Annual Assessment of Flooding and Sea Level Rise

2024 Edition

Chapter 6

Part 2
Property Insurance and Severe Weather Events: An Economic Perspective

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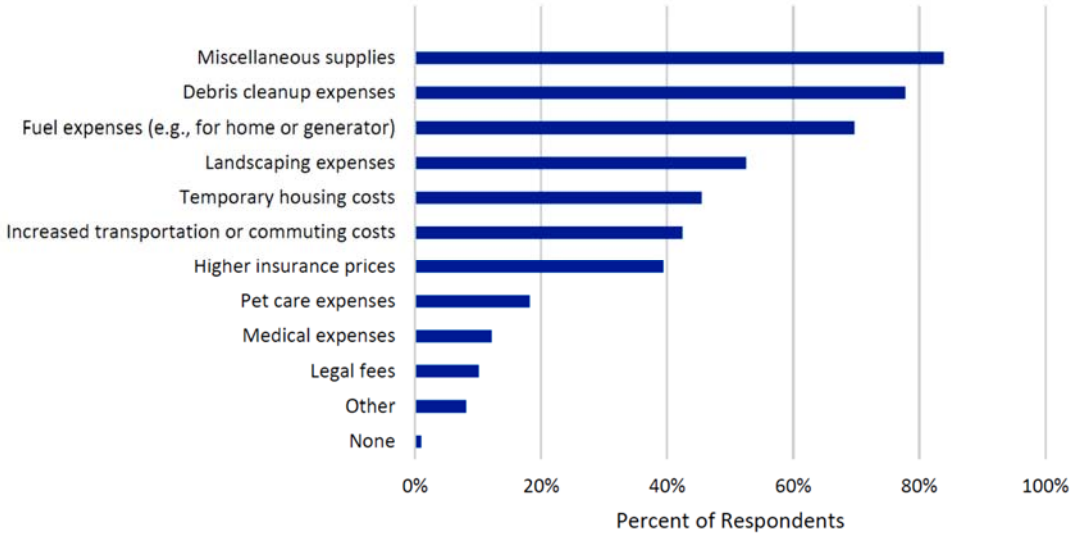
Covering Losses

A recent national survey indicated that 32 percent of all homeowners had their homes impacted by a weather event within the past five years.[1] Since the type and severity of each event influences the amount of damage, these impacts would have varied from home-to-home, ranging from simple cosmetic damage to total loss. Further, the direct impact to homes is only part of the story. Nearly three years after Hurricane Michael made landfall as a Category 5, the Wharton Risk Center (in partnership with the Resilience Action Fund) found that the major costs of that particular hurricane extended far beyond property damage to include significant lost income and evacuation expenses.[2] Survey respondents also reported additional costs related to the items on the graph below.



To cover losses after a severe weather event, there are essentially five sources of funds that homeowners can draw upon. With the caveat that they are not equally available to people of different income levels, nor are they available for all weather events, these sources are:

- Available personal savings;
- Redirected dollars from other planned expenditures;
- Loans and access to credit (private and public);
- Public aid and assistance (federal, state and charitable); and
- Insurance (private and publicly-subsidized).

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[1] Survey conducted by the Insurance Information Institute and Munich Re. The results are reported in "Homeowners Perception of Weather Risks, 2023Q2 Consumer Survey." See: https://www.iii.org/sites/default/files/docs/pdf/2023_q2_ho_perception_of_weather_risks.pdf.

[2] Sweeney, K., Wiley, H., & Kousky C. (2022). The Challenge of Financial Recovery from Disasters: The Case of Florida Homeowners after Hurricane Michael. Wharton Risk Center, University of Pennsylvania. According to the study, lost income "includes a reduction in hours worked, loss of a job, or being furloughed." Among the survey respondents who reported evacuation costs, the average cost for this expense was approximately $1,500. The included graph is based on Figure 3: Additional Hurricane Costs.

Each of these sources has economic impacts that vary. Importantly, only the latter two provide any external compensation to individuals for their losses; the others are entirely self-funded. For this reason, public assistance and insurance are more likely to bring new dollars into the state, as opposed to realigning the dollars that already exist.

This year's report addresses the last item on the list—insurance. Even though it is frequently combined with one or more of the other sources, this discussion treats insurance as a stand-alone subject and focuses on homeowners. For context, in the survey after Hurricane Michael, approximately 83% of homeowners had some form of insurance, but only "a little over 36% of respondents with insurance indicated that their insurance (from all policies) was sufficient to cover the full costs of repairing/rebuilding their home and of replacing items inside their homes."[3]

Basic Insurance Framework…

Mechanically, insurance works through statistical probabilities and the mathematical law of large numbers to price risk. To accomplish this, the relatively low-probability perils from a large number of households are combined by the insurance company "to make their individual losses collectively predictable."[4] The insurance premium is then set to cover the expected value or predictable loss proportionately across the group—plus a margin for transaction costs and profits (inclusive of the cost of capital).[5] More formally, Dionne and Harrington state, "If claim costs are not perfectly correlated across insured exposures, the standard deviation of an insurer's average claim cost will decline, ceteris paribus, as the number of insured exposures increases."[6]

In this framework, disaster insurance proves to be particularly problematic since the individual household risks are not independent: if the covered event occurs, it will likely affect a large number of policyholders and generate material losses. Primarily because of this feature, "the private insurance market abandoned the flood market by 1929," deeming this and other similar types of catastrophe uninsurable.[7] Nearly four decades would pass before the insurance industry settled into a new role—and only then because the public sector created, and later reformed, the federal National Flood Insurance

[3] Ibid. The most obvious reasons for this include high deductibles, losses above policy limits, and the presence of uninsured property.
[4] See: https://nios.ac.in/media/documents/VocInsServices/m2--f2.pdf.
[5] Generally speaking, higher premiums reflect higher risk. In addition, a large amount of risk capital (a significant portion of which must be in liquid form) is needed to underwrite catastrophe risk—especially given the correlated risks explained in the next paragraph. See: Kunreuther, H. & Michel-Kerjan, E. (2014). Chapter 11 - Economics of Natural Catastrophe Risk Insurance. In: Machina, M., Viscusi, K. (eds) Handbook of the Economics of Risk and Uncertainty, vol. 1. North-Holland (pub).
[6] Dionne, G. & Harrington, S.E. (1992). An Introduction to Insurance Economics. In: Dionne, G., Harrington, S.E. (eds) *Foundations of Insurance Economics*. Huebner International Series on Risk, Insurance and Economic Security, vol 14. Springer, Dordrecht.
[7] Elliott, R. (2021). Underwater: Loss, Flood Insurance, and the Moral Economy of Climate Change in the United States. New York, NY: Columbia University Press.

Program.[8] Essentially, the federal government absorbed a portion of the disaster risk and, by doing so, reduced the private insurance market's potential exposure. Part of the rationale for this change was the federal government's ability to borrow money to cover extraordinary losses from extreme events.

Since then, technological progress has enabled a significant transformation in the pricing of disaster insurance. While insurance companies rely heavily on historical loss data to set premiums for most lines of insurance, they generally use a more complex method—catastrophe modeling—to price insurance and assess disaster exposure.[9] This has not always been the case. Both the relatively rare occurrence of major disasters and the wide array of potential damage scenarios combined to cause the more typical methods to fail completely in the early 1990s, which expedited the switch to this type of modeling.[10] Rooted "in the fields of property insurance and the science of natural hazards," modern catastrophe modeling uses computer-based models running on powerful supercomputers to link scientific studies of natural hazards and historical occurrences with geographic information systems (GIS).[11] Key to the results, today's technology facilitates the storage and management of "vast amounts of spatially referenced information."[12] This allows forward-looking projections that take account of a large number of discrete scenarios that have yet to come to pass, but reside somewhere within the identifiable range of probabilities. The Insurance Information Institute offers the following description:

> *"Natural catastrophe models combine historical disaster information with current demographic, building (age, type and usage), scientific and financial data to determine the potential cost of catastrophes for a specified geographic area. The models use these vast databases of information to simulate the physical characteristics of thousands of potential catastrophes and project their effects on both residential and commercial property."*[13]

While substantial improvements have been made to catastrophe modeling since the beginning of this century, the science is still evolving to incorporate new elements. Most

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[8] Ibid. Also see: https://www.fema.gov/sites/default/files/2020-07/fema_nfip_eval_chronology.pdf. A voluntary National Flood insurance Program was created in 1968, but five years passed before the Flood Disaster Protection Act of 1973 made the National Flood Insurance Program compulsory for most floodplain homeowners.

[9] This topic is widely discussed in the literature. See, for example: Nyce, C., Dumm, R. E., Sirmans, G. S., & Smersh, G. (2015). The Capitalization of Insurance Premiums in House Prices. The Journal of Risk and Insurance, 82(4).

[10] Catastrophe modeling gained acceptance after Florida's Hurricane Andrew in 1992 and California's Northridge Earthquake in 1994, but modern applications date back to the mid-1960s. For a detailed history of the model's history, see: Pita, G. L. (2022). Foundation and Development of Natural Catastrophe Modeling. Natural Hazards Review, 23(4).

[11] Grossi, P., Kunreuther, H., & Windeler, D. (2005). An Introduction to Catastrophe Models and Insurance. In: Grossi, P., Kunreuther, H. (eds) Catastrophe Modeling: A New Approach to Managing Risk. Catastrophe Modeling, vol 25. Springer, Boston, MA.

[12] Ibid.

[13] Wilkinson, C. (2008). Catastrophe Modeling: A Vital Tool in the Risk Management Box. See: https://www.iii.org/article/catastrophe-modeling-vital-tool-risk-management-box.

relevant among these is the attempted inclusion of near-term climate-related effects on physical assets. According to a recent analysis by McKinsey & Company:

> *"Indeed, common catastrophe models, which are mostly based on historical data, are unlikely to accurately project risk because the climate now behaves differently. These models may end up hiding the true extent of the risk for both the insurers and the insured. As a result, the two parties' interests are consistently misaligned. And for insurers, changes in the climate—and therefore the market—will only increase their exposure."*[14]

Along with severe errors in modeling, other issues can cause market failure in the insurance industry. Prominent among these are substantial increases in the value at risk and greater concentrations of exposure in catastrophe-prone areas, which combine to increase the likelihood of losses from any given event and escalate the losses from a major event.[15] As a result, a truly extreme event in a heavily urbanized area (or even co-occurring catastrophes) could cause a number of insurers and reinsurers to face insolvency, exit the market, or price future premiums beyond a range that is affordable.[16] The American Property Casualty Insurance Association already characterizes today's environment as "the hardest market cycle in a generation."[17] To them, a hard market is defined by "rising premiums, tighter coverage terms, and reduced capacity for insurance," regardless of the root cause.[18]

There are a number of ways to address these issues. One way is through greater cross-subsidization within the pool, where lower risk participants subsidize higher risk participants. Other tactics include government provision of direct subsidies or the creation of residual markets for the highest risks. Unfortunately, these "other tactics" come with the real risk of causing unintended consequences and further exacerbating the underlying problems. As an example, the American Property Casualty Insurance Association has this to say about residual markets:

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[14] Grimaldi, A., Javanmardian, K., Pinner, D., Samandari, H. & Strovink, K. (2020). McKinsey's Insurance and Sustainability Practices, Climate Change and P&C insurance: The Threat and Opportunity.
[15] Kunreuther, H. & Michel-Kerjan, E. (2014). Chapter 11 - Economics of Natural Catastrophe Risk Insurance. In: Machina, M., Viscusi, K. (eds) Handbook of the Economics of Risk and Uncertainty, vol. 1. North-Holland (pub).
[16] Ibid. An example of this industry response occurred in the terrorism risk insurance market after September 11, 2001. According to the discussion by Kunreuther and Michel-Kerjan, "The attacks also inflicted damage estimated at nearly $80 billion, about $32.5 billion (2001 prices) of which was covered by nearly 150 insurers and reinsurers worldwide (including $21 billion for damage and business interruption alone. Private reinsurers, who covered a majority of these losses, then decided to exit this market, leaving insurers without protection. A few months after 9/11, insurers had excluded terrorism from their policies in most states. In fact, by early 2002, 45 states permitted insurance companies to exclude terrorism from their corporate policies. Commercial enterprises thus found themselves in a very difficult situation, with insurance capacity extremely limited and priced very high." A federal reinsurance program (Terrorism Risk Insurance Act of 2002) was subsequently created. Florida-specific examples are discussed in a later section.
[17] American Property Casualty Insurance Association. (2023). Hard Market Cycle Arrives: Inflation, Natural Disasters, and More Straining Property Insurance Markets.
[18] Ibid.

> "*However, the expansion of policies in residual market plans weighs heavily on admitted insurance companies, as the concentration of high-risk properties could result in substantial losses in any given year. Should losses exceed a residual market plan's claims paying capacity, assessments might be made against admitted market insurers, forcing those insurers (and ultimately their policyholders) to pay the shortfall...[S]hould a major disaster occur, the likelihood and magnitude of potential assessments continues to grow for admitted insurers and their policyholders, adding another layer of financial stress for the industry."*[19]

Theoretical Benefits of Insurance…

Fundamentally, insurance is the dominant risk transfer method. In and of itself, such a transfer does not change the overall level of risk, but it does lead to different economic results. For example, several important benefits have been posited for the role of insurance after a significant weather event, mostly revolving around its ability to deliver funds and liquidity. When the disaster insurance market works well, these benefits include:

- Faster recovery for individual households, businesses and the local economy.
- More likely rebuilding, reconstruction and restoration to pre-event conditions.

The benefits can also be of an intangible nature. One of the more indirect benefits often associated with private insurance is societal equity and fairness. By paying the premium, homeowners assume financial responsibility for the risk they choose to undertake.[20] To underpin this responsibility, deductibles are used to reduce the problems of moral hazard faced by insurance companies—an added risk that a household or business would act irresponsibly or recklessly if it faced no cost for those behaviors. Conversely, publicly subsidized insurance and disaster aid spreads the costs among all taxpayers. As a hybrid of these approaches, Florida's use of assessments to backstop the Florida Hurricane Catastrophe Fund and Citizens Property Insurance Corporation spreads the risk over a broad base of policyholders, a practice known as cross-subsidization. Essentially, those with no or low risk subsidize those with higher risk. Other countries have taken this concept even further:

> *"Some countries, like Spain, France and New Zealand, have taken an approach where they mandate that property insurance, like your homeowners insurance, cover all natural disasters. Then the government provides either reinsurance or a backstop to make sure that requirement doesn't bankrupt a company."*[21]

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[19] Ibid.

[20] In part, this presupposes that homeowners have a choice among different policies, as well as the ability to pay a variety of different premiums. To the degree this assumption breaks down, insurance loses some or all of its contribution to societal equity and fairness.

[21] Rethinking Insurance for Floods, Wildfires and Other Catastrophes: quote from Carolyn Kousky in an interview for Knowable Magazine with Emily Underwood; September 21, 2022. See: https://knowablemagazine.org/article/society/2022/rethinking-insurance-floods-wildfires-other-catastrophes

In Spain and France, these approaches are referred to as "solidarity" where everyone shares in the costs—for example, through a compulsory flat fee for disaster coverage with the government addressing costs above a specified level. New Zealand's program differs by inducing lower government costs through deductibles, coverage caps, and exclusions for contents coverage.

Finally, insurance premiums that are actuarially-sound may serve as valuable signals to homeowners in well-functioning markets. Conceptually, the full monetization of risk through the premium allows each homeowner to determine whether undertaking proactive measures to alleviate damage before a disaster occurs is cost-effective. In addition to preventing or minimizing disaster-related damage, these investments could have the added benefit of reducing costs related to premiums—or even reinsurance—since the covered risk related to future damage is lower.

Changing Face of Insurance: Theory Hits Home…

In 2020, Florida recorded the highest average premium for homeowners among all states.[22] This followed six years where its lowest ranking was third highest, and the future is unlikely to change significantly. Particularly with respect to the manifestation of climate-related effects, altered conditions will only be fully priced in once they become a current threat—although the overall trajectory of insurance prices can be predicted years or even decades in advance. This is because insurance premiums largely reflect the probability that insurers will have to pay claims during the covered period. For most homeowners' policies, this period spans 12 months. An emerging risk that is not expected to materialize until years down the road is largely irrelevant during this period. According to Michael Yaworsky, Florida's Commissioner of Insurance Regulation, "Absent temporary market disruptions, insurance markets change gradually, year over year, and these changes are driven by slow processes incorporating complex modelling and actuarial science."[23]

Echoing this sentiment, an analysis by Moody's Investors Service in 2018 stated, "Although P&C (re)insurers are able to reprice insurance policies annually to mitigate this risk, the potential for increasing incidence of catastrophe losses linked to climate change creates additional underwriting and risk management complexity."[24] Further, "...as climate change trends create an unpredictable environment that makes assessing and pricing risk more difficult, it becomes more likely that pricing trends will

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[22] 2022 National Association of Insurance Commissioners (NAIC). Reprinted by the Insurance Information Institute. See: https://www.iii.org/fact-statistic/facts-statistics-homeowners-and-renters-insurance. A separate NAIC report using 2021 data that was specific to Florida indicated the state "...ranks 1st in homeowners premium with 10.36% of the U.S. market." See: https://content.naic.org/sites/default/files/publications-key-facts-market-trends-florida.pdf.

[23] Letter to U.S. Secretary of the Treasury Janet Yellen dated November 28, 2023. See: https://www.insurancejournal.com/app/uploads/2023/12/Florida-Response-to-climate-data-letter.pdf.

[24] Moody's Investors Service, March 15, 2018. Climate Change Risks Outweigh Opportunities for P&C (Re)insurers. See: https://www.law.berkeley.edu/wp-content/uploads/2018/06/Moodys-Climate-change-risks-outweigh-opportunities-for-PC-reinsurers.pdf.

consistently lag actual loss experience, meaning that the industry would be playing 'catch up' in raising premiums to match increasing losses."[25]

This means that the long-term outlook for insurance pricing will be colored by climate-related effects, regardless of their specific manifestation in today's pricing. According to Kousky, "As climate change escalates many disaster risks, many insurance prices will necessarily need to go up to reflect the higher risk..."[26] Following this logic, the Bank of England recently conducted a financial sector stress test involving three scenarios, one of which was dubbed a 'No Additional Action (NAA)' scenario that "explores the physical risks that would begin to materialise if governments around the world fail to enact policy responses to global warming."[27] It found that:

> *"Some responses – to the NAA scenario in particular – implied a material reduction in access to lending and insurance for sectors and households which were most exposed to physical risks. In the NAA scenario, banks would reduce lending to properties facing greater physical risks, and insurers would substantially increase the premiums they charge to insure against such risks, making insurance coverage unaffordable for many of these households."*[28]

Paraphrasing Kousky's conclusions, intervening efforts to suppress prices are just temporary delays to the inevitable. Essentially, the industry will be dealing with the complexity of insuring catastrophic weather events that have an increasing probability of occurring—a challenge exacerbated by the generation of greater expected losses and the necessity for larger capital allocations to meet those losses. All else being equal, affordable premiums are predicated on low probabilities of loss.

From an economic perspective, theory would suggest that a seriously disrupted insurance market would have significant economic repercussions. In one scenario, widely unavailable or unaffordable insurance policies in a large high-risk area would affect both the local mortgage and housing markets. This is primarily because proof of homeowners insurance is a typical requirement for closing on (and maintaining) a loan with the mortgage lender.[29] Since an estimated 63 percent of all home purchases have an accompanying mortgage, a significant drop in mortgage approvals would drive the sales

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[25] Ibid. Also see: American Property Casualty Insurance Association. (2023). Hard Market Cycle Arrives: Inflation, Natural Disasters, and More Straining Property Insurance Markets.
[26] Kousky, C. (2022). Understanding Disaster Insurance: New Tools for a More Resilient Future. Washington, DC: Island Press: 71.
[27] Bank of England. (2022). Results of the 2021 Biennial Exploratory Scenario on the Financial Risks from Climate Change. See: https://www.bankofengland.co.uk/-/media/boe/files/stress-testing/2022/results-of-the-2021-cbes.pdf. The stress test involved "the largest UK banks and insurers."
[28] Ibid.
[29] Lenders require property insurance to protect themselves, since the property is used as collateral for the loan. Also see Rick Sharga quote in https://www.wsj.com/personal-finance/americans-are-bailing-on-their-home-insurance-e3395515?mod=hp_featst_pos3: "Compared with around four years ago, mortgage lenders are more focused on factoring in higher insurance costs when determining how much of a mortgage a borrower can qualify for, Sharga says. This is particularly the case in areas that are experiencing more natural disasters such as California and Florida."

volume in that area downward. For those buyers able to pay cash, a body of research has already shown that high insurance costs or rapidly increasing premiums have adverse effects on housing demand.[30] While a drop in demand typically leads to lower prices, all incoming buyers would face the same set of conditions, leading to a downward spiral as the homes in these areas become increasingly undesirable.

Combined, all of these forces would lead to a decline in property values, with consequences for both the existing homeowners in the affected high risk area and local government revenues.[31] In this case, the local government would have one of two options: raise the millage rate on all remaining property owners to generate an equivalent amount of revenue or reduce services. Under either option, the homeowner would experience a commensurate decline in aggregate household wealth. According to the U.S. Census Bureau's 2022 Survey of Income and Program Participation, home equity accounted for 28.5 percent of household wealth in 2021 and was the second largest asset type after retirement accounts.[32]

Either through inaccessible insurance or dramatic price increases, an increasing number of those who own their homes outright may choose to go bare—that is, voluntarily forego the purchase of insurance. From an economic perspective, this is because some homeowners view self-insurance as a viable substitute for private insurance.[33] According to the Insurance Information Institute, twelve percent of homeowners currently do not have insurance.[34] While some may be taking proactive steps to self-insure, 48 percent of the non-buyers have household incomes of less than $40,000 per year.[35] This means that rebuilding, reconstruction and restoration from a catastrophic event for a lot of these families would not occur, leading to many of the same outcomes described above. Foremost among them would be deteriorating property values for the property itself and the surrounding area, as well as a loss of local government revenues.

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[30] Nyce, C., Dumm, R. E., Sirmans, G. S., & Smersh, G. (2015). The Capitalization of Insurance Premiums in House Prices. The Journal of Risk and Insurance, 82(4).

[31] Even the state budget would feel the effects, since local property taxes are used in the financing of public schools.

[32] Hays, D. & Sullivan, B. (2022). The Wealth of Households: 2021. *Current Population Reports*, P70BR-183, U.S. Census Bureau, Washington, DC. See: https://www.census.gov/content/dam/Census/library/publications/2023/demo/p70br-183.pdf

[33] Ehrlich, I. & Becker, G. S. (1972). Market Insurance, Self-Insurance, and Self-Protection. Journal of Political Economy, 80(4). See: http://www.jstor.org/stable/1829358. Also see: Chang, Y.-M., & Ehrlich, I. (1985). Insurance, Protection from Risk, and Risk-Bearing. The Canadian Journal of Economics / Revue Canadienne d'Economique, 18(3), 574–586. https://doi.org/10.2307/135020.

[34] Other reports have variously indicated that as low as 7 percent and as high as 15 percent of homeowners lack insurance. The statistic quoted here is from a recent survey conducted by the Insurance Information Institute and Munich Re. The results are reported in a document entitled "Homeowners Perception of Weather Risks, 2023Q2 Consumer Survey." See: https://www.iii.org/sites/default/files/docs/pdf/2023_q2_ho_perception_of_weather_risks.pdf.

[35] Ibid.

Before conditions deteriorate to the point of complete market failure in Florida, there are two government backstops that come into play—the Florida Hurricane Catastrophe Fund (FHCF) and Citizens Property Insurance Corporation (Citizens).

Florida Hurricane Catastrophe Fund…

Created by legislation in 1993, the Florida Hurricane Catastrophe Fund (FHCF) is a tax-exempt state trust fund that was initially recommended by the Study Commission on Property Insurance and Reinsurance.[36] In exchange for the payment of actuarially determined premiums into the fund, the FHCF provides reimbursements to residential property insurance companies for selected percentages (45, 75 or 90 percent) of their catastrophic hurricane losses in Florida, up to specified limits of coverage. Reimbursement to any individual insurer does not commence until after its retention level (similar in function to a deductible) has been met. According to the State Board of Administration (SBA):

> *"The fund was part of Florida's response to Hurricane Andrew, a Category 5 hurricane that caused massive destruction in 1992, and the resulting property insurance crisis. The official purpose of the Cat Fund is to protect the state's economy and the public health, safety, and welfare by providing a stable and ongoing source of reimbursement to residential property insurers..."*[37]

An article in the Actuary Magazine describes the FHCF as the "lynchpin of the state's property insurance system, a statutorily mandated program that provides a type of low-cost coverage similar to private reinsurance to all companies (including Citizens) writing residential property insurance in the state."[38] The authors go on to explain:

> *"The ability to draw upon assessments from a broad base of policyholders is one of the primary reasons for the low price charged to insurers for Cat Fund coverage, and it was also an essential factor in achieving federal tax-exempt status. The U.S. Internal Revenue Service recognizes the Cat Fund as an instrumentality of the state that serves a major purpose of not only providing resources for the payment of claims to rebuild after a catastrophic hurricane, but also serving to stabilize the economy by managing hurricane risk for the state of*

[36] The Study Commission was created by Chapter 93-401, Laws of Florida, in a prior Special Session.
[37] See: https://www.sbafla.com/fsb/Portals/FSB/Content/Topics/FHCF%20At%20A%20Glance%20-%20SBA%20website.pdf?ver=2022-11-03-112155-043. The *Final Bill Analysis & Economic Impact Statement* for the legislation that created the FHCF indicated the action was necessary because insurers planned to cancel or nonrenew over 700,000 property insurance policies immediately after Hurricane Andrew. This was deemed to be "a significant threat to millions of Floridians and to the state's economy" in part because "mortgages require reliable property insurance; the unavailability of reliable property insurance would therefor make real estate transactions virtually impossible, impacting construction, real estate, banking, and other industries, as well as countless individuals." The referenced analysis was developed for CS/HB 31-C and is dated November 24, 1993.
[38] Musulin, R. and Nicholson, J. (2017). Extreme Measures: How the Florida "Cat Fund" provides funding for catastrophic hurricane losses. See: https://www.theactuarymagazine.org/extreme-measures/.

Florida under the executive leadership of its top elected officials—the governor, the chief financial officer and the attorney general."[39]

In addition, the SBA's 2022 Annual Report indicates that the FHCF can provide "a lower cost than private market prices since it does not include a profit factor or risk load in its rates and since it is exempt from federal taxes."[40]

By law, participation in the FHCF is essentially mandatory for all residential property insurers in Florida, with its maximum potential obligation currently capped at $17 billion per season.[41] The FHCF is authorized to issue post-event bonds on a tax-exempt basis when reimbursement payments are projected to exceed its cash reserves, as well as pre-event bonds for liquidity.[42] Debt service for the bonds is primarily covered by emergency assessments on most property and casualty insurance premiums within Florida, a compulsory spreading of localized losses throughout the state. The reported emergency assessment base in 2022 was $72.6 billion of premiums, on which the maximum assessment percentage was 6 percent for losses attributable to any one year and 10 percent for losses associated with multiple years.

During the 2022 Session, the Florida Legislature created the Reinsurance to Assist Policyholders program (RAP). The legislation provided a non-recurring total of $2 billion in coverage for a portion of FHCF participants' hurricane losses; however, the new layer of reinsurance is designed to be accessed prior to the FHCF layer of coverage at no cost to the insurers.[43]

During a Special Session held later in the same year, the Florida Legislature created the Florida Optional Reinsurance Assistance (FORA) program, a voluntary one-year program designed to operate in conjunction with RAP. Funded with a non-recurring total of $1 billion, it provides four optional layers of reinsurance in exchange for premiums.[44]

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[39] Ibid.
[40] State Board of Administration of Florida: Florida Hurricane Catastrophe Fund. (2022). See: https://fhcf.sbafla.com/media/uvmnfyka/2022-fhcf-annual-report.pdf.
[41] In FHCF's 2022-23 contract year, there were 150 participating insurers. By law, the cap was set at $17 billion in 2010 and has remained in place since then. This level can increase further if the FHCF has the capacity to pay (through cash and bonding) $17 billion in both the current and subsequent year (essentially, total claims-paying capacity of $34 billion). In today's environment, meeting this threshold would be challenging.
[42] The cash reserves come primarily from premiums (including the application of a cash build-up factor) which are actuarially determined. Other sources of liquidity to pay FHCF claims can include, when applicable, investment income, proceeds from pre-event bonding, recoveries from reinsurance and other risk-transfer transactions, and proceeds from post-event revenue bonds.
[43] The program also includes other insurers that meet the qualifications outlined in 215.5551, F.S., but excludes Citizens Property Insurance Corporation (Citizens) and any company the Office of Insurance Regulation (OIR) certifies is in an unsound financial condition.
[44] In order to be eligible for coverage under the FORA program, an insurer must have been a participating insurer in FHCF as of November 30, 2022. Citizens Property Insurance Corporation (Citizens) is not eligible for FORA coverage.

Absent any other policy interventions, the current claims-paying capacity will provide diminishing relief to the market, as potential losses and reinsurance costs continue to rise and the relative share provided by the FHCF shrinks.

Citizens Property Insurance Corporation…

By design, Citizens is a not-for-profit company that was created by the Florida Legislature in 2002 to serve as a permanent residual market insurer.[45] Prior its creation, Florida had two separate state-created associations providing property insurance to persons unable to obtain coverage from authorized insurance companies: the Florida Windstorm Underwriting Association (FWUA) to provide windstorm and hail coverage in specified coastal areas, and the Florida Residential Property and Casualty Joint Underwriting Association (JUA) to meet full residential coverage needs throughout the state.[46] Effectively, Citizens was a merger of the two into a single entity.[47] According to the Auditor General for the State of Florida:

> *"State law establishes Citizens Property Insurance Corporation (Citizens) to provide affordable residential and commercial property insurance to applicants who are in good faith entitled to procure insurance through the voluntary market but are unable to do so. Citizens is a governmental entity that is an integral part of the State and is not a private insurance company."*[48]

Commissioner Michael Yaworsky describes Citizens similarly, "Florida is also one of two states in the country to have its own state-run property insurer, capable of rapidly expanding and shrinking depending on market conditions, to ensure affordable access to insurance."[49] Further, he indicates that "Citizens...underwrites risks not typically taken in the admitted or surplus lines market, often at a lower cost than what is actuarialy [sic] sound."[50]

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[45] According to a 2002 Senate Staff Analysis for CS/SB 1418: The "residual market" for insurance is typically a nonprofit state-created mechanism that provides insurance coverage to persons who are insurable but unable to obtain coverage from any of the licensed insurance companies that compose the "voluntary" market." Florida has created residual markets for automobile, medical malpractice, and property insurance. These entities are also referred to as insurance risk apportionment plans under s. 627.351, F.S. The Legislature has also created a residual market mechanism for workers' compensation insurance.

[46] Senate Staff Analysis and Economic Impact Statement for CS/SB 1418, dated February 25, 2002. See: https://www.flsenate.gov/Session/Bill/2002/1418/Analyses/20021418SBI_2002S1418.BI.pdf. The FWUA was originally created in 1970 as a permanent entity. The JUA was created in 1992 as a temporary solution to the market crisis induced by Hurricane Andrew.

[47] Florida Senate Interim Project Summary 2002-119 dated September 2001. See: https://www.flsenate.gov/UserContent/Committees/Publications/InterimWorkProgram/2002/pdf/2002-119bi.pdf. The then-Department of Insurance first proposed legislation in 2001 to merge the FWUA and JUA into a single entity, named the Citizens Property Insurance Corporation.

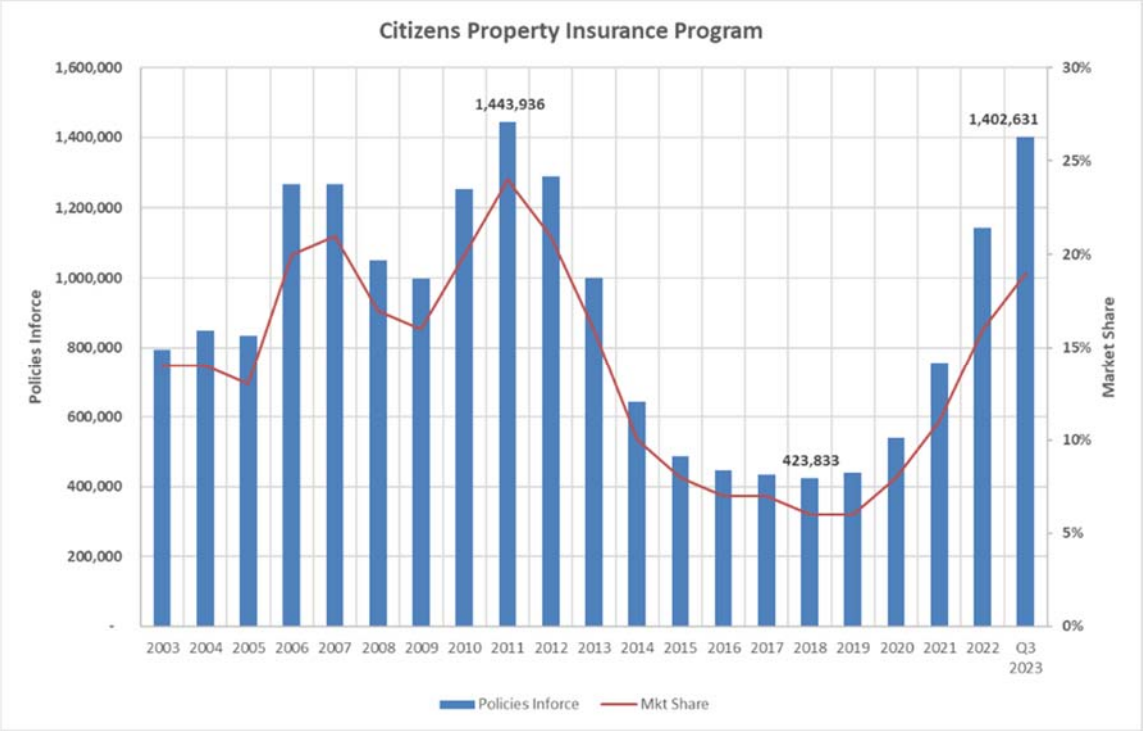
[48] State of Florida Auditor General: Operational Audit, Report No. 2022-011. (August 2021). See: https://flauditor.gov/pages/pdf_files/2022-011.pdf

[49] Letter to U.S. Secretary of the Treasury Janet Yellen dated November 28, 2023. See: https://www.insurancejournal.com/app/uploads/2023/12/Florida-Response-to-climate-data-letter.pdf.

[50] Ibid.

As such, Citizens serves as the state's insurer of last resort.[51] It is primarily funded by policyholder premiums; however, "Florida law also requires that Citizens levy assessments on most Florida policyholders if it experiences a deficit in the wake of a particularly devastating storm or series of storms."[52,53]

When the Legislature established Citizens over two decades ago, it found "that private insurers are unwilling or unable to provide affordable property insurance coverage in this state to the extent sought and needed."[54] Since then, Citizens has had a history of significant policy growth, reaching a high of 1.44 million policies and 24 percent of the state's insurance market in 2011 before dropping to its lowest point of 423,833 policies and 6 percent of market share in 2018. For context, prior to 2017, Florida had gone through a long period without any major hurricanes. Since then, Florida has had four in relatively quick succession: Irma (2017), Michael (2018), Ian (2022) and Idalia (2023). As of September 30, 2023, Citizens had 1,402,631 policies in force with a market share of 19 percent. That market share was 23 percent of the total dollar value of premiums written.



[51] Ibid.
[52] Citizens Property Insurance Corporation Strategic Plan / About Us / Who We Are. See: https://www.citizensfla.com/documents/20702/93059/Citizens+Strategic+Plan.pdf/fed84371-4b62-697e-010c-d8d20425bd96?t=1593110499824.
[53] An exception was made to this funding policy in 2006 when the Legislature directly appropriated $715 million to reduce Citizens' 2005 plan year deficit. See Section 44 of SB 1980, 2006.
[54] Section 627.351(6)(a)(1), Florida Statutes.

Because Citizens functions as the insurer of last resort, it captures greater than normal risk—risk that the private market is generally unwilling to bear at an affordable cost for consumers.[55] While the state of Florida does not explicitly back the program, there are multiple ways that Citizens poses a risk for state government finances. Absent any other policy interventions, Citizens will increasingly come under pressure to provide coverage to residents as private insurers continue to pull out or develop risk-adjusted rates that prove to be unaffordable.

Next Steps…

With both of Florida's public backstops for insurance expected to face increasing pressure from severe weather events, the need to quantify the likely impact of these events on Florida's economy becomes even more important. Next year's report will include the results and analysis of EDR's first model runs, using various scenarios.

In addition, the topic of public aid and assistance (federal, state and charitable) will be introduced and examined from an economic perspective—much like insurance was addressed this year.

[55] Generally, a person is eligible for coverage by Citizens if: (1) no comparable private-market offers of coverage are received; or (2) comparable private-market offers of coverage are received, but the premiums are more than 20 percent higher than a comparable Citizens policy.