

2022 CBMU Fall Educational Program

LOSS COSTS ON THE RISE UNDERSTANDING THE IMPACT OF INFLATION ON OCEAN MARINE LINES

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Inflation Basics and Impact on Marine



1st Party Marine Lines



3rd Party Marine Lines

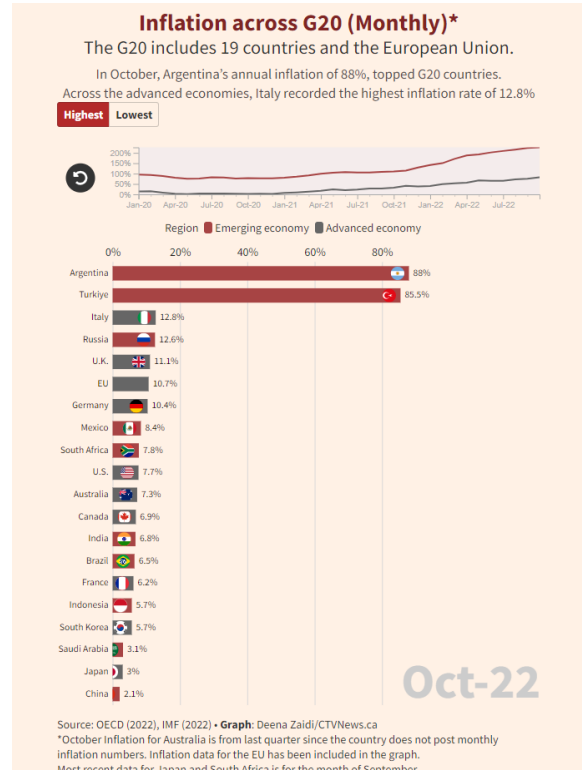


Definition: Inflation is the rate of increase in prices over a given period of time. Inflation is typically a broad measure, such as the overall increase in prices or the increase in the cost of living in a country. (Source: IMF <https://www.imf.org/external/pubs/ft/fandd/basics/inflat.htm>)

Causes of Inflation:

- Demand-Pull
- Cost-Push
- Increase in Money Supply
- Sustained Low Interest Rates
- Government Policies.

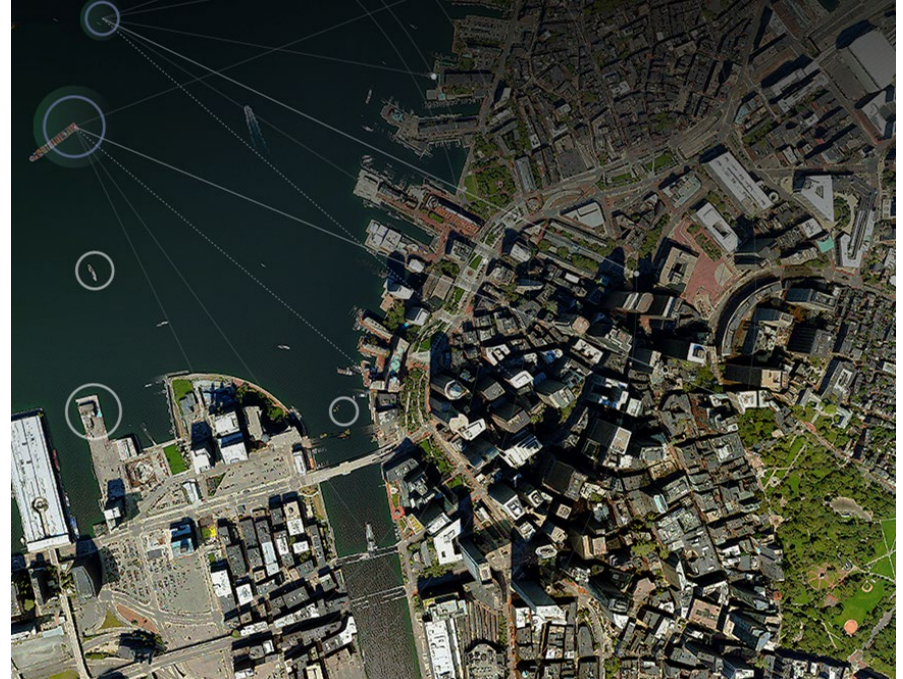
Inflation Across G20 Countries



Inflation and Impacts on Marine Insurers

Marine Lines of Business

- Cargo
- Hull & Machinery
- Protection & Indemnity
- Marine Liabilities
- Marine Builders Risk
- Yacht Insurance
- Marine Property
- Commercial Inland Marine Lines



- Producer Price Index – Nonmilitary Self-Propelled Ships New Construction
- Producer Price Index - Ship Repair Nonmilitary
- Consumer Price Index – Overall
- Consumer Price Index - Medical Care Services
- Cost of Litigation
- Port Container Volume
- Yachts Registered
- Yachting Deaths, Injuries & Accidents
- US and Canadian economic and trade indicators, port activity, shipyard, maritime employment, recreational boating statistics

Inflation and Impacts on Marine Insurers

Areas of Concerns

- Increased Cost of Loss
- Increased Values / Exposure at Risk
- Adequacy of Limits
- Premium / Rate Keeping Pace With Inflation
- Deductible Adequacy
- Vessel Valuation
- Marine Builders Risk Escalation Clauses
- Working Layer or True Excess



Impact of Inflation on Marine Lines

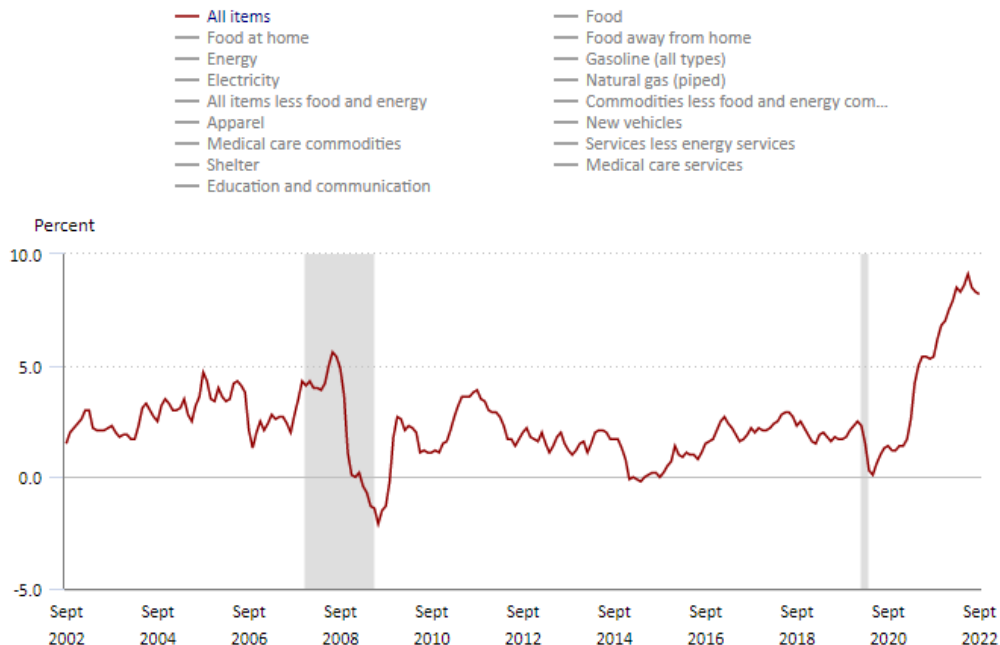
Marine LoB	Inflationary Impact(s)	Ramifications for Marine Insurance	Comments
Cargo	CPI at 40 Year Record High, US Import Price Index Increase, High Shipping Costs, Supply / Supply Chain Constraints	Increased Cost of Loss, Policy Limit(s), Valuation, Rating Base, Deductible Adequacy.	Lack of Warehouse Capacity. Rating base / exposure base should reflect impact of inflation and absent rate reduction and / or flat premium premiums should track. Selling price valuation on unsold goods presents challenging exposures and loss adjustment complications.
Yacht	Cost and availability of materials. Higher labor costs.	Increased Cost of Repair, Impact on Estimated Vessel Valuation (Replacement Cost and Fair Market Value)	Cost of loss Increasing. Adequacy of deductibles and policy limits factors. Greater tendency to CTL on smaller yachts / boats.
Hull & Machinery	Inflation for non military shipbuilding and repair at record highs. Cost and availability of materials. Higher labor costs.	Increased Cost of Repair, Impact on Estimated Vessel Valuation (Replacement Cost and Fair Market Value)	Cost of loss Increasing. Adequacy of deductibles and policy limits. Builders Risk Escalation Clauses / Limits.
Protection & Indemnity	Increased medical costs. Jones Act increasing quantum of claims. Increased legal costs.	Increasing cost of loss. Adequacy of limits for primary.	Annual Aggregate Deductibles (AADs) challenging as mask results for early years.
Primary Marine Liabilities	Increased medical costs and legal costs. GL exposures in addition to marine.	Increasing cost of loss. Adequacy of limits for primary (move to \$ 5 million primary limits on subscription basis).	Rating base / exposure base should reflect impact of inflation and absent rate reduction and / or flat premium premiums should track. Contractual risk transfer and "Action Over" claims increasing.
Excess Marine Liabilities	Increased medical costs. Jones Act increasing quantum of claims. Increased legal costs.	Increasing cost of loss. Social inflation.	Marine and non-marine exposures (commercial auto). Insurers reducing line sizes to de-risk portfolios and afford better balance. Subscription market approach. Availability of capacity.



Inflation Impact Marine 1st Party Lines

Consumer Price Index (CPI)

12-month percentage change, Consumer Price Index, selected categories, not seasonally adjusted



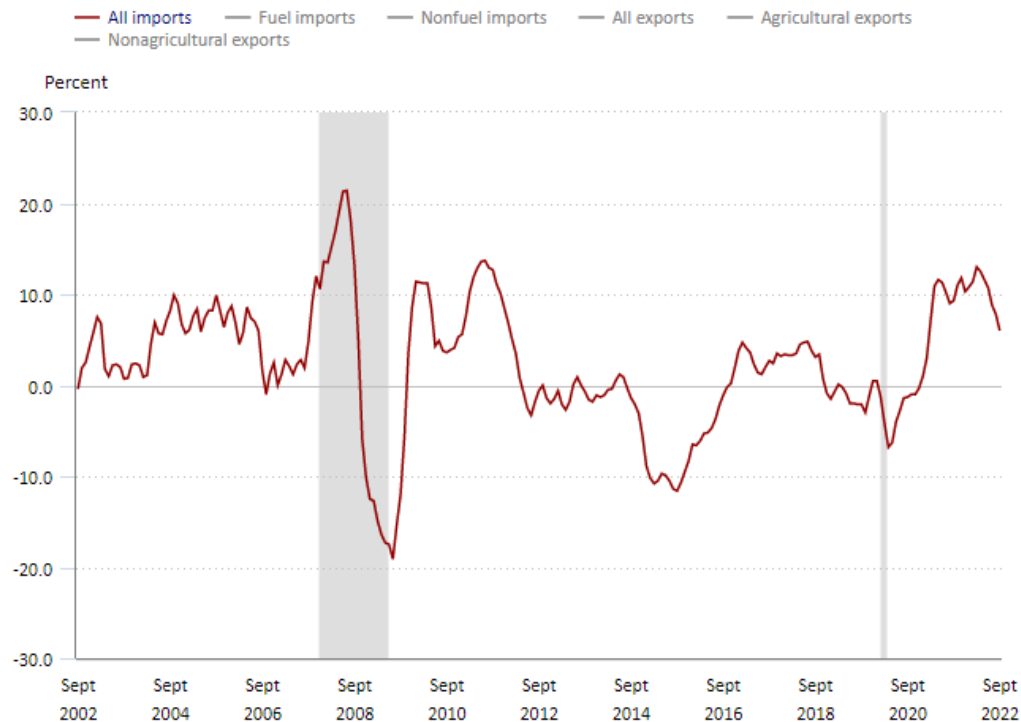
Hover over chart to view data.

Note: Shaded area represents recession, as determined by the National Bureau of Economic Research.

Source: U.S. Bureau of Labor Statistics.

US Import Price Index

U.S. import and export price indexes, 12-month percent change



Hover over chart to view data.

Note: Shaded area represents recession, as determined by the National Bureau of Economic Research.

Source: U.S. Bureau of Labor Statistics.

Shipping Costs

Freightos Baltic Index (FBX): Global Container Freight Index



Source: <https://fbx.freightos.com/>

Producer Price Index Non-Military Ship Building and Repair



Hull & Machinery Inflation 2020 to 2022 Example

2020

- Vessel insured value \$ 10 million (Estimated Replacement Cost \$ 15 million, Fair Market Value \$ 8 million)
- \$ 100,000. Deductible
- \$ 250,000. Machinery damage claim FGU
- \$ 150,000. Insured Loss

2022

- Vessel insured value \$ 10 million (Estimated Replacement Cost \$ 17 million, Fair Market Value \$ 9 million)
- \$ 100,000. Deductible
- +18% increase in ship repair costs due to inflation 2020 to 2022
- \$ 295,000. Machinery damage claim FGU
- \$ 195,000. Insured Loss (+30%)

Yacht and Pleasurecraft Inflationary Impacts

- 10% year-over-year average increase in boat MSRPs. Here are the 2021 and 2022 average price increases for some popular models:
 - Lund 1875 Crossover XS Sport increased 21.7%, from \$25,206 to \$32,055.
 - Mastercraft NXT 22 increased 28.1%, from \$76,007 to \$97,390.
 - The Sea Ray Sundancer 320 increased 20%, from \$301,951 to \$363,902.
 - The Crestliner 1860 Retriever Jon increased 180.2%, from \$5,567 to \$15,601.
- Outboards increased 49.3%, stern drives increased 49.2%, and outboard motors are up by 48.3%
- Pontoon deck and houseboats saw a 25.5% increase.

Source: Price Digests <https://pricedigests.com/blog/rising-tide-consumer-interest-lifts-boat-prices-2/>

Yacht and Pleasurecraft Inflationary Impacts

- Higher material and technology costs
- Specialized labor / skills for service and repair
- Availability of boat repair yards
- Depreciating asset insured on an agreed value basis. Partial losses valued on “new for old” basis. Repair costs can quickly exceed insured value of the vessel resulting in a Constructive Total Loss (CTL).



Yacht Inflation 2020 to 2022 Example

2020

- Vessel insured value \$ 50,000.
- \$ 5,000. Deductible
- \$ 25,000. Claim FGU
- \$ 20,000. Insured Loss

2022

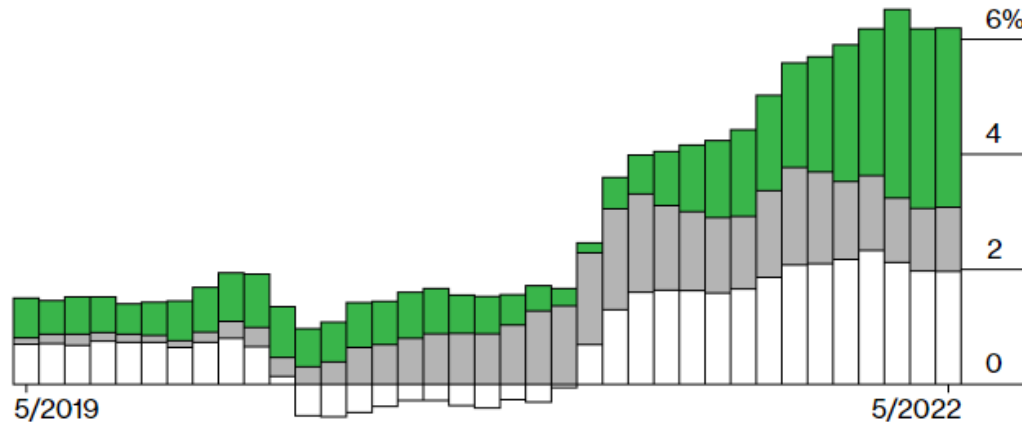
- Vessel insured value \$ 50,000.
- \$ 5,000. Deductible
- + 30% increase in repair costs due to inflation (2020 to 2022)
- \$ 32,500. Claim FGU
- \$ 27,500. Insured Loss (+37.5%)

- Causes:
 - COVID – Impact on production and demand.
 - Supply Chain runs at maximum capacity. Not built for interruption or sudden change.
 - Bottlenecks and corresponding impacts.
 - Lack of Warehouse Space.
- Marine Insurance Implications:
 - Accumulation (aboard vessels and in port).
 - Longer transit times.
 - Higher warehouse values at risk (inventory management from “just in time” to “just in case”).
 - Inflation (increase in cost of loss).
 - Putting more stress on a market trying to emerge from challenging period of global unprofitability.

Supply Constraints Are Driving Inflation

Components of US inflation
Percentage-point contribution to the year-over-year change
in the personal consumption expenditures price index

■ Supply-driven inflation ■ Ambiguous □ Demand-driven inflation

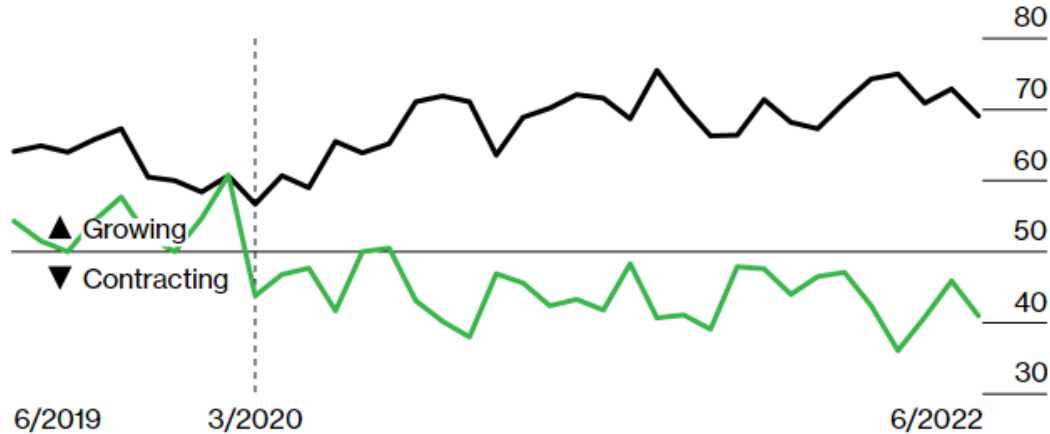


Source: Federal Reserve Bank of San Francisco working paper

Warehouses Are Full

Warehousing indexes
Components of the Logistics Managers' Index

▲ Warehousing utilization ▲ Warehousing capacity



Source: Logistics Managers' Index reports

- Assumptions:
 - Cargo premiums are derived by applying a rate against the insured value of shipments.
 - Insured value of shipments is based on the policy valuation (CIF + 10%, Selling Price if Sold).
- Global trade outlook 2023 +1% – world merchandise trade volume +1% (source WTO).
- Global inflation outlook 2023 per IMF +6.5% (source IMF)
- Container trade (number of TEUs shipped) in US per NRF Global Port Tracker:
 - 2021 to 2022 +1%
 - Outlook for 2023 -5%
- Container freight rates dropping (much faster than the volume of containers shipped).
- In concept in 2023 we expect less “units” of cargo to be shipped so less goods exposed. The insured value per “unit” of cargo will be higher and the cost per claim per “unit” of cargo will increase. Deductible adequacy is factor.

Cargo Inflation 2023 Outlook Example 1

2022

- 100 units of cargo valued at \$ 100. each. Total sum insured is \$ 10,000.
- 50 shipment of 100 units per year. Annual exposure is 5,000. units per year at insured value of \$ 100. each = \$ 500,000.
- Assume 5% of units per year damaged. \$ 500,000. X 5% = \$ 25,000.

2023

- 100 units of cargo valued at \$ 106.50 each. Total sum insured is \$ 10,650. (+6.5% insured value increase per unit of cargo from prior year).
- 47.5 shipments (-5% from prior year) of 100 units per year. Annual exposure is 4,750. units per year at insured value of \$ 106.50 each = \$ 505,875.
- Assume 5% of units per year damaged. \$ 505,875. X 5% = \$ 25,293.75. (1.175% increase)

Cargo Inflation 2023 Outlook Example 2

2022

- 100 units of cargo valued at \$ 100. each. Total sum insured is \$ 10,000.
- 50 shipment of 100 units per year. Annual exposure is 5,000. units per year at insured value of \$ 100. each = \$ 500,000.
- Assume 5% of units per year damaged. \$ 500,000. X 5% = \$ 25,000.

2023

- Cargo insured value increases +15% due to inflation. Shipments down 5%.
- 100 units of cargo valued at \$ 115. each. Total sum insured is \$ 11,500. (+15% insured value increase per unit of cargo from prior year).
- 47.5 shipments (-5% from prior year) of 100 units per year. Annual exposure is 4,750. units per year at insured value of \$ 115. each = \$ 546,250.
- Assume 5% of units per year damaged. \$ 546,250. X 5% = \$ 27,313. (9.25% increase)

Cargo Inflationary Impacts

Policy Valuation – Selling Price on Unsold Goods

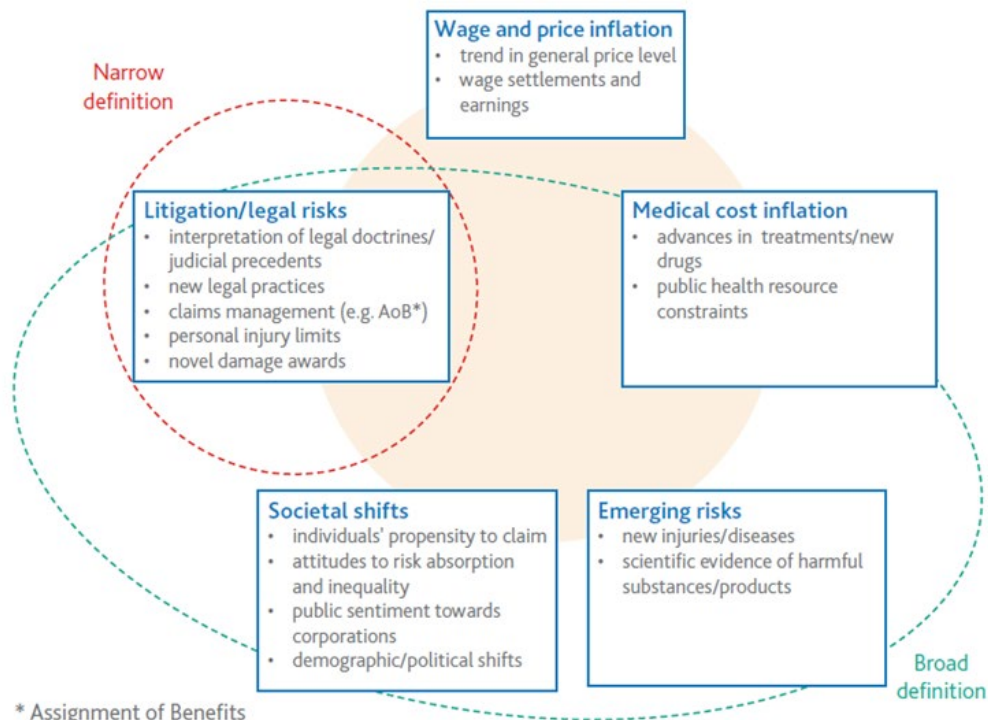
- Over indemnification, Increased Claims Handling Expenses (forensic accountants)
- Common Markups:
 - Clothing 100-350%
 - Shoes 100-500%
 - Furniture 200-400%
 - Cosmetics 60-80%
 - Prescription Medicine 200-5,600%
 - Eyeglasses 800-1,000%
 - Jewelry 100% average
 - Books 300% average
 - Electronics 750% average





Inflation Impact Marine 3rd Party Lines

Inflation in Casualty



Source: The Geneva Association

- It is difficult to analyze the impact of economic inflation in Casualty lines without discussing social inflation, as these factors are inextricable. This graphic displays the interplay between general economic inflation and social inflation
- Broadly defined, social inflation refers to all ways in which insurers' claims costs rise over and above general economic inflation (i.e., growth in wages and prices)
- More narrowly, social inflation refers to legislative and litigation changes that shape and ultimately impact insurers legal liabilities and claims costs

- Protection and Indemnity
- Marine Commercial Liability / General Liability Exposures
 - Care, Custody and Control
 - Bodily Injury and Property Damage
 - Premises
 - Operations
 - Products / Completed Operations
 - Personal and Advertising Injury
 - Action Over Coverage
 - Hired and Non-owned Auto
 - Contractual Liability

- Maintenance and Cure
- Personal Injury Damages
- Unearned Wages
- Pain & Suffering (Past and Future)
- Lost Wages (Past and Future)

National estimates for Captains, Mates, and Pilots of Water Vessels:

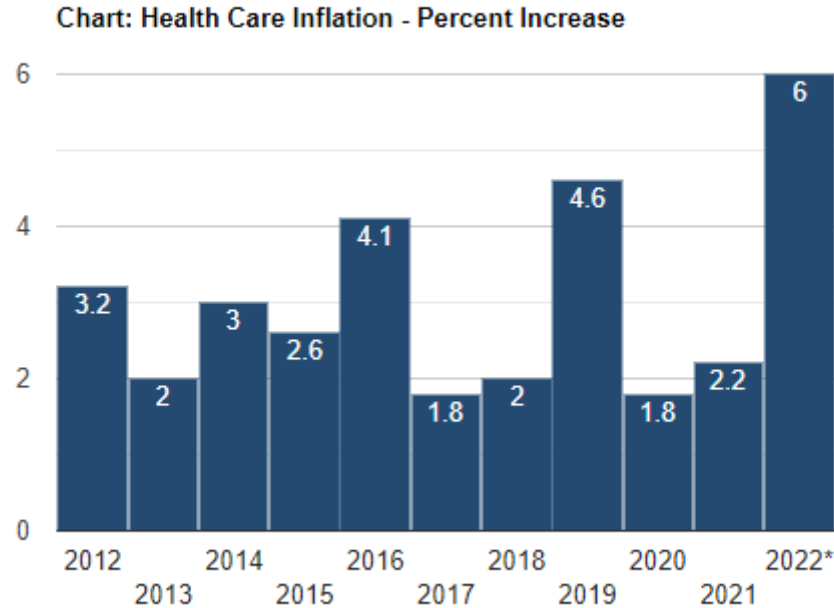
Employment estimate and mean wage estimates for Captains, Mates, and Pilots of Water Vessels:

Employment (1)	Employment RSE (3)	Mean hourly wage	Mean annual wage (2)	Wage RSE (3)
33,490	3.4 %	\$ 47.27	\$ 98,330	1.8 %

Percentile wage estimates for Captains, Mates, and Pilots of Water Vessels:

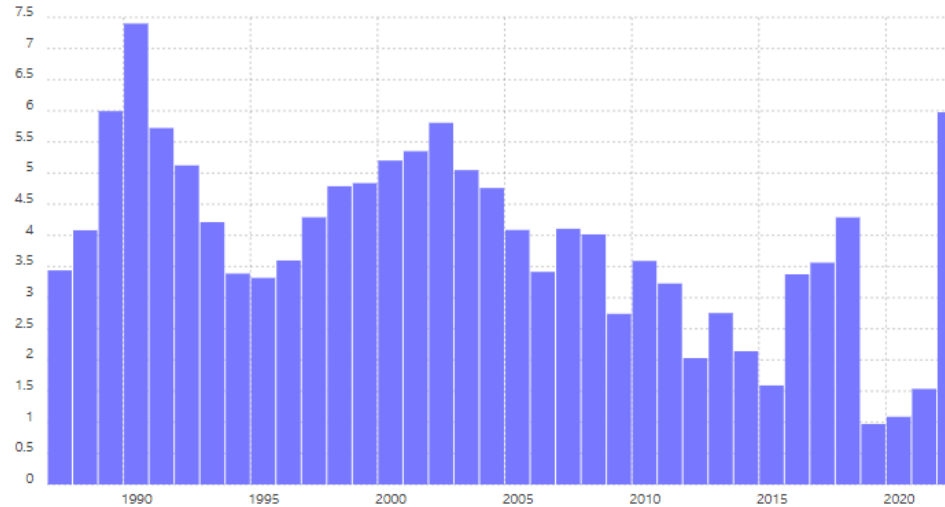
Percentile	10%	25%	50% (Median)	75%	90%
Hourly Wage	\$ 17.91	\$ 28.56	\$ 39.25	\$ 58.90	\$ 76.77
Annual Wage (2)	\$ 37,240	\$ 59,400	\$ 81,640	\$ 122,520	\$ 159,690

Health Care Inflation in the United States



Price Inflation for Legal services since 1986

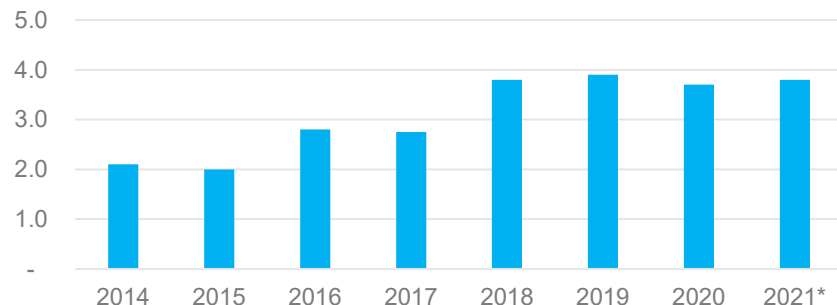
Consumer Price Index, U.S. Bureau of Labor Statistics



Years with the largest changes in pricing: 1990 (7.40%), 1989 (5.99%), and 2022 (5.98%).

- Over the last several years, indicators of social inflation have emerged as a disruptive issue for liability insurers. For example, the median value of a single fatality remained fairly stable between 2001 and 2015 but increased sharply starting in 2016 to \$3.8M in 2020. If the rate of inflation were applied to the 2001 value of a single fatality, the 2020 figure would only be \$2.25M.¹
- Though difficult to measure, the use of litigation financing also continues to increase.
- While the social inflation problem appears to exist across most risk classes, re-underwriting the portfolio, limits management, and pricing actions are options available to insurers to control risk. Insurers must also look at external factors, become more forward-thinking in terms of trends, and identify macro-factors that can influence underwriting strategy.¹
- Insurers must analyze social inflation developments from a cross-functional perspective, pulling expertise from claims, legal, underwriting and data analytics departments to understand and respond to social inflation trends.¹
- It is too early to tell what effect the pandemic will have on the broader liability landscape, but it does have the potential to amplify the factors that have contributed to social inflation.

Median Cost, Single Fatality in \$ Millions



Source: R Street Policy Study No 247. Scourge of Social Inflation Dec 2021

* Through Q2 2021

Prevalence of Litigation Financing

76%

of in-house and law firm lawyers say their organizations have used legal finance, up from 37% in 2017 – a 105% increase.²

68%

of in-house and law firm lawyers agree that legal finance will become more common in the years ahead, particularly as a tool to combat recession impacts.²

Rate Change and Loss Trend

Rate: A unit of cost that is multiplied by an exposure base to determine an insurance premium. An insurance rate is the amount of money necessary to cover losses, cover expenses, and provide a profit to the insurer for a single unit of exposure. Rates, as contrasted with loss costs, include provision for the insurer's profit and expenses.

Rate Change: Rate change is a key indicator of how an insurer's loss ratios are likely to change.

Loss Trending: Adjusting historical losses to account for inflationary trends so that their value is in current dollar amounts. Historical loss amounts are multiplied by "trending factors" to convert historical loss amounts to current dollar amounts.

... it's far easier to keep up than catch up.
- Gretchen Ruben

