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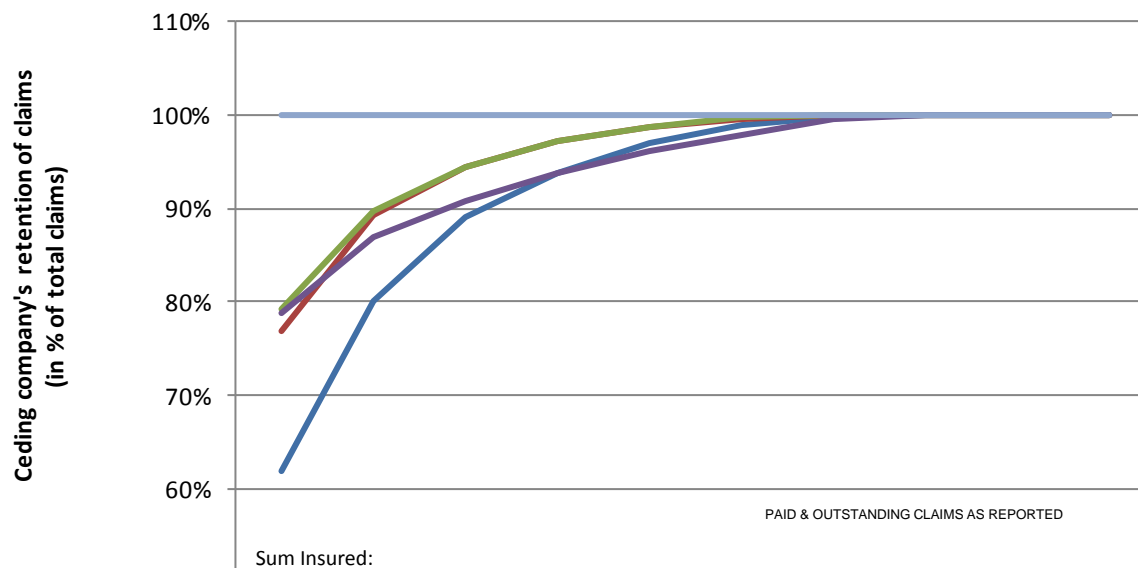
# EXPOSURE CURVES – OCEAN HULL

## VESSELS WITH VALID IMO NUMBER

Nordic Marine Insurance Statistics as of 31 December 2019

# OCEAN HULL – EXPOSURE CURVES

## Exposure curves by Sum Insured Partial Claims only ( $\leq 75\%SI$ )



PA claims in % of all claims\* :

- 0-5 MUSD: 78%
- 5-20 MUSD: 89%
- 20-75 MUSD: 90%
- > 75 MUSD: 100%\*

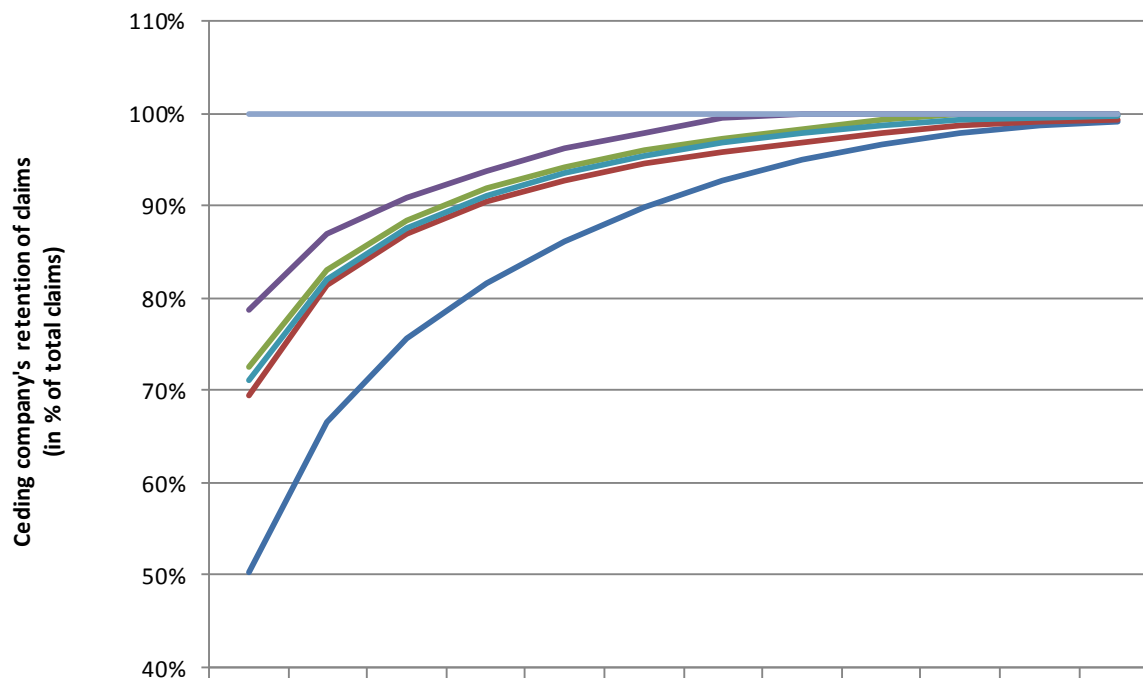
Sum Insured:	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
0-5 Mio USD	0.619	0.800	0.890	0.939	0.970	0.990	0.999	1.000	1.000	1.000
5-20 Mio USD	0.770	0.893	0.944	0.972	0.987	0.996	0.999	1.000	1.000	1.000
20-75 Mio USD	0.792	0.897	0.945	0.972	0.987	0.997	1.000	1.000	1.000	1.000
> 75 Mio USD	0.788	0.869	0.908	0.937	0.962	0.979	0.995	1.000	1.000	1.000
100%	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

The curves are based on 100% shares. For a ceding company writing 10% shares, the exposed values in the given bands are " $\leq 0.5$  MUSD", " $0.5-2$  MUSD", " $2-7.5$  MUSD", " $>7.5$  MUSD".

Ceding company's retention as % of SI

# OCEAN HULL – EXPOSURE CURVES

## Exposure curves by Sum Insured All claims including total losses



The curves are based on 100% shares. For a ceding company writing 10% shares, the exposed values in the given bands are "<0.5 MUSD", "0.5-2 MUSD", "2-7.5 MUSD", ">7.5 MUSD".

	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%	110%	120%
0-5 Mio USD	0.503	0.665	0.756	0.815	0.862	0.898	0.927	0.949	0.966	0.980	0.987	0.991
5-20 Mio USD	0.694	0.814	0.869	0.904	0.927	0.945	0.959	0.969	0.979	0.987	0.991	0.994
20-75 Mio USD	0.726	0.830	0.884	0.919	0.942	0.961	0.974	0.984	0.994	0.999	1.000	1.000
> 75 Mio USD	0.788	0.869	0.908	0.937	0.962	0.979	0.995	1.000	1.000	1.000	1.000	1.000
All	0.711	0.821	0.875	0.911	0.936	0.955	0.969	0.979	0.988	0.994	0.996	0.997
100%	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Ceding company's retention as % of SI

# EXPOSURE CURVES – EXPLANATIONS

- **Exposure Curves**

- Exposure curves are used by reinsurers to price excess of loss reinsurance.
- The curves indicate the ceding company's retained share of PA claims after ceding claims in excess of a given percentage of a vessel's sum insured.
- The curves should be applied on individual vessels or groups of vessels with similar values and written shares.
- The curves are calculated for 100% values. In applications the choice of curve should thus also be based on 100% values.
- The curves are based on USD claims amounts. Due to exchange rate fluctuations, the ratio between claim cost and insured value may deviate in the original currency.
- Compared to previous editions, the share of total losses as % of all claims has reduced in the SI groups 0-5 and 5-10 USD million.

- **Exposure Curves technicalities**

- The curves are based on H&M covers only for vessels with valid IMO-No.
- The curves are based on claims incurred in the **years 2014-2019**  
(16,906 partial claims; 17,042 claims in all; only claims with reported cost > 1 USD included)
- The curves are calculated as follows:
  - x = percentage retained
  - C = Individual claims <sup>1)</sup>
  - V = Vessel value
  - $f(x) = \frac{\sum \min[C, V*x]}{\sum C}$

- <sup>1)</sup> First set of exposure curves: based on partial claims only; Second set of exposure curves: based on all claims, including total losses / claims exceeding the Sum Insured