Marine Insurance – Casualty trends

ASTRID SELTMANN

Vice chair, IUMI Facts & Figures Committee
Analyst/Actuary, The Nordic Association of Marine Insurers (Cefor)
## CONTENTS

- IUMI Facts & Figures Committee
- The Global Marine Insurance Market
- Vessel values & fleet trends with impact on casualty trends
- CASUALTY TRENDS

### Main data sources

<table>
<thead>
<tr>
<th>Category</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premiums</td>
<td>IUMI (Global Marine Insurance Report, September 2018)</td>
</tr>
<tr>
<td>Fleet data</td>
<td>Lloyds List Intelligence, Clarksons Research,</td>
</tr>
<tr>
<td>Vessel values</td>
<td>Nordic Marine Insurance Statistics (NoMIS)</td>
</tr>
<tr>
<td>Casualties</td>
<td>Nordic Marine Insurance Statistics (NoMIS)</td>
</tr>
<tr>
<td></td>
<td>p. 21-24: Lloyds List Intelligence</td>
</tr>
</tbody>
</table>
CONTENTS – CASUALTY TRENDS

SHIPOWNERS’ LIABILITY

- Pool claims International Group of P&I Clubs

HULL CASUALTY TRENDS

- Total and major losses
- Trends by type of casualty
- Trends by age group & vessel type
- Cost driving factors

SPECIAL

- Detentions – Indicator of future casualties
- Fires on container vessels
IUMI FACTS & FIGURES COMMITTEE
IUMI FACTS & FIGURES – STATS & PROJECTS

Spring – newest edition March 2019
• Spring statistics & analysis for Hull, Cargo, Offshore energy

Autumn – next publication at IUMI conference 15-18 Sept. 2019 Toronto
• Report on World Merchant Fleet and World Trade (F&F chair)
• Global Marine Insurance Report & data downloads (Astrid Seltmann)
• Fact Sheets Hull, Energy, Cargo
• Cost inflation indices for Hull and Cargo business
• Update on major claims database project (pilot run 2018, new data collection 2019 from 7 (cargo: 9) associations)
• New 2018: IUMI Stats Report – Market analysis based on conference publications

Other projects
• Analyse new demands (fishing vessels, yachts, carriers & marine liability, …)
• Cooperation with other maritime forums such as IUMI @ IMO
THE GLOBAL MARINE INSURANCE MARKET
MARINE PREMIUM 2017
BY LINE OF BUSINESS

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

NB: Exchange rate effects!

Source: IUMI Global Marine Insurance Report 2018
MARINE PREMIUM 2017
BY REGION

Source: IUMI Global Marine Insurance Report 2018
GROSS CALLS (PREMIUM) 2017 – OPERATIONAL LOCATION

Calls 2017:
UK: 1.92
Nordic: 0.92
Japan: 0.20
US: 0.07
Total: 3.11 (USD billion)

Source: IUMI Global Marine Insurance Report 2018
VESSEL VALUES & WORLD FLEET

Foto: Astrid Seltmann
INDEX OF AV. VESSEL VALUES, GT & AGE
2005 = 100% (SAME VESSELS IN SELECTION)

INCREASING GAP BETWEEN VESSEL SIZE & VALUE

Average age of world fleet increasing.

Sources: vessel values: Cefor NoMIS; Age and gross ton: Lloyds List Intelligence World Fleet update
NEWBUILDS WORLD FLEET – LESS & LARGER VESSELS
VESSELS LESS THAN AND ABOVE 5,000 GROSS TON

Less newbuilds => Increasing fleet age.
Newbuilds larger in size.

Source: Lloyds List Intelligence, World Fleet Update, as of January 2019; Graph: Cefor Annual Report 2018
ANNUAL CHANGE IN VESSEL VALUES
COMPARING INS. VALUE OF SAME VESSELS IN TWO CONSECUTIVE YEARS

Strong reduction 2015/16 mainly connected to bulk & supply/offshore market challenges.

Bulk signs of recovery in 2017.

2018: Normalisation (some value reduction due to aging of vessels).

Source: Cefor Annual Report 2018
OFFSHORE VESSEL VALUES & OIL PRICE

Waiting for recovery in offshore market...

Source: Cefor Annual Report 2018

Change in average sum insured (%) • Oil Price, USD (Brent), annual average
TYPES OF (INSURED) CASUALTIES

- Physical damage – vessels, offshore energy units, cargo
- Third party liability
  - To object e.g. collision
  - People (passengers, crew)
  - Environmental damage (e.g. oil spill)
- Loss of income
- Terror etc.
LIABILITY: P&I POOL CLAIMS BY POLICY YEAR

Modest claims impact in recent years, but:
End of 2018 / 1st quarter 2019 number of severe casualties affecting P&I!

P&I is a complex business with high liabilities!

Source: IG P&I Annual Review 2017/18

*Int. Group Excess of Loss Reinsurance
HULL CASUALTY TRENDS – FREQUENCY
TOTAL LOSSES 2000-2018 (LLI)
AS % OF WORLD FLEET, VESSELS > 500 GT

Total losses: Long-term positive trend.

Sources: Losses: Lloyds List Intelligence; Fleet numbers: Clarksons Research
CLAIMS FREQUENCY* (NOMIS): LONG-TERM POSITIVE TRENDS

* = No. of claims divided by no. of insured vessels

Source: Cefor Annual Report 2018
HULL CASUALTY TRENDS – COST
CLAIM COST PER VESSEL AS OF 31 DEC 18
STABILIZING AT LOW LEVEL

INCLUDING/EXCLUDING TOTAL LOSSES

2003-08: Strong increase in repair cost per vessel.

Since 2009: repair cost stable; Volatility by major claims impact.

16-18: little total loss impact

Strong total loss impact

Source: Cefor Annual Report 2018
CLAIM COST PER VESSEL AS OF 31 MAR 19
STRONG TOTAL LOSS IMPACT 1ST QUARTER 2019!
INCLUDING/EXCLUDING TOTAL LOSSES

Source: Cefor NoMIS stats as of 31 March 2019

1st quarter 2019: renewed total loss impact

* 1st quarter figures only
CLAIM COST PER VESSEL AS OF DEC 2018: 3 YEARS WITHOUT CLAIMS > USD 30 MILLION

2004: first claim > USD 50 million

2012/13/15: strong major claims impact

2014-16-18: little major claims impact

Claim bands:
- > 50 MUSD
- 30-50 MUSD
- 10-30 MUSD
- 5-10 MUSD
- 1-5 MUSD
- <= 1 MUSD
- IBNR

Source: Cefor Annual Report 2018
CLAIM COST PER VESSEL AS OF 31 MARCH 19
MAJOR CLAIMS REVIVAL

Source: Cefor NoMIS stats as of 31 March 2019

* 1st quarter figures only
CLAIMS IN EXCESS OF USD 10 MILLION IN % OF TOTAL CLAIMS COST*

* 2019: 1ST QUARTER DATA ONLY

Source: Cefor NoMIS stats as of 31 March 2019

* 1st quarter figures only
HULL CASUALTIES – BY TYPE OF CASUALTY
TOTAL LOSSES 2004 – 2018
by cause, all vessel types, vessels > 500 GT
(Lloyds List Intelligence categories)

Source: LLI, total losses as reported by Lloyds List
NUMBER OF CLAIMS – BY TYPE OF CASUALTY
(CEFOR NOMIS CATEGORIES)

Total number of claims:
2013-2017: 17,208
2018: 3,096
COST OF CLAIMS – BY TYPE OF CASUALTY

Total cost of claims in USD million:
2013-2017: 4,710.9
2018: 734.5
FREQUENCY OF CLAIMS > USD 500,000
BACK TO PRE-BOOM LEVEL

Source: Cefor Annual Report 2018
AVERAGE CLAIM COST AS OF DEC 2018

STRONG VOLATILITY OF FIRE/EXPLOSION COST

USD 1,000

NoMIS
Nordic Marine Insurance Statistics
AVERAGE CLAIM COST AS OF MARCH 2019

1ST QUARTER 2019: NEW STRONG IMPACT ON COST BY SEVERE FIRE/EXPLOSION AND NAVIGATIONAL-RELATED CASUALTIES

* 1st quarter figures only
CLAIMS TRENDS
BY AGE GROUP AND VESSEL TYPE
CLAIMS FREQUENCY – REDUCED ACROSS ALL AGE GROUPS

Source: The 2018 Cefor NoMIS Ocean Hull Report
CLAIM COST PER VESSEL – REDUCED ACROSS ALL AGE GROUPS

Source: The 2018 Cefor NoMIS Ocean Hull Report
CLAIMS FREQUENCY, BY VESSEL TYPE

Source: The 2018 Cefor NoMIS Ocean Hull Report
CLAIM COST PER VESSEL BY VESSEL TYPE

Source: The 2018 Cefor NoMIS Ocean Hull Report
COST DRIVING FACTORS

Cost driving factors inflation index, 2000 = 100%

Sources: Claim indices: Cefor NoMIS data as of 31.12.2018; Exchange rates: Norges Bank, Ship operation costs: Moore Stephen’s, Steel: CRU Steel Price Index
CASUALTY TRENDS – FREQUENCY

• Total loss frequency
  - Long-term positive trend
  - Stabilizing around the probably minimum achievable level.
  - Result of increased focus on safety measures?

• Overall claims frequency
  - Long-term positive trend
  - Low volatility since 2012, stabilizing around 23%.

• Many influencing factors
  - Vessel utilization (type of trade, overcapacity, maintenance, lay-ups)
  - Younger & bigger vessels
  - Change in insurer deductibles (higher deductibles = less claims reported)
  - Exchange rates
    (strong dollar may ‘reduce’ claims cost -> less claims exceed insurer deductibles)
  - …
CASUALTY TRENDS – REPAIR COST

• Down after financial crisis peak

• Stabilization at modest level in recent years.

• Reduced last 3 years over all age groups and nearly all vessel types.

• Various drivers (correlation with certain parameters)
  - Steel price
  - USD exchange rate
    (Strong USD may have kept cost down, as repairs often paid in other currencies).
  - Labour cost
  - Maintenance routines
  - …
MAJOR (= COSTLY) LOSSES

• More expensive single claims – increasing vessel sizes, more complex objects

• Increasing Volatility - strong impact in some years, little in others

• Strong influence on the cost also in years with few major losses – The 1% most expensive claims account for minimum 30% of the claims cost in any year.

• Random occurrence – Difficult to estimate major claims impact for a specific year

• Fires on container vessels are a concern.

• 1st quarter 2019 casualties demonstrate all of the above

Terminology: ‘Serious’ casualties versus ‘major’ losses
IMO, LLI etc. define casualty ‘seriousness’ related to the nature of the event. Insurers are impacted by ‘major’ claims = extraordinary costly casualties. The majority of ‘serious’ casualties are no ‘major’ claims in terms of cost. For details on the comparison, check https://cefor.no/globalassets/documents/statistics/nomis/2017/2017-half-year-claims-trends_250817.pdf
DETENTIONS – INDICATOR OF FUTURE CLAIMS
SCOPE/DESIGN OF DETENTION ANALYSIS

- **‘Vessels with detentions’** defined as:
  Vessels with at least one detention in a 3-year period prior to the underwriting year, i.e. prior to the year of the insurance coverage to which the analyzed claims attach.

- **Scope of analysis / Test groups:**
  - Vessels with detentions against vessels without detentions in same period.
  - All vessels, and vessels < 10,000 gross ton

  (Vessels < 10,000 gross ton are a more homogenous group. Smaller and older vessels are more prone to total losses, thus this group is of special interest when analysing the correlation between total losses and detentions)

- **Casualty trends compared:**
  - Claims frequency
  - Total loss frequency
  - Claim cost per vessel
CLAIMS FREQUENCY – HIGHER FOR ALL VESSELS WITH DETENTIONS

Vessels all sizes

Vessels < 10,000 gross ton

Source: Cefor Annual Report 2018
TOTAL LOSS FREQUENCY – HIGHER FOR VESSELS WITH DETENTIONS EXCEPT YOUNGEST

Vessels all sizes

Vessels < 10,000 gross ton

Source: Cefor Annual Report 2018
CLAIM COST PER VESSEL (USD) – HIGHER FOR VESSELS WITH DETENTIONS EXCEPT YOUNGEST

Source: Cefor Annual Report 2018
DETENTIONS –
INDICATOR OF FUTURE CASUALTIES

• Claims frequency
  - was generally higher for vessels across all age groups.

• Total loss frequency
  - Higher for vessels with detentions except the youngest vessels
  - The gap in the total loss frequency widens with age
  - Strong increase already from 5 years for vessels with detentions. Vessels without detentions only show a substantial increase in the total loss frequency after 15 (20) years.
  - Vessels younger than 5 years become seldom total losses.
  - When checking the reason for detentions (Equasis), these clearly indicated a causal connection with the type of total loss incurred later (i.e. not only an incidental statistical correlation).

• Claim cost
  - Generally higher for vessels with detentions except the youngest.
FIRES ON CONTAINER VESSELS
CONTAINER VESSEL FIRES – NO. OF OCCURRENCES IN NOMIS DATABASE

Increasing Number of fires on large container vessels →

[Bar chart showing increasing number of fires on large container vessels from 2005 to 2019, with separate bars for vessels <= 100,000 gross ton and vessels > 100,000 gross ton.]

NoMIS
Nordic Marine Insurance Statistics
CONTAINER VESSEL FIRES – CLAIMS FREQUENCY

NoMIS
Nordic Marine Insurance Statistics

High 1st quarter 2019
ISSUES TO MONITOR

High-value risks
- Oil price, fuel quality
- Climate change
- Changes in regulation (liabilities)
- Arctic risks
- New technology
- Internet of things/complex technologies
- Navigation

Human factor/Qualification
- Fire on RoRo & Container vessels
- Value accumulation
- Cyber risk
- MSC Safety discussions!
NEW IUMI STATS REPORT 2018 (PUBLIC)

IUMI Statistics: https://iumi.com/statistics
OTHER IUMI REPORTS 2017/18

Conference publications:

Spring statistics on Cargo, Hull, Offshore energy:

and:
- Cargo, Hull and Energy Fact Sheets
- Hull and Cargo inflation indices
- Data downloads

IUMI Statistics: https://iumi.com/statistics
CEFOR PUBLICATIONS 2019
NORDIC MARINE INSURANCE STATISTICS (NOMIS)
Published 11 April 2019

+ half-year trend updates

Cefor NoMIS Statistics at http://cefor.no/Statistics/NOMIS/
THANK YOU.
astrid.seltmann@cefor.no