



Canadian Board of Marine Underwriters 2017 NAT CAT Losses and Impact on Marine Insurance Market



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- Global marine profitability challenges pre-2017 Nat Cats
- Global marine and offshore energy major losses
- Global marine and offshore energy premiums
- US ocean marine expense ratios
- Cargo profitability example
- 2017 Nat Cat review
- Marine lines impacted by 2017 Nat Cats
- What is “capital?”
- Impact on Lloyd's / London market
- Marine profitability
- Challenges and opportunities ahead

Global marine insurance profitability challenges

Pre-2017 Nat Cat events

- Many P&C insurance companies have supported deteriorating results with prior year reserve releases.
- Majority of lines have been in a sustained soft market with multiple years (3 to 4) of declining rates, and claims inflation (trend) has added to rate adequacy challenges.
- Specialty lines, including marine, are expected to outperform their P&C counterparts over the cycle, but results show marine is underperforming globally.
- Marine lines need to cover Nat Cat and large / outlier losses over the cycle, but this is not happening.
- Impact and results of “commoditizing” a specialty line.
- More information is available than ever before, but underwriters get less information in their submissions than they did 25 years ago.

Source: See appendix for sources



Marine and offshore energy major losses 2012 to 2016

Event	Year	Estimated Gross Loss	Comments
Space X	2016	\$ 285 million	Satellite pre-launch cover written in cargo market
Jubilee	2016	\$ 1.25 billion	Offshore energy
Hanjin Insolvency	2016	\$ 250 million	Container leasing cover
Hurricane Matthew	2016	\$ 100 million	Yacht / cargo (auto)
Vermillion	2015	\$ 400 million	Cargo claim for misappropriation of oil in Morocco
Tianjin	2015	\$ 2 billion	Cargo losses resulting from port explosion
Big Foot	2015	\$ 550 million	Offshore energy
Pemex	2015	\$ 650 million	Offshore energy
Alpine Eternity	2015	\$ 275 million	Hull / P&I
Cidade de Sao Mateus	2015	\$ 475 million	Offshore energy
MOL Comfort	2013	\$ 500 million	Hull / cargo
MSC Flaminia	2012	\$ 150 million	Hull / cargo
Superstorm Sandy	2012	\$ 2.5 to \$ 3 billion	Post tropical cyclone
Costa Concordia	2012	\$ 2 billion	Hull / P&I

Global marine and offshore energy premiums

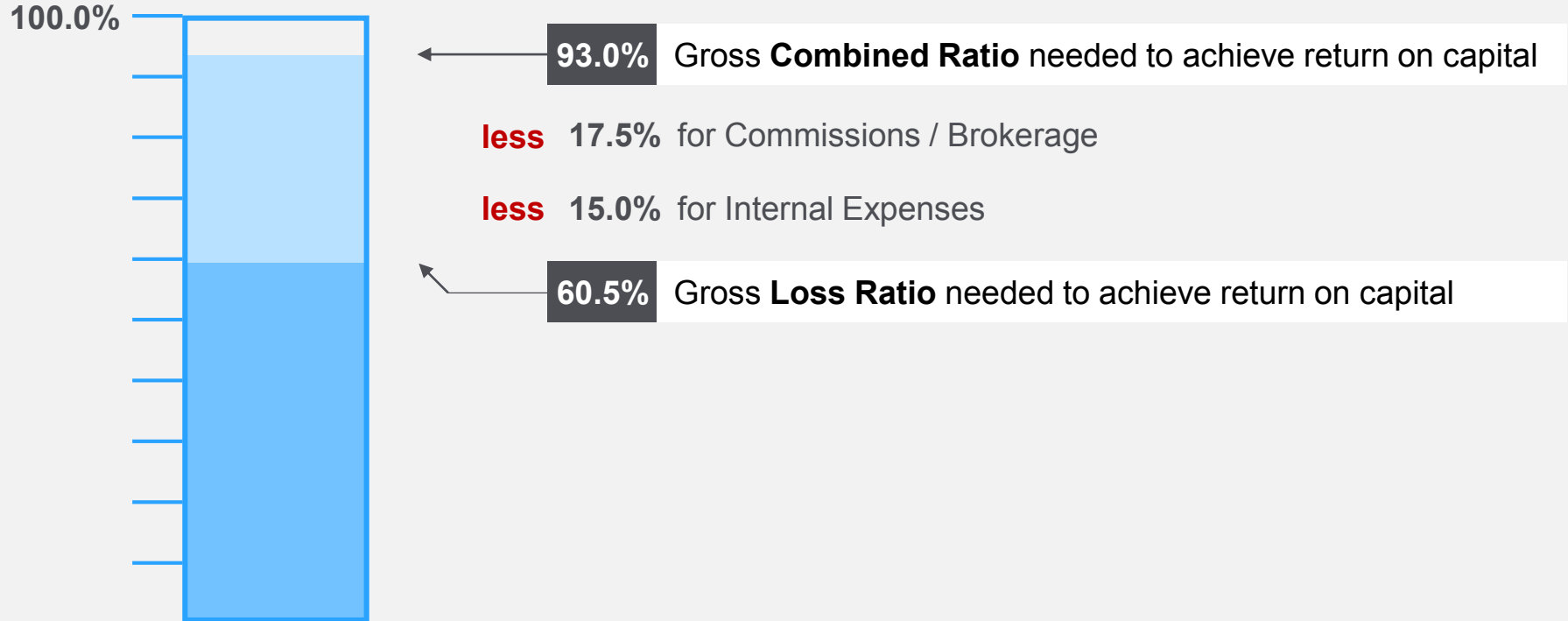
Year	GWP (USD)	Cargo L/R	Hull L/R	Loss Ratio Impact of NAT CAT / Major Losses
2012	\$ 34.8 billion	> 75%	> 71%	13.4 points
2013	\$ 34.2 billion	> 72%	> 65%	1.5 points
2014	\$ 32.6 billion	> 78%	> 70%	
2015	\$ 29.9 billion	> 82%	> 77%	14.6 points
2016	\$ 27.5 billion	> 75%	> 72%	6.5 points

Note: Global GWP down 21% from 2012 to 2016 while exposures have increased.

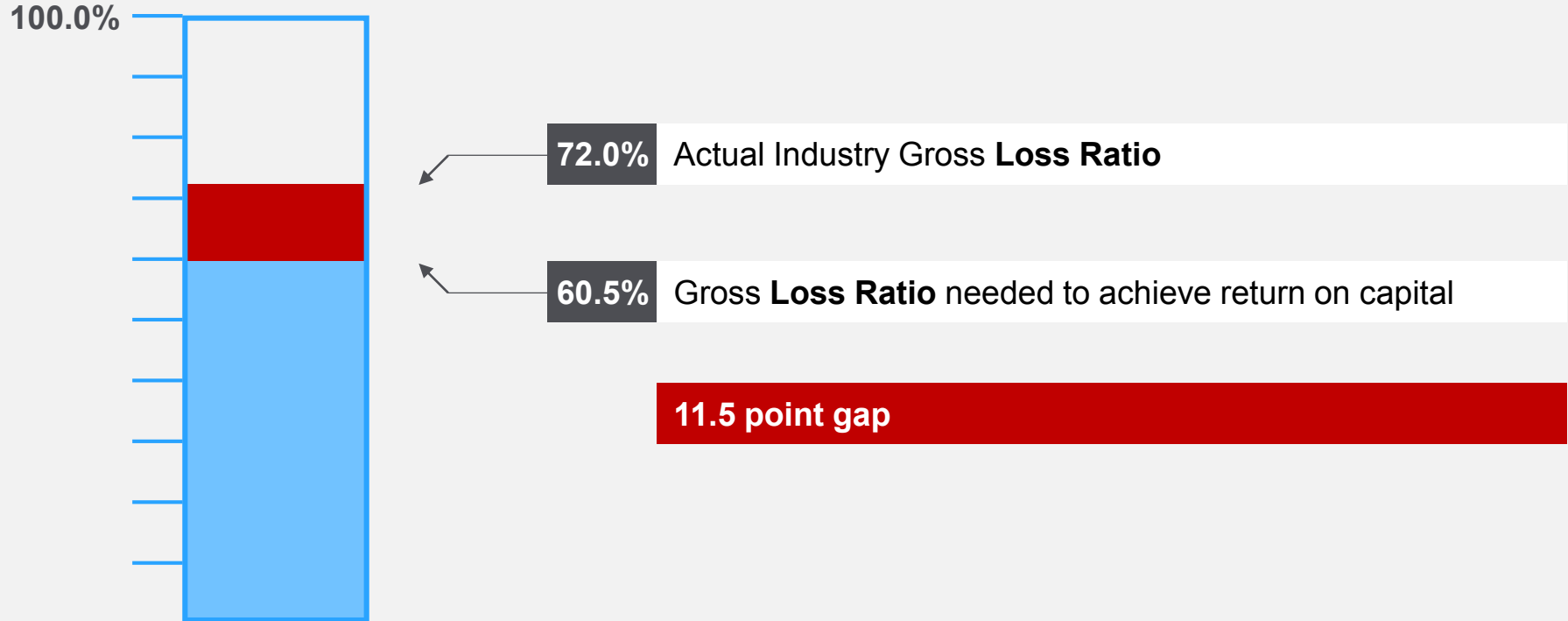
US ocean marine expense ratios

Year	Expense Ratio (Total Underwriting Expenses Incurred to NPW)
2012	36.8%
2013	44.7%
2014	34.9%
2015	35%
2016	35.5%

Global Cargo Profitability Example



Global Cargo Profitability Example



	DWP	EP	Loss Ratio
2016	405,282	401,939	47.13
2015	373,170	383,013	48.73
2014	382,271	390,151	51.47
2013	417,219	402,015	47.65
2012	380,259	380,341	39.86

Canadian Marine results

Canada Top 10 - Marine Company	Rank	Market Share	Direct Written Premiums	% Growth	Loss Ratio
	2016.4	2016.4	2016.4	2016.4	2016.4
A	1	14.52	57,213	0.96	42.75
B	2	12.59	49,595	1.17	40.40
C	3	11.94	47,041	1.05	55.46
D	4	8.87	34,942	1.20	30.56
E	5	8.13	32,016	0.79	50.69
F	6	7.75	30,544	1.00	76.62
G	7	7.63	30,065	2.80	4.28
H	8	4.81	18,955	0.94	78.83
I	9	3.63	14,308	0.75	53.14
J	10	3.21	12,632	1.52	52.45
Total		83.07	327,311	1.07	46.91

Canadian marine results

Best's Market Share Reports
Five-Year Trend Study
Data Years: 2012 - 2016
State/Territory: Canada
Line of Business: Ocean Marine

<u>Company Name</u>	<u>2016</u>	<u>2015</u>	<u>2014</u>	<u>2013</u>	<u>2012</u>
Direct Written Premiums	66,085	66,278	72,250	78,913	82,356
Direct Combined Ratio (%)	77.40	106.20	76.22	60.21	67.20
Adjusted Loss Ratio (%)	39.75	71.05	40.68	25.31	32.07

US ocean marine loss ratios

Best's Market Share Reports							
Line of Business: Ocean Marine							
<u>Adjusted Loss Ratio (%)</u>							
Company Name	5-Year Average	3-Year Average	2016	2015	2014	2013	2012
Company A	45.22	35.84	39.96	41.76	25.62	43.02	79.12
Company B	51.92	35.73	41.39	37.50	29.10	37.49	107.00
Company C	75.84	67.32	85.86	48.11	68.32	80.55	96.22
Company D	65.37	65.52	70.42	56.83	69.44	60.45	71.33
Company E	57.61	58.37	56.24	48.95	70.75	21.18	89.31
Company F	67.69	70.67	65.62	86.53	59.84	57.84	68.67
Company G	69.16	69.58	76.00	76.79	53.92	42.09	100.75
Company H	64.62	43.19	33.92	46.30	48.49	30.92	166.91
Company I	40.89	34.94	50.69	27.08	25.16	62.80	40.56
Company J	50.82	45.50	44.23	51.43	40.86	42.36	91.58
Company K	56.33	55.20	63.11	46.19	56.12	50.08	65.87
Company L	39.69	5.63	22.76	(39.07)	27.05	43.89	82.53
Company M	39.64	37.89	29.97	33.38	50.04	26.44	59.99
Company N	73.94	66.82	75.56	61.67	64.42	41.46	138.15
Company O	48.39	49.48	43.05	44.04	60.81	19.19	75.40
Company P	40.96	49.25	48.07	55.77	43.94	18.90	36.07
Company Q	44.42	52.99	46.80	66.32	44.37	7.43	32.97
Company R	73.63	72.03	80.38	68.26	65.87	61.53	92.61
Company S	58.92	66.09	94.92	63.15	43.94	58.20	20.07
Company T	60.07	66.92	97.17	51.36	48.75	31.65	66.89
Total US PC Industry	55.23	50.68	56.41	48.28	47.48	42.85	82.50

Result warnings & vast loss amounts dominated media headlines

Up to \$190bn I 2017 cat losses signal 'capital event': Fitch
27 September 2017

Cat events could prompt a turn in reinsurance market
28 September 2017

Mexico earthquake insured losses won't top \$1.2bn: RMS
25 September 2017

Chubb says Harvey-Irma losses up to \$1.6bn
27 September 2017

Scor forecasts \$505mn HIM, Mexico losses
9 October 2017

Karen Clark puts Nate loss at \$500mn
9 October 2017

Norwegian Hull Club notifies reinsurers of \$105mn Sunsail loss
10 October 2017

Lloyd's sees \$4.5bn impact from Harvey and Irma
28 September 2017

RMS puts insured Maria loss at \$15bn-\$30bn
28 September 2017

HIM raises prospect of worst ever cat year
26 September 2017

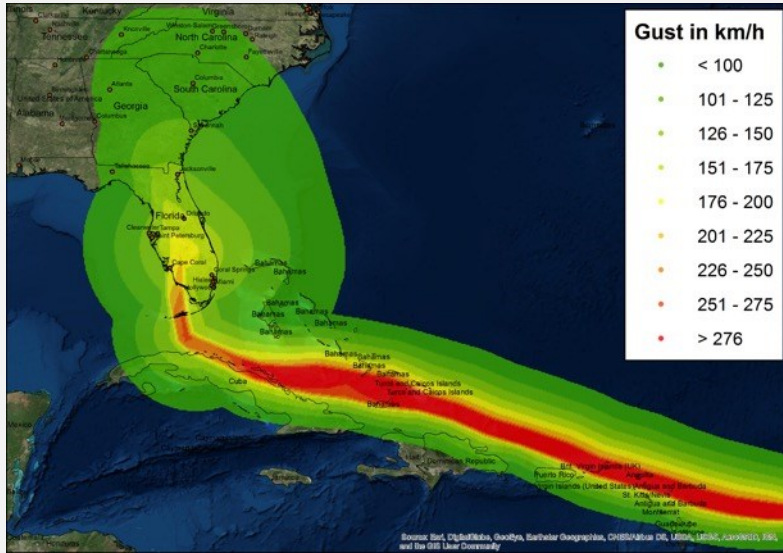
Mapfre warns its cat bill may reach EUR200mn
25 September 2017

Lancashire sees up to \$212mn hit from HIM, Mexico quakes
9 October 2017

Nate primary loss to add \$1.5bn-\$3bn to record cat toll
10 October 2017

AIG forecasts up to \$3.1bn Q3 cat losses
10 October 2017

After some “calm” years, natural catastrophes were a powerful force this year



Wind speed footprint of Irma (Munich Re)

Source: Munich Re America

- Harvey (Cat. 4 Hurricane)

- First major hurricane making landfall in the US since Wilma in 2005
- Losses mainly from flood in the Houston area (> 60 inches of rain east of Houston, the most ever recorded in the Lower 48 States from a single Hurricane / Tropical Storm)
- Estimated insured loss in the range of **USD 25 – 35bn** (RMS)

- Irma (Cat. 5 Hurricane)

- Hit Caribbean Islands and Cuba before making landfall in Florida

 Total market loss caused by Cat-Events in America 2017: USD 100 – 150bn

After some “calm” years, natural catastrophes were a powerful force this year

- **Mexico Earthquake (M. 7.1)**

- Major earthquake in Mexico
- Estimated insured loss **USD ~1.2bn** due to low insurance penetration (RMS)

- **Maria (Cat. 5 Hurricane)**

- Hit Caribbean Islands
- Strongest Hurricane to hit Puerto Rico since 1928
- Estimated insured loss **USD 15 - 30bn** (RMS)

- **Hurricane Nate (Cat. 1 Hurricane), CA Wildfires**



▶ Total market loss caused by Cat-Events in America 2017: USD 100 – 150bn

Harvey, Irma and Maria will make it into the top 10 of the costliest events for the US/LATAM insurance market

10 costliest events in Latin America and North America ordered by inflation adjusted insured losses

Date	Event	Affected area	Insured losses in USD mn
Aug 2005	Hurricane Katrina	Gulf of Mexico	74,300
Sep 2017	Hurricane Irma	Caribbean, Cuba, Florida	35,000 – 55,000
Oct 2012	Hurricane Sandy	USA (East Coast), Cuba, Caribbean	30,500
Aug 2017	Hurricane Harvey	Gulf of Mexico, Texas	25,000 – 35,000
Aug 1992	Hurricane Andrew	Bahamas, Florida, Gulf of Mexico	29,100
Jan 1994	Earthquake	CA, Northridge, Los Angeles, San Fernando Valley, Ventura, Orange	24,800
Sep 2017	Hurricane Maria	Puerto Rico	15,000 – 30,000
Sep 2008	Hurricane Ike, storm surge	Cuba, Gulf of Mexico, Bahamas	20,700
Sep 2004	Hurricane Ivan	Caribbean, Gulf of Mexico	15,000
Oct 2005	Hurricane Wilma	Bahamas, Cuba, Haiti, Jamaica, Mexico, USA	14,800

Observation

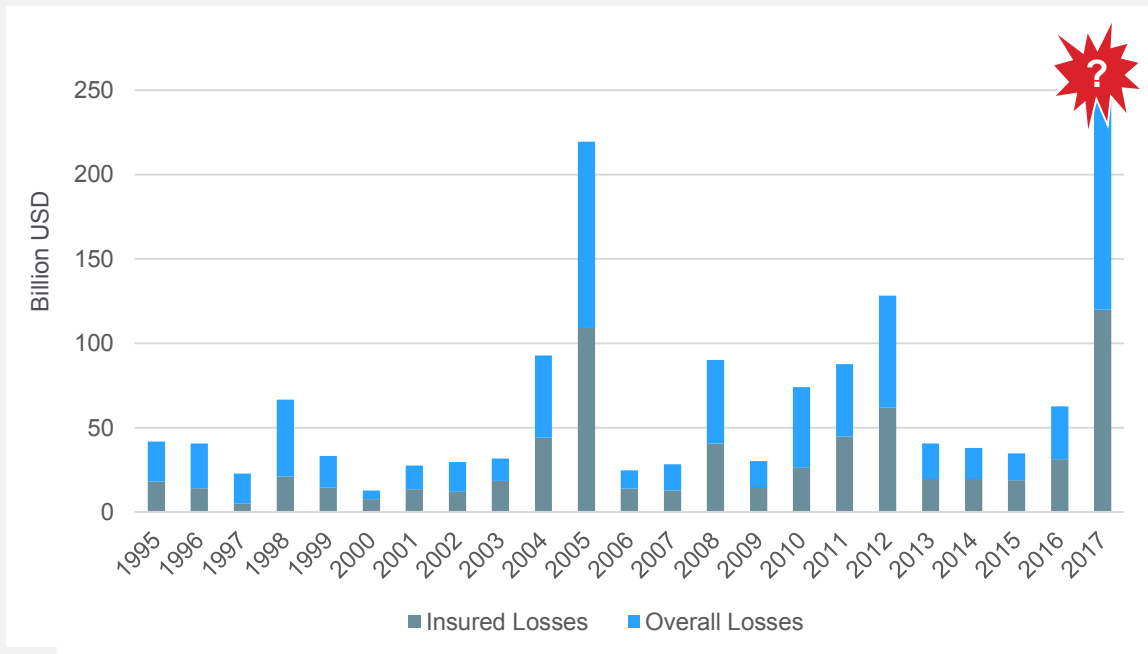
- Recent events most expensive for insurance industry
- Hurricanes are the most severe events for the insurance industry

Implication

- Emergency action plans for Hurricane events essential
- Accumulation control essential in yacht and cargo business

2017 will be the worst Nat Cat year in history

Inflation adjusted overall and insured losses in North, South, Central America and the Caribbean US\$



Observation

Overall loss estimation already now larger than 2005 for KRW

Implication

Market changing events in 2017

NAT CAT in Canada

Event #	Year	Month	Name	Provinces	Perils	Status	Industry Loss
95	2017	10	British Columbia and Prairies Windstorm	BC,AB,SK,MB	Windstorm, Water, Fire	Open	\$106,936,000
94	2017	08	Late-August Windsor Flooding	ON	Flood, Water	Open	\$144,200,000
93	2017	07	Elephant Hill Wildfire	BC	Fire	Open	\$40,262,000
92	2017	07	Williams Lake Wildfires	BC	Fire	Open	\$87,090,000
91	2017	07	Mid-July Central Alberta Severe Storms	AB	Hail, Windstorm, Flood, Water	Open	\$35,772,000
90	2017	07	Central Alberta & Saskatchewan Severe Storms	AB,SK	Hail, Windstorm, Flood, Water	Open	\$48,388,000
89	2017	07	Alberta Severe Storms	AB	Hail, Windstorm, Flood, Lightning	Open	\$72,705,000
88	2017	06	Central Alberta Severe Storms	AB	Hail,Windstorm,Water	Open	\$35,465,000
87	2017	06	Saskatoon Hailstorm	SK	Hail,Windstorm,Lightning,Water	Open	\$43,780,000
86	2017	05	Western Canada Windstorm	BC,AB,SK	Windstorm, Water, Flood	Open	\$70,215,000
85	2017	05	Eastern Canada Flooding	ON,QC,NB,NS	Flood,Water	Open	\$113,490,000
84	2017	04	Southern Ontario and Quebec Rain & Windstorm	ON,QC	Flood, Water,Winterstorm	Open	\$108,444,000
83	2017	03	Eastern Newfoundland Windstorm	NL	Windstorm	Open	\$58,704,000
82	2017	03	Southern Ontario Windstorm	ON	Windstorm	Open	\$105,418,000
							\$1,070,869,000 CAD
Event #	Year	Month	Name	Provinces	Perils	Status	Industry Loss
81	2016	10	Remnants of Hurricane Matthew	NB,NS,PE,NL	Windstorm, Flood, Water	Closed	\$104,179,000
80	2016	09	Windsor Flooding	ON	Flood, Windstorm, Water	Closed	\$153,461,000
79	2016	07	Moose Jaw Hailstorm	SK	Hail, Windstorm,Lightning,Water	Closed	\$74,637,000
78	2016	07	Prairie Long Weekend Severe Storms	AB,SK,MB	Hail, Windstorm, Flood, Water	Closed	\$443,302,000
77	2016	07	Quebec & Ontario Severe Storms	ON,QC	Hail, Windstorm, Lightning, Water	Closed	\$65,006,000
76	2016	07	Southern Prairies Severe Storms	AB,SK,MB	Hail, Windstorm,Lightning,Water	Closed	\$102,739,000
75	2016	07	Southern Alberta and Saskatchewan Severe Storms	AB,SK	Hail,Flood, Windstorm,Water	Closed	\$70,468,000
74	2016	07	Southern Ontario Severe Storms	ON	Hail, Windstorm,Lightning,Water	Closed	\$47,063,000
73	2016	07	AB/SK/MB Severe Storms	AB,SK,MB	Hail,Flood, Windstorm,Water	Closed	\$54,252,000
72	2016	06	Prairie Severe Storms	AB,SK,MB	Hail,Flood, Windstorm,Water	Closed	\$89,083,000
71	2016	06	Prairies & Northern Ontario Severe Storms	SK,MB,ON	Flood, Windstorm, Hail, Water	Open	\$35,523,000
70	2016	05	Fort McMurray Wildfire	AB	Fire	Open	\$3,666,167,000
69	2016	03	Southern Ontario Ice Storm	ON	Winterstorm, Windstorm, Water	Closed	\$27,379,000
							\$4,933,259,000 CAD

- Large variation in estimates of insured loss by modelling firms.
- Flood is not modelled. There is flood coverage written in commercial property, inland marine, and cargo storage / STP. Concern over “loss creep” on losses due to water damage.
- Majority of announcements by companies on amount of losses reflect a figure NET of reinsurance and AFTER TAX.
- Majority of marine insurers are divisions within larger P&C Companies. Regardless of impact to marine portfolio, their companies have suffered significant losses.
- For some insurers / reinsurers this is an earnings event, for others it is a capital event.
- Alternative capital providers (ILS / CAT bonds) will take losses and investors will take losses on principal.
- Impact across primary insurers, reinsurers, and retrocessionaires.
- Insurers will review reinsurance purchases including retention levels and amount of cover they purchase (horizontal and vertical).

Marine lines impacted by 2017 Nat Cat events

- Yacht
- Marinas / boat dealers
- Cargo (storage / STP), autos
- Inland marine
- Cargo STP winery program impacted by California wildfires



What is “Capital?”

Equity of shareholders of a stock insurance company. The company's capital and surplus are measured by the difference between its assets minus its liabilities. This value protects the interests of the company's policyowners in the event it develops financial problems; the policyowners' benefits are thus protected by the insurance company's capital. Shareholders' interest is second to that of policyowners.

Will new capital / entrants rush in?

- Alternative capital will reassess risk / reward.
- New capital / entrants will gravitate to lines where potential returns are greatest and uncertainty / volatility the least. This does not bode well for underperforming lines.
- How does one deploy capital?
- Confidence in models?
- Impact on Retro Markets.

Impact on Lloyd's / London market

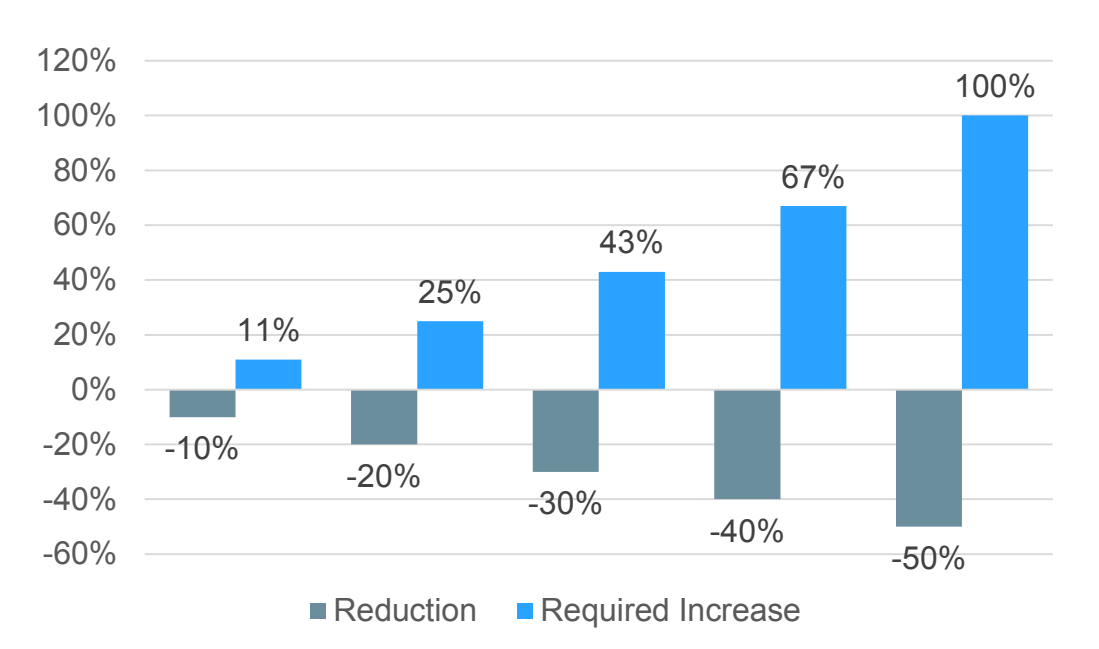
- Lloyd's / London Market is a major factor in marine both globally and in the U.S.
- Lloyd's / London market facing significant losses from 2017 Nat Cats.
- Fitch revised Lloyd's outlook to negative from stable, June 27, 2017.
- S&P Global Ratings revised on Lloyd's outlook to negative from stable, October 13, 2017.
- Significant insurance, reinsurance, and retro losses.
- Prior to 2017 Nat Cats results were poor, markets exiting and / or reducing staff.



Marine profitability: How does an underwriter improve results?

- Portfolio management
- Rate / premium adequacy
- Improve terms and conditions
- Reduce expenses
- Improve subrogation / recovery
- Reduce / minimize claims leakage
- Apply effective risk engineering / loss control
- Effective use of Cat modelling (development of flood modelling)

Rate increases required to recoup



Technical rate: \$100
Reduction: 50%
New rate: \$50
Required increase: 100%
Technical rate: \$100

Source: Munich Re America

How does 2017 differ from other MCE / hard markets?

- **Combination of events / factors** in 2017 as opposed to **one “market changing event.”**
- **Speed on information / misinformation and communication.** Forums / media to express opinions and outlook.
- **Sustained low interest rate environment** and impact on reserve earnings / investment.
- Prior MCEs / hard market:
 - 2001 market changes has been preceded by market changes including impacts of under-reserving in 1990s and sustained soft market. 9/11 accelerated hard market conditions.
 - KRW (Hurricanes Katrina, Rita, and Wilma) in 2005 came at time rate levels were relatively healthy coming off hard market post 2001. Market changes largely driven in impacted lines / markets / territories.
 - Ike in 2008 was more confined to Offshore Energy and Yacht / Recreational Marine lines in gulf.
 - In 2012, the impact of Superstorm Sandy and Costa Concordia was felt in markets and lines of business that suffered the loss. Short lived rate increases.
 - 2015 Tianjin losses had minimal impact beyond loss affected business.

Challenges and opportunities ahead



Risks are getting more complex and larger. They require specialization, not commoditization.



“Rising Tide” will not lift all ships equally. There will be winners and losers!



Find your winning formula!



Sources

Slide 3 –

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Slide 4

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- Slide 5- IUMI, Munich Re America
- Slide 7- Munich Re America
- Slide 8- Canadian Underwriter
- Slide 9 and 10- - AM Best
- Slide 11 – Insurance Insider
- Slides 12 and 13 – Munich Re America
- Slides 14 and 15 - Münchener Rückversicherungs-Gesellschaft, Geo Risks Research, NatCatSERVICE – As at September 2017
- Slide 16- Source: CAT IQ. <https://www.catiq.com/>
- Slide 17 – Munich Re America
- Slide 20- AM Best Glossary of Insurance Terms



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