

CASUALTY ACTUARIAL SOCIETY

2019 Seminar on Reinsurance

US Marine Market Overview and Update

Sean M. Dalton, CPCU, AMIM
Head of Marine - North America
Munich Reinsurance America, Inc
June 3, 2019



Agenda

- What is Marine Insurance?
- Global Marine Insurance Market Update
- US Ocean Marine Market Overview 2018 Results
- Canadian Ocean Marine Market Overview 2018 Results
- Marine LoB Subline Review
- Keys to Success and Competitive Advantages
- Sources of Information on NA Marine Insurance Market
- Appendix



What is Marine Insurance?

- Oldest form of Insurance.
- Marine is a hybrid, it has both property and casualty elements.
- Marine involves instrumentalities of transportation and assets that are mobile in nature.
- Marine business is CAT exposed. Coastal and static risk.
- Marine is a Global business.
- In US Commercial Ocean Marine Insurance is written on an admitted basis but non-filed as to form and rate.
- Low barriers to entry and exit.
- US Primary Commercial Marine Insurance Market is made up of Globals, Nationals, Specialty Writers, and MGA / MGU / Program Administrators. Yacht / Watercraft Market also written by Personal Lines Carriers and Regionals.



What is Marine Insurance?

- Cargo (Vessel, Air, Barge, Truck, Rail, Warehouse, Stock Thru Put)
- Hull & Machinery (including Marine Builders Risk)
- Protection & Indemnity
- Marine Liabilities (Charterers, Stevedores, Terminal Operators, Ship Repairers, Marina Operators, Boat Dealers, Marine Construction, etc.) written on a mono-line basis and also as a Marine GL Policy
- Excess Marine Liabilities (Follow Form XS and Bumpershoot / Umbrella)
- Yacht (Personal Watercraft, Small Boat, Luxury Yacht, etc.)
- Recreational Marine (Marinas, Boat Builders, Boat Dealers, Marine Service Industries)
- Commercial Inland Marine (per 1976 Nationwide Marine Definition)



Notable Marine Risks / Losses



Types of Marine Risks Cruise Ship

Symphony of the Seas (\$1.35 billion)



Types of Marine Risks Container Ship

MUNICH MAERSK(20,568 TEU, Vessel \$ 400 Million, Cargo \$ 1 billion +)



Types of Marine Risks

Oil Tanker - VLCC

Frank A. Shrontz



Types of Marine Risks LNG Vessels

Q-Flex Ships (\$ 222 million each)



Types of Marine Risks Luxury Yacht

Eclipse (\$1.5 billion)



Types of Marine Risks



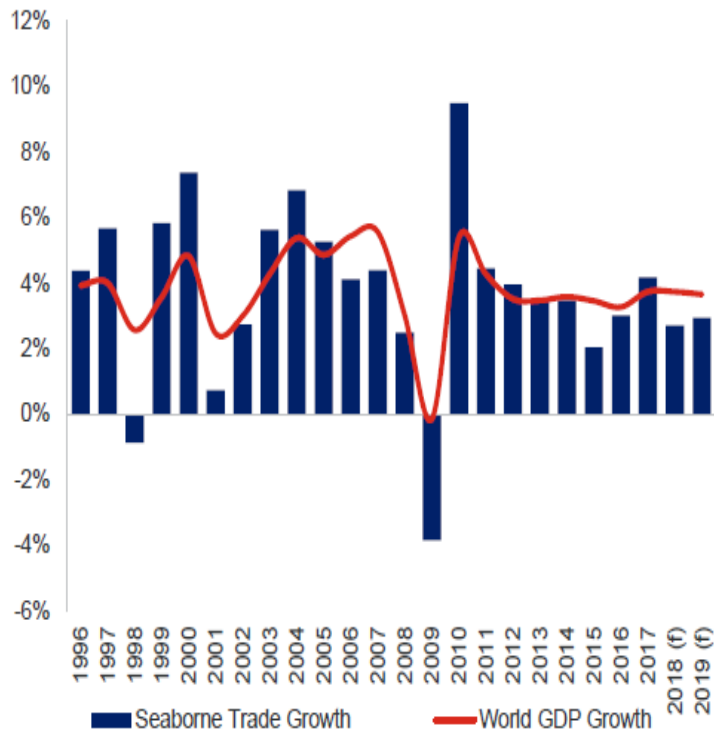
Global Marine Insurance Market Update



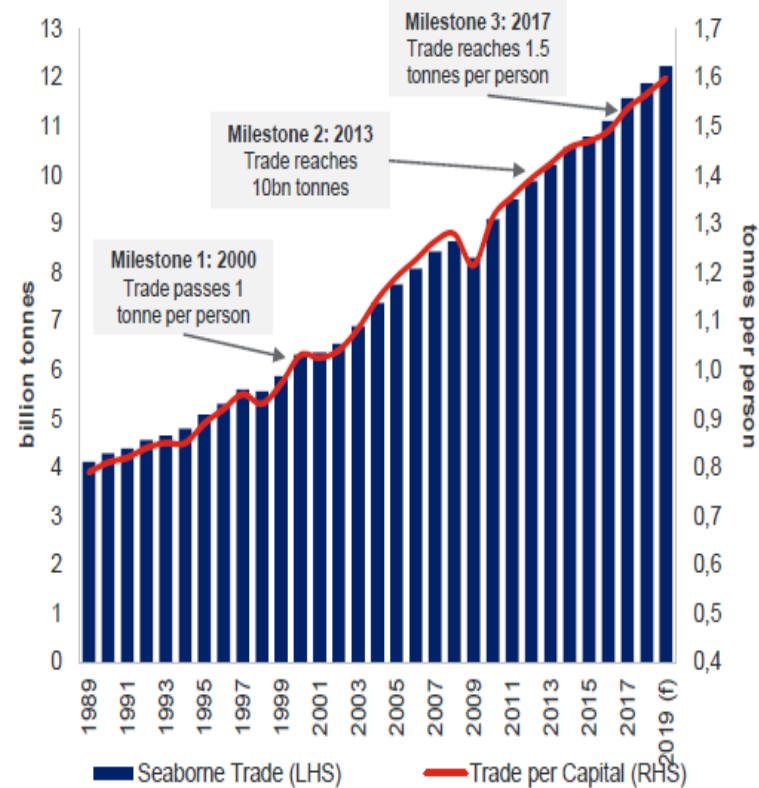
World Seaborne Trade & the World Economy

Close Correlation Continues

Growth: Seaborne Trade vs. World GDP



Seaborne Trade per Capita



Source: Clarksons Research / IMF, January 2019



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
2017	\$ 28.5 billion	> 75%	> 85%	> 15 points

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

Source: IUMI, Munich Re America



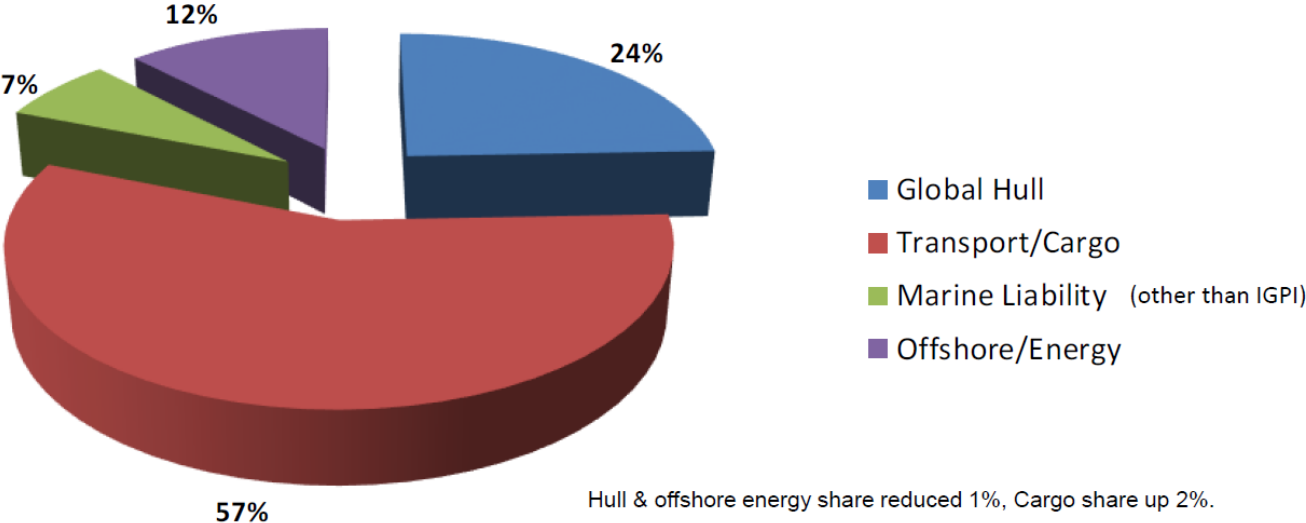
Global marine and offshore energy premiums

Marine Premium 2017

by line of business

Total estimate 2017: 28.5 USD billion / Change 2016 to 2017: +2%

NB: Exchange rate effects!



Marine and offshore energy major losses 2016 to 2018

Year of Loss	Type	Cause	Region	PD US\$	OEE US\$	BI US\$	Total US\$
2016	MOPU	Mechanical failure	Africa	620,000,000	0	900,000,000	1,520,000,000
2016	Rig	Mechanical failure	North America	83,500,000	0	95,000,000	178,500,000
2016	Pipeline	Anchor/jacking/trawl	Africa	100,000,000	0	0	100,000,000
2016	Platform	Fire + explosion/VCE	Latin America	95,367,316	0	0	95,367,316
2016	Well	Blowout + fire	Australasia	0	70,000,000	0	70,000,000
2016	Pipeline	Terrorism	Africa	65,000,000	0	0	65,000,000
2016	Platform	Piling operations	Asia	51,000,000	0	0	51,000,000
2016	SSCS	Anchor/jacking/trawl	Middle East	50,000,000	0	0	50,000,000
2017	Well	Collapse	Europe	42,000,000	151,737,600	35,451,000	229,188,600
2017	MOPU	Faulty work/op error	Africa	135,000,000	0	0	135,000,000
2017	MOPU	Faulty work/op error	Asia Pacific	132,000,000	0	0	132,000,000
2017	Vessel	Pipelaying/trenching	Latin America	128,500,000	0	0	128,500,000
2017	Well	Unknown	Europe	72,000,000	0	24,000,000	96,000,000
2017	Well	Blowout + fire	Europe	0	80,000,000	0	80,000,000
2017	Pipeline	Impact	Africa	70,500,000	0	0	70,500,000
2017	Pipeline	Corrosion	North America	60,000,000	0	0	60,000,000
2017	Platform	Fire no explosion	Africa	52,000,000	0	0	52,000,000
2017	Well	Blowout + fire	Africa	0	50,000,000	0	50,000,000
2018	Plant	Earthquake	Asia Pacific	270,000,000	0	0	270,000,000
2018	Pipeline	Heavy weather	North America	51,000,000	0	0	51,000,000

The Upstream loss record continues to defy gravity from a catastrophe perspective. But does this take into account the attritional effect of minor E&P losses?

Source: WTW Energy Loss Database as of March 1 2019 (figures include both insured and uninsured losses)



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



Maersk Honam – March 6, 2018
Estimated > US \$ 500M Loss



September 2018 – Lurssen Fire Euro 600M Builder's Risk Loss



Vessel fires since January 2019

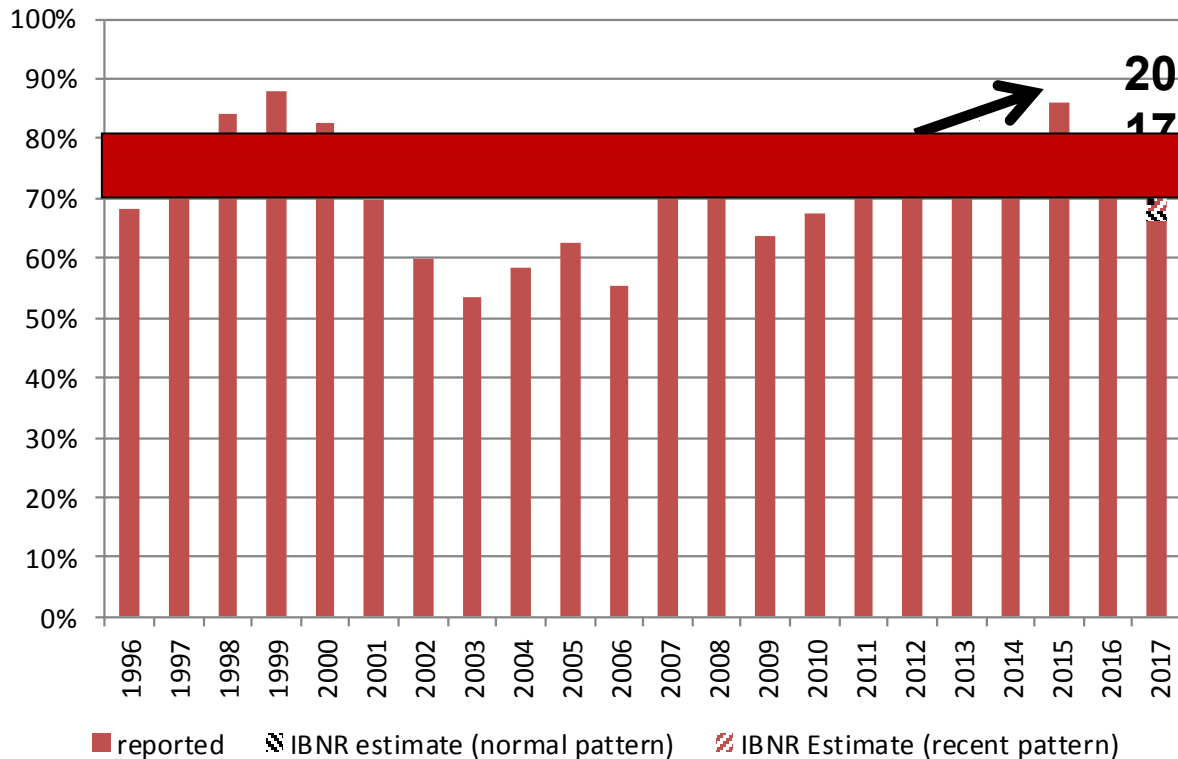
Grimaldi Grande America

- Sincerity Ace
- Yantian Express
- APL Vancouver
- ER Kobe
- Grande America
- Grande Europa



Cargo Results
Ultimate Gross* loss ratios
Cargo Europe (& partly US)**
Underwriting years 1996 to 2017

Cargo acquisition cost reported by some countries: 15%-20%



Recent years strong impact by outlier & Nat-cat event losses:

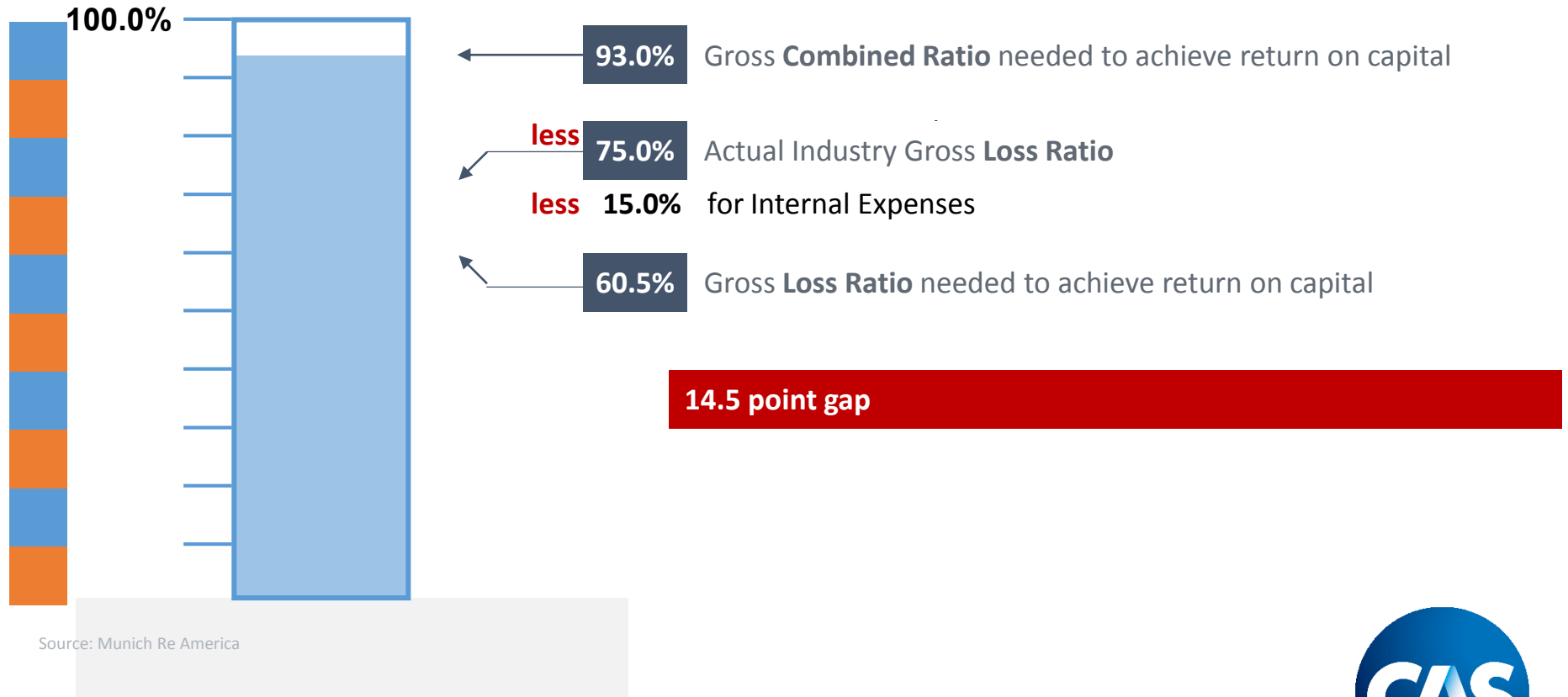
- 2015: Tianjin port explosions
 - 2016: Hanjin, Amos-6 satellite
 - 2017: Hurricanes / Nat Cat
 - 2018: Mærsk Honam, Sincerity Ace
 - 2019: Yantian Express, MSC Zoe, Grimaldi Grande America
- Affect more than one uw year.
 Increasing expenses a concern.

* Technical break even: gross loss ratio does not exceed 100% minus the expense ratio (acquisition cost, capital cost, management expenses)

**Data included from: Belgium, France, Germany, Netherlands, Italy, Spain (until 2007), UK, USA



Theoretical Cargo Profitability Example



US Ocean Marine Market Overview



US Ocean Marine Market Overview 2018

- DWP \$ 3,087,831
- Incurred L/R 57.7 % (Direct Losses Inc. to DWP)
- Combined Ratio (after Divs) 91.4 %
- Expense ratio (Total U/W expense to NPW) 35.2%
- Marine LOB split (2017 AIMU, 17 member companies reporting)
 - 49% Cargo
 - 11% Yacht
 - 13% Commercial hull (domestic trading)
 - 14% Primary marine liabilities
 - 1% Offshore energy
 - 6% Excess marine liabilities
 - 6% Commercial P&I (domestic trading)
 - <1% Ocean hull (blue water)

Sources: AM Best; AIMU



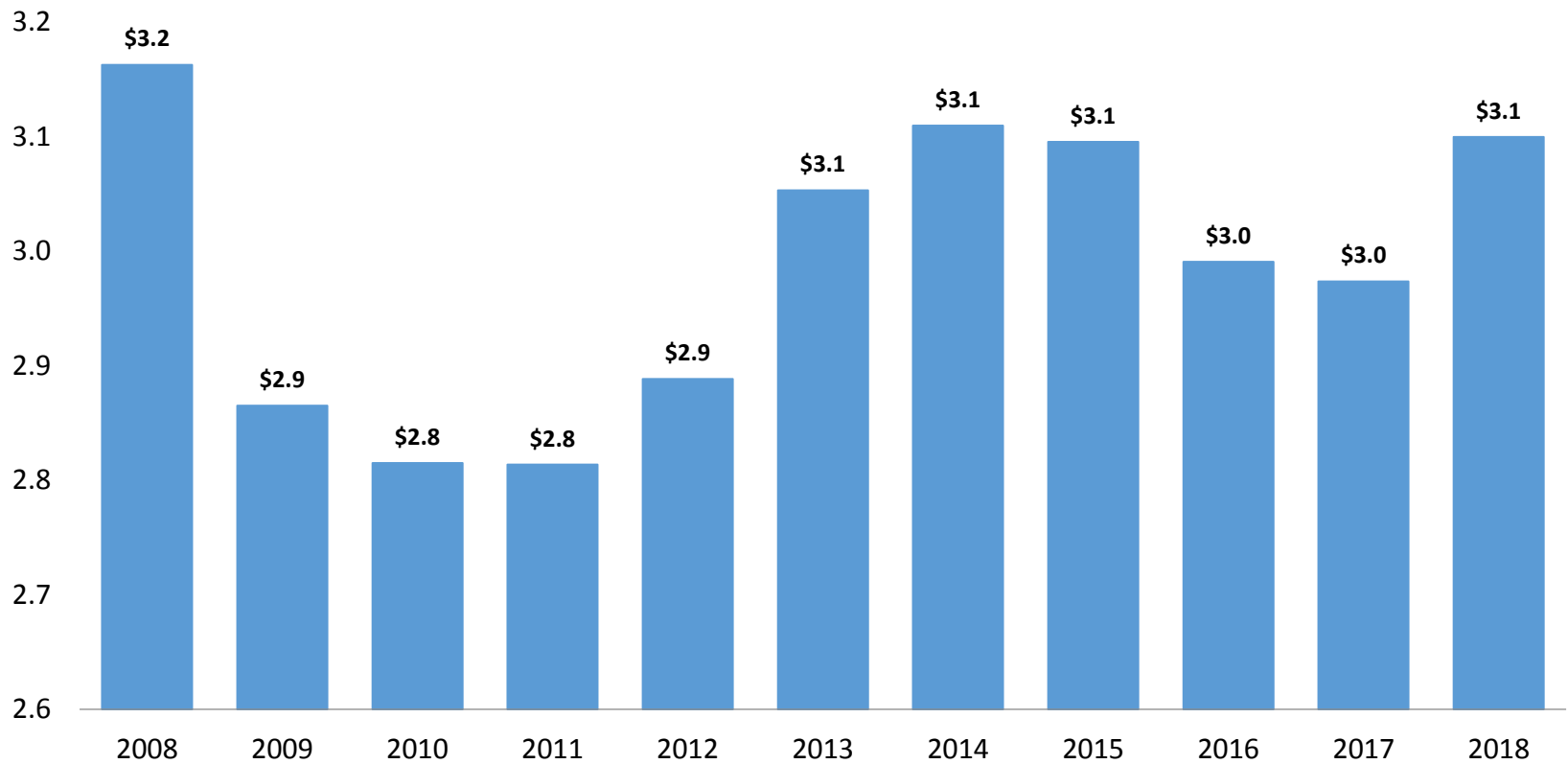
US Ocean Marine Market

In the US Market, Marine Lines (both Ocean Marine and Inland Marine) are defined by the 1976 Nationwide Marine Definition. Certain lines including, but not limited to, Motor Truck Cargo Legal Liability, Fine Arts & Specie, and Inland Transportation (domestic only) are classified as Inland Marine where elsewhere outside the US these may be included in a Cargo Account.



U.S. Ocean Marine Direct Written Premiums

(\$ Billions)



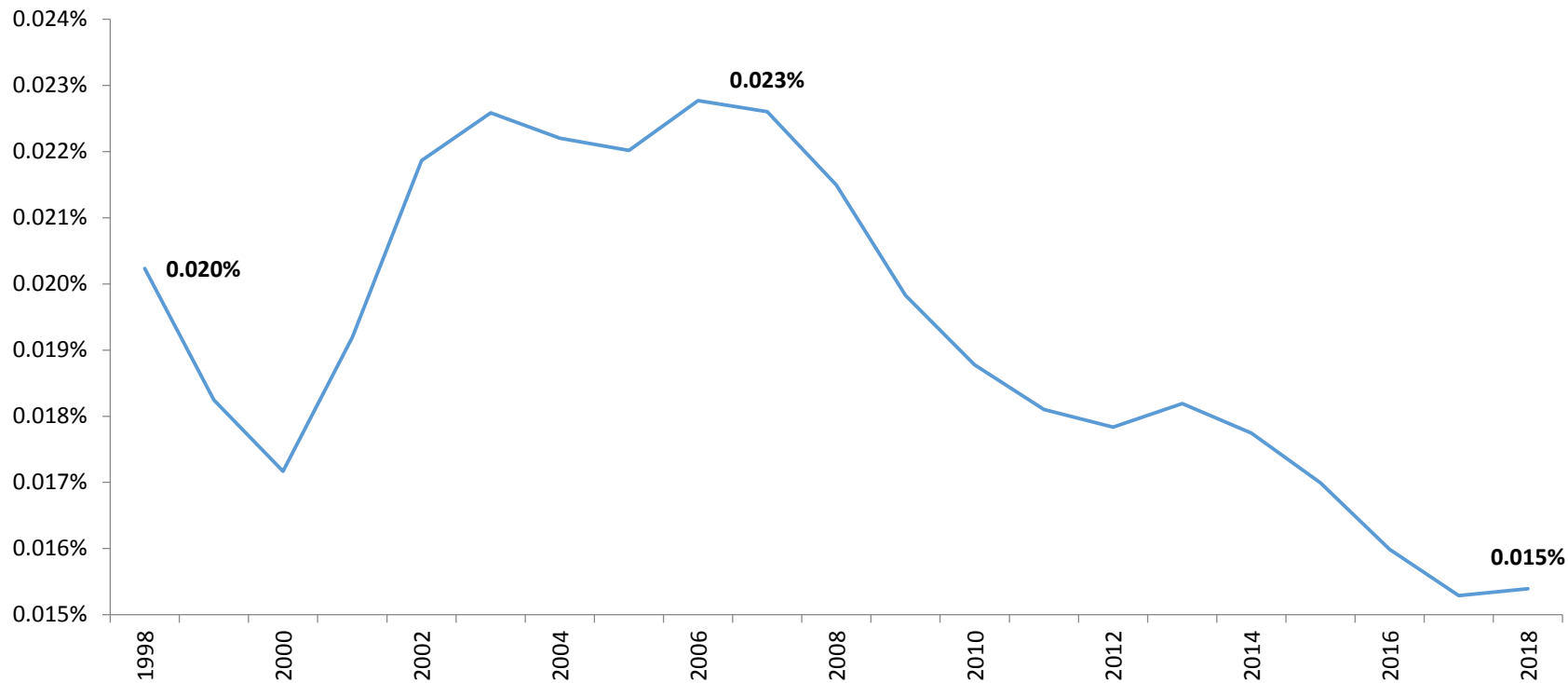
Ocean Marine Premium Volume Fell During the Global Financial Crisis.



Source: iii NAIC data, sourced from S&P Global Market Intelligence.
Note: U.S. and territories

Has the Market Bottomed Out?

(U.S. Ocean Marine DWP as % of GDP)

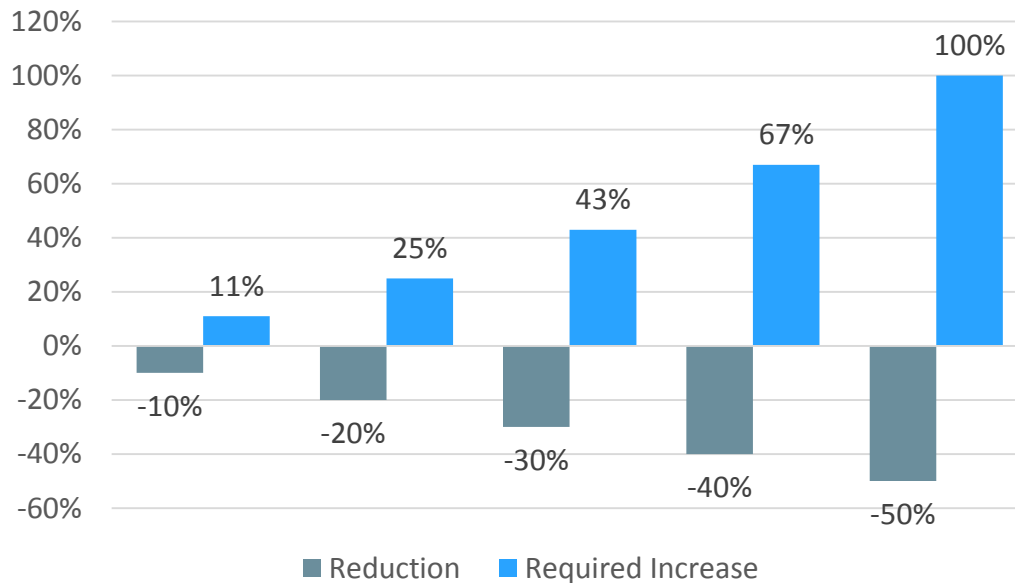


Economy Grows Faster Than Premium – Sign of Soft Market (30% Decline Since 2006 Peak)



Impact of rate reductions

Rate increases required to recoup



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

Source: Munich Re America



US Ocean Marine Profitability

- Specialty business needs to outperform P&C counterparts over time, currently underperforming
- Outsized loss relative to P&C Counterparts (SANDY)
- 7 of top 10 markets did not meet this target (AM Best 2018)
- 5 of top 10 exceeded 100% CR (AM Best 2018)



US Ocean Marine Expense Ratios

Year	Expense Ratio (Total UW Expenses to Incurred NPW)
2012	36.8%
2013	44.7%
2014	34.9%
2015	35.0%
2016	35.5%
2017	34.4%
2018	35.2%

(Source: AM Best)



US Ocean Marine Market 2017 and 2018 NAT CAT Impact

- 2017 and 2018 NAT CAT activity impacted Yacht, Cargo, and Inland Marine lines
- 2018 NAT CATS included Hurricanes Florence and Michael along with California Wildfires (Maritime Executive). Drivers of loss included Storm Surge / Wind, Yachts, Docks, Storage Risks / Static Risk, Stock Thru Put (STP), and Auto Accounts. Retail STP Accounts were heavily impacted with losses ranging from Flood to Looting
- Modelled losses for Hurricane only account for Wind and Surge, they do not include Flood. There is a significant amount of Flood cover in Commercial Property, Inland Marine, and Cargo Policies. In many cases, blanket limits (subject to high aggregates for CAT) cover large schedules of impacted location.
- US and Canadian Marine Insurers much less impacted than their counterparts in London. Biggest reasons include underwriting appetite, terms and conditions, and pricing.
- Minimal impact on Marine Reinsurance Programs although significant retained losses by insurers on multiple events / occurrences.
- Clients reviewing retention levels and purchases post event.



US Marine Market Observations

- Low barriers to entry and exit.
- Lack of credible industry statistics by marine LOB.
- Exposures and risks are growing in size and complexity, these require sustainable solutions and will drive opportunities.
- High expense ratios warrant companies revising their business models and staffing, need to be flatter and more productive / efficient.
- NAT CAT is a big challenge for marine in the US (flood, wind, EQ).
- P&I, marine liability and excess marine liability business is more challenging in the US due to the legal system and lack of tort reform.
- Cyber (CL 380, AIMU Cyber Liability Clause, Silent)
- Markets that execute on a sound strategy and distinctive competencies / competitive advantages outperform.



US Marine Market Observations

- M&A activity
 - XL / Catlin / Axa
 - Chubb / Ace
 - Tokio / HCC / Philadelphia
 - Hartford / Navigators
 - Apollo / Aspen
- Lloyd's expansion hiring local teams in US
 - Brit
 - Talbot
 - Beazley
 - Canopus
 - Ascot
- Reinsurer expansion
 - Swiss Re, Berkshire Hathaway, Munich Re



Canada Ocean Marine Market Overview



Canadian Ocean Marine Market Overview 2018

- The Canadian Market Total Direct Marine written premium sits at \$373,716,000 CAD
- Of note, Lloyd's market share in Marine in Canada has increased from 7.47% to 11.56% in 2018
- Overall Net Loss Ratio (all lines combined) is 60.14%
- The Cargo Line of business (according to historical CBMU statistics) represents approximately 34% of the total WP i.e. \$113,194,000 CAD
- Overall market industry data by line of business represents a challenge for the Canadian market as there is a lack of consistency in numbers reported year-over-year



COMPULSORY INSURANCE FOR SHIPS CARRYING PASSENGERS

- Require Canadian registered passenger vessels engaged in domestic voyages to maintain liability insurance in an amount of \$250,000 multiplied by the passenger capacity of the vessel.
- Require evidence of insurance to be demonstrated upon demand.
- Enhance the financial protection of marine passengers entitled under the Marine Liability Act.

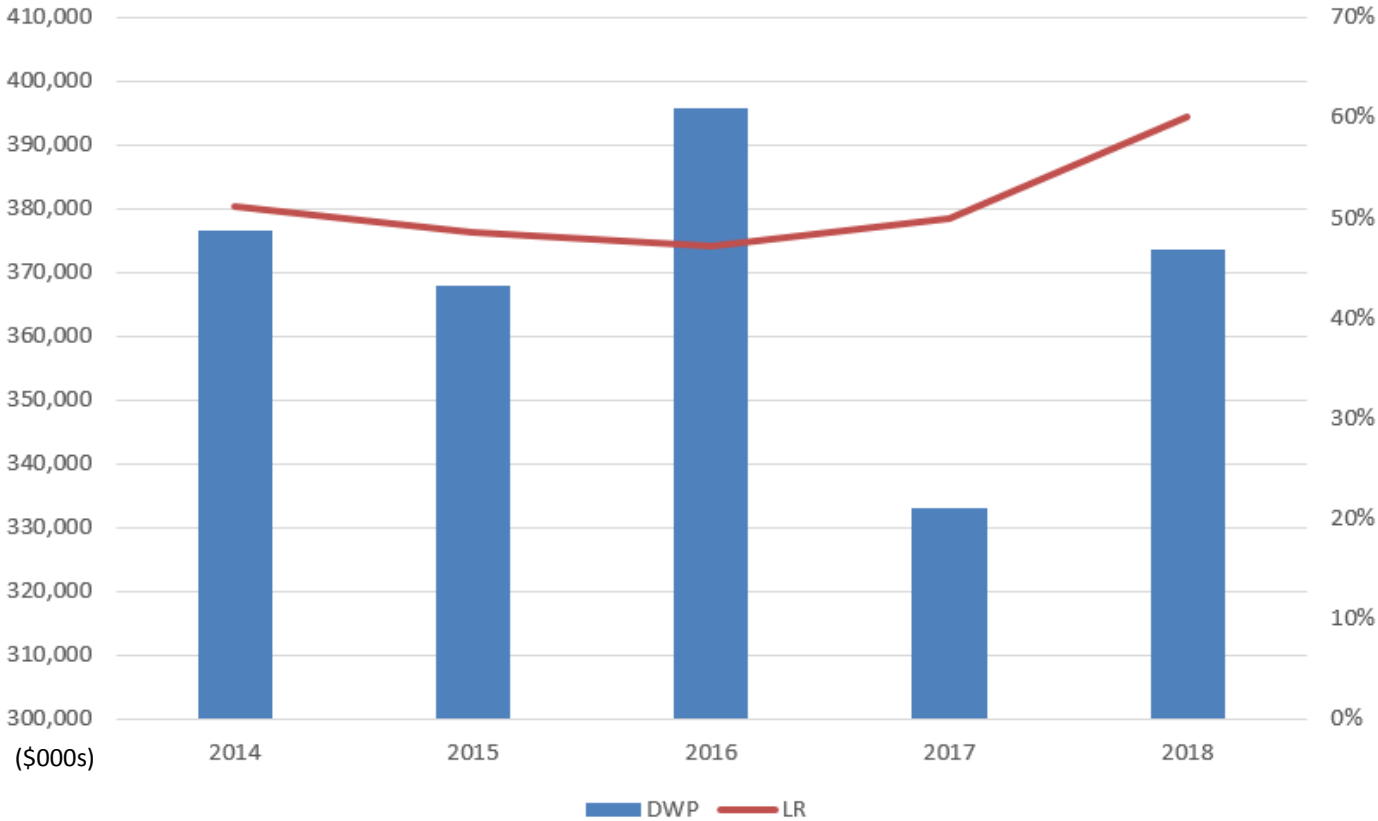


Bill c-64 and the Wreck Removal Convention

- Implements the Nairobi Int'l Convention on the Removal of Wrecks
- Registered owner strictly liable for the costs of locating, marking and removing the wreck.
- No limit of liability for owner
- Applies to all Canadian and foreign ships; all of Canada's waters
- In effect Summer 2019



Canada Marine Direct Premiums and Loss Ratios 2014 to 2018



(Source: MSA Research Inc.)



Lloyd's

Closing the Performance Gap



Lloyd's in the United States

- Underwriters at Lloyd's have licenses in Illinois, Kentucky, and the US Virgin Islands and are approved surplus lines insurers in all US states and territories. Lloyd's is also an accredited reinsurer in all 50 states.
- 41% of Lloyd's global premiums are held by US customers
- Total premium in the US was \$15bn
- \$2.2billion in total net claims paid for Superstorm Sandy
- Lloyd's leads the way in the excess and surplus lines and reinsurance segments in the US:
 - 57% surplus lines
 - 35% reinsurance
 - 7% exempt
 - 1% licenses
- > 1,000 Lloyd's Coverholders in the US



2018 Lloyd's lines of business breakdown

Global

- 31% Reinsurance
- 27% Property
- 26% Casualty
- 7% Marine
- 4% Energy
- 3% Motor
- 2% Aviation

US and Canada (51% of Global)

- 22% Reinsurance
- 36% Property
- 28% Casualty
- 6% Marine
- 5% Energy
- 2% Motor
- 1% Aviation

Lloyd's 2018 Results

- Loss before tax £1,001m (2017: £2,001m)
- Combined ratio of 104.5% (2017: 114.0%)
- Pre-tax return on capital of -3.7% (2017: -7.3%)
- Investment return of £504m (2017: £1,800m)
- Net resources of £28,222m (2017: £27,560m)
- Marine Result £343m Loss, 116% Combined Ratio
- Marine Expense Ratio (Net Operating Expenses / NEP) 42.6%

Source: Lloyd's 2018 Annual Report (<https://www.lloyds.com/investor-relations/financial-performance/financial-results/annual-report-2018>)



Lloyds Facts & Figures

- Total Number of Syndicates: 99
- Total Number of Coverholders: 3797
- Total Number of Coverholders Authorized to Write Marine: 579

Source: Lloyds Market Directory



Lloyd's Marine Results

Year	Marine GWP	Accident Year Ratio	Combined Ratio
2018	£2,603m	115.6%	116%
2017	£2,506m	121.8%	122.4%
2016	£2,470m	108.4%	106.2%
2015	£2,245m	105.4%	94.2%
2014	£2,140m	103.7%	95.2%
2013	£2,195m	102.8%	95.4%
2012	£2,090m	103.8%	99.9%
2011	£1,968m	102.3%	94.5%

Source: Lloyd's Annual Reports



Lloyd's MGAs Authorized to Write Marine

Line of Business	Number
Cargo	50
Hull	45
Liability	46
Yacht	41

Source: Lloyds Market Directory



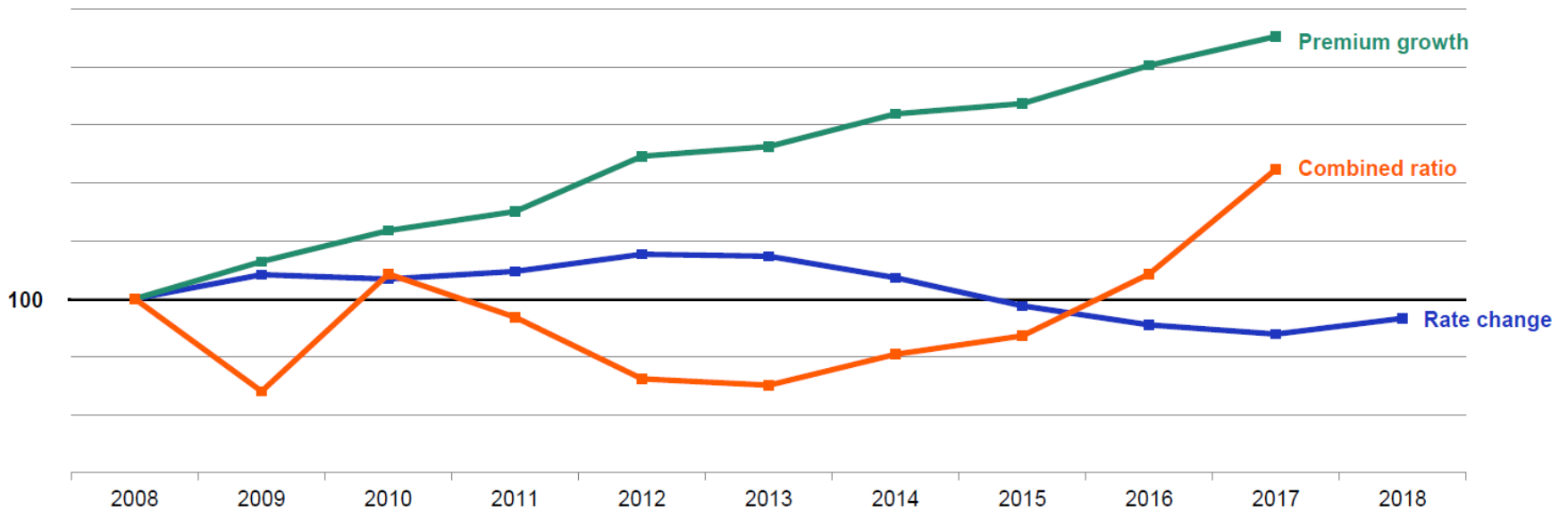
Lloyd's Coverholders Authorized to Write Marine in the US

Line of Business	Number
Cargo	242
Hull	42
Liability	64
Yacht	29

Source: Lloyds Market Directory

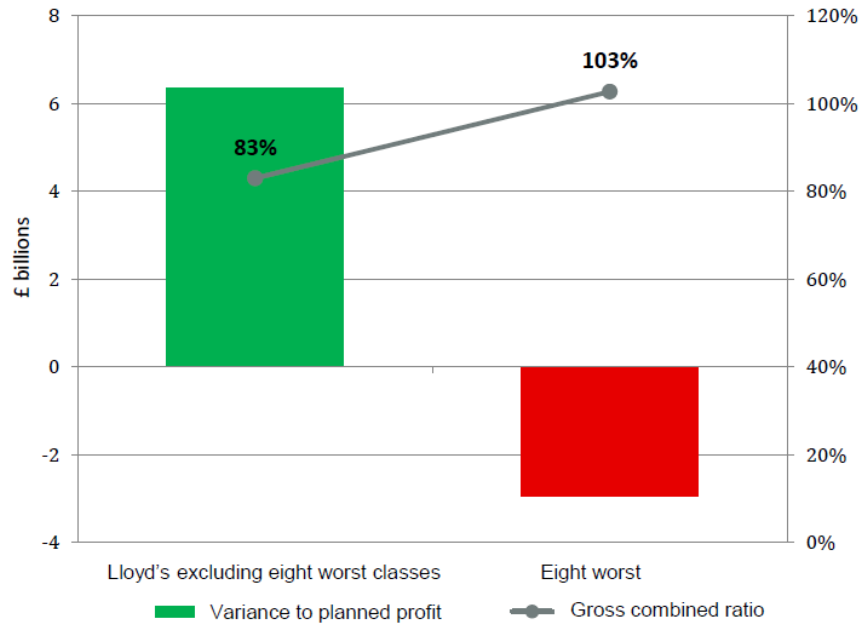


The CR continues to rise

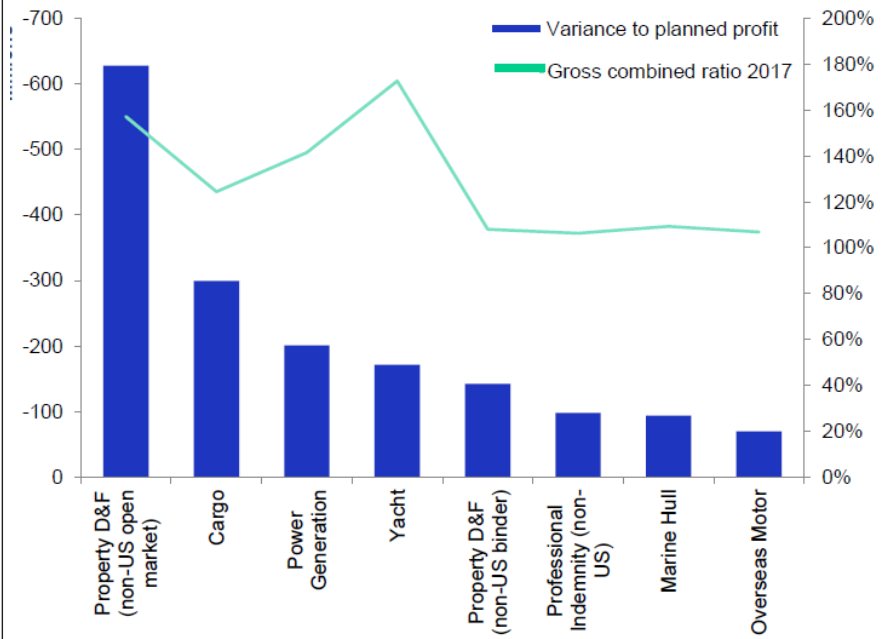


2018 / 2019 Portfolio Review

Gross combined ratio and variance to planned profit for 2012-2016



Gross combined ratio and variance to planned profit for 2017



Marine Subline Review

- Cargo Challenges / Opportunities
- US Commercial H&M and P&I Challenges / Opportunities
- US Marine Liability Challenges / Opportunities
- Yacht and Recreational Marine Challenges / Opportunities



Cargo Challenges / Opportunities

- Vessel accumulation and Port accumulation
- NAT CAT (EQ, wind / storm surge, flood, hail, etc.)
- High commissions / expense ratio
- Broker facilities
- Increased “static risk” covered via stock thru put policies
- Breadth of coverage (valuation, CDG, definition of CAT perils / limits, etc.)



Port and Vessel Accumulation

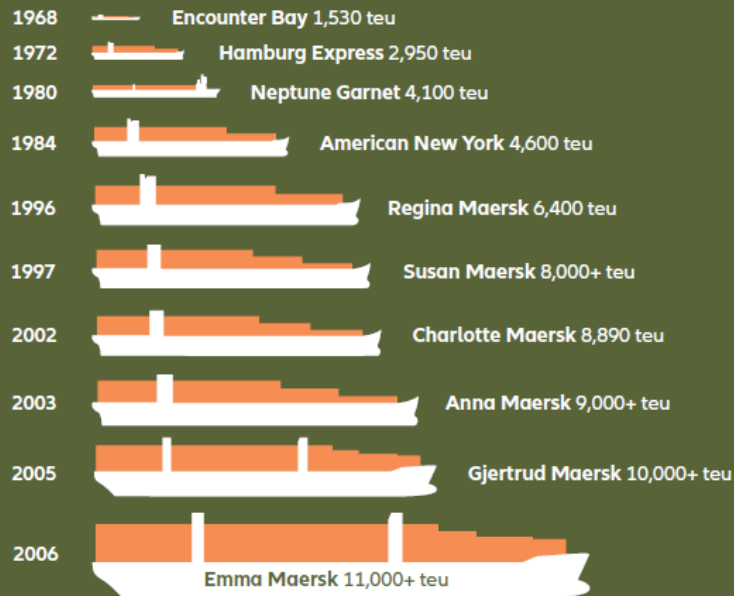
CSCG Globe (19,100 TEU, Vessel \$ 700 Million, Cargo \$ 1 billion +)



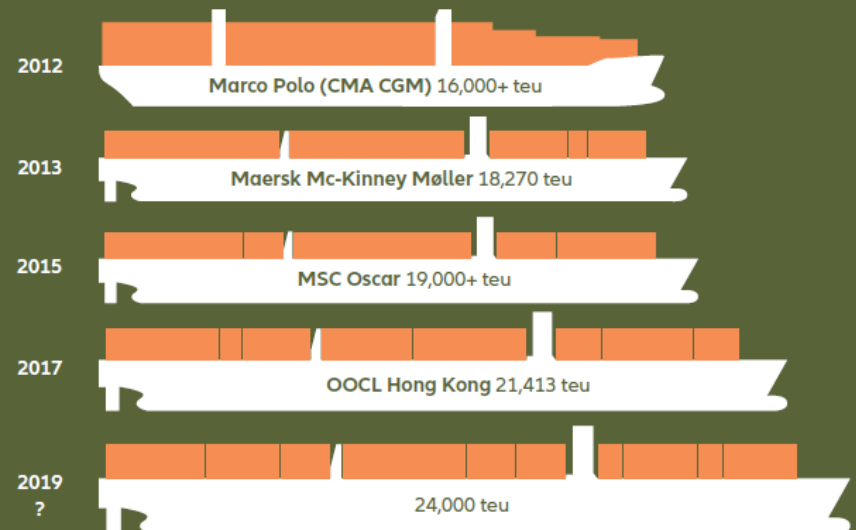
Consequences are Getting Bigger

Safety and Shipping Review 2018

50 YEARS OF CONTAINER SHIP GROWTH



Container-carrying capacity has increased by almost 1,500% since 1968



Cargo Challenges / Opportunities

- Compliance (sanctions / OFAC, globally compliant programs)
- Misappropriation / commodity business
- Increased utilization of of RMS 2016 and damageability code for cargo storage on AAL's. RMS 2016 includes a cargo damageability
- PCS H1 2017 Catastrophe Review introducing Global Marine and Energy Database on loss exstimated (\$ 250 million and above).
- Cyber threats and awareness of potential risks (impact in Forwarding / Logistics sectors).
- Misdeclared cargoes / hazmats. Recently the National Cargo Bureau (NCB) has offered to help inspect containers carrying imports to the United States to determine the extent of improperly declared or stowed cargo. NCB has offered to inspect a sample of inbound containers arriving at U.S. ports for carriers that are members of the Cargo Incident Notification System (CINS).



US Commercial H&M and P&I Challenges / Opportunities

- Increase in US shipyard activity (Jones Act tankers)
- Downturn in the offshore energy sector (vessels laid up, crew claims)
- Jones Act crew exposure
- Increase size and complexity of vessels
- Pollution
- Wreck removal
- Claims Inflation (medical expenses)
- Crewing / talent
- Punitive damages
- Opioid crisis



US Marine Liability Challenges / Opportunities

- Primary and excess
- US legal system (Deep Pocket impact)
- Premises / operations / products / completed operations
- Claims inflation (medical expenses)
- Contractual risk transfer (who are you insuring)
- Auto
- Punitive damages
- Opioid crisis
- Policy forms / wordings



Yacht and Recreational Marine Challenges / Opportunities

- NAT CAT
- Industry continues recovery from 2008 downturn (Great Recession / Financial Crisis)
- Products liability
- Luxury yachts - Increased values, P&I limits and sophistication
- Marinas / docks - Valuation of property / docks
- State filing requirements for smaller yachts / boats / PWC
- High commissions
- Yacht / recreational marine underwriters competing against personal lines underwriters
- Credit scoring, MVR's, etc.



US Marine Insurance Market Competitive Advantages for Underwriters

- Marine specialist expertise (underwriting talent) and relationships with a proven track record (supported by developed results).
- Risk appetite, capacity / line size.
- Distribution / agency channels.
- Cross-sell (property, construction, energy, transportation, etc.).
- Whole account solution (marine, property, casualty, auto, WC, umbrella, etc.).
- Global capabilities (ability to offer a globally compliant solution).
- Ability to technically price business, manage portfolio throughout cycle, and track / monitor results.
- Value proposition (claims, risk engineering, subrogation / recoveries, account servicing, automation, etc.).
- Expense structure.
- Ease of doing business.
- Commitment to line of business / strong brand / financial security.



Keys to Outperforming the Market

- Execute of strategy built around strengths and distinctive competencies. Focused execution is key.
- Portfolio management. Retain your profitable business while driving rate and underwriting improvements on your unprofitable business.
- Utilize available tools and resources to better manage business. Including CAT modeling, technical pricing, internal reporting / monitoring of results, 3rd party data, analytics, etc.
- Minimize claims leakage
- Improve salvage and subrogation / recoveries
- Risk engineering
- Leverage learnings and capabilities from non-marine counterparts including property, energy, construction, transportation, boiler & machinery, etc.



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 of Information on NA Marine Insurance Market

- American Institute of Marine Underwriters (AIMU) www.aimu.org
- Canadian Board of Marine Underwriters (CBMU) www.cbmu.com
- Inland Marine Underwriters Association (IMUA) www.imua.org
- Insurance Service Offices (ISO) www.verisk.com
- American Association of Insurance Services (AAIS) www.aaisonline.com
- Conning Insurance Research www.conning.com





15 - 18 SEPTEMBER

IUMI  

TORONTO  2019

www.iumi2019.com





Thank you for your attention!

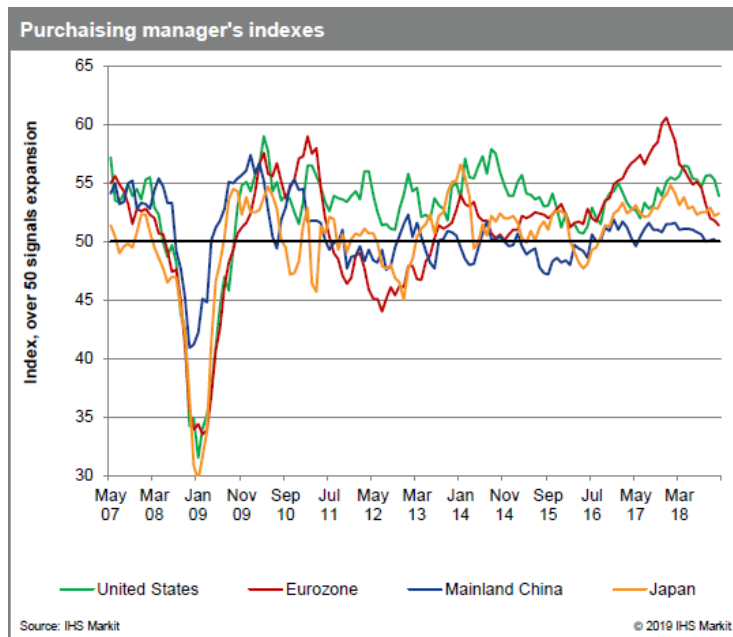
Sean M. Dalton, CPCU, AMIM
sdalton@munichreamerica.com
[@SeanDalton14](https://twitter.com/SeanDalton14)



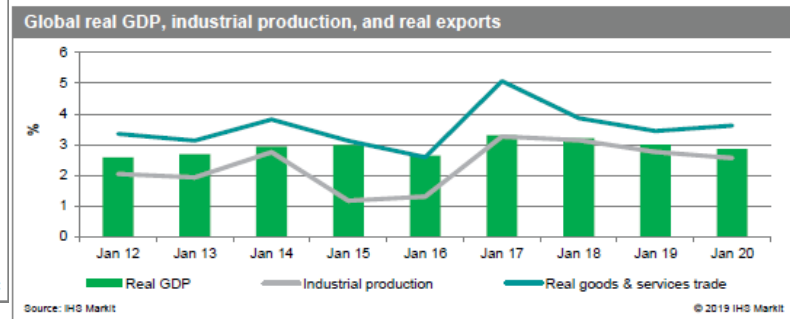
Appendix



The period of above-trend economic growth is ending



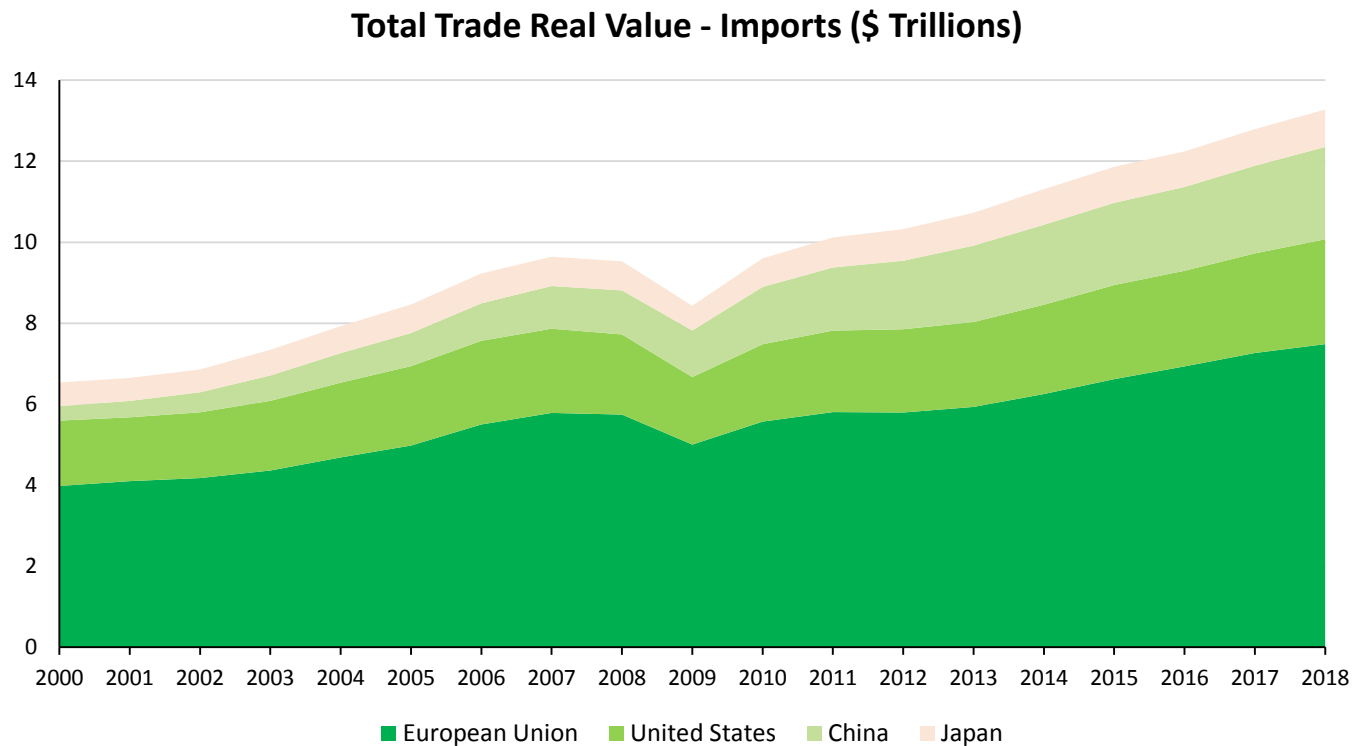
- Financial conditions are tightening and volatility is increasing. The combined effects of policy uncertainty and the surge in financial volatility are hurting business sentiment and investment.
- In the United States, fiscal stimulus will continue to fuel growth in 2019, but inflationary pressures and policy tightening will restrain growth in 2020–21.
- Europe's growth will be restrained by political uncertainties and weakening global trade dynamics.
- China's growth will be slowed by US tariffs, deleveraging, and excess capacity. Government stimulus will provide some offsetting support. Emerging markets that depend heavily on external finance, including Turkey, Argentina, and South Africa, are vulnerable.



Source: IHS – Shipping and shipbuilding 2019 outlook



Total trade real value – imports (\$ trillions)

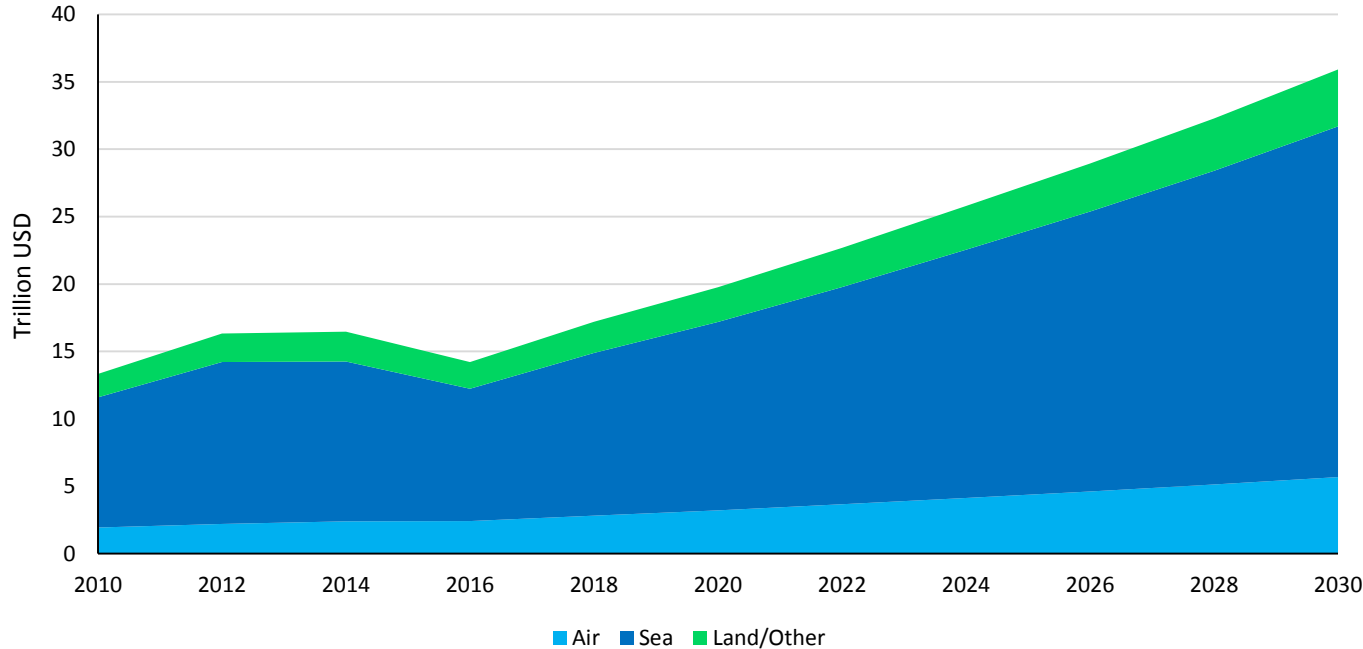


Source: IHS Markit



Global Merchandise Trade – 71% Seaborne, 16% Airborne, 13% by land (2018)

Global Trade by Mode of Transport

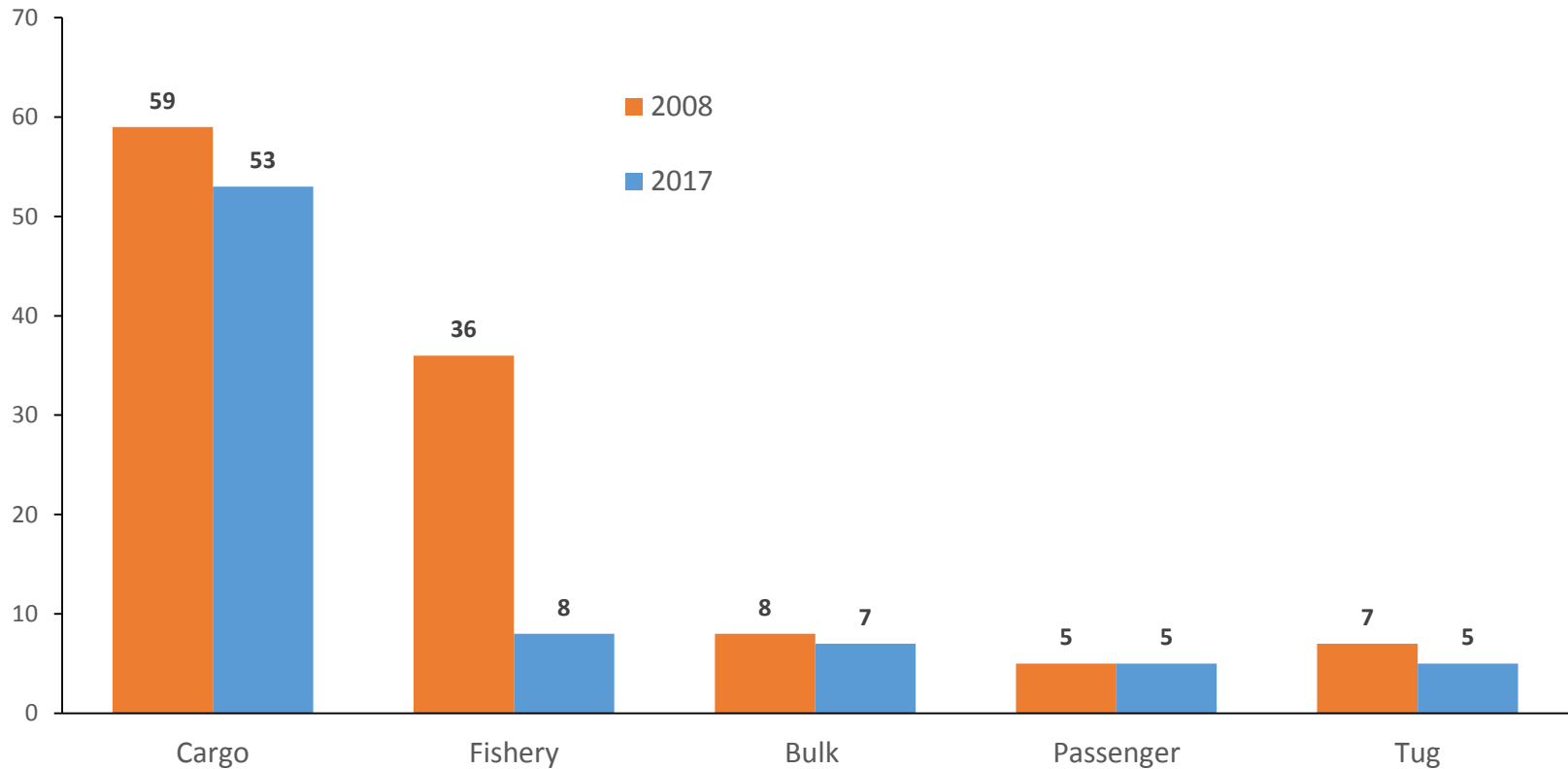


Source: IHS Markit



Total losses by type of vessel 2008 vs. 2017

(Vessels Lost)



While Exposures Grow, the Number of Vessels Lost Has Declined.



US Marine Exposure Base

- Real gross domestic product in US increased at an annual rate of 3.2 percent in the first quarter of 2019, following the annualized 2.2 percent increase in the fourth quarter of 2018 (bea.gov). Personal consumption expenditures (0.82 percentage points), exports (0.45 percentage points), and private inventory investment (0.65 percentage points) positively contributed to the Q1 2019 real GDP. Notably, imports in 2018 decreased to 0.58 percentage points in Q1 of 2019 (bea.gov). Imports from February 2019 to March 2019 increased \$2.8 billion to \$262.0 billion, while exports in the same timeframe increased \$2.1 billion to \$212.0 billion (census.gov). Since March 2018, average exports increased by \$4.7 billion while average imports increased by \$2.7 billion. Industrial supplies/materials exports (natural gas, fuel oil) increased \$1.7 billion in March 2019, versus consumer goods imports (cell phones) which decreased by \$0.7 billion. The decrease in tech imports is connected with U.S. tariff's on Chinese electronics in March 2019 (NY Times). Concern over Tariffs under Trump Administration and resulting "Trade Wars" impacting trade volumes, routes, and seasonal inventory changes.
- US Shipbuilding / Ship Repair Industry includes 124 shipyards across 26 states that are classified as active shipbuilders. In addition, there are more than 200 shipyards engaged in ship repairs. The industry's revenue is expected to reach \$22.09 billion in 2019 (Brandon Gaille). Six market segments in the domestic trade will offer future business opportunities in building, repair, and service. These include naval / military, tug / barge, ferries / small passenger, coastal tankers, offshore supply, and domestic containerships. Military ship construction leads the U.S. shipyard market (60% of industry revenue), versus commercial ship construction (22%) and ship repairs (18%) (dcms.uscg). If the U.S. president decides to increase the Navy to 350 ships, an additional 18,000 and 25,000 shipbuilding jobs would be required (cresreports.org).
- Since the Jones Act requires domestic trading ships to be built in the U.S., the market is reserved for shipyards located in the US. The Organization for Economic Cooperation (OCED) reports that repealing the Jones Acts could cause the U.S. commercial shipbuilding industry to increase total output by 70 % (cato.org). Without foreign competition, U.S. shipbuilding industries will have difficulty with innovation and reducing costs (cato.otg).



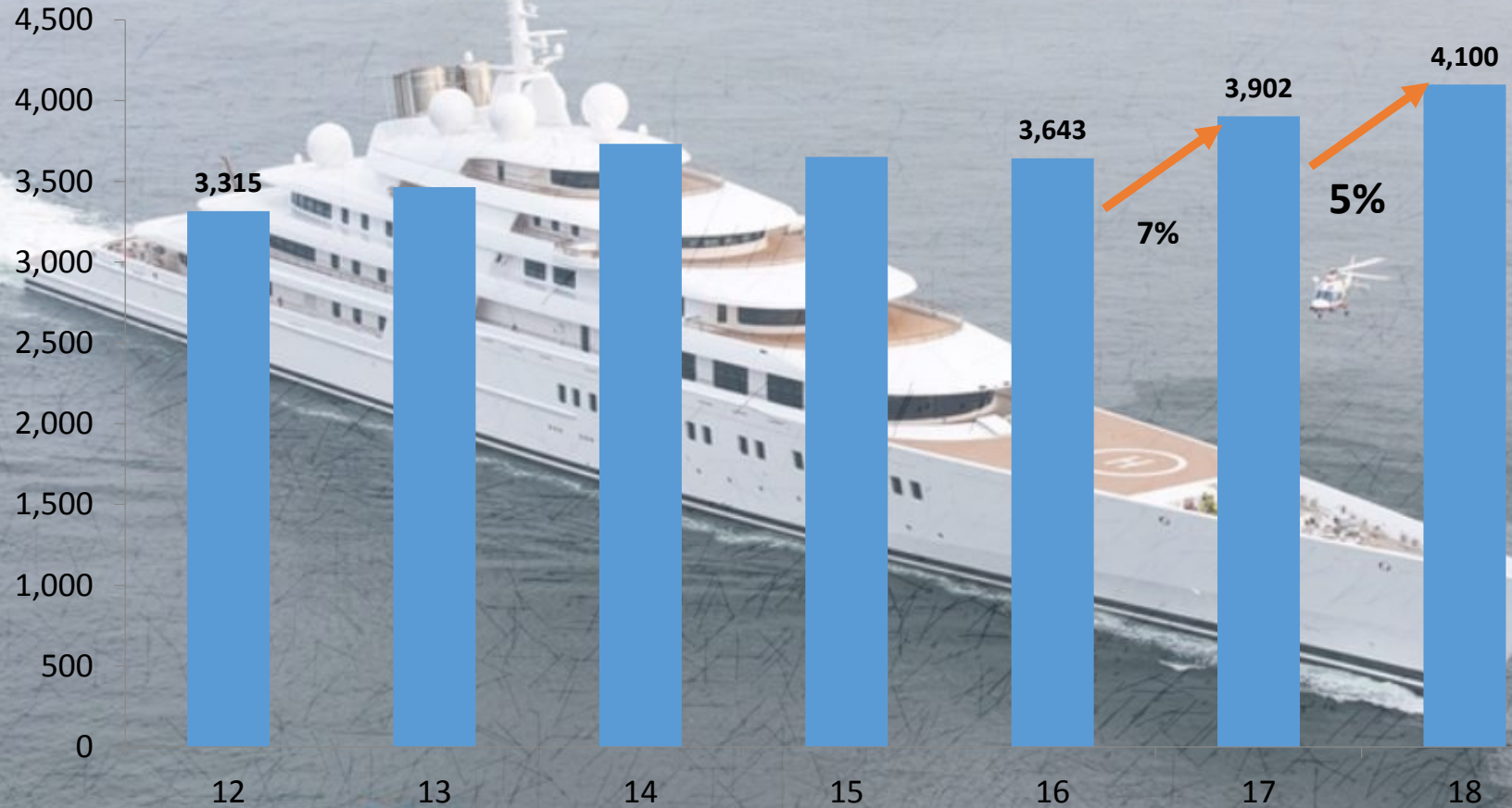
US Marine Exposure Base

- U.S. Gulf of Mexico offshore support vessel (OSV) market is extremely challenges. There has been prolonged low demand due to the downturn in oil prices and limited large projects in the market. In addition, there was an excess of new tonnage brought on to the market when oil prices were high. Fleet utilization rates fell from an average of 50% to 58% from 2010 to 2014, to 34% in 2015. Rates fell further in 2016, to 25%, and then again in 2017, to an average of 21%, having hit a low of 20% in Q1 and Q2 of that year. Fleet Utilization rates improved from 53% in Q1 2018 to 62% in Q2 2018. The Middle East Region in Q2 2018 achieved a fleet utilization rate of 82 %, the highest since 2013 (Business Wire). In late April of this year, including dive support vessels, there were 30 vessels in service, said Greg Rivera, senior data specialist, offshore North America, at IHS Markit. Of those 30, eight were listed as cold stacked. Of the remaining 22, just 18 were actually active. (E&P 21 May 2018)
- The recreational boating industry in 2018 contributes approximately \$170.3 billion to the U.S. economy—an increase in of \$49 billion since 2012 (Market Watch). The upward climb this industry has faced for the past seven years is expected to continue in 2019 (Market Watch). Also, the boating industry’s supply chain offers 691,000 direct and indirect American jobs along with 35,000 marine businesses (Market Watch). Strong consumer spending in recent years caused an increase in boat purchasing. The average American’s purchasing power grew since 2010. Boating products are luxury items—the industry faced challenging times during the Great Recession of 2007 to 2009 (Freedonia).
- Annual U.S. consumer spending on boats, marine products, and services totaled \$41 billion in 2018, a 5 percent increase from 2017. Outlook for 2019 new powerboat sales is expected to increase by 3 to 4 percent (AP NEWS). The recreational boating industry in the U.S. supports 650,000 direct and indirect American jobs and nearly 35,000 small businesses (AP NEWS). There were an estimated 12 million registered/documented boats in the U.S. in 2018 (AP NEWS). Florida (\$23.3 billion) and California (\$13 billion) contribute the most to recreational boating economic activity in the U.S. (AP News). Ninety-five percent of boats on the water (powerboats, personal watercraft, and sailboats) in the U.S. are small in size, measuring less than 26 feet in length—boats that can be trailered by a vehicle to local waterways. (AP News)



Total value of recreational boats sold in the U.S.

(\$ Millions in Sales)



SUPERYACHTS.COM
THE WORLD OF LUXURY YACHTING

*National Marine Manufacturers Association.
SOURCE: Statista, 2018.

2018 US Ocean Marine Results

Company Name	Direct Premiums Written (\$000)	Direct Premiums Earned (\$000)	Direct Losses Paid (\$000)	Direct Losses Incurred (\$000)	Paid Loss Ratio (%)	Incurred Loss Ratio (%)	Adjusted Loss Ratio (%)	Direct Combined Ratio (%)	Market Share (%)
American International Group	444,781	439,539	149,763	148,567	34.07	33.80	33.80	67.65	14.40
Berkshire Hathaway Insurance Group	277,193	265,212	220,367	213,623	83.09	80.55	80.55	98.46	8.98
Travelers Group	241,858	238,486	133,620	91,356	56.03	38.31	38.31	81.30	7.83
Starr International Group	184,688	170,819	180,661	190,906	105.76	111.76	111.76	134.99	5.98
Chubb INA Group	167,856	203,368	109,801	53,902	53.99	26.50	26.50	52.88	5.44
Allianz of America Companies	157,628	154,396	113,436	105,539	73.47	68.36	68.36	100.37	5.10
Tokio Marine US PC Group	127,038	118,353	53,673	49,704	45.35	42.00	42.00	72.62	4.11
Markel Corporation Group	125,005	113,504	61,977	74,236	54.60	65.40	65.40	102.20	4.05
AXA U.S. Group	123,096	127,211	114,732	99,061	90.19	77.87	77.87	118.16	3.99
OneBeacon Insurance Group	122,613	123,328	69,076	80,364	56.01	65.16	65.16	109.56	3.97
Navigators Insurance Group	121,475	126,222	74,828	77,784	59.28	61.62	61.62	96.59	3.93
CNA Insurance Companies	92,172	90,757	55,074	2,522	60.68	2.78	2.78	37.50	2.99
Great American P & C Insurance Grp	82,845	81,764	38,093	36,564	46.59	44.72	44.72	75.29	2.68
American Steamship Owners Mut P & I Asn	82,842	82,983	47,593	38,919	57.35	46.90	46.90	94.90	2.68
Zurich Financial Services NA Group	81,443	79,749	58,360	53,537	73.18	67.13	67.13	86.21	2.64
Liberty Mutual Insurance Companies	73,235	67,486	33,146	39,072	49.12	57.90	57.90	85.20	2.37
Sompo Holdings US Group	67,954	65,521	53,984	74,705	82.39	114.02	114.02	145.05	2.20
Farmers Insurance Group	55,245	52,814	42,821	41,738	81.08	79.03	79.03	121.74	1.79
Hanover Insurance Grp Prop & Cas Cos	47,375	44,744	25,994	21,759	58.09	48.63	48.63	91.75	1.53
Swiss Reinsurance Group	35,214	33,672	14,254	(5,229)	42.33	(15.53)	(15.53)	13.40	1.14
ProSight Specialty Group	32,128	32,968	9,911	25,347	30.06	76.88	76.88	76.59	1.04
Hartford Insurance Group	31,972	31,822	15,053	16,233	47.30	51.01	51.01	92.18	1.04
W. R. Berkley Insurance Group	24,739	24,199	7,909	7,275	32.68	30.06	30.06	62.25	0.80
RLI Group	23,522	21,525	12,394	15,395	57.58	71.52	71.52	114.70	0.76
Seven Seas Insurance Company, Inc	22,321	22,380	4,201	4,036	18.77	18.03	18.03	27.82	0.72
FM Global Group	19,561	18,672	23,571	41,447	126.24	221.97	221.97	257.47	0.63
MS&AD US Insurance Group	19,238	17,400	10,476	8,758	60.21	50.34	50.34	79.02	0.62
Argo Group	19,024	19,565	8,382	9,256	42.84	47.31	47.31	95.84	0.62
Enstar Insurance Group	18,769	17,973	9,378	8,707	52.18	48.45	48.45	99.42	0.61
Aspen US Insurance Group	18,159	16,497	10,937	(99)	66.30	(0.60)	(0.60)	51.31	0.59
Selection Total	2,940,989	2,902,929	1,763,465	1,624,984	59.89	57.73	57.73	91.41	95.23
Total US PC Industry	3,087,831	3,039,574	1,856,748	1,705,385	61.09	56.11	56.13	91.24	100.00

(Source: AM Best)



2018 US Ocean Marine 5 Year Adjusted L/R

Company Name	Adjusted Loss Ratio (%)						
	5-Year Average	3-Year Average	2018	2017	2016	2015	2014
American International Group	37.60	40.02	33.80	47.04	39.91	41.75	25.69
Berkshire Hathaway Insurance Group	76.01	82.74	80.55	96.48	70.42	56.83	69.44
Travelers Group	39.43	43.89	38.31	52.12	41.39	37.50	29.10
Starr International Group	82.62	101.57	111.76	110.18	85.86	48.11	68.32
Chubb INA Group	50.89	44.74	26.50	49.73	56.24	48.95	70.75
Allianz of America Companies	67.26	62.44	68.36	52.95	65.62	86.53	59.84
Tokio Marine US PC Group	42.62	38.83	42.00	41.18	33.92	46.30	48.49
Markel Corporation Group	55.96	57.89	65.40	62.09	43.79	45.96	59.39
AXA U.S. Group	84.40	93.85	77.87	127.81	76.27	83.36	54.84
OneBeacon Insurance Group	50.80	54.12	65.16	52.47	44.23	51.43	40.86
Navigators Insurance Group	46.09	57.49	61.62	59.71	50.69	27.08	25.16
CNA Insurance Companies	14.32	26.21	2.78	54.91	22.76	(39.07)	27.05
Great American P & C Insurance Grp	46.23	49.33	44.72	74.06	29.97	33.38	50.04
American Steamship Owners Mut P & I Assn	49.63	48.23	46.90	35.29	63.11	46.19	56.12
Zurich Financial Services NA Group	63.43	63.72	67.13	46.91	75.56	61.67	64.42
Liberty Mutual Insurance Companies	53.25	55.75	57.90	61.49	48.07	55.77	43.94
Sompo Holdings US Group	73.33	81.23	114.02	78.81	46.80	66.32	44.37
Farmers Insurance Group	79.38	85.90	79.03	98.40	80.38	68.26	65.87
Hanover Insurance Grp Prop & Cas Cos	66.02	75.44	48.63	82.08	97.17	51.36	48.75
Swiss Reinsurance Group	48.13	49.46	(15.53)	135.20	47.79	36.93	50.64
ProSight Specialty Group	48.44	69.77	76.88	40.02	90.74	41.96	15.82
Hartford Insurance Group	37.19	44.04	51.01	58.60	21.10	27.62	24.15
W. R. Berkley Insurance Group	44.89	76.36	30.06	45.43	149.17	(38.66)	41.81
RLI Group	47.82	56.78	71.52	53.88	41.96	15.20	46.16
Seven Seas Insurance Company, Inc	14.18	16.61	18.03	17.32	13.88	10.50	9.22
FM Global Group	118.61	63.41	221.97	(28.69)	13.92	104.74	304.52
MS&AD US Insurance Group	45.19	47.87	50.34	47.73	45.32	54.46	29.67
Argo Group	46.65	46.77	47.31	45.69	47.91	45.00	6.70
Enstar Insurance Group	71.53	66.24	48.45	89.93	59.06	171.40	47.08
Aspen US Insurance Group	84.35	90.18	(0.60)	239.88	58.72	80.32	72.47
Fairfax Financial (USA) Group	71.17	89.77	78.54	89.18	94.92	63.15	43.94
AXIS US Operations	24.04	37.73	44.96	36.51	31.67	(0.45)	9.05
Everest Re U.S. Group	53.48	53.48	53.49	50.00	0.00	0.00	0.00
Munich-American Holding Corp Companies	61.37	68.91	76.25	78.38	52.61	44.54	59.71
Nationwide Group	77.55	84.56	81.61	82.91	89.98	76.00	40.87
Samsung F & M Insurance Co, Ltd USB	26.65	42.00	58.36	40.43	27.68	30.55	(5.40)
PURE Group of Insurance Companies	41.50	40.55	48.77	35.59	26.23	56.06	27.79
Beazley Insurance Company, Inc.	69.33	70.82	38.79	124.24	60.81	91.85	30.80
Allstate Insurance Group	67.08	86.83	89.59	127.68	42.69	36.45	35.66
USAA Group	30.12	37.85	37.59	47.89	29.10	13.03	27.21
Selection Total	54.61	58.97	56.17	65.34	55.56	48.02	48.28
Total US PC Industry	54.73	59.27	56.13	65.46	56.38	48.21	47.91

(Source: AM Best)



Canadian Marine Exposure Base

- Canadian exports rose 3.2% month-over-month to CAD 49 billion in March 2019 from CAD 47.54 billion in February 2019 (Trading Economics). Exports to the U.S. rose by 1.3%, while exports to countries other than the U.S. rose by 8.8% (Trading Economics). Imports increased 2.5 % from March 2019 to February 2019 following decreases in imports from January 2019 to February 2019 (Monthly Trade Report). Year over year total imports rose by 4.6% (Monthly Trade Report).
- Canadian Shipbuilding / Ship Repair Industry has rapidly expanded over the past five years. Industry players build, modify, convert and repair ships, including warships, icebreakers, ferries and offshore platforms. In an effort to rebuild its navy and coast guard, the federal government launched the \$38.0 billion National Shipbuilding Procurement Strategy (NSPS) in 2010, which effectively solved this problem. As NSPS-related ship construction ramps up, the industry will increase production. In May 2019, Canadian Prime Minister Justin Trudeau plans to invest CAD 15.7 billion to fully renew Coast Guard Fleet (Reuters). A new shipyard in Quebec will create over 2,000 new jobs to help contribute to this renewal project (Reuters). Currently, the entire sector employs more than 8,000 people and will contribute an estimated \$7.7 billion through shipbuilding strategy contracts (Marine Link).
- In Canada in 2017 the recreational boating industry generated \$2.3 billion—large powerboats and sailboats consisted of 40% of total sales. Total boat sales declined by 2.5%, but number of units sold increased 4.7% to 39,000. Engine sales(40,286 engines) were 20% higher in 2017 than they were in 2010 (Canadian Boating Statistics 2017). The average cost of units sold was \$50,000, 6.8% lower from 2016.
- Transport Canada proposed Regulations Respecting Compulsory Insurance for Ships Carrying Passengers require Canadian registered passengers vessels engaged in domestic voyages to maintain liability insurance in an amount of \$ 250,000 multiplied by the passenger capacity of the vessel (Justice Laws Website).



Canada 2018 Ocean Marine GWP

Company	Direct Written Premium	Market Share
RSA Canada Group	58,188	16%
Aviva Canada Group	54,835	15%
Lloyd's Underwriters	43,197	12%
Intact Financial Corporation	40,701	11%
COMP Northbridge Financial Corporation	36,717	10%
Continental Casualty Company	33,853	9%
Allianz Global Risks US Insurance Company	15,568	4%
COMP Co-operators - Group	10,661	3%
COMP Travelers - Group	10,123	3%
Liberty Mutual Insurance Company	9,771	3%
Zurich Insurance Company Ltd.	8,584	2%
Desjardins General Insurance Group Inc.	7,926	2%
Great American Insurance Company	7,636	2%
AIG Insurance Company of Canada	6,669	2%
COMP Chubb Group	6,468	2%
COMP XL - Group	3,837	1%
Starr Insurance & Reinsurance Limited	3,732	1%
COMP FM Global - Group	3,008	1%
Berkley Insurance Company	2,537	1%
Groupe Promutuel	2,139	1%
Total Market	373,716	100%

(Source: MSA Research Inc.)



Canada Ocean Marine Direct Loss Ratios 2014 to 2018

Company	Direct Loss Ratio (%)				
	2018	2017	2016	2015	2014
<i>Top 10 (Average)</i>	63.34	49.66	53.79	53.65	52.02
RSA Canada Group	62.80	63.93	42.75	43.36	44.41
Aviva Canada Group	51.37	63.02	55.46	50.88	48.18
Lloyd's Underwriters	46.68	33.91	40.40	27.61	56.43
Intact Financial Corporation	64.70	26.02	30.56	64.27	32.53
COMP Northbridge Financial Corporation	65.83	74.58	76.62	79.18	69.98
Continental Casualty Company	73.59	42.20	50.69	61.18	46.13
Allianz Global Risks US Insurance Company	76.15		53.14	113.29	24.90
COMP Co-operators - Group	65.97	52.12	52.45	17.36	58.67
COMP Travelers - Group	102.32	38.22	32.18	51.82	48.96
Liberty Mutual Insurance Company	23.99	52.98	103.65	27.51	89.97

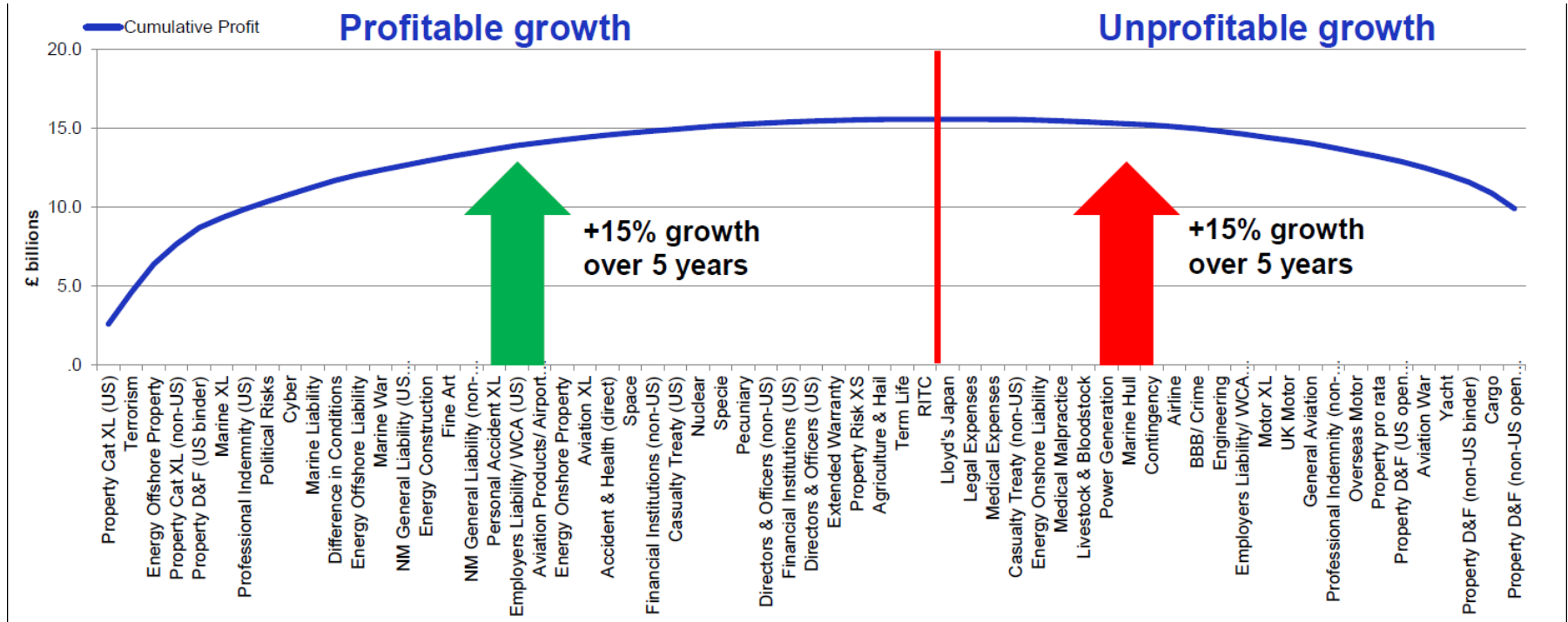
(Source: MSA Research Inc.)



Lloyd's 2018/19 Portfolio Review

- **£6.4bn GWP** in eight worst-performing classes
- Missed plan by **£1.7bn** in 2017
- **83 syndicate COBs** - classes losing money and driving material deviation from plan
- 70% impact from 40% of the premium
- New process
 - Action plans required for all classes
 - Quarterly review of progress and intervention
 - Focus in 2019 planning

Portfolio Management



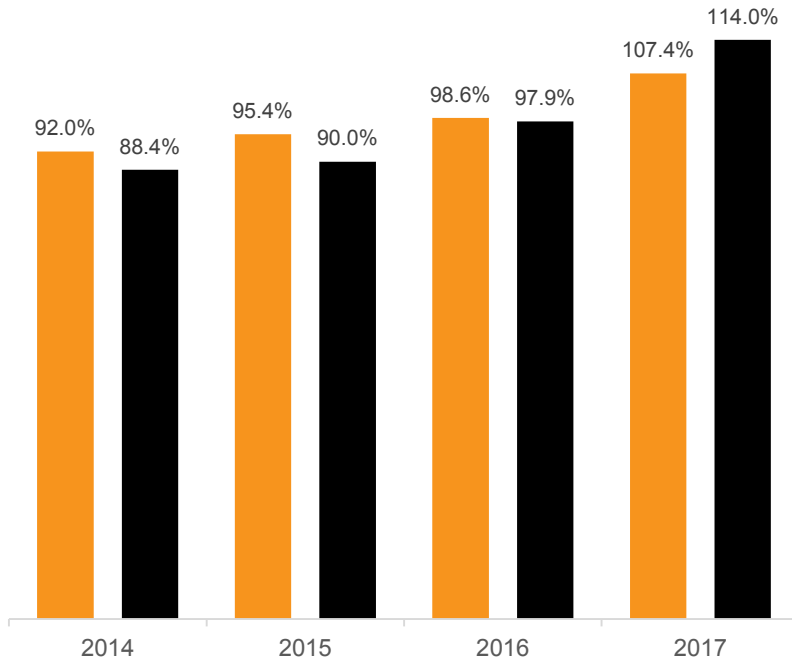
Source: QMB @Q4 2017



Performance

Lloyd's vs. peers – admin and expense costs

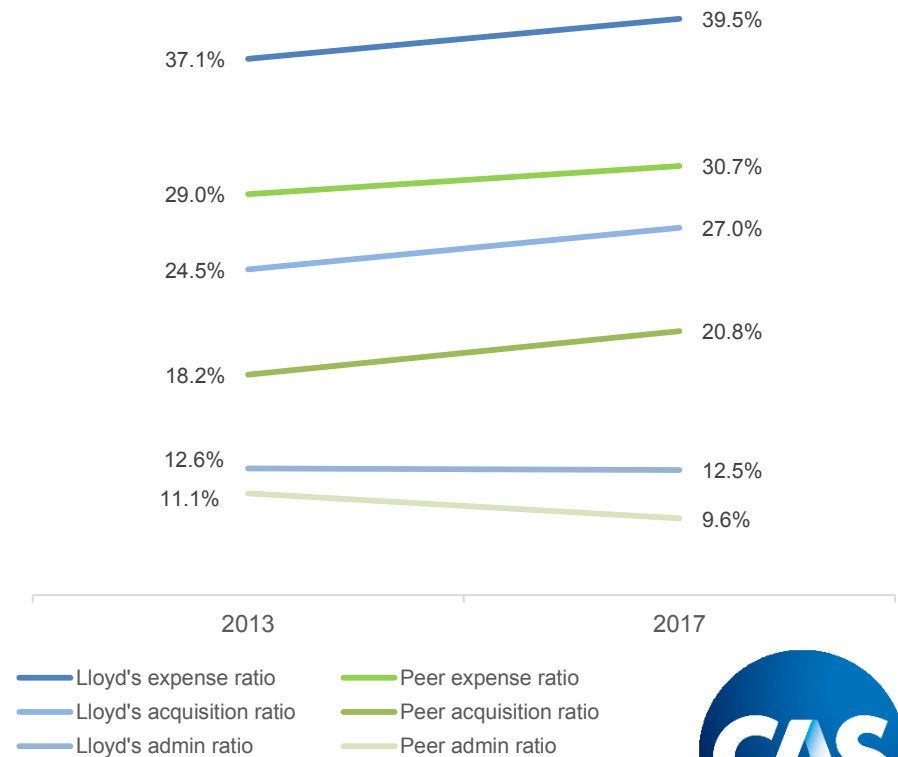
Lloyd's vs competitor group
Combined operating ratio



■ Competitor Group ■ Lloyd's

Source: Competitor financial statements and Lloyd's market results, 31 December 2017. Competitor group: AIG, Allianz, Arch, Chubb, CNA Corp, Everest Re, Hannover Re, Munich Re, Partner Re, SCOR, Swiss Re, XL Catlin and Zurich

Lloyd's overall net expense ratio remains c. 9pts higher than that of its peers



— Lloyd's expense ratio — Peer expense ratio
— Lloyd's acquisition ratio — Peer acquisition ratio
— Lloyd's admin ratio — Peer admin ratio



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

www.casact.org

