



The Source You Trust

Workers Compensation Catastrophes: Past, Present, and Future

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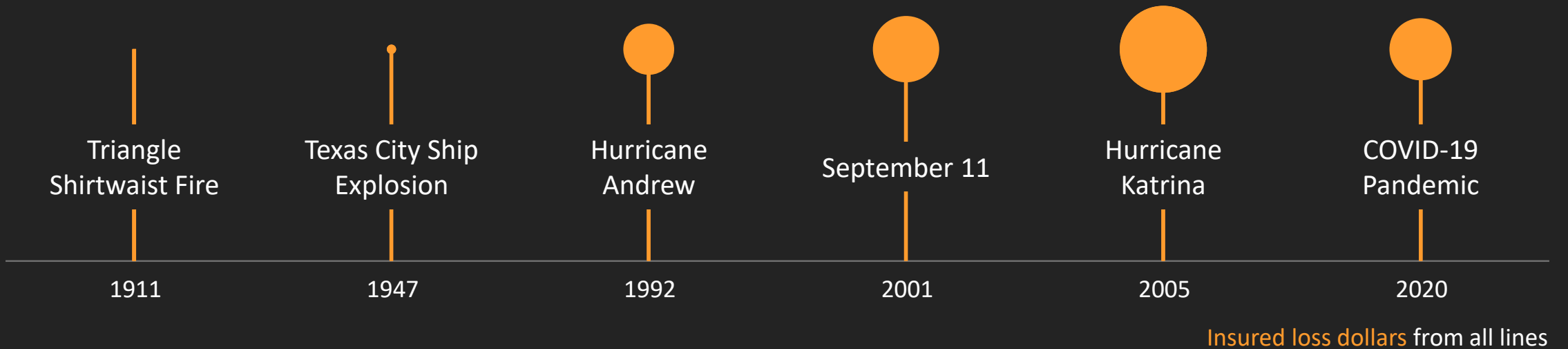


How do we address catastrophic risk?

- 1 Understanding past events
*What can we **learn by looking back**?*
- 2 Estimating future pandemic risk
*What does the **model tell us**?*
- 3 Implementing the findings
*What is the **impact** to loss costs and rates?*



How have past catastrophes shaped our viewpoints?

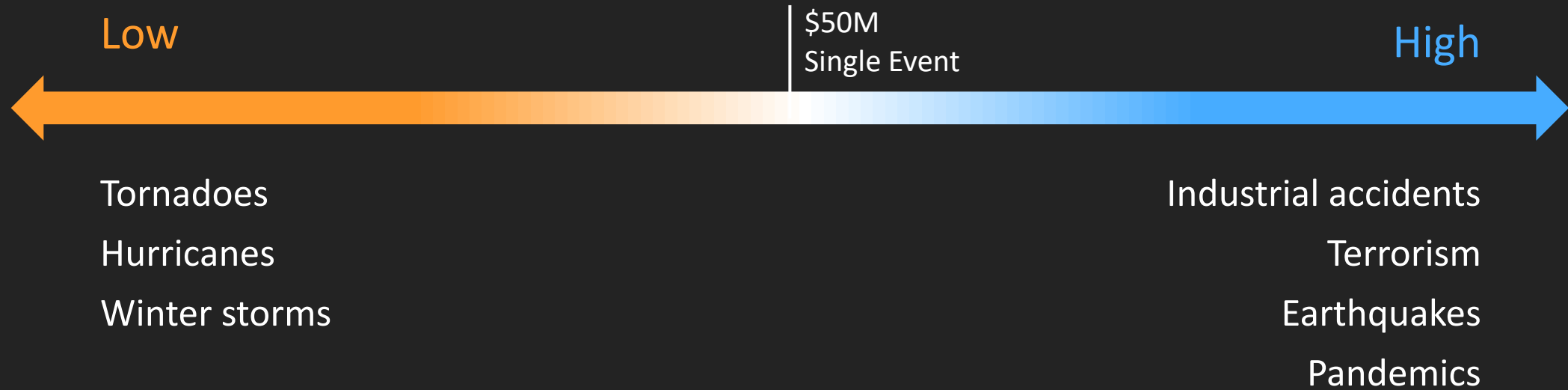


Sources: Insurance Information Institute, Inc., www.reuters.com, www.HISTORY.com

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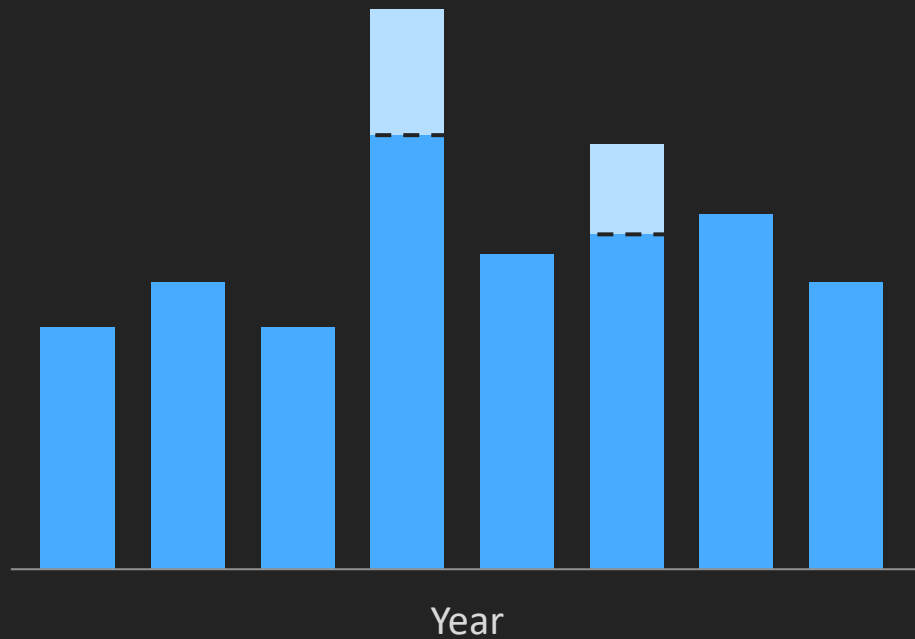
What is the workers compensation catastrophic loss potential?



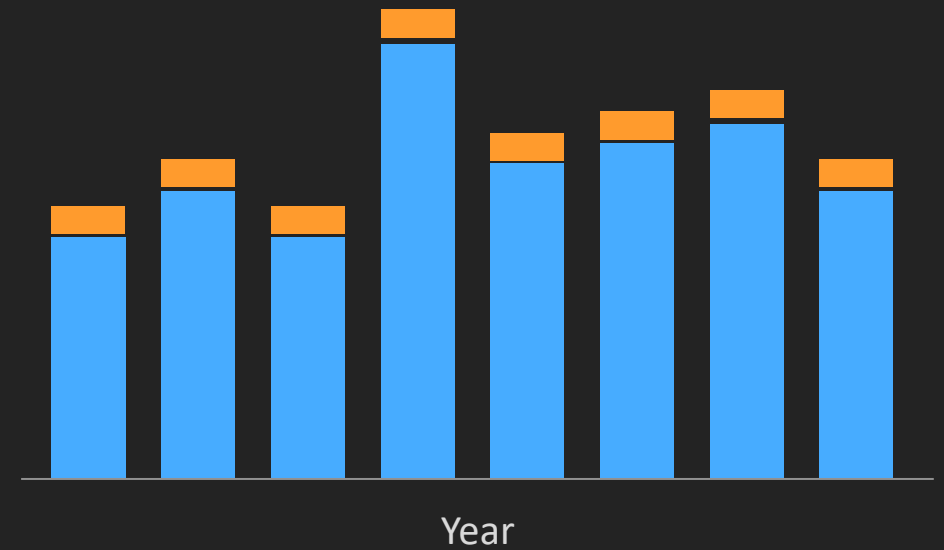
How are catastrophe losses accounted for in ratemaking?

Actual catastrophic losses are removed from ratemaking

Actual catastrophic losses have little historical data and can vary significantly

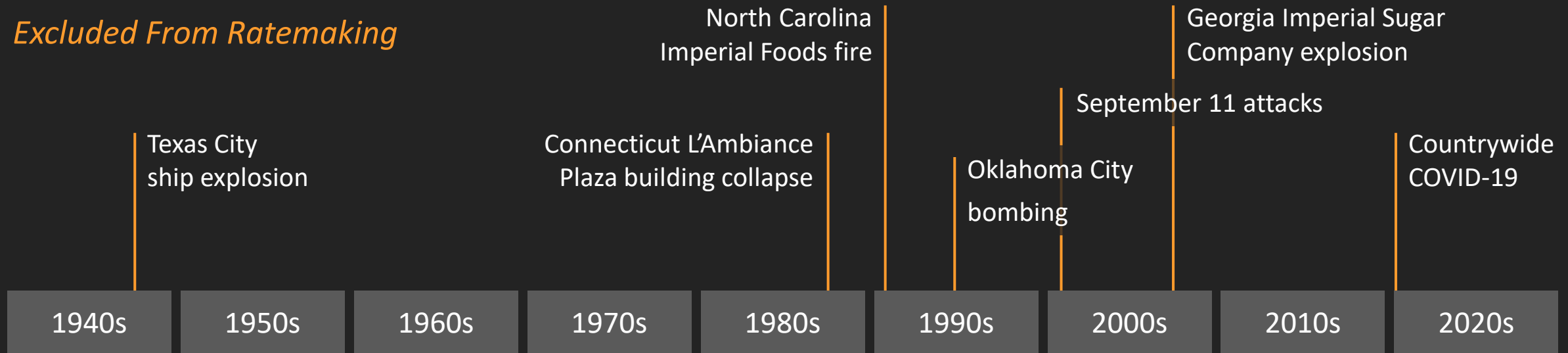


Modeled catastrophic losses help to provide recognition for insured catastrophe exposure

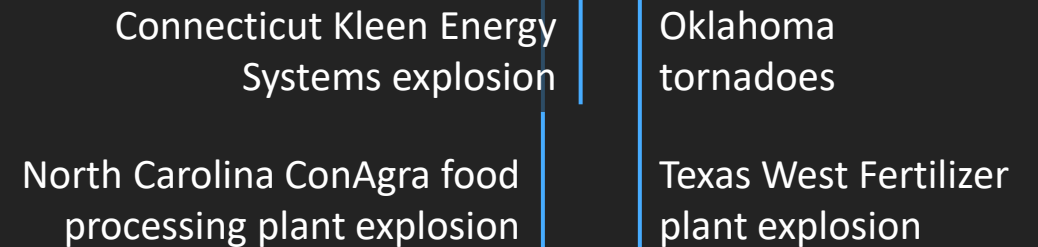


How have catastrophes been handled in the past?

Excluded From Ratemaking

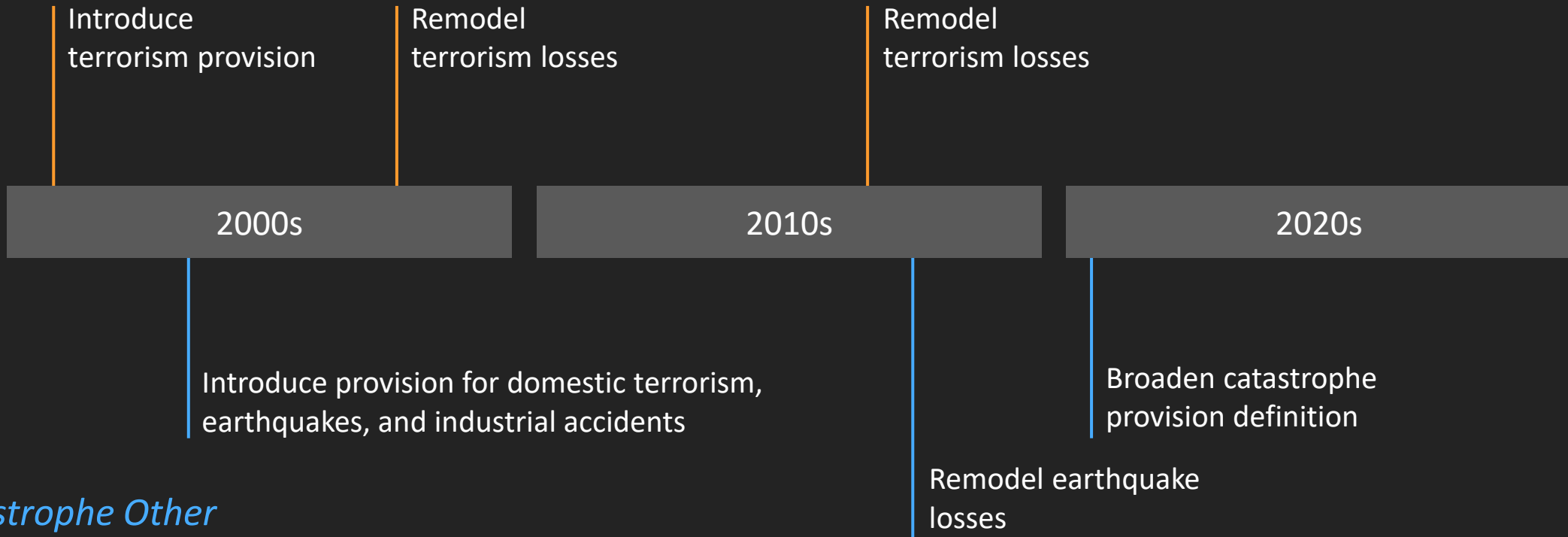


Included in Ratemaking



How did NCCI respond?

Terrorism



Catastrophe Other

How do pandemics impact workers compensation?



Pandemics Before COVID-19

No historical impact on workers compensation industry



Pandemics Post COVID-19

New source of loss

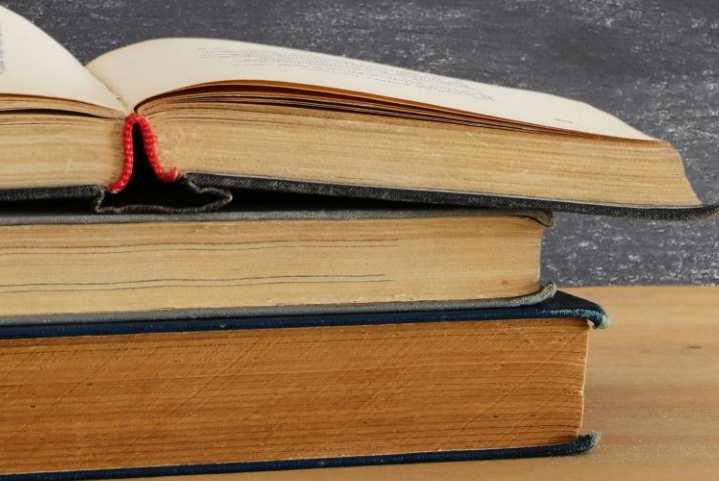
Engagement on loss modeling

How do you estimate a future workers compensation pandemic?

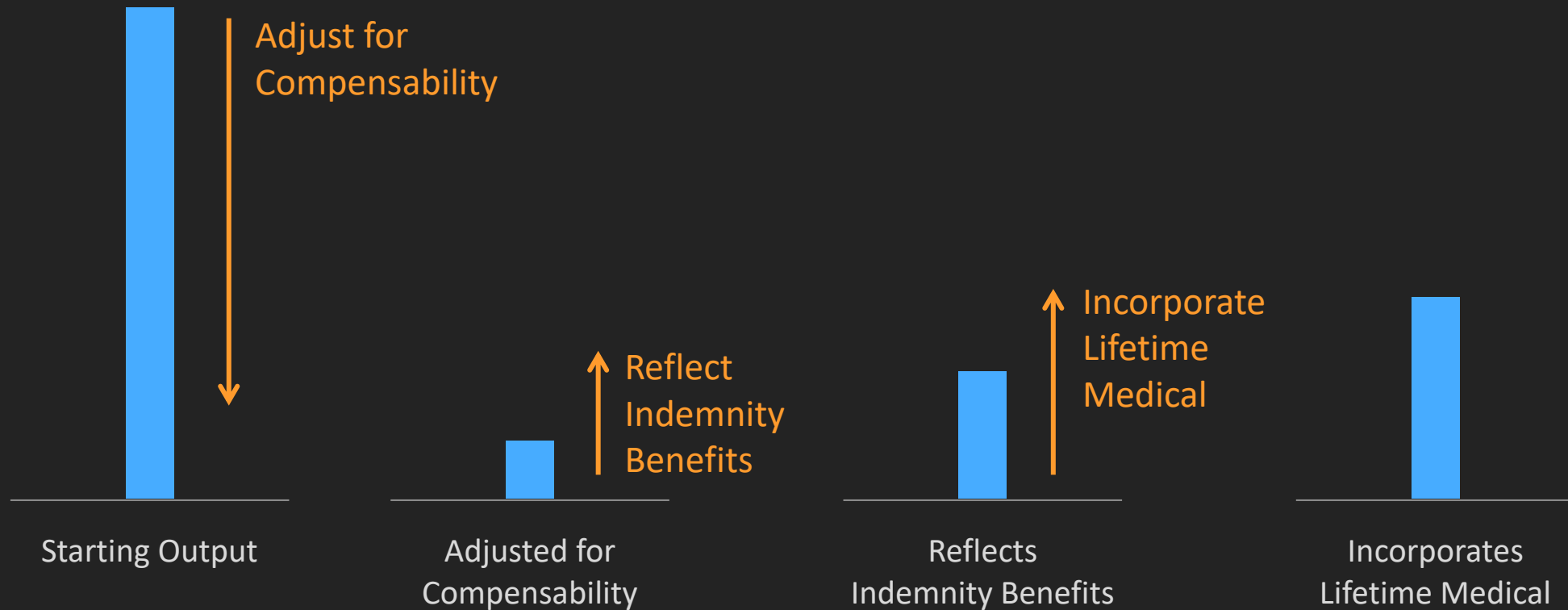
Step 1: Run epidemiological model

Step 2: Adjust claim counts

Step 3: Add indemnity and medical losses



How do you adjust model output to a workers compensation level?



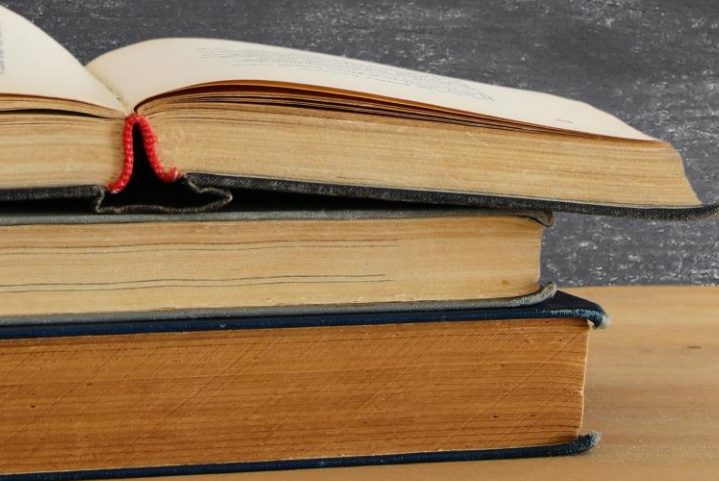
How do you estimate a future workers compensation pandemic?

Step 1: Run epidemiological model

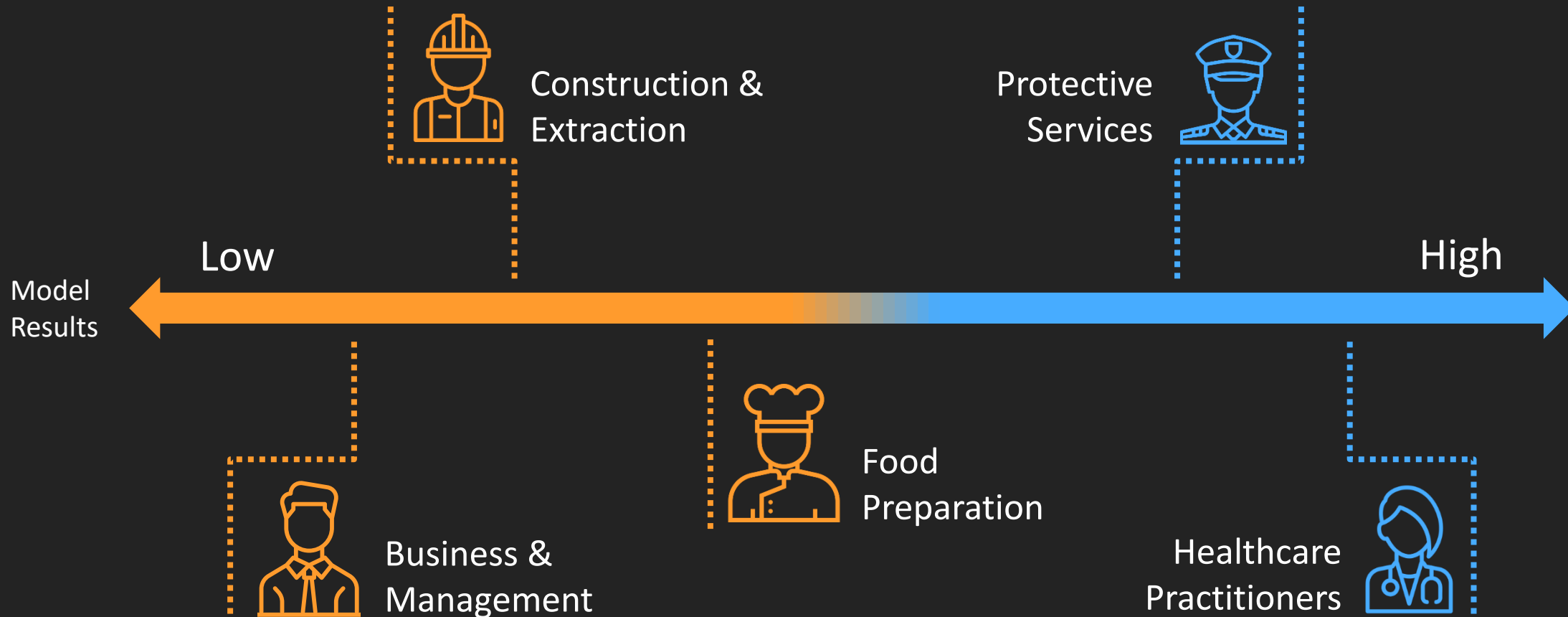
Step 2: Adjust claim counts

Step 3: Add indemnity and medical losses

Step 4: Determine appropriate granularity

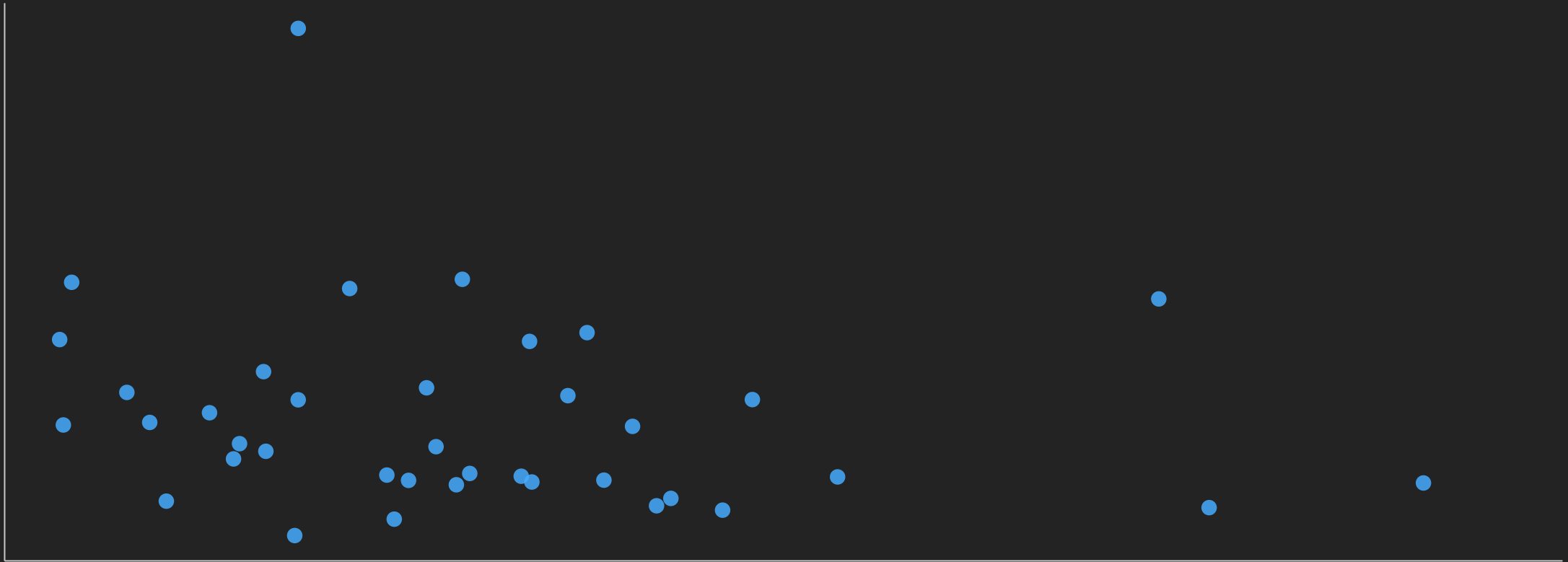


Should the selected provision differ by occupation?



Should the selected provision differ by state?

COVID-19 Claim
Count Shares



Model Results

Sources: NCCI's Financial Call data, AY 2020 (as of year-end 2020) undeveloped claims; excludes large deductible policies
COVID-19 claim count shares are the number of COVID-19 indemnity claim counts divided by the total number of indemnity claim counts
Includes all states where NCCI provides ratemaking services

How do you estimate a future workers compensation pandemic?

Step 1: Run epidemiological model

Step 2: Adjust claim counts

Step 3: Add indemnity and medical losses

Step 4: Determine appropriate granularity

Step 5: Account for extreme events



What could an extreme event mean for workers compensation?



Different work environment

Increased safety measures reduce WC costs



Federal government backstop

Potential for intervention to protect insureds

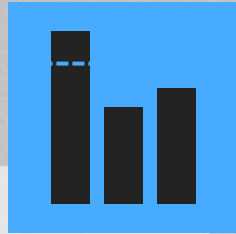
Sources: NCCI's Financial Call data, incurred COVID losses valued as of year-end 2021
Includes all states where NCCI provides ratemaking services

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What did we learn from the modeling?

Capping events at \$100 billion reduced the average losses by 2/3



Impactful assumptions on coverage and large events

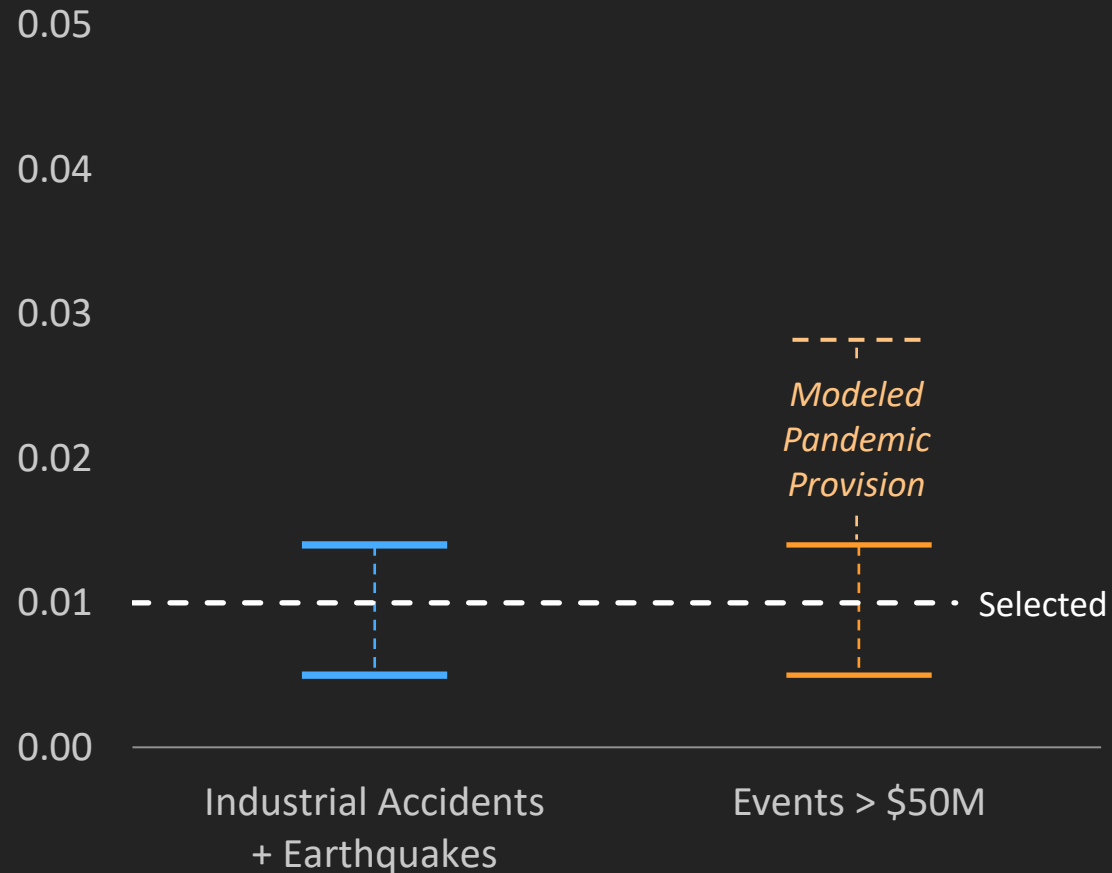


Adjusted Output:
\$0.016 Loss Cost



Inverse correlation between pandemic and non-pandemic claims

What updates were made to the catastrophe provision?



Prior Catastrophe Definition

Earthquakes, noncertified acts of terrorism, or catastrophic industrial accidents

Updated Catastrophe Definition

A **single event or peril** resulting in a group of claims with aggregate workers compensation losses in **excess of \$50 million**

What could impact our understanding of catastrophic risk?

1 Changing working conditions
*How does **remote work** impact WC catastrophe exposure?*

2 Evolving impacts of known perils
*Could **climate change** increase weather-related losses?*

3 Insuring the unknown
*What **new hazards** exist on the horizon?*