

Macro, meso, micro: Practical experiences at all levels in parametric insurance



International Conference on Inclusive Insurance

Matt Chamberlain
November 3, 2020



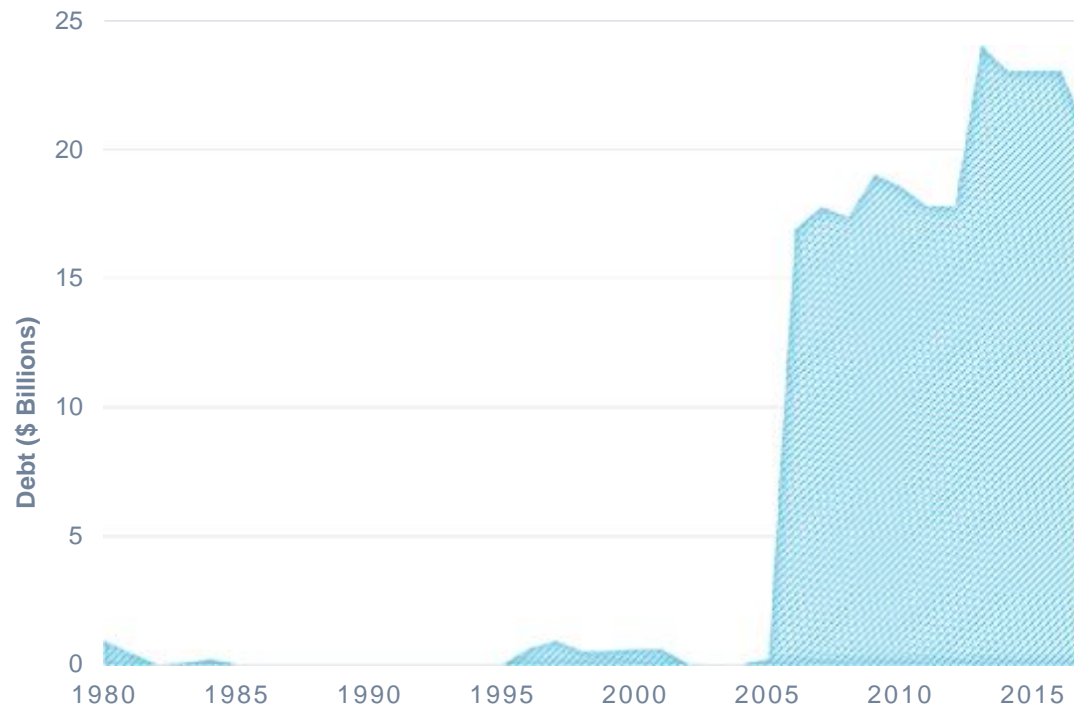
Overview

- § Insurance protection gap
- § Private flood insurance
- § Lessons
- § Questions

Insurance protection gap

Financial stress in the current Federal flood program

Recent history of National Flood Insurance Program (NFIP) debt



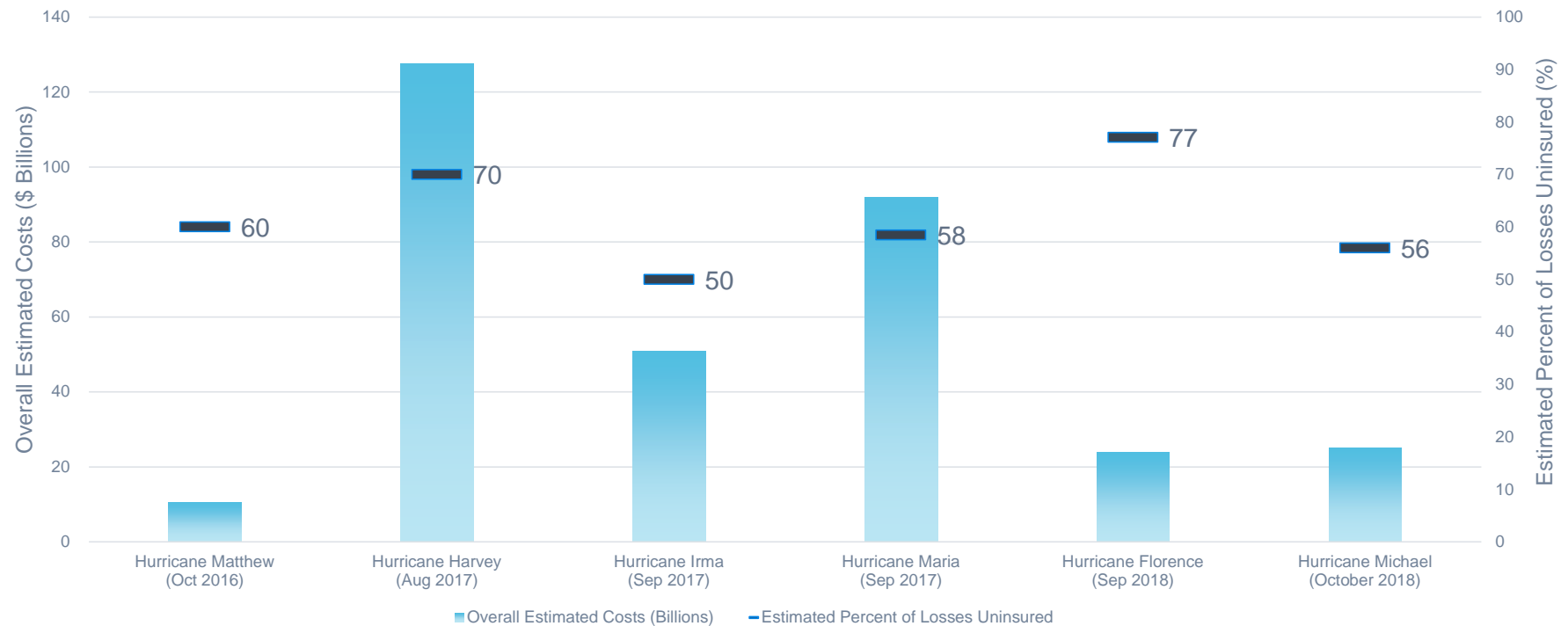
NFIP Debt Path

- § Almost \$17 billion borrowed in 2005 and 2006 after Katrina, Rita, and Wilma
- § Over \$6 billion borrowed in 2015 after Sandy
- § Net debt decrease in 2017 is due to the unprecedented cancellation of \$16 billion in debt by Congress, allowing claims to be paid for Harvey, Irma, and Maria.
- § As of March 2019, NFIP debt was \$20.525 billion, compared to the authorized borrowing limit of \$30.425 billion.

Source: CRS analysis of data provided by FEMA Congressional Affairs, November 20, 2017 and The Watermark, Fiscal Year 2019, 2nd Quarter

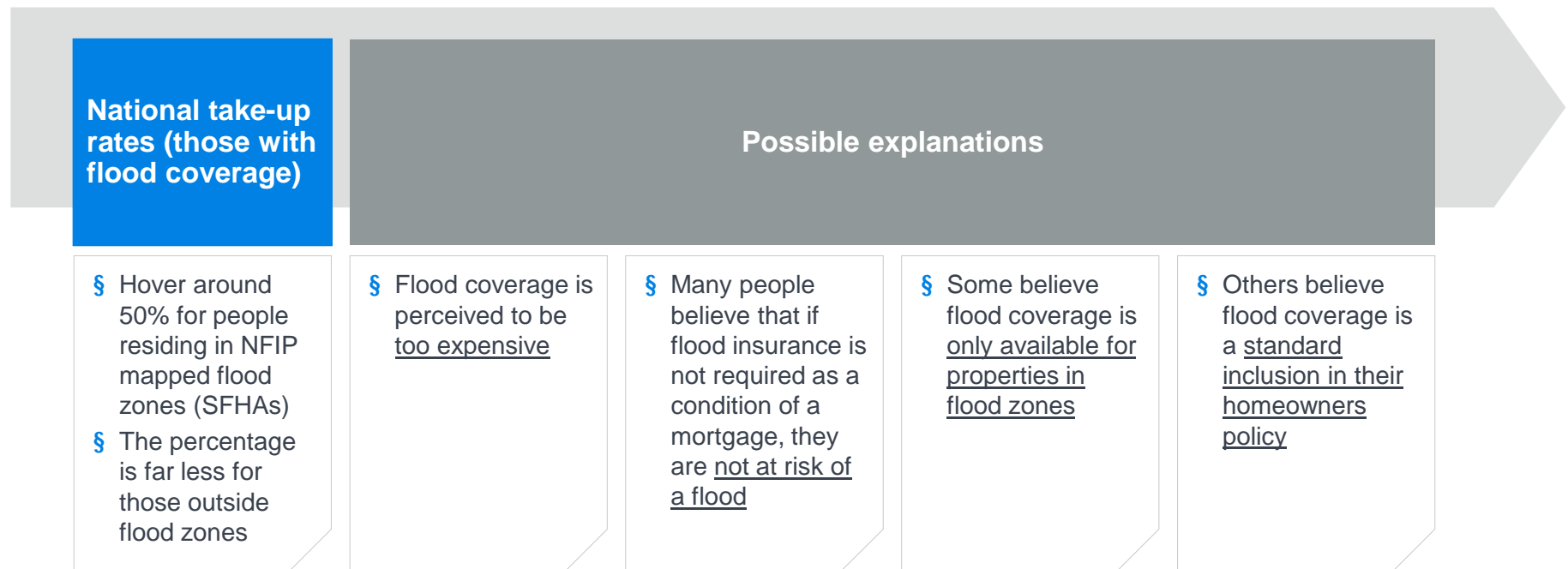
Majority of losses uninsured during recent events

Between 50% and 80% of wind and flood losses in recent catastrophes went uninsured



Source: www.Artemis.bm, www.reinsurancene.ws, Milliman Insight, NOAA National Centers for Environmental Information (NCEI) U.S. Billion-Dollar Weather and Climate Disasters (2019). www.ncdc.noaa.gov/billions/

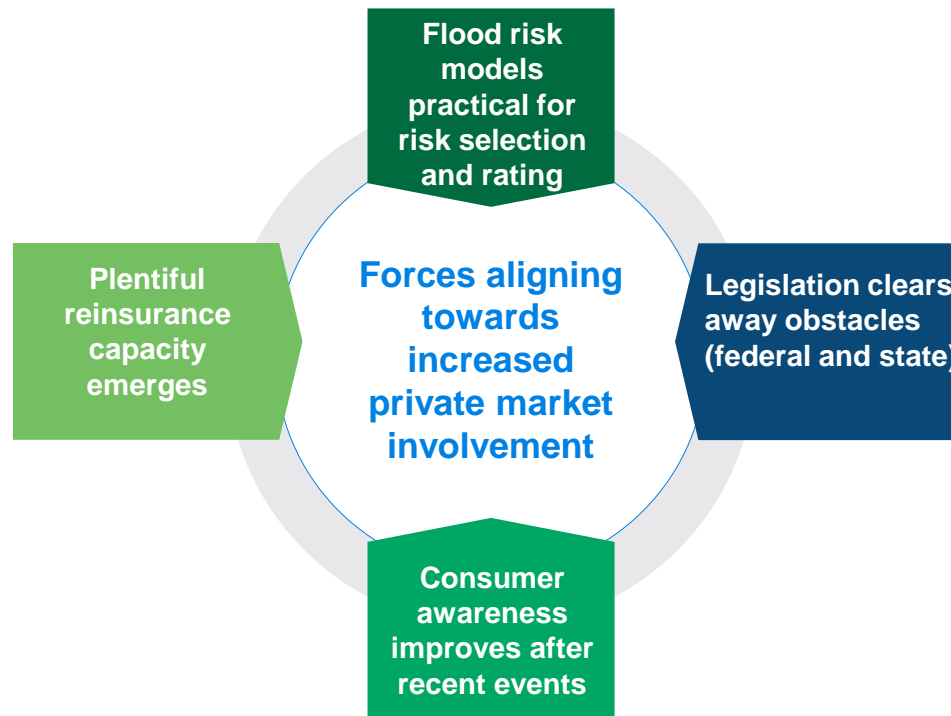
Take-up rates for Federal flood are low, leaving uninsured risk and limiting and delaying disaster recovery



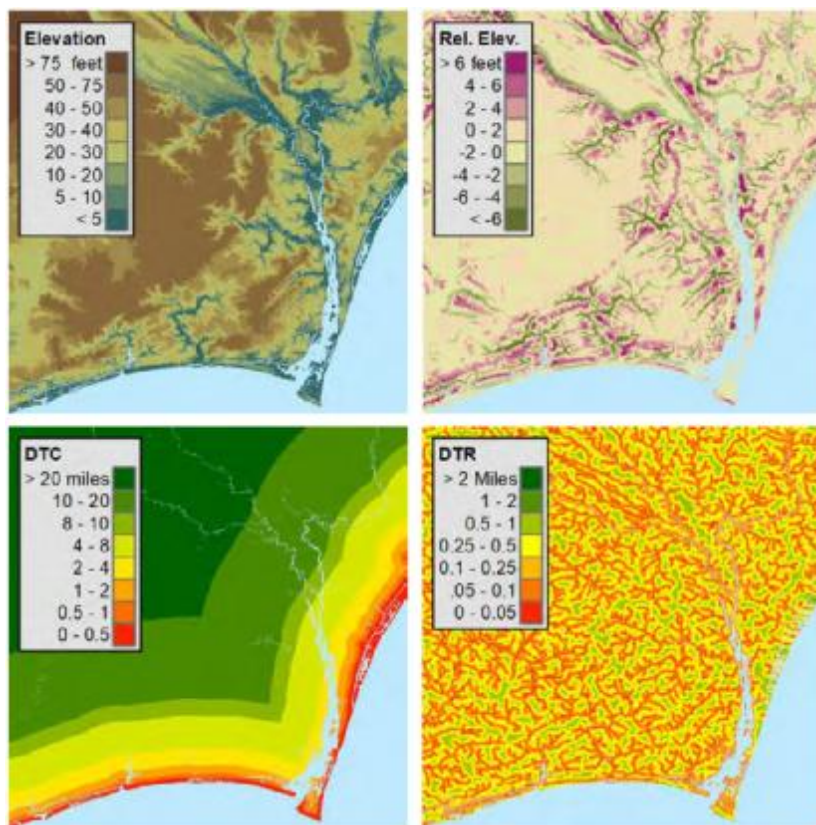
Source: NAIC CIPR Study on Flood Risk and Insurance, April 2017

Private flood insurance in the United States

Why is private flood emerging as an alternative to NFIP?



How to make flood insurance understandable



Geographic:

- § Elevation (to an absolute benchmark)
- § Relative elevation (to radius around site)
- § Distance to coastline
- § Distance to river/stream

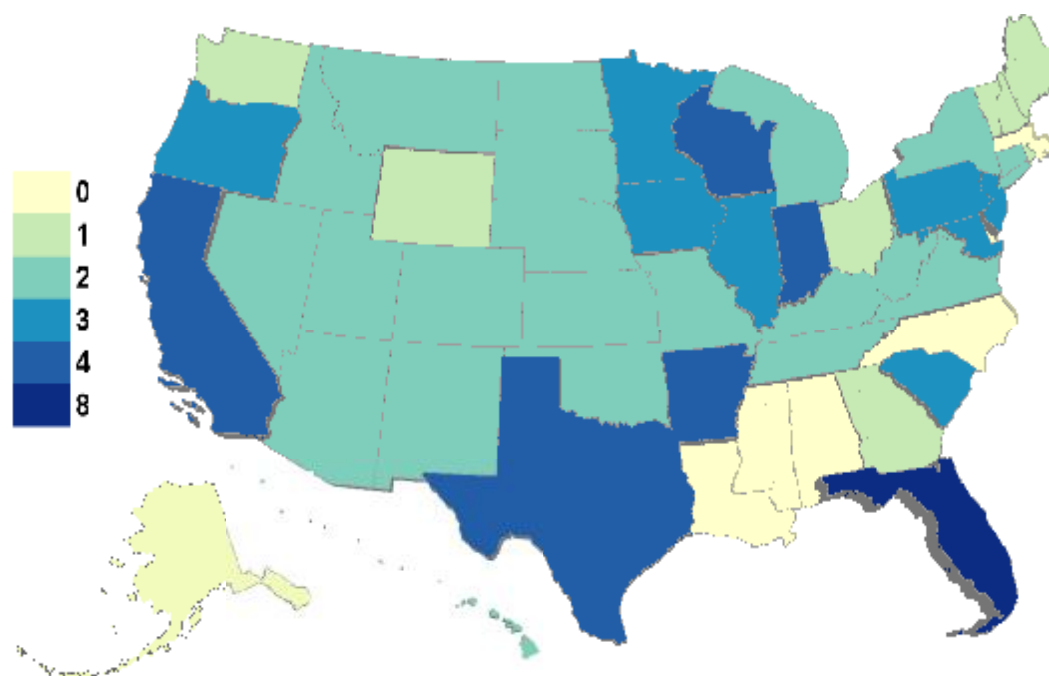
Building and Coverage:

- § Number of Stories
- § Foundation Type (basement, slab...)
- § Replacement Cost
- § Insured Value
- § Deductible

Private flood growth

Entrants to the private flood market have increased in recent years; highest activity in Florida

- § We estimate over 100 new standalone personal flood programs have been launched since 2013.
- § ISO personal flood program approved in 36 states.
- § TypTap or Homeowners Choice approved in 9 states.
- § Philadelphia Contributionship offers an endorsement to Homeowners priced and reinsured with Munich Re in at least 3 states.



Rapid private flood premium growth in recent years

Reported written premiums for Private Flood line of business grew 56% in 2017, 6% in 2018

State	Private Written Premiums (Millions)			2016 to 2017	2017 to 2018
	2016	2017	2018	% Change	% Change
California	48.8	72.0	83.6	48%	16%
Florida	47.8	84.5	79.7	77%	-6%
Texas	31.8	53.5	63.2	68%	18%
New York	27.4	47.7	47.2	74%	-1%
New Jersey	17.0	28.9	33.6	70%	16%
Pennsylvania	13.2	18.8	22.1	42%	18%
Louisiana	11.5	17.9	20.5	56%	15%
Massachusetts	9.0	15.3	17.0	70%	11%
Illinois	9.8	14.0	15.6	43%	11%
Ohio	5.6	14.2	15.4	154%	8%
All 50 States	412.6	641.9	681.4	56%	6%

Source: Statutory Page 14 Data for the P&C Industry, Compiled by S&P Global

Lessons

Lessons

- § Inaccurate pricing
 - § Leads to low take up rates
 - § May be unprofitable
- § Reducing the protection gap requires
 - § High quality models
 - § Adjustments to reflect model limitations
 - § Pricing that reflects location level risk
- § Implications for parametric insurance
 - § Community rating may cause issues with take-up rates
 - § Build a rating plan that use information asymmetry to your advantage

Thank you

Matt Chamberlain
matt.chamberlain@milliman.com
(415) 394-3785