Orange County Sanitation District

Insurance Market Update & Renewal Expectations

May 10, 2023

Presented by:
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Insurance Market
Financial Performance

Catastrophic Perils and
the effect on capacity

Commentary by Line of Coverage

Specifics Regarding July
1 Renewals

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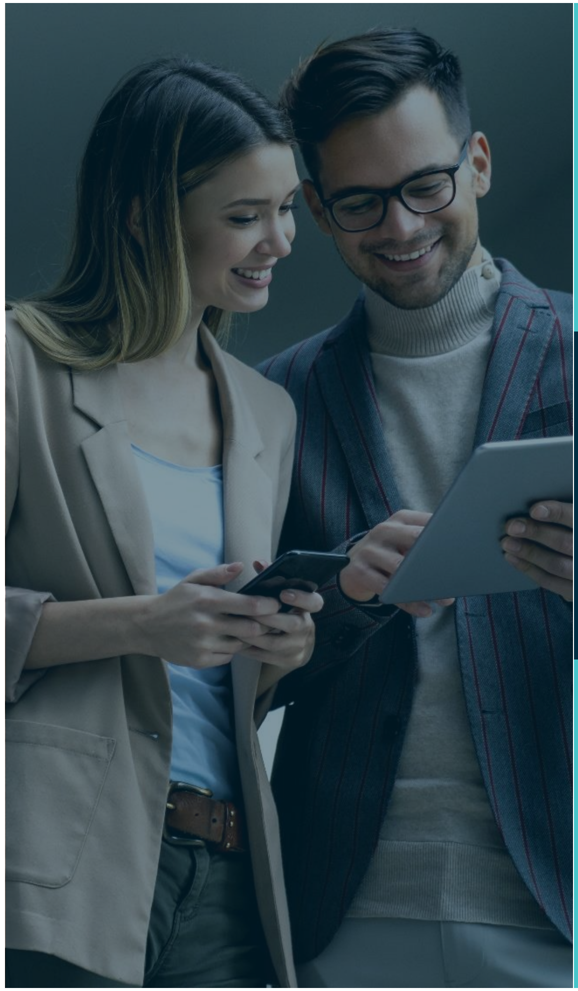
Market Pressures…

"While the industry balance sheet is strong enough to meet the commitments to insureds, it is facing emerging challenges from the significant and increasing impact of catastrophic weather events, cyber risk and significant price and social inflation/lawsuit abuse," Robert Gordon, senior vice president of policy, research, and international for APCIA, said in a statement.

- Pandemics & Epidemics
- Great Resignation & Quiet Quitting
- Aging Infrastructure
- Geo Political
- Climate Change
- Inflation
- Mass Shootings
- Natural Disasters
- Supply Chain & Labor Shortage
- Social Inflation & Nuclear Verdicts
- Cyber Attacks
- Ukraine War
- Legislation

Market Conditions

Impactful issues for insureds:



Property

Excess Liability

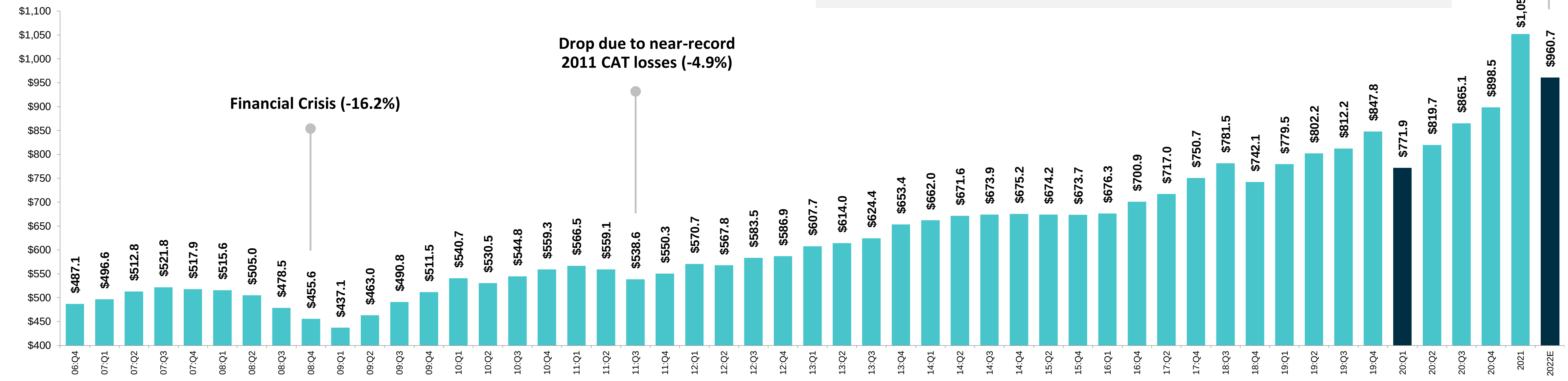
Cyber

- **Liability capacity pull back** and withdrawals have been significant over the past two years
- **Property capacity reductions**:
  - 15% to 30% reduction in capacity from incumbents, and not being replaced in the near term
  - Coastal and wildfire capacity continues to be especially difficult
- **Cyber capacity is leveling** but still particularly acute for certain industries (Public Entity)
- Insurers produced **negligible profit in 2022** – Expected $112b in Global Insured CAT losses in 2022 – **3rd Worst Loss Year on Record.**
- Excess Workers Compensation **remains stable, but retained layer may be experiencing increased claims volume**.
- Historically **low interest rates** have hampered carrier investment returns.
- An **increased pattern of major property catastrophes** such as hurricanes, typhoons, wildfires, winter storms and etc. over the past 5 years. Is this the new normal?
- Consistent **increases in attritional property losses** (fires, water damage, tornados, hail, wildfires).
- **Increased inflation** has added to the issue of **valuation across all property classes**.
- **Social inflation & Litigation Financing** driving up liability verdicts and settlements.
- **Ransomware cyber losses** are systemic - $6 Trillion Impact in 2021 – **Expecting $10 Trillion by 2025** – 2019 was $2 Trillion

Policyholder Surplus (Capacity), 2006:Q4 – 2022:H1*

($ Billions)

The P/C insurance industry entered the COVID-19 pandemic from a position of strength and was able to withstand the 9.0% surplus decline in Q1 2020 (far less than during the Financial Crisis). 2020 ended with record surplus. 2021 set another new record, exceeding $1 trillion for the first time. Unrealized losses caused surplus to drop sharply in 2022.



Policyholder Surplus is the industry's financial cushion against large insured events, periods of economic stress and financial market volatility. It is also a source of capital to underwrite new risks.

*2022 figure is actual through Q2.

Sources: ISO, A.M .Best, NAIC. Risk and Uncertainty Management Center, University of South Carolina.

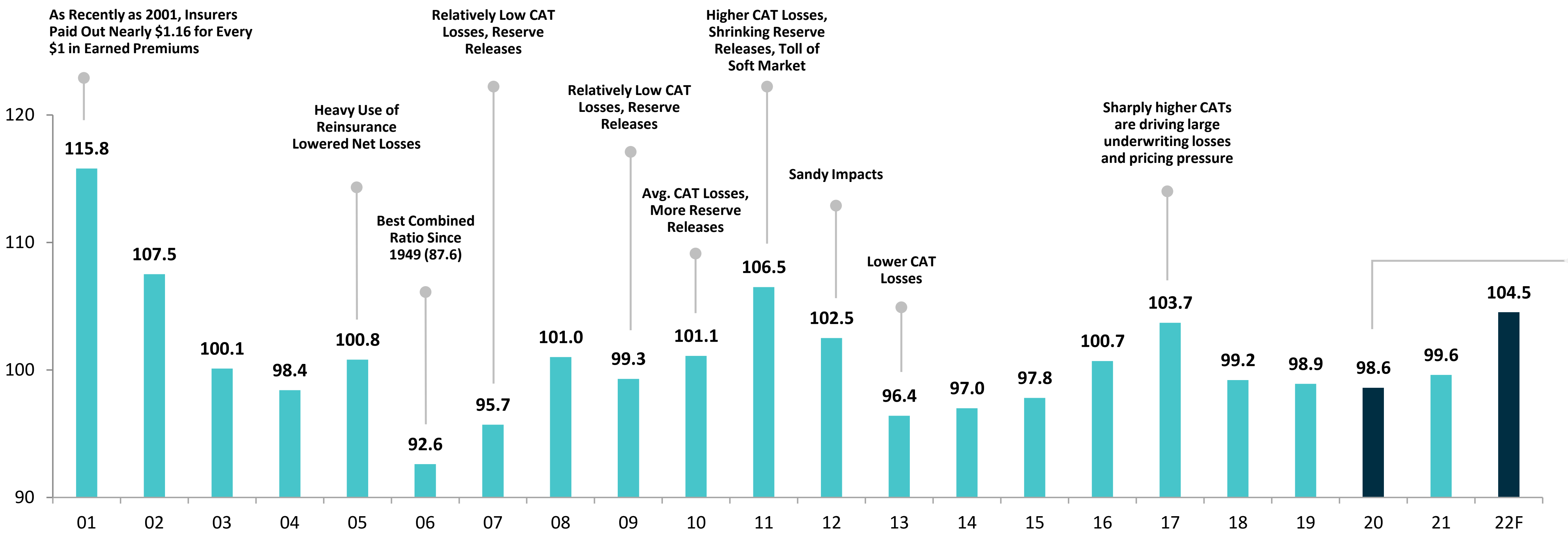
Net Investment Yield on Property/Casualty Insurance Invested Assets, 2007–2022:H1

The yield on invested assets remains depressed relative to pre-financial crisis and pre-COVID yields. Fed rate hikes in 2022 should begin to slowly lift yields.

Average: 1960-2019 = 4.9% | Low: 2.8% (1961) | High: 8.2% (1984/85)

Sources: NAIC data, sourced from S&P Global Market Intelligence; 2017-19 figures are from ISO. 2020-21 data from the APCIA. Risk and Uncertainty Management Center, Univ. of South Carolina.

P/C Insurance Industry Combined Ratio, 2001–2022F**



COVID-19 has had no discernable ***net*** impact on pre-COVID expectations for the combined ratio in 2020;

-7.5 pts. due to CATs vs. 4.1 in 2019 (about twice avg.)

Pre-COVID 2020 Combined Ratio Est. 99.1 (A.M. Best)

Actual = 98

*Excludes Mortgage & Financial Guaranty insurers 2008–2014.
**2022 figure is forecast. A.M. Best Review and Preview (Feb. 2021).
Sources: A.M. Best, ISO (2014-2022F).

Recent CAT Losses

Drought

50% of the Lower 48 States are in drought

299.9 Million acres of crops in U.S. are experiencing drought conditions this week

120.2 Million people in the U.S. are affected by drought this week

Flooding

2021 – More than **50** severe flood events

$80b Economic Loss – only $20b insured

2022 – KY Floods **37** deaths

Hurricanes

Record-breaking **21** named storms in 2021

$45B+ in insured losses (US) **IDA = $30b Alone**

Hurricane Ian & Nicole = **$70b?**

Wildfires

2021 wildfires

Burned over **7,000,000** acres

$15B in insured loss

2022 = **7.5m** acres

Tornado / Convective Storm

2021 **1376** tornadoes in the US compared to 1075 in 2020

Over **100** deaths associated

Estimated **$10B+** insured losses

Winter Storms

Uri – 2021 Over **110** deaths associated

Estimated **$20B+** insured losses

Largest Q1 loss record

Elliott – 2022 Over **65** deaths associated

Estimated **$5.4B+** insured losses

The Makings of a Hard Market - Timeline

2016 is the height of a soft market.
Buyers and producers are happy, prices are low and companies compete to pay producers commission.

2022 we are in a hard market.
There is high demand for insurance coverage and low appetite to insure. Rates are high and coverage is difficult to find.

2017

2017
Costliest Year on Record for Natural Disasters
16 separate events, each causing damages in excess of $1B[1]

2017 Hurricane Season Ranks as Costliest Ever for U.S.

2017 California Wildfires

8/17/2017
Hurricane Harvey[2]
- 2nd costliest storm on record ($125B)
- Dumped approximately 29 trillion gallons of water on Texas and Louisiana

Harvey The 'Most Significant Tropical Cyclone Rainfall Event' in U.S. History

8/30/2017
Hurricane Irma
- Category 5
- 5th costliest storm on record ($50B)

9/16/2017
Hurricane Maria
- Category 5
- 3rd costliest storm on record ($90B)

2018

2018
Market Starts to Harden Due to Catastrophes
The market begins to harden and capacity constricts causing supply and demand issues for insurers

10/17/2018
Hurricane Michael
- Category 5
- 9th most costly storm on record ($25B)[3]

Hurricane Michael is the Most Powerful Storm to Hit the Florida Panhandle on Record

2018 California Wildfires

8/31/2018
Hurricane Florence

2019

2019
The Rise of Social Inflation
The rising cost of insurance claims due to the impact of societal factors such as:
- An increase in litigated claims and larger jury awards
- Broader definitions of coverage by the legal system, such as pandemic insurance
- Use of Public Adjustors in the claims process
- Changing views of social responsibility

This all caused the losses from the 2017 and 2018 seasons to be much bigger than anticipated.

COVID-19
Global Pandemic
- Bigger losses than 9/11
- Uncertainty around full impact to the industry and the world

2020

2020
Rising Reinsurance Costs
Florida insurers seeing rate increases of at least 20% and as high as 60%

2020
Very Low Interest Rates
Very difficult to earn the investment return many carriers are dependent on, causing reduced risk appetite

2020 California Wildfires

2020 Colorado Wildfires

2020
Active Catastrophe Season
- Most active storm season on record
- Cost estimated to be over $30B for Hurricanes Isaias, Laura and Sally alone[4]

2020 Atlantic Hurricane Season Breaks All-time Record while Leaving the Gulf Coast Battered

8/10/2020
Midwest Derecho
Caused $7.5B in damage in just 14 hours and generated winds up to 140 MPH

2020
Global Insurance Market Starts to Harden

2021

2021
Another Active Catastrophe Season
with the second most disasters in a calendar year, behind 2020[5]
- Winter storm event in the deep south
- Extreme heat, drought and wildfires across western U.S.
- Hurricane Ida

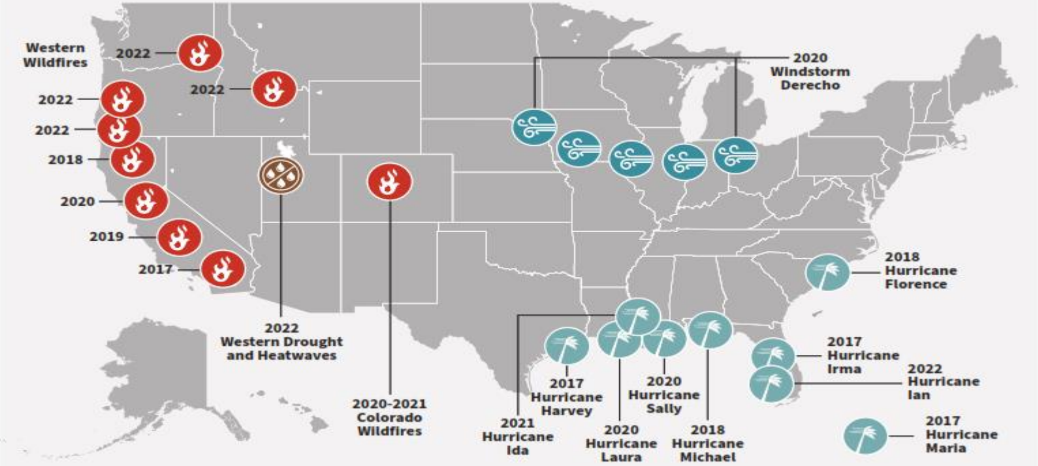
2022

2022
Rising Costs
Due to inflation, social inflation, undervaluation, and a lack of insurance capacity, creating a hard market.

9/2022
Hurricane Ian
- Category 4
- Estimated to exceed $50B in insured and uninsured losses[5]

Aftermath of Hurricane Ian, Fort Meyers, FL

2017-2022 Natural Disaster Locations



TIMELINE KEY
Nationwide (and worldwide)
- 2019-2022 Hardening Markets
- 2020-2022 COVID-19

icat a VICTOR company

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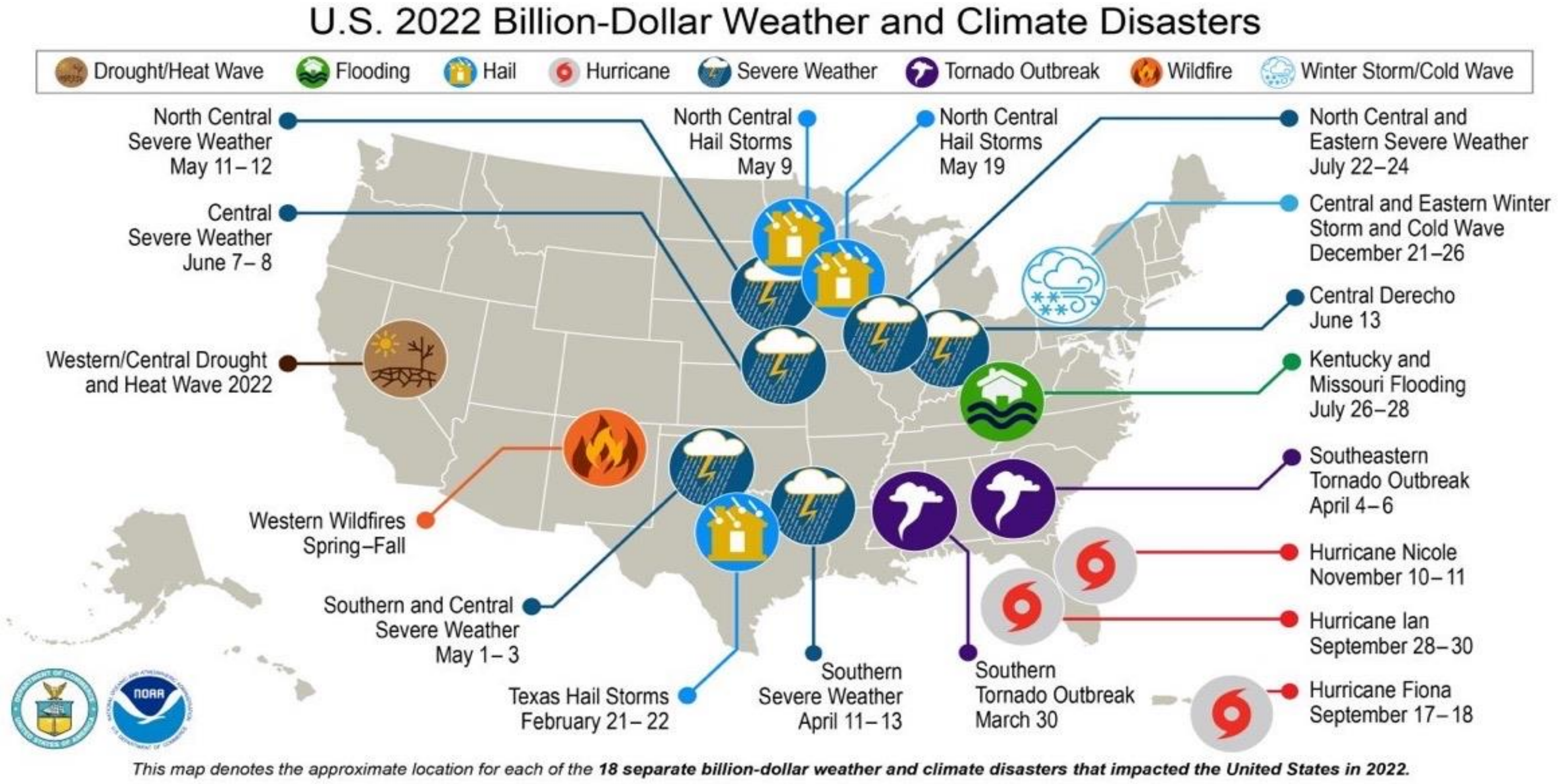
Major U.S Losses in 2022



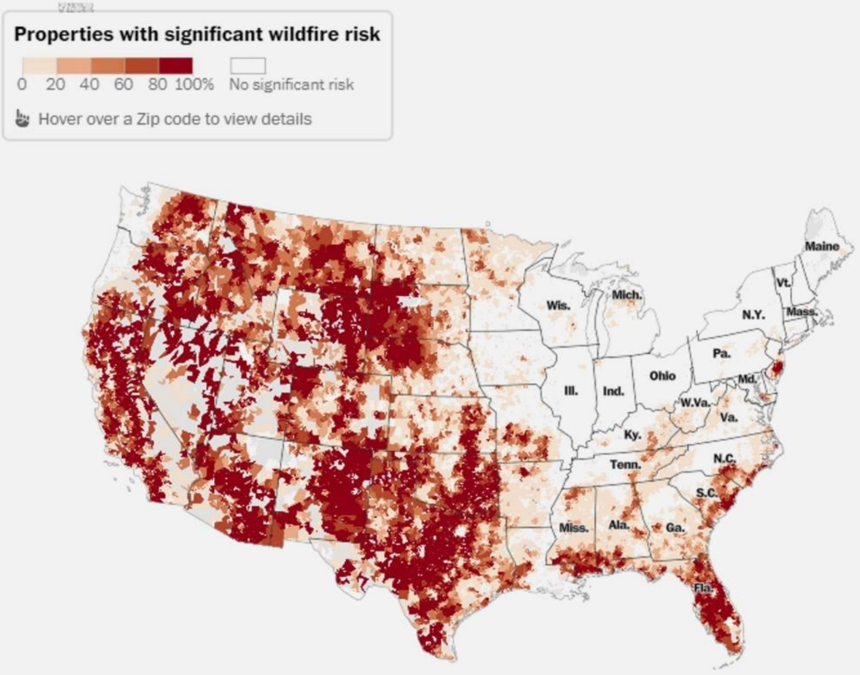
The “Newest” CAT Peril: Wildfire

Climatic changes are resulting in larger and hotter wildfires occurring each summer and later into fall.

Beyond the physical damage and destruction of wildfires, intense smoke significantly impacts the health and economy of communities:

- Reduced travel and tourism leading to loss of sales and occupancy taxes.
- Reduced school attendance and outdoor activities.
- Smoke can hurt your eyes, irritate your respiratory system, and worsen chronic heart and lung diseases.

Continued investment & development of high-risk areas.



Trend and Valuation

Construction Cost Trends

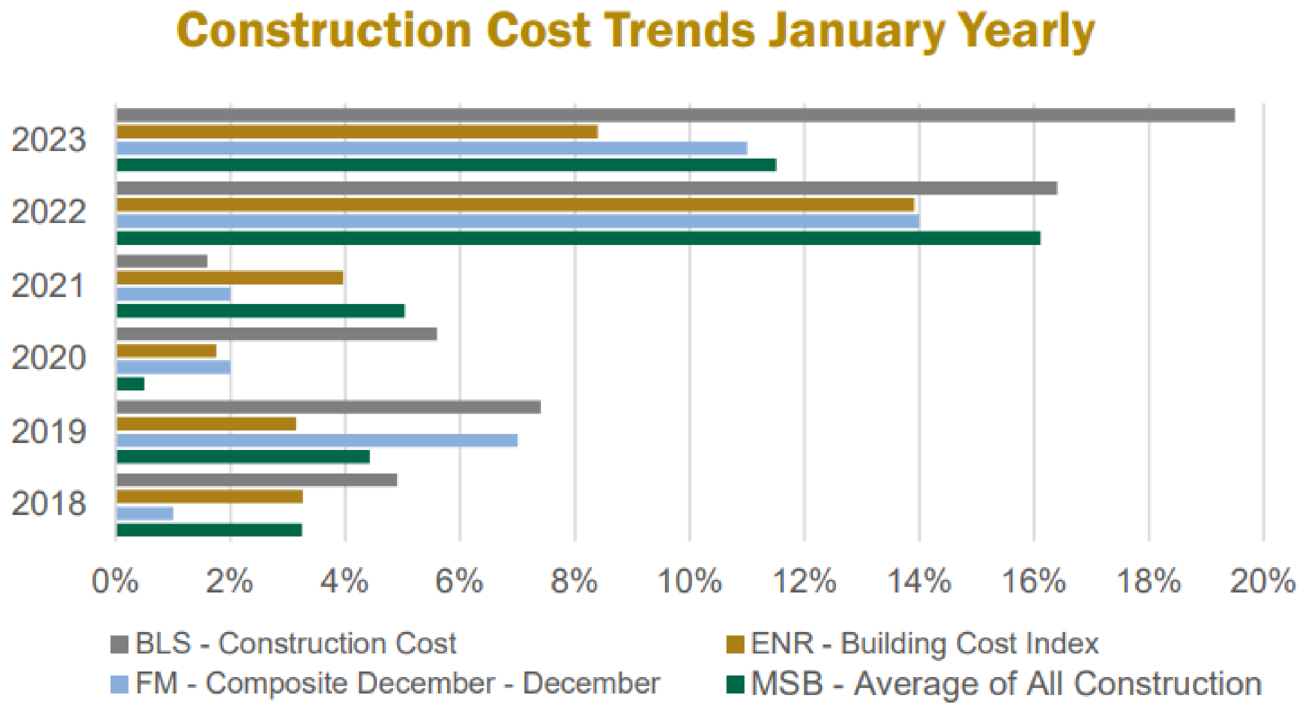
Inflation is not the only challenge impacting construction costs. While certain material costs increases may have subsided and some supply chain issues have diminished, the construction industry is faced with significant labor challenges. The shortage of skilled labor, coupled with increasing wages, is extending project completion timelines and impacting the cost of both existing projects and new bids.

January 2023 Construction Cost Trends

8.4%
ENR - Building Cost Index

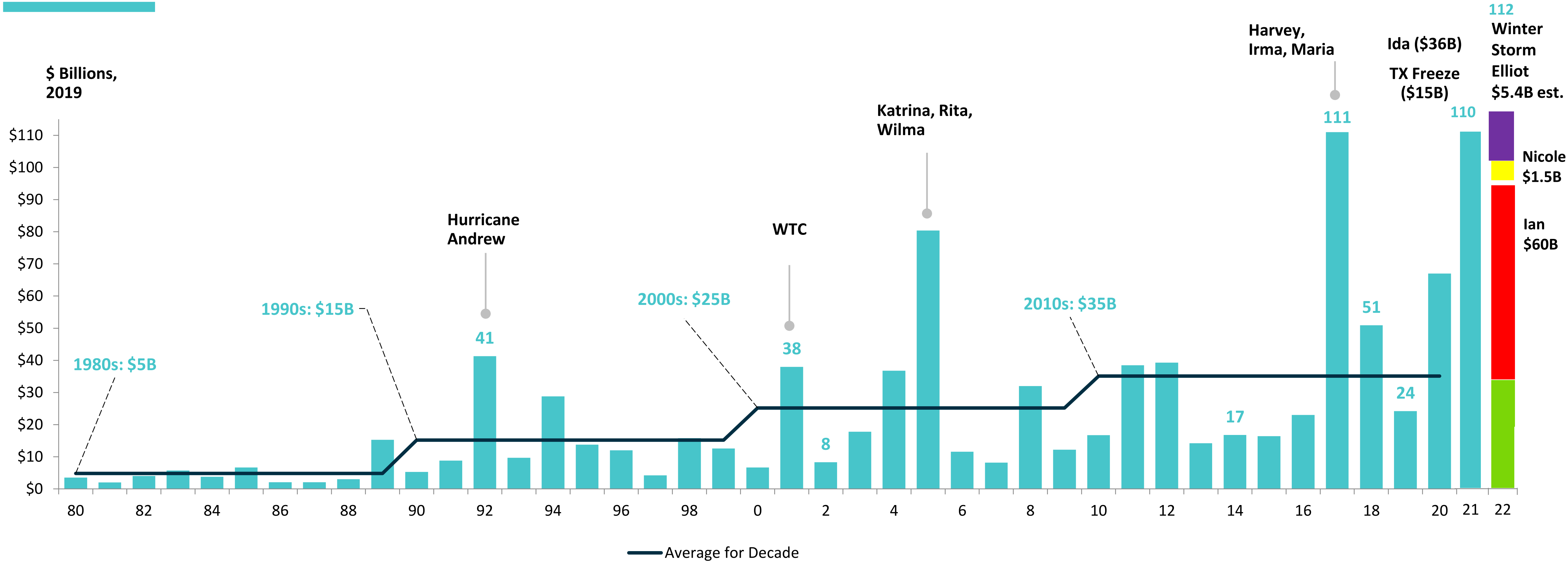
11.0%
FM – Composite December – December

11.5%
MSB - Average of all Construction



WWW.cbiz.com/valuation

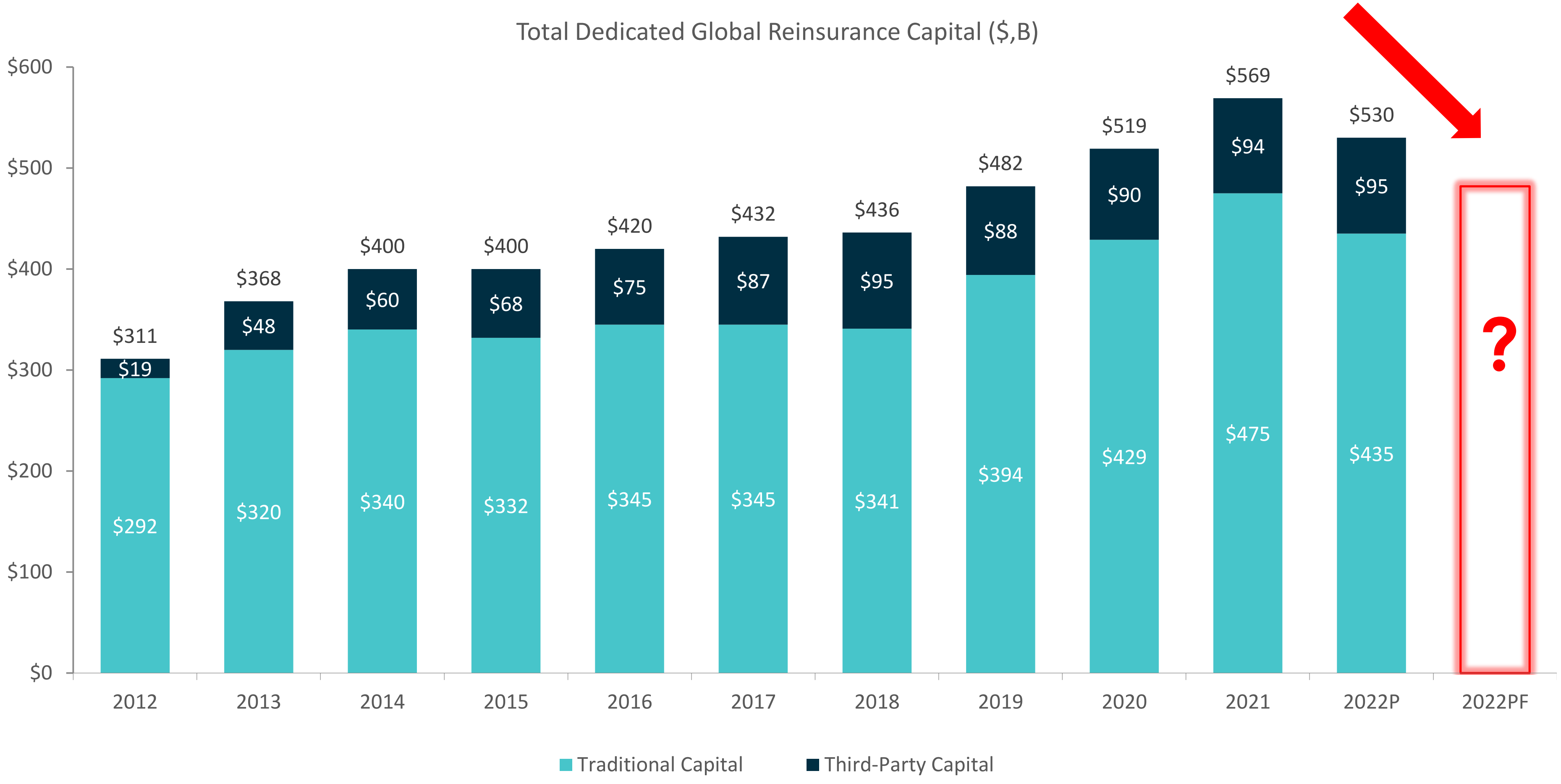
U.S. Inflation-Adjusted Insured CAT Losses



Insured Cat Losses Are Increasing At An Alarming Rate – Nearly 700% Since 80's
Average Insured Loss per Year* | 1980-2021: $23.8 Billion | 2012-2021: $44.1 Billion

Sources: NAIC data sourced through S&P Global Intelligence; Insurance Information Institute.

Reinsurance Capacity Supply & Demand Imbalance



Reinsurance Capital Supply Is Expected To Be Down $50B + At YE:22

While Demand Is Estimated To Be Up $30B +.

Source: AM Best, Guy Carpenter; D&P Analysis. 2022PF = D&P estimates

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Property Reinsurance Rate Movements as of 1/1/23

Territory	Pro rata commission	Risk loss-free % change	Risk loss-hit % change	Catastrophe loss-free % change	Catastrophe loss-hit % change
Australia	-5.0% to -2.5%	+5% to +15%	+15% to +30%	+10% to +20%	+25% to +45%
Canada	-4% to -2%	+10% to +20%	+20% to +35%	+12% to +25%	+20% to +40%
Central & Eastern Europe	-1.5% to 0.0%	+5% to +20%	+20 to +35%	+10% to +30%	+20% to +50%
China	-4% to -1%	+15% to +30%	n/a	+20% to +30%	n/a
Europe	n/a	+20% to +30%	n/a	+25% to +40%	n/a
France, Belgium	n/a	+10% to +20%	+20% to +30%	n/a	+25 to +60%
Germany, Switzerland, and Austria	n/a	+25% to +60%	n/a	+25% to +60%	n/a
Italy	n/a	n/a	+5% to +25%	+7.5% to +20%	+10% to +35%
Indonesia	-2.5% to 0%	+5% to +20%	+30% to +40%	+5% to +20%	+30% to +40%
Korea	-10% to -5%	n/a	+50% to +100%	+15% to +20%	+50% to +100%
Latin America	-7% to 0%	0% to +12%	+10% to +25%	+7% to +35%	+10% to +45%
MENA, South Africa	-3% to 0%	+5% to +10%	+10% to +25%	+15% to +30%	+30% to +50%
Malaysia	-9%	+20% to +25%	+25% to +100%	+20% to +25%	+25% to +100%
Netherlands	-2% to 0%	+2.5% to +17.5%	+7.5% to +25%	+5% to +32.5%	+15% to +45%
Nordic Countries	n/a	+10% to +30%	+15% to +50%	+15% to 30%	+25% to +35%
Turkey	-5%	+20% to +50%	n/a	+20% to +50%	n/a
United Kingdom	n/a	+20 to +25%	+30% to +40%	+20 to +27.5%	n/a
United States	-6% to -3%	+15% to +25%	+35% to + 150%	+25% to +50%	+45% to +100%

Property reinsurance prices are up around the world, especially for CAT-loss hit accounts:+45% to 100% increases in the US

Source: Gallagher Re 1st View Report (Jan. 2023) available at: https://www.ajg.com/gallagherre/news-and-insights/2023/january/gallagher-re-first-view-market-turns/; Risk and Uncertainty Management Center, University of South Carolina.

Casualty Market Major Disruptors

Auto Liability

- Cost of Vehicles/Technology
- Fatality Trends
- Distractive Driving – Cell Phones
- Frequency and Severity Trajectory

Workers Compensation

- Opioids
- Tele Medicine
- Aging Workforce
- Medical Cost Inflation
- Cancer & PTSD Presumption
- Workplace Violence
- COVID
- Out of State Exposure

General Liability & Excess Liability

- Increase in Catastrophic Losses
- Punitive Damage Awards
- Organized Plaintiff Bar
- Personal Injury Trends
- Traumatic Brain Injury
- Aging Infrastructure
- Sexual Misconduct
- Excessive Force

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Increasing Impact on Liability Market

Reduced Capacity
reinsurer withdrawals have been significant over the past two years

Litigation Financing
continues to drive large claims and 68% of firms are using it in 2021

Plaintiff Attorney Strategies
specialization and strategies have evolved to get larger verdicts and settlements.

Hyper Social Inflation
"A Texas jury awarded $300 billion to the family of a teen and her grandmother, who were killed in a 2017 crash with a drunk driver." This type of verdict is meant to send a message to others.

Labor Shortage
everyone is doing more with less

Reviver Legislation Amendments
A rise in Sexual Abuse and Molestation claims and settlements

Law Enforcement
Increased focus on policing policy and procedures as well as pressure on Qualified Immunity

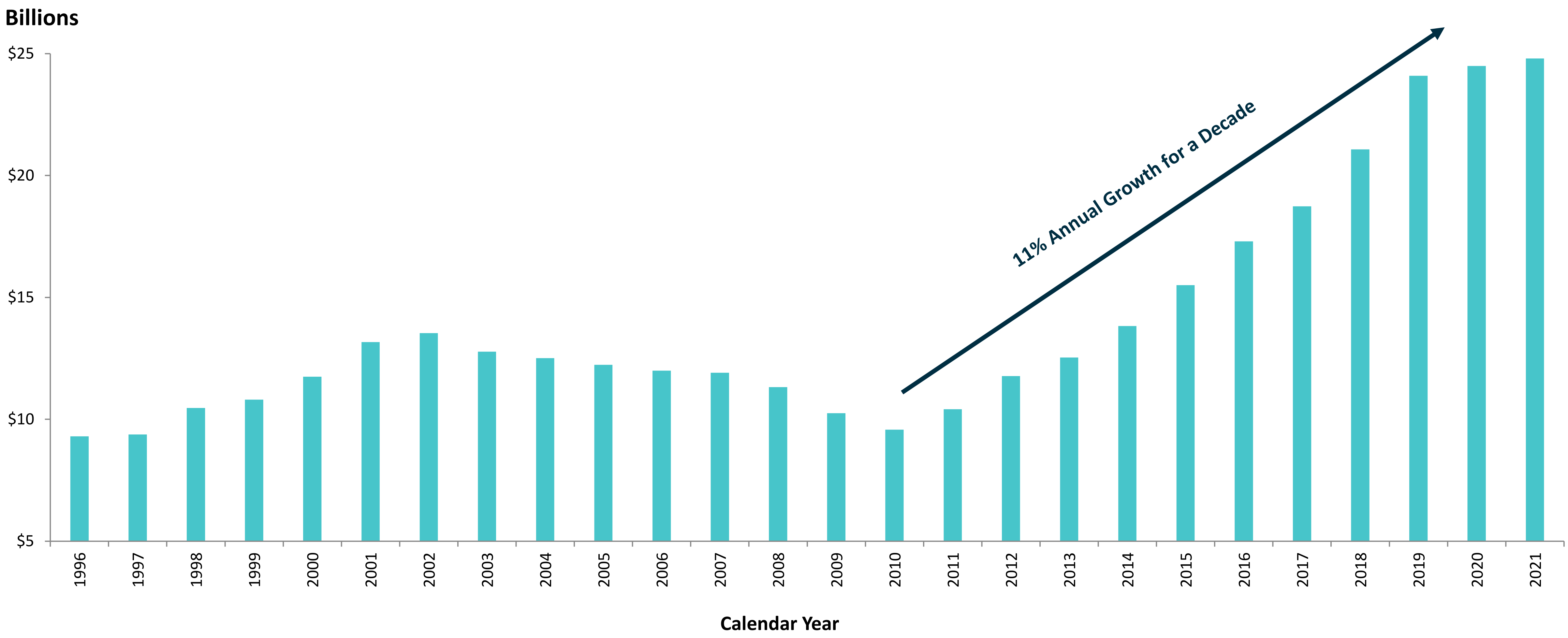
Auto Liability
Frequency & Severity of losses has returned to pre COVID figures

Underwriter Scrutiny
reinsurers are seeking to grow prudently and are maintaining a disciplined, conservative underwriter approach.

Inflation
Rising cost are increasing the size of claims

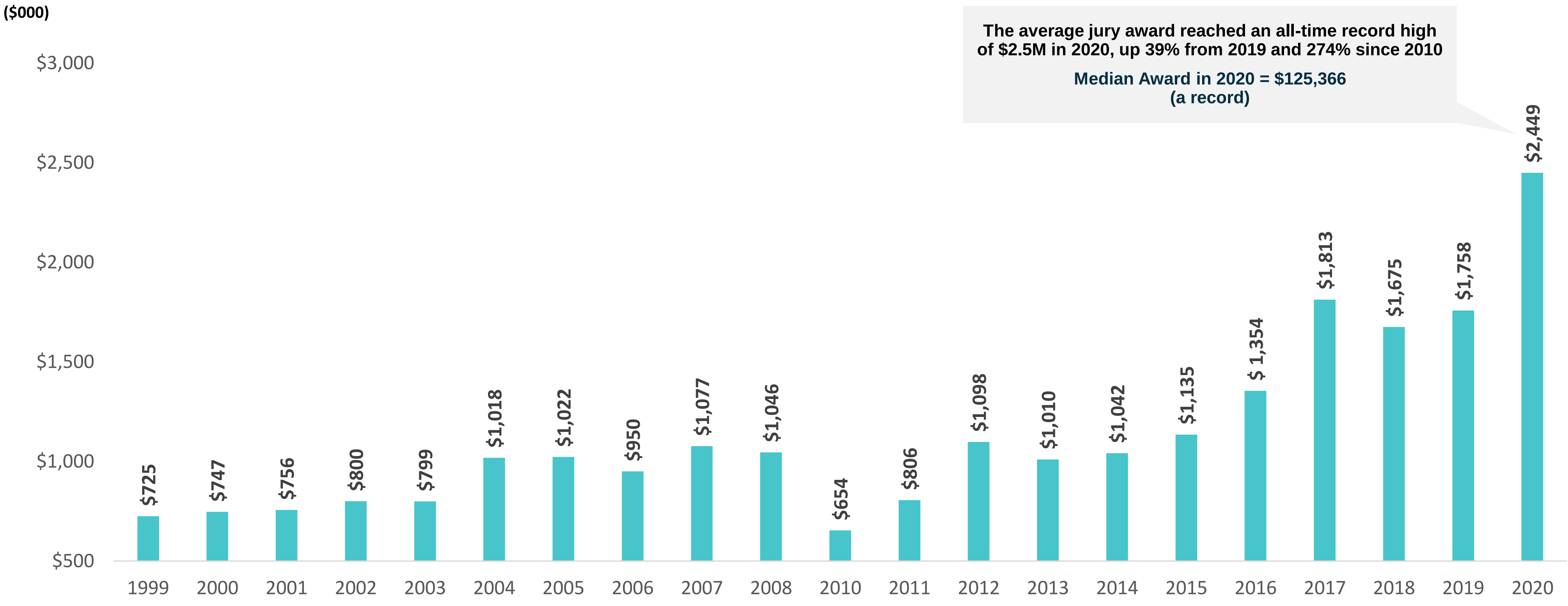
Exclusions
continued restrictions surrounding sexual abuse, Wildfire Exclusions, COVID, cyber, opioids and man made chemicals (PFAS – new focus)

Upward Trend in Liability Claims



Sources: NAIC data sourced from S&P Market Intelligence; Insurance Information Institute.

Average Jury Awards, 1999 – 2020 (latest available)



Source: Jury Verdict Research; *Current Award Trends in Personal Injury* (61st Edition), Thomson Reuters; Risk and Uncertainty Management Center, Univ. of South Carolina.

Liability Claim Values: Unfavorable Jurisdictions

In its recently released annual report, the ATRA identified 8 jurisdictions on its 2022 hellholes list – which, in order, include:

1. Georgia, most prolific producer of nuclear verdicts nationwide – from 2010 to 2019, 53 personal injury and wrongful death nuclear verdicts totaling more than $3b. Rise is largely attributed to allowance of "anchoring" by plaintiffs' lawyers.
2. Pennsylvania,
3. California, which fell from number 1 spot a year ago (with the plaintiffs' bar taking advantage of unique California laws like the Private Attorney General Act);
4. New York City (particularly regarding Americans With Disabilities Act accessibility claims and an activist attorney general battling climate change with energy companies),
5. Illinois (especially Cook, St. Clair, and Madison counties and regarding asbestos litigation and Illinois Biometric Information Privacy Act class actions),
6. South Carolina (particularly in asbestos litigation).
7. Louisiana (including deceptive lawsuit advertising practices and coastal litigation),
8. St. Louis, Missouri

American Tort Reform Association ("ATRA") publishes its "Judicial Hellholes Report."

No. 1

Georgia

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Cyber Renewal Outlook

Leading insurers have indicated “We may have hit rate equilibrium”

2023 Forecast:

- Nominal increases, for “good” risks and most
- Growth in capacity in past 6 months deployment
- HOWEVER, Increased per-claim, self-insured retentions for poor security posture
- Potential coinsurance percentages added for ransomware
- Further reduction of ransomware limit

Requirement to evidence security posture:

- MFA
- Data Backups
- Endpoint Detection
- Employee Education & Training Programs

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State of the Cyber Market

Europe May Surpass the United States as the Most Targeted Region for Ransomware

Ransomware continues to have a significant impact on businesses across the globe. While reports show that the U.S. is the country most targeted by ransomware attacks worldwide,[1] small indicators show that ransomware activity is decreasing in the United States and growing in other regions.[2] In Europe. the number of victims is increasing. and if that increase continues. Europe will likely become the most targeted region in 2023. The United States has been very outspoken on policies, sanctions and the potential of a response in the cyber domain concerning ransomware and other attacks. However, it is hard to conclude if the more aggressive stance on ransomware actually deters attacks.

More Attacks by Non-Organized Attackers and Non-Nation State Attackers

In 2023 we expect to see more intrusions conducted by non-organized attackers and non-nation state attackers. More of the threat actors operating out of North America and Europe will likely be younger, and conducting intrusion operations not because they're interested in making money specifically, or because governments have tasked them with doing it, but because they want to be able to brag to their friends or boast online that they've hacked into and brought embarrassment to prominent organizations. While they will be happy to achieve financial gain, that may not necessarily be their lead motivation.

More Extortion, Less Ransomware

Historically, cyber criminals have used ransomware to monetize access into a victim's network. Due to several high-profile and visible breaches last year, organizations see mitigating brand damage as a much more compelling reason to pay a ransom than regaining access to encrypted systems. Over the next year, we will continue to see criminals rely on extortion, but actual ransomware deployments may decline. Ransomware-as-a-service(RaaS) providers will modernize their software to focus on data exfiltration and 'leak sites' for public shaming.

Cyber Liability insurance providers are requiring clients to have better controls around cyber exposure. Implementation of MFA is now a requirement for most insurance carriers.

Cyber liability pricing is beginning to smooth out in terms of pricing. We are now seeing carriers base pricing on underwriting a specific risk, rather than a broad-brush approach to pricing which was needed in the past to achieve carrier profitability in this coverage line.

We are still seeing increases over expiring for clients with losses, poor cyber hygiene, or higher exposures.

Clients with unfavorable controls will see modifications to their program. Carriers will exclude cyber extortion, impose co-insurance, or exclude coverages like computer hardware replacement, and reputational loss.

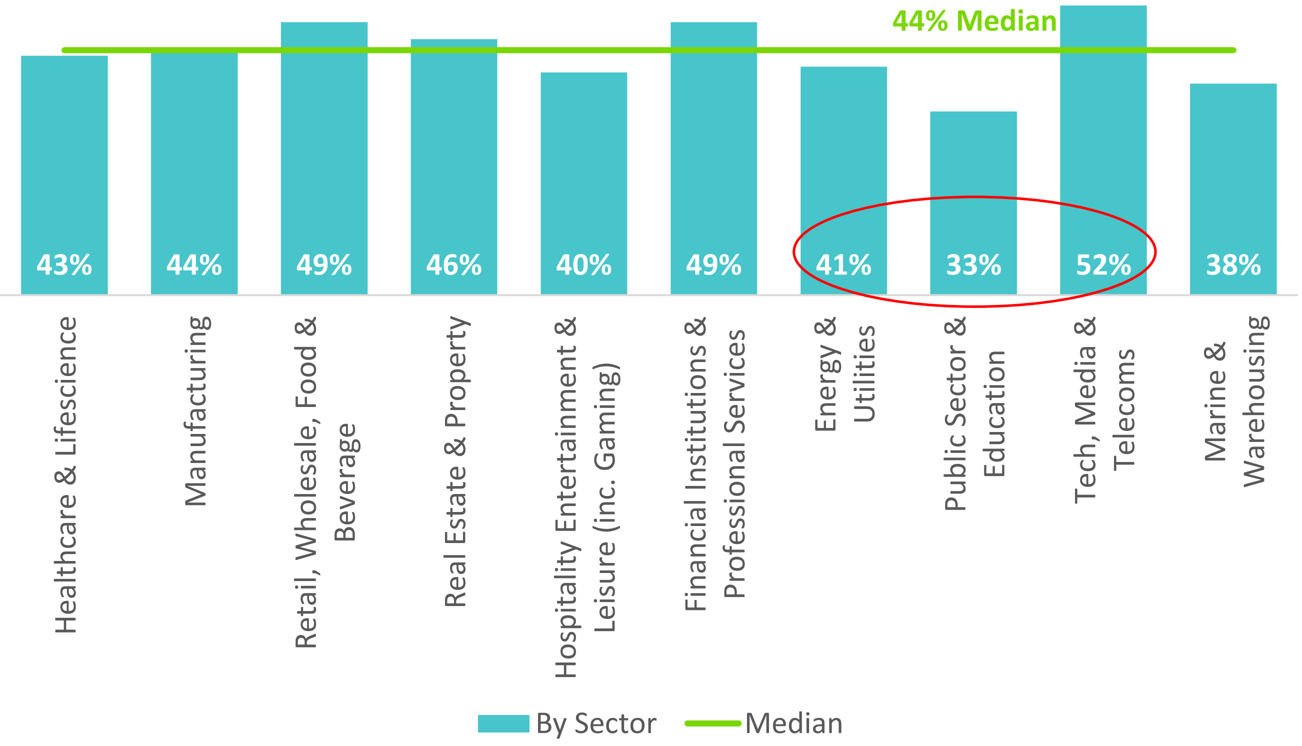
Spotlight: Cyber Liability

Marketplace stabilizing after several years of dramatic claims development.

Security standards across the marketplace:

- Multi-factor authentication
- Well managed end point detection
- Well managed RDP connections – VPN, MFA, etc.
- Back Ups
- Planning and Training (and Frequency)
- Reasonable patching schedule/plan
- Plan or adequate measures in place to protect end of life software
- IT Security Budgets
- Email Security
- Identity Access Management
- Service Account Management

Sector view on resilience to cyber risk



Percentage of US and UK companies feeling 'very prepared' to anticipate and respond to cyber risk in 2021. Median line indicates the mid-point of the data set across all industries surveyed.

Workers Compensation Leading Concerns

Rate Expectations: Account Specific

Trends to Watch:

- Increase in state legislative bills filed for Presumptive and PTSD benefits
- Proposed bill (NY) covering Opioid-related deaths if prescribed during work comp claim
- Emerging case law (MN) precedent for public safety survivor benefits if suicide linked to PTSD
- COVID covered claims for 'long COVID' or death benefits

Wage Inflation's impact on premiums & Medical Expense Inflation

Underwriter Concerns: Per Occurrence exposure to Cat loss

Remote Work: Out of State employees & Impact on productivity and compliance

Investment Yield on Long Tail Coverage

Rate Projections

Estimated Year over Year Total Cost Results
As of 5-2-23

Excess Liability	Total Cost 2022	Est. Cost 2023	Change -	
Limit	40,000,000	40,000,000	-	0%
Self-Insured Rentention	750,000	750,000	-	0%
$10MM - Great American	525,033	630,040	105,007	20%
$20MM - Berkley National	351,752	422,102	70,350	20%
Arch $5MM Part of $20MM	62,600	75,120	12,520	20%
$10MM - Great American Custom	100,000	120,000	20,000	20%
Total Cost	**1,039,385**	**1,247,262**	**207,877**	**20%**

Excess Workers' Comp	Total Cost 2022	Est. Cost 2023	Change -	
Payroll	81,881,299	83,569,100	1,687,801	2%
Limit	Statutory	Statutory	N/A	N/A
Rate Per $100	0.38	0.47	0.09	24%
Self-Insured Retention	1,000,000	1,000,000	-	0%
Total Cost	**309,659**	**391,000**	**81,341**	**26%**

Property (incl. B&M)	Total Cost 2022	Est. Cost 2023	Change -	
Values	2,378,199,811	2,544,673,798	166,473,987	7%
A/R Limit	1,000,000,000	1,000,000,000	-	0%
Flood Limits	25M/25M	25M/25M	-	0%
A/R Deductible	500,000	500,000	-	0%
Flood Deductible	1,000,000	1,000,000	-	0%
Boiler Limit/Deductibles	100M/25k/Vrs	100M/25k/Vrs	-	0%
Rate Per $100	0.082	0.12	0.03	40%
Total Cost (Including Comm Rebate)	**1,767,215**	**2,617,059**	**849,844**	**48%**

Earthquake	Total Cost 2022	Est. Cost 2023	Change -	
Values	116,727,428	124,898,348	7,636,374	7%
Limits	25,000,000	25,000,000	-	0%
Rate Per $100	0.11	0.14	0.01	10%
Deductibles	5% $5MM Min	5% $5MM Min	-	0%
Total Cost	**128,546**	**173,054**	**44,508**	**35%**

Total Cost - Board Items	**3,244,805**	**4,428,376**	**1,183,571**	**36%**

Thank you!

Questions?

Please contact us if you would like a copy of this presentation.