



# ILS: How to Grow Past Cats When the Wind Keeps Blowing

March 26, 2019

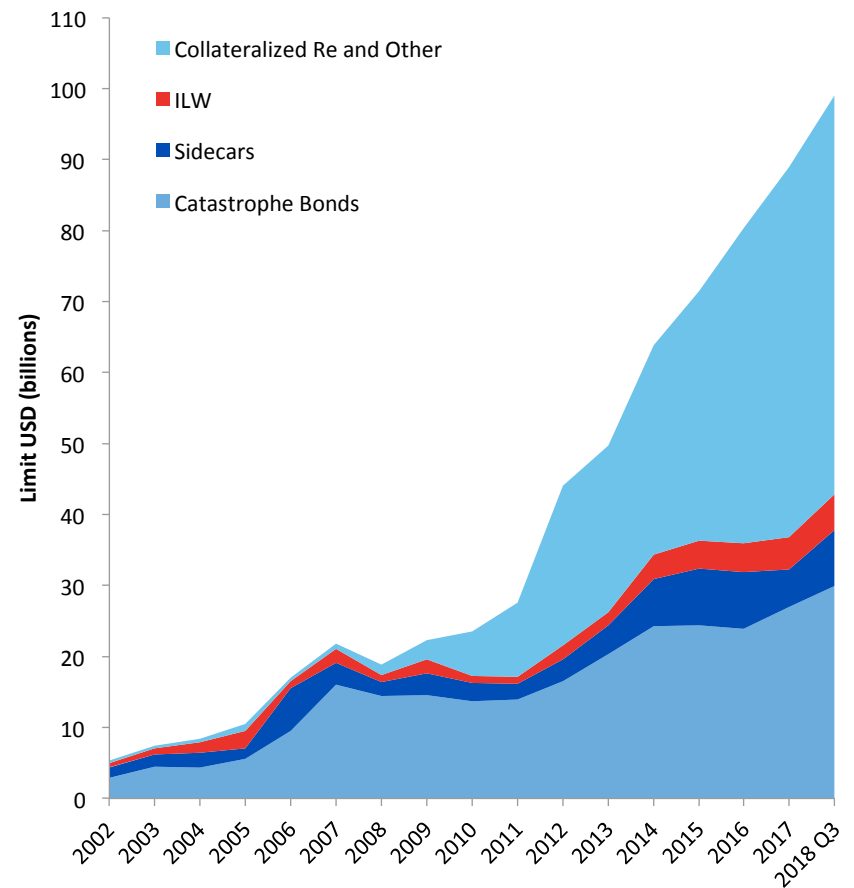
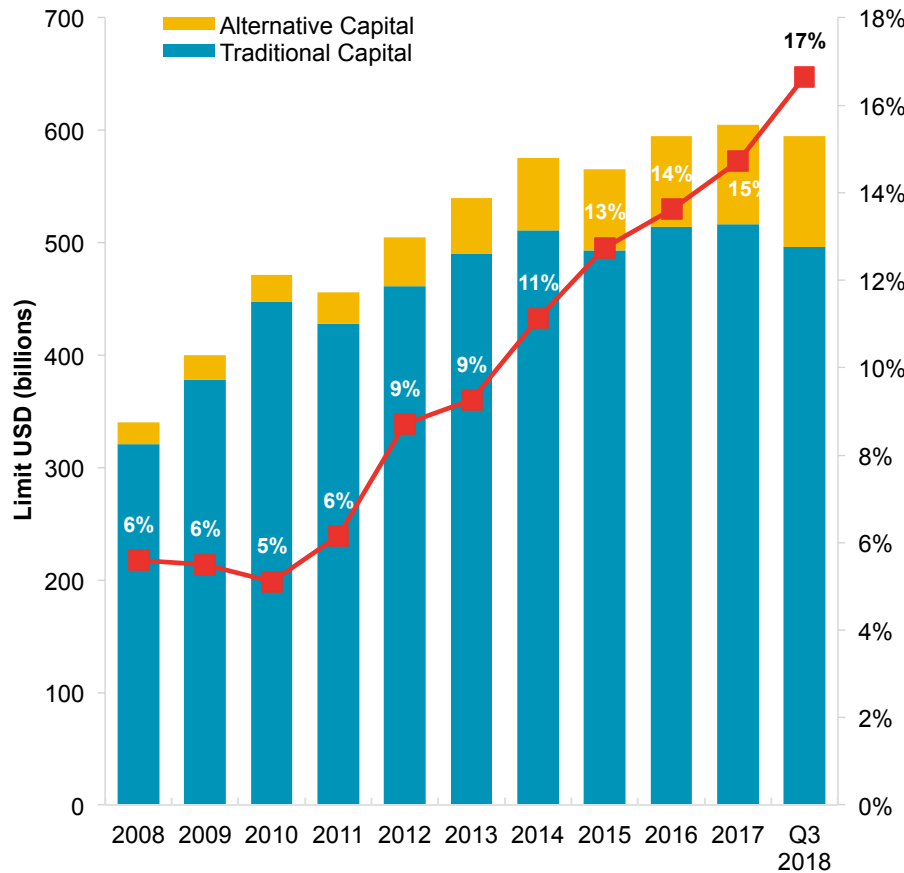
Tom Johansmeyer, PCS

Zach Breslin, Aon Securities

Beth Fitzgerald



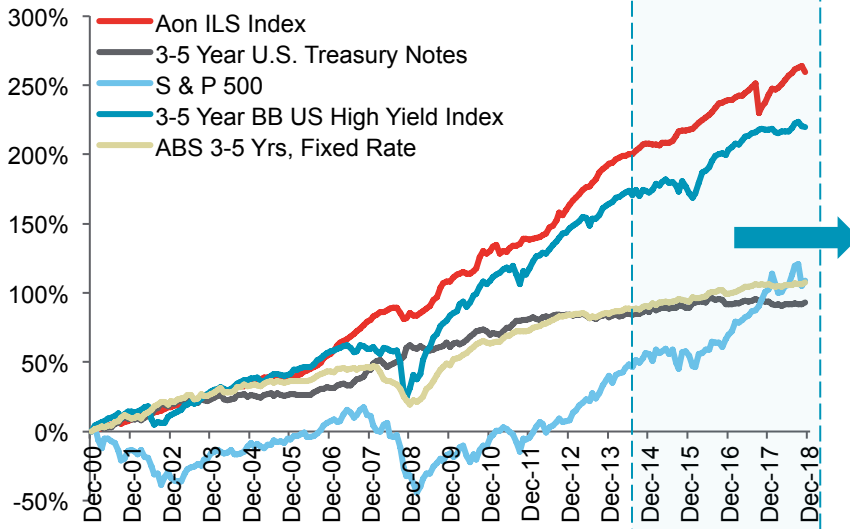
# Alternative Capital Fuels Competitive (Re)insurance Market



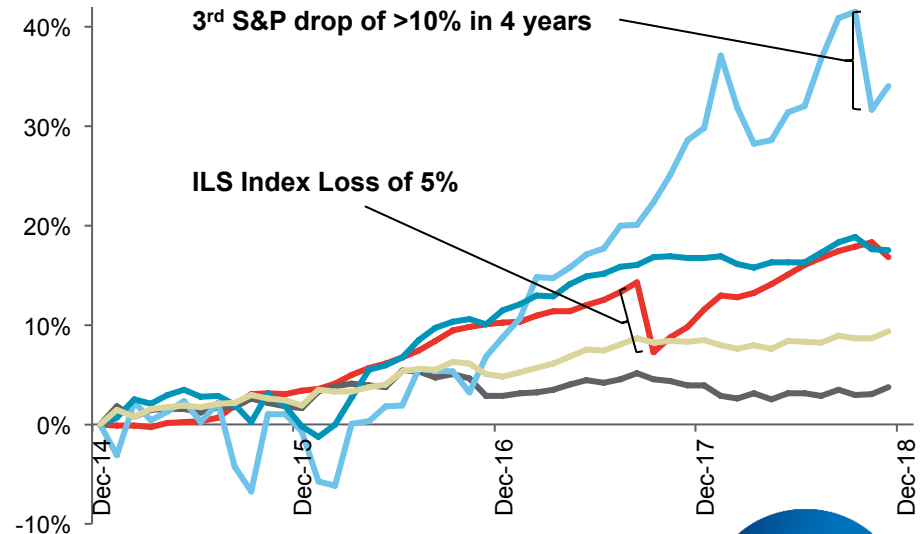
# Insurance-Linked Risk vs. Other Asset Classes

- Investing in ILS has historically provided a high return per unit of risk taken compared to competing asset classes
- The Aon ILS Index outperformed competing asset classes through stable performance over the past 18 years, with only one drop of more than 5%

## Strong, Stable Performance over Time



## Compelling Short-Term Returns with Large Industry Losses





# Catastrophe Bond Market Update

## Primary Market

- First half 2019 has maturities of about \$3.4 billion
- ILS investors have indicated that their risk appetite will focus on more remote layers in 2019
- Known pipeline will be led by repeat sponsors

## Secondary Market Activity

- The market has been active for the last two months as opportunistic buyers are positioning their portfolios to take advantage of sellers
- We do not believe secondary prices are reflective of where new issues would come to the market

## Investor Capital

- ILS firms continue to work on raising capital from new investors
- Large seed investors are considering allocating more capital to the ILS space
- Some possible redemptions could create more or less cash depending on how developments play out



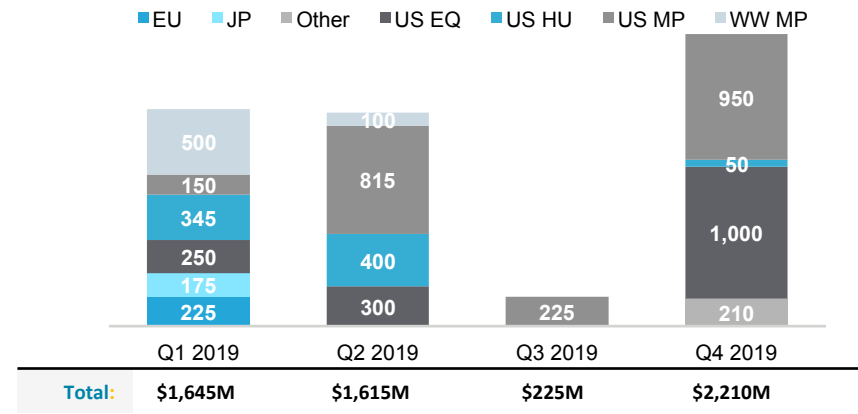
# Property Cat Bond Market Review

As of February 15, 2019

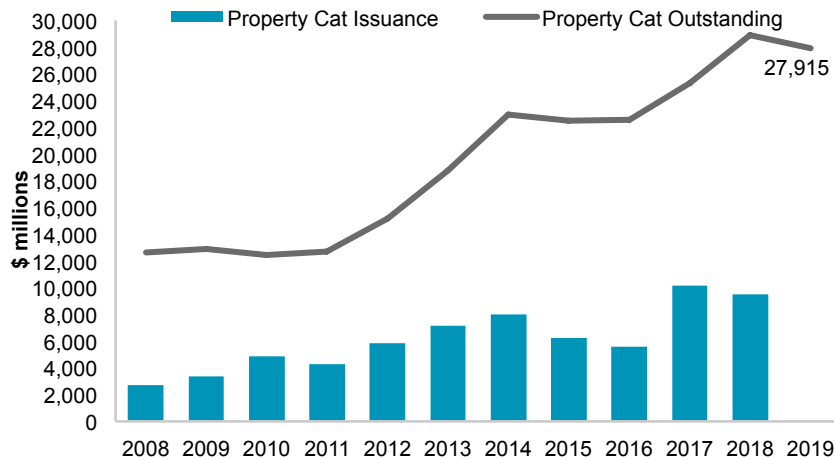
## Property Cat Bond Metrics

2018			
Completed Issuances	Sponsors	Issuance Volume (B)	Average Deal Size (M)
28	31	\$9.5	\$339
2017			
Completed Issuances	Sponsors	Issuance Volume (B)	Average Deal Size (M)
33	28	\$10.2	\$308

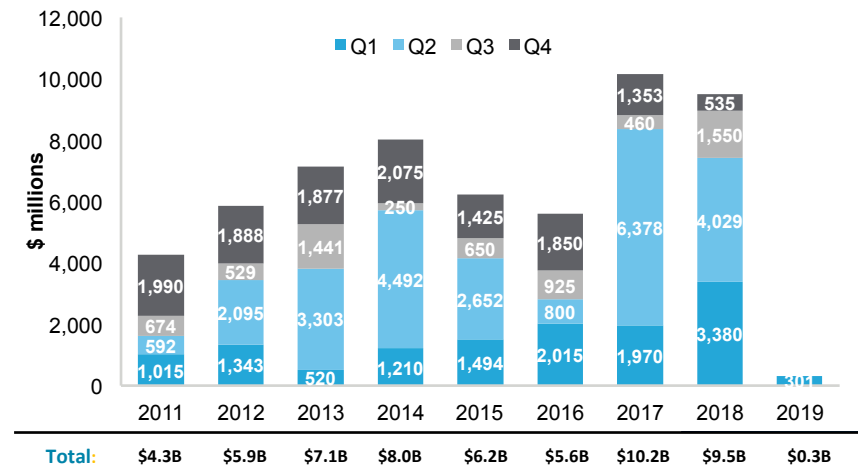
## Property Cat Bond Maturities by Quarter



## Property Cat Bond Issuance and Outstanding by Year



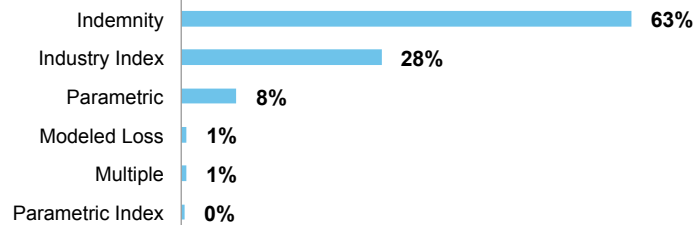
## Property Cat Bond Issuance by Quarter



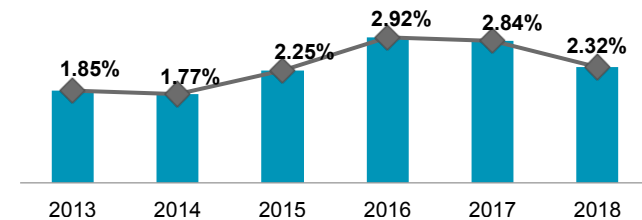
# Features of Outstanding Property Cat Bonds

As of February 15, 2019

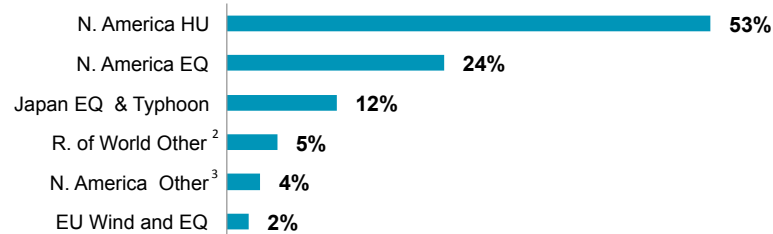
## Trigger type<sup>1</sup>



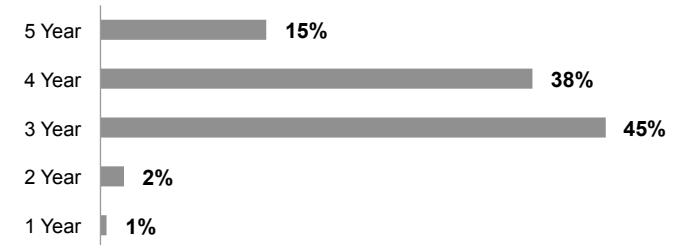
## Weighted Average Expected Loss by Issuance Year



## Contribution by region / peril<sup>1</sup>



## Term<sup>1</sup>



## Trigger basis



## Risk assessors<sup>1</sup>



<sup>1</sup> Figures may not add to 100% due to rounding

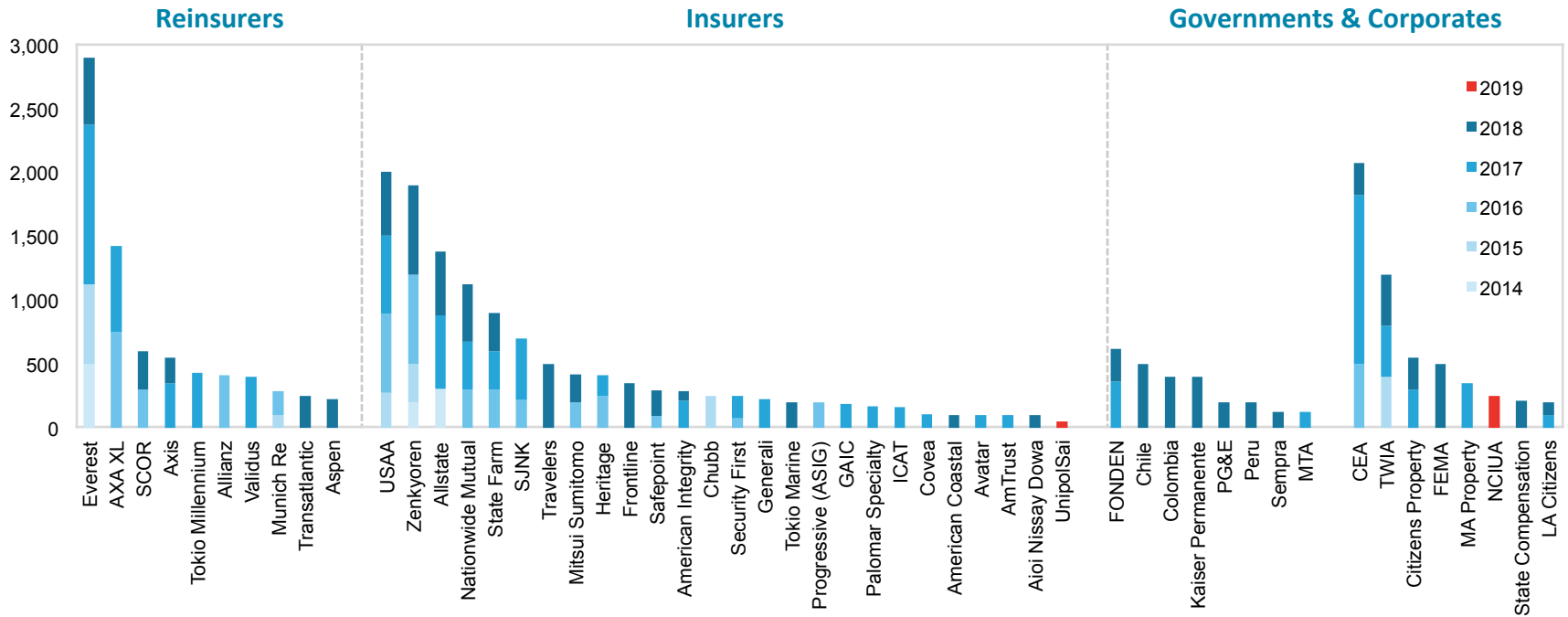
<sup>2</sup> Includes South America Perils, Australia EQ and Tropical Cyclone

<sup>3</sup> Includes Severe Thunderstorm, Winter Storm and Wildfire



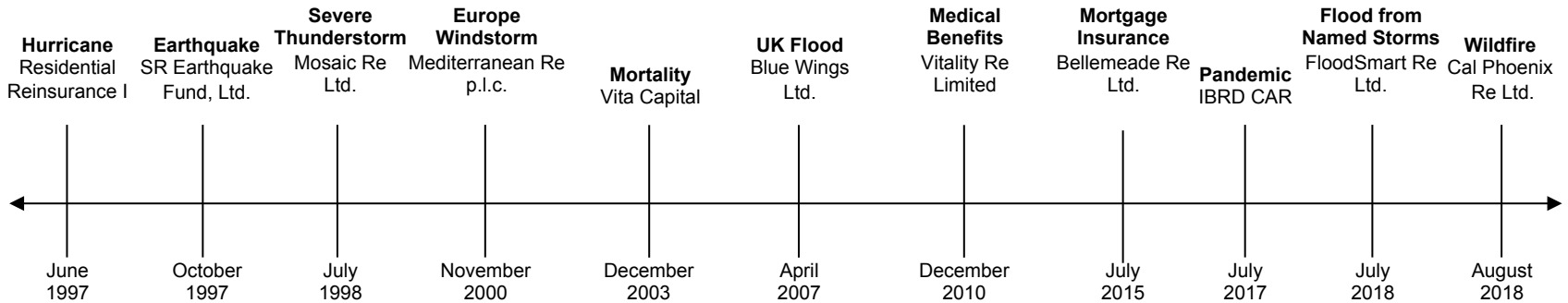
# Outstanding Property Bonds by Sponsor

As of February 15, 2019

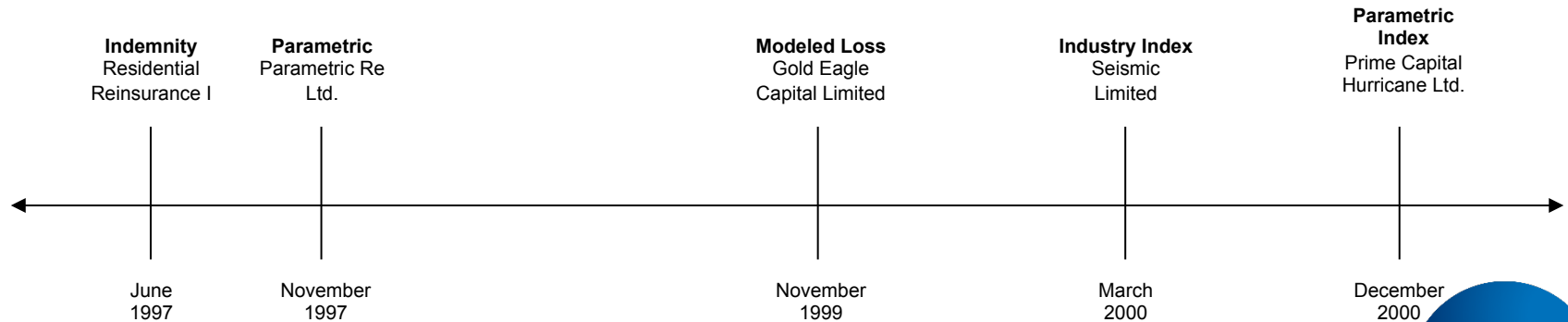


# Sponsors & Investors are Constantly Innovating

## New Perils



## New Triggers





# Continued Peril Expansion

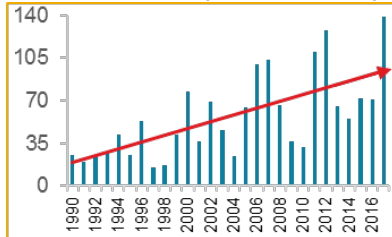
Present

Near-Term Future

## Flood

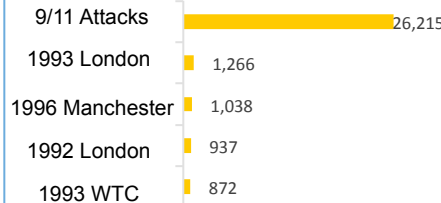


## U.S. Wildfires (acres burned)



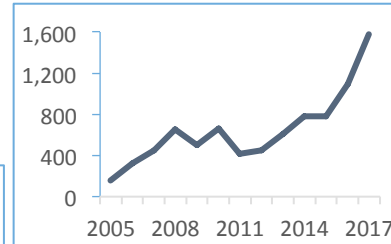
- FEMA sponsored the first bond covering U.S. flood events
- Two bonds with wildfire as the sole peril have come to market in 2018
- Climate shifts will drive an increase in demand for these and other new perils

## Largest Insured Losses Due to Terror Attacks (\$millions)



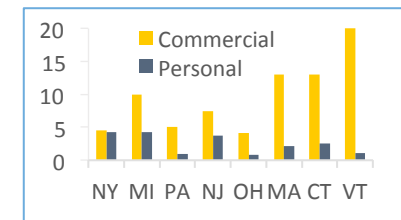
- Due to the constantly changing political climate, terrorism continues to be a significant concern

## Data Breaches in the U.S.



- As more of our economy moves online, the potential loss from a breach or cloud outage is increasing
- Covering this new peak peril is a significant opportunity for insurers, reinsurers and alternative capital

## Per-customer Insured Losses—2003 Northeast Blackout (\$000)



- Recent large economic losses highlight the insurance protection gap
- The protection gap is primarily driven by non-damage business interruption

Source: [NFIC](#), Statista, [Insurance Services Office](#)



# Unexpected Perils Become a Problem

- Before 2016, wildfire rarely hit 10-digit industry loss levels
  - Fort McMurray in Canada changed that, becoming the largest on record with PCS
  - Since Fort McMurray, more than 5 have exceeded \$1 bn
- Since 1999, all major losses in Turkey were EQ and flood ...
  - 2016: attacks on 12 villages led to more than \$150 mn
  - 2017: two hailstorms hit Istanbul, with significant APD
- Non-affirmative cyber leads to nearly \$3 bn in insured loss from Petya/NotPetya



# Is Cyber the Next “US Cat”?

Event Name*	Year	Economic Loss	Property-Catastrophe Equivalent
MyDoom	2004	US\$38 billion	Gulf hurricane with flood
SoBig	2003	US\$37 billion	Gulf hurricane with flood
ILOVEYOU	2000	US\$15 billion	Northeast hurricane
Conficker	2007	US\$9.1 billion	Southeast hurricane with flood
Code Red	2001	US\$2 billion	Texas hail
Melissa	1999	US\$1.2 billion	Texas hail
SirCam	2001	US\$1 billion	European straight-line wind
SQL Slammer	2003	US\$750 million	Northeast winter storm
Nimda	2001	US\$635 million	Localized Midwestern hailstorm



# Significant Cyber Losses for Reinsurance/ILS

Company/Event	Year	Insured Loss	Comments
Petya/NotPetya	2017	\$3+ billion	Cyber cat with major affirmative and non-affirmative risk losses
Marriott	2018	\$350 million	Still developing, broad reinsurance market impact
TSB	2018	\$90 million	Migration problem that led to a breach, may claim against E&O
Merck	2017	\$275 million	Part of NotPetya
Equifax	2017	\$125 million	Insured ~10% of economic loss

**More than \$1 bn in affirmative cyber risk losses since 2016!**



# Tangible Peril/LOB Expansion Progress

- Marine and energy: several regular ILW trades every year with key ILS markets
- Terror: more discussion of trades that aren't US-only, awaiting first global transaction
- Cyber: several structures being marketed in ILW space, at least three ILS funds have taken collateralized QS
- Japan: New reporting agent brings potential for greater trading than sigma/NatCat (several trades being discussed)



# Growing Importance of ESG Investments

## Environmental



## Social



## Governance



### Example ESG Investments Include:

#### Launch of Nephila Climate (NCx)

- Dedicated to weather risk transfer

#### Federal Emergency Management Agency / National Flood Insurance Program

- The U.S. government helps to manage exposure, supporting the ability to provide affordable flood insurance

#### Humanitarian Impact Bond

- Bond that provides funds to rehabilitate handicapped in Africa

#### World Bank Pandemic Cat Bond

- World Bank transactions that provides funds to prevent disease outbreaks

#### World Bank Pacific Alliance Cat Bond

- Solution that provides financing for Chile, Columbia, Mexico and Peru



**Questions?**



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Casualty Actuarial Society  
4350 North Fairfax Drive, Suite 250  
Arlington, Virginia 22203

[www.casact.org](http://www.casact.org)

