

The potential for flood insurance
privatization in the U.S.
Could carriers keep their
heads above water?



Contents

Introduction: Greater privatization may create growth opportunities, but leveraging them might be problematic	1
Current Events: Where does the flood insurance market stand now?.....	4
Opportunities Versus Obstacles: What challenges might insurers face in writing more flood coverage?	8
Options for Greater Flood Insurance Privatization: The devil is in the details	11
Closing Thoughts: Where do carriers go from here with flood insurance?	15
Added Insight: How is flood insurance handled in other countries?.....	16
Added Insight: Proactive mitigation could be the key to making flood more of an insurable risk	17

Introduction: Greater privatization may provide growth opportunities, but leveraging them might be problematic

While the National Flood Insurance Program (NFIP) explores the potential to share at least some of its exposure with primary insurers, reinsurers, and/or catastrophe bond investors, there is no guarantee that such private market players will be eager or even willing to take on such risks, considering the factors that have left the current federal program so heavily in debt.

That's not to say that insurers wouldn't be interested in the possibility of tapping into the \$3.3 billion or so in premiums paid each year to the NFIP by policyholders, as this market likely represents the largest potential growth opportunity in the property and casualty market.

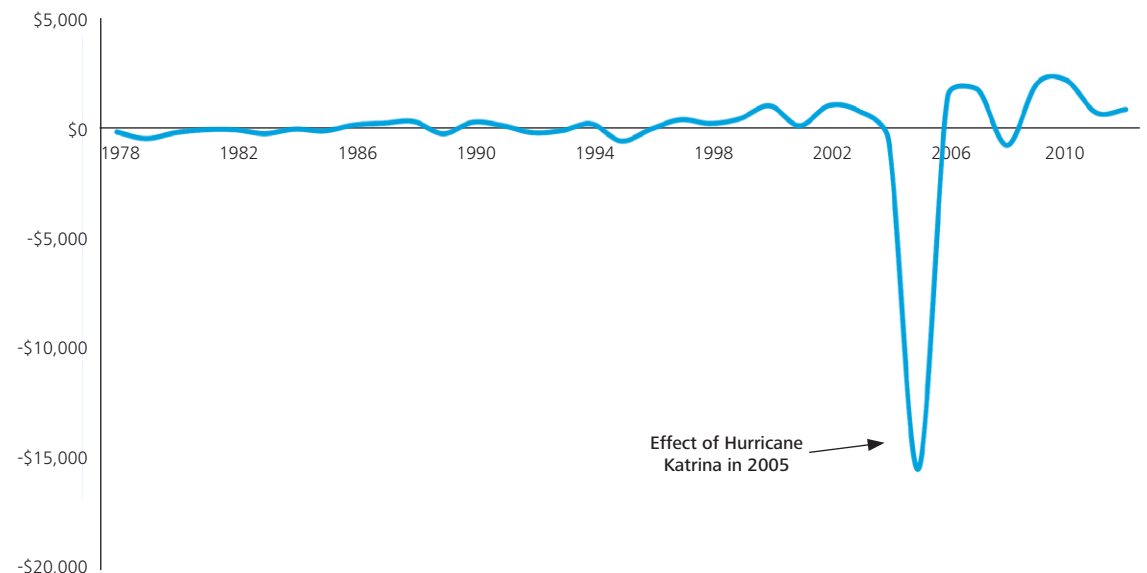
The question, however, is whether the problems currently hampering the NFIP can be addressed to the extent that flood insurance becomes a viable market for profit-driven carriers and investors.

This report will examine how private markets might play a bigger role in underwriting flood insurance risks, while assessing the possible obstacles facing those interested in taking on such exposures.

The NFIP has been the primary source of flood coverage for U.S. home- and business-owners for more than a half century. For the vast majority of its existence, the program collected more in premiums than it paid out in claims¹ (see Exhibit 1).

Exhibit 1. Deficit disorder leaves NFIP in the red

Difference between NFIP premium collected and claims paid (\$ million) (As of June 24, 2013)*



Source: FEMA, "Total Earned Premium by Calendar Year," <http://www.fema.gov/statistics-calendar-year/total-earned-premium-calendar-year> and FEMA, "Loss Dollars Paid by Calendar Year," June 24, 2013, <http://www.fema.gov/statistics-calendar-year/loss-dollars-paid-calendar-year> (accessed February 27, 2014).

* Excludes claim figures for 2012 Superstorm Sandy, due to non-availability.

¹ Government Accountability Office (GAO), "Flood Insurance – Strategies for Increasing Private Sector Involvement," January 22, 2014, <http://www.gao.gov/products/GAO-14-127>.

However, massive insured losses were incurred in 2004, 2005, 2008, and 2012, primarily due to catastrophic events such as Hurricanes Ivan, Katrina, Rita, and Ike (see Exhibit 2), with much of the damage concentrated in a handful of states or generated by repetitive-loss properties. When Hurricane Sandy hit the Northeastern United States in October 2012, the NFIP was already \$20.7 billion in debt.² After the floodwaters caused by Sandy receded, the NFIP had to borrow an additional \$9.7 billion from the U.S. Treasury to pay claims, leaving the program over \$30 billion in the red.³

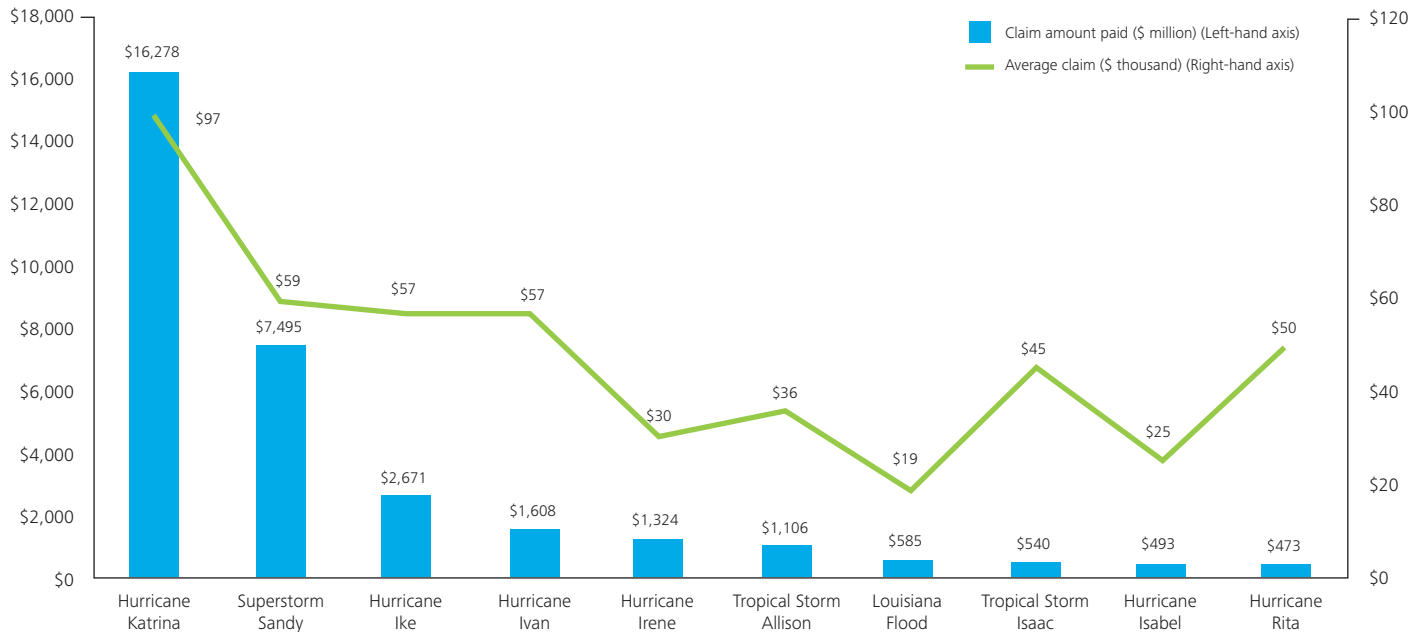
These catastrophic losses alone, however, are not entirely responsible for the NFIP's current financial challenges. The program operates under a number of pricing restrictions, with the result being that about one-in-five policyholders are charged rates that do not fully reflect their actual exposure.

Months before Sandy made landfall, Congress was being challenged to fortify and reform the program to restore its fiscal integrity and avoid leaving taxpayers on the hook for future flood claims. In July 2012, Congress reauthorized the NFIP for an additional five years, but required that a number of changes be implemented. One was to start increasing subsidized rates over time to risk-based levels according to updated flood maps and loss experience, while another was to enhance mitigation efforts.

But Congress also mandated that the NFIP consider greater private market participation, going beyond the role insurers already play in the distribution of policies and administration of the program to assume more of the actual risk.

Exhibit 2. Major catastrophes took their toll

Claim payments for significant flooding events (As of Dec. 31, 2013)



Source: FEMA, "Significant Flood Events," <http://www.fema.gov/policy-claim-statistics-flood-insurance/policy-claim-statistics-flood-insurance/policy-claim-13-9>, January 31, 2014.(accessed February 27, 2014).

² Rawle O. King, "The National Flood Insurance Program: Status and Remaining Issues for Congress," Congressional Research Service, February 6, 2013.

³ Ibid.

To gauge the prospects for success of such a privatization initiative, we examined secondary data and spoke with subject matter specialists within Deloitte. In addition, Deloitte’s Center for Financial Services research team interviewed interested parties representing primary insurers, reinsurers, independent agents, and even a leading consumer advocate, all of whom agreed to speak on background — meaning they would offer their views on the subject, but not be quoted by name in this report.

Among the questions we asked:

- What factors might prompt private market players to enter this familiar yet “new” market?
- What regulatory assurances would they need to have a chance at writing the coverage profitably?
- What steps could be taken to provide affordable coverage and encourage more consumers to buy flood insurance?
- What are some of the options available to expand the private market’s presence in the flood insurance market?

- What ongoing role might the federal government have to play in flood insurance even if greater privatization is achieved, in terms of mitigation, mapping, subsidization, and coverage for risks rejected by the private market?

Flood insurance theoretically presents a tremendous growth opportunity for private carriers. But to incentivize the private market to take on more of this risk, additional reforms will likely need to be put into place and maintained over the long term, or else the same obstacles that have undermined the NFIP’s solvency would likely threaten the viability of a private market solution as well. This sentiment is echoed in a report released in January 2014 by the Government Accountability Office (GAO), which reinforces the notion that private insurers are not likely to write flood insurance without the freedom to charge adequate, risk-based premiums.⁴



As used in this document, "Deloitte" means Deloitte LLP and its subsidiaries. Please see www.deloitte.com/us/about for a detailed description of the legal structure of Deloitte LLP and its subsidiaries. Certain services may not be available to attest clients under the rules and regulations of public accounting.

⁴ Government Accountability Office (GAO), "Flood Insurance – Strategies for Increasing Private Sector Involvement," January 22, 2014, <http://www.gao.gov/products/GAO-14-127>.

Current Events: Where does the flood insurance market stand now?

The NFIP was created in 1968 through an Act of Congress. It began to directly insure properties against the risk of flood after 1978, when most private insurers pulled out of the market as a result of frequent flooding inundating properties located in hazard-prone areas.⁵ The NFIP's major goals were to decrease the risk of flood loss, reduce the costs and consequences of flooding, lower the need for federal disaster assistance, and preserve and restore natural and beneficial flood plain functions.⁶

When considering the potential for greater privatization, it's important to remember that the private sector already plays a number of key roles in the flood insurance market. The insurance operations of the NFIP are administered by participating property and casualty insurers under the

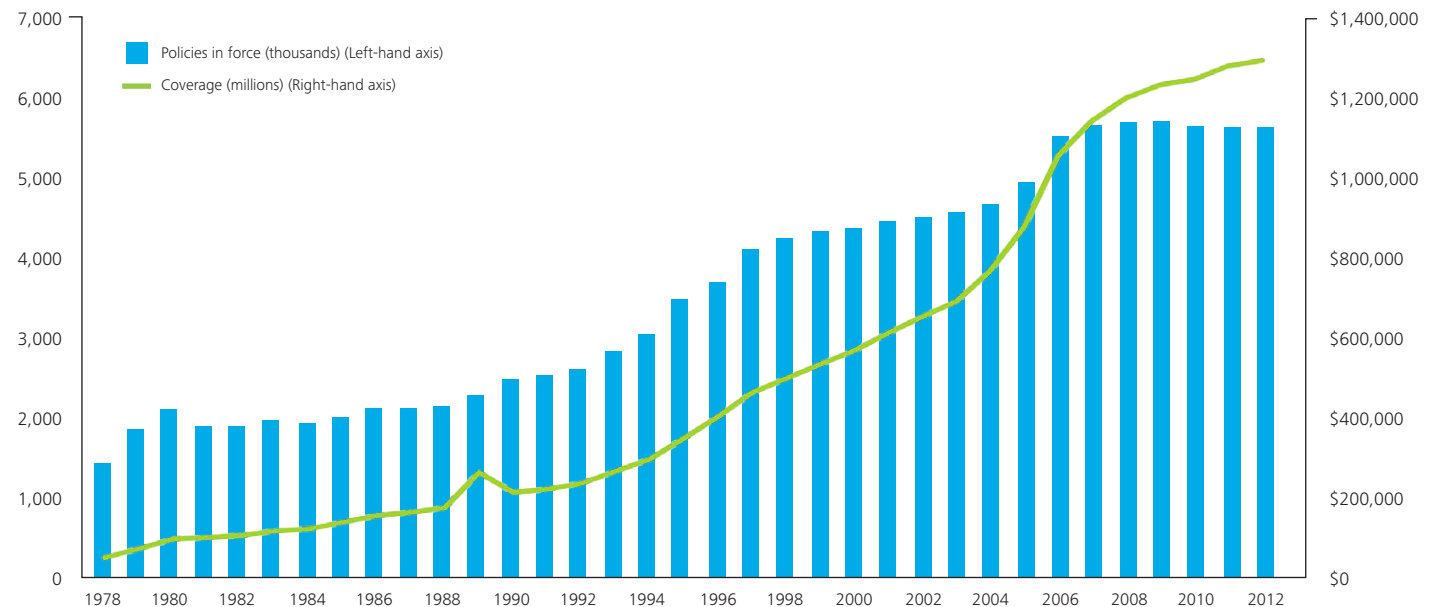
"Write-Your-Own" program and sold through the agency distribution system, in return for administrative fees and sales commissions.

In 2012, the most recent year for which figures are available, the program collected \$3.3 billion in premiums via 5.6 million policies in force, covering \$1.29 trillion worth of property against flood damage⁷ (see Exhibit 3).

Meanwhile, a number of private property insurers already cover flood risks, but usually on an excess basis over and above the limits allowed in an NFIP policy — which are \$350,000 for residential properties (\$250,000 for structural damage and \$100,000 for contents), and \$1 million for non-residential properties (\$500,000 each for structure and contents).⁸

Exhibit 3. Exposure keeps rising as policy growth slows

NFIP policies and coverage in force



Source: *Total Policies in Force by Calendar Year*. FEMA. June 24, 2013. <http://www.fema.gov/policy-claim-statistics-flood-insurance/policy-claim-statistics-flood-insurance/policy-claim-13-14> (accessed February 27, 2014) and *Total Coverage by Calendar Year*. FEMA. June 24, 2014. <http://www.fema.gov/policy-claim-statistics-flood-insurance/policy-claim-statistics-flood-insurance/policy-claim-13-12>

⁵ The American Institutes for Research, The Pacific Institute for Research and Evaluation, Deloitte & Touche LLP, *A Chronology of Major Events Affecting the National Flood Insurance Program*, October 2002.

⁶ The American Institutes for Research, *The Evaluation of the National Flood Insurance Program Final Report*, October 2006.

⁷ FEMA, "Policy and Claims Statistics for Flood Insurance," last updated <http://www.fema.gov/policy-claim-statistics-flood-insurance/policy-claim-statistics-flood-insurance/policy-claim-13>, January, 7, 2013, (accessed March 6th, 2014).

⁸ State of Missouri, State Emergency Management Agency (SEMA), NFIP FAQs, available from <http://floodplain.sema.dps.mo.gov/sema/faqs.htm>, (accessed February 27, 2014).

However, the federally-run NFIP differs from standard property and casualty insurers in a number of ways.

Among them:

- The NFIP is not subject to state regulation, which governs the rest of the insurance industry.
- Coverage terms and limits are set by federal statute.
- The NFIP is not subject to minimum capital requirements, nor is it required to adhere to any solvency measures.
- The program does not invest reserves to generate additional income.
- The NFIP does not spread or limit its risk through the purchase of reinsurance.
- A significant percentage of the NFIP's business is subsidized because prices paid for coverage do not reflect the actual risk being assumed for certain properties.

These are all relevant and important factors to consider in assessing the potential for greater privatization of flood insurance. Private carriers might offer advantages in terms of their ability to spread risk via reinsurance and earn income on "float" by investing premium dollars prior to having to pay claims.

However, in other ways, insurers might find themselves at a disadvantage by comparison with the NFIP, not the least of which is the need for private carriers to achieve a positive return on their investment, and their inability to borrow from the U.S. Treasury to pay claims.

Regulatory reforms put in place to strengthen the NFIP

Debate has been ongoing in Congress for years regarding how lawmakers might put the NFIP on a sounder financial foundation and keep it that way over the long term. However, consensus around decisive solutions has proven to be elusive. As a result, since 2002, the program has been reauthorized 11 times for relatively short periods, even briefly lapsing during debates over extension.⁹

Congress put in place a longer-term reform program with its passage of the Biggert-Waters Flood Insurance Reform Act of 2012. Signed into law by President Barack Obama on July 6, 2012, the Act extends the flood insurance program through Sept. 30, 2017.

The law included a number of reforms to strengthen the NFIP's financial solvency as well as improve administrative effectiveness. It also required a gradual increase in historically subsidized premium rates to risk-based levels, while minimizing homeowner incentives for rebuilding in areas at risk of repeated flooding.

In addition, the law mandated the study of further privatization of the flood program, starting with consideration of the purchase of reinsurance to limit the ultimate potential burden on taxpayers.



⁹ American Academy of Actuaries Flood Insurance Subcommittee, *The National Flood Insurance Program: Past, Present...and Future?*, July 2011.

Some key reform provisions in the law include:

- Eliminating immediately any premium subsidies on second properties, severe repetitive loss properties, and other properties damaged by flood where repair costs exceed fair market value.¹⁰
- A provision to raise premium rates by up to 20% every year, if necessary, to reach levels that fully reflect a property's actual flood exposure.¹¹
- A call to assess the capacity of the reinsurance, capital, and financial markets to spread the NFIP's risks, as well as authorization to transfer a portion of NFIP's exposure to the private reinsurance market.¹²
- Requiring the Federal Insurance Office and Government Accountability Office to study and report to Congress on the broad range of options, methods, and strategies for further privatizing the flood insurance program.¹³
- Creation of a \$12 billion catastrophe reserve fund to spread losses from catastrophes over time, reducing the need to borrow from the Treasury in adverse loss years.¹⁴
- Reorganization of the Federal Emergency Management Agency's flood hazard mitigation programs to achieve sustainable reduction in loss of life and property.¹⁵
- Increased penalties on lenders that do not enforce the legal mandate on homeowners who have federally-backed mortgages to purchase flood insurance, from the current \$350 to \$2,000.¹⁶

Industry leaders interviewed for this report generally supported these reform measures, characterizing them as reasonable attempts to address major problems that had undermined the program's financial viability, while setting the stage for insurers and the NFIP to work together on potential expansion of the private market's role in covering flood risks.

Legislative hurdles arise

However, once the pricing provisions of Biggert-Waters began to be implemented, there was a political backlash led by lawmakers in the most exposed states. There were calls for a delay or outright repeal of rate hikes by local, state and federal legislators representing these regions, who argued that the increases being imposed under the new law were rendering flood coverage unaffordable for many. Critics also said the law was undermining the homeowners market in affected communities because subsidized rates could not be transferred to new owners, making it difficult if not impossible for many policyholders to sell their properties.¹⁷

In January 2014, the U.S. Senate responded by passing the "Homeowner Flood Insurance Affordability Act of 2014," which delayed a number of Biggert-Waters Act measures put in place to raise premiums to risk-based levels for at least four years. The Senate bill was opposed by a number of insurance industry, taxpayer, and business groups, which contended that a delay would perpetuate the financial distress facing the NFIP, while shifting additional exposure to taxpayers.¹⁸

The House of Representatives passed its own measure that kept the transition to risk-based rates in place, but limited the scope and slowed the pace of implementation, while including provisions to maintain subsidized rates after properties are sold. The Senate decided to adopt the House approach, and President Obama signed the bipartisan bill into law on March 21, 2014.¹⁹

¹⁰ Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100205. U.S. Government Printing Office (GPO). July 6, 2012.

¹¹ Ibid.

¹² Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100232. U.S. Government Printing Office (GPO). July 6, 2012.

¹³ Ibid.

¹⁴ Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100212. U.S. Government Printing Office (GPO). July 6, 2012.

¹⁵ Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100225. U.S. Government Printing Office (GPO). July 6, 2012.

¹⁶ Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100208. U.S. Government Printing Office (GPO). July 6, 2012.

¹⁷ Bruce Albert. "House passes amendment to block huge hikes in flood insurance premiums," *The Times-Picayune*, June 5, 2013.

¹⁸ Andrew G. Simpson, "Senate Passes Flood Insurance Delay, Agent Licensing Bill," *Insurance Journal*, January 30, 2014.

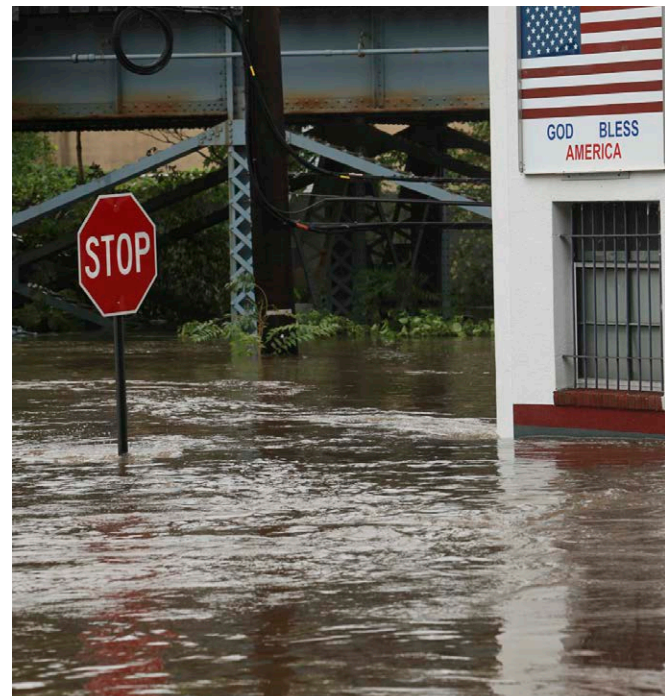
¹⁹ Nedra Pickler, "Obama Signs Relief From Flood Insurance Hike," *Associated Press*, March 21, 2014.

Moves to delay, limit, or roll back efforts to increase prices to risk-based levels raise red flags for private insurers and reinsurers, and may discourage them from entering the flood insurance market, the GAO warned in its January 2014 report.²⁰ “[D]emonstrating the political will to charge full-risk rates within NFIP could signal to private insurers a greater likelihood of being allowed the freedom to charge adequate rates in a private flood insurance market, thus encouraging their potential participation,” reported GAO, while any move in the opposite direction “would increase private insurers’ skepticism about the feasibility of participating...”

One way to mitigate the impact of necessary rate increases and also attract private insurers into the market might be to give carriers the freedom to charge risk-based prices, while setting up a federal program providing vouchers or some other method to help distressed policyholders overcome affordability concerns. The GAO suggested such an option in its January 2014 report.

Another alternative might be for individual state and local governments in highly exposed areas to help subsidize homeowners who face steep hikes in premiums based on the risk they face, at least for a transitional period.

It’s also important to note that some states — Florida, for example — have already found private carriers ready, willing and able to charge rates below the NFIP’s for certain properties, given the legislative support to write the coverage for interested policyholders.²¹



²⁰ Government Accountability Office (GAO), “Flood Insurance – Strategies for Increasing Private Sector Involvement,” January 22, 2014, <http://www.gao.gov/products/GAO-14-127>.

²¹ Michael Buck, “Florida’s HCI Group Flood Offering Can Compete Regardless of Congress NFIP Action,” *Best’s Insurance News & Analysis*, A.M. Best, March 5, 2014.

Opportunities Versus Obstacles: What challenges might insurers face in writing more flood coverage?

Regardless of whether the federal government or private industry is covering flood exposures, the unpredictable nature of extreme weather events makes this risk difficult to manage and insure. As part of its central challenge to insure against flood losses at affordable premium levels without running up a high deficit to be covered by taxpayers, the NFIP has faced several obstacles.

It might be useful to lay out these hurdles for private insurers and/or reinsurers that are considering the potential opportunities versus the possible challenges they might face in the flood insurance market (see Exhibit 4).

- **Rate Subsidies:** According to FEMA estimates, 20% of insured properties pay subsidized premiums — that is, rates that do not completely reflect their potential risk.²² Many of these individual exposures likely represent the highest-risk properties, especially along coastal areas exposed to regular flooding. Indeed, some say that underpricing of flood insurance to make coverage

“affordable” for such properties might in effect be counterproductive by unwisely encouraging construction in high-hazard areas.

The Biggert-Waters Act included provisions to allow for premium rate increases of up to 20% annually so that subsidies for higher-hazard properties could be removed over time.²³ But as noted earlier, protests by political leaders in states most affected by the rate hikes prompted Congress to scale back efforts to charge risk-based premiums for all flood policies.

The ultimate challenge is how to underwrite and price flood coverage to reflect the actual risk being faced while keeping such coverage “affordable” for many of the affected policyholders. Private insurers would likely not be willing to write flood insurance at a loss, so some form of government subsidy might still have to be provided to certain policyholders, whether temporary or permanent.

Exhibit 4. What are flood insurers up against?



²² Michael Buck, “Florida’s HCI Group Flood Offering Can Compete Regardless of Congress NFIP Action,” *Best’s Insurance News & Analysis*, A.M. Best, March 5, 2014.

²³ Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100205. U.S. Government Printing Office (GPO). July 6, 2012.

- **‘Déjà Vu Loss Events:** “Repetitive Loss Properties” (RPL) and “Severe Repetitive Loss Properties” (SRLP*) account for a large share of all flood insurance exposures, amounting to \$12 billion in total losses from approximately one-in-four claims paid between 1978 and 2011²⁴ (see Exhibit 5).

To avoid repeat claims, the federal, state and/or local governments could offer to buy out owners of repetitive loss properties in high-hazard areas. Indeed, such measures have already been announced locally — in the state of New Jersey, for example, where properties severely damaged by Superstorm Sandy, and seen as vulnerable to future hazards, will be purchased and converted to parkland or other open-space uses.²⁵

- **Low NFIP Program Participation:** Those with federally-backed mortgages are required to buy flood insurance, yet the take-up rate by homeowners in flood-prone areas regardless of their mortgage source has been historically low, with only 18% of properties in flood zones

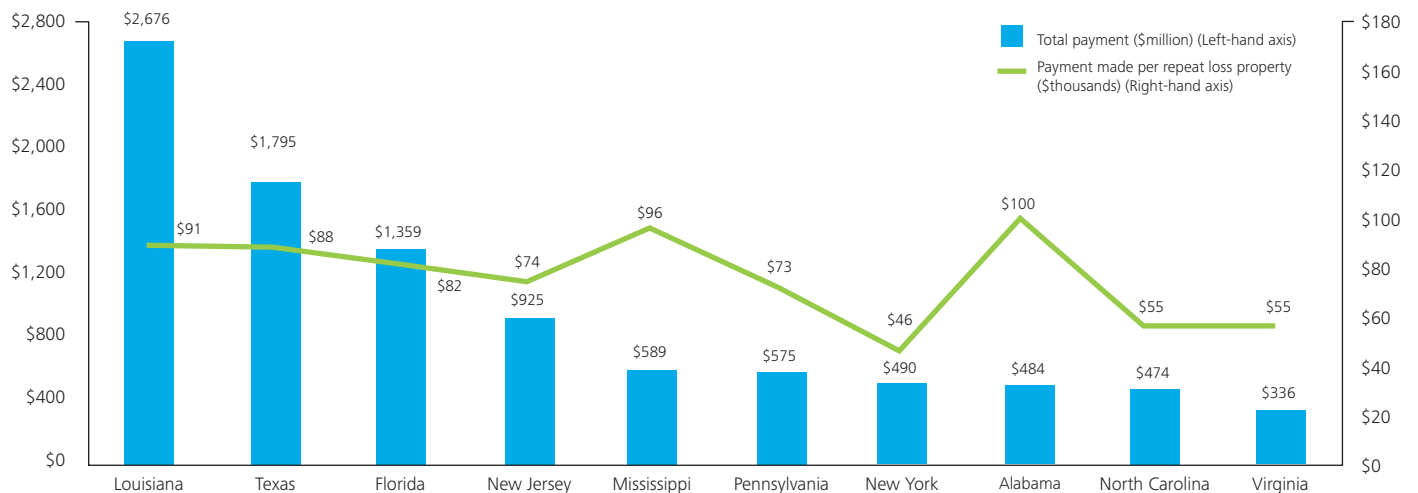
believed to have flood insurance.²⁶ Estimates from the damage caused by Superstorm Sandy revealed that only 15-to-25% of properties in Special Flood Hazard Areas (SFHA) in the Northeast were insured against flood loss.²⁷

Biggert-Waters attempts to tackle this problem in part by raising the penalty on institutions for failure to make sure homes with federally-backed mortgages are covered for flood exposures. Still, convincing property owners in general to purchase the coverage and making sure they keep coverage in effect remains a big challenge.

- **Better Pinpointing High-Hazard Areas:** Outdated flood maps have led to inadequate premium pricing and likely provide a false sense of security to residents living in areas that really are at a higher risk of flooding. Biggert-Waters aims to correct this with provisions to establish a Technical Mapping Advisory Council (TMAC). The Act also requires an appeals board to be set up where homeowners and communities can challenge revisions to flood zones in their area.²⁸

Exhibit 5. NFIP suffers from déjà vu on multiple-loss policies

NFIP payments to repetitive loss properties



Source: Rawle O. King, “The National Flood Insurance Program: Status and Remaining Issues for Congress,” Congressional Research Service, February 6, 2013.

²⁴ Rawle O. King, “The National Flood Insurance Program: Status and Remaining Issues for Congress,” Congressional Research Service, February 6, 2013.

²⁵ Hilary Russ, “New Jersey homeowners to get buyout offers after Superstorm Sandy,” *Reuters*, July 3, 2013.

²⁶ Susan Stellin, “Reconsidering Flood Insurance,” *New York Times*, November 8, 2012.

²⁷ Anita Lee, “Sandy Catches Northeasterners Without Flood Coverage,” *Sun Herald*, November 2, 2012.

²⁸ Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100216. U.S. Government Printing Office (GPO), July 6, 2012.

* A repetitive loss property (RLP) is defined as an insured property that experiences two or more flood losses greater than \$1,000 within any 10-year period. A specific section of RLPs, called severe repetitive loss properties (SRLP), have incurred at least four NFIP claim payments of at least \$5,000 each or the cumulative amount of such claims payments exceeds \$20,000 or for which at least two separate claims have been made with the cumulative amount of the building portion of such claims exceeding the market value of the building.

The success of these measures will in part depend on how swiftly and accurately flood plains can be remapped and premiums adjusted accordingly. Indeed, many homeowners are already challenging whether recently updated flood maps may be overstating their flood risks.²⁹

- **Adverse Selection and the Impact of Federal Disaster Assistance:** Due to the fact that purchasing flood insurance is often optional for many property owners, the market’s spread of risk is hampered by adverse selection, meaning those owning properties with relatively lower flood exposure are passing on the coverage, undermining the NFIP’s spread of risk.

In addition, many owners of flood-prone properties might be counting on the availability of federal disaster assistance should a major event occur, thus discouraging them from proactively laying out additional premium for individual flood insurance to cover their own risk.

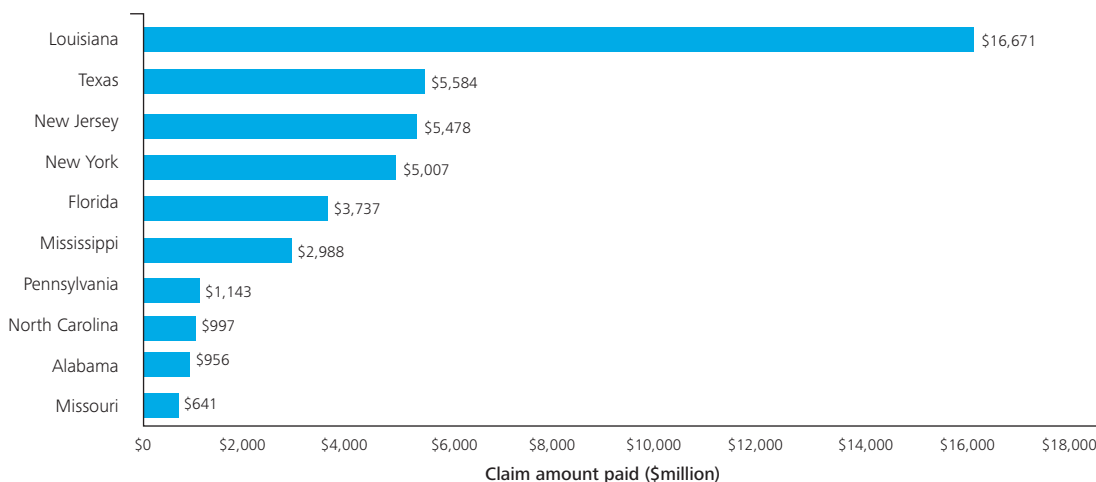
- **Focusing on High-Risk States:** From 1978 until September 2013, just six states — Louisiana, Texas, New Jersey, New York, Florida, and Mississippi — accounted for nearly 78% (in dollar value) of all flood claims paid³⁰ (see Exhibit 6). In terms of premiums collected, however, from September 2012 to September 2013, these six states accounted for only 61% of premiums paid across all states.³¹

Although Hurricane Katrina can be cited as a major culprit for the spike in claims in many of these particular areas, an assessment of the number of repeat-flood-loss properties, as well as other factors contributing to the higher hazard in those states, might more effectively focus specific flood mitigation efforts.

Even though these challenges may seem daunting, they are not necessarily insurmountable. But they do likely need to be addressed if the government has any inclination to expand the role of the private market in covering flood exposures.

Exhibit 6. Louisiana losses three-times that of the second worst-hit state

Top 10 states with most food claims (As of Dec. 31, 2013)



Source: FEMA, "Loss Statistics," December 31, 2013, <http://bsa.nfipstat.fema.gov/reports/1040.htm> (accessed February 27, 2014).

²⁹ Theodor Meyer, "Using Outdated Data, FEMA Is Wrongly Placing Homeowners in Flood Zones," *ProPublica*, July 18, 2013, <http://www.propublica.org/article/using-outdated-data-fema-is-wrongly-placing-homeowners-in-flood-zones>.

³⁰ FEMA, "Loss Statistics," <http://bsa.nfipstat.fema.gov/reports/1040.htm> (accessed December 16, 2013).

³¹ FEMA, "Policy Statistics," <http://bsa.nfipstat.fema.gov/reports/1011.htm> (accessed December 16, 2013).

Options for greater flood insurance privatization: The devil is in the details

Under the right conditions, having the private market — whether primary insurers, reinsurers, the capital markets, or some combination of all three — pitch in to take some of the flood exposure load off the NFIP could be a win-win for taxpayers as well as the insurance industry.

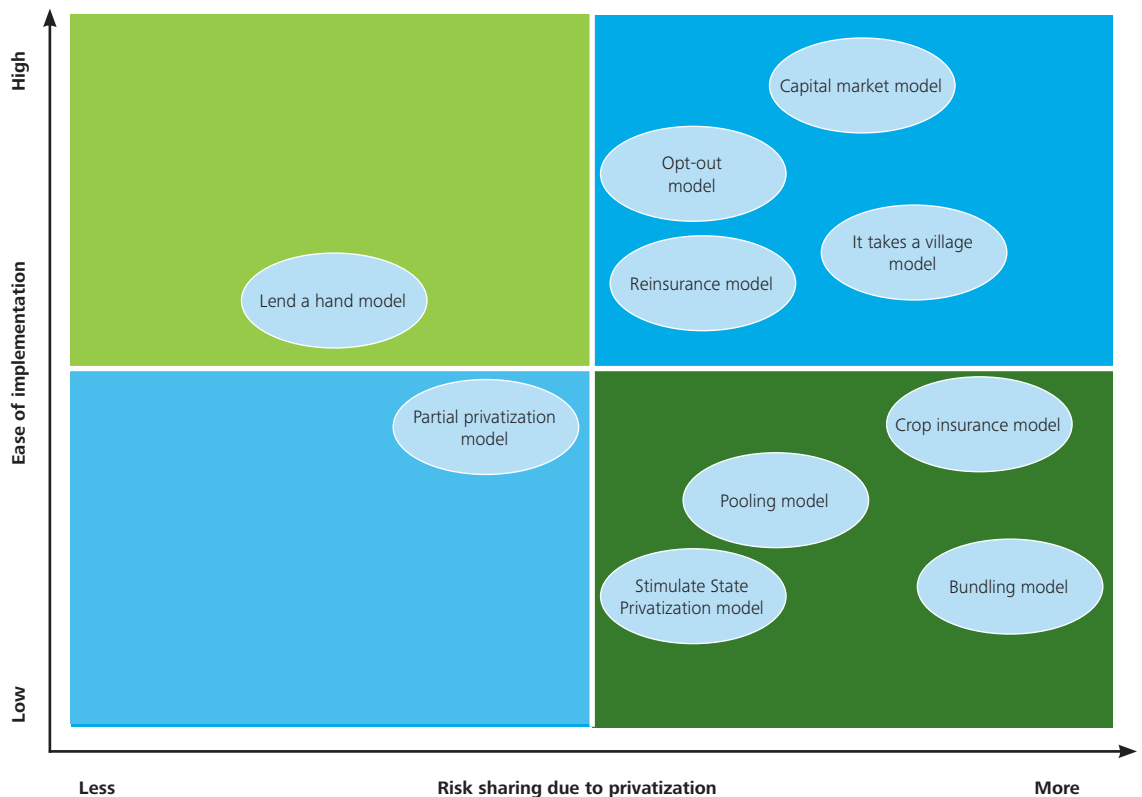
The challenge, however, is how a private-public partnership on flood exposures might be made beneficial for both sides. There are a number of ways to possibly go about achieving this goal, which are not mutually exclusive. Each has its own variables in terms of ease of implementation and degree of privatization (see Exhibit 7).

The Crop Insurance Model

With crop insurance, private carriers write a certain level of primary coverage while reinsuring catastrophic levels with the federal government. An additional layer of private market protection could be added through reinsurers offering excess-of-loss coverage to cap the government's aggregate exposure and further spread the risk.

The advantage here would be to have the private sector assume responsibility for a specific underlying loss level in any given year, while federal funds are only required to cap the industry's maximum loss in particularly intense catastrophe years. However, the question is whether reinsurers would write the coverage at all unless the underlying exposures were underwritten according to the actual risk being assumed.

Exhibit 7. What is the potential impact of specific privatization plans?



The Reinsurance Model

In this scenario, the NFIP could spread its risk and limit its maximum exposure in catastrophic years simply by purchasing reinsurance from the private sector. Even if such coverage only extends to a middle-range loss, with the program itself assuming the highest-level losses over and above a pre-determined reinsured layer, the impact of an anomalous loss year would still be alleviated. The advantage here would be to limit NFIP (and taxpayer) exposure.

This option has underlying facilitators in place. The Biggert-Waters Act provides authority for the program to secure reinsurance coverage from the private market while setting the stage for such a step by requiring the development of a protocol through which the NFIP can release to private reinsurers the data necessary for assessment of aggregated and individual flood insurance risks.³²

The Capital Market Model

In conjunction with the use of private primary insurance and/or reinsurance, the capital markets might offer additional avenues to help spread risks through securitization via the sale of catastrophe bonds to investors. Securitization of catastrophe risks, such as flooding, is fairly transparent since the trigger is tied to a significant event.

The spreading of disaster risks via cat bonds is well established in terms of wind and earthquake exposures,³³ and is already being employed to help mitigate some flood exposures. Indeed, New York City's transit system recently announced plans to sell cat bonds to hedge against possible damages from storm surge, to cover future losses resembling those caused by Hurricane Sandy.³⁴

The Pooling Model

Some suggest setting up a flood insurance pool, similar to the California Earthquake Authority (CEA), where participating insurers could sell flood coverage bundled with standard homeowners insurance. This has the advantage of insurers pooling their resources and paying out claims from that pool, thus diversifying their risks.

Since the CEA does not rely on public funds, it is considered self-sustaining to the extent to which it can pay claims. However, the efficacy of the CEA has not been tested by an actual loss event and the concept has its share of skeptics, particularly when it comes to the potential take-up rate given the likely cost of coverage for higher-risk properties.

The Partial Privatization Model

Another arrangement could involve private insurers picking up more moderate flood risks, while leaving the NFIP in place as a residual market for those who cannot get coverage otherwise. However, this "cherry-picking" arrangement could exacerbate the adverse selection issue for NFIP and still leave the program in a precarious financial state even if prices for the policies it writes are based on actual risk assumed.

The Bundling Model

In the United Kingdom, flood insurance is included with a standard homeowner's insurance policy and is a mandatory coverage. In turn, the government has pledged to reduce flood exposures through specific infrastructure development.³⁵ The agreement, which was up for renewal in mid-2013, has been extended until a new "not-for-profit" reinsurer called Flood Re is set up by 2015.³⁶ Might such a model work in the United States?

³² Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100232. U.S. Government Printing Office (GPO). July 6, 2012.

³³ "Cat Bonds Demystified – RMS Guide to the Asset Class," *Risk Management Solutions*, 2012.

³⁴ Charles Mead, "MTA obtains \$200 Million of Protection With Catastrophe Bonds," *Bloomberg*, July 31, 2013.

³⁵ Department for Environment, Food and Rural Affairs (DEFRA), "Flood risk and insurance: A roadmap to 2013 and beyond. Final report of the flood insurance working groups," GOV.UK, December, 2011.

³⁶ Robert O'Conner, "Questions Linger as UK Insurers Celebrate Flood Deal With Government", *Best's Insurance News & Analysis*, A.M. Best, www3.ambest.com, July 3, 2013.

Making flood insurance a mandatory purchase would accomplish some key goals. It would assure that everyone has coverage. It would overcome the problem of adverse selection, since everyone would buy insurance, not just those with the highest risk. Plus insurers would have a large enough pool to diversify their exposure. In addition, a large pool of participants will likely ensure that premium rates are kept reasonably affordable for most households, thereby improving retention rates for the program, which typically range from two-to-four years before policies are cancelled.³⁷

As noted earlier, to keep coverage affordable, premium vouchers could also be provided by the federal and/or state governments to low-income property owners and those with higher-risk properties. That way, insurers would collect risk-based premiums without putting prices beyond the reach of many property owners. Such voucher subsidies could be phased out over time to cushion the blow on policyholders. Biggert-Waters already includes a provision that requires FEMA to study the feasibility of such an approach.³⁸

There would likely be challenges in implementation of a bundling model, however. Homeowner insurers, particularly in states with windstorm exposures, have often had a difficult time overcoming regulatory rate suppression to address affordability concerns. Without having the flexibility to charge actuarially-determined rates, it would be problematic to generate the necessary premium volume to make flood insurance viable financially for private carriers, even if everyone is mandated to buy it.

In addition, homeowners who do not perceive any or even minimal flood risk to their property might be up in arms against a mandate to buy coverage they feel they do not need.

The 'Opt-Out' Model

Instead of mandating the purchase of flood insurance, one approach might be to require that all property owners be offered flood insurance along with their standard homeowner or business-owner policy, but be allowed to opt-out of that coverage. Regardless of whether the market is further privatized, this option might help bolster participation in flood insurance, similar to how opt-out provisions seemed to boost employee participation in 401(k) retirement plans.³⁹

Participation in flood insurance might increase even more under this scenario if a "hammer" was included — that being a notice that anyone who turned down flood insurance would not be eligible for federal disaster assistance if an event occurs. But there is skepticism among industry leaders whether the federal government would be able to overcome political pressure to follow through on such a pledge after a major catastrophe.

The 'Lend a Hand' Model

Under this scenario, the federal government and/or individual states with high-risk communities could offer vouchers or other types of financial support to those homeowners who cannot afford to pay risk-based rates for flood insurance or to mitigate their exposure. At least one state, Connecticut, has already created a Shoreline Resiliency Fund to provide low-interest loans to flood-prone property owners to elevate their homes and better protect their businesses.⁴⁰

³⁷ Government Accountability Office (GAO), "Flood Insurance – Strategies for Increasing Private Sector Involvement," January 22, 2014, <http://www.gao.gov/products/GAO-14-127>.

³⁸ Public Law 112-141; 126 Stat. 412. Title II — Flood Insurance. Sec. 100236. U.S. Government Printing Office (GPO). July 6. 2012.

³⁹ Ashlea Ebeling, "Some Employees Short-Shrifted by 401(k) Auto Enrollment Boom," *Forbes*, November 30, 2011.

⁴⁰ "Conn. Gov.: Low-Interest Loans Available for Elevating Homes, Flood-Proofing Businesses," *Insurance Journal*, November 6, 2013.

The 'It Takes A Village' Model

The potential benefits of purchasing flood insurance on a community-rated basis might also be considered.⁴¹ Such an approach would function much like group health insurance, with residents likely paying a lower premium than they would if they bought coverage individually. By enhancing affordability, more homeowners in flood-prone areas might be motivated to buy a policy, potential flood risks would be more effectively spread out, and local governments would have a strong incentive to take mitigation steps so as to lower community insurance rates.

Participating homeowners could perhaps pay for their flood insurance on a monthly or quarterly basis, as they do a utility bill, or have the charge for covering an entire community included on their local property tax bill. And if the flood insurance market is privatized down the road, a community-rating approach could theoretically be adopted by private carriers as well.

The Homeowner Flood Insurance Affordability Act of 2014 requires the Federal Emergency Management Agency to study the feasibility of incorporating a community-rating option into the NFIP.⁴²

The 'Stimulate State Privatization' Model

Instead of waiting for the NFIP to study the feasibility of attracting private market participation to write flood insurance, more states could launch efforts to stimulate their own local markets. In Florida, at least two private carriers have stepped forward on their own, suggesting they might be able to offer lower prices than NFIP would charge as Biggert-Waters-related rate hikes go into effect.⁴³ Meanwhile, a Florida state senator is drafting legislation to allow private carriers to offer flood coverage via the surplus lines market, while giving consumers the option to buy minimal limits to cover their mortgage, or higher amounts to pay replacement costs.⁴⁴

Adopting any one of the above options, or some combination thereof, might offer a fair chance to the private sector to write flood insurance at a profit, while easing the potential burden on the NFIP and, by extension, on taxpayers.

Government's ongoing role

Regardless of whichever option is adopted to privatize the flood insurance market, most industry leaders say the government should retain some continuing role in flood insurance hazard assessment and mitigation.

First, industry leaders queried for this report suggested that the government should maintain responsibility for mapping flood plains, since it has the data, resources, and technical expertise to do so, and can provide a level playing field for all market participants — including the NFIP.

Next, the federal and state governments can continue to play an essential regulatory role in terms of establishing and enforcing zoning laws and building codes to limit flood-related exposures. They could also take stronger steps to assure that households with federally-insured mortgages purchase the required coverage.

Finally, most industry leaders believe the NFIP can ultimately continue to serve as the insurer of last resort for property owners who demonstrate that they cannot get coverage in the private market.

⁴¹ Rawle O. King, "The National Flood Insurance Program: Status and Remaining Issues for Congress," Congressional Research Service, February 6, 2013.

⁴² H.R. 3370, 113th Congress (2013-2014), The Homeowner Flood Insurance Affordability Act of 2014, <http://beta.congress.gov/bill/113th-congress/house-bill/3370/text>.

⁴³ Jeff Harrington, "Two private insurers to offer flood insurance in Florida," *Tampa Bay Times*, October 25, 2013.

⁴⁴ "Florida senator drafts bill to encourage private flood insurance," *The St. Petersburg Tribune*, November 7, 2013.

Closing thoughts: Where do carriers go from here with flood insurance?

In June 2013, a report commissioned by FEMA noted that as a result of climate change, rivers are expected to deepen and areas enclosed in flood plains are predicted to expand 45 percent by 2100. In addition, the report stated that coastal flood plains are likely to increase by about 50 percent along the Pacific Coast and by a whopping 100 percent in regions around the Gulf of Mexico and the Atlantic Coast.⁴⁵ As a result, exposure to flood losses across the United States is only likely to increase over the course of this century.

Keeping these potential developments in perspective, President Obama cited the need for broader private sector participation in the flood insurance market as part of his response to the impact of climate change in terms of improving disaster mitigation and recovery efforts, outlined in a speech on June 25, 2013.⁴⁶

Still, convincing private insurers to get back into the flood insurance business in a big way will likely require concrete actions on the part of federal and state lawmakers to create an environment in which carriers are given enough flexibility to underwrite and price coverage for a reasonable return on the risks they are being asked to assume.

An exemption from state rate regulation would go a long way in making sure carriers have the ability to charge an actuarially-determined price for the flood risks they insure. Such a move would give private insurers an opportunity to make an adequate return on their investment and might encourage more of them to enter the flood insurance market.

If risk-based underwriting is believed to make the coverage unaffordable for many high-risk homeowners, the burden of subsidization would likely have to fall primarily on national and local governments. Otherwise, if insurers are required to write coverage at rates that are well below what is called for to reflect the actual risk, most insurers would probably pass on the opportunity, and any privatization program would likely not get off the ground.

Federal and local governments could also help lower flood exposures by taking additional risk management steps, particularly in high-exposure areas. In its recent report to Congress, the Federal Insurance Office recommended that “states should identify, adopt and implement best practices for construction standards, including building codes.”

FIO added that while it may be “difficult to implement mitigation measures for every building in a catastrophe-prone area, states and communities investing in the science of mitigation and exploring ways to reduce losses through construction standards may offer the best opportunity for ensuring access to affordable insurance.” Seeing a potential win-win, FIO concluded that “proper construction techniques and materials can save lives and reduce both insured losses and taxpayers’ burden.”⁴⁷

Indeed, by implementing additional flood mitigation strategies, government could create an environment where insurers might be able to write flood coverage with some confidence of keeping losses under control while earning a profit. (See “Added Insight” on “Proactive Mitigation” below.)

But government support is far from the only factor private carriers would have to take into account in preparing to enter the flood insurance market. They would likely require additional technological and data management capabilities. Advanced analytics and predictive models tailored for this particular exposure would be needed to fuel underwriting and pricing systems — two crucial elements for long-term profitability in the flood insurance market.

The bottom line is private carriers could in theory assume a sizable amount of flood exposure, and thus relieve taxpayers of a substantial burden. Indeed, privatizing federal flood insurance could represent the biggest growth opportunity for property and casualty insurers in years.

But for privatization to make sense for insurers, carriers will likely at a minimum have to be allowed to scientifically assess risks and price them accordingly, so there are adequate funds available for claims payments, even in worst-case scenarios.

⁴⁵ Arthur D. Postal, “FEMA Report Ponders Effect of Climate Change on NFIP,” *propertycasualty360*, June 26, 2013.

⁴⁶ Arthur D. Postal, “Insurers React to Obama’s Plan to Fight Climate Change,” *propertycasualty360*, June 26, 2013.

⁴⁷ Federal Insurance Office (FIO), U.S. Department of the Treasury, “How To Modernize And Improve The System Of Insurance Regulation In The United States,” December 2013.

Added insight: How is flood insurance handled in other countries?

Other countries handle flood risks differently than does the United States. When considering how the U.S. model might be altered to more effectively address the nation's flood exposures, rather than reinventing the wheel it might be informative to learn from the examples of those with comparable cultures and economic systems.

Australia: Most private insurers do not offer flood insurance to households. However, some state insurers do provide flood cover for private households. On commercial lines, flood insurance may be provided to businesses as part of the commercial property insurance policy. In the event of a flood, disaster relief is paid to local authorities for repairs to infrastructure.⁴⁸

Canada: Flood insurance is not offered by insurance companies for purchase by homeowners, nor by policies underwritten by the government. In the event of a flood, the provincial government assists residents with disaster aid and relief funds.⁴⁹

France: Flood insurance in France is provided through a partnership between the government and the insurance industry, which collects a premium that is mandatory to pay for natural disasters. The coverage is standard in property policies, and a level premium is charged

regardless of the level of risk.⁵⁰ The government acts as reinsurer and hence guarantees payments as the insurer of last resort. Insurance payments are made if the government announces an official state of disaster, following an extreme weather event.

Germany: Protection from flooding is available primarily through private insurers who charge risk-based rates, but there is very low subscription to such coverage. The larger proportion of flood risk is carried by the government, which provides disaster relief in the case of a major event.⁵¹

Netherlands: Flooding is typically excluded from insurance policies in the Netherlands. Under the Calamities Compensation Act (1998), the state is responsible for losses due to floods that are not covered by private insurance.⁵²

United Kingdom: Private insurance companies cover flood risks for residents and businesses. Coverage against flood damage is included in building or home contents insurance policies, bundling flood with other risks. The government does not provide disaster compensation in case flood damage occurs, and instead promises to invest in infrastructure that will reduce potential damage to life and property if an event were to occur.⁵³

⁴⁸ "Insuring flood risk – the Australia and UK perspective," Deloitte Global Services Limited, 2011

⁴⁹ "Why can't Canadians get overland flood insurance?" *CTVnews.com*, June 24, 2013.

⁵⁰ John O'Neill and Martin O'Neill, "Social justice and the future of flood insurance," *Joseph Rowntree Foundation*, March 7, 2012.

⁵¹ *Ibid.*

⁵² *Ibid.*

⁵³ W.J.W. Botzen and J.C.J.M. van den Bergh, "Insurance Against Climate Change and Flooding in the Netherlands: Present, Future, and Comparison with Other Countries," *Risk Analysis*, Vol. 28, No.2, 2008.

Added insight: Proactive mitigation could be the key to making flood more of an insurable risk

Should expanded privatization of the flood insurance program eventually be green-lit by policymakers, private carriers would perhaps be more inclined to write such coverage if the industry saw evidence that government, both federal and local, is committed to a multi-faceted, long-term program aimed at reducing the potential overall exposure. "Spend money to save money while saving lives" might be a catchy motto for any such effort to proactively mitigate flood losses.

For example, expanding the federal Hazard Grant Mitigation Program could provide funds for state and local governments to implement long-term hazard control measures, such as elevating homes to reduce the risk of repeated flood losses.⁵⁴

To supplement this program, the Disaster Relief and Emergency Assistance Act, introduced in May 2013 in both the U.S. House (HR. 1878) and Senate (S. 924), includes a provision that would provide incentives for states to adopt and enforce model building codes meeting minimum safety standards. Under the bill, qualifying states would be eligible to receive an additional 4% in post-disaster grants from FEMA.⁵⁵



⁵⁴ FEMA, "Policy Statistics," <http://www.fema.gov/hazard-mitigation-grant-programs-frequently-ask-questions>, accessed February 12, 2014.

⁵⁵ Arthur. D. Postal, "Insurers React to Obama's Plan to Fight Climate Change," *propertycasualty360*, June 26, 2013.

Contacts

Executive Sponsor

Susan Pino
Director
Deloitte Consulting LLP
+1 703 251 4310
spino@deloitte.com

Lead Author

Aditya Udai Singh
Assistant Manager
Deloitte Services India
Pvt. Ltd.

Co-Author

Sam Friedman
Research Leader, Insurance
Deloitte Center for
Financial Services
Deloitte Services LP
+1 212 436 5521
samfriedman@deloitte.com

Industry leadership

Gary Shaw
Vice Chairman
U.S. Insurance Leader
Deloitte LLP
+1 973 602 6659
gashaw@deloitte.com

Deloitte Center for Financial Services

Jim Eckenrode
Executive Director
Deloitte Center for Financial Services
Deloitte Services LP
+1 617 585 4877
jeckenrode@deloitte.com

The Center wishes to thank the following Deloitte client service professionals for their insights and contributions to this report:

Kevin Bingham, Principal, Deloitte Consulting LLP
Andrew N. Mais, Senior Manager, Deloitte Services LP
Robert Miccolis, Director, Deloitte Consulting LLP
Howard Mills, Director, Deloitte LLP
Jeanne Riggs, Partner, Deloitte & Touche LLP

The Center wishes to thank the following Deloitte professionals for their support and contributions to this report:

Rachel Moses, Senior Marketing Specialist, Deloitte Services LP
Courtney Scanlin, Insurance Marketing Leader, Deloitte Services LP
Richa Wadhvani, Senior Analyst, Deloitte Services India Pvt. Ltd.
Holly Wilmot, Senior Federal Marketing Manager, Deloitte Services LP

The Center also wishes to thank those insurance industry and consumer advocacy leaders who agreed to share their thoughts on background for this report about the state of the flood insurance market and potential ways to facilitate privatization.

Deloitte Center *for* Financial Services

The Deloitte Center for Financial Services offers actionable insights to assist senior-level executives in the industry to make impactful business decisions.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor.

Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.

Copyright © 2014 Deloitte Development LLC. All rights reserved.
Member of Deloitte Touche Tohmatsu Limited