



## 2023 CEFOR HULL FLEET AND CASUALTY TRENDS

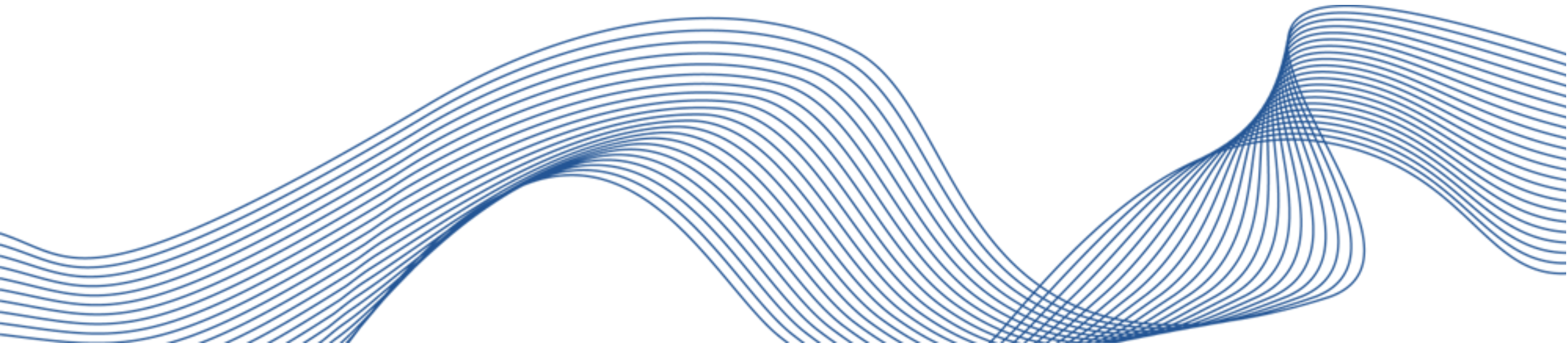
Astrid Seltmann, Analyst/Actuary @ Cefor, The Nordic Association of Marine Insurers

09 April 2024

# CONTENTS

- The context: Global trade & shipping / Industry issues
- Nordic Marine Insurance Statistics (NoMIS): Data & Team
- Fleet & Value trends
- Casualty trends – Frequency & Cost  
partial/major/total losses, by type of casualty and vessel segments
- Inflation
- The 2024 Oracle & Outlook on further analyses

THE CONTEXT:  
GLOBAL TRADE & SHIPPING / INDUSTRY ISSUES



# THE GLOBAL CONTEXT

	Characteristics	Relevance for Marine Insurance
Global Trade	Global economy, trade flows, commodity prices, freight rates, oil price,...	Volume/Value of transported goods (cargo) create demand for shipping.
World Fleet	Shipbuilding, scrapping and vessel routing reacts to global economy.	Size, value, composition of world fleet & Vessel activity patterns.
Crew	International crew, often long onboard.	Qualification & wellbeing of crew crucial for loss prevention.
Weather/ Climate	Frequency & intensity of storms, ice, wave heights, wind speed, Arctic areas, challenging shipping lanes,...	Value accumulation (ports, large vessels) + increasing frequency/intensity of NatCat = Risk of new record losses. Increasing traffic in challenging areas (Arctic).
Legislation	International and national legislation	Can be complicated across countries, may influence claims cost.
Geopolitical risks	Piracy. Sanctions. War.	Risk to vessels and crew. Difficult legal issues. Supply chain disruptions. Crew issues. Inflation. Shipping lanes / rerouting of vessels.
ESG	Emissions, crew health, ocean health,...	Support clients in achieving ESG goals. Risk changes.
Technical	New technology = change in risk	Adjust risk assessment/loss prevention measures.

# A COMPLEX WORLD

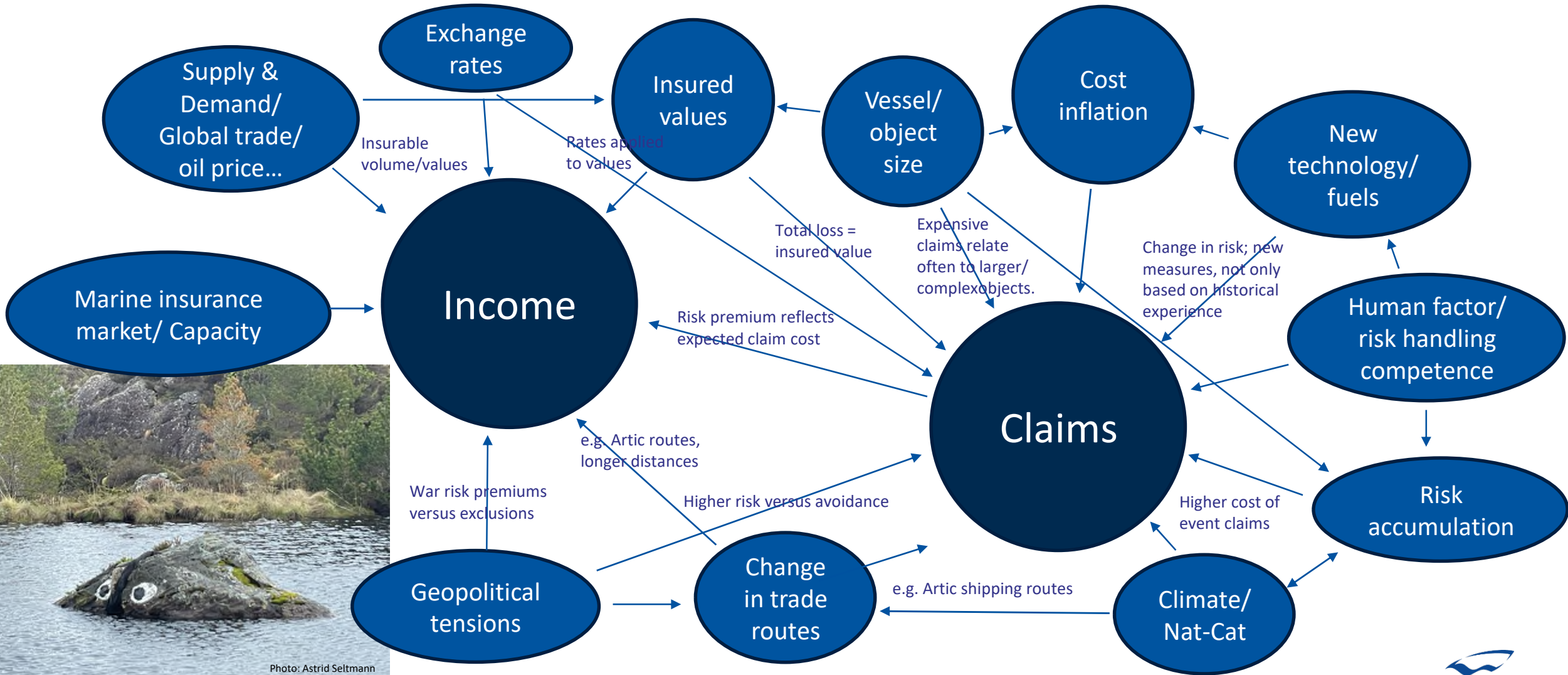
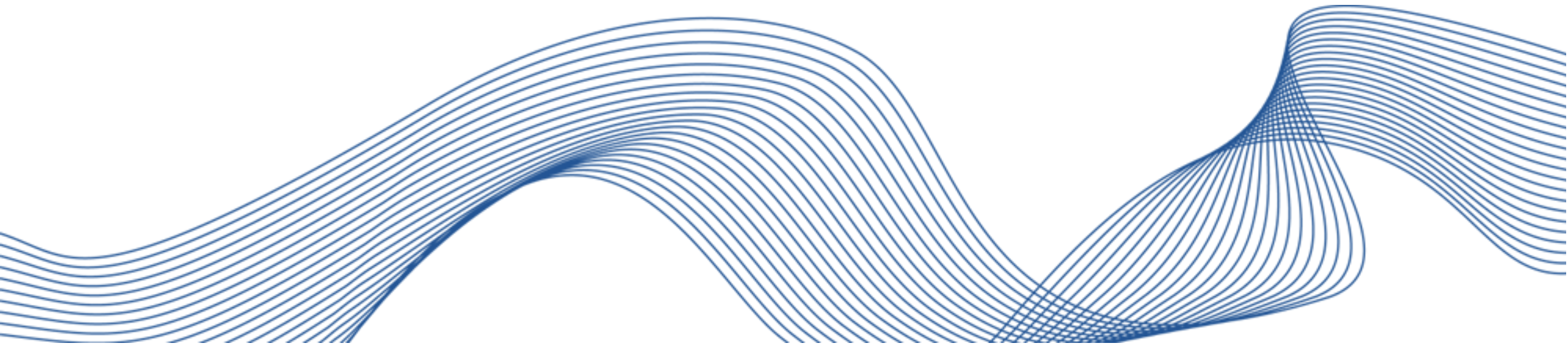


Photo: Astrid Seltmann

**NORDIC MARINE INSURANCE STATISTICS (NOMIS)**  
DATA & TEAM



# NORDIC MARINE INSURANCE STATISTICS – THE DATA



## Data reported into the NoMIS database:

Vessels covered under **Hull & Machinery (H&M)** insurance

- Lead and follower business
- Underwriting years from 1995
- Portfolio and claims data (vessel values, deductibles, paid+outstanding claims development)
- For comparability, hull-related insurance types other than H&M are excluded, such as Loss of Hire, builder's risk, freight interest, fishing (catch&gear).



## Additional data:

World fleet details (subscription data), linked to insurance data via IMO number.

Vessel activity data (distance sailed, average speed)

Exchange rates, oil price, ship operating costs, steel price etc.



## Data in this presentation represents:

**100% of each vessel** (values, claims).

Claims trends by **accident year** (= calendar year in which claim occurred)

46% of world fleet > 10,000 gross tons  
(27% of world fleet > 1,000 gross tons)

Trends as of 31 December 2023.

Most graphs include IBNR estimates (incurred but not reported) for the backlog in claims reporting (dotted lines), claims not yet reported by the end of the year, and future adjustments of outstanding claims reserves.

# STATISTICAL RELEVANCE OF NOMIS DATA – SHARE OF WORLD FLEET \* >1000 GT

Year of build	Gross tonnage		Grand Total
	1000-20000	>20000	
<b>Cefor share of world fleet</b>			
2020-2023	19.1%	35.6%	28.8%
2016-2019	21.0%	48.2%	35.4%
2012-2015	23.6%	48.4%	36.5%
<2012 or (blank)	15.1%	47.8%	23.4%
<b>World fleet count</b>			
2020-2023	2,151	3,159	5,310
2016-2019	2,913	3,669	6,582
2012-2015	4,328	5,069	9,397
<2012 or (blank)	30,229	12,510	42,739
<b>Total Cefor share of world fleet</b>	<b>16.5%</b>	<b>46.4%</b>	<b>26.7%</b>
<b>Total World fleet count</b>	<b>39,621</b>	<b>24,407</b>	<b>64,028</b>

\* Vessels with IMO number, insured underwriting years 2021-2023

# NORDIC MARINE INSURANCE STATISTICS – THE TEAM

The Cefor Statistics Forum dream team 2024:

- Alandia – Jonas Svartström
- Codan – Mikkel Gardner Andersen
- Gjensidige – Lars Fredrik Espeland
- HDI Specialty – Mikael Elhouar
- If – N.N.
- Norwegian Hull Club – Christian Irgens
- S Insurance – Christian Børve Blindheim
- Skuld – Otto Rendedal
- The Swedish Club – Anders Hultman
- The Nordic Association of Marine Insurers (Cefor) – Astrid Seltmann



Combining the intellectual power of marine insurance analysts / actuaries / mathematicians / business intelligence director / insurance risk coordinator / underwriter.

# TYPICAL STATISTICS FORUM MEETING



Bergen

Copenhagen

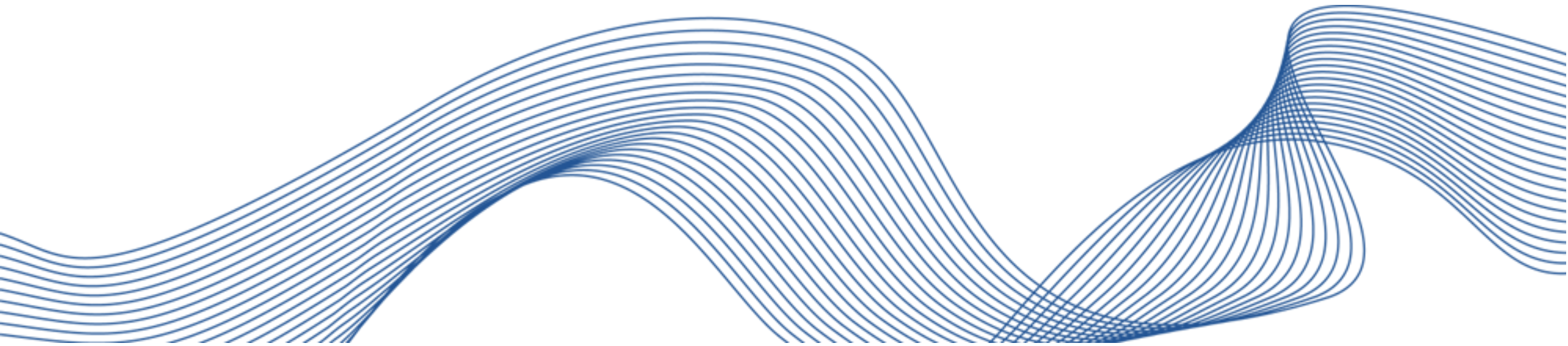
Gothenborg

Oslo

Stockholm

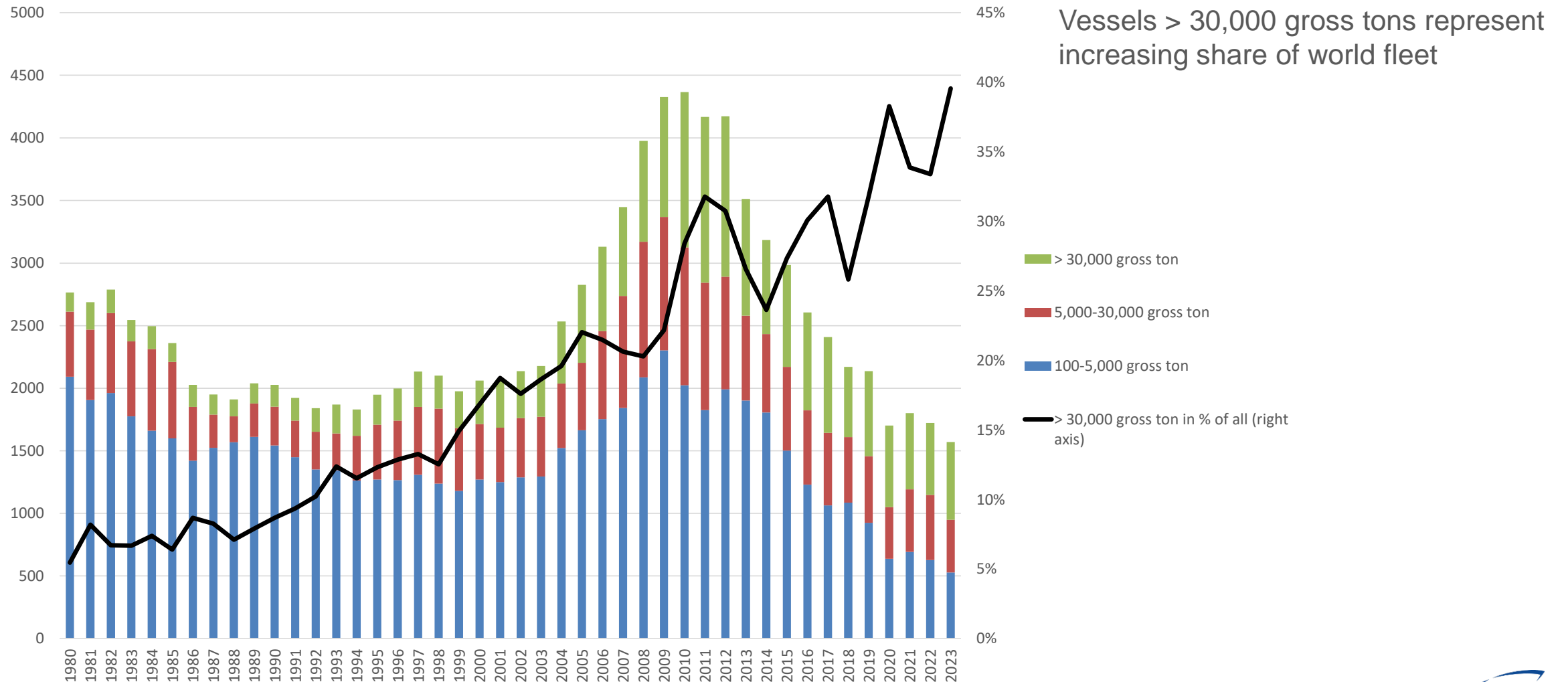
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# FLEET & VALUE TRENDS



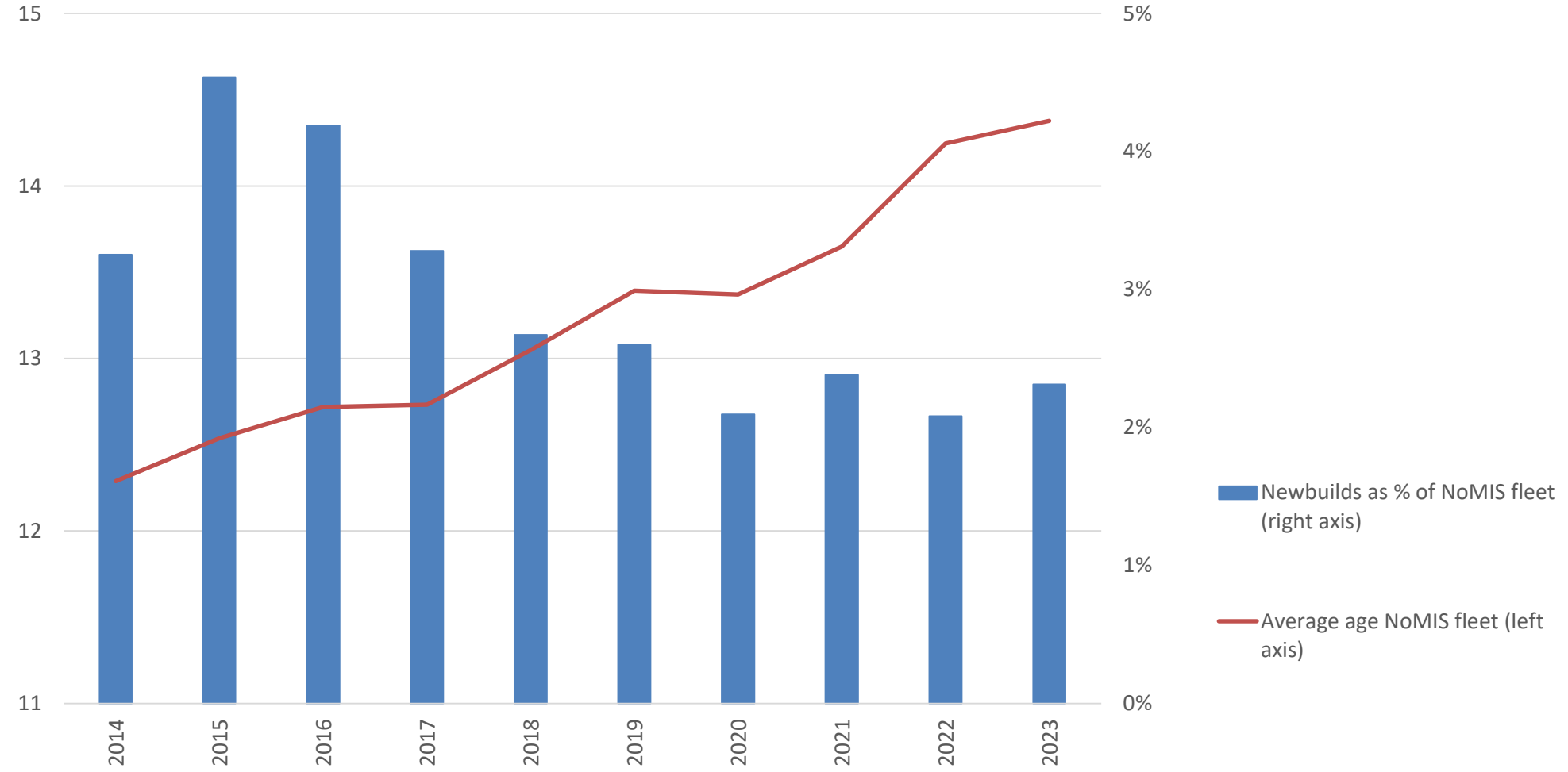
# WORLD FLEET – LESS BUT LARGER NEWBUILDS

NUMBER OF NEWBUILDS PER YEAR BY INTERVALS OF GROSS TON



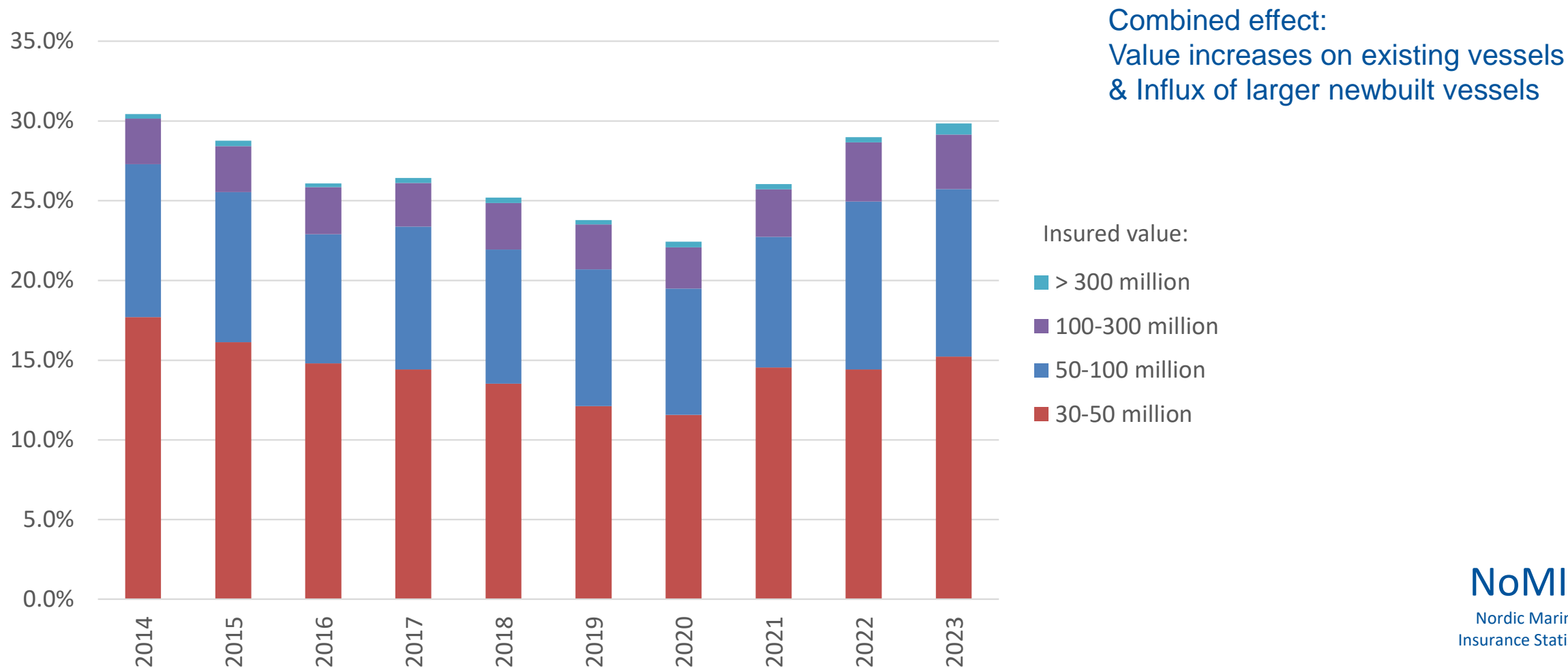
Source: Data: Lloyds List Intelligence, World Fleet Update, as of January 2024 / Graph: Cefor

# NOMIS FLEET – FOLLOWS WORLD FLEET TRENDS: LESS NEWBUILDS & INCREASING AGE



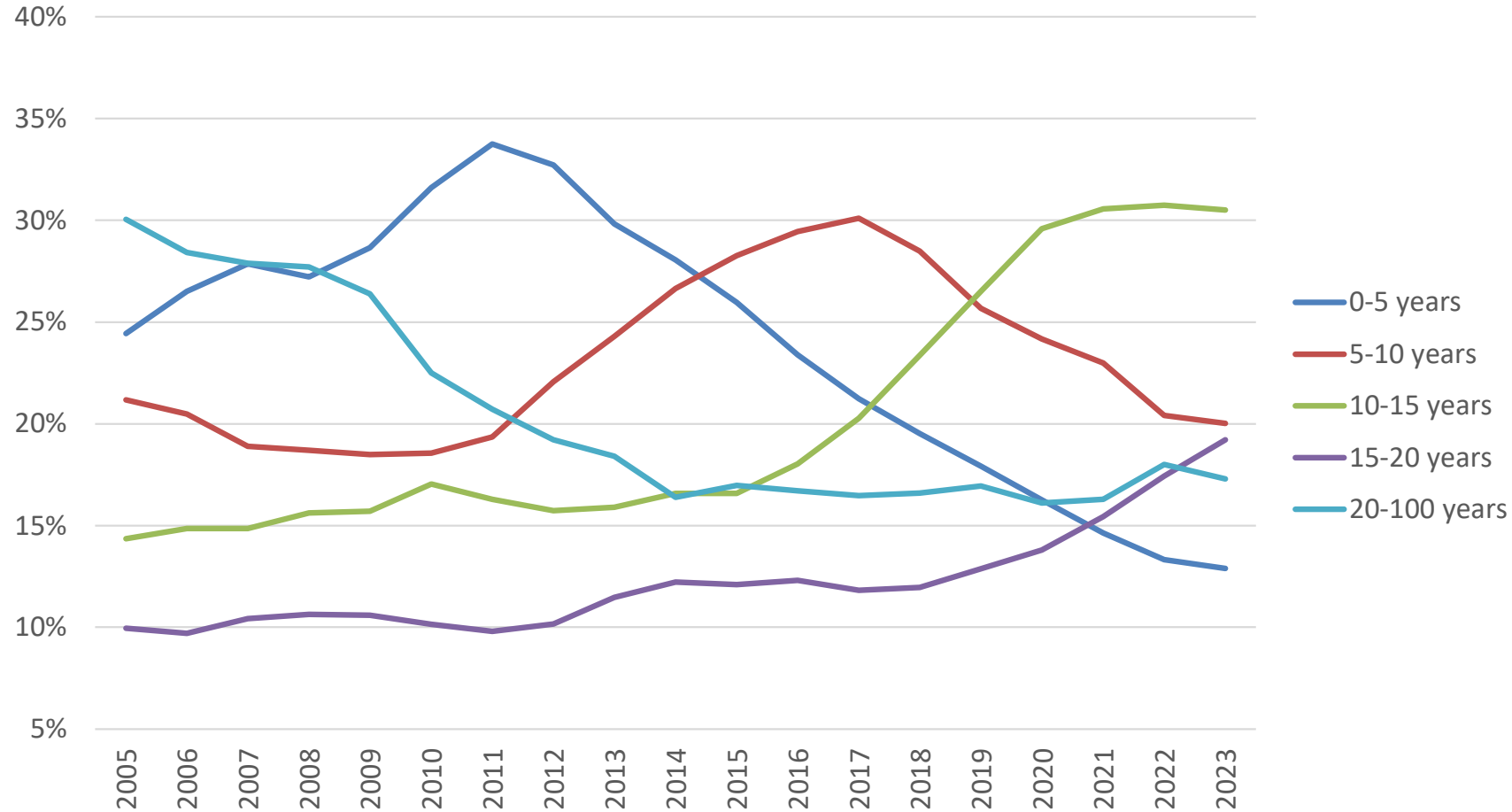
# NEW INCREASE IN SHARE OF HIGH-VALUE VESSELS

BY UNDERWRITING YEAR



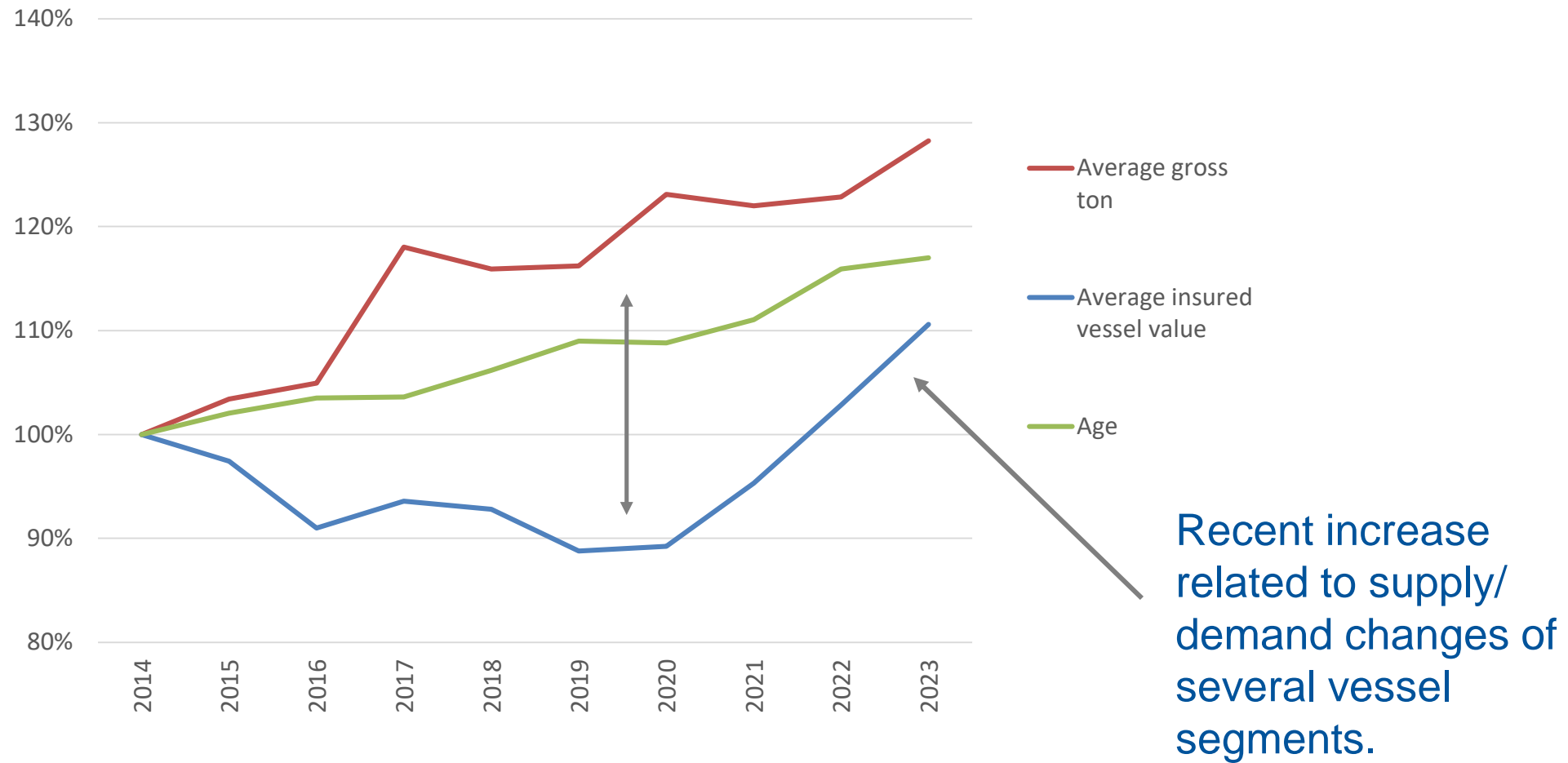
# NOMIS FLEET REFLECTS AGING OF WORLD FLEET

NUMBER OF VESSELS BY AGE GROUP AS % OF TOTAL FLEET



# UNTIL 2019 WIDENING GAP BETWEEN VESSEL SIZE & VALUES VALUE INCREASES AFTER 2020 COMBINATION OF GAP REDUCING AFTER 2020

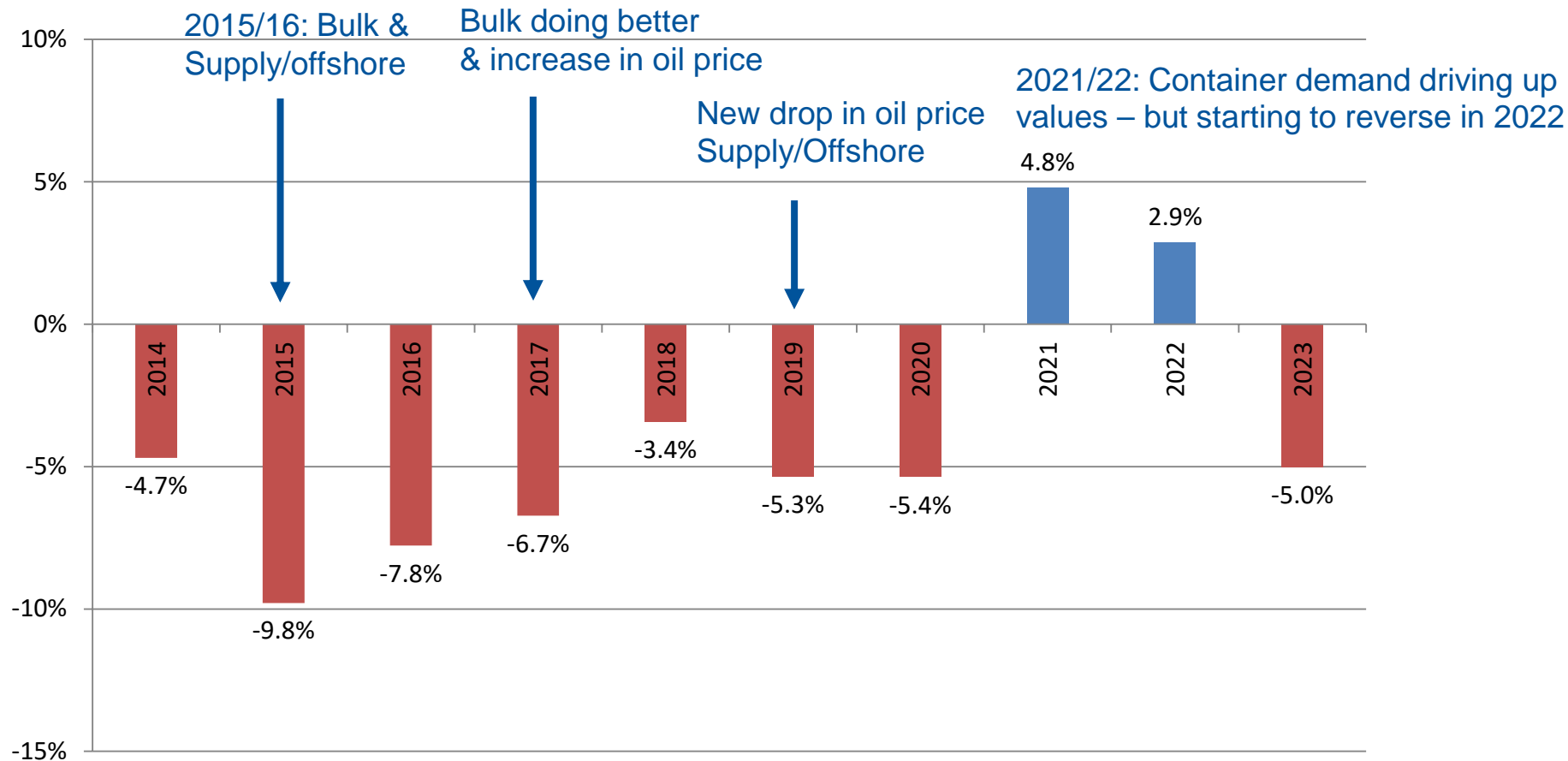
INDEX 2005 = 100%, AVERAGE VESSEL VALUES, GROSS TONS & AGE, ALL SHIPS (RENEWED AND NEW VESSELS)



Recent increase related to supply/demand changes of several vessel segments.

# VESSEL VALUES DOWN 5% ON 2023 RENEWALS AFTER 2 YEARS WITH VALUE INCREASES. MAIN DRIVER CONTAINER.

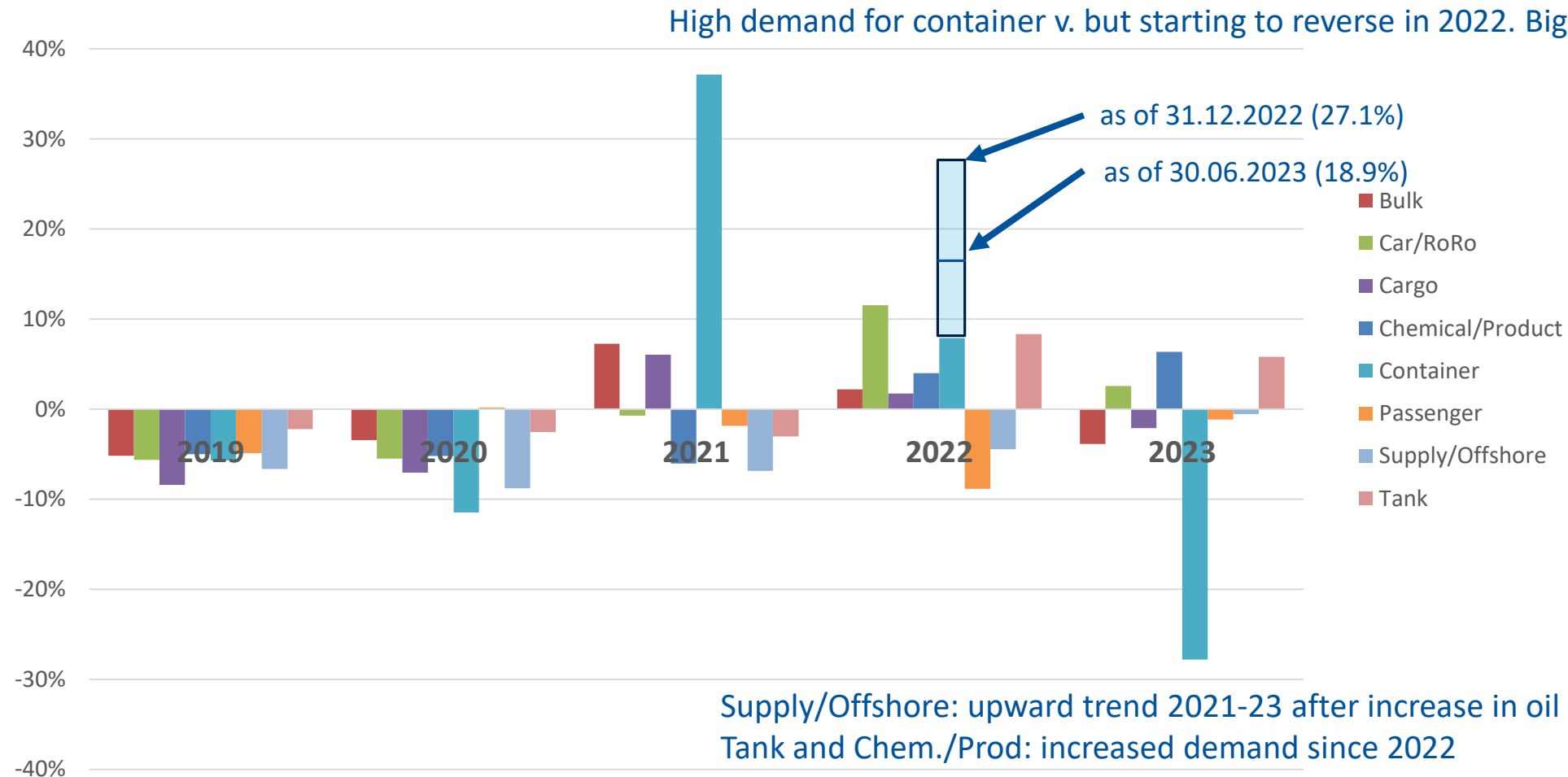
ANNUAL CHANGE IN VESSEL VALUES ON RENEWAL\*



\*comparing insured value of same vessels in two consecutive years

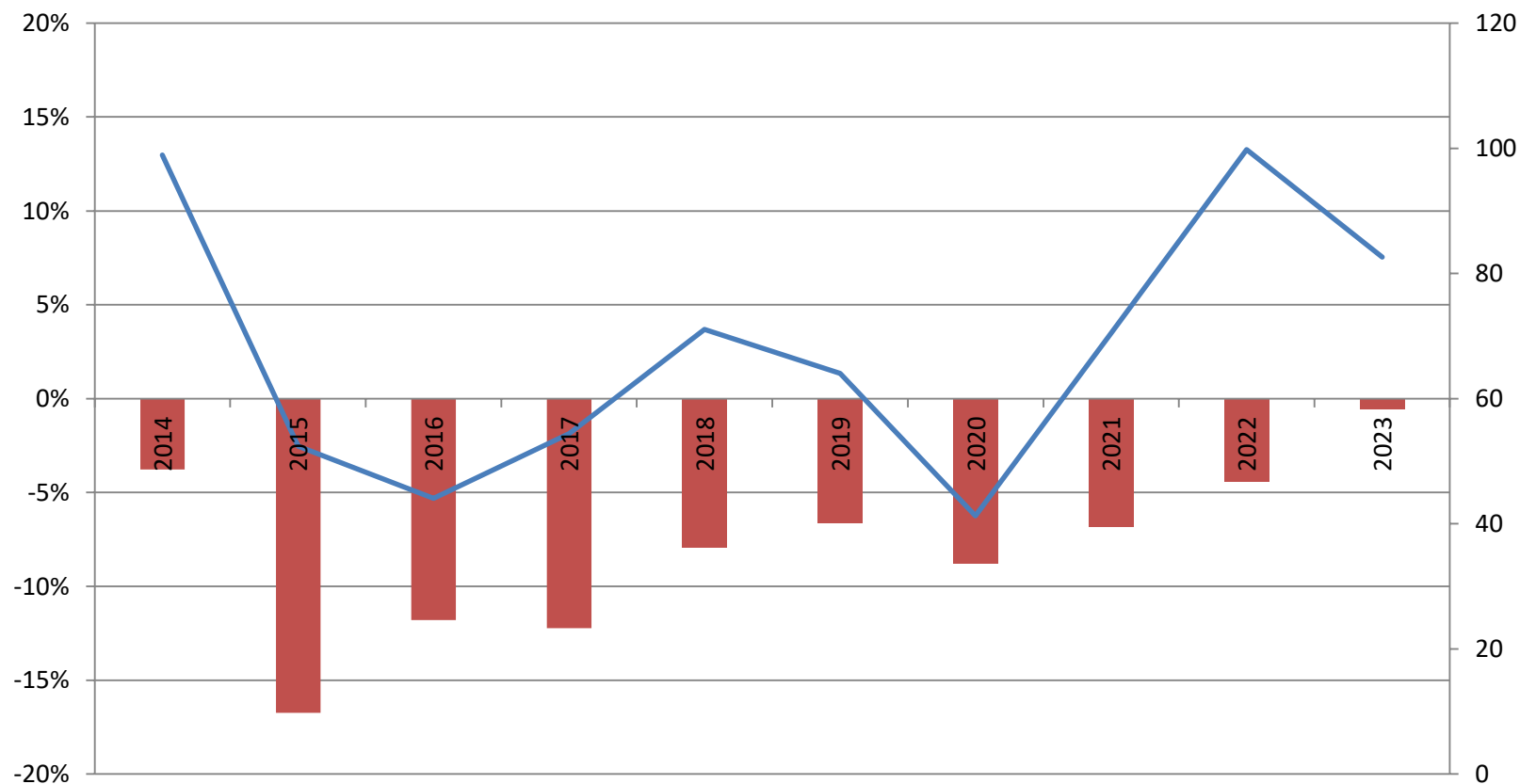
# 2021/22 VALUE INCREASES DRIVEN BY CONTAINER DEMAND MORE DIFFERENTIATED 2022–2023;

ANNUAL CHANGE IN VESSEL VALUES ON RENEWAL, BY VESSEL TYPE



# SUPPLY/OFFSHORE: TIME LAG BETWEEN INCREASE IN OIL PRICE AND RECOVERY OF VESSEL VALUES (DEMAND)

CHANGE IN VESSEL VALUES ON RENEWAL VERSUS OIL PRICE\*



Offshore activity increased in 2022 after increase in oil price.

Supply/offshore vessel values show upward trend with time lag.

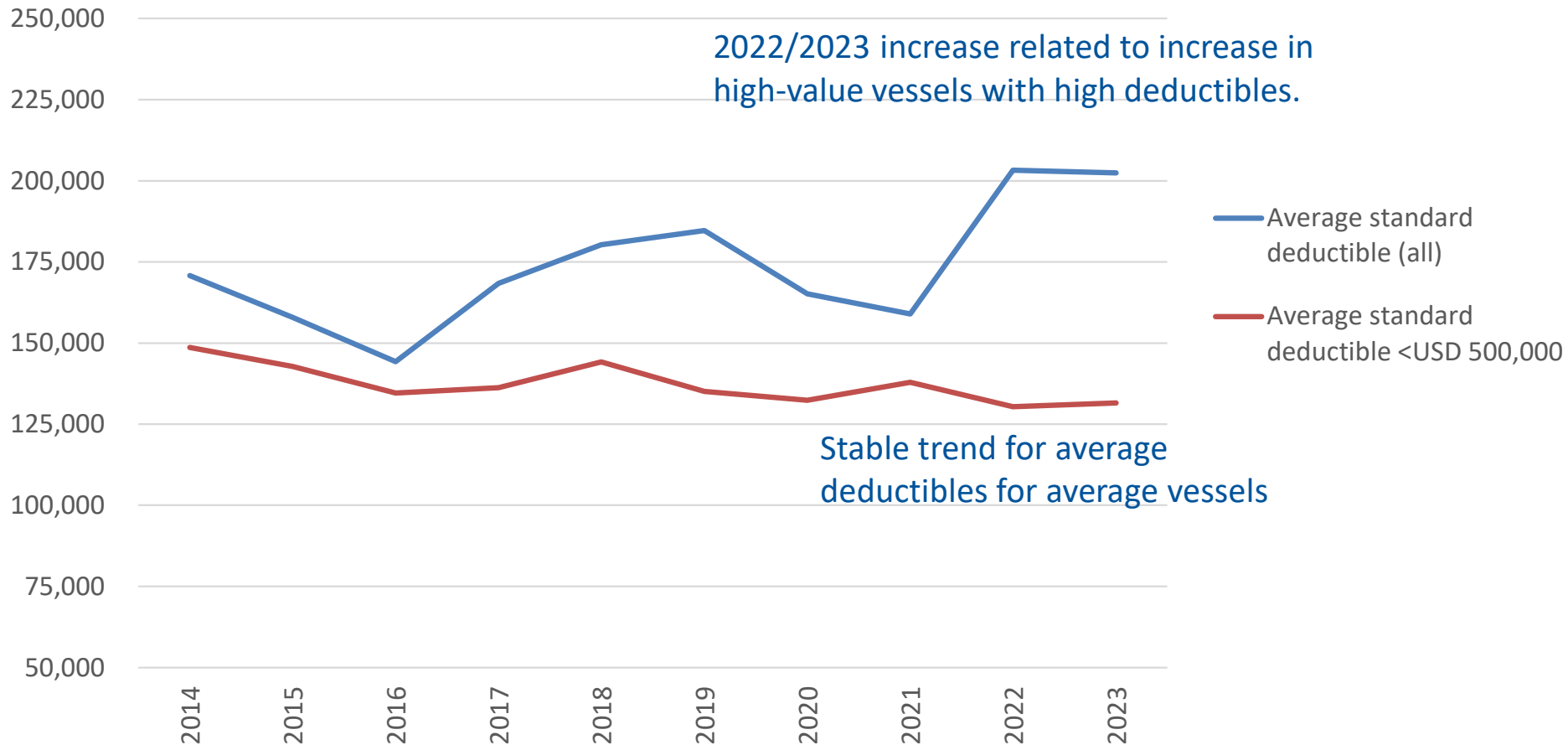
**NoMIS**  
Nordic Marine  
Insurance Statistics



\*Oil price: World Bank - Commodity markets: <https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/CMO-Historical-Data-Monthly.xlsx>

# AVERAGE DEDUCTIBLES: NUMBER & COST OF INSURERS' CLAIMS INFLUENCED BY DEDUCTIBLE LEVELS

AVERAGE BASIC DEDUCTIBLE (USD)



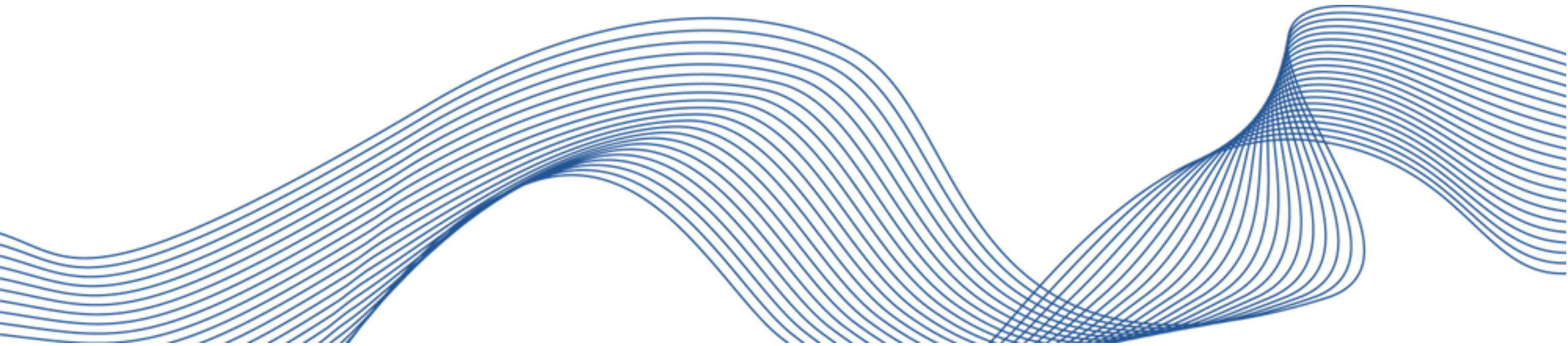
# SUMMARY WORLD FLEET & VESSEL VALUES

- Less newbuilds / average age of world fleet is increasing
- Newbuilds increase in size
- Large increase in vessel values on 2021 and 2022 renewals driven by container demand. Trend reversed during 2022 with big drop second half year 2022 and in 2023.
- Share of high-value vessels in portfolio on the rise again
- Vessel activity: greater deviations from average pattern over last years (changing trade patterns, rerouting of vessels).

How does that impact casualty trends?

- Claims frequency and cost differ by vessel age, type, size and other static vessel features.
- Claims frequency related to vessel behaviour (trade, distance, speed, geographic areas).
- Total loss cost related to vessel values (higher values mean higher maximum possible claim cost; but reduce the probability of a constructive total loss, and vice versa).
- Larger and more complex vessels increase the probability of new record costly claims (also of higher repair cost, not only total losses)
- Larger container and car/RoRo vessels have a higher probability of severe fire damage

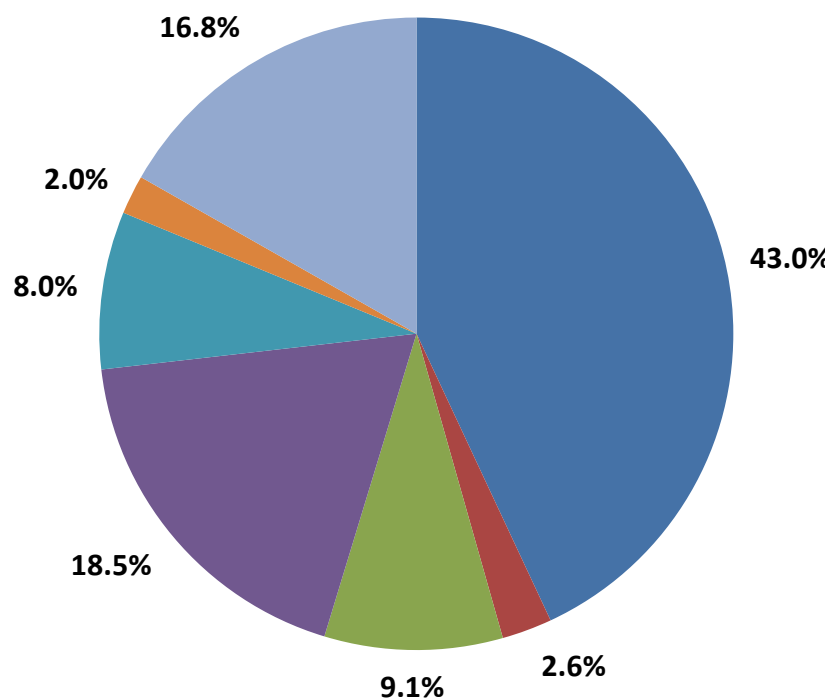
# BREAKDOWN BY TYPE OF CASUALTY



# BREAKDOWN OF CLAIMS (NUMBERS) BY TYPE OF CASUALTY

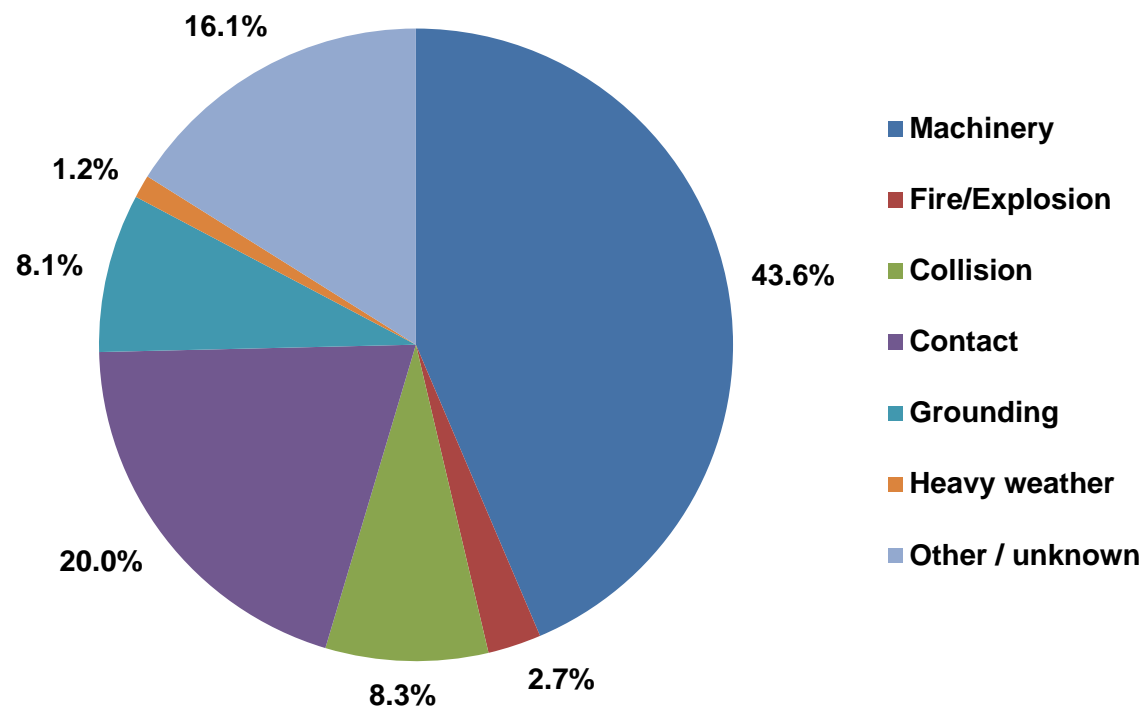
AS REPORTED PER YEAR END 2023, NO IBNR ADDED

### 2018-2022



2018-2022: 15,891

### 2023

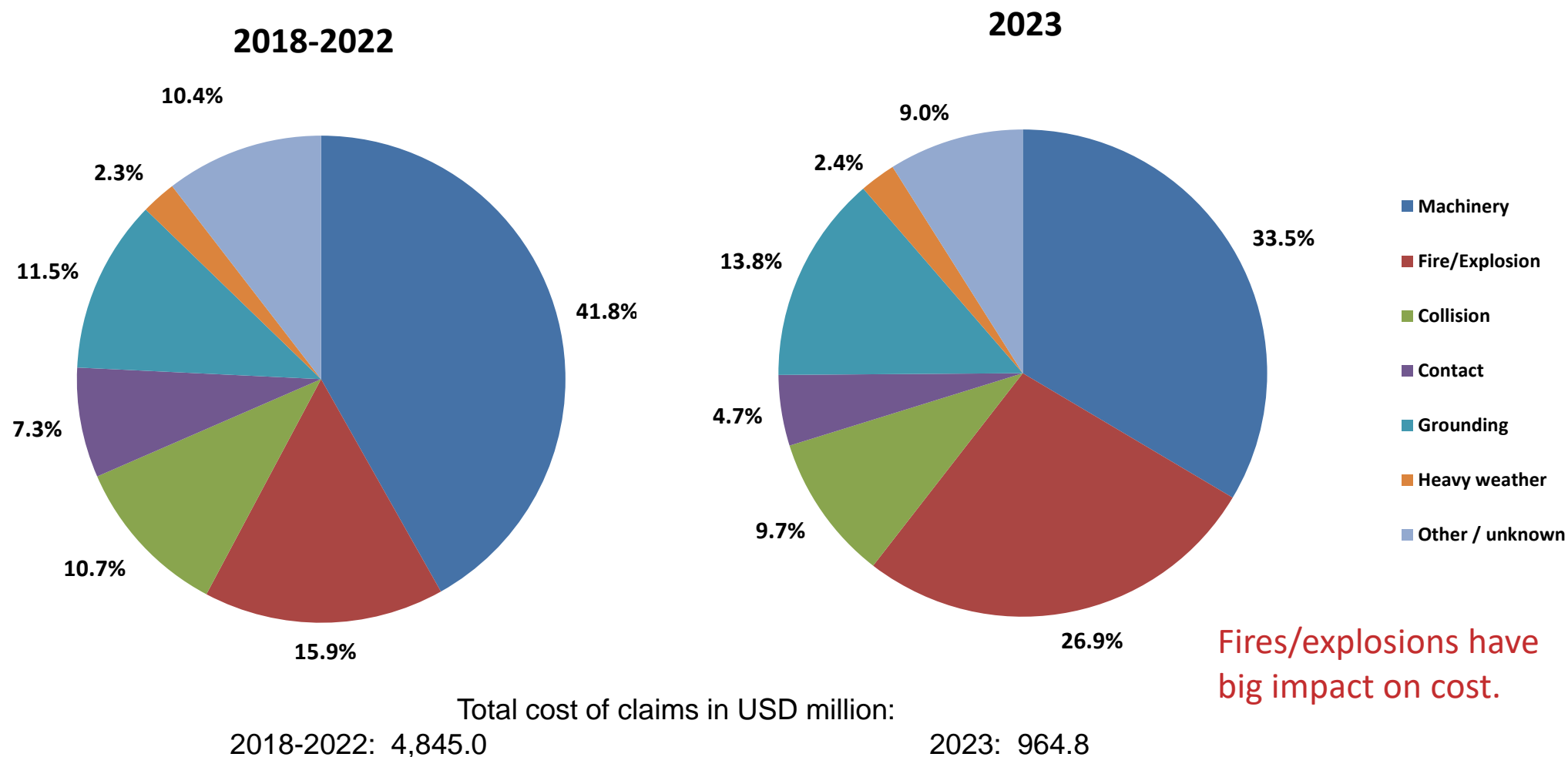


2023: 2,787

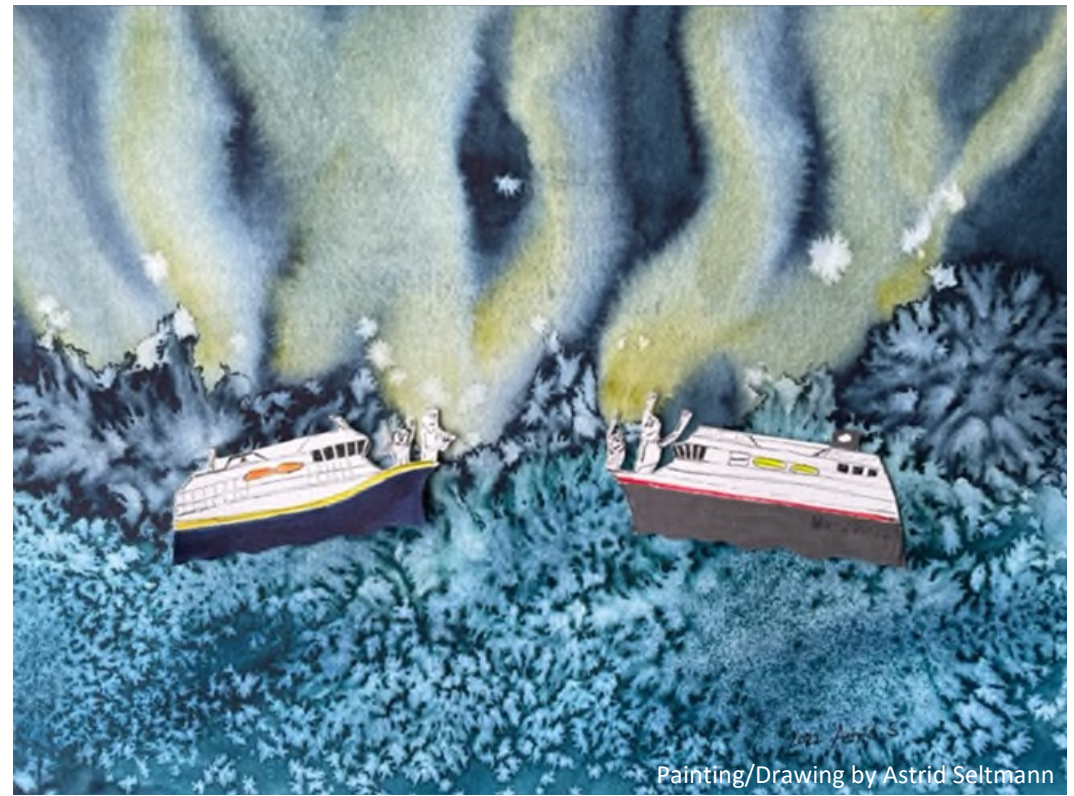
Total number of claims:

# BREAKDOWN OF CLAIMS (COST) BY TYPE OF CASUALTY

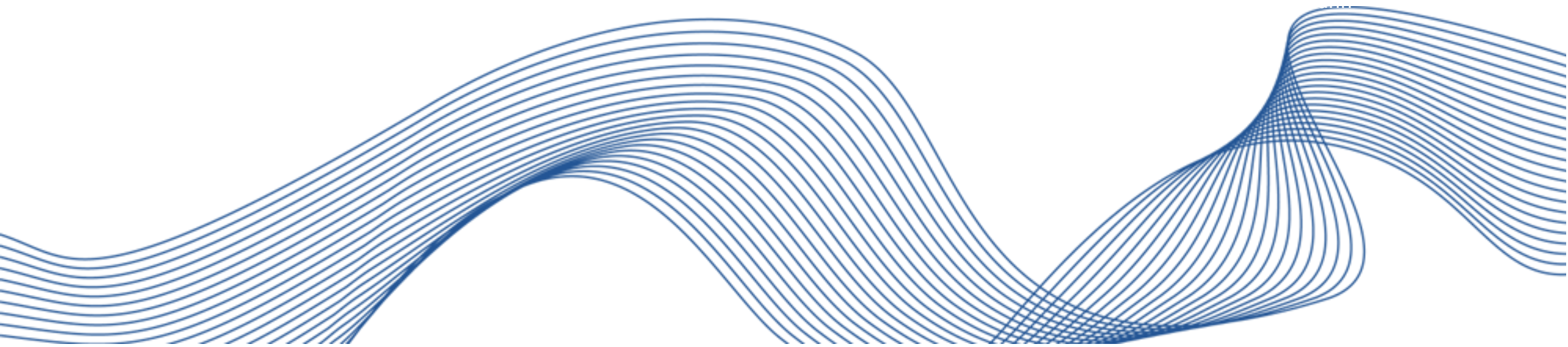
AS REPORTED PER YEAR END 2023, NO IBNR ADDED



# CLAIMS FREQUENCY TRENDS

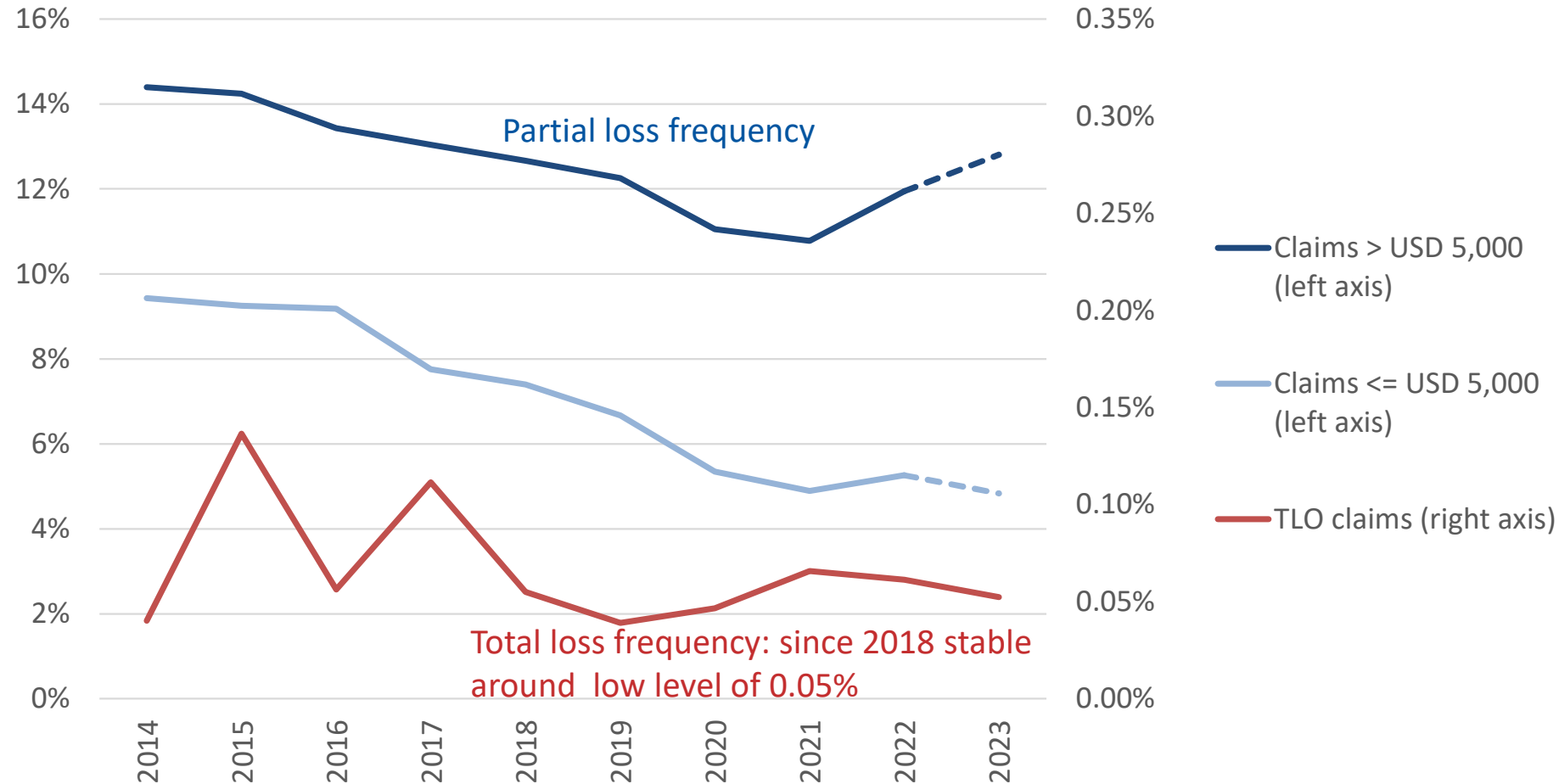


Painting/Drawing by Astrid Seltmann



# CLAIMS FREQUENCY\*: POST-PANDEMIC INCREASE

INCL. IBNR\*\* ESTIMATE



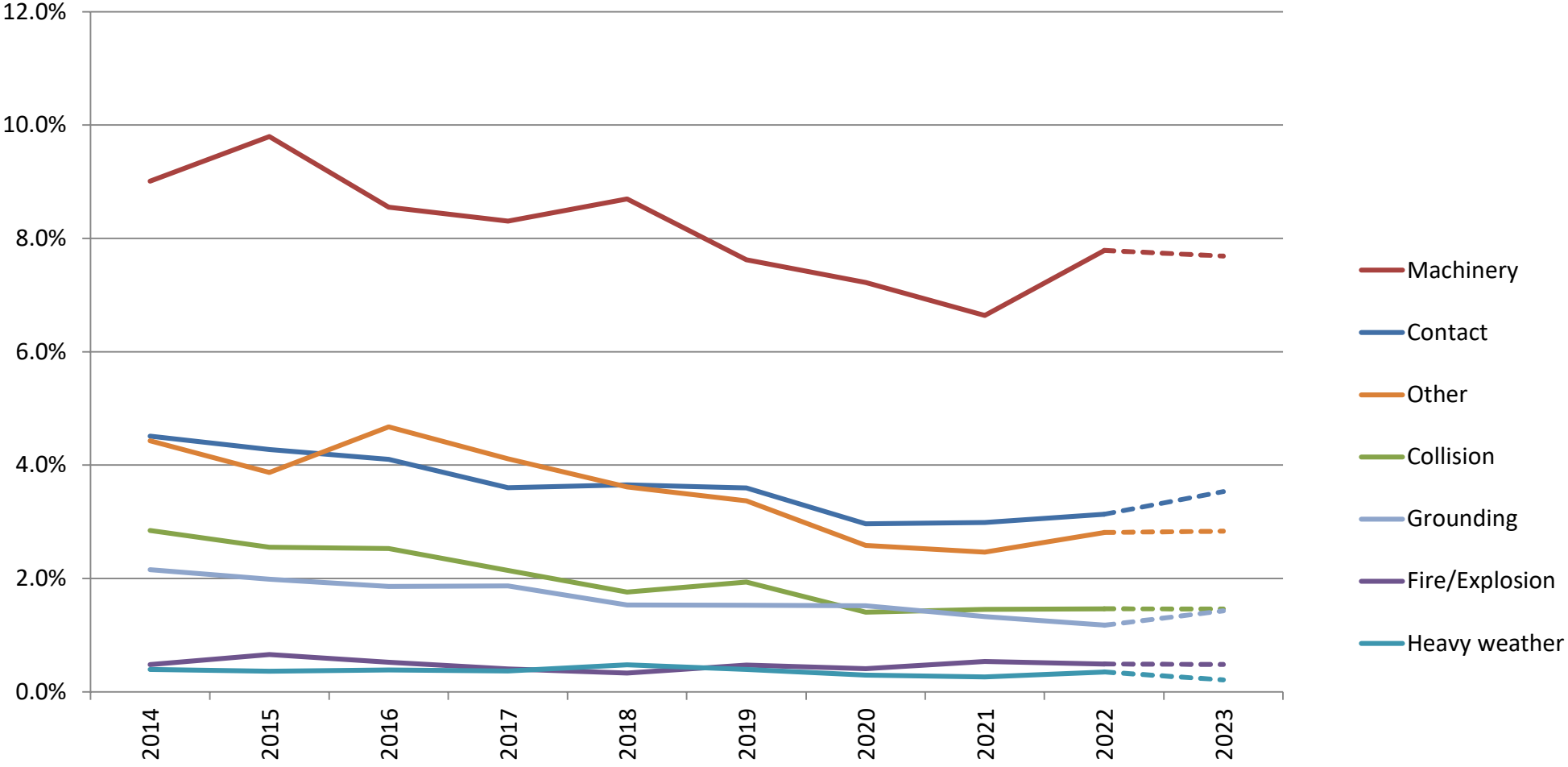
**NoMIS**  
Nordic Marine  
Insurance Statistics



\* = Number of claims divided by number of insured vessels    \*\*IBNR = Incurred but not (yet) reported; Estimate for backlog in claims reporting

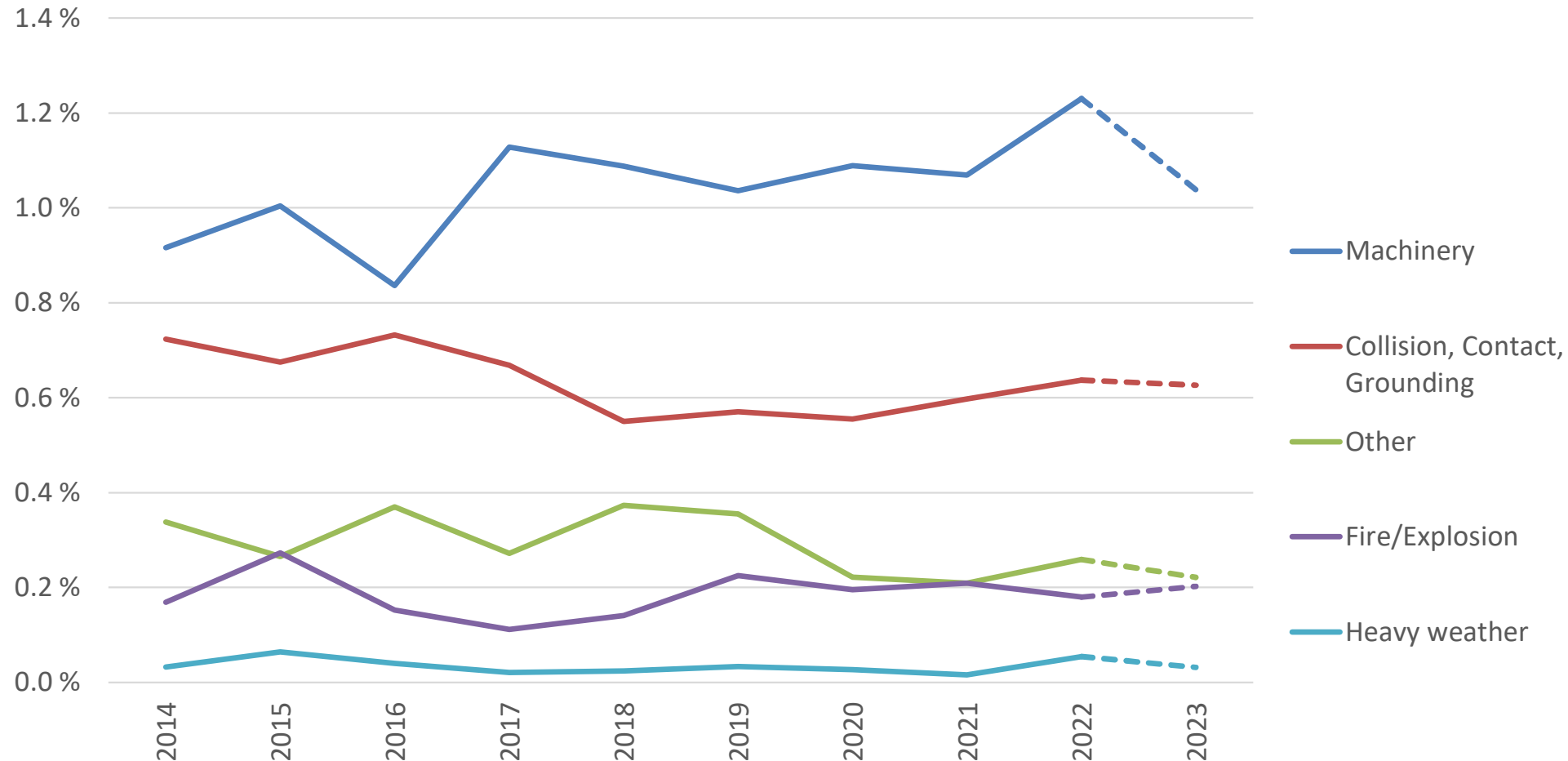
# CLAIMS FREQUENCY BY TYPE OF CASUALTY (ALL CLAIMS): INCREASING BUT NOT EXCEEDING PRE-PANDEMIC LEVELS

INCL. IBNR ESTIMATE



# CLAIMS > USD 500,000: IN RECENT YEARS INCREASED LEVEL OF COSTLY MACHINERY DAMAGE

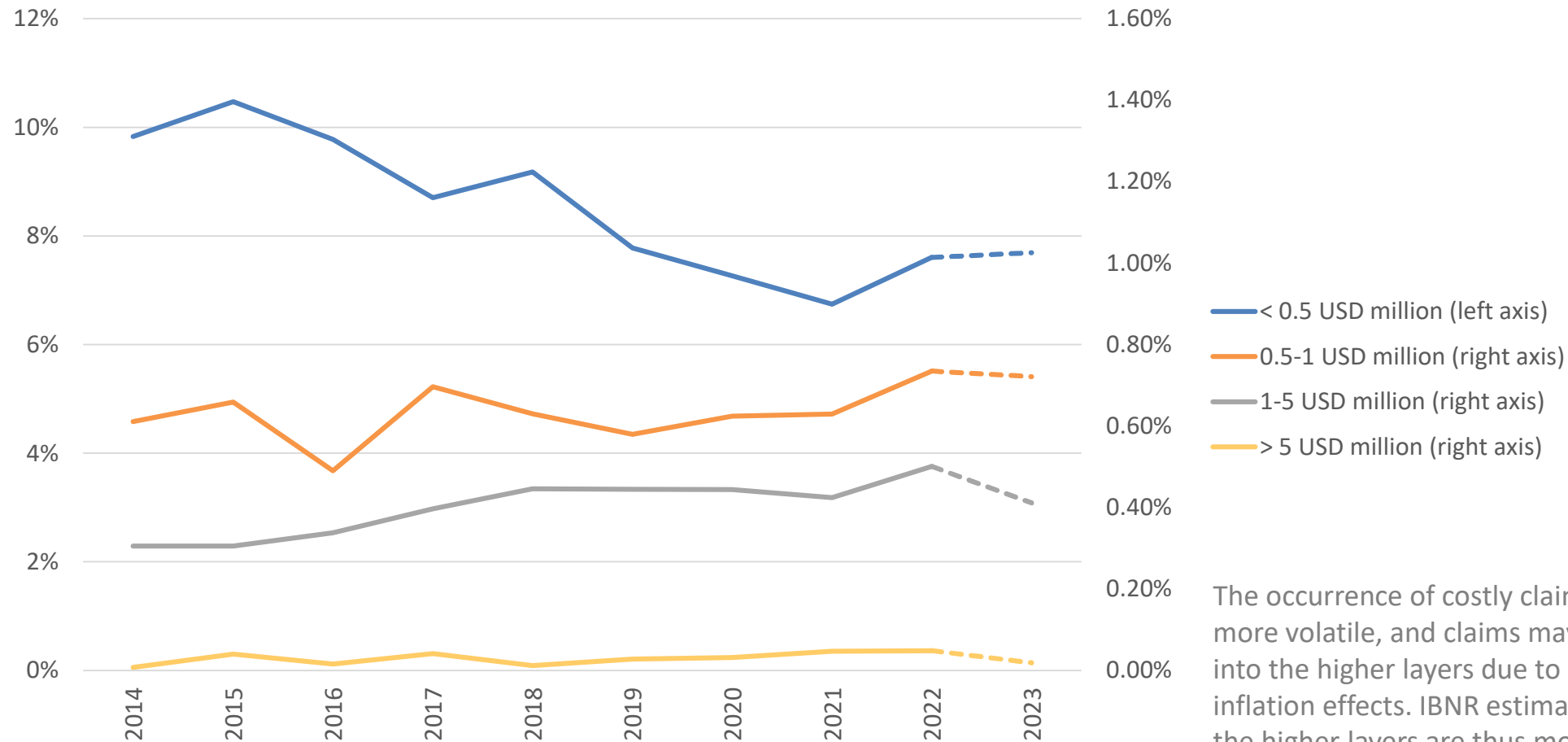
INCL. IBNR ESTIMATE



# MACHINERY CLAIMS FREQUENCY BY COST INTERVALS

## SLIGHT UPWARD TREND EXCEPT LOW-COST CLAIMS.

INC. IBNR ESTIMATE



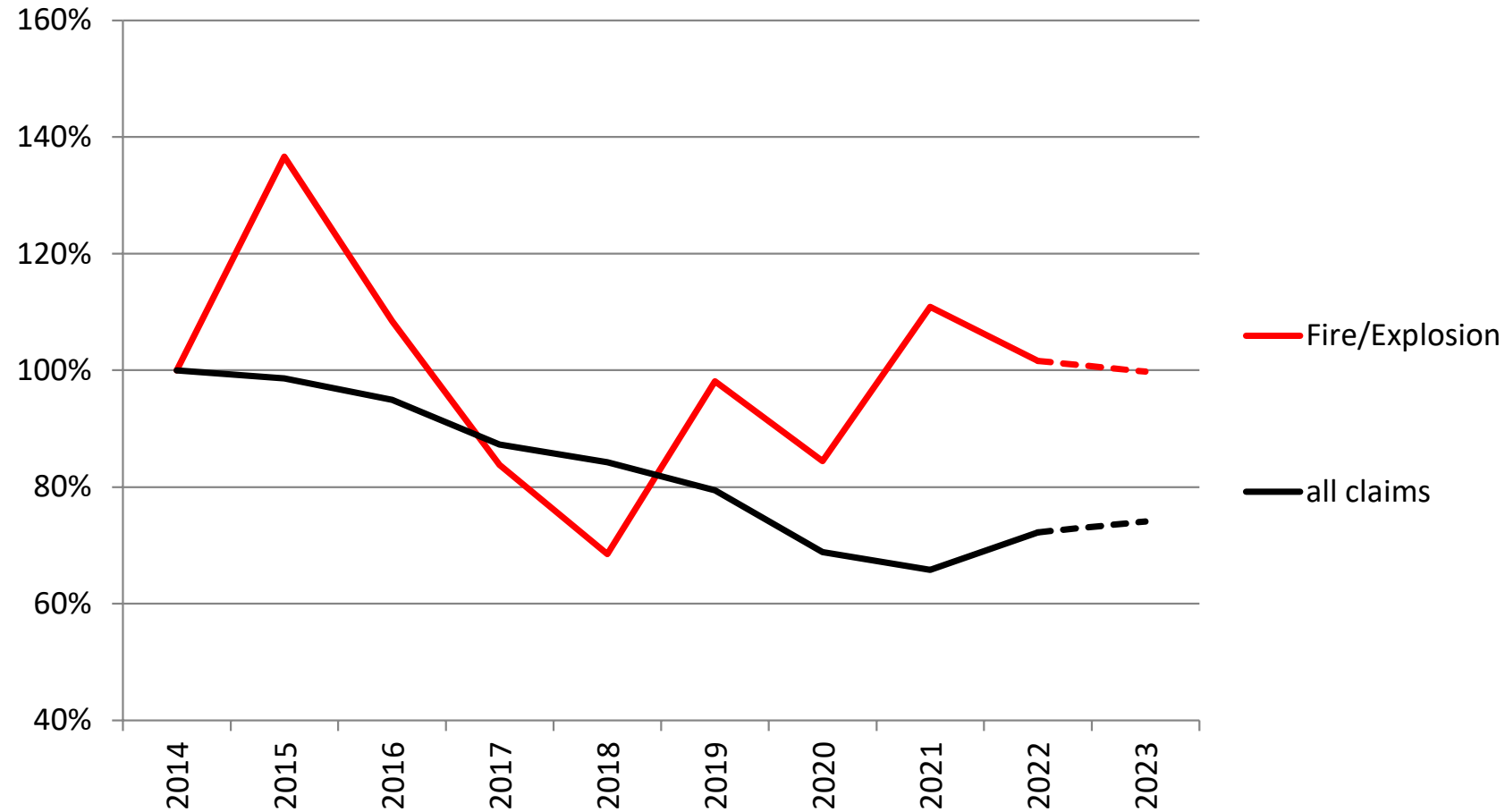
The occurrence of costly claims is more volatile, and claims may grow into the higher layers due to inflation effects. IBNR estimates for the higher layers are thus more uncertain than for the lower.

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Insurance Statistics

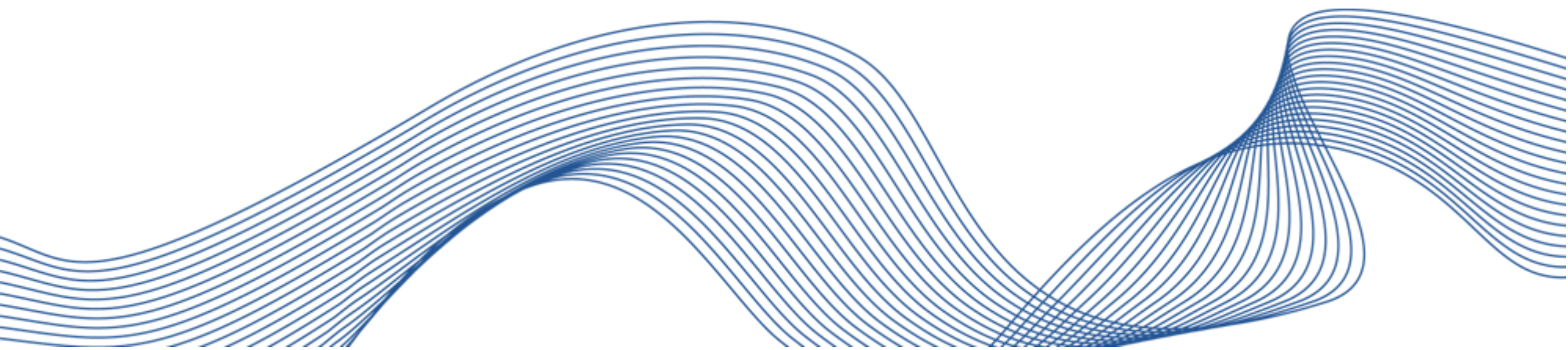


# FIRE FREQUENCY TREND DIFFERS FROM OTHER CLAIMS TYPES

INDEX, 2014 = 100%

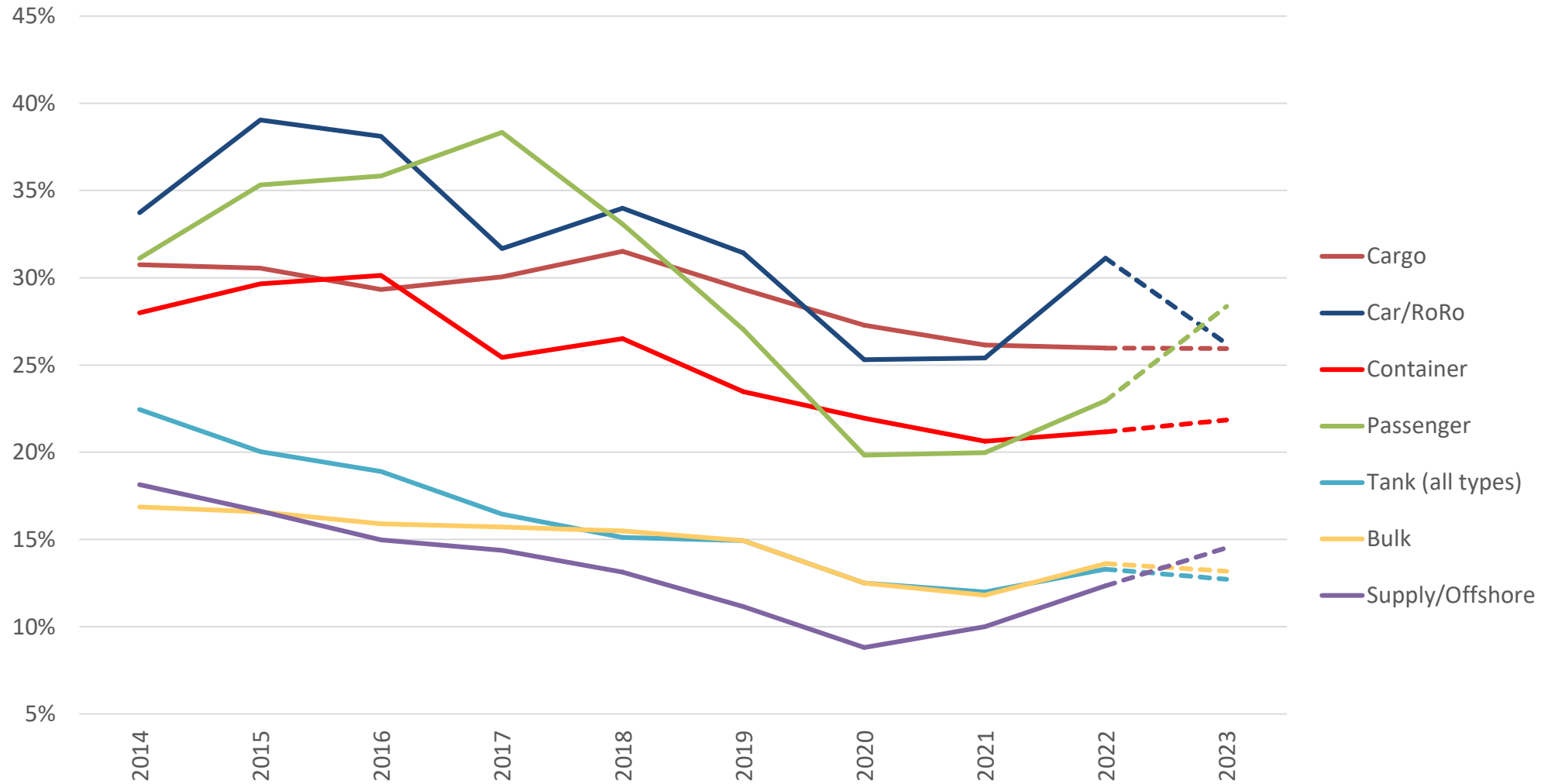


# TRENDS BY VESSEL SEGMENT



# CLAIMS FREQUENCY DIFFERS BY VESSEL TYPE

ALL CLAIMS, INCLUDING IBNR\*

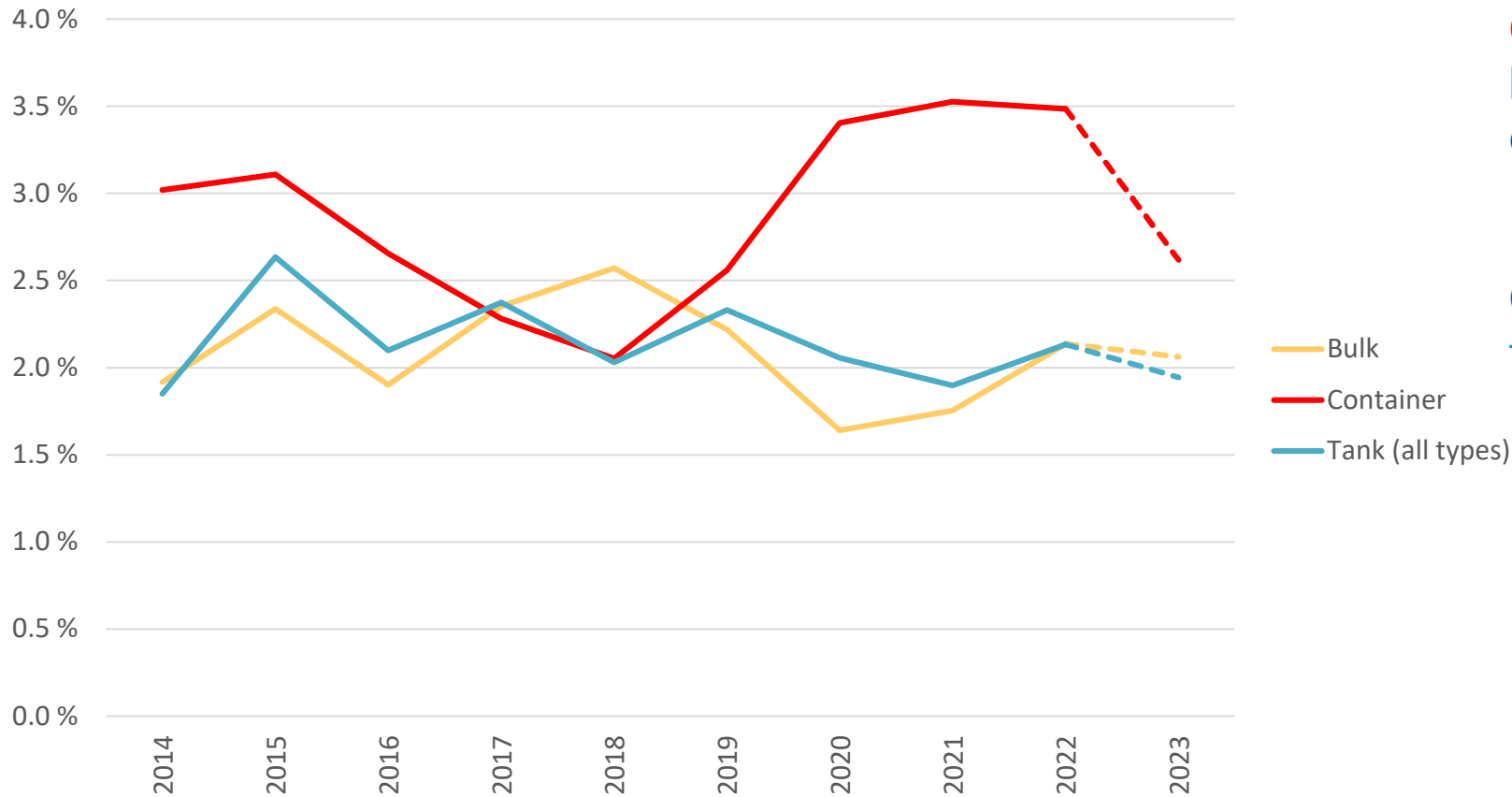


\* IBNR = Incurred but not reported = reserve for claims adjustments and registration backlog

# CLAIMS > 500,000 USD – MAIN VESSEL SEGMENTS

## POSITIVE FREQUENCY TREND EXCEPT FOR CONTAINER

INCL. IBNR ESTIMATE

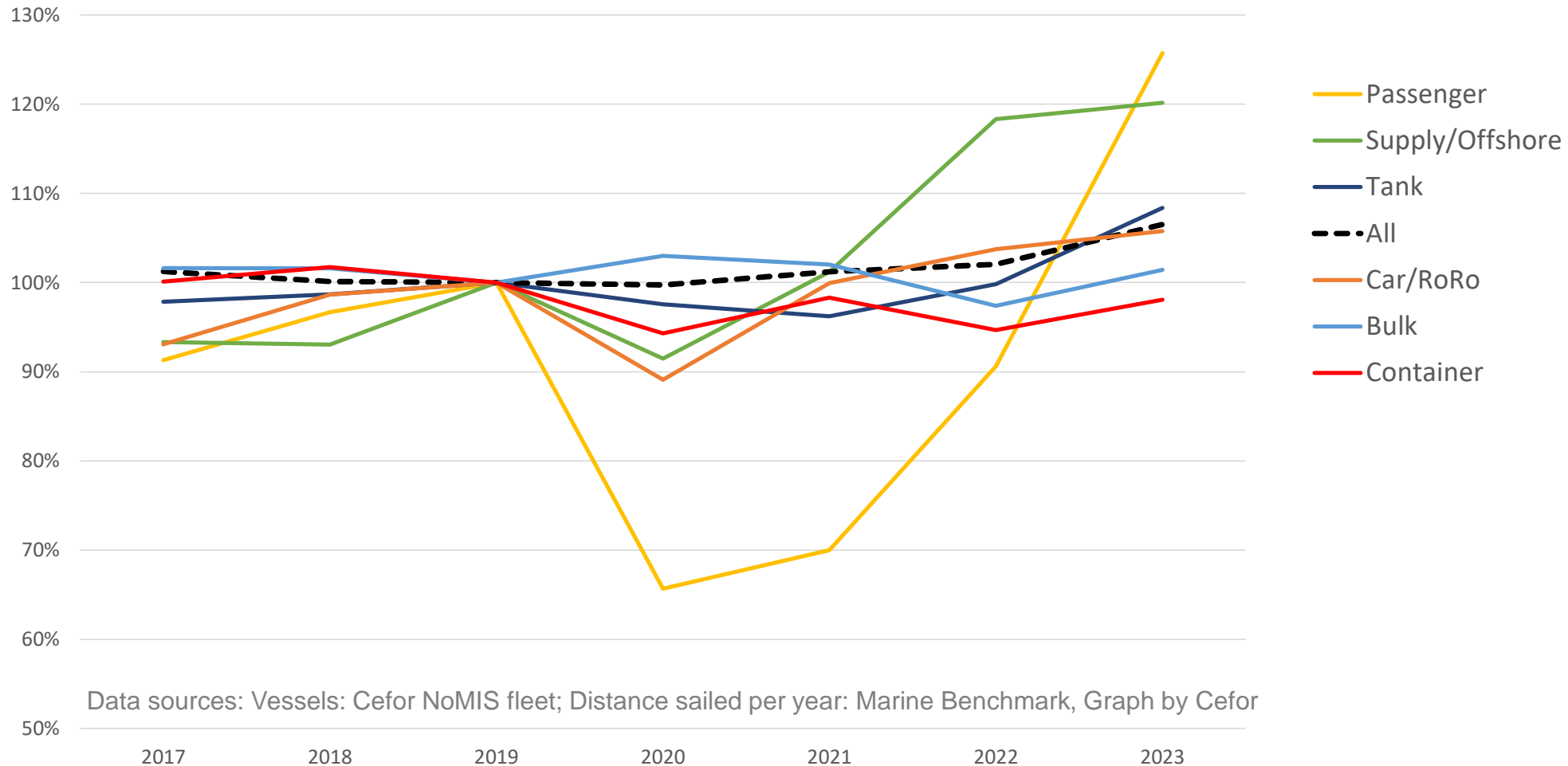


Container had 2020-2022 a higher level of costly claims, even when activity was partly reduced. 2023 may still develop

Contrary to trends for bulk and tank.

# VESSEL ACTIVITY PATTERNS (DISTANCE SAILED): DEVIATIONS FROM STANDARD PATTERN BY SEGMENT 2020-2023

DISTANCE SAILED PER VESSEL PER YEAR, INDEX 2019 = 100%



Data sources: Vessels: Cefor NoMIS fleet; Distance sailed per year: Marine Benchmark, Graph by Cefor

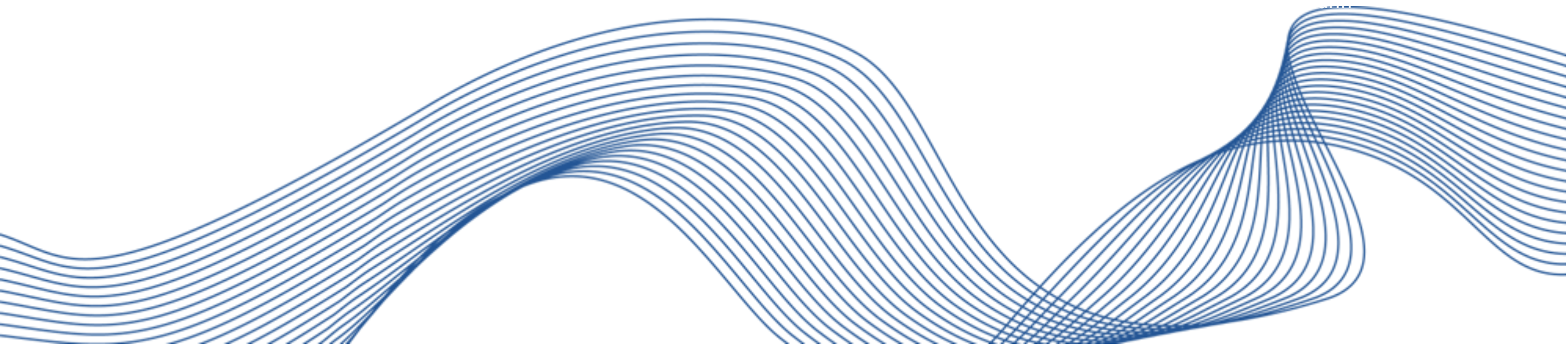
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Insurance Statistics



# SUMMING UP CLAIMS FREQUENCY TRENDS

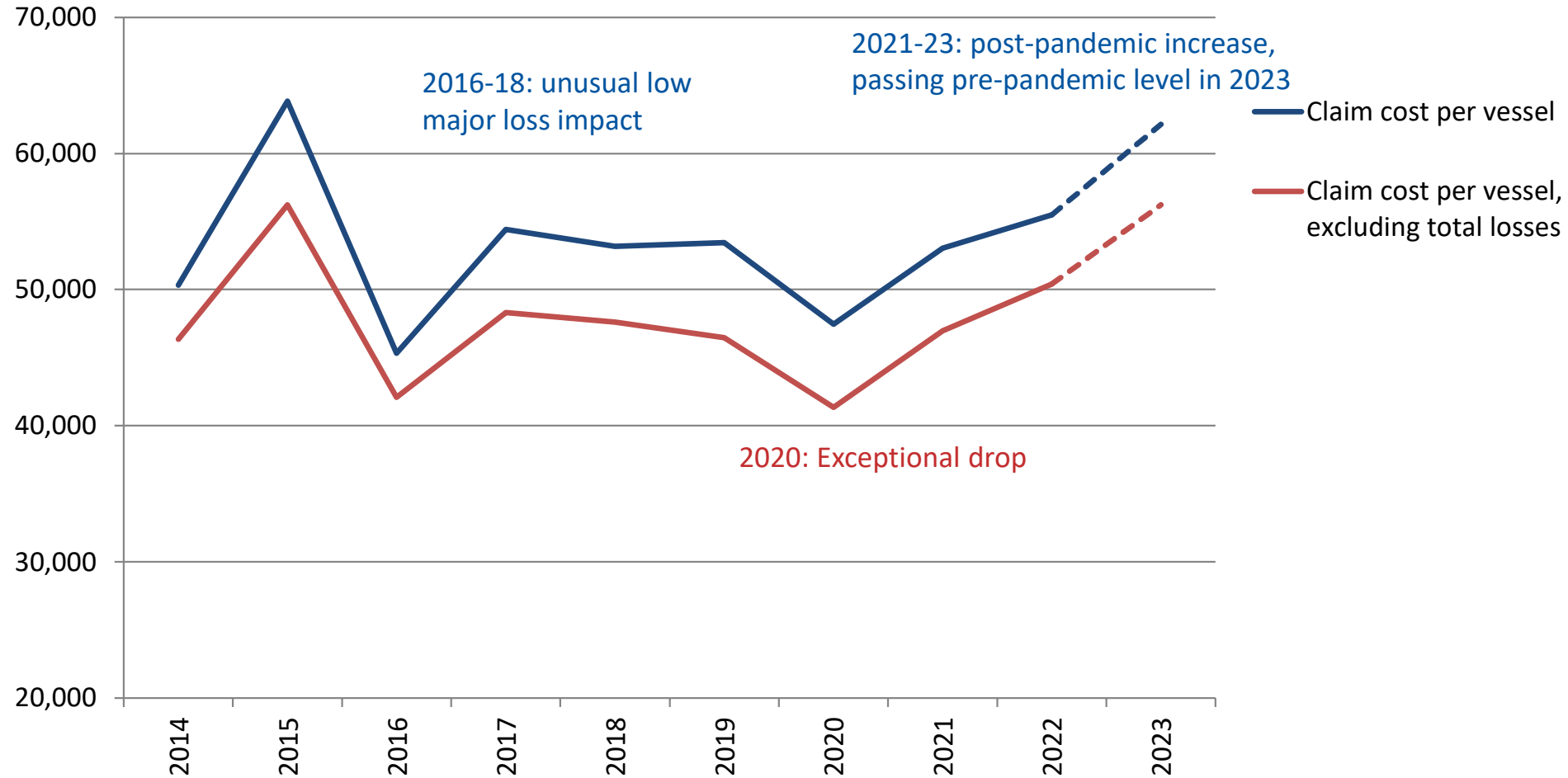
- **Total loss frequency**
  - Since 2018 rather stable at low level around 0.05%.
- **Overall claims frequency**
  - Upward trend after extraordinary drop in 2020.
  - Increased level of costly machinery claims.
  - Container segment higher level of costly claims.
- **Major loss frequency (costly casualties)**
  - New major loss impact in 2023. Two costly fires.
- **Influencing factors**
  - Static vessel characteristics (vessel age, size, type)
  - Vessel activity (trade, maintenance, lay-ups, congestions, speed, distance sailed, geography)
  - Changes in underlying risk (new technologies, fuels, vessel design,...)
  - Insurer deductibles (higher deductibles = less claims reported to insurers)
  - Inflation (more claims may pass deductible level)

# CLAIM COST TRENDS & INFLATION IMPACT

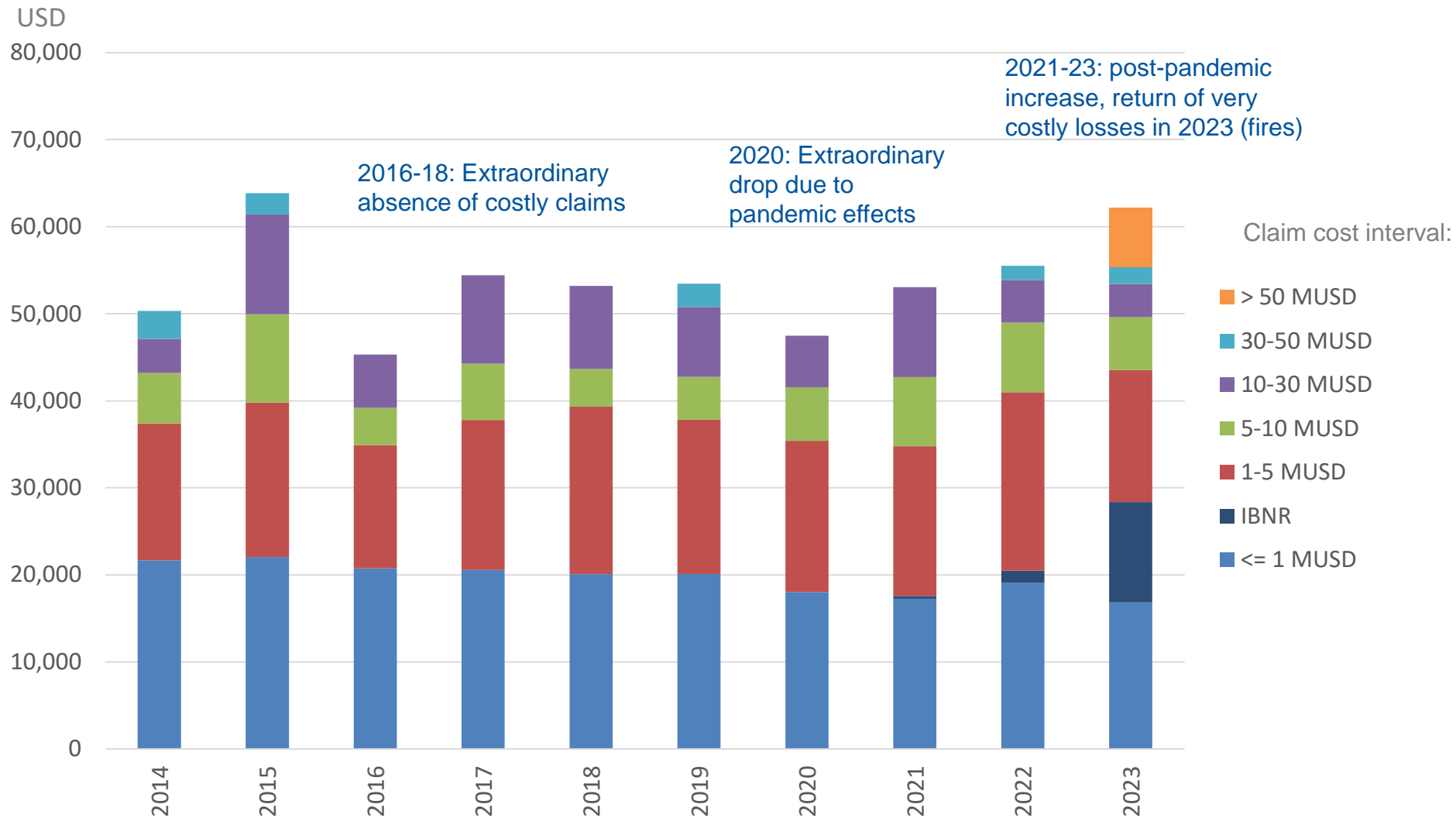


# CLAIM COST PER VESSEL: PASSES PRE-PANDEMIC LEVEL

INCL. IBNR ESTIMATE

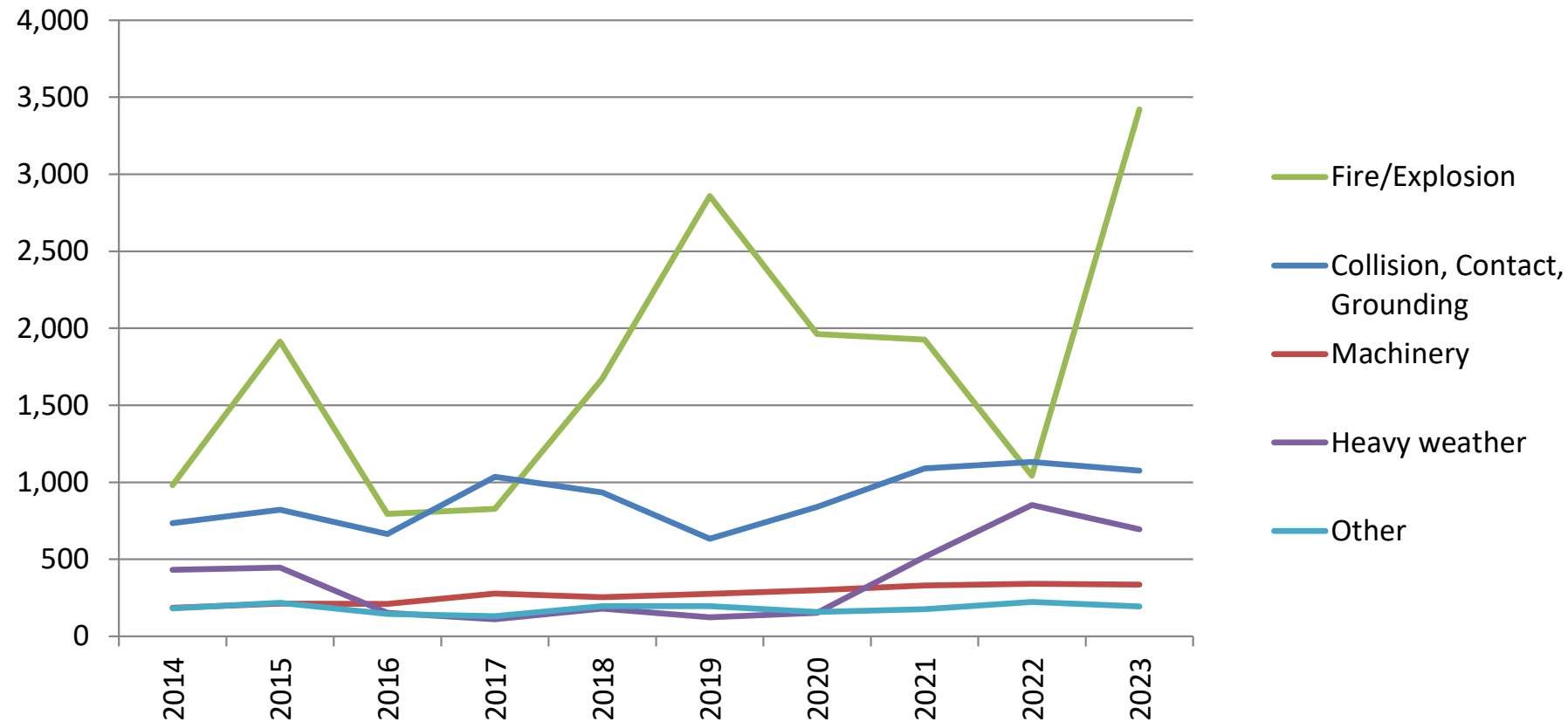


# CLAIM COST PER VESSEL BY INTERVALS OF CLAIM COST: CLAIMS > 50 USD MILL. FOR FIRST TIME IN OVER TEN YEARS



# AVERAGE INDIVIDUAL CLAIM COST\*: RENEWED IMPACT BY COSTLY FIRES IN 2023

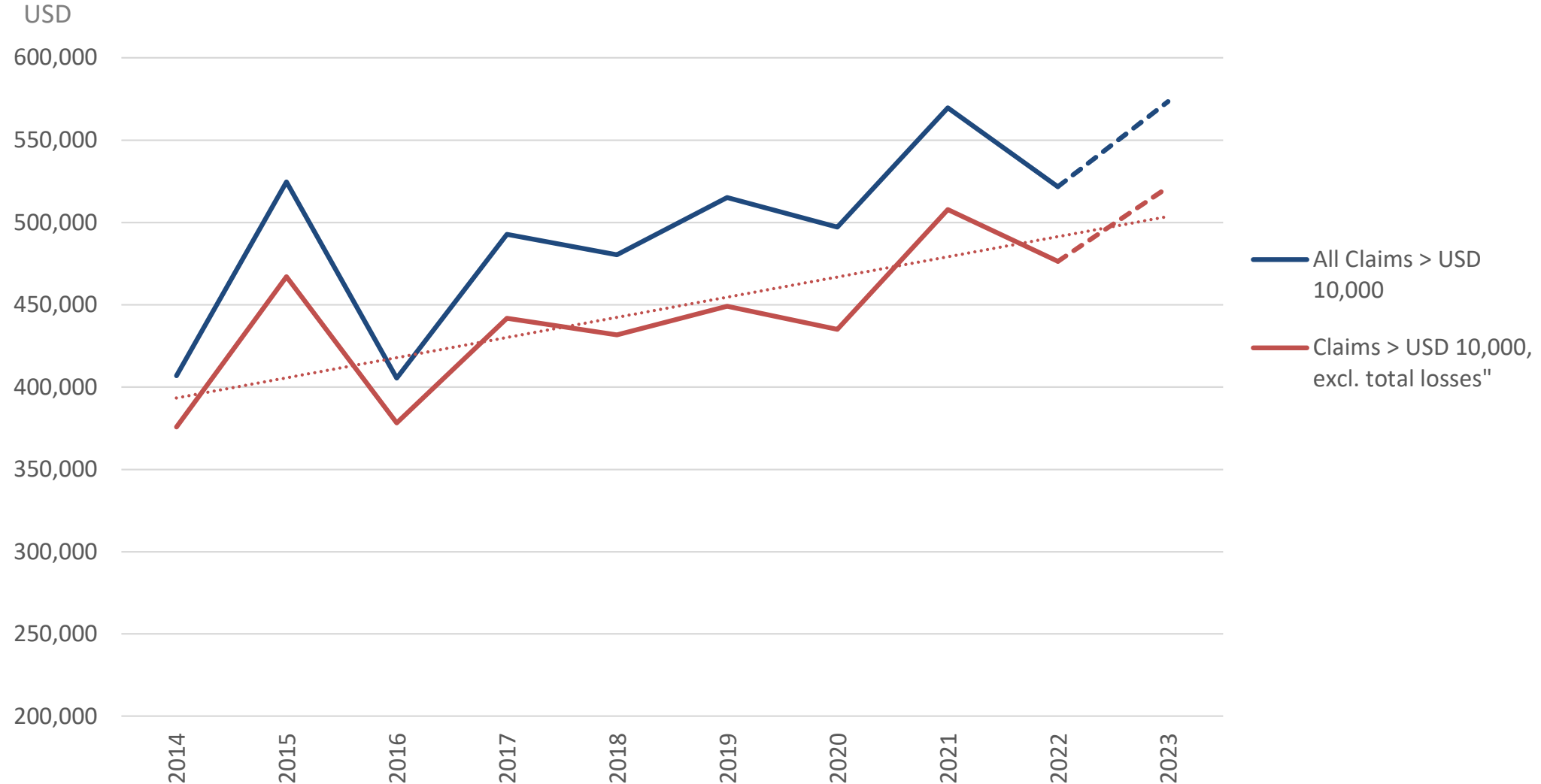
USD 1,000



\* = total cost of claims per year, divided by number of claims per year

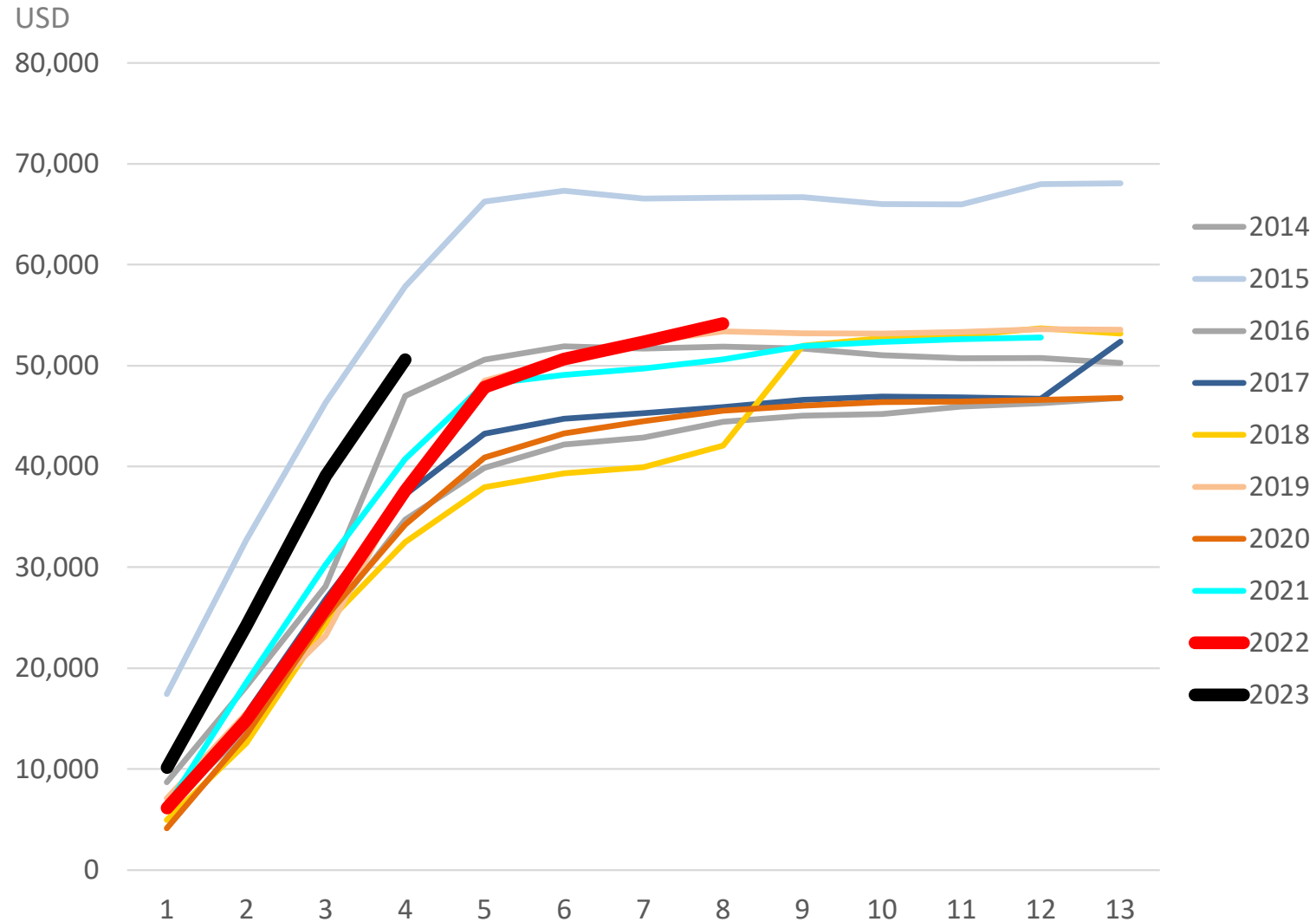
# AVERAGE INDIVIDUAL CLAIM COST ON THE RISE

AVERAGE PARTIAL AND TOTAL CLAIM COST, INCLUDING IBNR



# CLAIM PER VESSEL, QUARTERLY ACCUMULATED DEVELOPMENT

## BY ACCIDENT YEAR

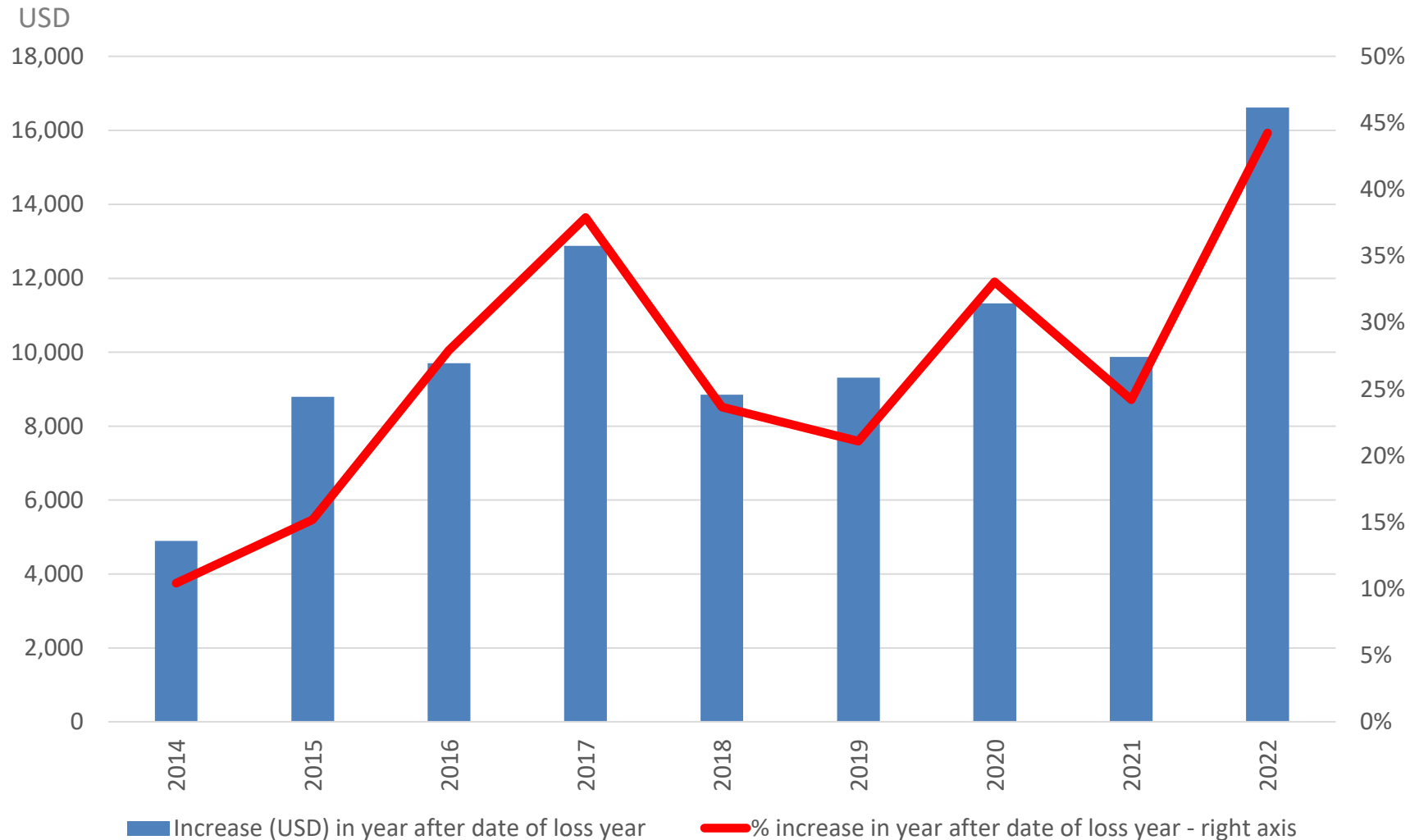


2022 showed above average upward cost adjustment. Indicates inflation impact (as original claim cost estimates were not sufficient).

2023 claim per vessel starts higher and shows steeper increase than most years.

# INCREASE IN CLAIM COST PER VESSEL THE YEAR AFTER THE LOSS OCCURRED (ADJUSTMENT OF CLAIMS RESERVES)

RELATIVE (%) AND ABSOLUTE (USD) INCREASE



The cost of 2022 claims increased more during 2023 than the cost of claims of any previous year in the year after the loss occurred.

# SUMMARY CASUALTY TRENDS – COST

- **Major losses (hull insurance)**
  - First time for over ten years claims in the > USD 50 million range. Fires big impact.
  - Larger / high-value vessels increase risk of costly total losses and more complex repairs.
- **Claim cost per vessel / repair cost:**
  - Increases after extraordinary drop in 2020 and starting to exceed pre-pandemic (moderate) level.
- **Inflation effects**
  - Both the cost per vessel and the average cost of individual claims show a recent upward trend.
  - 2022 claims show a higher upward cost adjustment than claims of any previous year.
- **Cost drivers**
  - Steel/materials and labour costs, USD exchange rates (repairs often paid in other currencies than USD), maintenance routines, vessel usage,...

<sup>1</sup> cost per vessel = total cost of all reported claims per year, divided by the number of insured vessels per year

# MAIN TAKE-AWAYS HULL TRENDS AS OF 2023

- **Fleet** aging, less newbuilds but increasing in size.
- **Values:** Drop in 2023 after big increases on 2021 & 2022 renewals. Differ substantially by vessel segment. Main driver container segment (big increase 2021/22, followed by big drop end 2022 into 2023). Supply/Offshore vessels upward trend after increase in oil price.
- **Claims frequency:** Some post-pandemic upward trend.
- **Claim cost per vessel:** post-pandemic increase.
- **Major claims:** first claims in > USD 50 million range for more than ten years. Fires remain concern. Increase in share of high-value vessels and vessel activity increases probability of costly losses.
- **Trends differ by vessel segment.** Big impact by container vessels but also changed patterns for other vessel types (cruise, tank, supply/offshore) influence overall trends.
- **Inflation effects:**
  - Upward trend in both claim cost per vessel and average cost of individual claims.
  - Higher upward adjustment of 2022 claims than for claims of any previous year in the following year.

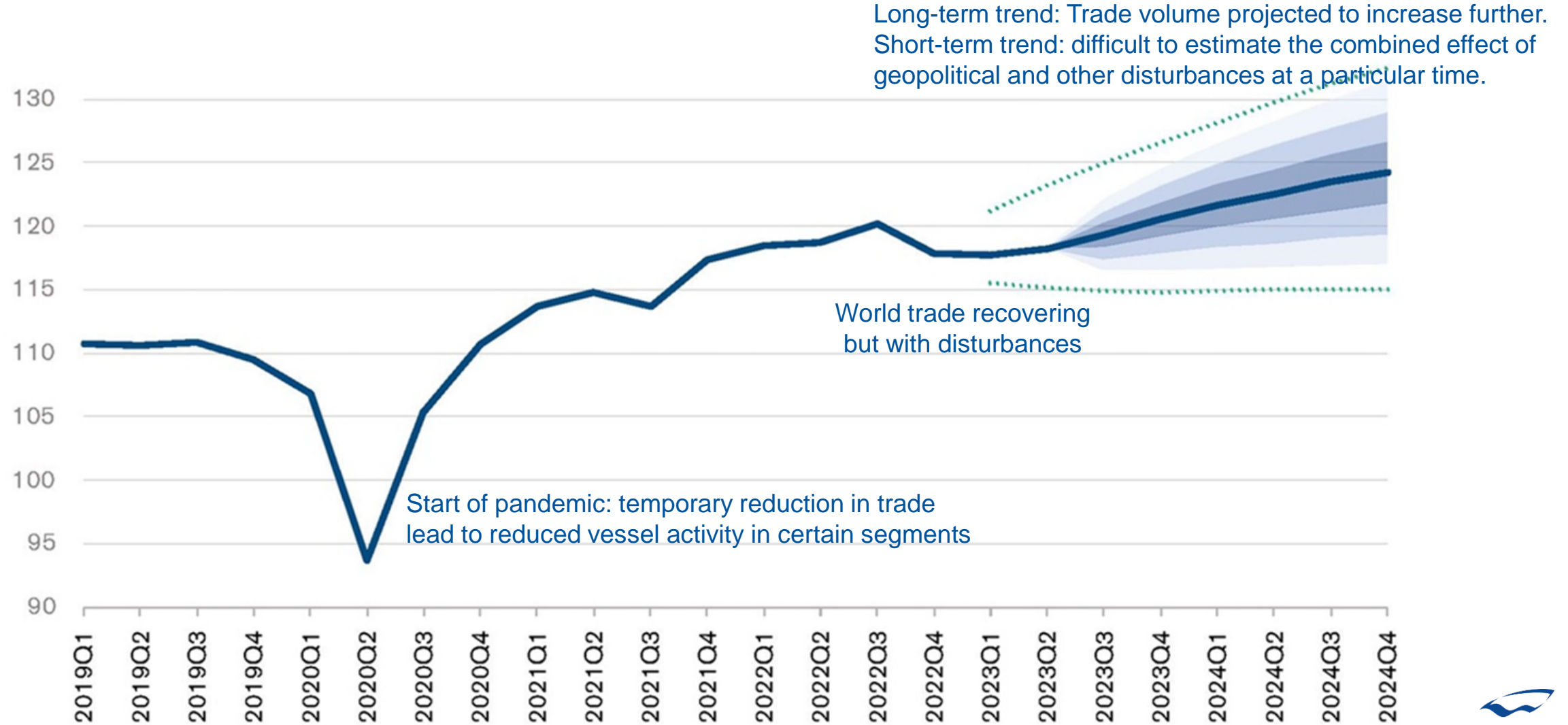
# THE 2024 ORACLE



Photo: Astrid Seltmann

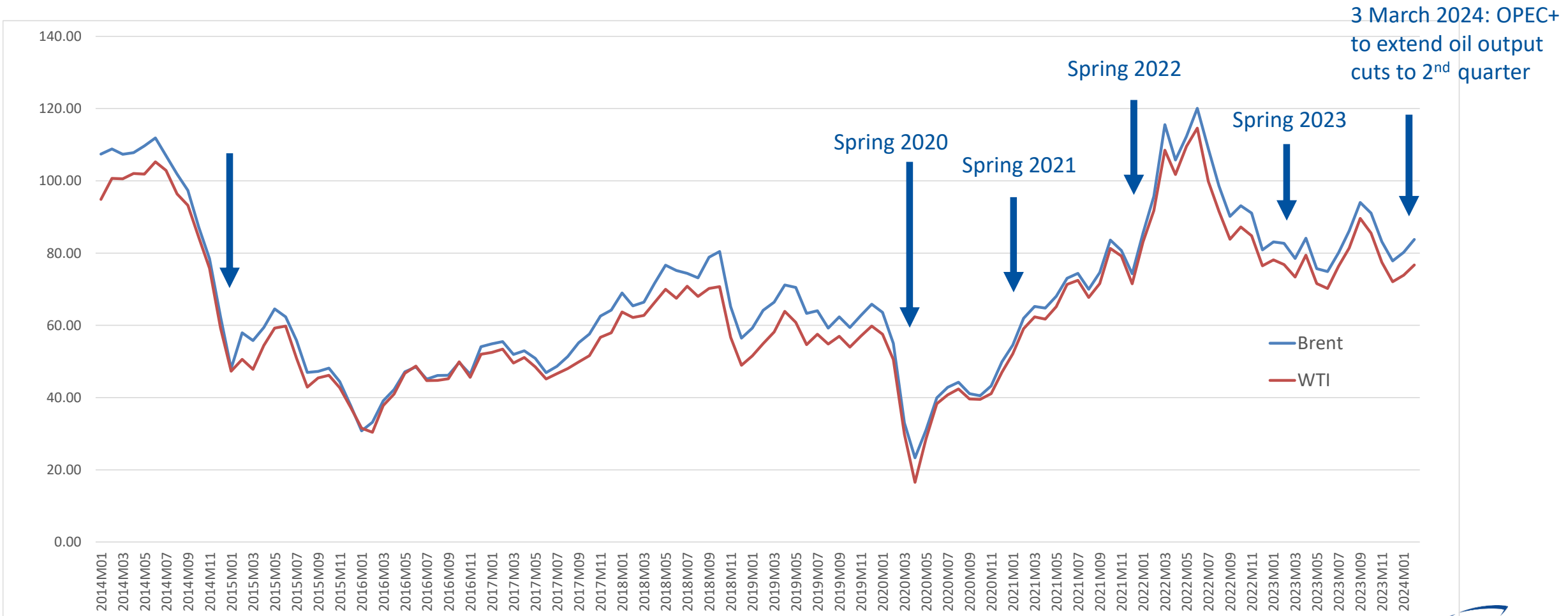
# WORLD MERCHANDISE TRADE VOLUME 2015Q1-2024Q4

SEASONALLY-ADJUSTED VOLUME INDEX, 2015 = 100%



# OIL PRICE\* RALLY 2020-22, SUBSEQUENT DROP STOPPED AFTER OPEC DECISIONS (LATEST 3 MARCH 2024)

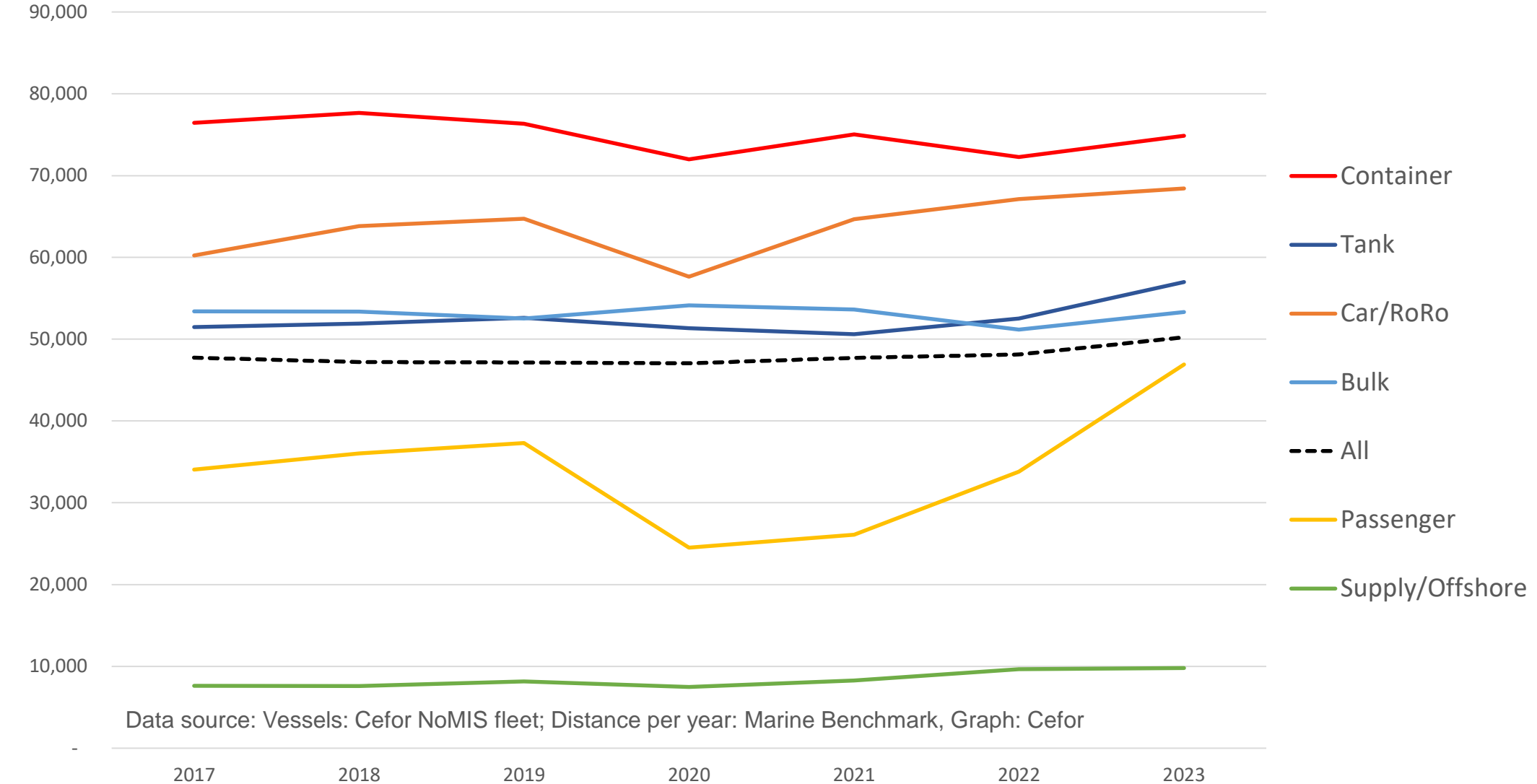
OIL PRICE PER MONTH (\$/BBL), BRENT & WTI



\*Oil price: World Bank - Commodity markets: <https://thedocs.worldbank.org/en/doc/5d903e848db1d1b83e0ec8f744e55570-0350012021/related/CMO-Historical-Data-Monthly.xlsx>

# VESSEL ACTIVITY: DISTANCE SAILED PER VESSEL PER YEAR

Nautical miles



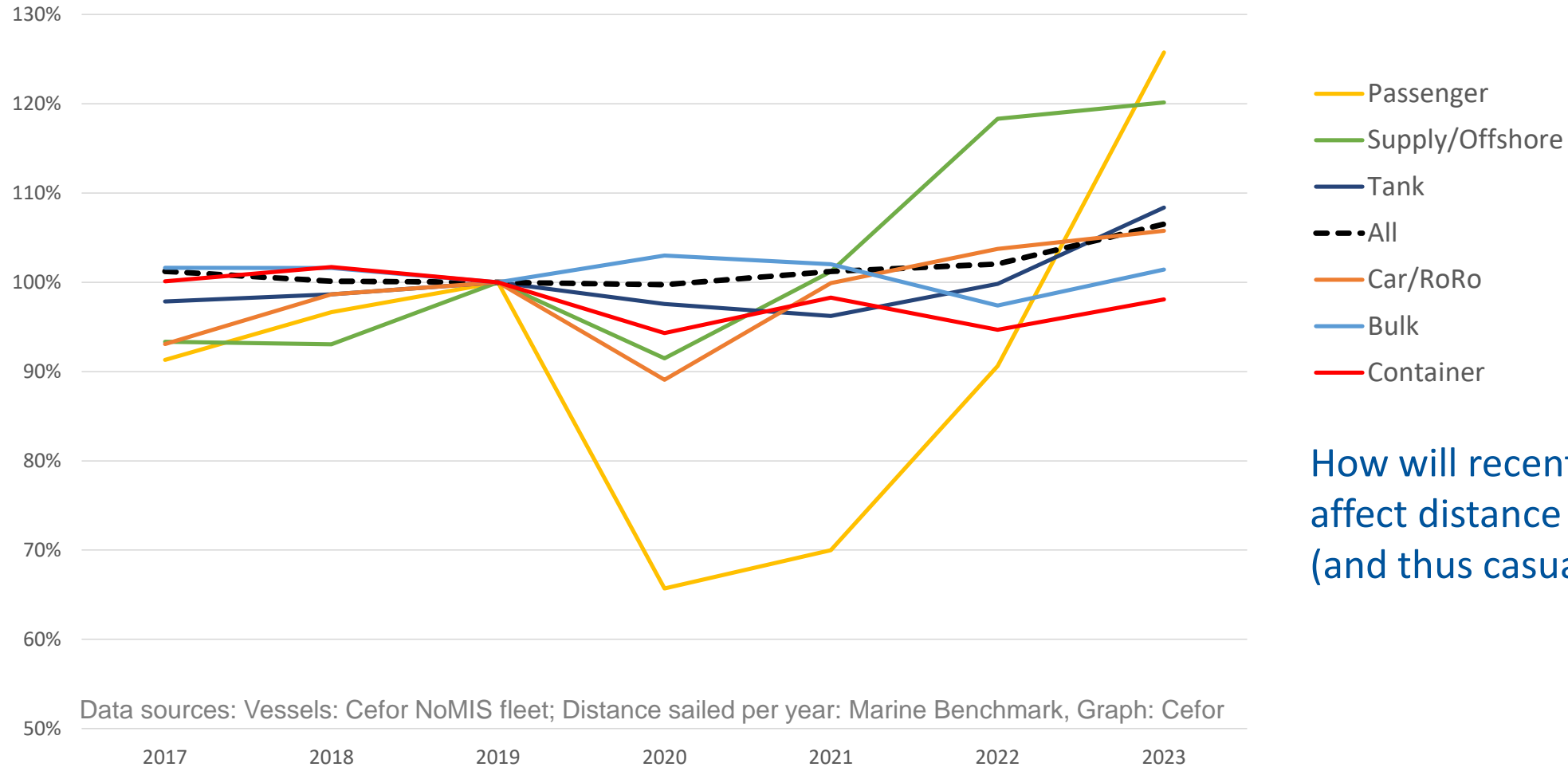
Data source: Vessels: Cefor NoMIS fleet; Distance per year: Marine Benchmark, Graph: Cefor

**NoMIS**  
Nordic Marine  
Insurance Statistics



# VESSEL ACTIVITY PATTERNS (DISTANCE SAILED PER YEAR): DEVIATIONS BY VESSEL SEGMENT 2020-2023

INDEX 2019 = 100%



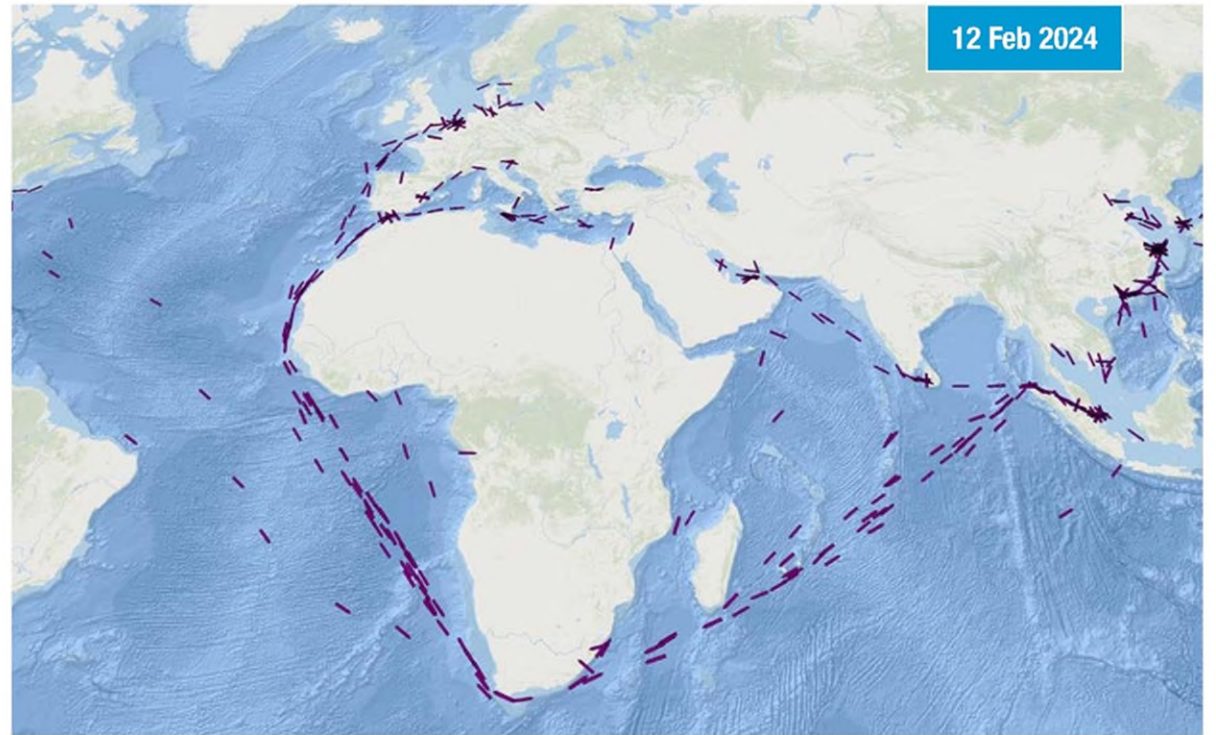
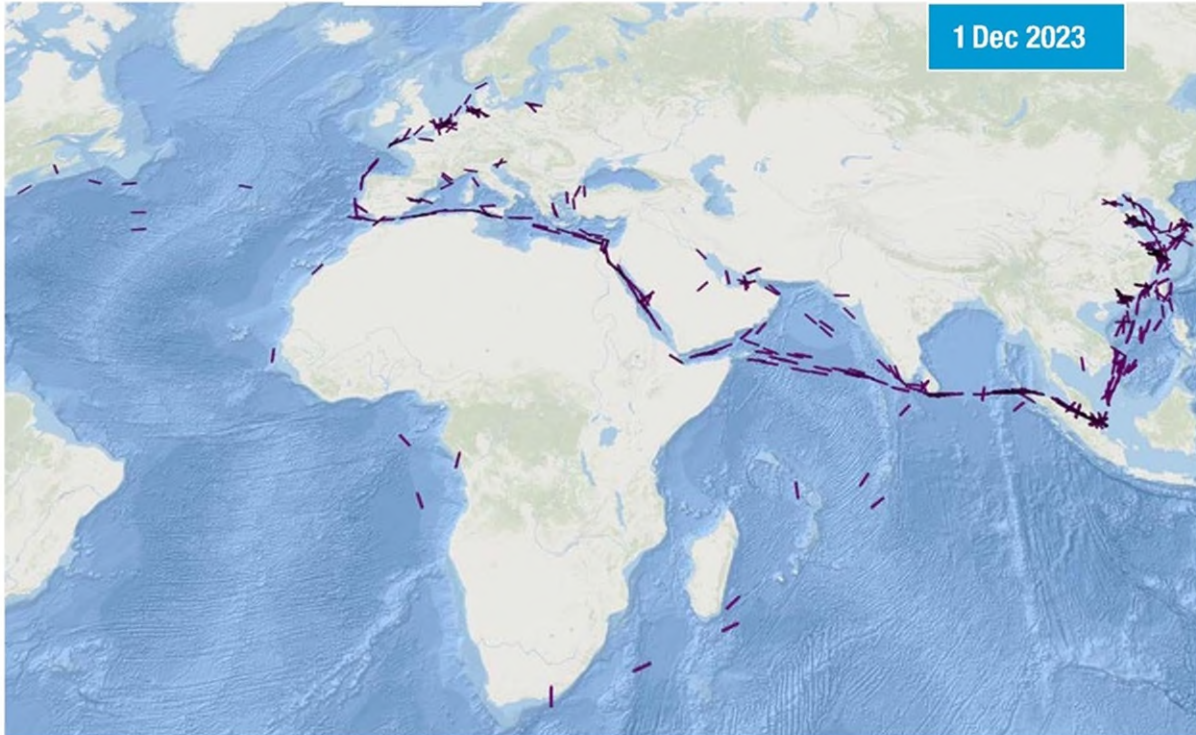
How will recent vessel rerouting affect distance patterns? (and thus casualty trends)

Data sources: Vessels: Cefor NoMIS fleet; Distance sailed per year: Marine Benchmark, Graph: Cefor

NoMIS  
Nordic Marine  
Insurance Statistics



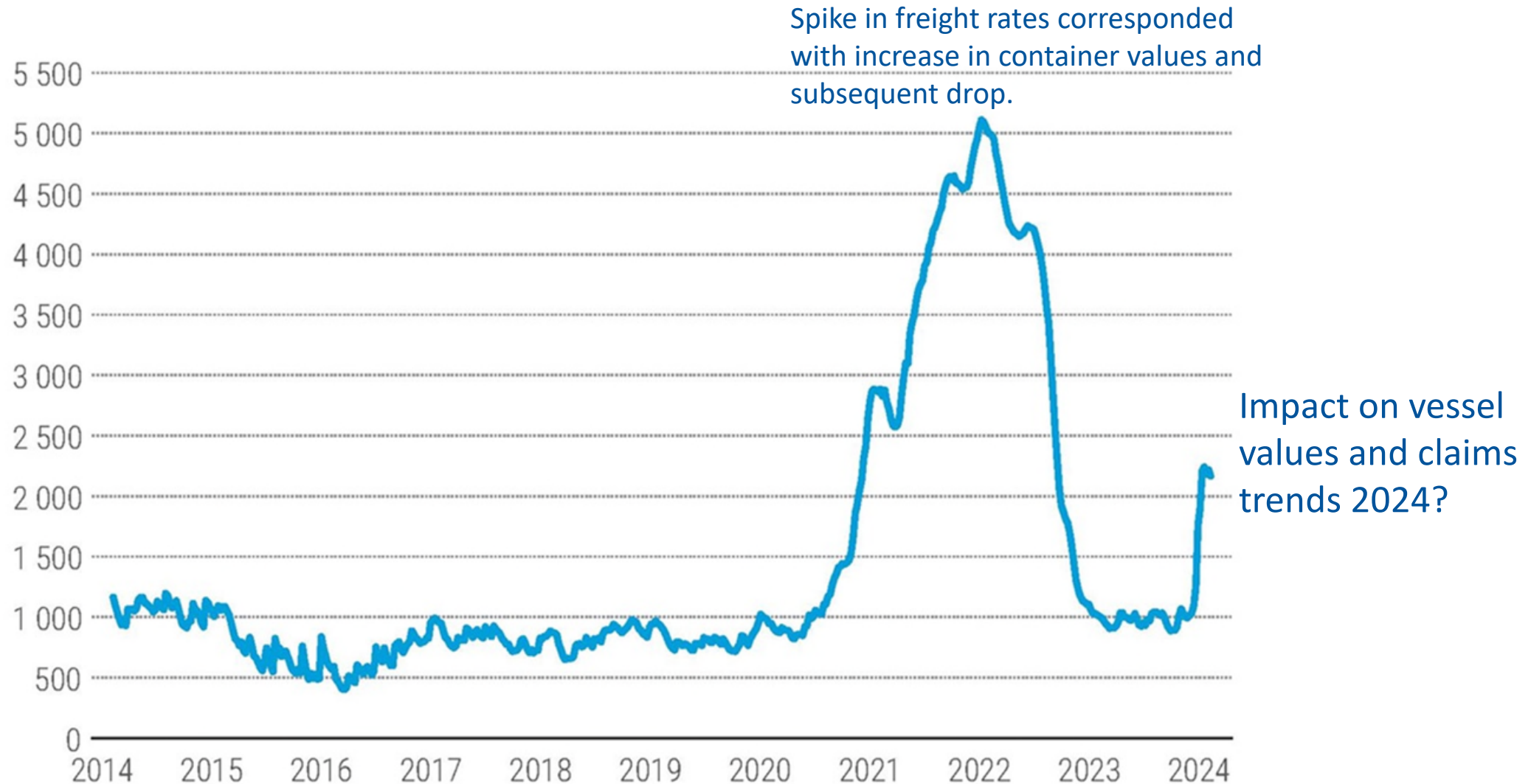
# SHIFT IN CONTAINER SHIP ROUTES FROM SUEZ CANAL TO CAPE OF GOOD HOPE



Source: UNCTAD February 2024 'Navigating troubled waters', Data analysis: Marine Benchmark

Implications: Container supply shortage, increased freight rates, higher CO2 emissions.  
Increase in claims frequency?

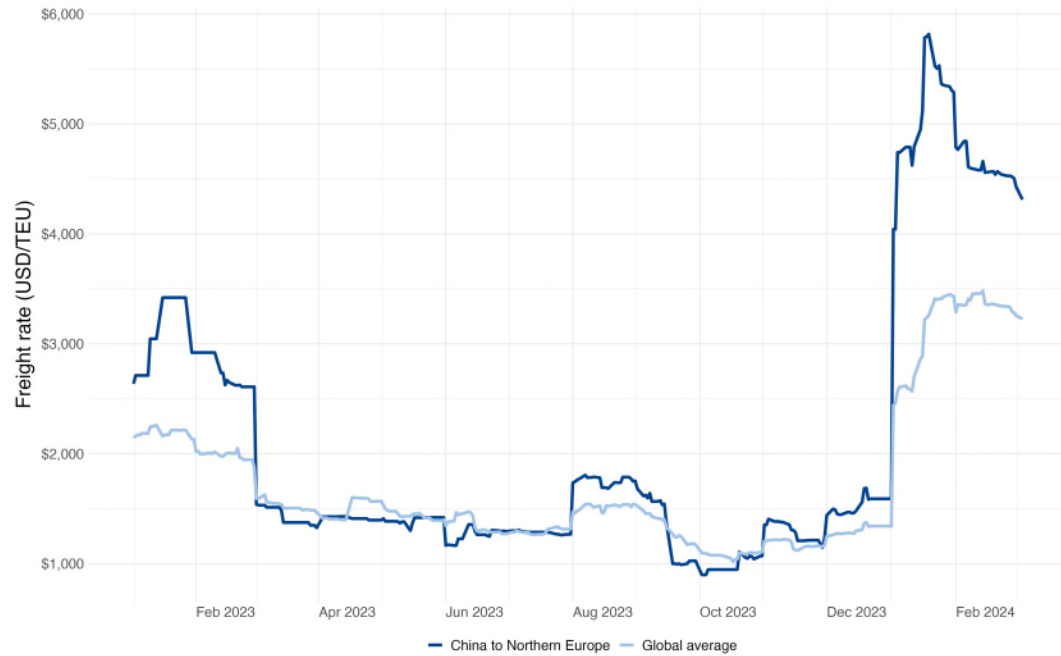
# CONTAINER FREIGHT RATES ON THE RISE AGAIN



Source: UNCTAD February 2024 'Navigating troubled waters', based on Clarksons Research and <https://en.sse.net.cn/indices/scfinew.jsp>

## Average freight rates from China to N. Europe and Global

Last update: 11/03/2024

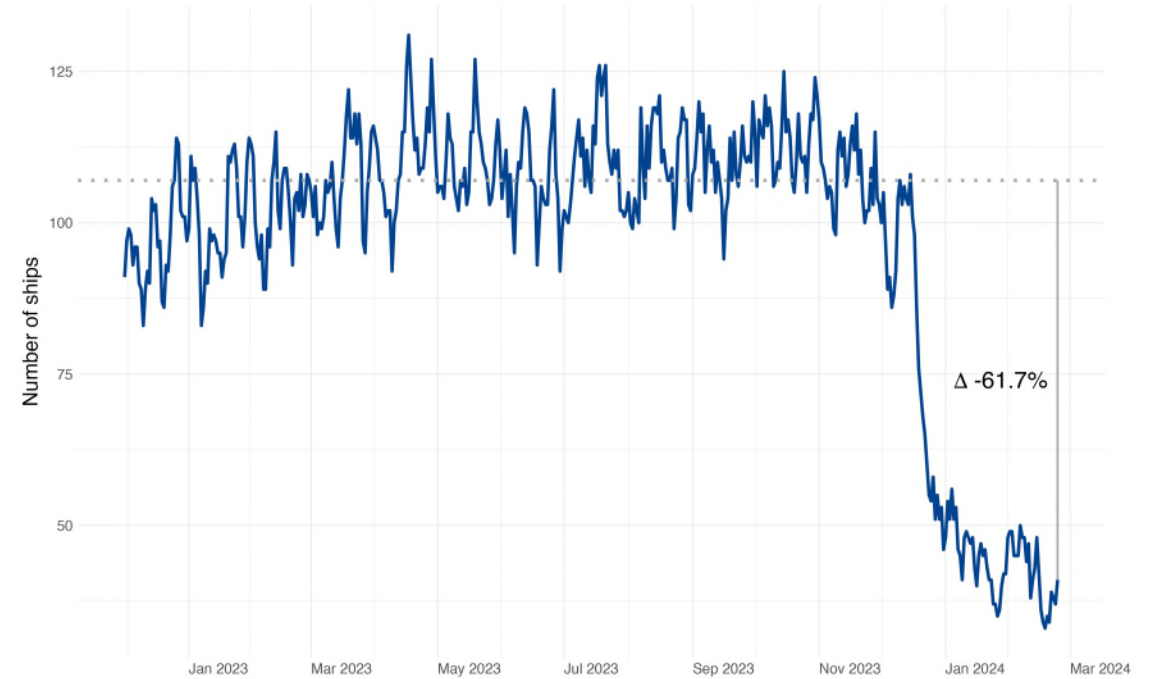


Quelle: Freightos, own calculations.

Kiel Trade Indicator

## Daily number of container ships in the Red Sea

Last update: 11/03/2024



Quelle: Fleetmon.com, own calculations.

Kiel Trade Indicator

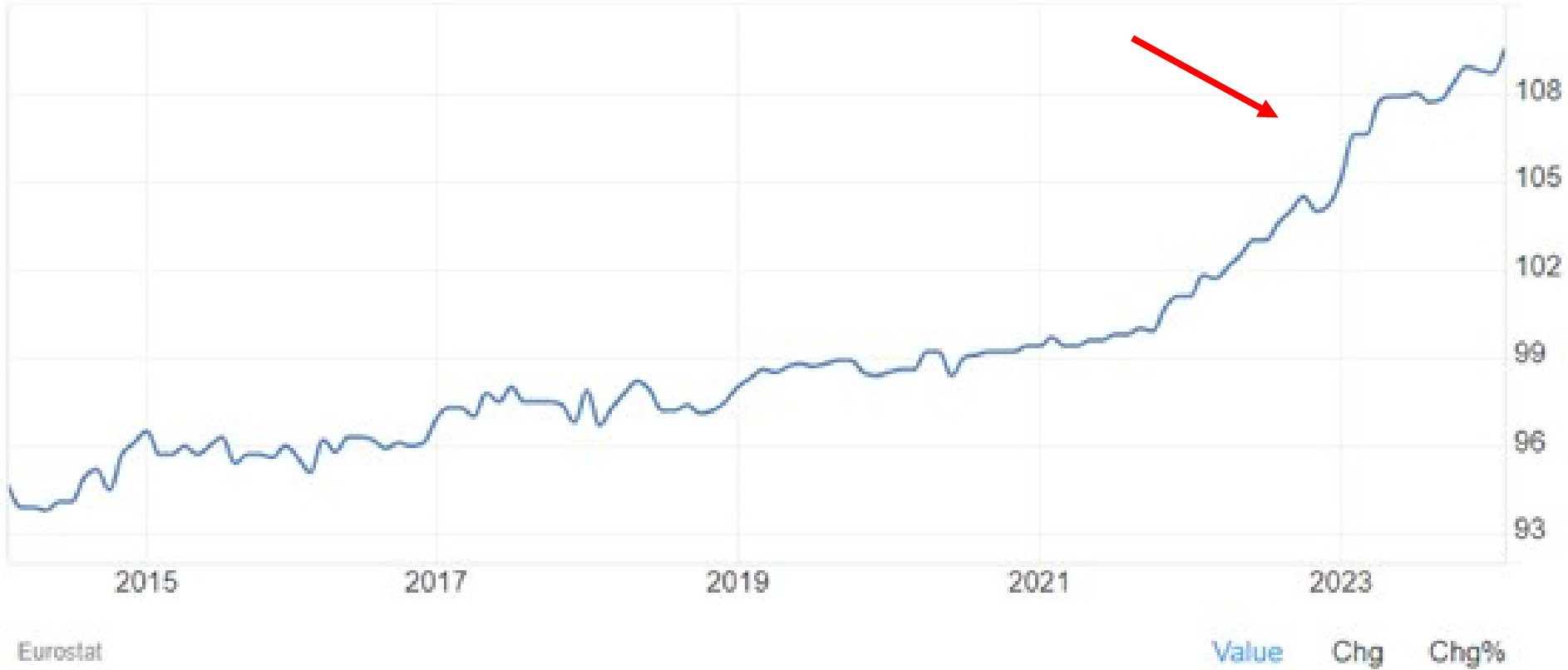
# US: PRODUCER PRICE INDEX, SHIP BUILDING AND REPAIRING NONMILITARY, AS OF FEBRUARY 2024



Claim cost inflation in 2024?

# EU: PRODUCER PRICE INDEX, REPAIR AND MAINTENANCE OF SHIPS

AS OF MARCH 2024



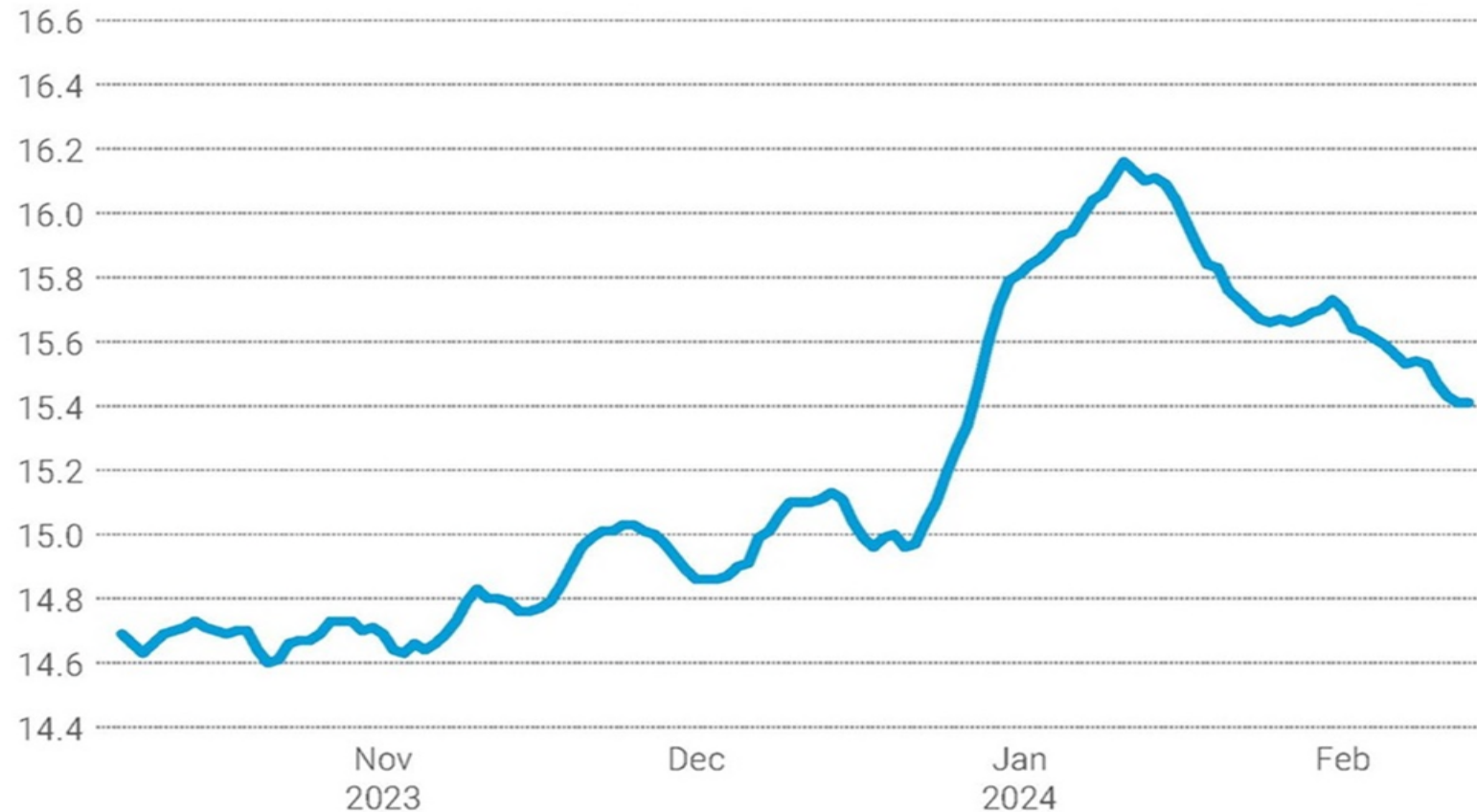
## Claim cost inflation in 2024?



Source: <https://tradingeconomics.com/euro-area/producer-prices-in-industry-repair-maintenance-of-ships-boats-eurostat-data.html>

# SPIKING VESSEL SAILING SPEED AT THE START OF THE RED SEA CRISIS AND EASING IN 2024

IN KNOTS, SEVEN-DAY MOVING AVERAGE



Vessel speed relates to vessel emissions (in absolute terms):  
What does it mean for decarbonisation goals?

Source: UNCTAD February 2024 'Navigating troubled waters', UNCTAD calculations, based on data from Marine Benchmark.

# ORACLE 2024 – A COMPLEX WORLD

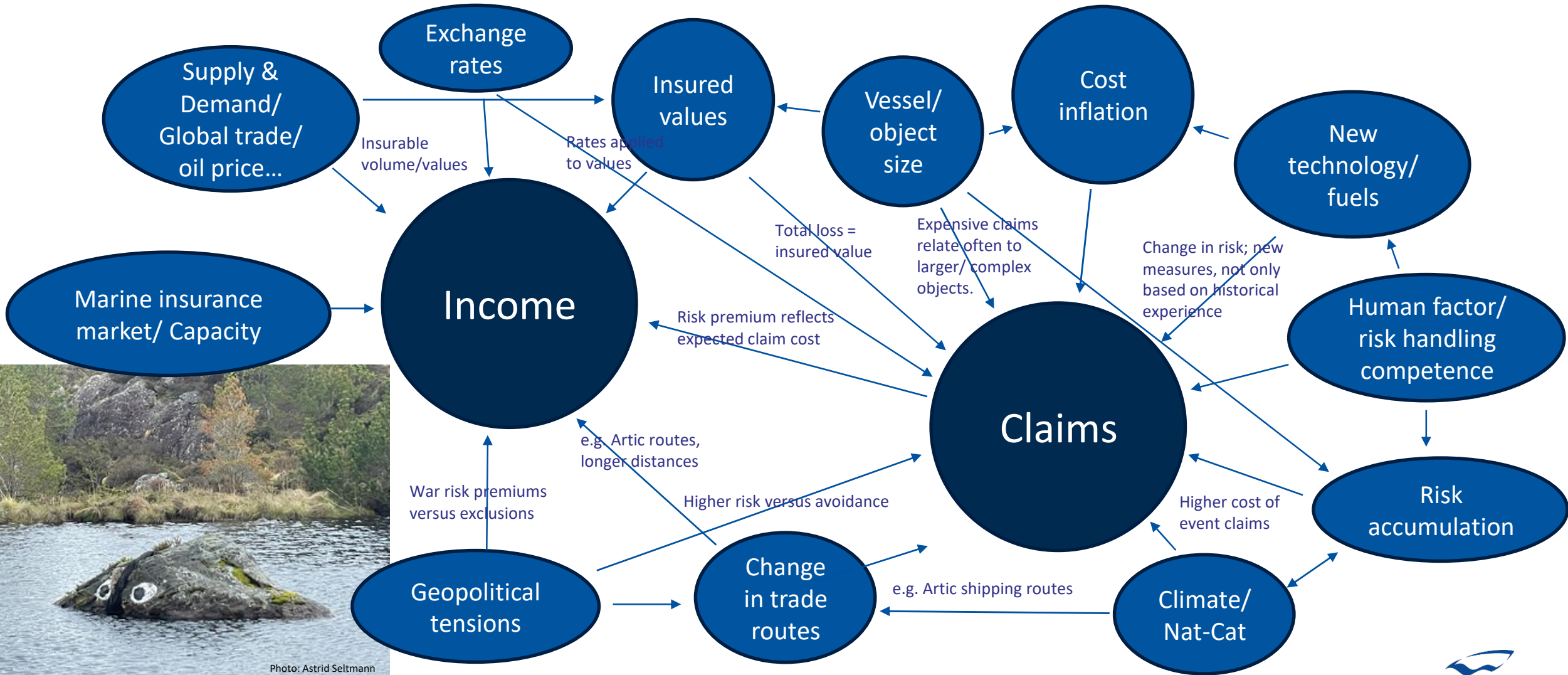


Photo: Astrid Seltmann

# ISSUES WITH POTENTIAL EFFECT ON HULL TRENDS

- **Claim cost inflation – we may not have seen the end of it yet**
  - Changes in steel prices, oil & gas prices (fuel), freight rates, wages influence claims costs.
  - Cost of total losses driven by vessel values.
  - Ageing fleet may lead to more attritional losses.
- **Vessel activity patterns**
  - Pandemic/geopolitics/climate led to rerouting of vessels over past years.
  - Casualty trends and vessel emissions are related to vessel activity patterns.
- **Green transition / Emission reduction / New technologies**
  - Alternative fuels, propulsion methods and other new technologies mean change of risk.
  - Historical data may not suffice to assess future claims potential. Increasingly relevant to assess risk inherent in new technologies in combination with vessel behaviour.

# 2024 ORACLE – HEADWINDS AHEAD

- **Global trade:** growths estimates constantly revised, uncertainties
- **Claims impact:** unlikely to decline  
(Shipping activity / larger vessels / inflation / new & changing risks / fleet ageing / climate)
- **Capacity:** attracted by past year's improved hull insurance results?
- **Complexity:** increasing  
(decarbonisation, regulations, compliance)
- **Energy costs, interest rates:** transport costs to increase
- **Obstruction of major shipping lanes / rerouting of vessels** impact supply/demand and fleet and casualty trends.
- Shipping might be sailing into a hurricane, get prepared!  
(Martin Stopford at ISSS 11 September 2023)

## Complexity & Uncertainty



Photo: Astrid Seltmann

# OCEAN AND COASTAL HULL TRENDS PUBLISHED 20 MARCH 2024



## Watch out for new analyses to come:

- Casualty trends versus vessel activity (speed, distance sailed)
- Vessel CO<sub>2</sub> emissions – follow-up of 2023 analysis\* with new data.
- Mid-year Cefor hull trend update (August 2024).

\* <https://cefor.no/globalassets/documents/statistics/nomis/focus-analyses/cefor-annual-report-2022---vessel-co2-emissions.pdf>

# NOMIS HULL TRENDS @ [STATISTICS \(CEFOR.NO\)](https://cefor.no/statistics/nomis/)

## NoMIS hull trends 2023:

<https://cefor.no/statistics/nomis/2023/>

The screenshot shows the Cefor website's 'NoMIS 2023' page. The header includes the Cefor logo and navigation links for 'About Cefor', 'Statistics', 'Clauses', 'Education', and 'Industry Policy'. The main content area features a sidebar with a 'Statistics' menu and a '2023 Hull trends - Increase in claims cost and frequency' article. The article text states: 'Cefor released its 2023 hull trends based on data as per 31 December 2023. Highlights are: Upward trend in claims cost and frequency. Claims occurred in 2022 showed a worse cost development in 2023 than claims of any previous year had in the following year. Some increase in major losses in 2023, with fires representing the costliest claims. Container vessel values saw big downward corrections in the second half year of 2022 and in 2023 after big increases in 2021 and the first half year of...'. Below the article is a 'Read More' link and a 'Print this page' button. To the right, there is contact information for Astrid Seltmann and a 'Market Overview' section with a magnifying glass icon.

## Special focus analyses:

<https://cefor.no/statistics/analysis-with-special-focus/>

The screenshot shows the Cefor website's 'NoMIS Special focus analyses' page. The header is identical to the previous page. The main content area features a sidebar with a 'Statistics' menu and a 'NoMIS Special focus analyses' article. The article text states: 'An overview over special focus analysis prepared by Cefor and derived from data compiled in the Nordic Marine Insurance Statistics database (sorted by topic and year of publication). The focus of the analyses is to identify claims trends in the context of portfolio and fleet characteristics. The analyses are also published as part of the Cefor Annual report or the June hull trends update, issued in April and August each year. Vessel CO2 emissions: 2023: Vessel CO2 emissions. Analyses the CO2 emission alignment against the 100% reduction trajectory by vessel type, age and distance sailed. Fires: 2022: Fires - still burning. Fire trend analysis per December 2021, featuring: Fires versus other casualty types; Fire trends by vessel type; Container fires by location (cargo, accommodation, engine room)'. Below the article is a 'Read More' link. To the right, there is contact information for Astrid Seltmann and a 'Market Overview' section with a magnifying glass icon.

# THANK YOU!

Questions? Contact

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**Helle**  
Big  
Boss

**Astrid**  
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Jack of all  
trades