

# ISSUE BRIEF

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## RESIDENTIAL FLOOD INSURANCE IN PUERTO RICO

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Flood insurance in Puerto Rico has attracted media and policymaker attention since Hurricanes Irma and Maria devastated the island in late summer 2017. One reason is the incredibly low take-up rate for flood insurance, which left some residents financially vulnerable following flood damage from two back-to-back hurricanes. Another is the surprising shift over the last five years from the vast majority of flood policies being written with the National Flood Insurance Program (NFIP) to instead being written by private sector insurers. This shift has not occurred on the mainland U.S. and many stakeholders have been interested in understanding the drivers of the shift in Puerto Rico.

### FLOODING IN PUERTO RICO

The eye of Hurricane Maria ripped through Puerto Rico in September, 2017 two weeks after Hurricane Irma had left many homes damaged and people without power. The wind damage from these events was devastating, but the island also suffered serious flood damage. In addition to storm surge, Maria dumped over 30 inches of rain on the island. Towns along the north coast were inundated, necessitating the emergency rescue of thousands of people, and flash floods occurred throughout mountainous areas. Several people died in the floods. Figure 1 is an estimate of the extent of flooding from Hurricane Maria.

Maria is only the latest source of flood damage on the island. Puerto Rico has suffered multiple flood-related disasters over the last several decades. Figure 2 shows the counts of presidential disaster declarations for flood-related events by decade.

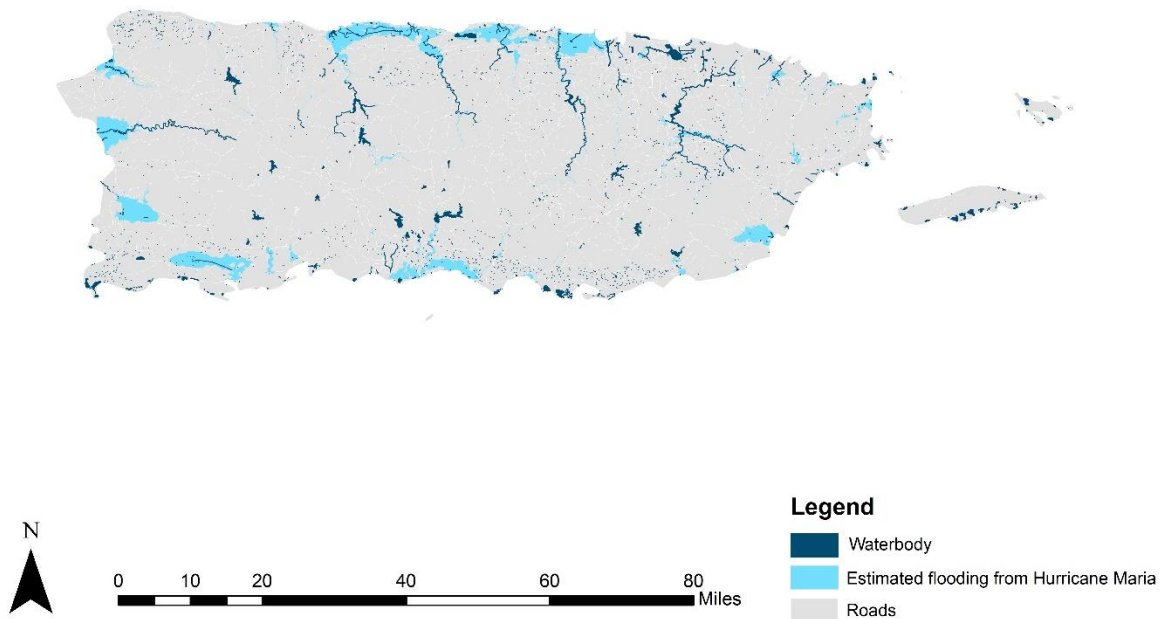
### KEY FINDINGS

- Less than 4% of households in Puerto Rico have flood insurance.
- Over the last five years, the majority of residential flood insurance on the island has moved to the private sector from the National Flood Insurance Program (NFIP). Today, roughly 90% of residential flood insurance on Puerto Rico is private, compared to only 2% nationwide.
- Different construction practices that are not accounted for in NFIP rates are one reason the private sector can offer less expensive flood policies.
- Most residential, private flood insurance policies in Puerto Rico are written by so-called Write Your Own companies. They are able to compete with NFIP policies by coupling flood coverage with vandalism coverage and by offering higher coverage limits.
- The availability of private flood insurance in Puerto Rico has not led to greater demand. One contributing factor could be affordability challenges for roughly half of residents currently estimated to be living in poverty.

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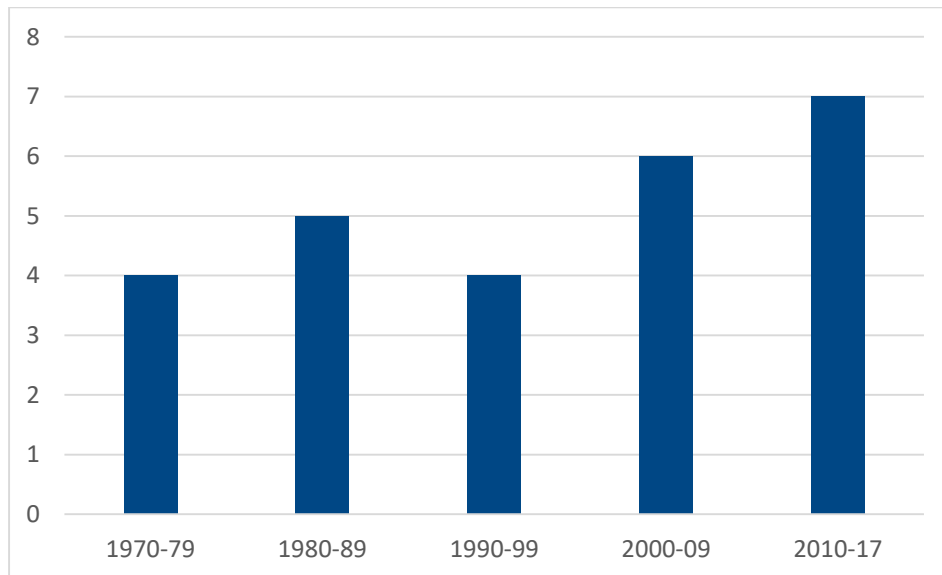
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**FIGURE 1. ESTIMATED FLOODING IN PUERTO RICO FROM HURRICANE MARIA**



*Estimated flood extent from FEMA. Roads and waterbodies from Census TIGER shapefiles. Thanks to Xiao Wu for map production.*

**FIGURE 2. FLOOD RELATED DISASTER DECLARATIONS BY DECADE FOR PUERTO RICO**



*Produced by the authors with public data from FEMA.*

## IS THE FLOOD INSURANCE GAP WIDENING?

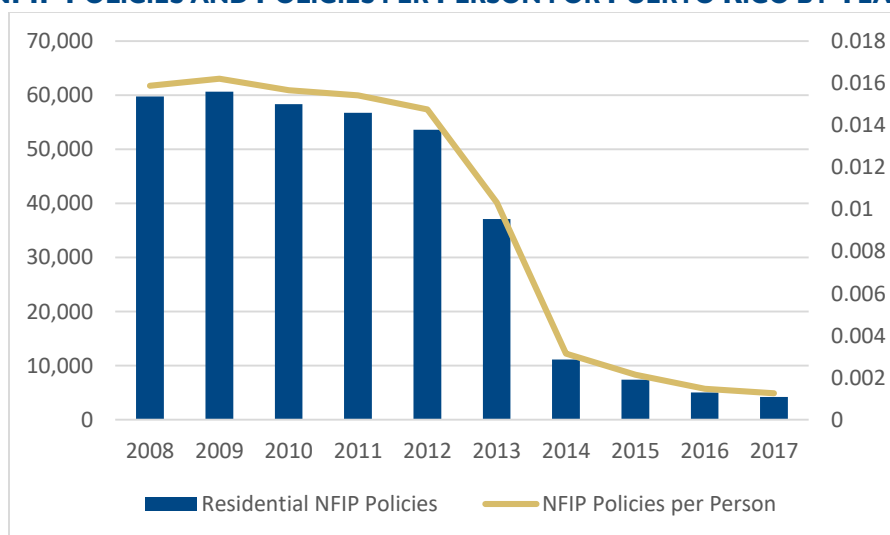
Despite the flood risks on the island, flood insurance take-up in Puerto Rico has been quite low. Combining data on NFIP policy counts, private sector flood policies, and data from the U.S. Census on number of households, we estimate that less than four percent of households in Puerto Rico had flood insurance going into Hurricane Maria. This low take-up rate is likely attributable to many factors.

The federal requirement to purchase flood insurance applies only to those living in the 1 percent annual chance floodplain (100-year floodplain) with a mortgage from a federally backed lender. Despite flooding outside this area, few voluntarily purchase flood insurance if not mandated to do so. We do not know the take-up rate specifically in the 100-year floodplain. The mandatory purchase requirement may have less impact in Puerto Rico. The Census estimates that less than 30 percent of Puerto Rican households have a mortgage, and several news outlets have reported that nearly half of the island's 3.4 million residents live in informal or illegally-built homes. In addition, the majority of islanders are renters. While their household contents may be at risk, there is no federal requirement to purchase flood insurance for personal property and very few choose to do so voluntarily. Thus, the requirement to purchase flood insurance applies to only a small part of the population.

Further, the Puerto Rican economy has been weakening. The U.S. Census estimates that over 40 percent of people on the island are living in poverty; they are unlikely to have the means to pay for flood insurance. This figure has gone up since Hurricane Maria, with estimates now suggesting that over 50 percent are in poverty. Many homeowners on the island do not have any homeowners insurance, let alone flood coverage. Finally, lack of awareness may have played a role in depressing flood insurance demand before Hurricane Maria. At least one insurance company is reporting increased interest in flood coverage since the hurricane.

The number of residential NFIP policies-in-force in Puerto Rico saw a large drop beginning around 2012. While there has been some decline in population over this time period, this alone does not explain the drop; total policies and policies per person both dropped steeply between 2012 and 2014.<sup>2</sup> We found that much of this drop-off, although not all, is due to the rise of private sector flood insurance.

**FIGURE 3. NFIP POLICIES AND POLICIES PER PERSON FOR PUERTO RICO BY YEAR, 2008-2017**



*Produced by the authors with data from FEMA and the U.S. Census.*

<sup>2</sup> While FEMA will often purchase Group Flood Insurance Policies (GFIP) with low coverage limits after major disasters for residents receiving Individual Assistance grants, these have been a small percentage of NFIP policies over the years. FEMA estimates that there were no GFIPs in 2008, then close to 600 in 2009, declining to just over 500 in 2014, and none since that time.

## PRIVATE, RESIDENTIAL FLOOD INSURANCE IN PUERTO RICO

Beginning in 2011 and 2012, the private sector began to offer standalone flood insurance in Puerto Rico competitive with the NFIP. Insurers realized that the NFIP was overcharging most properties on the island due to a building stock that is more resilient to floods. Common construction practices in Puerto Rico vary considerably from those in many floodplain areas of the mainland United States. Many homes on the island are poured concrete, slab on grade, with concrete roofs. They are sturdy and may not be knocked over by floodwaters. While contents may be damaged, homes post-flood may be structurally sound. Several feet of floodwater in a concrete house with no drywall, subfloor, or insulation will have much less damage than the same height of floodwaters in a wood home with those items. Private flood insurance can also be cheaper since it does not include congressionally mandated surcharges and fees.

First, United Surety & Indemnity Co. (USIC) and then MAPFRE realized they could offer standalone flood coverage at rates cheaper than the NFIP. Table I shows the top private flood insurers in Puerto Rico—both residential and commercial—as of 2016. The top two are the dominant residential flood insurers on the island. They are also Write Your Own (WYO) companies for the NFIP.

**TABLE I. TOP PRIVATE FLOOD INSURERS IN PUERTO RICO BY DIRECT PREMIUMS WRITTEN COMBINED RESIDENTIAL AND COMMERCIAL, 2016**

Rank	Entity	Direct Premiums Written	Market Share (%)
1	MAPFRE SA	\$14,345,000	73.80%
2	United Surety & Indemnity Co.	\$4,215,000	21.69%
3	FM Global	\$730,000	3.75%
4	Allianz Group	\$116,000	0.60%
5	Swiss Re AG	\$26,000	0.13%
6	Alleghany Corp.	\$6,000	0.03%

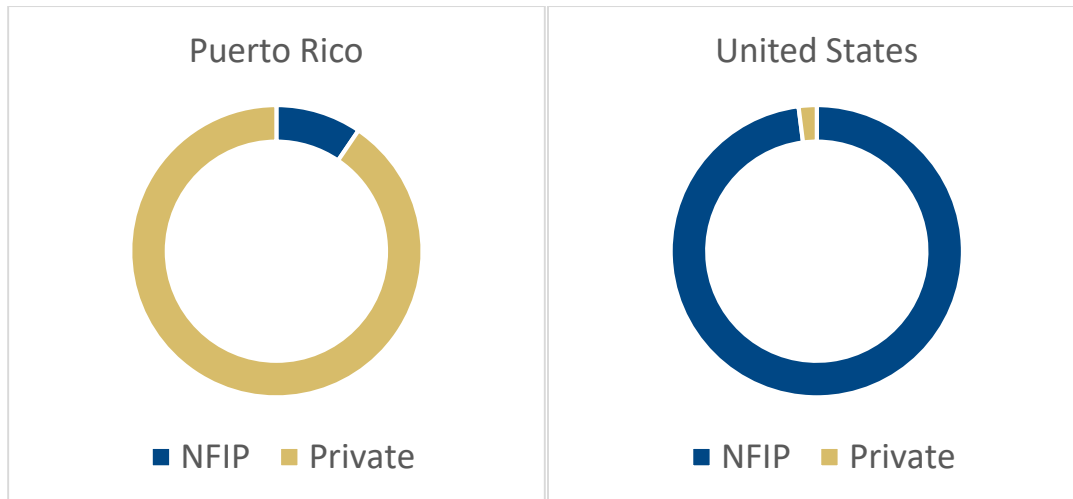
Data from S&P Global Market Intelligence.

WYO companies write policies and service them on behalf of the NFIP in exchange for a fee, but bear none of the risk. Currently, they are not allowed to compete directly with FEMA by offering a standalone flood product. USIC and MAPFRE found they could avoid this restriction by bundling flood with another peril. They both chose vandalism. As such, the majority of private, residential flood policies in Puerto Rico also protect homeowners against vandalism. Note, however, that FEMA has recently removed this restriction<sup>3</sup> in their notice of the FY 2019 WYO arrangement; WYOs will be able to offer standalone private flood insurance starting in October 2018. Both companies in Puerto Rico also offer higher coverage levels than the NFIP but find that no one purchases coverage above the NFIP cap of \$250,000 anyway. They are both products in the admitted insurance market, which means that rates and forms are reviewed by the Office of the Insurance Commissioner.

We estimate that there are a little more than 40,000 private residential flood policies in Puerto Rico today. As of the end of 2017, the NFIP had just over 4,200 residential policies on the island (some of these are WYO policies with USIC or MAPFRE). This means roughly 90 percent of residential flood policies in Puerto Rico are private. This is in stark contrast to the only roughly 2 percent of residential flood policies in the rest of the U.S. that are private<sup>4</sup> as shown in Figure 4.

<sup>3</sup> See 83 FR 11772, available here: <https://www.federalregister.gov/documents/2018/03/16/2018-05418/national-flood-insurance-program-nfip-assistance-to-private-sector-property-insurers-notice-of-fy>

<sup>4</sup> This estimate comes from a forthcoming report on the private flood insurance market in the U.S. For more information please see: <https://www.dhs.gov/publication/st-frg-private-flood-insurance-market-evaluation-project-fact-sheet>.

**FIGURE 4. RESIDENTIAL FLOOD INSURANCE MARKET**

It is important to keep in mind that there are very risky properties that the private sector is either unwilling to insure at all or unable to insure at a price lower than the NFIP. FEMA's Severe Repetitive Loss (SRL) properties fall in this category. In some U.S. communities, SRL properties are a sizeable share of those at risk. This is less true for Puerto Rico. As of October 31, 2017, there were 12 verified residential SRL properties in Puerto Rico that are currently insured out of 88 identified.

## LESSONS FOR ELSEWHERE?

Since so few people in Puerto Rico have flood insurance, the vast majority of those with flood damaged homes will rely on federal disaster assistance to help finance repairs and rebuilding. The aid available from the federal government, however, is quite limited and can take a long time to reach those in need. Disaster victims can get a loan of up to \$200,000 from the Small Business Administration (SBA) to rebuild and make repairs, but those funds must be paid back with interest. Taking on such debt is likely infeasible and unaffordable for those living in poverty. If an individual or household is denied an SBA loan, FEMA may provide up to \$33,300 of Individual Assistance to cover necessary disaster expenses (raised to \$34,000 for disasters declared after October 1, 2017), but the average grant is much lower. As of March 2018, six months after Maria struck Puerto Rico, 1.1 million people had applied for FEMA assistance, with only 441,000 receiving funds. The average grant totaled only \$2,400. Residents may not realize that FEMA Individual Assistance is only to make homes safe and habitable, not to bring them back to pre-disaster conditions.

To fully repair property after a disaster, aid is no substitute for insurance. Insurance generally provides funds more quickly, helps victims recover more completely, and increases the likelihood of rebuilding compared to relying on government assistance. It also allows policyholders to make repairs without taking on debt, using savings, or diverting other spending. The challenges of low insurance take-up are particularly acute in Puerto Rico, but they are by no means unique to the island. Across the U.S., flood insurance take-up is low, even among properties that are required to have it.

The experience in Puerto Rico has demonstrated that there are instances where the private sector can offer lower cost coverage than the NFIP and that consumers are responsive to this. The stark contrast between the role of the private sector in Puerto Rico and on the mainland U.S., however, demonstrates the continued limitations of greater private sector writing of residential flood more broadly. But perhaps the biggest lesson from Puerto Rico is the need for new approaches to help low-income families in risky locations afford disaster insurance. Multiple reports have investigated and proposed policy designs for such a program, such as a federal means-tested flood insurance voucher. Proposals have been put forward in the House, Senate, and by the White House Office of Management and Budget, but Congress has not yet passed any legislation on this issue. It may also be time to consider more innovative insurance products, such as micro-insurance, group coverage, and more parametric-based designs to target vulnerable populations.