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Hurricanes, recovery and insurance

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The staggering physical damage and emotional trauma caused by Hurricanes Harvey, Irma and Maria is visible on network television, newsfeeds and social media. Pictures of heroic rescues, cries for assistance and physical devastation are everywhere.

Not for long, however, at least with respect to Harvey and Irma. Outside interest in the affected areas has already begun to wane. The Weather Channel's Jim Cantore has moved on. Webcams are back on. Restaurants are reopening. Schools are open or about to open, and people are returning to work.

The catastrophes in Puerto Rico and the Caribbean may be different. But even there, the focus will shift as other matters and controversies arise. A natural disaster creates hundreds of thousands or even millions of individual questions or disputes. After all, there's insurance for that, isn't there?

In fact, there may not be insurance for that. Standard property insurance policies generally do not cover losses due to flooding or other water-caused damage. Some private coverage may be available, but policies offering coverage generally offer much less than full limits.

In addition, they may be subject to eponymous Named Storm Peril Deductible endorsements, which, as the name implies, can significantly increase deductibles for losses due to named hurricanes.

The National Flood Insurance Program has been an imperfect work-around to provide coverage for flood losses, including those caused by named storms.

Ominously, as Harvey made landfall, the NFIP, which had been troubled for at least a decade, was on the verge of expiring Sept. 30. Congress "kicked the can down the road" and extended the program for 90 days, but this action did not solve the program's structural problems.

Using Hurricane Harvey as a starting point, it is possible to better understand many of the issues that arise from catastrophic losses such as storms.

HURRICANE HARVEY: A BRIEF RECAP

After high winds and tornados had been reported for six hours, Hurricane Harvey's eyewall made landfall at about 10 p.m. Aug. 25, near Corpus Christi, Texas. It hit with sustained winds of over 100 mph and gusts as high as 132 mph.

After causing catastrophic wind damage in Port Aransas, Rockport and nearby communities, Harvey turned inland and then went back out to the Gulf of Mexico. It came ashore again over Copano Bay northeast of Corpus Christi on Aug. 26, after which it began to move toward Houston.[1]

By Aug. 28, the center of Harvey had moved back out to sea and parked in the Gulf of Mexico. Over the next several days, there was unprecedented rain — 40 to 61 inches in many areas — in the Houston area, southeast Texas and southwestern Louisiana.[2]

Roughly 275 trillion pounds of water fell during Harvey, enough to push the Earth's crust in the Houston area down by an inch.[3]

> Even before Maria hit, there were estimates of losses from Harvey and Irma of between $115 billion and $290 billion — enough to depress American gross domestic product growth for the quarter by 0.6 to 0.8 percent.

The unprecedented rains from Harvey rapidly filled — and then overfilled — the Addicks and Barker flood control reservoirs in northwest Houston, both of which were well outside any NFIP-designated flood zone.

Authorities released water from each reservoir into the Buffalo Bayou on Aug. 26 and 27, adding additional torrents to the water already accumulating far beyond the stream's capacity. Flood waters inundated many residential areas that were considered safe.

The current scorecard for Harvey:

- According to the latest figures from the Texas Department of Public Safety, 273,276 Texas homes were damaged and 15,528 were destroyed.[4] When Harvey hit, only about 15 percent of the homes in Houston had flood insurance.[5]
- Harvey also damaged or destroyed at least 500,000 cars (probably many more) in the Houston area.
- Damage to businesses has not been determined, in part because the long-term impact of the storm on employers and population demographics will not become apparent for some time.

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None of this is to minimize the impacts of Hurricanes Irma or Maria, which will be as big or bigger.

Maria's impact will careen through financial markets at many levels because of the precarious state of Puerto Rico's economy, its pre-existing bond debt, and the possibility of a mass exodus from the island.

Such an exodus might resemble the one that occurred in New Orleans, whose population dropped over 40 percent after Hurricane Katrina and still is only 80 percent of the pre-Katrina level.[6]

Even before Maria hit, there were estimates of losses from Harvey and Irma of between $115 billion and $290 billion — enough to depress American gross domestic product growth for the quarter by 0.6 to 0.8 percent.[7]

How will these losses be absorbed? In a word, imperfectly.

Using Hurricane Harvey as a guide, we can begin to understand the issues and perhaps embark on the dialogue necessary to create a better way of absorbing catastrophe losses.

PROPERTY LOSSES, PROPERTY INSURANCE AND FLOOD INSURANCE

The number of homes damaged in Harvey alone is staggering. Many houses sustained obvious damage to their above-ground structure from floodwater, which will cause substantial damage by itself — as anyone who has ever had a broken pipe can attest.

Additionally, most of these houses are built on slabs on soil with a high clay content. Clay soils are highly elastic. They expand when saturated with water, and they contract when the water level recedes. This movement can be uneven or leave portions of the slab unsupported, causing damage to the slab or the home on which it is built.[8]

Adding 50 inches of rain to clay soil can cause unprecedented changes in the soil underneath homes. Damages caused by these changes may manifest themselves long after initial repairs are made.

Every uninsured expense that increases the cost to restore damaged property puts financial pressure on the property owner. In some cases, the owner will seek grants or loans, increasing debt load. In others, damage will not be fully repaired or, worse, the owner will walk away from the loan.

Estimates suggest that 300,000 borrowers in Harvey-impacted areas will become delinquent on loans, with 160,000 becoming over 90 days delinquent.

There are 2.08 million mortgaged properties in Irma-related Federal Emergency Management Agency disaster areas, with total unpaid mortgage balances of $370 billion — twice as many as Harvey and four times as many as Katrina.[9] That translates to 480,000 seriously delinquent mortgage loans.

Estimates for Maria are not yet available. Neither are numbers for business interruption, hard business losses or all the consequential damages that ripple outward from storm-related interruptions. These include everything from gasoline that is 30 to 50 cents a gallon more expensive — or even completely unavailable — to the billions that will be needed to bring electricity back to Puerto Rico.

These numbers loop back to the two "dogs that have not barked in the night" — property insurance and NFIP flood insurance. Both are intended to provide cushions that would allow restoration of residential and business property. Both are imperfect vessels at best.

Adding 50 inches of rain to clay soil can cause unprecedented changes in the soil underneath homes.

With traditional property insurance, the answer is clear: There likely is not coverage.

Traditional property insurers left the flood insurance market after the historic Mississippi River Flood of 1927, now mostly remembered in Randy Newman's poignant song "Louisiana 1927."

The nature of hurricane and flooding risks is fundamentally different than risks associated with other catastrophic events such as seismic events and mass terrorism.

Risks such as fire, automobile collisions or broken pipes are widely distributed. Many people are exposed to the same risk, and only a few ever experience a loss. Losses are relatively small, and premiums to pay for them can be widely distributed.

Catastrophic risks generally are highly concentrated in certain areas, and it is difficult to make policyholders outside those areas pay a premium for such coverage.[10] Sharing the cost among a small group results in higher prices for all within the group — and sometimes prices that are prohibitively expensive.

The fact that catastrophes happen infrequently distorts actuarial assumptions and creates complacency among those who should protect themselves. The failure to purchase catastrophe insurance for a mass event that may be 12 years in the future (the time between Katrina, Rita and Wilma in 2005 and Harvey, Irma and Maria in 2017) represents a textbook exercise in the psychology of preferences pioneered by Daniel Kahneman and Amos Twersky.

Although the consequences of not having insurance for a hurricane or flood may be catastrophic, many will avoid

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purchasing protection because of the uncertainty of when the event will happen.

This "risk-seeking behavior" results in there being less money paid as premiums, increasing the costs of coverage for those who do purchase insurance.[11] It also means that the uninsured costs of a flood or catastrophe are much higher.

The NFIP represents an effort "to reduce the impact of flooding on private and public structures ... by providing affordable insurance to property owners and by encouraging communities to adopt and enforce flood plain management regulations."[12]

Initially enacted in 1968 after Hurricane Betsy struck the Gulf Coast, the NFIP created a structure that has remained essentially intact for 50 years.

Local communities elect to participate in the program. If the community adopts a flood plain management ordinance including building codes for new construction to reduce flood risks, the government makes flood insurance available within that community.

Premiums depend upon a particular parcel's location in a mapped Special Flood Hazard Area, which in general terms, face a 26 percent chance of suffering flood damage over the life of a 30-year mortgage. Approximately 20,000 communities participate in the program.

There are three important terms related to the program: affordable, new construction and "mapped." With respect to the element of new construction, FEMA cannot require pre-existing structures to come into compliance with its building codes. The premiums charged for NFIP flood insurance depend on what zone the property is in.

The Biggert-Waters Flood Insurance Reform Act of 2012, the statute that reauthorized NFIP through Sept. 30, required FEMA to intensify an already existing remapping program to update and revise the scope of flood plains so that they accurately reflect the risks from floods.

Although this program is underway, the reservoir releases in Harvey show that flood zones are changing more quickly than maps can capture the changes.

And although we think of the NFIP in terms of hurricanes, it also covers river flooding, such as the major floods on the Red River of North Dakota in 1997 and 2009, and many other events.

Perhaps the most significant challenge with the NFIP and most other catastrophe insurance pools lies in the word "affordable." Since its inception, the NFIP has employed a process known as "grandfathering," which allows pre-existing older homes to escape premium increases.

If a property is grandfathered for NFIP purposes, the property owner can retain an existing lower premium for coverage (despite higher risk) and take advantage of any reduction in premium that results from remapping. In short, grandfathering is a subsidy that can be significant.

Biggert-Waters directed FEMA to discontinue grandfathered premiums over several years. The result was a substantial increase — sometimes 1,000 percent — for all previously grandfathered policyholders, and a huge outcry.[13]

In 2014 Congress restored grandfathering in the Homeowner Flood Insurance Affordability Act, somewhat ameliorating the criticisms from policyholders but exacerbating the financial problems faced by the program.

As 2017 hurricane claims come in, the NFIP is deeply in debt to the Treasury Department. The program was to be self-supporting, but the combination of major catastrophes and low premiums has left it $24.8 billion in debt to the Treasury against a borrowing limit of $30 billion.

Prior to Harvey, the most plausible replacement proposal was the Cassidy-Gillibrand Flood Insurance Affordability & Sustainability Act of 2017, S. 1313.[14]

A recent Government Accountability Office report also suggests most of the changes proposed in Cassidy-Gillibrand and adds a recommendation that Congress should forgive the current debt. This is a proposition that will not sit well with budget hawks, especially after tax proposals that would considerably add to the national debt.

Congress will be very unlikely to forgive the Katrina-Rita-Wilma-Ike-Sandy debt if it will be immediately followed by Harvey-Irma-Maria debt that is at least as large. Debt forgiveness was intended to give the program a second life in order to allow for sounder finances prospectively — and not merely to permit it to run in place.

What happens if the NFIP cannot pay all claims? Such a situation would generate waves of litigation. To the extent the government is called upon to make good on its commitment to backstop the NFIP, that litigation likely would be heard in the U.S. Court of Claims, which may not be prepared for the onslaught.

There are other likely consequences. Cassidy-Gillibrand sought to encourage private insurers to enter this market or increase their participation in it. The bill would require private insurers to keep $50,000 per policy for their own account or to reinsure it privately.

This would require private markets to absorb over $775 million for destroyed homes and $13.6 billion for damaged homes in Harvey alone.

Private insurers are very unlikely to re-enter the flood insurance market unless there is a robust federal backstop for losses and premiums can be actuarially sound.

More threateningly for reform, the requirement for flood insurance is deeply and probably permanently embedded into our banking system and government-sponsored enterprise loan structure. One only has to look at existing statutes and regulations to be convinced of this.

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It is not at all clear that there is a viable way to deal with existing loans that are subject to this requirement.

Even more ominously, after Biggert Waters, when premiums were adjusted to make them actuarially sound, many with flood insurance either canceled their policies or let them lapse. This required regulated lenders to force-place that coverage.

When the NFIP went on hiatus in 2010, federal bank regulators sent out informal guidance to the regulated community.[15] The guidance allowed lenders to make loans in Special Flood Hazard Areas.

It also required lenders to "to make flood determinations, provide timely, complete, and accurate notices to borrowers, and comply with other parts of the flood insurance regulations."

Of particular concern, the guidance required regulated lenders to "evaluate safety and soundness and legal risks" of loans made during the hiatus. It did not address force-place requirements.

Applying this guidance as a prediction of what could happen, how willing should Anytown Bank be to make a disaster recovery loan on an already mortgaged hurricane-damaged property without separate "clean" collateral? How willing should a bank be to make a new loan near the Addicks flood control reservoir or other at-risk area without flood insurance?

The demise of NFIP flood insurance would have far-ranging consequences. Congress has very little time to act; it must make a number of difficult decisions in a very short time.

It is sad but true to say that the debate over catastrophe recovery is likely to be lost in debates involving other issues. However, it is hoped that Congress will take time to evaluate the effects the repeal or abandonment would have on development, commerce and banking.

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