



High Water Mark

Are private carriers finally ready to re-enter the homeowners flood insurance market?

by Matthew Chamberlain

Until recently, there was a general consensus in the United States that flood constituted an uninsurable peril.

That consensus is breaking down. Although only a few companies have begun writing primary flood coverage in the United States, the possibility is now widely discussed and it is likely that more insurers will start writing private flood coverage in the near future.

To understand this trend, as well as why flood was for a long time considered an uninsurable risk, consider the history of flood insurance in the United States.

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Private insurers stopped writing flood coverage in 1929, concluding that the peril was uninsurable. Virtually no private insurance covered coastal or river-related flood losses when Congress created the National Flood Insurance Program in 1968. This program is administered by private insurance companies, but the NFIP retains the entire risk.

To keep premiums affordable, they are set at a level that is, in aggregate, below the actuarial rate and involves large subsidies from low-risk insureds to high-risk insureds. In Special Flood Hazard Areas—the high-risk zones—flood insurance is generally required for properties with federally backed mortgages. Outside of the SFHAs, flood insurance is generally not required. Because risks outside the SFHAs typically subsidize those inside the SFHAs, take-up rates outside the SFHAs are often as low as a few percent.

Key Points

► **The Situation:** Flood risk remains one of the most difficult perils for homeowners insurance writers.

► **The Back Story:** The federal flood insurance program and a few private insurers provide the only products currently available.

► **The Next Chapter:** Insurers remain interested in the private flood insurance market and Florida is piloting an effort to bring products into the admitted market.

There are several reasons why flood has been considered an uninsurable risk. First, flood is a localized peril; a distance of a few hundred feet, or less, can make a large difference in risk. This produces an information asymmetry, because the insured has a clear understanding of the local topography, while the insurer does not. The insured knows how far the house is from water, and whether it is on the top of a hill or if it is in a depression.

Insurers, on the other hand, typically use large rating territories for homeowners insurance, in some cases larger than a county.



If these territories were to be used for flood insurance, it would create the potential for adverse selection. Insureds that were at highest risk of a flood would be most likely to want the coverage, and if insurance companies do not have a means of distinguishing higher-risk from lower-risk policies, anti-selection would result. Also, even if insurance companies could construct more granular territories, historically there has been no way to price them accurately. Floods are a low-frequency event, making historical experience a poor predictor of future loss.

Problematic Storm Surge Claims

Although homeowners insurance policies have a flood exclusion that's intended to eliminate flood losses to insurers, this has not always been the effect. When Hurricane Katrina made landfall in Louisiana in 2005, it brought a storm surge as high as 28 feet along portions of the Mississippi coastline. This intense surge washed away many houses, leaving only slabs behind.

Although Hurricane Katrina was extreme, storm surge events are fairly common. In 2008, 80% to 90% of homes in the Bolivar peninsula, near Galveston, Texas, were destroyed by a storm surge of around 11 feet produced by Hurricane Ike. In 2012, Hurricane Sandy produced a storm tide of up to 14.6 feet, resulting in major damage along the New York and New Jersey coastlines.

After these events, homeowners often claimed their houses were damaged by wind prior to being washed away. Because wind is a covered cause of loss in most homeowners policies, policyholders argued that their claims should be paid. Since it was impossible to know for certain the cause of loss, insurance companies came under immense political pressure to pay claims when the true cause of loss could not be proven—and in many cases the insurers did pay.

Insurance companies, therefore, have become very concerned that they will have to pay claims for flood losses

despite having never received premium for that peril. The traditional approach to managing this risk has been to impose underwriting restrictions. The most extreme restriction is to not write business in coastal counties or not allow wind coverage in those counties. However, because this severely limits the potential market, companies typically apply such total bans selectively. They opt instead for different methods of managing their exposures in coastal counties, such as not writing policies within a selected

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distance-to-coast or below a certain elevation. In some cases, this restriction depends on whether the policy has flood coverage from the NFIP.

These restrictions still result in some risky locations being written while other, lower-risk locations end up ineligible. A more nuanced underwriting approach utilizes "minimum permissible elevation" rules, in which eligible locations must have a minimum elevation that depends on ZIP code and distance-to-tidal-water. This allows the company to make lower elevations eligible farther inland, while still restricting coverage on very low-lying locations that are closer to the coast. Because storm surge can reach several miles inland, this approach is a more effective way of managing exposure than the simple rule of not

writing within 1,500 feet of the coast.

Although these underwriting rules are a substantial improvement over the older, less nuanced rules, they are still only a compromise solution. Insurers that do not cover the flood peril cannot charge premium for it, so unless the underwriting rule is very robust, there will always be some risk of paying flood claims for which the company has not collected corresponding premium.

Further, so much of the population of the United States lives along the coast that avoiding coastal areas is not a viable long-term strategy for the insurance industry. The population living in coastal counties in areas of the United States subject to hurricanes is approximately 100 million as of 2010, a 46% increase since 1970.

Writing flood insurance directly, however, has frightened some companies, because of the risk of adverse selection that is due to asymmetric information. They would also need to compete with the NFIP, which as a government entity is able to offer coverage that is, on average, below actuarial rates. The event that may have upset this equilibrium was Congress' passage of the Biggert-Waters Act.

Biggert-Waters Makes Waves

Because of losses from large events such as Katrina, Congress passed the Biggert-Waters Flood Insurance Reform Act of 2012, which required NFIP premiums to be brought in line with actuarial rates. In late 2013, shortly before the new rates would go into effect, it became clear that some insureds would receive large rate increases as a result of the law.

The concern was especially great in Florida, where there was fear that the high flood insurance premiums could paralyze the coastal

Watch a webinar on flood and storm surge risk modeling using this link: <http://www3.ambest.com/ambv/displaycontent/MediaArchive.aspx?RC=223241>

real estate market, since homes without flood insurance in SFHAs would not be able to get federally backed mortgages.

In some cases the new flood insurance premiums were so high that it was unlikely anyone would pay them. In the aftermath of the collapse of the housing bubble, there was a consensus that this could not be permitted to happen.

Two developments occurred in parallel to address this perceived problem. Congress passed a bill this past March that rolled back the more severe premium increases, averting the prospect of a paralyzed real estate market. At the same time, Florida passed SB 542, which encourages the development of a private flood insurance market by allowing use-and-file for flood insurance until 2019. Florida legislators were concerned that if no action was taken by Congress to reform Biggert-Waters, the real estate market could freeze, and so they wanted to create a private market alternative.

Easing the regulatory burden on flood insurance by itself is not enough to result in the introduction of private flood insurance in the admitted market. The other primary obstacle is the asymmetric information that potentially leads to adverse selection. Fortunately, highly advanced catastrophe models for U.S. flooding and storm surge are now being produced.

The availability of these models will enable insurance companies to estimate expected flood losses at the location level. For companies that develop sufficiently granular rating plans, the risk of adverse selection will be greatly reduced or eliminated.

Flood Rating Plans

Historically, companies have used relatively coarse territories based on political boundaries, such as counties, cities or postal codes. These were adopted because they are objective and do not require

sophisticated information systems. However, they prove inadequate when dealing with certain perils, especially catastrophe perils like flood that vary over short distances. Two locations that are close to each other but have different elevations may have very different risks, so an approach that relies solely on territories is inherently unworkable for the flood peril. Because the physical drivers of loss, such as distance-to-coast, distance-to-river/stream and elevation are readily apparent to the insured, the take-up rates are likely to vary substantially among insureds, which will lead to the program ultimately failing.

Geographic Information Systems, when coupled with the new flood catastrophe models to provide a very granular rating plan, may help insurance companies overcome these risks. Territories can be based on “hydrological units,” or watersheds, so that areas that water is not likely to flow between are not grouped together. Within a territory, appropriate rating factors are distance-to-coast (relating to storm surge risk), distance-to-river/stream (relating to river flood risk), and elevation (because all else being equal, there is lower flood risk at higher elevations).

Using all of these rating factors produces a rating plan that is able to distinguish different levels of risk even among points that are near each other. This produces true risk-based pricing that is likely to be sustainable in the long run. The top map at right shows this approach and compares it to the traditional method of rating flood insurance used by the NFIP, shown at bottom.

The Future of Flood Insurance

Florida’s new regulatory regime only went into effect in June this year, and although few companies have started writing private flood insurance in the admitted market, there is considerable interest in the industry. Many insurance companies believe that offering flood coverage will distinguish

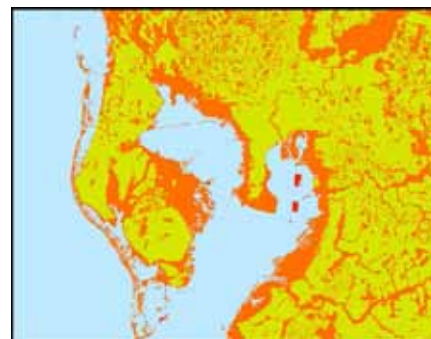
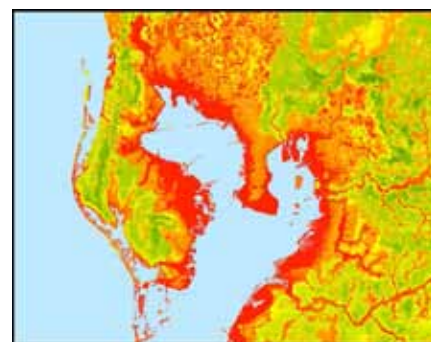
them from their competition, especially in an increasingly soft market.

Furthermore, the NFIP’s rating plan does not align premiums well with the underlying risk, which has resulted in low take-up rates in many areas. For many people outside the SFHAs, there has been no reasonable flood insurance option. This provides a unique opportunity for insurance companies, which do not often find themselves in the position to introduce an insurance product into one of the most developed markets in the world. If the Florida experiment is a success, other states may follow suit.

As is always the case, first entrants will have an advantage over latecomers. Companies that enter the market now with sophisticated approaches will see the greatest profit margins, but the flood market is likely to look very different in five years. **BR**

New Maps for Old

The top map, of the Tampa Bay, Florida region, shows improved detail of flood hazards from the Continuous Flood Rating method, as compared to the traditional method of rating flood insurance used by the NFIP, at bottom.



Source: Milliman