest in the country, indeed more than 3 times the national average, which is $1,700.00.

Florida's average premium has doubled between 2020 and 2023, and the trajectory is that it's going to get worse. This has put a strain on many Florida residents. They install hurricane windows and doors to reduce risk, but premiums continue their upward march. They put off retirement, or skip vacations. For some, such as Deb Wood and her husband, it is simply too much. In Florida, insured losses grew by 206 percent between 2003 and 2018. 2022 saw Florida residents file over 678,000 personal and commercial insurance claims. Over 40 percent were hurricane related.

The National Oceanic and Atmospheric Administration (NOAA) predicts an 85 percent chance of an above normal 2024 hurricane season, with 17 to 25 total named storms, and 4 to 7 major hurricanes. In 2022 and 2023, more than a dozen insurance companies left the Florida residential market, including national insurers like Farmers. Residents fled to Citizens Property Insurance, the state backed insurer of last resort, which ballooned from a 4 percent market share in 2019 to as much as 17 percent last year.

If it has to pay out claims that exceed its reserves, Citizens can levy a surcharge on Florida insurance policyholders across the state. Good luck with that, particularly if the surcharge grows to hundreds or even thousands of dollars. To depopulate its books, Citizens has let private insurers cherry pick out its least risk policies.

Those private insurers may have problems of their own, as we will hear today. This all looks like an insurance market that is swirling the drain. As one of our witnesses put it, and I quote, "unreliable insurance could result in a situation where large climate shocks may cause property damage at the exact time that the property insurer becomes insolvent, increasing household default incentives, and losses given default."

What will the collision of increasingly unreliable insurance and greater mortgage defaults mean? Who will be left holding the bag? The federal budget takes a hit because these insurers and their policies are accepted by Freddie Mac and Fannie Mae, who are either own, or guarantee a large part of our $12 trillion mortgage market.

This all sounds eerily reminiscent of the run-up to the mortgage meltdown of 2008, including a role of potentially captive, or not fully responsible rating agencies. Florida is far from alone. A New York Times investigation found that the insurance industry lost money on homeowner's coverage in 18 states last year, and the states may surprise you. The list includes Illinois, Michigan, Utah, Washington, and Iowa.

Insurers in Iowa lost money each of the last 4 years. This is a signal that hurricanes and earthquakes, once the most prevalent perils, are being rivaled by hail, windstorms, and wildfires. Last year the U.S. experienced 28 separate billion-dollar extreme weather events. Over the past decade 28 states have been hit by such events more than twice in a year—I should say twice or more in a year.

38 states were hit in back to back years, and losses are expected to climb. So too will premiums, that is where insurers are even willing to stay. In one example, the premium on a $250,000 home for a 40-year-old couple with a combined good credit rating and clean claims history, would increase by as much as 63 percent in Louisiana, and 61 percent in Nebraska.

To borrow from the Times article, "the question facing insurance companies around the country, and the homeowners who rely on them is which state might be heading in the same direction as Florida? The answer from our reporting, it could be any of them."

Or as a former State Insurance Commissioner said, "we're marching toward an uninsurable future." This isn't all that complicated. Climate risk makes things uninsurable. No insurance makes things unmortgageable. No mortgages crashes the property markets. Crashed property markets trash the economy. It all begins with climate risk, and a major party pretending that climate risk isn't real, imperils our federal budget and millions of Americans all across the country.

I'll just add in closing that the scale of the exposure that we're talking about today, and the paucity of our response, and the numerosity and severity of the warnings we have heard from responsible people, and the role of underinsurance and potentially unreliable ratings from rating agencies is really ringing a lot of alarm bells with me of what we looked like going into 2008. And with that, I'll turn to my distinguished Ranking Member, Senator Grassley.

OPENING STATEMENT OF SENATOR GRASSLEY [2]

Senator GRASSLEY. Thank you, Mr. Chairman. Welcome to our panel of experts. If the Federal Government is going to remain ready to respond to the natural disasters and national emergencies, we have to have the capability of doing that, and it seems to me that begs to put the nation's fiscal house in order.

Yet, even with interest on our national debt, and that is set to surpass defense spending this year, the majority refuses to write a budget, or work together to curb reckless Washington spending. This week is more of the same, with our 19th hearing on climate change. President Biden and the majority would like us all to ignore our exploding $34 trillion debt.

The majority hopes that we stop discussing how unchecked deficit spending has fueled inflation, hammering hard-working Americans, and I will say shortly, has something to do with driving up

[2] Prepared statement of Senator Grassley appears in the appendix on page 36.

the cost of insurance. Families now face prices that are 20 percent higher than when President Biden took office. 65 percent of Americans report that entrenched inflation has made their financial situation worse off under the Biden administration, and that's not Chuck Grassley, that's according to the Federal Reserve.

Moreover, recent high interest rates have contributed to Americans struggling to pay record high credit. That means their credit card bills or home mortgage. As Federal Reserve Chairman Powell has said, "it's probably time, or past time, to get back to an adult conversation among elected officials about getting the Federal Government back on a sustainable fiscal path."

Absent correcting action, Iowans, and for that matter all Americans, will be faced with even higher interest rates, lower incomes, and elevated inflation, and that will be the situation for years to come. As to the subject of today's hearing. We've seen this show before. The majority continues to crusade against American fossil fuel companies. They want to bully insurers into abandoning their diversified portfolios, so they stop underwriting all fossil fuel projects.

If the majority get their way, Americans can expect to pay much more to put gas in their cars, and to heat their homes. Now, I've done battle with big oil in the past, particularly when it comes to their opposition to bio fuels, and I support reasoned oversight over insurance companies. But oversight isn't the same thing as advocacy that seeks to punish those that hold different views from one's own.

As Justice Sotomayor wrote in last week's unanimous National Rifle Association of America (NRA) versus Vullo decision, "government officials cannot attempt to coerce private parties in order to punish or suppress views that the government disfavors." Insurance premiums are far too high across the board, and may increase after the recent storms, including those very storms in my state of Iowa.

Climate change isn't the primary driver of insurance rates hikes, and collapse of the insurance industry isn't imminent, although I'll have to say, Iowa had six property and casualty companies pull out of insuring Iowans. Climate change doesn't explain why auto insurance premiums in 2024 have increased by a whopping 20 percent year over year.

It also doesn't account for the consistent failure of liberal cities to fight crime, which has raised insurance risk and even caused insurers to deny coverage. Expensive liberal policies, not climate change, are much to blame for these market dynamics. Insurance companies and reinsurers are scrambling to wrangle inflation, like the rest of us.

Disasters cost more than ever because our goods and services are much more expensive. Moreover, there are more rich people living in areas affected by weather, all the way from Newport down to Miami Beach. It's simply more costly to pay the bill for insurance claims.

What's more, the Federal Reserve can't keep up with the Biden inflation, despite hiking interest rates to a 23 year high. Reinsurance companies are in the business of purchasing risk from insurance company portfolios. It's only rational for them to forego risky investments when the U.S. Treasury pays such a healthy return.

Inflation has become embedded in the economy, and the historic levels of borrowing by the Federal Government are crowding out the private sector. It only makes sense that the majority would rather point the finger at climate change. To do otherwise means that they acknowledge their reckless spending is a major cause of the problem.

So, I welcome all today's witnesses, and I look forward to each of your testimonies, and hope you guide this Committee to focus on our primary responsibility. Thank you.

Chairman WHITEHOUSE. Thanks very much, Senator Grassley. Before I introduce the witnesses, let me just point out that we have a budget agreed to in bicameral and bipartisan fashion. And with respect to reducing fiscal risk, I've been pursuing that on four routes. One is derisking the budget, which is important because a third of our national debt came from shocks, economic shocks, that we could have predicted that were not part of regular and ordinary budgeting.

Second, raising revenues, particularly on the corporate sector, whose contribution to our government revenues has declined dramatically across recent decades. And of course, high end people, including billionaires who literally pay zero in income tax.

Third is to reduce healthcare spending. It's a major component of our spending, and with system reforms that the Ranking Member and I have discussed, a number of bipartisan bills that we're working on, I think we can make real progress there.

And the last, and probably the least, is to review appropriated spending. That is not the highest value, or the most significant, important focus I think, in terms of getting to a balanced budget, but it is a small part of the overall equation.

Senator GRASSLEY. Could I respond to that before you introduce our witnesses?

Chairman WHITEHOUSE. Of course.

Senator GRASSLEY. Yeah. We don't have a budget resolution for 2025. What we do have is called a deemer, and it's no substitute for a real Congressional Budget Resolution that can be debated and amended on the floor by all 100 Senators. A deemer has none of the basic contents of a congressional budget required under Section 301 of the Budget Act.

And while a budget resolution can offer a serious financial plan for the Federal Government, deemers based on baseline estimates are simply placeholders until we finish a real budget. Last year's debt limit deal explicitly said that a deemer does not prevent Congress from doing a real budget resolution for 2025. Thank you very much.

Chairman WHITEHOUSE. That is true, and it remains the case that we have a budget that was agreed to in bicameral and bipartisan fashion. The first witness is Rade Musulin. Rade is an actuary with 45 years of experience in insurance, specializing in property, pricing, natural perils, reinsurance, agriculture, catastrophe risk modeling, public policy development and climate risk. Specifically, he spent many years working in Florida, including as Chair of the Florida Hurricane Catastrophe Fund Advisory Council during the time in which Citizens Property Insurance Corporation was established.

Our second witness is Dr. Ishita Sen. Dr. Sen is an Assistant Professor at Harvard Business School. Her recent research examines the pricing of property insurance, and the interactions between insurance and mortgage markets. This includes the role that institutions and the regulatory landscape play, and the broader consequences for real estate markets, climate adaptation and our overall financial stability.

Our third witness is Deb Wood. Ms. Wood and her husband, Dan McGrath are both retired Floridians. They moved to South Florida in 1979, and lived in Broward County, which includes Fort Lauderdale, for 43 years until skyrocketing insurance premiums became too much. They now reside in Tallahassee, Florida.

I will now turn to my Ranking Member, Senator Grassley, to introduce the Republican witnesses.

Senator GRASSLEY. Thank you for the privilege of introducing my invitees to this Committee. Dr. E.J. Antoni is a Research Fellow at the Heritage Foundation, Grover M. Hermann Center for Federal Budget. His research focuses on fiscal and monetary policy, and he previously was an economist at the Texas Public Policy Foundation. Antoni earned his master's degree and doctorate's degree in economics from Northern Illinois University.

Commissioner Glen Mulready has served as Oklahoma's 13th Insurance Commissioner, and was first elected to this position in 2019. Commissioner Mulready started his insurance career as a broker in 1984, and also served in the Oklahoma State House of Representatives.

He supports efforts to continue to apply best practices, modernizing the Oklahoma Insurance Department, and embracing new technology to serve the people of Oklahoma. Welcome to both of you.

Chairman WHITEHOUSE. With that, Mr. Musulin, you have 5 minutes, and your entire written testimony, which was very helpful, and I appreciate, will be made a part of the record of the proceedings. Please proceed with your oral statement.

STATEMENT OF RADE MUSULIN, PRINCIPAL, FINITY CONSULTING [3]

Mr. MUSULIN. Chairman Whitehouse, Ranking Member Grassley, and distinguished members of the Committee, thank you for the opportunity to appear before you today. My name is Rade Musulin. I'm an actuary who has extensive experience in natural hazard risks, and funding arrangements for the damage and loss they cause.

I worked with many public sector entities on policy responses to the challenges of affordability, availability of insurance, and community resilience. This work included participating in Florida's response to Hurricane Andrew, which included the creation of the Florida Hurricane Catastrophe Fund, and Citizens Property Insurance Corporation.

[3] Prepared statement of Mr. Musulin appears in the appendix on page 39.

The catastrophe (CAT) Fund and Citizens can access different forms of funding than traditional insurance companies. Instead of holding sufficient capital or reinsurance before an event to cover the cost of potential losses, both entities use public sources of capital to reduce upfront costs by partially funding losses post event through bonding and assessments.

All property casualty insurance policyholders, whether in Citizens or not, are subject to its assessments, while the CAT Fund could also assess almost all policies, including automobile. This approach exposes Floridians to debt and repayment if large losses occur, and it subsidizes high risk policies from the entire population. These pools, others like them in other states, and the National Flood Insurance Program (NFIP) have contributed to rapid development in high risk areas, driving higher costs in the long run.

In Florida, national insurers have reduced their exposure. As a significant proportion of the insurance market has moved to Citizens, or smaller insurers with limited capital that are heavily dependent on external reinsurance. Now, to date, Florida's system has been successful in meeting its claims and obligations, while improvements in building codes have reduced loss exposure.

However, for a variety of reasons, including exposure to hurricanes, claims cost inflation, and litigation, Florida's insurance premiums are the highest in the nation, causing significant affordability stress for consumers. According to market research from Bank Rate, the average premium for a $300,000 home in Florida is 3 times the national average, with some areas 5 times the national average.

A major hurricane hitting a densely populated area like Miami could trigger large and long-lasting post assessments, or even exceed the system's funding capacity. Continued rapid exposure growth and more extreme hurricane losses amplified by climate change will cause increasing stress on the nation's insurance system, which can be felt through solvency issues, non-renewals, growth of government pools, and affordability pressure.

Evidence of increasing risk abounds, including Hurricane Otis in 2023, which rapidly intensified from a tropical storm to a CAT 5 hurricane, and devastated Acapulco in Mexico. Last summer water temperatures off Florida exceeded 100 degrees Fahrenheit. Last week, as was alluded to earlier, NOAA forecasted an extremely active hurricane season for '24.

We've seen losses in the Mid-Atlantic from Sandy, record flooding from Harvey, and extreme devastation from Maria, among others. In coming decades, we must prepare for the possibility of more extensive—more extreme hurricanes, and coastal flooding from Texas to New England.

Florida's experience is a warning of what we may see in the future in other states. Despite its innovative and extensive efforts to address its hurricane problem, premiums are high, consumers may face large assessments, and many are dependent on Citizens and smaller insurers.

Most current building codes and land use policies in the country do not reflect potential future risk. Even if we undertook rapid action to address this, existing exposure and likely development will leave us vulnerable to large losses for decades to come, which may trigger more widespread availability and affordability issues, or even calls for federal assistance.

The combination of demographics, development, and disasters pose a significant risk to our financial system, and climate change increases that risk. Addressing this will be a long-term effort which involves very difficult public policy choices, thank you.

Chairman WHITEHOUSE. Thanks very much. Dr. Sen, please proceed with your testimony.

STATEMENT OF DR. ISHITA SEN, ASSISTANT PROFESSOR OF FINANCE, HARVARD BUSINESS SCHOOL [4]

Dr. SEN. Good morning Senators. I am Ishita Sen, Assistant Professor at Harvard Business School, and my research studies insurance markets. In recent work with coauthors at Columbia University and the Federal Reserve Board, I examine how climate risk creates fiscal and potentially financial instability because of miscalibrated insurance screening standards, and the repercussions for mortgage markets.

Insurance is critical to the housing market. Property insurers help households rebuild after disasters. By preserving collateral values and reducing the likelihood that a borrower defaults insurance directly reduces risks for mortgage lenders and the Government Sponsored Enterprises (GSEs), Fannie Mae and Freddie Mac.

Mortgage lenders, therefore, require property insurance, and the GSEs only purchase mortgages backed by insurers who meet the minimum financial strength ratings, which measure insurer solvency, and the ability to pay claims. The GSEs accept three main rating agencies: AM Best, S&P, and more recently Demotech. And to provide an example, Fannie Mae requires insurers to have at least a B+ rating from AM Best, or at least an A rating from Demotech, to accept a mortgage. Now, despite having this policy in place, we find a dramatic rise in mortgages backed by fragile insurers, and show that the GSEs, and therefore the taxpayers, ultimately shoulder a large part of the financial burden. Our research focuses on Florida because of the availability of granular insurance market data, and we show that traditional insurers are exiting, and the gap is rapidly being filled by insurers rated by Demotech, which has about a 60 percent market share in Florida today.

These insurers are low-quality across a range of different financial and operational metrics, and are at a very high risk of becoming insolvent. But despite their risk, these insurers secure high enough ratings to meet the minimum rating requirement set by the GSEs.

Our analysis shows that many actually would not be eligible under the methodologies of other rating agencies, implying that in many cases these ratings are inflated, and that the GSEs' insurer requirements are miscalibrated.

We next look at how fragile insurers create mortgage market risks. In the aftermath of Hurricane Irma, homeowners with a policy from one of the insolvent Demotech insurers were significantly

[4] Prepared statement of Dr. Sen appears in the appendix on page 56.

more likely to default on their mortgage relative to similar borrowers with policies from stable insurers.

This is because insurers that are in financial trouble typically are slower to pay claims, or may not pay the full amount. But this implies severe economic hardships for many, many Floridians, despite having expensive insurance coverage in place. However, the pain doesn't stop there. The financial cost of fragile insurers go well beyond the borders of Florida because lenders often sell mortgages, for example to the GSEs, and therefore the risks created by fragile insurers spread from one state to the rest of the financial system through the actions of lenders and rating agencies.

In fact, we show two reasons why the GSEs bear a large share of insurance fragility risk. First, lenders strategically secularize mortgages, offloading loans backed by Demotech insurers to the GSEs in order to limit their counterparty risk exposures.

And second, that lenders do not consider insurer risk during mortgage origination for loans that they can sell to the GSEs, even though they do so for loans that they end up retaining, indicating lax insurer screening standards for loans that can be offloaded to the GSEs.

Before I end I want to leave you with two numbers. Over 90 percent, that's our estimate of Demotech's market share among loans that are sold to the GSEs. And 25 times more, that's Demotech's insolvency rate, relative to AM Best, among the GSE eligible insurers.

Projections suggest risks will continue to grow with climate change and with more building in risky areas—that is unless action is taken to correct incentives and strengthen insurance markets, which includes properly accounting for insured solvency risks and climate risks. A necessary starting point for all of this is access to granular insurance underwriting data. I urge regulators to collect these data in a comprehensive way, and make it widely available for research. I really appreciate this opportunity, Senators, and your timely efforts on this issue. Thank you.

Chairman WHITEHOUSE. Thank you very much. I now have the pleasure of welcoming Ms. Deborah Wood, who can bring some lived experience to the expert testimony that we have heard. Please proceed, Ms. Wood.

STATEMENT OF DEBORAH WOOD, FLORIDA RESIDENT [5]

Ms. WOOD. Good morning, and thank you for inviting me. My name is Deborah Wood. My husband, Dan McGrath and I, moved from New Jersey to South Florida in 1979. We lived in Broward County for 43 years until we sold our home in January 2023, in part because our home insurance was becoming unaffordable.

My husband and I are retired. He was a public school teacher of special needs children, and I was a journalist. Dan and I raised our two daughters in Florida, and all four of us have earned degrees from Florida public universities.

In 1994, we moved to the City of Plantation, about 10 miles inland from the east coast. Home insurance rates were reasonable in

[5] Prepared statement of Ms. Wood appears in the appendix on page 70.

those early years, and when we had to replace our roof in 2008 after a storm, the claims process was very smooth.

Our policy renewed each October with manageable rate increases. That changed in recent years. In 2017, we paid $3,700 per year for insurance, and in subsequent years the rates increased significantly, so that our proposed renewal for 2023 was more than $8,000. Our problems with insurance began in 2017.

Sometime before my husband and I left on a trip, a man showed up unannounced, saying he was from my insurance company and wanted to take a look at the property. As he had no identification, I declined him access. I left the company a voicemail, and forgot about it until a few weeks later when I received a notice that our policy would not be renewed because I had refused an inspection.

I contacted them immediately, said there was a misunderstanding, and asked them to send another inspector. They did. I didn't hear anything more, and naively thought we no longer had a problem. I was wrong. In early September my husband and I were at the Grand Canyon National Park, where we caught the news of Hurricane Irma's pending assault on Florida.

I knew we would be covered for the storm, but I wanted reassurance that my policy was on track to be renewed in October, so I called the company. I will never forget that phone conversation. I was told that we still would not be renewed, but now the reason was because my roof had failed inspection. I asked why did you not tell me this, and the answer was because we don't have to.

I asked for the roofing report, and was told no. That was the property of the insurance company. So, this company that I had done business with for at least 20 years, was not only dropping us, but was allowing us to ride out a potentially catastrophic storm with what they had determined was a defective roof without even warning us.

Fortunately, we only incurred minor damage from Irma, but we had to scramble to find a new company in a matter of weeks in a state that had sustained major damage. Our roof passed the new company's inspection with no problems, even after Irma, but unfortunately, their rates were higher, and kept increasing, even as we had no new claims, reduced our coverage, replaced our windows and doors with hurricane proof glass, at a cost to us at about $40,000.

My husband I never intended to move. We loved our community, our neighbors, and our friends. Our home in South Florida was the regular gathering place for extended family. We truly enjoyed hosting visitors.

But in 2022, we began discussions as to whether South Florida was still the best place for us. There were family concerns, the weather events were becoming more and more frequent, and maintaining our home was becoming expensive.

The insurance quote for 2023 gave us the push to put the house on the market. We intended to buy another home in Tallahassee, Florida, near our daughter and son-in-law. We put our belongings in storage, moved in with them, and looked for a new home. Flash forward to 2024. We have reluctantly made the decision that we will not be buying a home in Florida.

We've learned there's no escaping the insurance problems, and weather disasters are becoming more and more prevalent, even in previously safe areas, like Tallahassee. We haven't decided what our next step will be, but at this stage of our lives, we are not willing to risk our financial well-being by buying a home that one day may be uninsurable, or craters in a value in a housing market fueled by the homeowners insurance crisis.

Chairman WHITEHOUSE. Thanks very much. Our next witness may proceed.

STATEMENT OF THE HONORABLE GLEN MULREADY, INSURANCE COMMISSIONER, STATE OF OKLAHOMA [6]

Commissioner MULREADY. Chairman Whitehouse, Ranking Member Grassley, members of the Committee. Thank you for the opportunity to address you today on a topic that's becoming increasingly important to homeowners across the nation, increasing homeowners insurance premiums.

As natural disasters continue to rise, understanding the dynamics of insurance pricing is crucial for both homeowners and policymakers. Homeowners insurance is a fundamental safeguard for what is for many Americans, their single largest asset. This important coverage protects against financial loss due to damage or destruction of a home and its contents.

However, recent years have seen a notable increase in insurance premiums. One significant driver of this rise is convective storms and other severe weather events. Convective storms, which include phenomenon like thunderstorms, tornadoes, and hail, have caused substantial damage in various regions.

The cost to repair homes or replace belongings after such events has skyrocketed, leaving insurance companies to adjust their premiums to cover that increased risk. Beyond convective storms, we've witnessed hurricanes, wildfires and flooding. These events have not only caused damage, but have also increased the long-term risk profile of many areas.

Insurance companies are tasked with managing that risk, and have responded by raising premiums to ensure they can cover those potential claims. Another major factor influencing homeowners insurance premiums is inflation. Inflation affects the cost of building materials, labor and other expenses related to home repair and reconstruction.

As the cost of living increases, so does the cost of claims for insurers. When the price of lumber, steel, and other essential materials goes up, the expense of repairing or rebuilding homes also rises. Insurance companies must reflect these higher costs in their premiums to maintain financial stability, and ensure they can meet those contractual obligations to policyholders.

So, what can homeowners do to mitigate these rising costs? One of the most effective strategies is proactive mitigation. Homeowners can invest in measures that reduce the risk of damage from severe weather events. For instance, installing storm shutters, reinforcing roofs, using "hail resistant shingles," and using fire resistant materials can make a home much more resilient.

[6] Prepared statement of Hon. Mulready appears in the appendix on page 72.

Additionally, maintaining proper drainage systems, and removing potential fire hazards from around the property can help. Insurance companies often provide discounts for homes that incorporate these protective measures, making them a worthwhile investment for homeowners.

I believe the most essential aspect of managing insurance premiums is fostering a robust, competitive free market. Competition among insurance companies encourages innovation and efficiency, leading to better pricing and services for consumers. When insurers can properly underwrite and price for risk, they create a more balanced and fair market. This involves using advanced data analytics, modeling techniques to accurately assess the risk levels of different properties.

By doing so, insurance companies can offer premiums that reflect the true risk of avoiding excessive charges for low risk homeowners, and ensuring high risk properties are adequately covered. Regulation also plays a crucial role in maintaining a healthy insurance market.

Policyholders must strike a balance between consumer protection, and allowing insurers the freedom and flexibility to adjust their pricing based on the risk. Overly stringent regulations can stifle competition, and lead to market exits, reducing choices for consumers.

We've seen this play out most recently in another state, where there were artificial caps put in place on premium increases. That worked well for consumers in the short-term, but then one by one, all of the major insurers began announcing they would cease to write any new homeowners insurance in that state. These are all private companies, and if there's not the freedom and flexibility to price their products properly, they may have to take drastic steps, as we've seen.

Conversely, a well-regulated market encourages transparency and fairness, ensuring that homeowners have access to the most affordable and adequate coverage options. In conclusion, the rise in homeowners insurance premiums is driven by severe weather events and the impact of inflation. However, homeowners are not powerless in the face of these challenges.

By investing in mitigation measures, and supporting a competitive insurance market, they can manage costs, and ensure their homes are protected. Collaboration between homeowners, insurers, and policymakers is essential to create a sustainable and a resilient insurance landscape.

Thank you for your attention. I look forward to any questions you might have.

Chairman WHITEHOUSE. Thank you very much, sir. I appreciate you being here. Dr. Antoni.

STATEMENT OF DR. EJ ANTONI, RESEARCH FELLOW, HERITAGE FOUNDATION'S GROVER HERMANN CENTER FOR THE FEDERAL BUDGET [7]

Mr. ANTONI. Chairman Whitehouse, Ranking Member Grassley, members of the Committee, thank you for the invitation to discuss

[7] Prepared statement of Mr. Antoni appears in the appendix on page 75.

with you today the current state of the insurance and reinsurance markets, and especially how they have been impacted by inflation and climate change.

I am a Public Finance Economist and the Richard F. Aster Fellow at the Heritage Foundation, where I research fiscal and monetary policy with a particular focus on the Federal Reserve. I am also a senior fellow at the Committee to Unleash Prosperity.

Since January 2021, prices have risen a cumulative 19.3 percent on average in the American economy. Construction prices for single family homes have risen much faster, up 30.5 percent during the same time. This has been a direct result of public policy choices made here in Washington, D.C., and those choices have imposed significant costs on the insurance industry.

Unprecedentedly large federal deficits over the last four years financed by the Federal Reserve's purchase of Treasury securities, increased the money supply by trillions of dollars, much faster than the increase in the real economy. Roughly, one-third of all dollars in existence were created in just a few years. That transferred wealth from the people to the government, and devalued the dollar at rates not seen in four decades.

Consequently, it now takes more dollars to purchase the same products and services. This has increased repair and replacement costs throughout the economy, which has directly contributed to higher insurance premiums and losses for insurers, and reinsurers alike.

Actuarial tables used in underwriting to estimate risk and future losses, as well as calculate premiums, rely heavily on those input costs. When prices increase radically, precisely as has happened over the last several years, old actuarial tables are of significantly less use when pricing premiums because they will grossly understate the future cost to the insurer.

The sharp increase in total claim costs since 2019 has resulted in billions of dollars of losses for both insurers and reinsurers, prompting large premium increases to stop those losses. This has put significant financial stress on consumers, who are already struggling with a cost of living crisis, and are now faced with much higher insurance premiums, especially for homeowners insurance.

Other factors, mostly stemming from public policy failures have contributed to today's insurance premiums as well. The widespread rioting caused by groups like Black Lives Matter (BLM) and Antifa in 2020 caused $100 billion in damages, a massive financial loss for the insurance industry. Likewise, general lawlessness in American cities over the last several years, and the refusal of government authorities to protect private property, has resulted in more damages, more claims, and ultimately higher premiums.

Over regulation has also put upward pressure on premiums by increasing repair and replacement costs, a fact which is frequently omitted from the cost benefit analysis conducted when such regulations are proposed.

Lastly, while some assert that climate change has been a significant contributor to higher premiums and general stress in the insurance industry, there is no empirical evidence to support this claim. In fact, the evidence indicates it is not true. For example, hurricanes are not becoming significantly more numerous, nor more powerful, but we are building more homes in their path, and we are building more expensive homes there too.

The increase in claims related to weather events has undoubtedly increased, but it is not due to the climate changing. This is why the insurance and reinsurance markets do not rely heavily on climate modeling when pricing premiums. Furthermore, climate models are inherently subjective, not merely in how the models are constructed, but also by way of the inputs that the modeler uses.

In other words, because insufficient data exists to create a predicted model, a human being must make wide ranging assumptions, and add those to the model in place of real world data. Thus, those models have no predictive value for insurers. If government broadly, and this Committee specifically, seek to relieve stress to the insurance industry, and lower costs to consumers, your focus should be on reducing the government spending that created the inflation, which was responsible for most of the increase in insurance premiums over the last several years.

Passing a budget, ideally a balanced one, would be a good place to start. Thank you kindly for your time, and I look forward to your questions.

Chairman WHITEHOUSE. Thank you. Mr. Musulin, your testimony is that a major hurricane hitting a densely populated area like Miami could trigger large, and long-lasting post event assessments, or even exceed the system's funding capacity. What does exceeding the system's funding capacity look like? Your microphone please.

Mr. MUSULIN. Well,—it's on, sir. Sorry. According to public statements, you know, the system concurrently cover events like in Citizens up to their modeled 100 year event. But also note that the ability of like Citizens to pay claims depends on the ability of the CAT Fund to pay its reinsurance obligations.

There are certainly storm scenarios such as a repeat of the 1926 great Miami hurricane, which have been estimated to cost well over $125 billion to the market, and there is a point at which an event becomes large enough to exhaust Florida's entity's ability to issue bonds and form assessments.

Chairman WHITEHOUSE. And then what happens?

Mr. MUSULIN. Well, and then Florida will face some very difficult choices, which could include raising assessment caps, or finding some other source of funding, or taking other actions to try to——

Chairman WHITEHOUSE. You kind of step into the unknown at that point, right?

Mr. MUSULIN. Yes, sir. I will note that that's an extreme event.

Chairman WHITEHOUSE. Yeah.

Mr. MUSULIN. But it is something that has happened in the past.

Chairman WHITEHOUSE. You say that this combination of demographics, development and disasters, poses a significant risk to our financial system. What do you mean by risk to our financial system?

Mr. MUSULIN. Well, Senator, if you look at the combination, as has been pointed out, of high growth and, you know, wealth accumulation in coastal areas, and you look at just what we've observed in the climate, much less what's predicted in the future, there is significant exposure along the coastline from Maine to Texas.

In fact, my family is from New Jersey, and there is enormous development on the coast of New Jersey, and if we start to get major hurricanes coming through those areas, the building codes are probably not up to the same standards they are in Florida, and we could be seeing some significant losses, as I believe was pointed out in the recent——

Chairman WHITEHOUSE. And how does that create risk to the financial system?

Mr. MUSULIN. Well, because it's sort of a set of dominos. You start with potential claims, issues with the insurers, you know, being stressed and not ability to pay claims. You have post event rate increases, as we've seen in Florida. You could have situations where people cannot secure insurance because they cannot afford it, then that affects their mortgage security and so on and so forth.

So, there are a number of ways that this could affect the financial system, sir.

Chairman WHITEHOUSE. Cascading beyond the immediate insureds and becoming a national problem?

Mr. MUSULIN. Well, I would just note, Senator, that in Florida the real problem started years after we got past Andrew, you know. We got past the claims in Andrew, and then the big problems occurred later when we tried to renew the policies.

Chairman WHITEHOUSE. Do you have your testimony in front of you?

Mr. MUSULIN. Yes, sir.

Chairman WHITEHOUSE. Could you turn to page 9 where you have a graph?

Mr. MUSULIN. Okay. Just a second please. I may need my glasses for this, excuse me. Age related issue. Yes, sir.

Chairman WHITEHOUSE. On page 9, you have a graph of the Florida Hurricane Catastrophe Fund, and there's a bottom line that says, "total liquidity resources," below potential obligations, and then there's a number. Could you explain that line?

Mr. MUSULIN. Yes. Well, basically that represents the amount of debt, which in this case $7 billion that they would have to issue in order to meet their claim obligations, because that is not money that they have on hand from their fund balances, pre-event bonding, et cetera.

Chairman WHITEHOUSE. Thank you. Ms. Sen, your testimony basically describes the Florida risk being transferred to the Federal Government through Demotech Insurance that taxpayers bear large unpriced exposure to climate risk through insurance market fragility, and the fragile insurance with inflated ratings now dominate the insurance markets in Florida. Is that correct?

Dr. SEN. That's right.

Chairman WHITEHOUSE. And you see in this, and I'm quoting you here, "parallels in the 2008 financial crisis." What parallels do you see?

Dr. SEN. So, just like what happened during the financial crisis. There were rating agencies that gave out high ratings to pools of mortgages backed by sub-prime loans. Here we have a situation where rating agencies like Demotech are giving out inflated ratings to insurance companies. The end result is that it's just too much risk, and too many risky mortgages being originated, in this case backed by really low quality insurance, that are then entering the financial system.

And the consequences of that have to be borne of course by the homeowners, but also the mortgage owners, GSEs, the lenders, and ultimately the federal and state government.

Chairman WHITEHOUSE. You say, this will be my last question. The fragility of property insurers is an important channel through which climate risk might threatened the stability of mortgage markets, and possibly the financial system. What do you mean when you refer to a risk to the financial system?

Dr. SEN. Well, as I was explaining, the GSEs, if there are large losses in the GSE space, then those losses have to be paid by somebody, so the taxpayers. That's one channel through which you've got risk to the financial system. And the GSEs serve as a backstop in the mortgage market. They may not have the ability or the capacity to do so in such a scenario which affects mortgage-backed security prices, which are held by all sorts of financial institutions, so that's affecting all of these institutions.

On the other hand, if you've got a bunch of insurers failing, another channel is these insurers are one of the largest investors in many asset classes like corporate bonds, equities and so on, and they may have to dump these securities at inopportune times, and that affects the prices of these securities as well.

Chairman WHITEHOUSE. Senator Grassley?

Senator GRASSLEY. Thank you, Mr. Chairman. Dr. Antoni, is there any evidence to support the notion that climate change is the greatest threat to the insurance market?

Mr. ANTONI. No, Senator, there is not. And part of that has to do again with the fact that when we look at the models that are used to predict climate change, we simply don't have enough empirical data, with which we can input into those models, and so as a result of that we have to have human assumptions on what we think is going to happen, based essentially on a guess.

And as a result of that, these models really are not of any predictive value, and that's why these models for the last 50 years have been predicting catastrophic outcomes, none of which have come true.

Senator GRASSLEY. Okay. And also to you Dr. Antoni. How has the Biden administration's economic leadership failed to help our economy, and what can this Committee do to get our economy back on track?

Mr. ANTONI. Senator, I would say the biggest failure in terms of the Biden administration on economic policy has been constantly pushing for more and more spending, which this government and the American people simply cannot afford. And as a result of that we have today's not only inflation problem, but today's cost of living crisis as well.

And the increase in insurance premiums is part of that. In terms of what this Committee and the Congress, more broadly, can do they need to be, in my opinion, sending the White House balanced budgets regardless of how large a budget the White House is asking for.

Senator GRASSLEY. And Commissioner Mulready, you heard me say that we had six property and casual companies pull out of

Iowa, so from your experience what can states do to increase market competition and best serve policyholders?

Commissioner MULREADY. Thank you, Mr. Ranking Member. And if I can, I'd like to address something before that just quickly, this focus on the rating agencies. I would agree with that if that was sort of the be all end all, but the State Insurance Commissioners in each 50 states is tasked with the financial solvency of the insurance companies.

We do not depend on rating agencies for that. We are doing financial exams on them. We are doing financial analysis every quarter on each one of them, so I would agree if that was the sort of be all, end all, forgive that phrase, but it's not at all. And we don't depend very much at all on those rating agencies from our standpoint.

Okay. And that said to your question what can we do? In my comments I mentioned I think the most important factor is having a robust competitive free market. The state of Oklahoma, we have over 100 companies licensed to write homeowners insurance in our state. We had one company leave. You mentioned, I think, that you had a handful. We had one who exited nine different states because it was a very, very small piece of their business.

But I think having a business friendly environment, and allowing folks to come in and offer their products, and offer consumers choices is the most, best thing that you can do. I think secondly, I can't focus enough on mitigation and resilience. The state of Oklahoma just passed two weeks ago the Governor signed a bill that we pushed through to Strengthen Oklahoma Homes Act.

The Governor signed that in place. It will allow us to issue grants to Oklahomans as they're replacing their roofs, or they want to replace their roofs, you know, to upgrade to more resilient shingles, fasteners, wind proofing, that sort of thing. So, homes in Oklahoma can withstand, you know, up to 130 mile an hour winds, so there is mitigation.

There are things that can be done, I think that as policymakers, and as a former policymaker, the things we can do is help incentivize that. I know that the Senate has before them, I think it's Senate Bill 1953, pretty easy thing. Should be a no brainer to the Tax Parody Act for Disaster Mitigation, that will just allow state based programs, like ours, that other states are doing.

Kentucky passed that this legislative session as well. It will address the tax issue for those folks that receive those grants.

Senator GRASSLEY. Commissioner, this is my last question. How have you worked with both political parties to reduce costs, remove red tape, and create a stronger economic environment for Oklahomans?

Commissioner MULREADY. Well, I blew with a lot of that in that last answer. I would just respond with that, that we have worked with that piece of legislation that passed. I will tell you that the National Council of Insurance Legislatures, NCOIL, if you didn't know there's an association of state legislatures who focus on insurance issues.

The Chairman of that property county committee is a democrat from Oklahoma, who has pushed through, is leading the way to make that a model act across the country, and so there's a bipartisan effort there. I'll just tell you that when I was in the House, I worked on a substantial number of issues with the Senate Minority leader, who was a democrat attorney from Harvard, actually, and we did a lot of good work on the insurance side of things.

Insurance isn't a partisan issue. Mitigation and resilience is not a partisan issue.

Senator GRASSLEY. For the majority I'm done.

STATEMENT OF SENATOR KAINE

Senator KAINE [presiding]. Thank you, Ranking Member Grassley. I'm going to take over the helm, but unless my head swells too big, I'm not going to take the Chairman's seat. I'm going to do it from here, and I'm up next. Ms. Wood, I wanted to dig into your question. I really appreciate you being here and sharing your story.

And tell me a little bit more. You thought moving to Tallahassee, farther away from the coast, where maybe the weather emergencies were less extreme, you thought that would be the solution, and yet why was that not the solution. You had a bad experience with this insurer that was going to cut you off without even telling you, and not even sharing the information about your roof.

You did find another insurer, but were there not companies in the Tallahassee area when you talked to them that, you know, would offer affordable homeowners insurance, and is that part of the reason why you decided not to buy another home in Florida?

Ms. WOOD. Thank you. When we knew that South Florida was kind of the epicenter of the weather disasters, the insurance problem, and we thought Tallahassee would be safer. Our daughter lives there. And we started looking for homes, and we started talking to people about their insurance problems, and they were basically repeating the same things that were happening down south at a lower level.

And we just a few weeks ago in Tallahassee had a freak thunderstorm come through, knock out the power to 70—80,000 people for several days. And it wasn't a hurricane. It was a storm, a rainstorm. And then I started talking to people. How are you doing? What do you see here? And they all say they are seeing increased weather events where they live, where they didn't have that before.

Senator KAINE. One of the things about your testimony that's important is, you know, I'm a senior citizen now. You are too, you and your husband, you describe the ability of seniors to just kind of tolerate an unknown upside increase in a big cost item like insurance is pretty darn limited.

And so, when you were worried about the unpredictability of upside, that hit seniors particularly hard. Dr. Sen, I have a question for you. When we talk about the impact of insurance on housing, we're often thinking about homeowners, but there's a significant impact to multifamily properties as well.

I reached out to the Virginia Housing Agency, which is our housing financing agency that largely supports low and moderate income rental properties, and I asked about what they're seeing on projects that their agency finances across the 119 local jurisdictions on which they have sufficient data, 105 are averaging at least double-digit annual increases between '21 and '23, and 9 averaged triple digit increases, including 2 in the Hampton Roads area near the Atlantic Ocean, Virginia Beach, and Chesapeake. If you're a nonprofit developer, public housing agencies serving low and moderate income families, and it's an important thing, these increases are really tough on the developer, and then they get passed on to a tenant, unlimited means.

Are the same dynamics in play when we talk about multifamily insurance markets as in single family?

Dr. SEN. Yeah. So, in Florida, a similar set of insurers are sort of in both markets. And so I would expect similar dynamics play out. However, unfortunately we haven't been able to explore this in as much depth, in part because the data on multifamily insurance is not granular enough for us to look at it in any sort of systematic way.

And that's why collecting these data, the Federal Insurance Office (FIO), National Association of Insurance Commissioners (NAIC) data call needs to focus across all segments of insurance and collect these data in a systematic way so that we can look at them because these issues are so much worse for people with a low income, in the low income segment. Their premiums are the highest, and they've also sort of grown the most in the past few years. I would also—sorry.

Senator KAINE. Please.

Dr. SEN. If I could also respond to Mr. Mulready on the point about regulators sort of looking at and reshaping agencies is not something that we need to look at. I would just point out that in Florida if you look at the number of exams of the Demotech rated insurers that by the way have a 20 percent insolvency rate relative to zero percent for traditional insurers, they get examined at the same rate as the traditional insurers like Farmers and All State get examined, which is not something that you would expect.

If you're at more risk, you would expect regulators to come look at them, much, much more frequently. And they're just based on capital requirements that we have got that were designed in the 1980s. They are just not sensitive enough to new risks like wildfire and hurricanes and so on, and also not as well designed for under-diversified insurance companies because if so, all of these insurers were meeting the risk-based capital requirements.

However, at the same time they are going insolvent at the rate of 20 percent, so those two things sort of don't really go hand in hand.

Senator KAINE. Thank you. Senator Johnson.

STATEMENT OF SENATOR JOHNSON

Senator JOHNSON. Thank you, Mr. Part-time Chair, but now we got the real guy back. So, first of all I mean I think the premise of this hearing is just completely off. And I think the chart that the Chairman talked to you about, Mr. Musulin is indicative of that. So, the Florida Hurricane Catastrophic Fund, or Catastrophe Fund has a shortfall for a year about $7 billion, right?

Mr. MUSULIN. Yes, sir.

Senator JOHNSON. So, we've had testimony before this Committee that we've already spent $5 to $6 trillion, that's $5,000 to $6,000 billion, trying to mitigate climate change, and we haven't made a dent in it.

Their estimates are it's going to cost tens of trillions of dollars every year to reach net zero, so again, this is not the solution for a real problem, which is the broken insurance market. I have enough Wisconsin residents living on the Gulf Coast in Florida, you know, after Hurricane Ian we've got some real problems in Florida.

But fixing climate change isn't the solution. So there are other causes, and that's what I really want to focus on too, Dr. Antoni. You talked about inflation. You talked about riots and lawlessness. You talked about high cost of properties being located in these vulnerable areas, and then you know, Mr. or Commissioner Mulready talked about the harmful regulations, you know, price caps.

So, can you off the top of your head, nobody has calculated this, but if you can give me some sense of what percentage of the total problem is each one of those elements? I mean how much of—let's say it's $100 billion worth of a problem here. How much of that is due to inflation? How much to the lawlessness, the riots? How much to the high cost of properties?

And then how much has been just from market distortions of pricing caps and that type of thing?

Mr. ANTONI. Senator, it's a very good question. The only caveat I want to say in answering this is that much of the regulatory costs actually get rolled into what we attribute to inflation. The reason for that is because typically, these regulatory costs because it's something being done by government mandate those are essentially assumed away under a hedonic adjustment.

So, if we can just talk about government action broadly, and include both a failure to respond to criminal activity, and inflation and regulatory costs. That explains 90 percent approximately of the increase that we have seen in insurance premiums over the last several years.

Senator JOHNSON. But I want to zero more—what do you think inflation is in that component? Just during inflation? I mean again, I know it's government action, but that government action. What percent is inflation? Is it half? Is it a quarter?

Mr. ANTONI. Probably about three-quarters, almost three-quarters, Senator.

Senator JOHNSON. Did you confirm that or?

Commissioner MULREADY. I just have a personal and timely example on the impact of inflation. About six months ago we had our roof replaced in Tulsa, Oklahoma. And 18 months prior I had a proposal to have the roof replaced, and that 18 months almost to the day, 18 months, same roofer, same roof, same materials, that cost had increased exactly 30 percent, from $20,000 to $26,000 for a roof that was strictly impact on material and labor.

Senator JOHNSON. Okay. So that's overall, Florida is just a different animal here, right? I mean Florida's insurance market is completely screwed up because of hurricanes, because of probably regulation and that type of thing. Insurance conception is pretty simple. Yeah, we all pay a little bit in to protect ourselves against a catastrophic loss, and with the marketplace it moves around.

If it's priced properly, it discourages people from putting high cost properties in a very vulnerable area, but it hasn't been priced properly, right? So, I guess I'm kind of wondering for a Wisconsin resident, with a Wisconsin house, how much are our insurance premiums being boosted because of the distortions in the marketplace because of over regulation?

In other words, are we paying the price for all these hurricanes in Florida because the Florida insurance market is just screwed up? You have reinsurance companies that are losing money, and by the way, you did talk about high losses. What is that? I mean how big a loss was this last year? And is that just loss premium versus payments, or did this go into reserves?

Is that the whole part? You get premiums, you set up reserves, you have a loss. Generally, the reserves ought to cover the loss, right? You shouldn't be taking them out of premiums. Premiums ought to just continue to fill up those reserves, Mr. Mulready.

Commissioner MULREADY. Yes. Thank you. And I hate to over simplify it, but sometimes I do when speaking publicly back in my state, and that is that you know it's not rocket science, it's math. It is premiums in, and claims paid out, and then what's the end result? Of course, there's investments and other things in there. They're over simplifying it.

But it is math, and so the insurance companies have the role of determining what that math is going to be. What do those storms look like? I mean in Oklahoma, we get hit—we have a terrible spring. We have had 100 tornadoes this year, but the previous 3 years—the previous 4 years we were substantially below our average. So, you know, we've had a rough year with the two Enhanced Fujita Scale (EF) 2s, and so the companies will absorb that. Our role is to make sure they're financially solvent, they have risk-based capital that we monitor quarterly, and if they're investing in things that they shouldn't be investing in, or we have concerns.

Heck, if a company drops a certain percentage of their surplus, they get a letter from me saying what's your plan? You've dropped a bit here, a little too much in this past year, and so that's where monitor makes sure it can be there to pay their claims. And like I said, we've had one company leave. We've had no property companies exit the market, but you've got to have that freedom, the flexibility to price it properly.

Senator JOHNSON. One quick comment, closing comment is this hearing ought to be called Riskier Business, How Massive Deficit Spending Which Caused Inflation is Challenging the Insurance Markets. Would you kind of agree with that, Mr. Antoni?

Mr. ANTONI. I could not agree more, Senator.

Senator JOHNSON. Thank you.

Chairman WHITEHOUSE. Senator Merkley.

STATEMENT OF SENATOR MERKLEY

Senator MERKLEY. Thank you, Mr. Chair, and thank you all for bringing your expertise to bear. And the conversation is essentially focused on the challenge of flooding, hurricanes, so on and so forth, but let's go west for a moment. Let's go to New Mexico and California and Oregon and Washington, Idaho, Montana, Colorado, where wildfires are the real challenge.

And we have a much longer, hotter, fire season. We have more lightning strikes. As the climate has changed, the result has been much more devastating wildfires. So, we are seeing folks go hmm, our insurance rates are really going up, and or I can't get insurance at all.

I just held a group of town halls, nine town halls in Eastern Oregon, and the town hall for town hall, people came forward to say hey, I came to say I got a problem. My insurance company either has greatly raised the rate, or said they're not insuring anymore. What am I going to do?

Well, so Dr. Sen, has any of your work focused on the challenge of the western insurance markets, and the growing destruction from climate change induced wildfires?

Dr. SEN. Yes. I mean I do look at the homeowners insurance market more broadly as well, not just the Florida experience.

Senator MERKLEY. And so, you're aware of this growing challenge, and here's the rub, which is if your company says it won't insure you, then you have a mortgage. And the mortgage company requires that you have insurance. And if you can't find a private insurer, they will put an insurance policy on your property.

And the mortgage company actually gets a kickback on these arrangements. So, they have an incentive to go to a very high priced policy, and that may be totally unaffordable to any ordinary family. So, if you were at one of my town halls, and a citizen was saying I've got this problem because if I can't find an insurance company I'm going to lose my house because I won't meet the terms of the mortgage. What would be the right policy response to that challenge?

Dr. SEN. Right. What you're describing is something that we obviously are already seeing, homeowners get forced based insurance, they have to go to insurers of last resort. And in all these situations they have—they're basically paying a lot of money for the coverage that they're getting.

Ultimately what the solution is, is something that is obviously the main question that we are here to answer, but I would say that it is extremely hard to really figure out what the solution is in part because we are not in a position right now to even answer some basic facts about how big the problem is. What exactly the numbers look like.

For instance, we do not know basic facts about how much coverage people have in different places. How much they're paying. It would be nice if we did know. And you don't know that it's at a granular enough level because the data does not exist. And the first steps towards designing any policy is for us to know exactly how bad the problem is, and then we sort of come up with the solution for that, and start to evaluate these different policy responses.

Right now, we are sort of trying to make policy blindfolded.

Senator MERKLEY. So, in looking at the materials, I saw that Citizens Property Insurance Company, I gather that's Louisiana and Florida, that have a completely state backed program. Well, all right, so if the state becomes the insurer of last resort, and they now suffer the same losses that a regular private insurance company is suffering, now the folks in the state are carrying massive debt. So that doesn't seem like a great solution.

Dr. SEN. That's definitely a problem, right? I mean you do—the problem is of course whether the state then has the physical capacity to actually withstand a big loss, like a big hurricane season, which is a concern that was raised about Citizens. And in such a scenario, then you know, in a world where they do not have enough tax revenue, then they would have to sort of go into financial markets, try to borrow money, which could be very costly, and so on.

So fiscally it's going to be very challenging for many cities and many municipalities and counties, and so on, yes.

Senator MERKLEY. Well, let me close with this question, and perhaps Mr. Musulin, I'll direct this to you. Is it responsible for Congress to say we're going to ignore the enormous damage that climate change is doing across our country through fires, through smoke, through ice storms, through flash floods, through hurricanes, and we'll just somehow back up the insurance market.

If we are looking ahead 20 or 30 years, shouldn't we be undertaking the core challenge of the overheating of this planet from carbon dioxide (CO_2) and methane?

Mr. MUSULIN. Well, Senator, one thing. I would never want to comment on what Congress should or shouldn't be doing. That's certainly not my job. But I certainly think that we, in many cases, look decades into the future as we do with say the social security trust funds, or many other things.

And this is an issue which has the potential to cause, you know, significant losses to our economy and our system, and I think it would be responsible for everyone to start stress testing the system, to consider the possibilities. It doesn't have to be a certainty.

We don't know the future for certain, but the possible exposure to damage up and down the east coast, and what that could mean for——

Senator MERKLEY. And the west coast.

Mr. MUSULIN. And I'm sorry, sir, I was referring to east coast because I was talking to Florida, but yes, the west coast, and across the country, sir, I should note, apologies. But yes, we should be considering that, and including wildfires, and certainly we've even seen issues like the tragic fires in Maui where things like the electrical grid can contribute to fires, and maybe we can kill two birds with one stone by hardening the grid against weather, and also building it out for renewable power, so there's a lot of opportunities for us to do both.

Senator MERKLEY. I see my colleague, Senator Romney is here, and my time is up, but I really appreciate you all's contribution, and I'll just say from my perspective, it's hugely irresponsible for us to just say we can try to fix the insurance market, and fail to address the underlying causes that will get worse with every succeeding decade far into the future.

Chairman WHITEHOUSE. Senator Romney.

STATEMENT OF SENATOR ROMNEY

Senator ROMNEY. My colleague, Mr. Merkley, I wish there was something we could do that would reduce the climate change we're seeing, and the warming of the planet. But I have seen absolutely nothing proposed by anyone that reducing CO_2 emissions, methane gases, and the heating of the planet.

Climate change is going to happen because of the development in China and Indonesia and Brazil, and the only thing that actually makes any measurable impact at all is putting a price on carbon, and no one seems to be willing to consider doing that. Everything else that's being talked about in the climate front.

Chairman WHITEHOUSE. I've got two bills.

Senator ROMNEY. I know, you and I are. But you guys had reconciliation. You could have done it all by yourselves, and you didn't. So, the idea that somehow we're going to fix climate and solve the insurance problem, is pie in the sky. That's avoiding the reality that we can't fix climate, because that's a global issue, not an American issue.

Anyway, let me turn back to insurance. I'm not going to count that as part of my time. Let's see. I'm going to ask you ladies and gentlemen about what we ought to do to try to help people be able to afford insurance. And I listen to the causes, inflation being the largest single one.

And of course, seniors are on fixed income, so inflation is a huge problem as Ms. Wood has indicated. Building in high risk areas is a big part of the problem, and then there's climate. We're not going to be able to fix global climate, not any time I am aware of, and according to Mr. Antoni, so far at least with regards to hurricanes and so forth, there's no evidence that climate is causing more hurricanes, although I think it's fair. In the American West, where I come from, more fires, drought is climate related, and so that's just a reality. So, the question is what actions can we take? Fiscal reform? Yes. To try and deal with inflation, except I want to note something for Mr. Antoni because you're esteemed at the Heritage Foundation.

72 percent of federal spending is not part of the budget we vote on. So, we talk about Biden wants to spend all this—72 percent. We don't vote on it. We only vote on 28 percent. Half of that is the military. We republicans want more military spending, not less.

So that means the other 14 percent, which is what the democrats want to expand, there's no way we can reduce the 14 percent enough to have any impact on the massive deficits we're seeing. So, there's going to have to be a broader analysis of what we have to do to reign in our fiscal challenges. I just want to underscore that.

I would say a second thing we can do besides fiscal reform, and dealing with inflation is stopping subsidizing high risk areas. Basically, subsidizing people to build expensive places along the coast, and in places that are at risk of wildfire. And we subsidize that, and that creates huge financial risk to the system.

And finally, mitigation of one kind of another. That's the other thing we can do, it's all sorts of mitigation, forestry management, having people move in places that are not high risk. But if you want to live in a big house on the coast, you're going to have to spend a lot of money to insure it, or take huge risk, that's just the reality.

So, those are the three I come up with. Stop the subsidy, mitigation, and fiscal reform. What else am I missing? Mr. Musulin, and I'm just going to go down the line for those that are sort of in this area to give me your perspectives.

Mr. MUSULIN. Well, thank you Senator, and I'd agree with all of those things, and I'd also add that we need to start thinking about future proofing our building codes and land use policies. The sea levels are rising. There's, you know, if you're going to build a house that's supposed to last 75 years, you'll ought to be thinking about the climate in 75 years when you, you know, give somebody a permit to build there.

So, I'd say that's important. I'd also say that, you know, large disasters also drive inflation because it puts more pressure and demand on labor and materials. More disasters mean supplies that could have been used to build new homes for Americans, are diverted to rebuild homes from the past. So certainly, doing things to reduce the vulnerability of properties, and improve the resilience is important.

And I do think, sir, that there are things we can do about climate change with respect over periods of decades that can make a difference in the long run. Thank you.

Senator ROMNEY. Thank you. Yes, Ms. Sen.

Dr. SEN. Sure. So, before that, the point about this—one point about inflation that we are missing which is without doubt it is a contributing factor, but the U.S. has had inflation in the past without such an acute crisis in insurance markets. So, whether that is the biggest cause or not, is up for debate.

I don't think we have reached a conclusion on inflation being the biggest contributor of rising insurance costs.

Senator ROMNEY. It's just a big one. You'd agree it's a big one.

Dr. SEN. I agree it's a big one, but I wouldn't say it's the biggest one.

Senator ROMNEY. Good enough.

Dr. SEN. In terms of policy solutions, I completely agree with you on we need to stop subsidizing building in high risk areas. That's definitely one of the things that we need to do that. Mitigation, another point that you bring up, and on that I would say not only do we need to harden our homes, but we also need to harden our financial institutions, our banks, and our insurance companies in order to make them withstand really large climate shocks that are for sure coming their way.

Senator ROMNEY. Thank you. Ms. Wood, I'm going to let you pass on this, just because that's not your area of expertise. Your experience was something which focused our thinking today. Mr. Mulready

Commissioner MULREADY. Thank you, Senator. I would say amen to your comments, but I will give you three quick things. Number one, the Federal Emergency Management Agency (FEMA) has a survey out that states that every $1 spent in mitigation saves $6 in loss claims. It pays off.

Number two, unfortunately a lot of communities have to have a disaster happen. In Moore, Oklahoma, back a dozen years ago, an EF5 hit, it was totally devastating. After that, the City of Moore changed their zoning. They changed their building zoning codes.

And then third, the City of Tulsa, back in the '80s had horrible flooding happened, and so they invested over decades, decades, infrastructure to prevent flooding. Now, one of only two communities in the country that are class 1 NFIP rated.

Senator ROMNEY. Thank you. Mr. Antoni.

Mr. ANTONI. Senator, regarding the wildfires out west.

I think California is a really good example of this. They have a combination—a deadly combination of terrible forest management, where they prohibit things like controlled burns to get rid of underbrush, and then also not investing enough in public utility infrastructure, so that they have power lines that are throwing sparks, for example, and starting these wildfires.

Regarding your comments on the budget, you're absolutely right. At this point non-discretionary spending and gross interest on the debt exceed tax revenue. And tax revenue, as a percentage of the economy right now, is near an all time high. So, you're not going to actually get much more in terms of revenue out of this economy, and so that leaves you with essentially two options, both of what you should do.

The first is the economy needs to grow a heck of a lot faster than it is right now. And then the other thing is that you need to address even non-discretionary parts of the budget.

Chairman WHITEHOUSE. Thanks, Senator Romney. Senator Van Hollen.

STATEMENT OF SENATOR VAN HOLLEN

Senator VAN HOLLEN. Thank you, Mr. Chairman, thank all of you for your testimony today. You know, there are a lot of folks out there who still deny that climate change is real, and the impacts and the human component. I've always believed that when skeptics began to feel the impact in their pocketbooks it would become more real.

And that is unfortunately what we are seeing, and today's hearing is an example. When homeowners find that either they cannot get homeowners insurance, or it becomes so expensive they can't afford it, then we're seeing the real pocketbook impacts, and Ms. Wood, thank you for your testimony. I listened in to C–SPAN, and I think that really brings things home to what more and more Americans will be experiencing.

You know, Swiss Re has done a number of studies on this, and yes, of course there are a number of components to increasing insurance premiums. No one denies that there aren't different pieces, but according to Swiss Re, climate impacts, and the growing risk from climate is the predominant factor in what they predict will be increasing costs due to climate risks.

And I do know in my State of Maryland that in areas that are particular vulnerable we've seen property insurance rates going up in the Ocean City area and others. One way to address this, and I think it was discussed in a different matter, is the need to get the data, and get the consensus on where the risks lie, which is why last year Senator Whitehouse, Senator Warren, and I sent a letter to the Treasury Department to the Federal Insurance Office, urging them to collect information from different states.

I am a supporter of a state-based insurance system for property and casualty insurance, but I do think it would benefit all of us to have a sort of national yardstick against which we can measure what's happening. So, Dr. Sen, could you, you know, talk a little bit about the benefit of having a common source of insurance data through the FIO, and how that could benefit state regulators and benefit all of us?

Dr. SEN. Yeah. Absolutely. Thanks for bringing that up. That's just the first order of importance I think because we don't even know the basic facts about this problem at the granular level. The risks here are local, and so we need to know what's going on ZIP Code by ZIP Code, census track by census track.

And for regulators to be able to figure out exactly how much risk is sitting with each of these insurance companies, they need to know how many policies they're writing, what type of coverage they're selling, and what cancellations are looking like in different ZIP Codes, because only then can they figure out exactly how exposed these different insurers are.

And then they can start designing policy around whether the risk-based capital ratios look all right or not, or should we put a surcharge on wildfires, or hurricanes and so on, and we do need a comprehensive picture. We just can't have a particular state regulator look at the risks in that state because of course, insurers are selling insurance all over the country, and we need to get a comprehensive picture of all of that.

Senator VAN HOLLEN. No, I appreciate that. I gather that the Treasury Department is getting some resistance from some state insurance regulators. I hope we can overcome that because I'm not sure why anyone would want to deny, you know, the American people the benefit of the facts here.

If I could ask you, Mr. Musulin, with respect to some of the sort of measures we should be taking. I mean obviously we want to collect information here, in the Budget Committee, but what kind of measures should we be taking now to address and mitigate some of these issues, and what are the consequences of failing to do so?

Mr. MUSULIN. Well, as I said, I think the biggest thing we need to do is future proofing our building code land use policies as I've said before, you know. We have to recognize that we're going to be facing extreme weather in places that we haven't experienced it before, and we've got to certainly address that.

I also think it's important to address climate change. I will just note that sometimes climate change itself can contribute to the inflation we've been talking about. For example, there were beetle infestations and droughts and fires in Canada, which decimated some of the lumber crop and the forest, and led to a fivefold increase in the cost of lumber a few years ago.

So, some of this, you know, claims inflation is actually related to climate change, and I think we need to address that. And we also need to recognize that we have to build smarter and protect our people better to make sure that, you know, they've got affordable insurance, and that they can fix up their houses when there's a disaster.

Senator VAN HOLLEN. Appreciate that. Mr. Mulready, I saw you wanted to comment on that first question.

Commissioner MULREADY. Thank you, Senator. I just wanted to follow-up on our comment about FIO and the collection of data. Just if you didn't know, the NAIC, National Association of Insurance Commissioners, is in the midst of a data collection right now.

Senator VAN HOLLEN. Yeah.

Commissioner MULREADY. They will collect that data for at least 80 percent of the homeowner's market, and we have an agreement with FIO to be sharing that data with them. They originally came to us. I got a letter from FIO, and they were requesting data that we did not actually collect at the ZIP Code level, and they have a very stringent timeline for that, so my response wasn't no, it was just look, we can't meet that timeline.

We don't collect that today. We can in the future, but from that is where this is ground, the data call by the NEIC.

Senator VAN HOLLEN. So, I appreciate. I saw that there had been now this effort on behalf of the state, so has this now been worked out? Are there any states that are objecting to your knowledge at this point in time in terms of sharing data?

Commissioner MULREADY. I don't know about specific states.

Senator VAN HOLLEN. Okay.

Commissioner MULREADY. We will be collecting data that will represent at least 80 percent of the market share.

Senator VAN HOLLEN. Okay. Thank you. Thank you.

Chairman WHITEHOUSE. Thank you for that, by the way, we are watching the data call, and we're grateful to the NAIC for that effort. Senator Kaine had another question or two?

Senator KAINE. Just a follow-up comment, and it's really on that point. I think we often assume that rates charged homeowners by homeowners insurance is based upon some rational algorithm using actuarial data, but that is not always true. My legal career, the highlight of it was a lawsuit that I brought against the Nationwide Insurance Company for redlining minority neighborhoods all of the United States in 1998.

It led to the largest civil rights jury verdict in the history of the United States at that time. And we were able to gather data that through the discovery process that our insurance regulators didn't have.

Other states insurance regulators didn't have, and it demonstrated that part of the entire set of where we put agents, where we sell policies, how we price policies was based on the racial composition of neighborhoods using ZIP Code plus four data, that essentially labeled every neighborhood in the United States in categories that were either we want to do business here or we don't.

And so, the notion that this is all, you know, actuarial and math and it's based upon claims experience and investment income, those are factors, but until you get the data you can't be confident that there are not other factors at work that, you know, might explain why, you know, Ms. Wood—this whole thing about not even being told that your policy was being cancelled, and being told your roof flunked, but they're not going to give you the information about your roof.

And the next company that analyzes it says your roof is just fine, you really can't assume that the system is being fairly operated in accord with actuarial data until you get the data. And I applaud the NAIC's effort, and Dr. Sen, your testimony and your answers to questions.

You say we need to know a lot more to understand what's going on. I do believe these increases in places like Florida, or coastal communities in Virginia, extreme weather events are playing a role, but there may be other factors that we need to dig into deeper if we are going to try to find the right relief so that homeowners like Ms. Wood and others don't face the kind of problems they're experiencing. Thank you.

Chairman WHITEHOUSE. Thanks very much. I appreciate the conversation we've had here, and I appreciate all of the witnesses. I would like to ask two questions for the record, which will give you a chance to deliberate a minute and put your thoughts in writing.

The first is for Dr. Sen. Here's your statement. "Our analysis shows that a vast majority of the Demotech insurers would not meet GSE eligibility if subjected to traditional rating agencies methodologies." Would you be willing to elaborate on that in a paragraph or two, so that I can better understand specifically what the methodological differences are that you're referring to, and why they're allowed to exist?

Dr. SEN. Absolutely.

Chairman WHITEHOUSE. Thank you. I appreciate that. And Mr. Musulin, to your statement, the risks that threaten the U.S. coastal home insurance industry are potentially devastating. Could you elaborate on what the elements are of that risk, or of those risks, you used the plural, specifically including what role you think inflation plays?

Mr. MUSULIN. Yeah.

Chairman WHITEHOUSE. And elaborating a big further on what you mean by potentially devastating? You are an actuary, are you not?

Mr. MUSULIN. Yes, sir. I am.

Chairman WHITEHOUSE. Yeah. Actuaries are not known for hyperbole.

Mr. MUSULIN. No. But one of the lessons we need to learn though, sir, is the difference between potentially the correct answer, and the right answer. And often those two are somewhat different, and I'll strive to give you a mixture of both.

Chairman WHITEHOUSE. Okay. I'm not challenging your testimony here. I'm just asking for further elaboration.

Mr. MUSULIN. No. I understand that.

Chairman WHITEHOUSE. On the point. What do you mean by devastating? Who gets devastated? How? Elaborate on that, and what are these risks, and specifically what role does inflation play because we are, you know, watching this very carefully, and we're seeing people who are truly expert in the insurance market, including major insurers themselves, very clearly say that the problem here is climate change, and the uncertainty of weather events, and harms that they're not able to anticipate or predict for.

So, we obviously heard other views here from entities that are funded by the fossil fuel industry, and it would just be helpful to know what your views are more specifically to that.

Mr. MUSULIN. Yes, sir. And I'll be happy. If I might, just one quick comment that you know, regardless of whether we think we know what the future holds or not, it's well established practice in economics that uncertainty has a positive cost.

Chairman WHITEHOUSE. Yeah.

Mr. MUSULIN. And the more uncertain we are about things, the higher the cost is, and I think that's a significant factor here at play too. And I'll make sure I put that in my comment.

Chairman WHITEHOUSE. That and six-inch hailstones too. We may be setting new records. Thank you so much.

Senator KAINE. Mr. Chairman.

Chairman WHITEHOUSE. Yeah.

Senator KAINE. One other thing. My innate sense of fairness makes me add an addendum to the comment that I last made about insurance rates not being purely actuarial in nature. I talked about the suit against Nationwide. After we successfully sued them, they dropped all the use of the non-actuarial data. They endeavored to do better, and years later they said you know what, we actually not only did good, but by doing good we did well because minority neighborhoods turned out to be really good places to sell insurance.

And the homeowners to whom we sold insurance turned out to be really loyal customers. So, I didn't want to leave it hanging in midair with just the lawsuit against Nationwide, I also wanted to indicate that when we got information and put it out there, they took corrective action, and the corrective action ended up, you know, working out well for all concerned.

Chairman WHITEHOUSE. Senator Luján has appeared with seconds before the gavel, so let me respect his arrival by allowing him to ask his questions. I will just allow him a minute to get himself settled in his seat here, and thank him for attending. I want to thank all of you for attending.

I think that the personal experience of Ms. Wood was really important because, you know, behind the statistics and the warnings and the threats, and the risks, and the potentially devastating consequences that are described by our expert witnesses, are individual homeowners who are often swept around in the maelstrom of this insurance mess, not knowing where to turn, being shuffled around among insurance companies, not getting straight answers.

And it is a hell of a tough time to be a consumer, and I want to thank you for putting such a good, human face on that part of this problem. Senator Luján. Our closing questions.

STATEMENT OF SENATOR LUJÁN

Senator LUJÁN. Mr. Chairman, thank you so very much for this hearing. Thank you all for being here today, as well. I very much appreciate that now. Two years ago, we had the most destructive fire in our state's history in New Mexico. The Hermit's Peak Calf Canyon fire tore through my state.

This year, Southeastern New Mexico is currently the only region in the nation experiencing exceptional drought, according to the U.S. drought monitor. The National Interagency Fire Center reports above normal wildfire potential in wide swaths of New Mexico for most of the summer.

I think everyone that has been watching the news has seen the heat that's going to hit the southwest over the next few days. Now the potential for another massive wildfire is real. These climate driven extreme weather conditions are changing the way New Mexican businesses operate.

Electric co-ops are just one example. Co-ops are struggling to obtain wildfire insurance because of the chance their equipment is faulted for a major fire because their lines have to connect communities. And in places like where I live, the shortest path and the path where they're located is often in some of these areas where there's a lot of trees, and higher elevations as well.

Co-ops and utilities are dealing with frequent extreme weather. They're also hard at work at the daunting task of clearing some of these easements as well because it doesn't take much when it gets dry for something to tip over. And once that happens, and clips one of those lines, then we lose everything.

And the Hermit's Peak Calf Canyon fire region, the bipartisan Infrastructure Law is providing money to the local co-op through the Grid Resilience and Innovation Partnership Program. The co-op will deploy modern grid technologies that both mitigate wildfire risk, and help recover from power outages.

Now, Mr. Musulin, is that correct?

Mr. MUSULIN. Close enough, sir.

Senator LUJÁN. Musulin.

Mr. MUSULIN. Musulin. That's fine, sir.

Senator LUJÁN. Musulin, thank you. What can Congress do to support the rural co-ops, and other critical infrastructure adapting to climate?

Mr. MUSULIN. Well, thank you for that question, and I think there's no doubt that there's enormous opportunities in rural infrastructure and power grids to do both. Hardening those grids to support, or sorry—to prevent tragedies like the fires we've seen, and also to support growth in rural communities, and to prepare the grid for the increase in renewable power, which is inevitably going to occur in the next several decades.

So, we can actually spend the same dollar multiple times, and accomplish multiple benefits by investing in grid hardening, and also you know, a more renewable friendly grid at the same time.

Senator LUJÁN. I appreciate that. When major wildfire strikes it destroys both homes and critical infrastructure. If these basic services aren't quickly rebuilt, homeowners may be forced to leave their communities. And in a small town, in a small community, even a few people leaving, completely erodes the tax base.

It erodes the small business that may be in that community that everyone depends on. An eroded tax base undermines public services like emergency response and schools. This can decimate a town. Dr. Sen, if folks who want to rebuild can't get insurance, will these communities struggle to thrive?

Dr. SEN. Yeah, absolutely. Insurance is sort of required if you want to maintain a mortgage, and so in the absence of finding insurance, folks would either be forced by lenders, or they would have to resort to insurers of last resort through the markets, and in all of these cases the costs for the coverage that is being sold is extremely high.

And so, there is an immediate financial implication for the household, exactly when they're also going through the devastation of having their home destroyed. On top of that, the other challenge is to not have enough insurance going forward for future shocks. And if you do not have adequate coverage for all of the future shocks that might be coming, then it makes you that much more vulnerable for, you know, the next fire.

Senator LUJÁN. I appreciate that. Now the Hermits Peak Calf Canyon fire was a prescribed burn that got out of control. It was started by the federal government. Now, because of this the Federal Government has a responsibility to the people of New Mexico to clean up and rebuild our communities.

Disaster costs keep rising, or as disaster costs keep rising, FEMA is reporting that its disaster fund could run out this summer, and require additional Congressional appropriations. Yes or no, are rebuilding efforts at FEMA strained by the cost of disasters around the country, Rade?

Mr. MUSULIN. Yes. You know, to the extent that FEMA has finite resources, more disasters mean more stress on FEMA, but I'm not really able to comment on what this may mean for the fiscal situation under the budget because I'm not familiar with that.

Senator LUJÁN. I appreciate that. And Mr. Chairman, when I sat on the Public Regulation Commission in New Mexico, it was a hodgepodge of agencies. We were essentially the Public Utility Commission. But New Mexico had insurance underneath it. The Superintendent of Insurance worked for the Commission. We had oversight over them.

I just certainly hope that through our experiences throughout the decades, and even now, as we're seeing what's happening in this particular space, that we have folks that are willing to police themselves, that if a company is not a good company, that some rogue Commissioner doesn't try to relocate them into a jurisdiction that may allow them to get licensed there, and then that company preys on other companies, or other families, and things of that nature, which only compounds the problem we have today.

That was happening when I was elected to that particular body. And it's just not right. So, with all the challenges that we have across the country, I certainly hope that there's a way for state by state to get this right. If not, Mr. Chairman, we all need to have a serious conversation about what's going to happen at the federal level to make sure that we're going to be doing some things in a different way for the good of all the people that we represent all across America.

So, thank you very much for the time, and thank you for letting me go over my time.

Chairman WHITEHOUSE. Thank you, Senator Luján. Thank you to all of the witnesses. Mr. Musulin, sorry I said Musulin before, Musulin, if you don't mind me adding an edit to the question for the record (QFR) request to you, it would be also to elaborate a little bit on your description of the cycle between climate causing inflation, and inflation itself.

We certainly heard a lot of testimony about that in the agriculture area here with respect to shipping delays in the Panama Canal, and through a whole lot of other vectors, so I would appreciate that. Anybody else with questions for the record, they'll be due by noon tomorrow, by email, or with a signed hard copy delivered to the Committee Clerk.

We would ask that QFRs be responded to within 7 days of receipt, and with that the hearing is adjourned.

Commissioner MULREADY. Mr. Chairman, okay. If I could, just one minute on Senator Luján's comments on FEMA, and at the risk of, as my mom would say, sounding like a broken record, I've met with FEMA numerous times this year in the State of Oklahoma with some of our disasters.

The FEMA Administrator Criswell came to Sulphur, and I toured that with her, and she did a wonderful job by the way. But FEMA's own survey from a few years ago again, shows a 6 to 1 return on dollars invested in mitigation. FEMA comes into our communities, there's been numerous of them this spring, and they help out with the individual systems, and as well as U.S. Small Business Administration (SBA) loans.

And some of that money was put towards mitigation, I think that would be extremely helpful. Thank you.

Chairman WHITEHOUSE. I think that's a good point to end on. Thanks very much everyone. The hearing is adjourned.

[Whereupon, at 11:53 a.m., Wednesday, June 5, 2024, the hearing was adjourned.]

Opening Statement of Chairman Whitehouse
Senate Budget Committee Hearing: "Riskier Business: How Climate Change is Already Challenging Insurance Markets"
June 5, 2024

Members of the Committee, witnesses, guests. More than a year has passed since our hearing on climate havoc in the insurance industry upending housing markets, mortgage markets, and local property tax bases, spilling over into the broader economy. It's just one of the systemic risks climate change poses to our economy and to our financial system. Since then, things have gotten worse in insurance markets, and worse for American families that rely on them.

As we heard in our original hearings, you need insurance to get a mortgage. Without a mortgage, most of our constituents could not purchase a home. What happens when insurance companies go bust? Or don't renew policies? Or pull out of a state? Families lose insurance. They can't find a decent policy; they can't afford what's available; some even pack up and move away. Some end up with state-backed insurers of last resort, which may or may not be solvent.

This is what we've begun to see in several states. One is Florida. 10% of our nation's homeowners live in Florida. Florida homeowners pay on average over $6,000 for insurance, the highest in the country and more than three times the national average, $1,700. Florida's average premium doubled between 2020 and 2023. And it's likely getting worse.

This has put a strain on many Florida residents. They install hurricane windows and doors, but premiums continue their upward march. They put off retirement, or skip vacations. For some, such as Deb Wood and her husband, it is simply too much.

In Florida, insured losses grew by 206% between 2003 and 2018. 2022 saw residents file over 678,000 personal and commercial claims. Over 40% were hurricane-related. NOAA predicts an 85% chance of an above-normal 2024 hurricane season, with 17 to 25 total named storms and 4 to 7 major hurricanes.

In 2022 and 2023, more than a dozen insurance companies left the Florida residential market, including national insurers like Farmers. Residents fled to Citizens Property Insurance, the state-backed insurer of last resort, which ballooned from a 4% market share in 2019 to as much as 17% last year. If it has to pay out claims that exceed its reserves, Citizens can levy a surcharge on Florida insurance policyholders across the state. Good luck with that; particularly if the surcharge grows to hundreds or even thousands of dollars.

To depopulate its books, Citizens lets private insurers cherry-pick its least-risk policies. Those private insurers may have problems of their own, as we will learn. It looks like an insurance market that is swirling the drain. As one of our witnesses put it, "unreliable insurance could result in a situation where large climate shocks may cause property damage at the exact time that the property insurer becomes insolvent, increasing household default incentives and losses given default." What will the collision of increasingly unreliable insurance and greater mortgage defaults mean? Who will be left holding the bag?

The federal budget takes a hit because these insurers and their policies are accepted by Freddie Mac and Fannie Mae, who either own or guarantee a large part of our $12 trillion mortgage market. Sounds eerily like the run-up to 2008.

Florida is far from alone. A *New York Times* investigation found that the insurance industry lost money on homeowners coverage in 18 states last year. The states may surprise you. The list includes Illinois, Michigan, Utah, Washington, and Iowa. Insurers in Iowa lost money each of the last four years.

Hurricanes and earthquakes, once the most prevalent perils, are being rivaled by hail, windstorms, and wildfires. Last year, the U.S. experienced 28 billion-dollar extreme weather events. Over the past decade, 28 states have been hit by such events more than twice in a year; 38 states were hit in back-to-back years. Losses are expected to climb.

So, too, will premiums – that is, where insurers are even willing to stay. In one example, the premium on a $250,000 home for 40-year-old couple with a combined good credit rating and clean claims history would increase by as much as 63% in Louisiana and 61% in Nebraska.

To borrow from the *Times*, "the question facing insurance companies around the country, and the homeowners who rely on them, is which state might be heading in the same direction as Florida. The answer from our reporting: It could be any of them." Or, as a former state insurance commissioner said, "… we're marching toward an uninsurable future."

This isn't complicated. Climate risk makes things uninsurable. No insurance makes things unmortgageable. No mortgages crashes the property markets. Crashed property markets trash the economy. It all begins with climate risk, and a major party pretending that climate risk isn't real imperils our federal budget and millions of Americans all across our country.

UNITED STATES SENATE
BUDGET COMMITTEE
RANKING MEMBER CHUCK GRASSLEY

Opening Statement by Senator Chuck Grassley of Iowa
Ranking Member, Senate Budget Committee
Hearing titled, "Riskier Business: How Climate is Already Challenging Insurance Markets"
Wednesday, June 5, 2024

If the federal government is going to remain ready to respond to natural disasters and national emergencies, we have to have the capability of doing that. It seems that begs the need to put the nation's fiscal house in order.

Yet, even with interest on our national debt, set to surpass defense spending this year, the majority refuses to write a budget or work together to curb reckless Washington spending.

This week is more of the same, with our 19th hearing on climate change.

President Biden and the majority would like us all to ignore our exploding $34.5 trillion debt.

The majority hopes that we stop discussing how unchecked deficit spending has fueled inflation, hammering hardworking Americas, and as I will say shortly, has something to do with driving up the cost of insurance.

Families now face prices that are 20 percent higher than when President Biden took office.

65 percent of Americans report that entrenched inflation has made their financial situation worse off under the Biden administration. That's not Chuck Grassley, that's according to the Federal Reserve.

Moreover, recent high interest rates have contributed to Americans struggling to pay record high credit card bills or afford a home mortgage.

As Federal Reserve Chairman Powell has said, "It's probably time, or past time, to get back to an adult conversation among elected officials about getting the federal government back on a sustainable fiscal path."

Absent corrective action, Iowans, and for that matter, all Americans, will be faced with even higher interest rates, lower incomes and elevated inflation. That'll be the situation for years to come.

As for the subject of today's hearing, we've seen this show before.

The majority continues to crusade against American fossil fuel companies.

They want to bully insurers into abandoning their diversified portfolios, so they stop underwriting all fossil fuel projects.

If the majority gets their way, Americans can expect to pay much more to put gas in their cars and heat their homes.

Now, I've done battle with Big Oil in the past, particularly when it comes to their opposition to biofuel, and I support reasoned oversight over insurance companies.

But oversight isn't the same thing as advocacy that seeks to punish those that hold different views from one's own.

As Justice Sotomayor wrote in last week's unanimous *NRA v. Vullo* decision, "Government officials cannot attempt to coerce private parties in order to punish or suppress views that the government disfavors."

Insurance premiums are far too high across the board, and may increase after the recent storms, including those very storms in my state of Iowa.

Climate change isn't the primary driver of insurance rate hikes and collapse of the insurance industry isn't imminent, although I'll have to say, Iowa had six property and casualty companies pull out of insuring Iowans.

Climate change doesn't explain why auto insurance premiums in 2024 have increased by a whopping 20 percent year-over-year.

It also doesn't account for the consistent failure of liberal cities to fight crime, which has raised insurance risk and even caused insurers to deny coverage.

Expensive liberal policies, not climate change, are much to blame for these market dynamics.

Insurance companies and reinsurers are scrambling to wrangle inflation like the rest of us.

Disasters cost more than ever because goods and services are much more expensive.

Moreover, there are more rich people living in areas affected by weather, all the way from Newport, Rhode Island down to Miami Beach, Florida.

It's simply more costly to pay the bill for insurance claims.

What's more, the Federal Reserve can't keep up with "Bidenflation," despite hiking interest rates to a 23-year high.

Reinsurance companies are in the business of purchasing risk from insurance company portfolios.

It's only rational for them to forgo risky investments when U.S. Treasuries pay such a healthy return.

Inflation has become embedded in the economy and historic levels of borrowing by the federal government are crowding out the private sector.

It only makes sense that the majority would rather point the finger at climate change.

To do otherwise means that they acknowledge their reckless spending is a major cause of the problem.

So, I welcome all of today's witnesses.

I look forward to each of your testimonies and hope you guide this committee to focus on our primary responsibility.

-30-

5 June
2024

Riskier Business: How Climate is Already Challenging Insurance Markets

UNITED STATES SENATE COMMITTEE ON THE BUDGET
HEARING

MR. RADE MUSULIN

Opening Statement

Chairman Whitehouse, Ranking Member Grassley, and distinguished Members of the Committee, thank you for the opportunity to appear before you today.

My name is Rade Musulin. I am an Actuary who has extensive experience in natural hazard risks and funding arrangements for the damage and loss they cause. I have worked with many public sector entities on policy responses to challenges of insurance availability, affordability, and community resilience.

This work included participating in Florida's response to Hurricane Andrew, which involved the creation of the Florida Hurricane Catastrophe Fund and Citizens Property Insurance Corporation.

The Cat Fund and Citizens can access different forms of funding than traditional insurance companies. Instead of holding sufficient capital or reinsurance before an event to cover the cost of potential losses, both entities use public sources of capital to reduce upfront costs by partially funding losses post-event through bonding and assessments. All property insurance policyholders, whether in Citizens or not, are subject to its assessments, while the Cat Fund can assess almost all policies, including automobile.

This approach exposes Floridians to debt and repayment if large losses occur, and it subsidizes high-risk policies from the entire population. These pools, others like them in many coastal states, and the NFIP have contributed to rapid development in high-risk areas, driving higher costs in the long run.

In Florida, national insurers have reduced their exposure, as a significant portion of the insurance market has moved to Citizens or smaller insurers with limited capital that are heavily dependent on external reinsurance.

To date, Florida's system has been successful in meeting its claim obligations, while improvements in building codes have reduced loss exposure. However, for a variety of reasons, including exposure to hurricanes, claims cost inflation, and high litigation, Florida insurance premiums are the highest in the nation, causing significant affordability stress for consumers. According to market research from Bankrate, the average premium for $300,000 of homeowner insurance in Florida is three times the national average, with premiums in high-risk areas exceeding five times[1].

A major hurricane hitting a densely populated area like Miami could trigger large and long-lasting post-event assessments, or even exceed the system's funding capacity.

Continued rapid exposure growth and more extreme hurricane losses amplified by climate change will cause increasing stress on the nation's insurance system, which may be felt through solvency issues, non-renewals, growth of government pools, and affordability pressure.

[1] Bankrate, 'Home Insurance Rates by State', https://www.bankrate.com/insurance/homeowners-insurance/states/#home-insurance-rates-by-state.

Evidence of increasing risk abounds, including Hurricane Otis in 2023, which rapidly intensified from a tropical storm to a Category 5 hurricane - and devastated Acapulco in Mexico. Last summer, water temperatures off Florida exceeded 100F. Last week, the National Oceanic and Atmospheric Administration forecast an extremely active hurricane season in 2024. We have seen losses in the mid-Atlantic from Sandy, record flooding from Harvey, and extreme devastation from Maria. In coming decades, we must prepare for the possibility of more extreme hurricanes and coastal flooding from Texas to New England.

Florida's experience is a warning of what the future may hold in other states. Despite its innovative and extensive efforts to address its hurricane problem, premiums are high, consumers may face large assessments, and many are dependent on Citizens and smaller insurers.

Most current building codes and land use policies do not reflect potential future risk. Even if we undertook rapid action to address this, existing exposure and likely development will leave us vulnerable to large losses for decades to come, which may trigger more widespread availability and affordability issues, or calls for federal assistance.

The combination of demographics, development, and disasters poses a significant risk to our financial system, and climate change increases that risk. Addressing this will be a long-term effort which involves difficult policy choices.

Thank you.

A brief history of the Florida Property Insurance Market

The following section provides some background on the property insurance market in Florida, including some of the challenges it faced in the lead up to and aftermath of Hurricane Andrew in 1992.

According to the US Census Bureau, between 1950 and 1990 Florida's overall population increased 367%, from 2.8 million to 12.9 million. The growth was not uniform, with much of it occurring in the most catastrophe-prone part of the state near Ft. Lauderdale and Miami. This period was also one of rapid wealth accumulation - as the US emerged from the post-World War II era with strong economic growth. During this period, the value of property exposed to severe hurricanes grew substantially.

This period of rapid development coincided with decades of below-average hurricane activity due to the Atlantic Multi-Decadal Oscillation. Consumers, government, and insurers were lulled into a false sense of security. When the state experienced severe hurricanes in the distant past, there were few people, and when the population grew the state experienced few hurricanes.

Insurers at the time, due to limited technology and low-resolution data, adopted basic actuarial models that significantly underestimated hurricane risk. Notably, these methods failed to account for how new construction, shifts in the geographic distribution of risk, and insurance coverages (including "guaranteed replacement cost") might affect both the cost and size of potential losses. This resulted in insurers overextending exposure with overly generous terms and inadequate premiums.

Access to affordable home insurance, compounded by a lack of awareness of the true risk of hurricane loss, failed to encourage sufficient investment in loss mitigation measures. The problem was illustrated by a study done by the Insurance Institute for Property Loss Reduction following Hurricane Andrew (1992). It found that homes built after 1980 were three times more likely to have been rendered uninhabitable in winds up to 97 mph in Andrew than those built before 1980 (10% vs. 33%).

This combination of rapid growth and development, coupled with inadequate risk assessment and loss mitigation, ultimately left the Florida property insurance market vulnerable and woefully unprepared.

Hurricane Andrew made landfall south of Miami in August 1992. The Category 5 hurricane destroyed over 25,000 homes[2] (with an additional 100,000 damaged) across South Florida and inflicted $16 billion[3] (in 1992 USD) in insured losses, making it the costliest natural disaster in the nation's history at the time. This equates to $35 billion in today's dollars after adjusting for inflation using the U.S. Consumer Price Index, a figure which would be much larger if changes in population and wealth were reflected.

[2] National Oceanic and Atmospheric Administration, Atlantic Oceanographic and Meteorological Laboratory, '25th Anniversary of Hurricane Andrew', https://www.aoml.noaa.gov/25th-anniversary-hurricane-andrew/.
[3] Insurance Information Institute, 'Facts & Statistics: Hurricanes', https://www.iii.org/fact-statistic/facts-statistics-hurricanes.

The magnitude of this loss was a significant shock to the insurance industry, eventually resulting in the insolvency of seven domestic insurance companies and one foreign company[4]. This does not account for the companies that became 'technically insolvent' and required the transfer of funds from parent companies to sufficiently cover the cost of claims. While larger insurers with greater financial resources were able to absorb losses without failure, this was not without consequence. The severity of losses from Andrew induced widespread market disruption, causing insurers to take unprecedented actions including cancellations, non-renewals, requests for large rate increases and withdrawals from the market. Reinsurance rates increased and the majority of private insurers eventually stopped writing new property policies. This made it much harder for homeowners in Florida to access affordable insurance.

This mass exodus of insurers from the Florida market exposed many systemic vulnerabilities and was the impetus for significant changes involving catastrophe exposure modelling, building codes, and the role of government-regulated insurance entities.

Some key responses in the aftermath of Andrew are outlined below.

Moratorium on cancellations, non-renewals, and rate regulation (1992)

The steps that insurers were taking to mitigate losses, including cancelling policies, denying renewals, and applying large rate increases would have left homeowners without affordable (as perceived at the time) insurance in a time of need. To prevent this, legislators imposed a six-month moratorium on these practices. This was later followed by a three-year moratorium to prevent insurers from reducing their market share too quickly. Specifically, insurers could only decline to renew up to 5 percent of their property book in any 12-month period. Stricter underwriting was implemented for new business.

Creation of the Joint Underwriting Association (JUA - 1993) to provide last resort coverage along with the existing Florida Windstorm Underwriting Association (FWUA - 1972)

The FWUA existed to provide windstorm coverage in coastal areas particularly prone to hurricane risk that private insurers were reluctant to insure. The JUA was established in 1993 to further help fill these gaps and additionally to provide a broader range of coverage (beyond just windstorm) as other insurers reduced their exposure or withdrew from the market.

Creation of the Florida Hurricane Catastrophe Fund (FHCF)

The FHCF was created to stabilize the insurance market by providing reinsurance, reimbursing a portion of the private insurer's losses due to catastrophic hurricanes. By spreading the risk, the FHCF aimed to prevent drastic premium increases and make coverage more affordable and accessible.

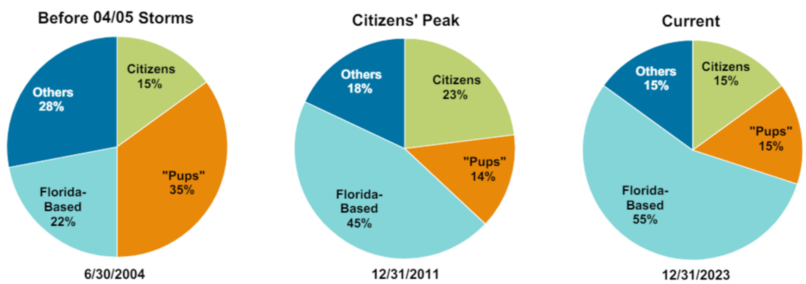
While the FHCF remains a critical component of Florida's insurance market, its long-term financial stability is sometimes questioned, especially after the major hurricane seasons in recent years leading to diminishing surplus. Maintaining the FHCF's financial position through adequate funding and sound policies is an ongoing challenge for the state.

[4] Insurance Information Institute, 'Hurricane Andrew: The Costliest Hurricane in U.S. History', https://www.iii.org/sites/default/files/paper_HurricaneAndrew_final.pdf.

Merging of JUA and FWUA into Citizens Property Insurance Corporation (Citizens - 2002)

Although the JUA was initially intended to be a temporary entity, the need for a more permanent solution to the insurance availability crisis became evident as private insurers continued to reassess their risk appetite for writing business in Florida in the years following Andrew. Citizens was created through the merger of JUA and FWUA and designed to function as an insurer of last resort to provide homeowners with property coverage when they were unable to obtain it from private insurers.

Over the last two decades, continued pressure on availability and affordability has seen Citizens gradually change from its role as insurer of last resort. Changes in legislation allowed almost all risks to be accepted and, in many cases, at a lower price than what is charged by its private counterparts[4]. Citizens' market share (by total insured value) continued to increase, peaking at 23% in late 2011[5]. Its substantial exposure has raised concerns over its ability to meet claim payouts in the event of a catastrophic loss without resorting to assessments on all Florida policyholders. Presently, Citizens has a market share of 15% (shown in the figure below[5]) and the management of its size and risk exposure remains a key policy issue.



Transfer of exposure to "pups" and Florida-based insurers

During this period, modern catastrophe modelling techniques demonstrated that major insurers were at risk of impairing their national operations from risk in Florida. This led many companies to create Florida subsidiaries, effectively capping their exposure at the amount of capital placed in the subsidiary. Concurrently, many new companies were formed, partly reflecting incentives to depopulate Citizens to reduce the assessment risk to policyholders. While these companies were regulated by the solvency standards of the state, compared to the pre-1992 market, characterized by large national insurers with large capital bases, the new companies were typically backed by less capital and relied much more heavily on reinsurance from both the FHCF and private sources.

[5] Citizens Property Insurance Corporation, 'Market Share Report', December 31, 2023, https://www.citizensfla.com/documents/20702/93160/20231231+Market+Share+Report.pdf/.

Creation of the Florida Commission on Hurricane Loss Projection Methodology (FCHLPM)

Hurricane Andrew exposed significant flaws in the methods used by insurers to assess and model hurricane risk. Recognizing the need for more transparent and rigorous risk assessments, the FCHLPM was developed in 1995 with the goal to improve the accuracy of rate setting, reducing the likelihood of widespread insurer insolvencies in the event of another major hurricane.

Today, the FCHLPM continues its role in Florida's insurance market by reviewing and auditing hurricane models used by insurers to ensure they meet the standards for scientific validity and accuracy. This ongoing management promotes greater transparency and accountability within the industry, aiming to stabilize insurance market rates and protect consumers.

Enactment of tougher building codes in 2002

When Hurricane Andrew hit, there were more than 400 different building codes across the state of Florida. These were inconsistently enforced, and poor compliance led to the destruction of thousands of homes during Andrew and other hazard events. In response, the Florida Building Code was developed in 2002 as a single statewide standard which mandated stricter hurricane-resistant standards for new construction.

The FBC continues to evolve and is updated triennially to reflect the latest advancements in construction technology and hurricane engineering. These updates ensure that new structures built in Florida meet standards for wind and flood resistance, better withstanding the potential impacts of hurricanes and ultimately reducing losses in the long run.

Florida's property insurance market has been tested many times since Hurricane Andrew. A sampling of severe events includes (noting other hurricanes, such as Irma, also affected Florida during the period):

- Four Hurricanes in 2004 (Charley, Frances, Ivan, Jeanne)

Florida was struck by four major hurricanes in the unprecedented 2004 hurricane season, critically testing the system and the reforms implemented during the preceding decade.

The total impact (insured and uninsured) of the four hurricanes on Florida totaled over $60 billion (CPI-adjusted)[6].

- Hurricanes Katrina and Wilma (2005)

The total impact (insured and uninsured) of the two storms on Florida totaled almost $40 billion (CPI-adjusted)[12].

This chain of devastating hurricanes in back to back seasons led to Citizens levying a series of assessments on its own policyholders in order to cover its losses. In 2007 it imposed a 1.4% emergency assessment on all policyholders in the state (whether written by Citizens or not; reduced to 1% in 2011) and also a policyholder surcharge of up to 15% on its own policyholders.

[6] National Centers for Environmental Information, 'Billions of Dollars in Damages', Accessed October 27, 2023, https://www.ncei.noaa.gov/access/billions/

- Hurricane Ian (2022)

According to Gallagher Re in its 2022 Hurricane Assessment: "Ian will become one of the most expensive and difficult recoveries for any U.S. hurricane on record". The Category 4 storm resulted in $120 billion in economic loss and $60 billion in insured losses[7]. It is the costliest hurricane in Florida's history and the second costliest in US history (the costliest being Hurricane Katrina in 2005).

The projected losses incurred by Citizens was $3.6 billion dollars (as at December 31 2023)[8] with about $1.4 billion expected to be ceded to the FHCF and private reinsurance[9].

The FHCF projected an ultimate loss amount of $10 billion for Hurricane Ian[10]. A loss of this magnitude would have depleted the entirety of the FHCF's projected fund balance and the majority of its pre-event bonds. As stated in FHCF's Annual Report[11] at February 2024, "The FHCF would need to rely on post-event bonding and emergency assessments to pay claims if a storm or storms of moderate to significant magnitude impacted Florida in the 2024-2025 contract year."

The NFIP faced a significant number of claims due to the heavy rainfall and storm surge caused by Ian. it paid out over $4 billion in flood insurance payments[12].

Hurricane Ian placed six insurers into receivership in 2022 and ultimately led to numerous insolvencies. In turn, the Florida Insurance Guaranty Association (FIGA) has levied a 2% assessment on policyholders in 2022 followed by an emergency 1% assessment in 2023 in response to the liquidation of United Property & Casualty Insurance Company[13]. At this point, Citizens has not announced assessments in response to Hurricane Ian.

The insurance market for homeowners in Florida – affordability challenges and market risks in 2024 and beyond

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2024 – the current state of the Florida market for home insurance

Florida's property insurance market remains in a troubled state as we begin the 2024 hurricane season. Below is an outline of a few key indicators:

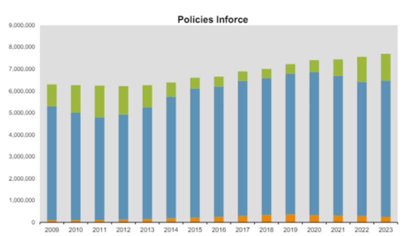
- Premiums
    - The average home insurance premium for Florida (for a sum insured of $300,000) is well above other states, including other Gulf States such as Texas.

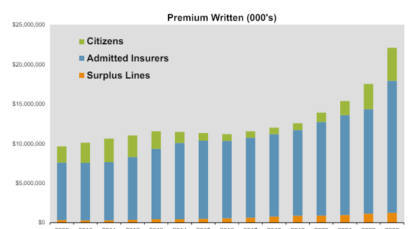
[7] Swiss Re, 'Tropical Cyclones', https://www.swissre.com/risk-knowledge/mitigating-climate-risk/tropical-cyclones.html
[8] Citizens Property Insurance Corporation, '2023 Annual Statement', 2023, https://www.citizensfla.com/documents/20702/29655847/2023+Annual+Statement.pdf
[9] Citizens Property Insurance Corporation, 'Citizens Updates Hurricane Ian Estimates', November 14, 2022, https://www.citizensfla.com/documents/20702/20355943/20221114+Press+Release+Citizens+updates+Hurricane+Ian+estimates.pdf/
[10] Florida Housing Finance Corporation, 'Florida Housing Finance Corporation Annual Report', 2022, https://fhcf.sbafla.com/media/uvmnfyka/2022-fhcf-annual-report.pdf
[11] Florida Housing Finance Corporation, 'FHCF 2024 PML Report', 2024, https://fhcf.sbafla.com/media/410lkiue/fhcf-2024-pml-report-final.pdf
[12] Artemis, 'NFIP Reinsurance Set to Trigger as Hurricane Ian Claims Hit $4.3bn', 2023, https://www.artemis.bm/news/nfips-reinsurance-set-to-trigger-as-hurricane-ian-claims-hit-4-3bn/
[13] FIGA Facts, 'Assessments', https://figafacts.com/assessments/

- According to market research from Bankrate, the average premium for $300,000 homeowner insurance in Florida is $6,366 compared to the national average of $2,153[1].
- Higher premium rates in Florida have been exacerbated by the impact of Hurricane Ian, which led to insurer insolvencies, including United P&C, Weston P&C, FedNat, and Southern Fidelity[14].

- Market size
    - Premium volume is estimated to be a total of $22 billion (as at December 31, 2023). This compares to $18 billion in the year prior[11].
    - 7.4 million property policies in force. There has been a continued upward trend in the total number of policies in force since 2012.
    - Total insured value is estimated at $3.7 trillion, which has also continued to increase since 2012.

- Citizens
    - Citizens is collecting $4.2 billion in annual premiums.
    - It issued 1.2 million, or 16%, of the total policies in force in 2023.
    - The total value insured by Citizens is $547 billion, or 15% of the state's total sum insured.
    - Citizens' estimated Probable Maximum Loss (PML) for a return time of 100 years is $17.7 billion (as at Dec 31, 2023)[15].





- FHCF
    - The FHCF has a statutory coverage obligation of $17 billion for 2024, including an estimated claims-paying capacity of $7.8 billion over 0-12 months[16]. The remainder of its maximum potential liability is met through $3 billion of available pre-event bond proceeds and an approximate $8 billion borrowing capacity.
    - As of December 31, 2023, the FHCF had an estimated fund balance of approximately $4.3 billion after paying or reserving for losses from Hurricanes Irma, Michael, and Ian in the total amount of approximately $19 billion[17].

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[14] Florida Office of Insurance Regulation, 'Insolvency Reports', https://www.myfloridacfo.com/division/receiver/companies/insolvency-reports.
[15] Citizens Property Insurance Corporation, 'Annual Report of Aggregate Net Probable Maximum Losses', February 1, 2024, https://www.citizensfla.com/documents/20702/96554/20240201+Annual+Report+of+Aggregate+Net+Probable+Maximum+Losses.pdf.
[16] Florida Housing Finance Corporation, 'Florida Housing Finance Corporation Annual Report', 2023, https://fhcf.sbafla.com/media/jezfd0d1/2023-fhcf-annual-report.pdf.
[17] Florida Housing Finance Corporation, 'FHCF 2024 PML Report', 2024, https://fhcf.sbafla.com/media/410lkiue/fhcf-2024-pml-report-final.pdf

- To secure additional liquidity for the 2024-2025 contract year, the fund has recently issued $1 billion of its Series 2024A pre-event bonds, bringing its total liquidity resources to $10 billion (as at May 2024)[18].
- The FHCF would need to rely on post-event bonding and emergency assessments to pay claims in the event of catastrophic losses in the 2024- 2025 contract year.

FHCF Obligations and Liquidity Resources – 2024-2025 Contract Year	Amount ($B)
Total Potential FHCF Obligations	$17.00
Projected 2024 Year-End Fund Balance	$6.91
Series 2020A Pre-Event Bonds Balance*	$2.25
Series 2024A Pre-Event Bonds Balance	$1.00
Total Liquidity Resources	$10.16
Total Liquidity Resources Below Potential Obligations	$6.84

Numbers may not add due to rounding.
** $1.25 billion of the currently outstanding $3.50 billion 2020A Pre-Event Bonds matures on July 1, 2025. These funds would be available as liquidity if needed but are expected to be used to pay the principal due on July 1, 2025.*

- National Flood Insurance Program (NFIP)

  - Prior to the sophisticated models of today, flood risk was difficult to measure and not provided by most private insurers.
  - Presently, private insurers are more comfortable with underwriting flood coverage and we have seen the number of NFIP policies reduce from 5.1 million at its peak to 4.7 million in 2023.
  - Florida comprises the largest proportion of these policies, with over 35% of total policies in force, reinforcing the state's vulnerability to flood risk[19].

What is the outlook for 2024?

The latest outlook from NOAA predicts the worst hurricane season in decades with a potential of four to seven 'major' hurricanes forming due to record high ocean temperatures[20].

The risks that threaten the US coastal home insurance industry, and particularly Florida, are potentially devastating. If and when major losses materialize many of the same challenges that have occurred in the past will persist and grow. Further severe hurricanes may:

- Place pressure on premiums with a further decline in the availability of affordable home insurance in Florida and other impacted states.
- Further disrupt private insurers that may limit the risks they will cover when faced with higher reinsurance rates or depleted capital.
- Cause more homeowners to seek coverage with Citizens or residual markets in other states. Heightened exposure could increase the risk of Citizens implementing policyholder assessments or seeking federal Government support. This will necessitate Citizens once again working with smaller insurers to depopulate.

[18] Florida Housing Finance Corporation, 'FHCF May 2024 Bonding Capacity Report', 2024, https://fhcf.sbafla.com/media/awmhd2tz/fhcf-may-2024-bonding-capacity-report.pdf.
[19] Florida Realtors , https://www.floridarealtors.org/news-media/news-articles/2024/04/fla-leads-2022-2023-flood-insurance-payouts and FEMA, https://www.fema.gov/press-release/20230425/fema-publishes-nfip-claims-and-policy-data
[20] The Washington Post, 'Hurricane Season Forecast: Active Storms Expected', May 23, 2024, https://www.washingtonpost.com/weather/2024/05/23/hurricane-season-forecast-active-storms/.

Will we learn from past warnings that went unheeded?

The Hurricane Pam exercise conducted in 2004 was designed to simulate the impact of a major hurricane on the Gulf Coast of the US, and accurately revealed several vulnerabilities that were exposed by Hurricane Katrina in the following year. This exercise demonstrated that FEMA and other agencies were able to clearly articulate the risks of an event which had not yet happened but that warning came too late to implement effective mitigation measures before Katrina.

What would happen if the Great Miami Hurricane of 1926 occurred today?

A combination of increased development and asset values would lead to significantly higher insured losses should major Florida hurricanes of the past be experienced today. The 1926 "Great Miami Hurricane" was estimated in 2017 to cost upwards of $125 billion.

Figure 1:
Estimated Insured Losses for the Five Largest Historical Hurricanes Affecting Florida Based on Current Exposures

Date	Event Name	Category	2017 Insured Loss
Sept. 18, 1926	Great Miami Hurricane	4	$128 billion
Sept. 17, 1928	Great Okeechobee Hurricane	4	$78 billion
Sept. 17, 1947	1947 Fort Lauderdale Hurricane	4	$62 billion
Aug. 24, 1992	Hurricane Andrew	5	$56 billion
Sept. 10, 1960	Hurricane Donna	4	$50 billion

Source: AIR Worldwide, 2017

* Modeled loss to onshore property, contents and business interruption, and additional living expenses for residential, mobile home, commercial and auto exposures as of Dec. 31, 2016, using the indexed takeup rates provided in the 2017 CATRADER release. Losses include demand surge and account for storm surge.

Citizens is positioned at the forefront of the financial response and its capacity to fulfil its claim payout obligations without government support would be severely tested.

Climate change and its impact on hurricanes and coastal hazards

The IPCC'S Sixth Assessment Report (2021) presents a strong body of scientific evidence that human influence has unequivocally warmed the atmosphere, ocean, and land, triggering many weather and climate extremes in every region across the globe. The scientific consensus concerning the impact of a warming climate on future hurricane severity is strong: climate modeling studies[21] project an increased intensity in tropical cyclones which will likely cause more severe rainfall and heightened coastal flood risk from storm surge[22].

Florida, which already has some of the highest and most frequent hurricane risks in the US due to its unique geography, may face a greater threat from increasingly powerful hurricanes.

- Hurricane intensity is projected to increase in the future:
    - Most models show an increase in average hurricane intensity, fueled by warming ocean temperatures and air humidity.
    - This means that a greater *proportion* of hurricanes that form will reach major intensity (Category 3, 4, or 5), implying an increase in the destructive potential per storm, assuming no reduction in size[23].
    - Under a 2 degree Celsius global warming scenario, the proportion of Atlantic hurricanes reaching Category 4 or 5 are projected to increase by about 10%, with peak wind speeds projected to increase about 3%[24].
    - The increased intensity of tropical cyclones across different regions of the world is shown in the figure below[25].

- Hurricanes are becoming more unpredictable by strengthening faster:
    - Warmer waters are also leading to an increase in rapid intensification[22], a phenomenon that describes hurricanes becoming stronger faster.
    - Faster strengthening of storms lead to higher unpredictability, resulting in lower preparedness and more economic damage.

- Hurricane rainfall rates are projected to increase:
    - Warmer air temperatures are able to hold more water vapor, resulting in more extreme precipitation events.
    - Consequently, rainfall rates within Atlantic hurricanes are projected to increase by about 15% for a 2 degree Celsius global warming scenario[23].

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[21] Klotzbach, P. J., Bowen, S. G., Pielke Jr, R. A., & Bell, G. D. (2018). Continental US hurricane landfall probability has decreased over the past 100 years. Bulletin of the American Meteorological Society, 101(3), 194-194.
[22] NASA, 'A Force of Nature: Hurricanes in a Changing Climate', https://science.nasa.gov/earth/climate-change/a-force-of-nature-hurricanes-in-a-changing-climate/.
[23] NOAA Geophysical Fluid Dynamics Laboratory, 'Global Warming and Hurricanes', https://www.gfdl.noaa.gov/global-warming-and-hurricanes/.
[24] National Oceanic and Atmospheric Administration, 'State of the Science: Atlantic Hurricanes and Climate Change', May 2023, https://sciencecouncil.noaa.gov/wp-content/uploads/2023/05/1.1_SOS_Atlantic_Hurricanes_Climate.pdf.
[25] Knutson, T. et al., 2020: Tropical Cyclones and Climate Change Assessment. Part II: Projected Response to Anthropogenic Warming. Bull. Amer. Meteorol. Soc., https://doi.org/10.1175/BAMS-D-18-0194.1

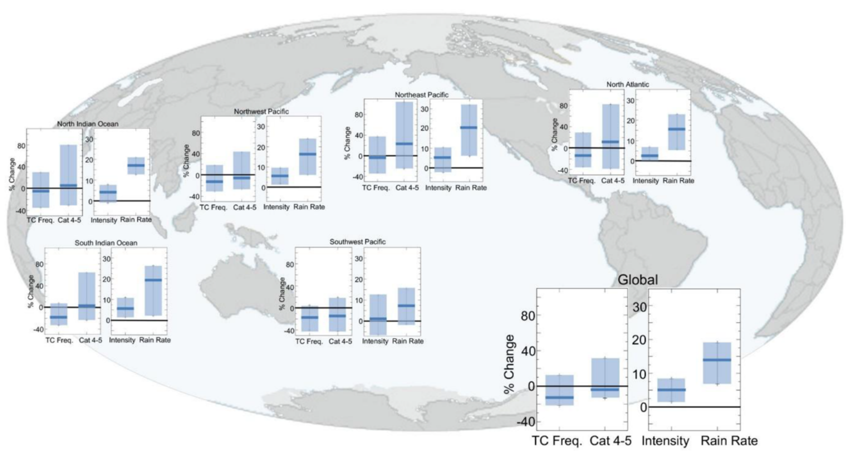
- Additionally, due to climate change-induced warming in the Arctic, storm speeds are projected to slow, resulting in more rainfall being dumped over a particular area before the storm moves on[26].

- More powerful and damaging storm surges due to rising sea levels
  - Sea levels are anticipated to rise by about 0.4 to 0.8 meters by 2100[4].
  - Higher sea levels increase the threat of coastal inundation from storm surge, as more water will be pushed further inland even with weaker hurricanes.

- There is a possibility of "poleward migration" of storms, which could impact higher latitude exposure concentrations in the mid-Atlantic and New England regions[27].

This combination of more severe natural disaster events and increasing development and property value would mean large rises in disaster costs in the future for Florida and other parts of eastern US.

Tropical Cyclone Projections (2°C Global Warming)



[26] Environmental Defense Fund, 'The Science Is Clear: Climate Change Is Causing More Damaging Hurricanes in Florida', November 1, 2023, https://blogs.edf.org/climate411/2023/11/01/the-science-is-clear-climate-change-is-causing-more-damaging-hurricanes-in-florida/

[27] https://texmex.mit.edu/pub/emanuel/PAPERS/Knutson_etal_2020.pdf

The projected economic cost of hurricanes for the Federal Budget

In June 2016, the Congressional Budget Office (CBO) released a paper on the implications for the Federal Budget of potential increases in hurricane damage in the United States. This paper includes commentary on climate change and coastal development and their effects on hurricane damage.

The CBO estimated the change in damage from hurricanes by comparing expected damage under current conditions with expected damage in selected future years - being 2025, 2050 and 2075 - under conditions expected to prevail at the time. The CBO noted that sea levels and frequency of hurricanes are affected by climate change.

The CBO concluded that:

- The growth in expected hurricane damage is expected to exceed the growth in the nation's ability to pay for such damage, with mean expected damage to be 0.16 percent of GDP in 2025, 0.19 percent in 2050, and 0.22 percent in 2075.
- Climate change and coastal development will occur simultaneously, and each factor will compound the increase in expected damage caused by the other.
- The expected damage from hurricanes will constitute a larger share of per capita income for people living along the East and Gulf coasts than for the average person in the United States – with 'substantial expected damage' defined as expected per capita damage that is greater than 5 percent of the county's average per capita income.
- 5.8 million people are projected to face expected damage that exceeds the 5 percent threshold by 2050, and 10 million people by 2075.

The CBO's paper outlines the federal budgetary implications of hurricane damage, noting discretionary spending required for FEMA's Disaster Relief Fund, and mandatory spending required to support claim payments made through the National Flood Insurance Program.

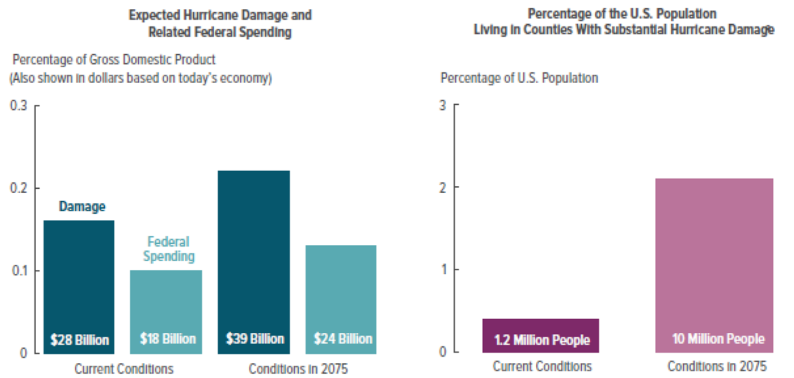
The CBO found that federal spending as a percentage of damage rose from 17 percent before Katrina struck to 62 percent from Katrina forward.

CBO's estimates of hurricane damage, federal spending and the substantially affected population (for 'current conditions' and conditions in 2075) are set out in Summary Figure 1 below[28].

[28] Congressional Budget Office, 'Potential Increases in Hurricane Damage in the United States: Implications for the Federal Budget', June 2016, p 34.

Summary Figure 1. Return to Reference

Estimates of Hurricane Damage, Federal Spending, and the Substantially Affected Population



Source: Congressional Budget Office.

CBO's estimate of expected annual hurricane damage at present—the "reference case"—is based on estimates of the current frequency of hurricanes, current state-specific sea levels, and the current valuation of property exposed to hurricanes.

CBO's estimates of federal spending are based on a scenario in which federal aid for relief and recovery—measured as a percentage of the damage resulting from hurricanes—stays roughly the same as it has been over the past decade.

CBO's estimates of expected hurricane damage in 2075 are based on the average results of 5,000 simulations, with each simulation using a unique set of draws (random selections) for the underlying conditions that determine expected damage.

a. People exposed to substantial hurricane damage are defined as those living in counties in which per capita expected damage is greater than 5 percent of the county's per capita income.

The CBO examined several options for policymakers seeking to reduce future federal spending on hurricane damage, namely:

- A coordinated effort to significantly reduce global greenhouse gas emissions between now and 2075 (with the caveat that reductions in global emissions would begin to have more significant effects on the rise in sea levels by the end of the century).
- Requiring greater cost sharing by private entities and state and local governments to provide an incentive for them to more fully account for the extent of expected damage and thereby reduce the pace of coastal development – with options including increasing insurance requirements for households and businesses, increasing the minimum amount of statewide per capita damage that is used as the primary criterion for providing federal assistance, and reducing the statutorily set minimum share of costs borne by the federal government for assistance provided from FEMA's Disaster Relief Fund.
- Investing in structural changes to reduce vulnerability to hurricane damage.

While the CBO's study was conducted several years ago its fundamental conclusions remain valid today.

Implications for other states

There are parallels between the situation in Florida before Andrew and the mid-Atlantic and New England areas today. While risk assessment tools are well advanced and scientific understanding of risk is far better, aside from Sandy the region has not experienced a large event in recent decades. There are large risk concentrations from Maryland to Maine, and building codes are far less stringent than in Florida. In addition, there is a high proportion of older properties surrounded by large trees that have not been stressed by extreme hurricanes.

Further, places like Norfolk, Virginia, and New York City are susceptible to significant coastal flooding. The densely built up New Jersey shoreline consists of many vulnerable barrier islands also prone to erosion and flooding. If major storms hit areas like these, losses could be catastrophic. Climate change many make such events much more likely.

Many states in these areas lack the type of public insurance systems which Florida has built up over several decades since Andrew. An extreme hurricane event could trigger widespread market disruptions of the type seen in Florida after Andrew. States' ability to use tools of the type created in Florida would be limited by their smaller size and lower premium bases available for assessments to support insurers of last resort or post-event bonding in a facility like the FHCF.

These conditions represent a significant risk to consumers, insurers, financial institutions, and governments. While it is not possible to anticipate what policy responses might be developed in response to a catastrophic loss, experience from Sandy indicates that the Federal government would be called on to provide significant relief, in addition to its existing obligations under the NFIP, various federal infrastructure responsibilities, or disaster relief programs.

A significant risk would follow the event if insurance markets were sufficiently disrupted to expose mortgage lenders to default losses on mortgages in high risk area if insurance (including against flood from the NFIP) is unaffordable, unavailable, or not adequate to cover the loan exposure. This issue is beyond the scope of my testimony, but a risk which merits close attention.

Mr. Rade Musulin

Qualifications

Associate of the Casualty Actuarial Society

Member of the American Academy of Actuaries

Certified Catastrophe Risk Management Professional

Graduate of the Australian Institute of Company Directors

BA in Applied mathematics
John Hopkins
University (US)

Profile

Rade has 45 years' experience in insurance, specializing in property pricing, natural perils, reinsurance, agriculture, catastrophe risk modelling, public policy development, and climate risk. Rade was named co-Actuary of the Year by the Australian Actuaries Institute in 2023 for his work on climate risk and sustainability, including being the International Actuarial Association's representative at the UN Climate Conferences COP27 and COP28.

Rade has spent the majority of his career developing frameworks for funding extreme events in the United States, Asia, and Australia. He has been active in projects to improve adaptation and resilience through forward looking building code and land use policies, including understanding the financial system's exposure to growth in high-risk areas and how shifts in risk resulting from global warming may affect future disaster funding needs.

He was previously CEO of FBAlliance and a senior executive at the Florida Farm Bureau Insurance Companies, both part of the American Farm Bureau system, providing insurance services to Farm Bureau members in the US. He also served as COO Analytics for Aon Benfield Asia Pacific, leading a team delivering technical support for reinsurance placements in the region.

Rade has deep experience working with government agencies in many countries, bringing global best practice to extreme event management and climate risk assessment. Rade has served in government related roles, including as Chair of the Florida Hurricane Catastrophe Fund Advisory Council and as a policy advisor to government insurance pools. He currently leads Finity's stakeholder engagement for the Cyclone Reinsurance Pool for the Australian Reinsurance Pool Corporation and Commonwealth Treasury.

Rade has also been a lecturer for university programs on catastrophe risk and is on the Editorial Board of Oxford University's Environmental Hazards Journal.

He is a past Vice President of the American Academy of Actuaries and past Chair of the Australian Institute's Climate and Sustainability Working Group. He is the current Chair of the International Actuarial Association's Resource and Environment Virtual Forum and a member of its Insurance Regulation Committee.

Select Publications

Lead author for the International Actuarial Association's Climate Science: A Summary for Actuaries, which was developed in collaboration with the Working Group I Technical Support Unit of the Intergovernmental Panel on Climate Change (IPCC).

Lead author of the Australian Actuaries Institute's Research Paper Property Insurance Affordability: Challenges and Potential Solutions.

Member of the Flood Insurance Working Group (Chair 2017) that authored the American Academy of Actuaries The National Flood Insurance Program: Challenges and Solutions.

Author of two articles on the drivers of growing catastrophe risk and its potential effects on the US economy, Demographics, Development, and Disasters and Rising Tides.

Co-author of the Australian National Climate Change Adaptation Research Facility report Market-based Mechanisms for Climate Change Adaptation.

Testimony of

ISHITA SEN
Assistant Professor of Finance
Harvard Business School

on

Riskier Business: How Climate is Already Challenging Insurance Markets

Before the

SENATE BUDGET COMMITTEE

Held on June 5, 2024

Room SD-608, Dirksen Senate Office Building

Good Morning Committee Chairman Whitehouse, Ranking Member Grassley, and Members of the Committee. Thank you for inviting me to speak today. I am Ishita Sen, Assistant Professor of Business Administration in the Finance Unit at Harvard Business School. My research studies the financial economics of property insurance markets and my recent work looks at the understudied intersection between insurance and mortgage markets. I speak only for myself today.

Access to reliable property insurance is key for the smooth functioning of real estate and mortgage markets, especially in view of the rapid rise of property damages from natural disasters. In recent work with coauthors at Columbia University and Federal Reserve Board, I examine how climate risk is creating taxpayer burden because of lax insurer screening standards in mortgage markets. Our findings speak to questions of interest to the committee. The paper shows that the Government Sponsored Enterprises' (GSEs') property insurance requirements are not sufficiently calibrated to insurer risk – that is the risk stemming from fragile insurers becoming insolvent. As a result, the GSEs, and thus taxpayers, bear large unpriced exposure to climate risk through insurance market fragility.[1]

My coauthors and I arrive at these conclusions in three steps using the state of Florida as a case study. We focus on Florida because granular insurance data are available making it possible to study the interactions between insurance and mortgage markets. First, we show that fragile insurers with inflated ratings now dominate insurance markets in Florida. Second, fragile insurers amplify mortgage delinquencies in the aftermath of natural disasters. Third, the GSEs end up having large exposure to mortgages backed by these fragile insurers, due to strategic securitization by lenders and lax lending in the conforming segment.

We consider several policy tools to address the risks posed by insurance market fragility to taxpayers and the financial system. The first is to explicitly price insurer fragility risk into the GSEs' guarantee fees. The second involves enhancing capital regulation to account for insurers' climate risk.

[1] See "When Insurers Exit: Climate Losses, Fragile Insurers and Mortgage Markets," with Parinitha Sastry (Columbia Business School) and Ana-Maria Tenekedjieva (Federal Reserve Board of Governors). Harvard Business School Working Paper, No. 24-051. The article can be accessed here.

1. Background

Mortgage markets bring a range of different financial institutions together in complex institutional arrangements. Households use mortgages to purchase homes. Banks and non-banks originate loans. The government-sponsored enterprises (GSEs) Fannie Mae and Freddie Mac directly own or guarantee a large portion of the $12 trillion US mortgage market.

Property insurers play a key role, especially in view of the rapid rise of climate-related property damages. Insurers help households rebuild in case of physical damages to the home, e.g., in response to natural disasters such as hurricanes and wildfires. Doing so preserves the value of the property (collateral to the bank), and lowers households' incentive to default on their mortgage.[2] In other words, insurance directly reduces risks for banks and the ultimate mortgage owners (e.g., GSEs) as both households and lenders are beneficiaries of the insurance policy. Unsurprisingly, banks require property insurance at mortgage origination, and the GSEs only purchase loans backed by good quality insurers.

1.1. GSE Insurance Requirements and Pricing

To be eligible to be sold to the GSEs, a mortgage must meet criteria that are set out in the GSE's origination guides. The most well-known criteria are the GSE's conforming loan limits, which limit mortgages based on the size of the loan balance at origination, and the FICO score criteria.[3] Less well known are the GSEs additional requirement that property insurers backing the mortgage meet a minimum financial strength rating.

(a) Financial Strength Ratings: The GSEs are exposed to the risk that households default due to the insurer becoming insolvent at the same time as there are claims to be paid for a natural disaster. The insurance is only as good as the ability of the insurance company to pay it in the event of a claim. To address this concern, the GSEs require that the property

[2] Several studies show that being uninsured or underinsured increases the propensity of household default after large climate events C. Kousky, H. Kunreuther, M. LaCour-Little, and S. Wachter, "Flood Risk and the U.S. Housing Market," *Journal of Housing Research* 29 (sup1), S3–S24. Publisher: Routledge eprint and P. Issler, R. H. Stanton, C. Vergara-Alert, and N. E. Wallace, "Mortgage Markets with Climate-Change Risk: Evidence from Wildfires in California," SSRN Working Paper No. 3511843.

[3] See e.g., B. J. Keys, T. Mukherjee, A. Seru, and V. Vig, "Did Securitization Lead to Lax Screening? Evidence from Subprime Loans," *The Quarterly Journal of Economics* 125 (1), 307–362 and B. J. Keys, A. Seru, and V. Vig, "Lender Screening and the Role of Securitization: Evidence from Prime and Subprime Mortgage Markets," *The Review of Financial Studies* 25 (7), 2071–2108.

insurer backing the mortgage meets a minimum financial strength rating (FSR) threshold.[4] FSR measures an insurer's solvency and ability to make timely payments on its policyholder claims. It therefore serves as an indicator of the counterparty risk that an insurer poses to mortgage owners, lenders, and households. The GSEs do not accept mortgages backed by insurers they deem too risky, i.e. insurers whose FSRs are too low. To be eligible, insurers therefore seek FSRs from third party rating agencies, in exchange for paying them a fee. State-run insurance of last resort plans are exempt from the financial strength requirement, so mortgages backed by them meet GSE eligibility for property insurance.

The main rating agencies accepted by the GSEs include AM Best, S&P Global, and Demotech.[5] Table 1 shows some key facts on the three agencies and the minimum FSR thresholds. AM Best and S&P have longer histories, rate multi-state insurers all over the US, and both have been registered with the U.S. Securities & Exchange Commission as a Nationally Recognized Statistical Rating Organization (NRSRO) since 2007. Demotech is relatively new, largely rates small single-state insurers operating in coastal states, and became NRSRO in 2022. Notably, GSEs insurer FSR thresholds vary by the issuing rating agency. For example, Fannie Mae sets out that insurers with AM Best ratings of B+ or better meet their eligibility. For Demotech they accept ratings of A or better.[6]

(b) GSE's insurer risk pricing. When selling or securitizing a mortgage with the GSEs, lenders have to pay an upfront fee called a guarantee fee (or g-fee). Following the crisis, GSEs added additional charges based on borrowers' credit score and loan-to-value ratio at origination called the loan-level pricing adjustments (LLPA).[7] Importantly, these fees do not vary with other key features of risk, including local house price risk, as well as insurance counterparty risk.[8] In other words, despite the wide disparity in the ex-ante quality of property insurers, even among those that meet GSEs' FSR requirements, differences in

[4] Our study focuses on the exposure to the government-sponsored enterprises, Fannie Mae and Freddie Mac. We exclude mortgages insured by the Federal Housing Authority (FHA) or Veterans Affairs (VA), which are securitized by Ginnie Mae into mortgage-backed securities. We do so because (i) these FHA/VA loans are backed by the government even at origination; (ii) We focus on Demotech, and Ginnie Mae's guidelines imply that it does not accept property insurers rated solely by Demotech.

[5] Kroll Bond Rating Agency (KBRA) was also added to this list for Fannie Mae in 2018, and for Freddie Mac in 2023; . We focus on AM Best, S&P, and Demotech as they accounted for most of the market share during the time frame of our study (2009-2018).

[6] For more details see Fannie Mae's and Freddie Mac's origination and servicing guides.

[7] See e.g., Fannie Mae's Pricing Matrix.

[8] See e.g., E. Hurst, B. J. Keys, A. Seru, and J. Vavra, "Regional redistribution through the US mortgage market," *American Economic Review* 106 (10), 2982–3028.

insurers' risk are not priced into g-fees or LLPAs. That is, lenders are not charged additional fees to sell mortgages backed by properties insured by riskier property insurers.

1.2. Implications for Federal Government's Fiscal Exposures

The lack of insurer risk pricing makes it crucial that GSEs rating requirements are properly calibrated to insurer risk to ensure that GSEs are screening out low quality insurers. It is equally crucial that the requirements are consistent across rating agencies because inconsistencies in the requirements across rating agencies could encourage ratings shopping. As long as an insurer meets eligibility through any one of the rating agencies, it meets the GSEs' eligibility requirements.

Mortgage market participants may not closely monitor the risks in insurance markets. Homeowners may lack the ability to distinguish between a good and a bad insurer. Lenders may have less incentives to screen for counterparty quality when they themselves do not directly bear the risks. As a result, they may originate mortgages backed by low quality insurers and offload such mortgages to the GSEs. As GSEs' pricing are not sensitive to insurer risk, lenders do not bear the costs associated with doing so. Indeed, these arguments have parallels in the 2008 financial crisis when lenders neglected borrower risks and originated too many risky mortgages, the risks of which eventually were borne by the GSEs (thus taxpayers) and the financial system more broadly.[9]

2. Assessing Federal Fiscal Exposures to Fragile Property Insurers

To study these interactions and the risks they pose to households and taxpayers, we construct a novel database linking insurance underwriting information with data on mortgage origination and performnace for the state of Florida. We focus on Florida because of the availability of granular insurance underwriting data and institutional features that allow us to examine the effect of insurer quality on lenders' actions in a causal way.

[9] See for example, C. Downing, D. Jaffee, and N. Wallace. "Is the Market for Mortgage-Backed Securities a Market for Lemons?", *The Review of Financial Studies* 22(7):2457–249; A. Purnanandam, "Originate-to-distribute Model and the Subprime Mortgage Crisis", *The Review of Financial Studies*, 24(6):1881–19; and B. Keys, T. Mukherjee, A. Seru, and V. Vig. "Did Securitization Lead to Lax Screening? Evidence from Subprime Loans." *The Quarterly Journal of Economics*, 125(1):307–362.

2.1. *Growth of Fragile Property Insurers*

Our first result concerns the rise of fragile insurers in Florida. We show that well-established traditional insurers (those rated by AM Best and S&P) are cancelling policies and exiting the state of Florida, in particular the high climate risk areas (Figure 1). The gap is largely being filled by insurers rated by Demotech (henceforth, Demotech insurers) and the state-run insurer-of-last resort known as Citizens Property Insurance Corporation. In particular, there is a dramatic increase in the market share of Demotech insurers. From having a negligible presence in the 1990s, when Demotech entered the market, their market share rose to over 50% in 2018. We show that this is not unique to Florida and part of a broader country-wide trend, especially in states more prone to weather- and climate-related disasters.

Demotech insurers are also of significantly lower quality than traditional insurers across a range of financial and operational metrics: they underwrite in high risk areas, are less diversified, are less capitalized relative to underlying risks, and their liabilities are backed by lower quality reinsurers. The higher ex-ante riskiness of Demotech insurers also translates to higher rates of insolvencies. We track all insurer insolvencies in Florida between 2009 and 2022 and find that 19% of Demotech insurers became insolvent during the time frame of our analysis, while none of the traditional insurers did. In other words, all the insolvencies during this time frame are among insurers rated by Demotech (Figure 2). The quality gap between Demotech insurers and traditional insurers are widespread, extending beyond Florida. Looking at the top ten climate risk states,[10] we find similar trends in ex-ante financial and operational metrics and in ex-post insurer insolvencies for Demotech insurers.

2.2. *Financial Strength Ratings and GSE Eligibility*

Despite their risk, insurers rated by Demotech secure high enough financial strength ratings to meet the minimum rating requirements set by the GSEs for a mortgage to be eligible for purchase and securitization. We develop a framework to estimate a counterfactual AM Best rating for the insurers rated by Demotech. This framework builds off a robust academic and industry literature and consider key financial ratios and operational metrics that are widely used as indicators of solvency risk. Our analysis shows that a vast majority of the

[10] Defined as states with the highest property damage per capita as reported in Spatial Hazard Events and Losses Database for the United States from the Arizona State University.

Demotech insurers would not meet GSE eligibility if subjected to traditional rating agencies' methodologies (see Figure 3). A comparison of historical US wide insolvency rates for the different rating agencies also corroborates this conclusion. The 10-year insolvency for insurers in the GSE eligible segment (i.e. insurers that meet the FSR threshold) is at 9% for Demotech and is 0.4% for AM Best as per NRSRO filings.[11]

2.3. The Amplifying Effect of Fragile Insurers on Mortgage Delinquencies

We next show that fragile insurers pose risks for households and mortgage owners. We study serious mortgage delinquencies[12] in the aftermath of Hurricane Irma, a Category 3 storm that caused over $50 billion in damages and several insurer insolvencies. Using an event study empirical design, we show that counties with more exposure to insolvent insurers have far worse delinquency outcomes; this result holds even after controlling for the direct effect of the storm on delinquencies. Indeed, we find that having large damage to the property causes homeowners to default on their mortgages particularly when the home is insured by an insurer on the verge of being insolvent. This is because insurers that are in financial trouble are slower to pay claims or may not pay the full amounts.[13] This result clearly highlights fragility of property insurers as an important channel through which climate risk might threaten the stability of mortgage markets, and possibly the financial system.

2.4. Who Bears Risks and Why?

A key question is who bears the risks of insurance market fragility? We find that the GSEs are particularly exposed to low quality Demotech insurers. This fact can be seen in two ways. (i) The fraction of mortgages that are sold to the GSEs is significantly higher in counties that also have a high market share of Demotech insurers. (ii) We can assess the market share of Demotech insurers for loans that are under the conforming loan limit because a vast majority of such loans are ultimately sold to the GSEs. Examining the average coverage amount sold by Demotech and traditional insurers provides a sense of their market shares for different loan

[11] See AM Best's and Demotech's NRSRO filings. AM Best (here) and Demotech (here).
[12] Serious delinquency is defined as whether the mortgage is more than 90-days delinquent, in pre-sale or post-sale foreclosure, or in REO.
[13] Brianna Sacks, 'How Florida let a top insurer abandon homeowners in their time of greatest need," *The Washington Post*, August 6, 2023, https://https://www.washingtonpost.com/climate-environment/2023/08/04/how-florida-let-top-insurer-abandon-homeowners-their-time-greatest-need.

types. Demotech insurers have a dominant presence, accounting for over 95% of the market share, in homes having lower coverage particularly those below $400,000 which are very likely conforming loans (Figure 4).[14] This strongly suggests that a vast majority of the GSE loans are being backed by Demotech insurers. Demotech insurers also have a substantive, though relatively smaller, market share in what is likely the non-conforming segment. This suggests that banks may also carry some exposure to poor quality insurers.

We find that the dominance of Demotech insurers in the GSE segment is driven by mortgage lenders' strategic securitization behavior to offload insurance counterparty risk as well as their lax origination standards in the conforming segment of the market. We also show that these patterns are not simply due to higher default risk borrowers being more likely to obtain insurance from Demotech insurers.

We arrive at this conclusion in two steps. First, we show that banks are more likely to sell loans to the GSEs that they had previously retained after the insurance policy switches from Citizens (state-run insurer of last resort) to one of the Demotech insurers. This plausibly exogenous variation in quality of insurance is delivered by Citizens' Depopulation Policy, a periodic program where Demotech insurers assume some policies from Citizen's balance sheet. We show lenders are more likely to sell mortgages following a Depopulation, indicating a desire to limit counterparty risk exposure to such insurers.

Second, we show that lenders' origination decision– whether to approve or deny a loan– is sensitive to insurance counterparty risk for jumbo loans (loans above the conforming limit) but not for conforming loans. The fact that origination decisions are sensitive to insurer risk in the jumbo segment, loans lenders have to retain on balance sheet, indicates lenders' desire to limit counterparty risk exposure to such insurers when lenders bear the risks. At the same time, their unwillingness to consider these risks in the conforming segment indicates lax screening standards for loans that can be offloaded to the GSEs at a low cost. This result also indicates that there are more conforming mortgages being originated relative to jumbo loans, suggesting that GSE policy is not just a transfer of risks from the state of Florida to the rest of the country, but creates a distortion in credit allocation from a benchmark where insurer risk is more likely to be appropriately priced.

[14] The base conforming loan limit for single-family homes was below $500,000 throughout our sample period.

3. Final Remarks

What can we do today to address the federal government's ongoing exposure to insurance market risks and the distortion in credit supply resulting from the mis-calibrated insurance market requirements? My coauthors and I consider several policy tools in our ongoing work to address the build up of risks in the financial system due to insurance market fragility.

1. **Insurer risk in loan-level price adjustments.** The most direct policy tool is to incorporate insurer risk in the GSEs loan level price adjustment (LLPA) matrix. Following the 2008 crisis, GSEs added LLPA for borrowers' credit score and loan-to-value ratio to account for the higher expected default risks of such borrowers and create the right incentives in the lending market. Having an LLPA for insurer risk will similarly compensate the GSEs for the higher expected default risk and losses given default because of exposure to low quality insurers.

   It will also provide households and lenders the right signals of insurance market risks, which would help address the distortions in lending markets. If GSE pricing were sufficiently sensitive to insurance counterparty risk, we would expect lenders to internalize the additional costs of having a low quality insurer when selling loans to the GSEs. Mortgages backed by low quality insurers will become more expensive than similar mortgages backed by high quality insurers. These price signals will help households distinguish between good and bad insurers (a job FSRs would have accomplished if they were sufficiently sensitive to insurer risks) and provide them incentives to shop for better quality insurers. Furthermore, households' would be able to be more confident that their insurance premiums would bring real coverage after natural disasters.

   A key challenge in implementing this policy is that the GSEs would need to continuously monitor the quality of insurers backing the mortgages they own. Because property insurance is typically a 1-year contract, the insurer may change over the life of the loan; GSE pricing would need to account for the possibility of these issues upfront.

2. **New Risk Based Capital regulation to address climate risk.** Our paper also highlights deficiencies in insurance solvency regulation and supervision. Higher capital is a measure of the likelihood that insurers remain solvent after experiencing a given shock. Even though a large number of Demotech insurers became insolvent, they continued to

satisfy the regulatory risk based capital (RBC) requirements. This suggests that the RBC requirements may not be sensitive to underlying risks. In particular, we find substantial differences between Demotech and traditional insurers in liability-side risks and in diversification across geographies, products, and group structure, while the composition of assets being relatively similar. This suggests that the regulatory capital charges associated with insurers' climate risk exposures may be too low, particularly for small and single-state insurers that tend to be less diversified.

Data challenges. We cannot make progress on our quantification of fiscal exposures or the trade-offs of different policy recommendations without access to granular data on insurers' liabilities. Currently, this data is severely limited, often even to regulators themselves. Access to detailed data on the number of policies, coverage sold, premiums charged, product features (e.g., wind or fire riders), and losses incurred is a necessary starting point to quantify each insurer's climate risk exposure. The data collection efforts need to focus on a geographically granular level (e.g., ZIP code or census tract) because the risks themselves can be very different across closely situated regions. This is also crucial from the standpoint of being able to connect insurance data with data on other markets (e.g., mortgage markets), which are typically at an individual level. The proposed joint FIO/ NAIC data call is a good first step. However, I would strongly urge regulators to make the data collection efforts as wide as possible, and to make the data available for research by the wider community of academics, policymakers, and industry practitioners.

I appreciate your timely efforts on this important topic, and I will be delighted to answer any questions.

Table and Figures

Table 1: Minimum Required Insurance Financial Strength Ratings for Mortgages

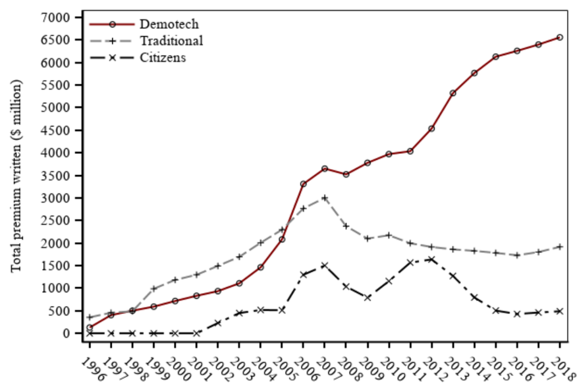
The table reports the minimum financial strength rating required of property insurance companies for the mortgage to be eligible for purchase or securitization by Fannie Mae or Freddie Mac. Source: Sastry, Sen, and Tenekedjieva (2023).

Rating Agency	Began	Regulated	Fannie Mae	Freddie Mac
AM Best	1899	2007	"B" or better	"B+" or better
S&P Global	1971	2007	"BBB" or better	"BBB" or better
Demotech	1990s	2022	"A" or better	"A" or better

Figure 1: Evolution of Homeowners' Insurance Market in Florida

Panel A shows the evolution of homeowners' insurance premiums over time for the different private insurer types Demotech, Traditional (rated by AM Best and S&P), and for Citizens. Total premiums are in thousands of dollars. Data are taken from insurers' statutory filings. Start and end dates are dictated by data availability of the QUASAR database. Panel B shows the percent of in force policies that are cancelled or not renewed by traditional insurers by FEMA's climate risk index in 2015. Source: Sastry, Sen, and Tenekedjieva (2023).

(a) Market Shares by Insurer Types



(b) Cancellations and Non-renewals of Insurance Policies by Traditional Insurers

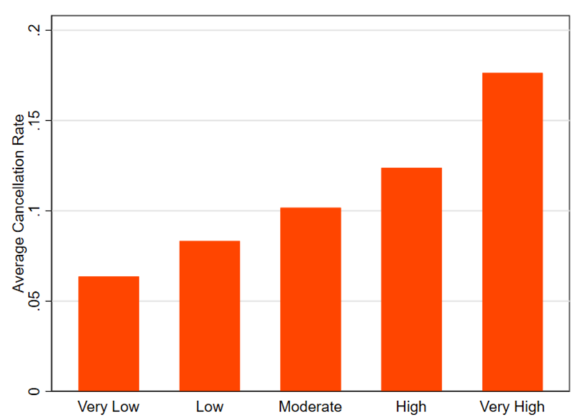


Figure 2: Insurer Insolvencies by Rating Agencies

The first column shows the share of insurer insolvencies by rating agencies, focusing on insurers operating in Florida that become insolvent between 2009 and 2022. Source: Sastry, Sen, and Tenekedjieva (2023) taken from NAIC GRID database. The second column shows these shares, as reported in the rating agencies' NRSRO filings, for the GSE-eligible segment.

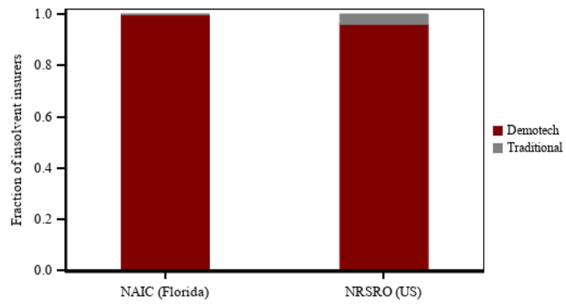


Figure 3: Counterfactual AM Best Ratings of Demotech Insurers

The figure shows our estimated counterfactual AM Best financial stability ratings of Demotech insurers. The red line shows the GSE eligibility cutoff for Freddie Mac and the blue line shows the GSE eligibility cutoff for Fannie Mae. Source: Sastry, Sen, and Tenekedjieva (2023).

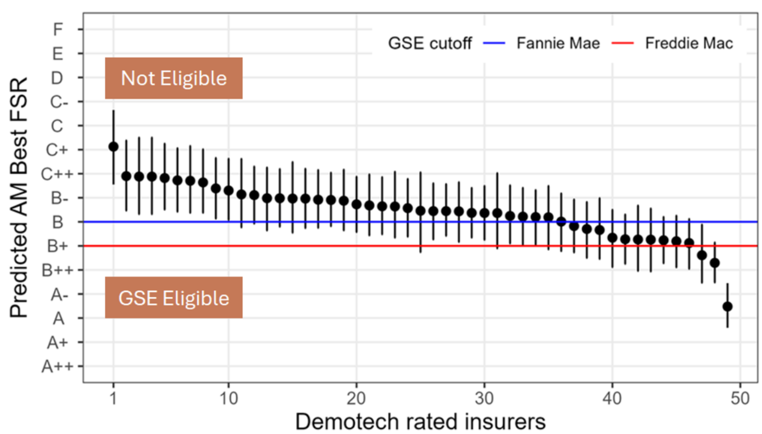
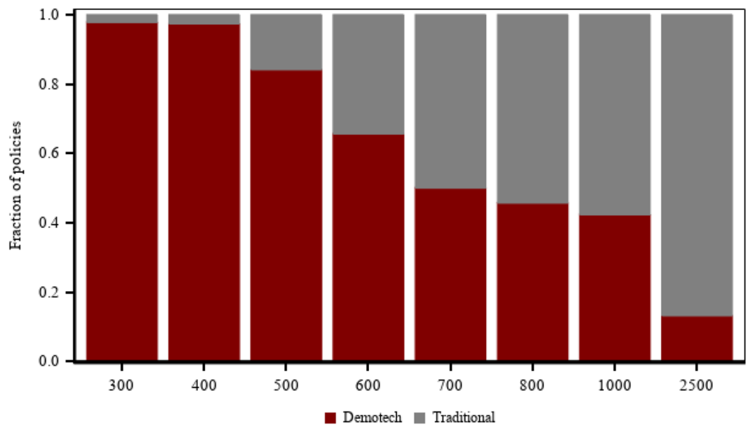


Figure 4: Demotech Market Shares By Coverage Per Policy

The figure shows the market share by number of policies for Demotech insurers in each coverage-per-policy category. Source: Sastry, Sen, and Tenekedjieva (2023).



Testimony of
Ms. Deborah Wood
Florida Resident

Before the
Senate Committee on the Budget
June 5, 2024

"Riskier Business: How Climate is Already Challenging Insurance Markets"

My name is Deborah Wood. My husband Dan McGrath and I moved from New Jersey to South Florida in 1979. We lived in Broward County for 43 years until we sold our home in January 2023, in part because our home insurance was becoming unaffordable.

My husband and I are retired, he was a public school teacher of special needs children, and I was a journalist. Dan and I raised our two daughters in Florida, and all four of us have earned degrees from Florida public universities.

In 1994 we moved to the city of Plantation, about 10 miles inland from the east coast. Home insurance rates were reasonable in those early years, and when we had to replace our roof in 2008 after a storm, the claims process was very smooth. Our policy renewed each October, with manageable rate increases. That changed in recent years. In 2017 we paid $3700 for insurance, and in subsequent years the rates increased significantly, so that our proposed renewal for 2023 was more than $8000.

Our problems with insurance began in 2017. Sometime before my husband and I left on a trip, a man showed up unannounced, saying he was from my insurance company and wanted to take a look at the property. As he had no identification, I declined him access. I left the company a voicemail and forgot about it until a few weeks later, when I received a notice that our policy would not be renewed because I had refused an inspection.

I contacted them immediately, said there was a misunderstanding, and asked them to send another inspector. They did, I didn't hear anything more, and naively thought we no longer had a problem. I was wrong.

In early September, my husband and I were at Grand Canyon National Park when we caught the news of Hurricane Irma's pending assault on Florida. I knew we'd be covered for the storm, but I wanted reassurance that my policy was on track to be renewed in October, so I called the company.

I will never forget that phone conversation. Essentially, I was told that we still would not be renewed but now the reason was because my roof had failed inspection. I asked why did you not tell me this and the answer was because we don't have to. I asked for the roofing report and was told "No," that the report was the property of the insurance company. So this company that I had done business with for at least 20 years was not only dropping us, but was allowing us to ride out a potentially catastrophic storm with what they had determined was a defective roof, without even warning us.

Fortunately, we only incurred minor damage from Irma. But we had to scramble to find a new insurance company in a matter of weeks in a state that had sustained major damage.

Our roof passed the new company's inspection with no problems, even after Irma. But unfortunately, their rates were higher, and kept increasing even as we had no new claims, reduced our coverage, and replaced our windows and doors with hurricane proof glass, at a cost to us of about $40,000.

My husband and I never intended to move, we loved our community, our neighbors, and our friends. Our home in South Florida was the regular gathering place for extended family, we truly enjoyed hosting visitors. But in 2022, we began having discussions as to whether South Florida was still the best place for us to be. There were family concerns, the weather events were more frequent and maintaining our home was becoming expensive. The insurance quote for 2023 gave us the push to put the house on the market.

We intended to buy another home in Tallahassee, Fl. We put our belongings in storage, and "temporarily" moved in with our daughter and son-in-law while we looked for a new house.

Flash forward to 2024. We reluctantly have made the decision that we will not be buying a home in Florida. We've learned there's no escaping the insurance problems, and weather disasters are becoming more and more prevalent, even in previously "safe" areas, like Tallahassee. We haven't decided what our next step will be. But at this stage of our lives, we are not willing to risk our financial well-being by buying a home that one day may become uninsurable or craters in value in a housing market crash fueled by the homeowners insurance crisis.

Written Testimony of

Commissioner Glen Mulready,
Oklahoma Insurance Department

Before the United States Senate
Committee on the Budget

Regarding:
Riskier Business: How Climate is Already Challenging Insurance Markets

June 5, 2024, 10:00 AM

Chairman Whitehouse, Ranking member Grassley, and members of the committee,

Thank you for the opportunity to address you today on a topic that is becoming increasingly important to homeowners across the nation: increasing homeowners insurance premiums. As natural disasters continue to arise, understanding the dynamics of insurance pricing is crucial for both homeowners and policymakers.

Homeowners insurance is a fundamental safeguard for what is for many Americans, their single largest asset. This important coverage protects against financial loss due to damage or destruction of a home and its contents. However, recent years have seen a notable increase in insurance premiums. One significant driver of this rise is convective storms and other severe weather events. Convective storms, which include phenomena like thunderstorms, tornadoes, and hail, have caused substantial damage in various regions. The cost to repair homes and replace belongings after such events has skyrocketed, leading insurance companies to adjust their premiums to cover the increased risk.

Beyond convective storms, we have witnessed hurricanes, wildfires, and flooding. These events have not only caused damage but have also increased the long-term risk profile of many areas. Insurance companies, tasked with managing risk, have responded by raising premiums to ensure they can cover those potential claims.

Another major factor influencing homeowners insurance premiums is inflation. Inflation affects the cost of building materials, labor, and other expenses related to home repair and reconstruction. As the cost of living increases, so does the cost of claims for insurers. When the price of lumber, steel, and other essential materials goes up, the expense of repairing or rebuilding homes also rises. Insurance companies must reflect these higher costs in their premiums to maintain financial stability and ensure they can meet their contractual obligations to policyholders.

So, what can homeowners do to mitigate these rising costs? One of the most effective strategies is proactive mitigation. Homeowners can invest in measures that reduce the risk of damage from severe weather events. For instance, installing storm shutters, reinforcing roofs, using "hail resistant" shingles and using fire-resistant materials can make a home much more resilient. Additionally, maintaining proper drainage systems and removing potential fire hazards from around the property can help. Insurance companies often provide discounts for homes that incorporate these protective measures, making them a worthwhile investment for homeowners.

I believe the most essential aspect of managing insurance premiums is fostering a robust competitive free market. Competition among insurance companies encourages innovation and efficiency, leading to better pricing and services for consumers. When insurers can properly underwrite and price for risk, they create a more balanced and fair market. This involves using advanced data analytics and modeling techniques to accurately assess the risk levels of different properties. By doing so, insurance companies can offer premiums that reflect the true risk, avoiding excessive charges for low-risk homeowners and ensuring high-risk properties are adequately covered.

Regulation also plays a crucial role in maintaining a healthy insurance market. Policymakers must strike a balance between consumer protection and allowing insurers the freedom and flexibility to adjust their pricing based on risk. Overly stringent regulations can stifle competition and lead to market exits, reducing choices for consumers. We have seen this play out most recently in another state where there were artificial caps put in place on premium increases. That worked well for consumers in the short term but then one by one all of the major insurers began announcing that they would cease to write any new homeowners insurance in that state. These are all private companies and if there is not the freedom and flexibility to price their products properly, they may have to take drastic steps as we have seen. Conversely, a well-regulated market encourages transparency and fairness, ensuring that homeowners have access to the most affordable and adequate coverage options.

In conclusion, the rise in homeowners insurance premiums is driven by severe weather events and the impact of inflation. However, homeowners are not powerless in the face of these challenges. By investing in mitigation measures and supporting a competitive insurance market, they can manage costs and ensure their homes are protected. Collaboration between homeowners, insurers, and policymakers is essential to create a sustainable and resilient insurance landscape.

Thank you for your attention, and I look forward to any questions you may have.

Budget Committee, U.S. Senate

Hearing on “Riskier Business: How Climate Is Already Challenging Insurance Markets”

Testimony of E.J. Antoni

Public Finance Economist, The Heritage Foundation

Room 608 Dirksen Senate Office Building

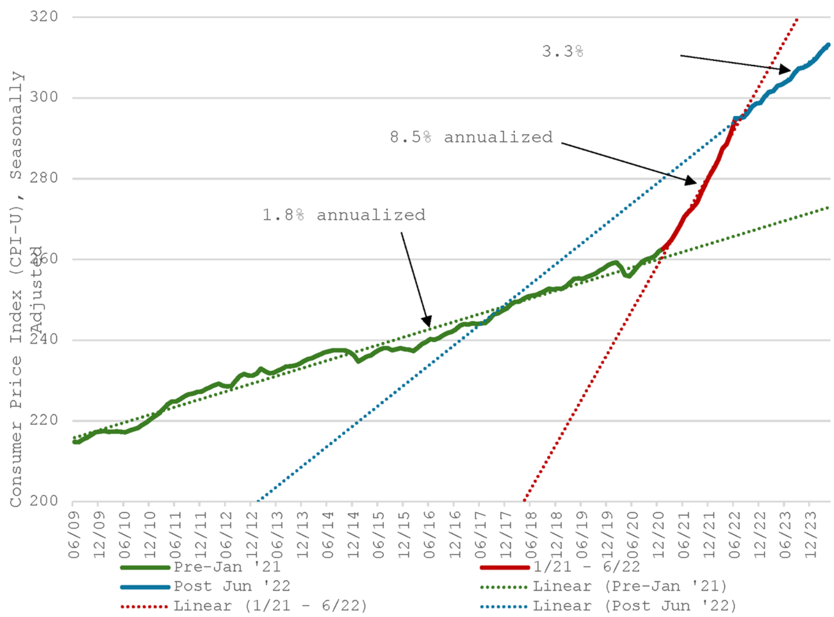
June 5, 2024

Chairmen Whitehouse, Ranking Member Grassley, members of the committee: thank you for the invitation to discuss with you today challenges in the insurance market and the impact of public policy on this marketplace, along with allegations surrounding climate change. I am a public finance economist and the Richard F. Aster fellow at the Heritage Foundation, where I research fiscal and monetary policy with a particular focus on the Federal Reserve. I am also a senior fellow at the Committee to Unleash Prosperity.

Four Years of Cost Increases

Since January 2021, American families and businesses have faced sharp increases in prices, especially for necessities like housing. The consumer price index (CPI) published by the Bureau of Labor Statistics (BLS) has risen a cumulative 19.3 percent through April 2024 on a seasonally adjusted basis. That is an annualized rate of 5.6 percent, at which pace prices will double in less than 13 years. This is in stark contrast to the rate of increase in the CPI before January 2021. From the start of the previous economic expansion through December 2020, the CPI rose at an annualized rate of 1.8 percent, below the Federal Reserve's 2.0 percent target (figure 1). After January 2021, however, the CPI began increasing significantly faster and from that time through June 2022 rose at an annualized rate of 8.5 percent, more than 4.7 times the previous rate of increase. Since June 2022, the index has risen an annualized 3.3 percent, almost twice the rate before January 2021.

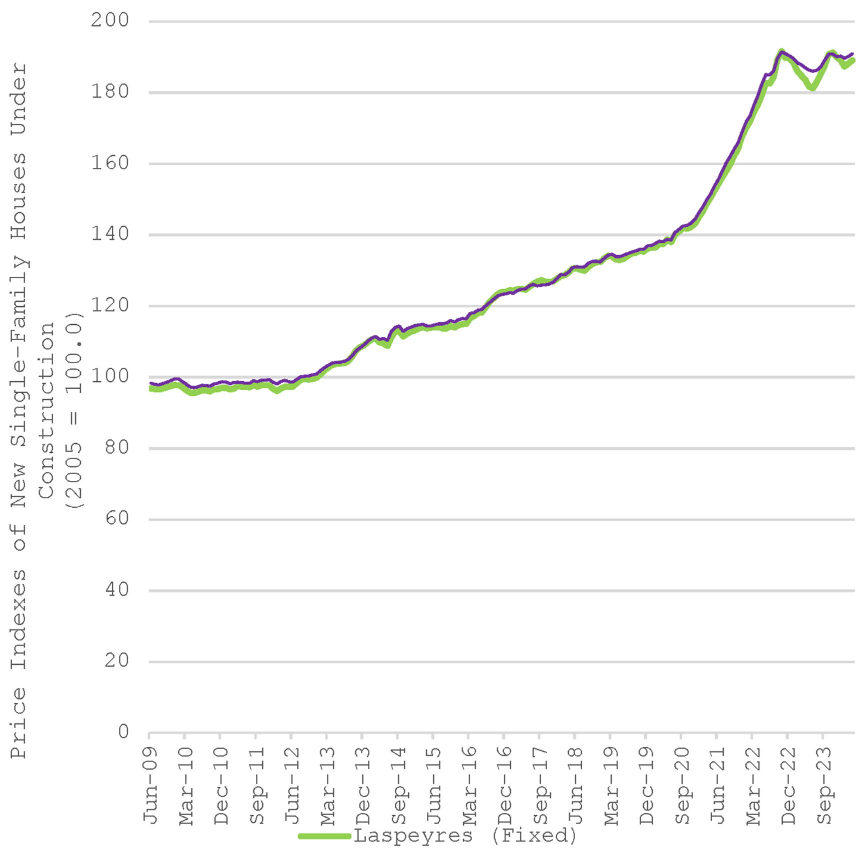
Figure 1



Source: Bureau of Labor Statistics

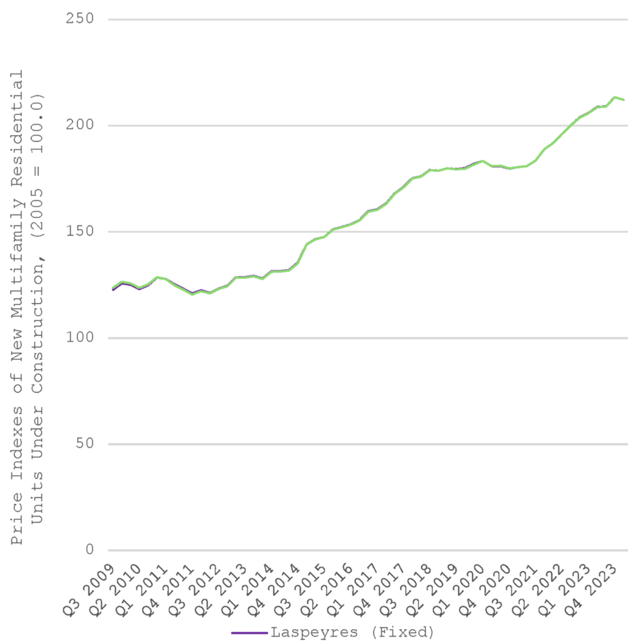
Price indexes for home construction have also increased sharply over the last four years. In January 2021, the annual inflation rate for the construction costs of a new single-family home began accelerating. Similarly, the price indexes for multifamily home construction also began increasing at a faster rate in the first half of 2021 (figure 2). The price indexes for single-family home construction have risen an average of 30.5 percent from January 2021 through April 2024. Costs for multifamily home construction rose at a slower pace than those for single-family homes, though much faster than the average rate of increase from 2017 through 2020 (figure 3). Since the end of 2020, the price indexes for multifamily home construction have increased by an average of 18.0 percent.

Figure 2



Source: Census Bureau

Figure 3



Source: Census Bureau

Impact of Cost Increases

In a theoretical perfectly competitive insurance market with no economic profit, insurer costs limited to claims for losses from the insured, and a single loss event, the premium paid by the insured can be represented as:

$$P_i = \pi_i R_i \theta_i$$

where P_i is the premium paid by insured i, π_i is the known probability of an event of loss to the insured R_i, and θ_i is the amount of loss. Trivially,

$$\frac{dP}{d\pi}, \frac{dP}{d\theta} > 0$$

Thus, increasing the probability of a loss to the insured or increasing the amount of that loss will increase the premium charged to the insured.

Inflation has had a significant impact on the insurance market over the last several years. This is particularly true for homeowners' insurance because input cost inflation for homebuilders has been higher than the average wholesale inflation rate. Premiums for homeowners' insurance increased about 20 percent in 2022[i], then 23 percent in 2023 and have continued rising.[ii] By increasing input costs for home construction and repair, the cost of claims has also increased significantly. In just four years, the median existing home price has increased 45.7 percent while the median new home sales price has increased 40.1 percent.[iii] Actuarial tables from 2019 or 2020 no longer represent accurate replacement or repair costs in today's insurance market. Furthermore, the higher construction price indexes for homes are inline with higher claim costs reported by major insurers.[iv]

Today's higher insurance premiums reflect today's higher cost of claims being filed. If the cost to repair or replace a homeowner's roof doubles, then the homeowner's premium will also double, all else being equal and assuming away detail such as overhead costs to the insurer. As premiums have risen to prohibitively expensive levels for some homeowners, many of them have chosen less coverage to reduce their premiums or have opted to waive coverage entirely and assume the risk of loss. Approximately 12 percent of homeowners in America are uninsured today.[v]

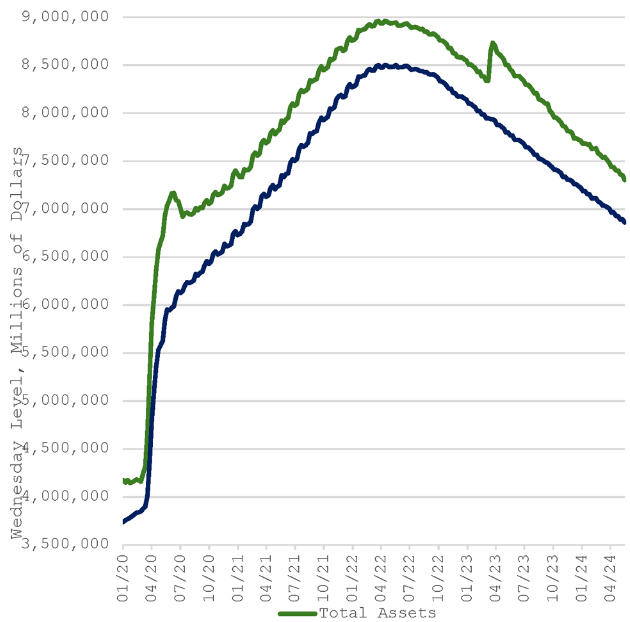
Insurance is fundamentally a risk management strategy. Price shocks, such as those which the nation has experienced over the last four years, cause lags between initial price increases and response from market participants. Hence, cost increases accumulated for several years without a commensurate increase in premiums. When those premiums were finally adjusted, they were increased not only for the most recent increase in the cost of claims, but for multiple years of increases. Indeed, the market is still adjusting its premiums to return to an equilibrium. Conversely, during the period prior to 2021, inflation was at a low and relatively steady level. That provided predictability which greatly reduced the number of sharp increases to premiums.

The insurance market is particularly susceptible to inflation shocks because it is backed by the reinsurance market. Losses to insurers above normal operating levels are effectively reimbursed by reinsurers. When costs are increased to the insured in the form of a higher-than-normal claim, the insurer pays that claim but does not initially know that this higher claim is the new normal. Thus, the insurer does not know to immediately increase premiums. After a period of losses, the insured is reimbursed by the reinsurer. Likewise, the reinsurer does not immediately know that these higher-than-normal outlays are the new normal. Thus, losses also accrue at the reinsurer until the new market conditions are determined to be permanent. At that point, the reinsurer increases the premiums charged to the insurer. The insurer, in term, increases the premiums charged to the insured in order to not only pay the new higher level of claims but also to pay the higher premiums charged by the reinsurer.

Sources of Cost Increases

The primary source of cost increases over the last four years for the insurance industry, and therefore also the primary source of higher premiums, has been inflation. Over the last four years, the federal government has run unprecedented budget deficits, resulting in equally unprecedented Treasury net debt issuances and an increase in the federal debt of $6.9 trillion since the end of 2020, and even more since the end of 2019. These debt issuances have largely been financed by the Federal Reserve's purchase of almost $5 trillion of Treasury securities since the start of 2020, along with manipulations of interest rates and capital markets to steer liquidity away from the private sector and towards the public sector (figure 4). Since purchases by the Federal Reserve are made from the right to issue fiat currency, they inherently increase the supply of money. Since the real economy has grown much slower than the money supply over the last several years, the value of the federal reserve note relative to goods and services has declined. This phenomenon is often referred to as “too much money chasing too few goods” and it is observed as an increase in the general level of prices.

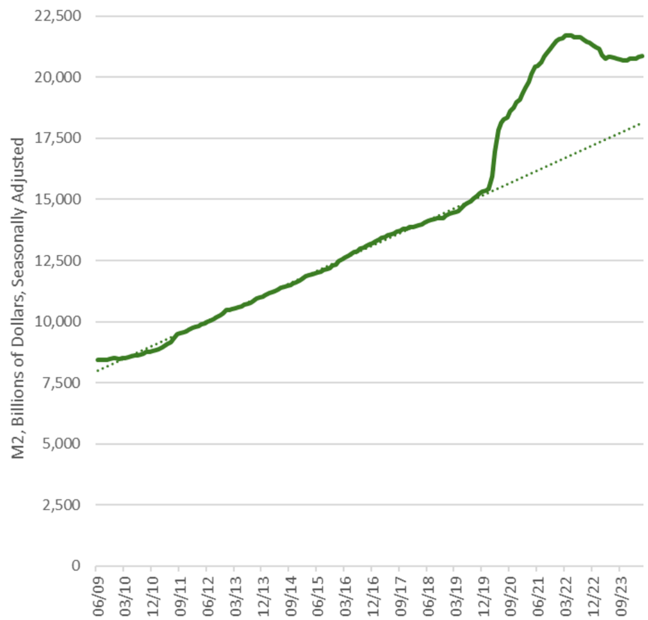
Figure 4



Source: Board of Governors of the Federal Reserve System

The quantity of money referred to as M2 grew over $6 trillion from early 2020 to the middle of 2022 (figure 5). After about a year of declines, M2 then remained relatively steady and has now begun growing again. It remains about $3 trillion above its pre-pandemic trend and is only down 3.9 percent from its peak as of April 2024, the latest data available at the time of this writing.

Figure 5



Source: Board of Governors of the Federal Reserve System

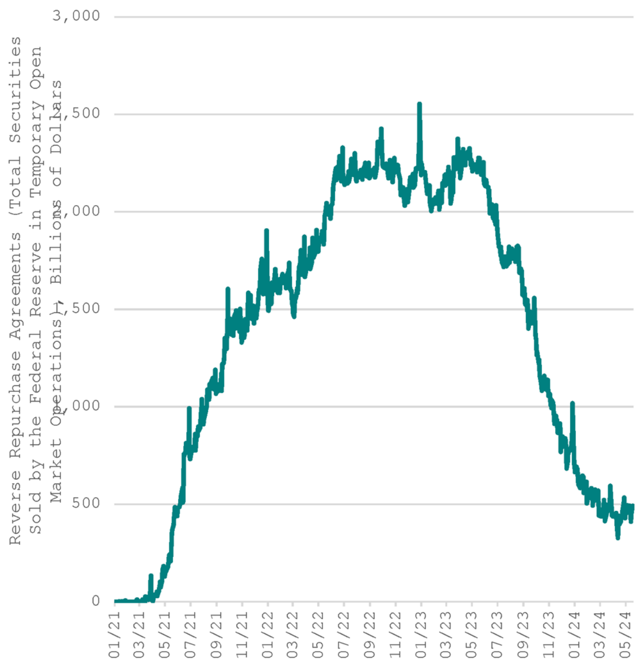
Similarly, bank reserves reached a trough at the beginning of 2023 and have trended up since then, rising 20.5 percent as of May 29, 2024 (figure 6). As this portion of the monetary base increases, loans to individuals, businesses, and the Treasury can increase, and each loan expands the total money supply. Thus, despite the Federal Reserve's reduction in its balance sheet, the increase in bank reserves has continued to expand the money supply and maintain an inflationary impulse in the economy.

Figure 6

Source: Board of Governors of the Federal Reserve System

This is largely the result of continued net debt issuance by the Treasury which is expected to increase to nearly $900 billion in the third quarter of this year. As financial institutions cease lending to the Federal Reserve's reverse repurchase agreement (RRP) facility and instead lend to the Treasury, money is moving out of sterilization and is working its way through the banking system. Whereas the money in the RRP facility cannot be used as the basis for loans and therefore can enlarge the money supply, any money lent to the Treasury is spent and therefore can enlarge the money supply upon reentry into the banking system. Beginning in 2021, the RRP facility absorbed excess liquidity that had been created by the Federal Reserve from its purchase of Treasury securities (figure 7). That reduced the initial inflationary impact from government deficit spending in 2021 and 2022 but only by delaying that inflation. As the RRP facility drains, the economy is finally feeling the effects of the government deficit spending that began in 2021.

Figure 7



Source: Federal Reserve Bank of New York

The elevated levels of government spending which have made 40-year-high inflation possible today stem directly from Congressional action. Congress, including the Senate budget committee, hasn't passed an actual budget in years. Instead, they have been funding the government with stopgap measures, record-setting omnibus packages, and emergency legislation, which is made public only shortly before members vote, thus ensuring the public is unable to examine what their representatives are actually voting until after the spending legislation has already passed.

Three other factors from the last four years have contributed to stress within the insurance industry beyond the general rise in the level of prices. First were the widespread riots in 2020, led by groups like Black Lives Matter and Antifa. These riots are estimated to have caused over $100 billion in damage, which created significant losses in the reinsurance market. Those losses caused liquidity concerns and had to be recouped with higher premiums to insurers, and then ultimately higher premiums to the insured.

Likewise, an increase in general lawlessness since 2020 has added to costs and financial stress in the insurance industry. The failure to prosecute retail theft and the failure of law enforcement to even respond to many reports of criminal activity in certain areas has added significant costs to insurers. Many insurance firms are refusing to even quote policies in America's inner cities today because the level of crime has so increased the risk of loss that the insurer cannot offer a risk mitigation that the would-be insured could ever afford to subscribe.

Third, overregulation by government authorities has created significantly more expensive replacement and repair costs, all of which are passed on to the insured, either in the form of higher premiums or direct payment when the insured cannot find affordable coverage. Regulatory analysis often makes unrealistic assumptions, such as overestimating the average life of a home or a vehicle. The empirical analysis for evaluating these regulations needs to consider the reduced average life of an object when that life is cut short because of an unpredictable loss, not just when the object wears out.

The last point of consideration is what are not the sources of cost increases which are putting pressure on the insurance industry. Attributing any significant impact on the insurance industry from climate change is not based on empirical evidence.[vi] It is not that weather related events like hurricanes and tornados are becoming more frequent or more intense, but rather that humans are building more structures (and more expensive structures) in the path of these low-pressure phenomena.[vii] The population of Florida, for example, has increased 15.6 percent in just the last decade, meaning more people are voluntarily moving to a hurricane-prone state.[viii] If a hurricane strikes an area where no one lives and no insured buildings are located, then there will be no insurance claims. If that same hurricane strikes that same area after hundreds of homes have been built, there will be hundreds of millions of dollars in claims. The same storm in different circumstances can result in completely different outcomes for the insurance industry. Similarly, forest fires from lightning strikes are not becoming more common in areas that practice adequate forest management practices, such as controlled burns. Areas which have adequate electrical grid maintenance are also less likely to have forest fires.

Analyses of the extent to which changes in the climate impact the insurance industry typically do not factor in the cost of adaptation, which is significantly less than the cost of direct mitigation or prevention. In other words, the most cost-effective strategy when dealing with climate or changes to the climate is almost always to adapt to it, instead of engaging in attempts at planetary engineering. This strategy has proven so cost-effective that climate related deaths have fallen 98 percent over the last century while energy use has trended upward, and energy prices have trended downward. Instead of trying to prevent hurricanes or stop building anywhere a hurricane might make landfall, the optimal choice has often been to build hurricane-proof homes which can withstand much or all the effects of such a storm.

While a theoretical insurance model incorporates known probabilities that are typically discrete and not continuous, this is not reflective of the real world. Rather, such a structure is devised to illustrate the concept of risk mitigation in an insurance framework. When an insurer is pricing a premium in the real world then, he or she must rely on actuarial science to examine the frequency of past events and predict the likelihood of those or similar events repeating. This is true for both known unknowns, such as the number of hurricanes that will make landfall at a particular location in a year, and unknown unknowns. Actuarial science is used not only to determine the likelihood of an event but also the likelihood of outliers. Thus, both insurers and reinsurers rely on such analysis for pricing their respective premiums.

There is an intersection between climate science and actuarial science which, at first blush, would imply that the former will impact the latter. For example, if a climate model predicts that there will be more hurricanes in a particular geographical region, then an insurer will need to alter the actuarial tables used to price premiums in that area. Although some people assert that climate models predict such results, the fact is that all of these models have a confidence interval which includes zero. This is due to the lack of sufficient input data used in regression analysis which can only be overcome by the modeler(s) using human-derived assumptions as opposed to strictly empirical inputs. Thus, these models are not only subjective in terms of their structure, but also their inputs. As such, they are of extremely limited use as predictors in actuarial tables and cannot help insurers when pricing premiums.

If the Senate Budget Committee is seeking to relieve the current stress in the insurance industry, it should start by passing a budget which reduces government spending. That would begin reducing the primary inflationary pressure in the economy, thereby also alleviating the greatest source of cost increases with the insurance industry. Reducing inflation to a much lower level that approximates stable prices should be the number one priority of this committee if the aim is truly to bring the insurance market back into equilibrium, and this is especially true for homeowners' insurance.

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[i] https://www.wsj.com/personal-finance/americans-are-bailing-on-their-home-insurance-e3395515
[ii] https://www.cnbc.com/select/homeowners-insurance-skyrocketing-how-to-lower-premium/
[iii] https://www.census.gov/construction/nrs/index.html
[iv] https://www.mercuryinsurance.com/resources/home/whats-driving-homeowners-insurance-rate-increases.html
[v] https://www.iii.org/sites/default/files/docs/pdf/2023_q2_ho_perception_of_weather_risks.pdf
[vi] https://www.sciencedirect.com/science/article/pii/S0040162520304157
[vii] https://www.census.gov/newsroom/press-releases/2023/state-to-state-migration-flows.html
[viii] https://www.census.gov/programs-surveys/popest.html

5 June
2024

Riskier Business: How Climate is Already Challenging Insurance Markets

UNITED STATES SENATE COMMITTEE ON THE BUDGET HEARING

MR. RADE MUSULIN

RESPONSE TO QUESTIONS FOR THE RECORD FROM CHAIRMAN SHELDON WHITEHOUSE, SUBMITTED 14 JUNE 2024

Question 1

Your statement says, "The risks that threaten the U.S. coastal home insurance industry, and particularly Florida, are potentially devasting." Would you elaborate on what those risks are and what you mean by "potentially devastating"?

According to NOAA, in 2020 almost 40% of Americans live in coastal counties, a 46% increase since 1970[1]. In 2015, Verisk estimated the total insurable value of property in coastal areas to be $17 trillion[2], a figure which is much higher today. A large number of highly credible studies have pointed to the risk of major losses to coastal property from hurricanes, winter storms, and rising sea levels. This risk will become materially worse in coming decades as climate change drives stronger storms, coastal flooding, and erosion.

There is strong scientific consensus that our climate is changing from global warming, and that human activity in the form of greenhouse gas emissions is responsible (see IPCC figures below)[3]. As documented in my written testimony submitted for this hearing, in the future hurricanes are expected to become more intense, they are strengthening faster, their rainfall rates are increasing, their storm surge will become worse due to rising sea levels, and there is a significant possibility of "poleward migration" that would increase risk in the mid-Atlantic and New England states. Aside from hurricanes, more intense non-tropical cyclones and rising sea levels threaten to inundate low-lying beachfront property.

With regard to hurricanes, a major issue is that states in the mid-Atlantic and New England areas do not have the strong wind building codes now in force in Florida. Given how slowly the housing stock turns over, it is almost certain that the risk from storms and rising sea levels will change faster than our ability to protect property through changes in building codes and land use policies. The complexity of the process to make such changes and predictable resistance form affected stakeholders will place us further behind the pace of changing risk.

All of this means that there is a significant likelihood of adverse effects on the United States' financial system, with obvious negative implications for the Federal budget. Issues may include stress in insurance markets, rising prices for insurance, consumer affordability problems, large losses and post-event assessments from various government pools such as Citizens in Florida, and flow on effects on mortgage loan default risk. Beyond the housing market, the Federal budget may be affected by things like NFIP losses, FEMA disaster assistance, beach restoration by the Army Corps of Engineers, infrastructure damage, etc. Superstorm Sandy in 2012 provided a clear example of these types of costs[4].

In coming decades difficult decisions will be required about the expensive process of retreat from high risk coastal areas, as sea level rise will render many properties non-viable. This issue is facing many countries around the world. Some are already making plans for retreat, such as

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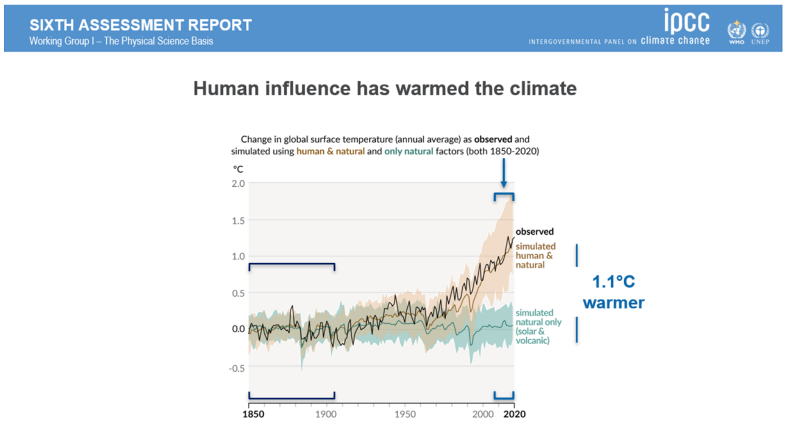
[1] https://coast.noaa.gov/states/fast-facts/economics-and-demographics.html
[2] https://www.air-worldwide.com/Publications/AIR-Currents/2015/The-Growing-Value-of-U-S--Coastal-Property-at-Risk/
[3] Source, IPCC, presented at a webinar introducing "Climate Science, A summary for Actuaries, https://www.actuaries.org/IAA/Documents/Publications/Papers/Climate_Science_Summary_Actuaries.pdf
[4] https://www.ozgator.com/publications/MusulinRisingTidesArticle1115.pdf

New Zealand[5], while others are investing large sums in coastal protection, such as Singapore[6]. Indonesia is planning to move its capital from Jakarta to Nusantara, partly due to Jakarta's high vulnerability to flooding from land subsidence and rising sea levels[7].



Adapted from Figure SPM.1

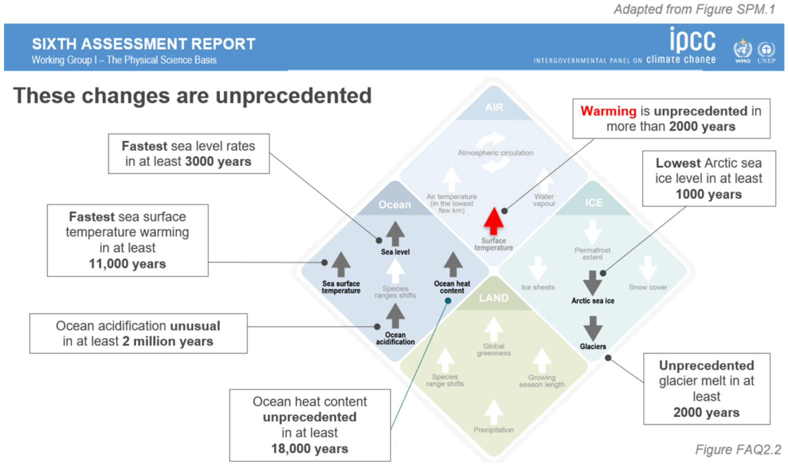


Figure FAQ2.2

As discussed during the hearing, climate change is exacerbating existing problems in insurance markets. Florida's reliance on government pools partially funded by post-event debt exposes its people to additional future costs which will make its already high insurance costs even less affordable for consumers. Tackling this problem will require urgent action to future-proof building codes and land use policies, strengthen loss financing, and reduce greenhouse gas emissions driving climate change.

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[5] https://www.preventionweb.net/news/coastal-retreat-serious-option-adapt-sea-level-rise
[6] https://www.channelnewsasia.com/singapore/rising-sea-levels-low-lying-vulnerable-coastal-protection-long-island-3955651
[7] https://www.aseanbriefing.com/news/indonesia-passes-bill-to-build-new-capital-city-deadline-2024/

Question 2

You also described an example of climate change-caused bark beetle infestations in Canadian forests driving up lumber prices, thereby contributing to inflation in the construction industry. Would you elaborate on how climate change-related extreme weather and other natural disasters such as wildfires are contributing to inflation for goods and services?

There are many ways climate change-related extreme weather contribute to inflation for goods and services. I provide two examples below.

The first involves the situation I alluded to in the hearing. An article in the Atlantic Magazine in January 2022[8] clearly explains how climate change contributed to huge increases in lumber prices experienced several years ago. As lumber is a key component of home construction, its cost directly affects insurance prices, unlike the general economy wide inflation cited by another witness at the hearing. Historically, lumber prices had been running in the $300-$400 per thousand board feet. Following a combination of beetle infestations, floods, and fires in Canada, the price increased to over $1,700, which would be similar to $17 per gallon gasoline relative to its current price.

Climate change contributed to this situation due to warmer temperatures allowing more beetles to survive and to spread to areas where the trees were not suited to repelling them, causing widespread tree kills. This temporarily led to lower lumber process as producers rushed to harvest dying trees, but over time the effect was to reduce supply and enhance the conditions for wildfires. Recent years have seen a large increase Canadian forest fires, which was evident in Washington by simply observing the air pollution they caused. Lumber production was also impacted by extreme flooding which degraded soil and stressed trees.

The lumber example affects the supply side of the cost equation. On the demand side, extreme weather increases damage to property, driving up demand for materials and labor, and hence their cost. An example of this occurred concurrently with the Canadian lumber situation described above. In December 2021 a very unusual storm system brought severe tornados to Kentucky, killing at least 80 people and causing widespread destruction. This event was at the extreme end of what would be expected, and while it is difficult to attribute it specifically to climate change, it is part of a pattern of more extreme weather observed in recent years (see the Actuaries Climate Indices below).

I raise this example to illustrate how a combination of these factors can cause significant pressure on insurance risk management. Insurers use catastrophe models "trained" on past weather patterns to estimate their exposure to such events. Climate change can drive more extreme outcomes than were apparent in historical records, meaning estimates of potential losses which underlie premiums may be understated. Following extreme events, insurers and reinsurers may adjust their loss estimates, driving up prices beyond that caused by inflation.

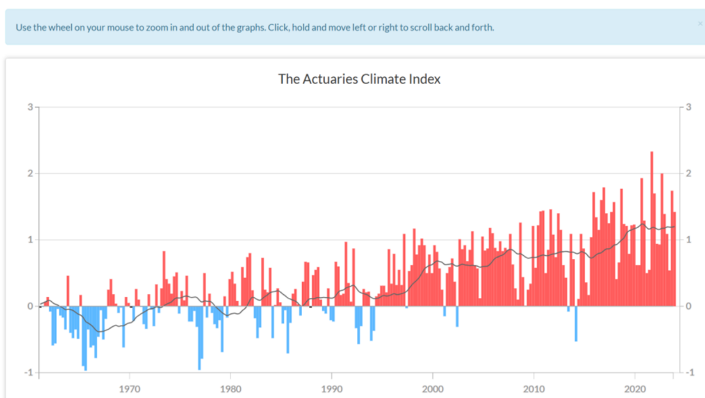
If there is climate affected pressure on materials used in reconstruction at the same time, we see a compounding effect of greater expected event damage and higher reconstruction costs due to things like the price of lumber. The combination of such effects can cause acute pressure on insurance prices.

[8] https://www.theatlantic.com/science/archive/2022/01/why-climate-change-pushing-lumber-prices/621288/

As evidence of the increasing trend in extreme weather, the actuarial profession produces the "Actuaries Climate Index" in both North America[9] and Australia[10]. These indices are objective measures derived from databases of weather information. Basically, they compare the incidence of extreme weather or sea levels currently observed to a baseline period in the past. Results above the historical average, shown in red below, indicate that the extreme weather is occurring more frequently. Clearly, on both continents extreme weather is occurring more frequently today than it did in the past. This puts upward pressure on insurance prices and contributes to inflation for materials and labor used in reconstruction.

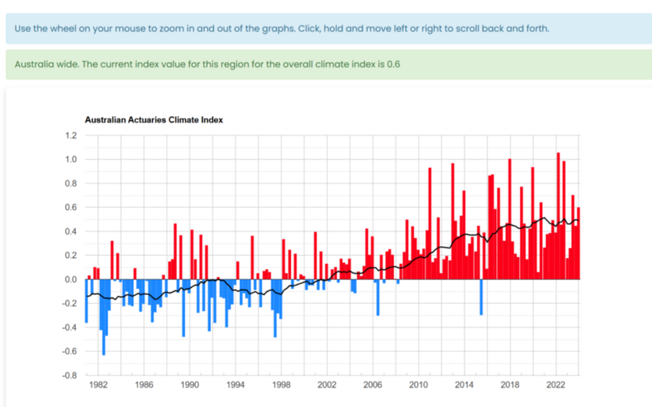
Latest Actuaries Climate Index USA

USA and Canada Combined



Latest Actuaries Climate Index Australia

Australia



[9] https://actuariesclimateindex.org/home/
[10] https://www.actuaries.asn.au/microsites/climate-index

Question 3

One of the witnesses testified that inflation was responsible for at least three quarters of the recent rise in homeowners insurance premiums and that said underlying inflation was the result of the United States federal government running large budget deficits. Do you agree with these statements? Why or why not?

No, I do not. General economic inflation has had a material impact on rising insurance costs, as noted in my written testimony. However, claiming that overall inflation is responsible for the specific issues with homeowners insurance affordability oversimplifies a complex issue.

Homeowners insurance premiums reflect many things, including the cost of claims, insurer capital charges, reinsurance costs, operating expenses, and so forth. The cost of claims is driven by a combination of general economic conditions, specific supply and demand pressures in the material and labor used in reconstruction, and the pattern of events which lead to claims. The specific construction cost issues and pattern of losses are by far the most important factors driving insurance prices. There is no question that recent years have seen many large disasters, such as Hurricane Ian.

As noted in my response to Question 2, there are many climate related influences on key materials used in construction. Further, whatever the level of general economy wide inflation, large disasters drive up the demand for construction materials and labor, which inevitably puts upward price pressure on whatever the cost would have been absent those disasters. A high level of destruction from extreme weather diverts resources from other more productive economic activities, increases the cost of housing, and drives up insurance premiums. Said another way, whatever the level of general economic inflation is, disasters make it worse with regard to insurance premiums. Conversely, reducing insurance losses by enacting stronger building codes, changing land use policies, and reducing global warming through emissions reductions will lower insurance prices over time from what they would have been otherwise, without regard to whatever the overall inflation rate is in the economy.

I also note that global supply chain issues have affected the cost of materials in countries which have different levels of government debt and fiscal policies. As an example, in Australia where I currently live, insurance prices have increased 56% since 2020, current insurance price inflation is 16.2%, and 12% of households are experiencing insurance affordability pressure[11]. These price increases are running well above the level of general inflation and have been driven by supply chain issues and a high incidence of extreme weather, experience which mirrors that in the United States. Importantly, Australia's government debt to GDP ratio is 38%, while the United States' is 129%[12]. Australia is also running a federal budget surplus in 2024[13]. This is an example of why it is difficult to assert a clear link between a country's debt and fiscal policies and insurance price changes or affordability.

Finally, the insurance affordability issues in Florida arose long before the current Administration and its fiscal policies, reflecting high exposure, the pattern of extreme weather events, and state government decisions. We have not seen similar issues in states with low catastrophe risk.

[11] https://www.afr.com/policy/economy/home-insurance-premiums-are-up-56pc-but-insurers-are-making-a-loss-20240402-p5fgt1
[12] Australian Government Debt – Parliament of Australia (aph.gov.au)
[13] https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/speeches/budget-speech-2024-25

Response to

Questions for the Record

From: Chairman Sheldon Whitehouse

ISHITA SEN

Assistant Professor of Finance

Harvard Business School

on

Riskier Business: How Climate is Already Challenging Insurance Markets

Before the

SENATE BUDGET COMMITTEE

Held on June 5, 2024

Room SD-608, Dirksen Senate Office Building

Question #1 Your statement says, "Our analysis shows that a vast majority of the Demotech insurers would not meet GSE eligibility if subjected to traditional rating agencies' methodologies." Would you elaborate on that so that I can better understand the methodological differences and why they are allowed to exist?

Response: One key analysis in our paper[1] is to examine whether insurers rated by Demotech would have met GSE eligibility in case a traditional rating agency (AM Best or S&P) would have rated them. To answer this question, we develop a rating replication framework building off a robust academic and industry literature that uses widely employed financial and operational indicators of solvency risk to predict insurers' financial strength ratings (FRSs).

Why not directly compare ratings given by two rating agencies? In theory, one could potentially only consider the set of insurers for whom we observe two ratings – a Demotech rating and a rating given by one of the traditional rating agencies and then ask whether the two ratings are consistent with each other.

However, there are two empirical problems with this approach. First, a large number of insurers that get rated by Demotech typically do not simultaneously also have another rating from a traditional rating agency. In fact, in only 6.4% of cases we observe two ratings in the same year. Second, even if two ratings were available such a comparison is problematic because insurers that tend to have two ratings are of higher quality than insurers that only have a Demotech rating. In other words, the population of insurers with only a Demotech rating is systematically different from insurers that have both. These systematic differences make it impossible to learn about the GSE eligibility of the Demotech-only insurance companies by using the population of insurers that have two ratings, given the vast differences in quality. This type of comparison would lead to very misleading conclusions about the methodologies of different rating agencies.

Rating Replication Framework: Our rating replication framework allows us to overcome these empirical challenges.[2] We first develop an AM Best rating replication model

[1] See P. Sastry, I. Sen, and A. Tenekedjieva, "When Insurers Exit: Climate Losses, Fragile Insurers and Mortgage Markets," Harvard Business School Working Paper, No. 24-051. The article can be accessed here.
[2] In practice, obtaining a counterfactual rating is very difficult to do directly because rating agencies' methodologies are proprietary, and they often have access to private data which go beyond what companies

by mapping observable insurer financial and operational characteristics to their AM Best FSRs.[3] This step identifies the best predictors of AM Best FSRs using the sub-sample of insurance companies that have an AM Best rating.[4] We then take this model to predict AM Best ratings for insurers that only have a Demotech rating by using the financial characteristics of those Demotech companies. We do so for the last year for which an "A" or a higher rating was assigned by Demotech, i.e. for the year the insurer met GSE eligibility using their Demotech rating.

Figure 1 shows the counterfactual AM Best ratings for the Demotech insurers. Each dot shows the average predicted value across several model simulations and the bar shows the 90% confidence interval. The blue line shows the GSE eligibility threshold for Fannie Mae and the red line shows the threshold for Freddie Mac. Dots above the lines indicate that the insurer would be GSE ineligible. As we can see that a large fraction of Demotech insurers would not meet GSE eligibility with our estimated counterfactual AM Best rating. In particular, our estimates imply that close to 67% of Demotech insurers would not meet Freddie Mac's eligibility requirement and 21% would not meet Fannie Mae's requirement. Moreover, only 10% of the Demotech rated insurers (depicted on the right hand side of the graph) appear to be comfortably meeting the GSE's eligibility criteria for AM Best.

Evidence from Actual Insolvencies: Our results are also validated by the substantially higher insolvency rate of GSE eligible Demotech insurers (i.e. those rated A or better by Demotech) relative to the insolvency rate of GSE eligible AM Best insurers (i.e. those rated B or better by AM Best). In fact, eligible Demotech insurers have a 25 times higher insolvency rate than eligible AM Best insurers.

Overall, these results strongly suggest inconsistencies in the GSE eligibility requirements across rating agencies. Please let me know if I can clarify anything further.

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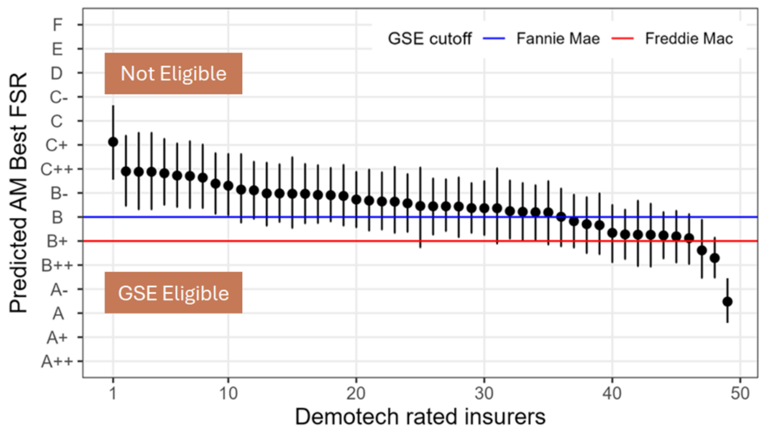
are required to publicly disclose.

[3] We focus on AM Best because of its substantially higher market share than S&P.

[4] See Sastry, Sen, and Tenekedjieva (2023) Section 4.3 for the different model specifications, the characteristics selected, and their explanatory power. Our model explains close to 60% of the variation in AM Best ratings, thus providing a good representation of AM Best's underlying ratings methodology. We choose the characteristics following the literature (see R.S.J. Koijen and M. Yogo (2015), "The cost of financial frictions for life insurers," American Economic Review 105 (1), 445–475.) We include several measures of insurers' risk and capitalization, e.g., total assets, extent of diversification, leverage, RBC ratio, asset risk, and reinsurance. The characteristics also closely overlap with what would be chosen using regularization techniques, e.g., LASSO. In addition, a large number of the chosen characteristics corresponds to factors AM Best itself considers in assigning ratings, as described in publicly available reports.

Figure 1: Counterfactual AM Best Ratings of Demotech Insurers

The figure shows our estimated counterfactual AM Best financial stability ratings of Demotech insurers. The red line shows the GSE eligibility cutoff for Freddie Mac and the blue line shows the GSE eligibility cutoff for Fannie Mae. Source: Sastry, Sen, and Tenekedjieva (2023).



Responses to:

Questions for the Record
from Senator Charles E. Grassley
for Dr. EJ Antoni
"Riskier Business: How Climate is Already Challenging Insurance Markets"
June 5, 2024
Senate Budget Committee

Question #1:
Dr. Ishita Sen noted the following when addressing current difficulties in insurance markets, "We are not in a position now to answer some basic facts about exactly what the numbers look like." She then went on to discuss how the "first step to designing any policy would be for us to know exactly how bad the problem is and then come up with the solution." Unlike past Democrat witnesses, Dr. Sen said the quiet part out loud. Liberal climate activists assume climate-driven economic disaster without basic facts to support their alarm.

Given this admission, would it be wise to use their extreme climate modeling and related forecasts to justify public policy responses? How could these policy responses wreak further havoc on our struggling economy? How can new mandates in the name of climate change increase costs and drive further inflation?

> It would be unwise to use the climate modeling of alarmists in the cost-benefit analysis of any public policy. For the last 50 years, these models have consistently proven themselves to be extremely inaccurate; none of the doomsday scenarios, or even the mildly adverse scenarios, have come to pass.
>
> If such alarmist climate modeling were to be taken seriously, it would prompt an equally alarmist public policy response. It is difficult to overstate the cost such a response would entail, amounting to about half the nation's gross domestic product, each year, in perpetuity.
>
> Regulatory mandates, including those done in the name of climate change, almost always impose additional costs, resulting in higher prices paid by consumers. Unfortunately, such cost increases are typically ignored when calculating inflation or a cost-of-living increase. When higher prices are the result of a regulatory burden, those additional costs are assumed away in what is called a hedonic adjustment. The assumption is that the product or service has appreciated in quality by exactly the amount of the regulatory cost. Thus, even though the consumer is paying more, tools like the consumer price index will show no increase. Imposing additional regulatory mandates in the name of climate change will therefore continue to increase the cost of living faster than the rise in the consumer price index and other similar tools used to measure inflation.

Question #2:

How have increased costs, such as those from homebuilding, home repairs, and automobile repairs, impacted the lives of insurance policy holders? How much have these costs increased and what is the overwhelming root cause of these increases?

Insurance policy holders, on average, are paying significantly higher premiums today compared to four years ago. As costs for homebuilding, home repairs, automobile repairs, etc. have risen sharply, insurance premiums have followed in their wake because repair and replacement costs are one of the key factors in determining premiums. Input costs like construction materials have risen significantly but the rate of increase has also varied considerably. The overall cost, however, to construct a single-family home has risen over 30 percent from January 2021 through April 2024. This exceeds the rate of increase in tenants' and household insurance premiums over that same period, according to the Bureau of Labor Statistics. Additionally, in that time, automotive repair costs have risen 41 percent and automotive insurance premiums by 52 percent. The overwhelming root cause of the increases across all insurance premiums over the last several years has been inflation, which caused the prices of the underwritten assets to rise.

Question #3:

Dr. Ishita Sen agreed with Senator Romney that inflation is a big factor driving up insurance costs, but not a single Democrat on the committee mentioned the inflationary impact of President Biden's policies.

They prefer to ignore inflation, which is emptying the wallets of hardworking Americans. One of the witnesses went so far as to attribute inflation to climate change by citing an anecdote of Canadian wildfires leading to a spike in the price of lumber. While supply constraints, whatever the cause, can lead to a temporary spike in prices for affected goods, attributing the Canadian wildfires to climate change is questionable given the findings of International Panel on Climate Change, which acknowledges that weather is not the most important factor in wildfires.[1] Moreover, according to Canada's National Forestry Database, Canada has not seen an increase in fire activity in recent decades.[2]

In your view, what is a larger contributor to the rising cost of insurance, alleged climate change driven supply constraints or inflation driven by the Biden administration's reckless spending agenda?

Supply chain disruptions contributed to cost increases in 2020 and 2021, but those disruptions were ultimately resolved. Index data published by the Federal Reserve Bank of New York and S&P Global both show supply chain pressures today are lower than before the pandemic and now have excess capacity. If supply chain disruptions had been the cause of higher prices and therefore inflation, then the resolution of supply chain disruptions should have resulted in falling prices and therefore deflation. This has not happened. Instead, inflationary pressures remain in the American economy because of excessive government spending and accommodative

[1] Roger Pielke, "What the media won't tell you about ... Wildfires," *The Honest Broker,* June 8, 2023, https://rogerpielkejr.substack.com/p/what-the-media-wont-tell-you-about-783

[2] Ibid.

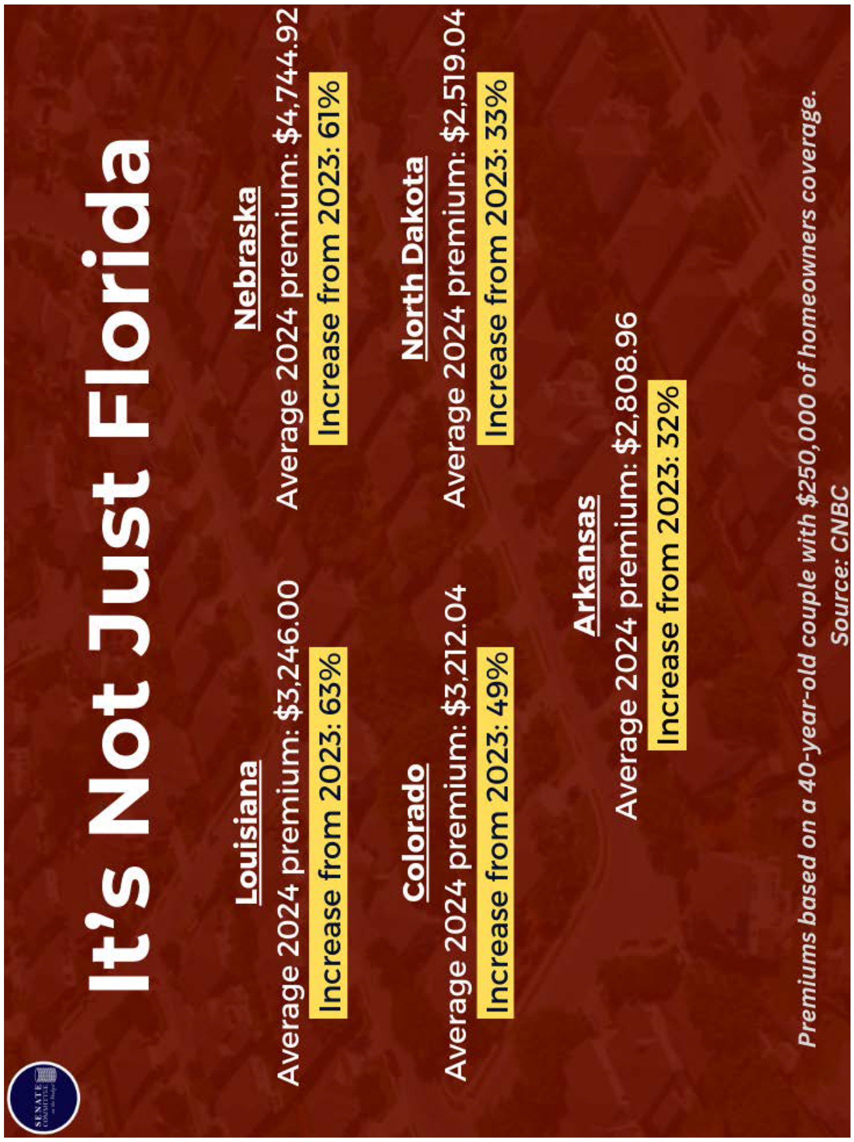
monetary policy. Furthermore, the fact that supply chains are now in better shape, on average, than they were before the pandemic indicates that the disruptions of the last several years had nothing to do with climate change, which the alarmists tell us is getting worse all the time. In fact, no empirical evidence has ever been presented to support the claim that anthropomorphic climate change has resulted in supply chain constraints. In reality, the elevated levels of government spending over the last four years have been the primary driver of inflation, including the rising cost of insurance.

Where Insurers Are Losing Money

States where homeowners insurance was unprofitable

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Colo.	Colo.	Mass.	Colo.	Calif.	Calif.	Colo.	Ala.	Colo.	Ark.	Ark.
Ga.	Iowa	R.I.	Mont.	Colo.	Colo.	Fla.	Ark.	Iowa	Ariz.	Colo.
Ill.	Ill.	S.D.	N.D.	Fla.	Conn.	Ill.	Del.	Idaho	Fla.	Ga.
Miss.	Mich.		Neb.	Ga.	DC	Minn.	Fla.	Ky.	Ga.	Hawaii
Mont.	Mont.		N.M.	Iowa	Fla.	Mont.	Ga.	La.	Iowa	Iowa
Neb.	Neb.		Texas	Idaho	Ga.	ND	Iowa	Mich.	Md.	Ill.
Okla.	S.D.		Wyo.	Ill.	Idaho	Neb.	Ill.	Minn.	Minn.	Ind.
S.D.	Vt.			Minn.	Md.	Wyo.	La.	Texas	Mont.	Ky.
				Neb.	NC		Minn.		Neb.	Mich.
				N.M.	S.D.		Miss.		N.M.	Minn.
				S.D.	Va.		Ore.		Ohio	Mo.
				Texas	Wyo.		S.D.		S.D.	Miss.
							Tenn.		Wash.	Ohio
							Utah		Wis.	Okla.
							Wyo.			Tenn.
										Utah
										Wash.
										Wis.

Source: AM Best


It's Not Just Florida
Louisiana
Average 2024 premium: $3,246.00
Increase from 2023: 63%
Nebraska
Average 2024 premium: $4,744.92
Increase from 2023: 61%
Colorado
Average 2024 premium: $3,212.04
Increase from 2023: 49%
North Dakota
Average 2024 premium: $2,519.04
Increase from 2023: 33%
Arkansas
Average 2024 premium: $2,808.96
Increase from 2023: 32%
Premiums based on a 40-year-old couple with $250,000 of homeowners coverage.
Source: CNBC

In Their Own Words: Floridians' Experiences with Insurance

"If our homeowners insurance continues to increase at this rate, we may be forced to drop it. What else can we do?"

- Kathleen and Lee

"The cost of homeowners insurance in South Florida is out of control, and prices keep rising."

- Paula

"With yet another recent rate increase ... we are being priced out of our home that we have lived in for over 28 years."

- Joan

"The cost of our home insurance needs to be addressed, especially for us seniors. It's hard enough making ends meet in South Florida, alone."

- Norm and Elena

EP Analytic Solutions E. Π. Analytic Σolutions

To Whom It May Concern,

I have been asked by Demotech to comment on the propriety of the statistical analysis and attendant conclusions in the paper "When Insurers Exit: Climate Losses, Fragile Insurers, and Mortgage Markets." To concisely express my opinion, I am content to simply state that I would not have accepted the analysis and conclusions of this paper from any of my subordinates, co – authors, mentees, or graduate students. This paper contains multiple statistical difficulties, neglect of basic economic concepts which would explain some of their observations, and inattention to the behavior of mortgage holders as it pertains to delinquency. As such, I have grouped my observations of this paper into three categories: statistical, economic, and praxeological.

Statistical Observations

1. One of the most concerning aspects of the analysis is the use of counter factual ratings. The authors claim in their abstract that "We find that these new insurers would not meet GSE eligibility thresholds if subjected to traditional rating agencies' methodologies." [1.] In fact, this is not the case. The authors admit as much when they write "We next develop an AM Best rating replication model by mapping observable insurer characteristics to AM Best financial stability ratings. Using the model, we predict counterfactual AM Best ratings for Demotech insurers." [2.] Hence, these ratings are not AM Best ratings, but simply the authors' guess about what AM Best's rating would have been using a subset of publicly available data.
2. The authors' guess is equation 1. While we might think of these ratings as being ordered, without an ordering variable (e.g. average insolvency rate by rating), the response in this modeling exercise is multinomial. Instead of attending to this, the authors write that they are modeling "the AM Best rating of insurer i in year t translated to a numeric scale." [3.] They do not discuss the nature of that translation. This is especially significant given that AM Best issues 16 unique ratings. Similarly, they do not discuss how they translate the model output (e.g. 9.042) back into a rating (e.g. B++). Given the nature of their model diagnostics and the conspicuous absence of a statement regarding how often their guess matched the actual rating, I suspect they did not perform the reverse translation.
3. A difficulty affecting all five of the models is the lack of discussion concerning transformations of the predictor variables. Sometimes the natural logarithm of a variable is used. Sometimes the square of a variable is used. Sometimes the variable is not transformed. How assiduous was the attempt to characterize the univariate relationship between the predictor variables and the phenomena being modeled? Was there any attempt to explore interactions between variables? For example, in equation 3, was the possibility that the impact on GSE share by 'Demotech' share might vary by county?

While there may be reasonable answers to all these questions, the authors published no discussion of how these questions were addressed.

4. The response variable in equations 3, 5, 6, and 7, being some measurement of a percentage, takes values between 0 and 1 inclusive. There is no attempt to constrain the model equations to attend to this fact. Hence, nothing prevents the model from producing responses less than 0 or larger than 1.
5. While the focus of equation 7 is Insolvent Insurer Shares, the model diagnostics in columns 2 and 6 in table 9 indicate that the efficacy of the model is due almost entirely to variables other than Insolvent Insurer Shares. Any material improvement to the model through its inclusion is questionable. Similar inferences about other models may not be drawn since such statistics are not included in tables 6 to 8.
6. It is not clear who are regarded as 'Demotech insurers.' The authors write "We use the phrase 'Demotech Insurers' as a short – hand for insurers that have a FSR at any point from Demotech. They mey [sic] also have FSRs from other rating agencies, or may lose their Demotech FSR at some point." [4.] While this is a precise definition, it contrasts with the definition that traditional insurers are "insurers rated by traditional rating agencies" [5.] This would mean that even insurers who received a rating from AM Best or Standard & Poor's could possibly be considered a 'Demotech insurer.' Given the authors' disparagement of 'Demotech insurers' (e.g. "significantly lower quality" [6.]) and lauding of AM Best (e.g. "AM Best and S&P, have longer histories, larger market share, and rate companies all over the U.S." [7.]), any company rated by Demotech and receiving a good rating from AM Best would be both a low and high quality insurer.
7. The authors' conclusion stating "Our results show that the GSEs bear a large share of insurance counterparty risk…" [8.] strains credulity. They reach this conclusion by calibrating statistical models and reasoning from their parameters as follows: (1) A higher percentage of 'Demotech' insurers went insolvent. (2) The probability that a mortgage delinquency takes place increases if an insurer goes insolvent. (3) The probability that a mortgage is sold to a GSE increases if it is held by a 'Demotech' insurer. If the authors sought to study counterparty risk, they should have avoided the convoluted mix of statistics and logic and simply modeled delinquency using insurer type (e.g. traditional or 'Demotech') and control variables, in particular, those related to the household (e.g. income, FICO score, loan to value ratio, and property value at evaluation). Oddly, these household variables are used by the authors in equations 3 and 4, yet they are not used in the delinquency models. Written another way, household financial variables are not considered when analyzing mortgage delinquency rates.

Economic Observations

1. The authors write, "We find that a vast majority of Demotech insurers would not meet GSE eligibility under AM Best's methodology." [9.] Even if the counterfactual ratings were

completely accurate, the strongest conclusion one can draw is that AM Best and Demotech disagree about what rating an insurer should receive. However, this was known a' priori. If Demotech frequently agreed with AM Best, then there would be no market reason that Demotech should exist. The fact that Demotech continues to exist demonstrates that stakeholders utilize Demotech's opinion to provide a useful perspective even when Demotech disagrees with AM Best.

2. By the same token, the authors' implicit claim that they can mimic AM Best's ratings for practical purposes using publicly available information would suggest that AM Best's ratings are not worth their price. The fact that the market makes use of AM Best's ratings implies that there is some value to them which is beyond what may be deduced from freely available information.
3. The authors write "Overall, our results suggest that mortgage lenders actively manage insurer counterparty risk by offloading mortgages with high insurer counterparty risk to the GSEs." [10.] In general, due to transaction costs and the inevitable haircut, ceteris paribus, riskier mortgages, due to counterparty risk or otherwise, would be the only mortgages that banks transfer to GSEs. They would have no other incentive. Moreover, with respect to counterparty risk, no one expects a government insurer to go insolvent. Hence, a transfer to any private insurer, 'Demotech' or otherwise, which is the context of this article, would be considered an increase in counterparty risk.
4. The authors write "These inconsistencies could encourage ratings shopping, in particular among poor quality insurers who would not otherwise meet GSE eligibility." [11.] Insurers are aware that if they do not have a good rating, they are less likely to be approved for homeowner purchase by a lender who may wish to sell the mortgage sometime. Hence, insurers have an incentive, independent of the amount of agreement among ratings agencies, to ratings shop.
5. The authors write "We show that the well – established traditional insurers are cancelling policies and exiting high risk areas. Instead of insurance disappearing completely, as is widely believed, the gap left by traditional insurers is filled by poor quality insurers, who disproportionately service the riskiest areas" [12.] It is a basic principle in economics that if demand remains constant, and there is a temporary decrease in supply, then, ceteris paribus, an increase in supply will follow. There is no need to refer to the regulatory environment.

Praxeological Observation

Mortgage delinquency does not occur because a rating agency issues a favorable or unfavorable rating to an insurer. Mortgage delinquency occurs because mortgage holders cease making payments. While insurer insolvency in the event of property damage may contribute to delinquency, it is hardly the sole cause. As discussed in detail by the esteemed economist Thomas Sowell, much of the delinquency stemming from the Great Recession was largely due to a combination of the lack of credit worthiness of the mortgage holders [13.] as well as the novel nature of the mortgages they were issued [14.]. Given these much more causal aspects of delinquency, I am baffled by the decision of the authors to focus their attention on aspects of mortgage delinquency three or four degrees removed from the mortgage holder.

In summary, this paper contains questionable statistical, economic, and praxeological reasoning. Statistically, the model underlying the authors' guess of counterfactual ratings is suspect, there is no discussion of model construction, model forms sometimes do not reflect the phenomena they are modeling, the variable of interest sometimes seems to contribute little to the model, their definitions are murky, and their chain of statistical reasoning is needlessly complicated. Moreover, the authors overlook obvious economic and praxeological explanations for the phenomena under consideration in favor of their tenuous statistical models and reasoning. I would not have accepted this work from an employee.

Cordially,
Ian Deters, PhD / ACAS / MAAA

References

1. Abstract
2. p. 19, paragraph 2
3. p. 19, paragraph 2
4. p. 3, footnote 5
5. p. 2, paragraph 4
6. p. 3, paragraph 2
7. p. 9, paragraph 3
8. Abstract
9. p. 3, paragraph 3
10. p. 5, paragraph 1
11. p. 20, paragraph 3
12. p. 1, paragraph 3
13. Sowell, Thomas. The Housing Boom And Bust. Basic Books, 2010. Chapter 2, Section "Affordable Housing", Subsection Lowering Lending Standards
14. Ibid., Chapter 1, Section "Creative" Financing