

COVID-19 Impact on Auto Ratemaking

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Executive Summary

1

**Impact on personal
auto usage**

2

**Impact on driving
behaviors**

3

**Impact on personal
auto insurance**

1) Impact on personal auto usage

Driving destinations are different

Retail & recreation

-27%

compared to baseline

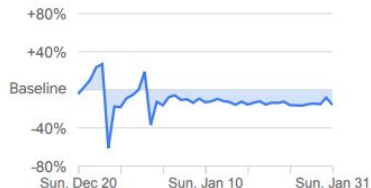


Mobility trends for places like restaurants, cafes, shopping centers, theme parks, museums, libraries, and movie theaters.

Grocery & pharmacy

-16%

compared to baseline

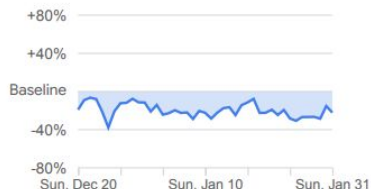


Mobility trends for places like grocery markets, food warehouses, farmers markets, specialty food shops, drug stores, and pharmacies.

Parks

-22%

compared to baseline



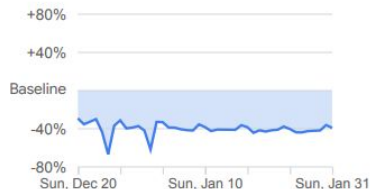
Mobility trends for places like national parks, public beaches, marinas, dog parks, plazas, and public gardens.

Driving destinations are different

Transit stations

-39%

compared to baseline



Mobility trends for places like public transport hubs such as subway, bus, and train stations.

Workplaces

-18%

compared to baseline



Mobility trends for places of work.

Residential

+7%

compared to baseline



Mobility trends for places of residence.

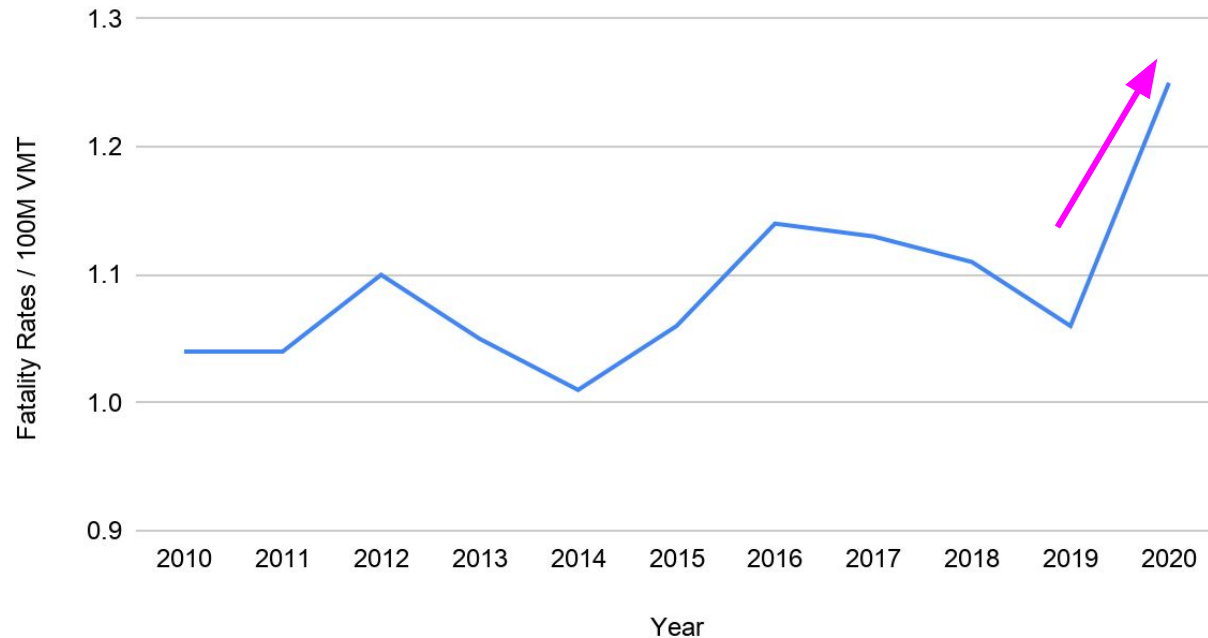
Fewer miles are being driven



Fewer miles are being driven, but each mile is riskier

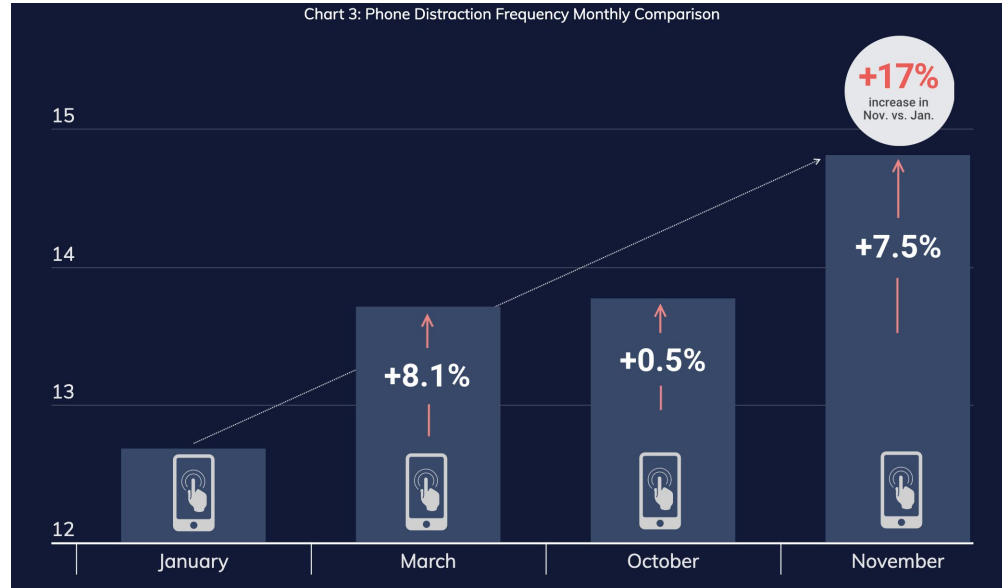
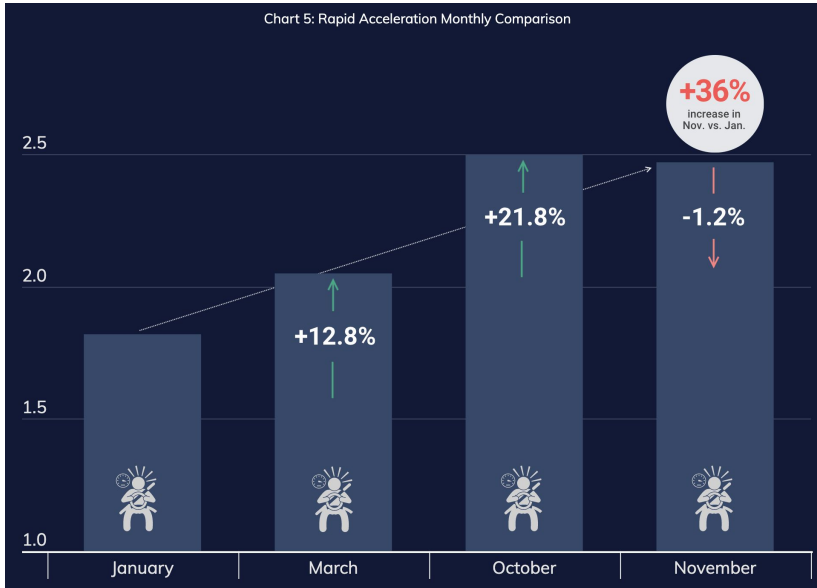


H1 (Jan - Jun) Fatality Rates per 100M VMT



2) Impact on driving behaviors

Telematics indicates **riskier** driving behaviors



More **reckless** driving on emptier roads

CORONAVIRUS CALIFORNIA

California Highway Patrol sees spike in 100-mph speeding tickets amid coronavirus shutdown

There's been an increase in citations for speeding while people have been staying home because of the novel coronavirus, according to CHP data.



Friday, May 22, 2020

U.S. | NEW YORK

New York City Traffic Deaths Rise During Covid-19 Pandemic

Reckless behavior on emptier roads spurs 69% increase in deaths among drivers and passengers

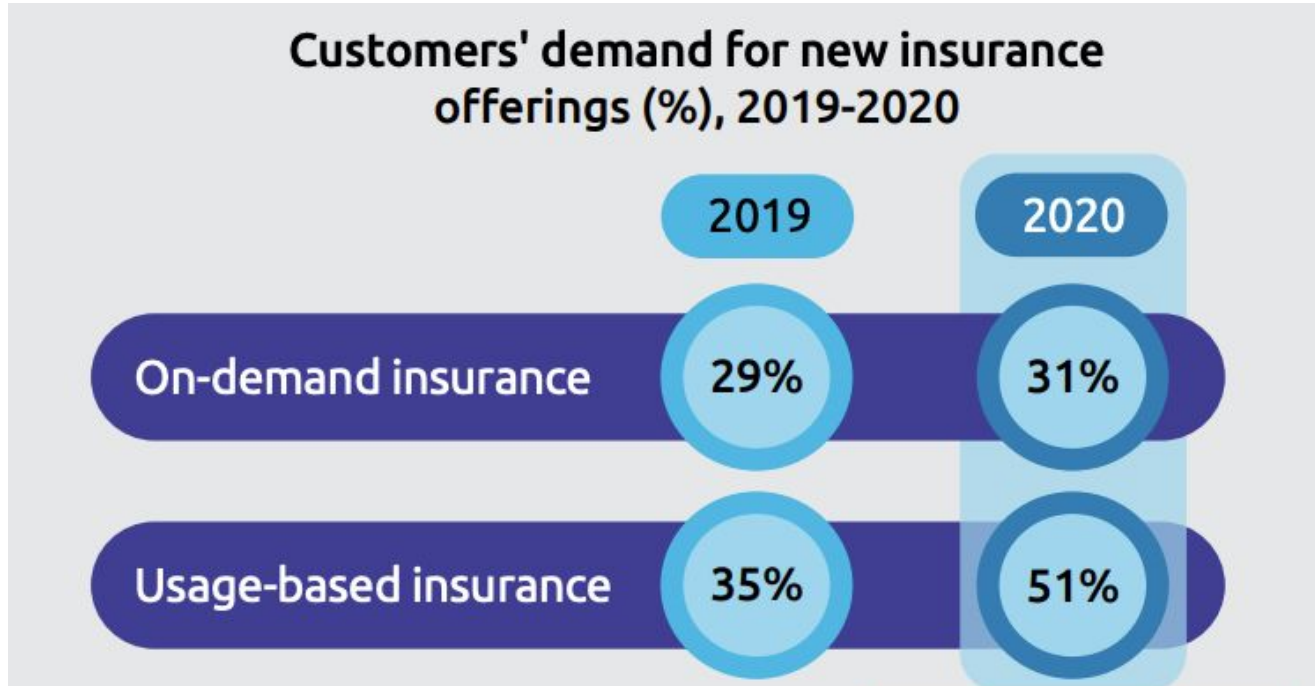
3) Impact on personal auto insurance

Fewer miles leads to **lower** premium under traditional policy



Coronavirus: Car insurers like Allstate, Geico and Farmers are issuing refunds or policy rate cuts to drivers

Usage-based insurance attracts more interest



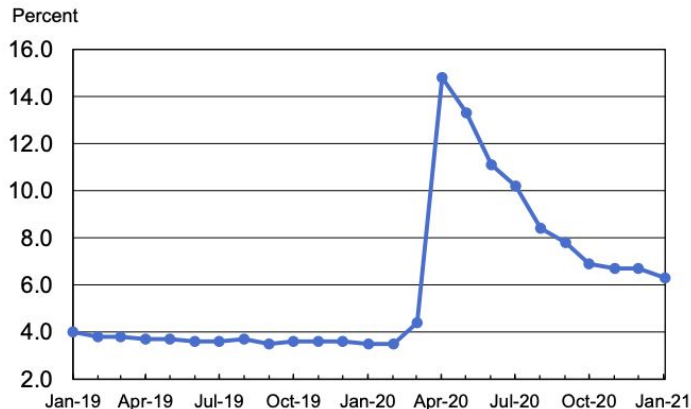
UM/UIM coverage could be challenging

yahoo/finance

Warren Buffett: There will be more uninsured motorists driving after the coronavirus

May 2, 2020

Chart 1. Unemployment rate, seasonally adjusted, January 2019 – January 2021



Claims adjusters operates differently

COVID Impact

- Fewer claims reported
- More adequate claim staffing

Potential Outcome

- Accelerate digital transformation of claims handling & adjusting
 - Limited physical inspection
- Accelerate case reserves
- Proactively reaching out to claimants

Final Thoughts

Miles mix shift

- Less Traffic
- Fewer miles driven
- Different “Rush Hours”
- Fewer commute miles

Driver behavior shift

- More speeding
 - Avg speed also increases
- More phone usage
- More harsh events
- More uninsured motorist

Digital Transformation

- More Usage-based Insurance
 - Pay-as-you-drive
 - Pay-how-you-drive
- More adoption on telematics
- Changing claims adjustment practice



Scenario Testing COVID-19 Assumptions with Predictive Models

RPM 2021

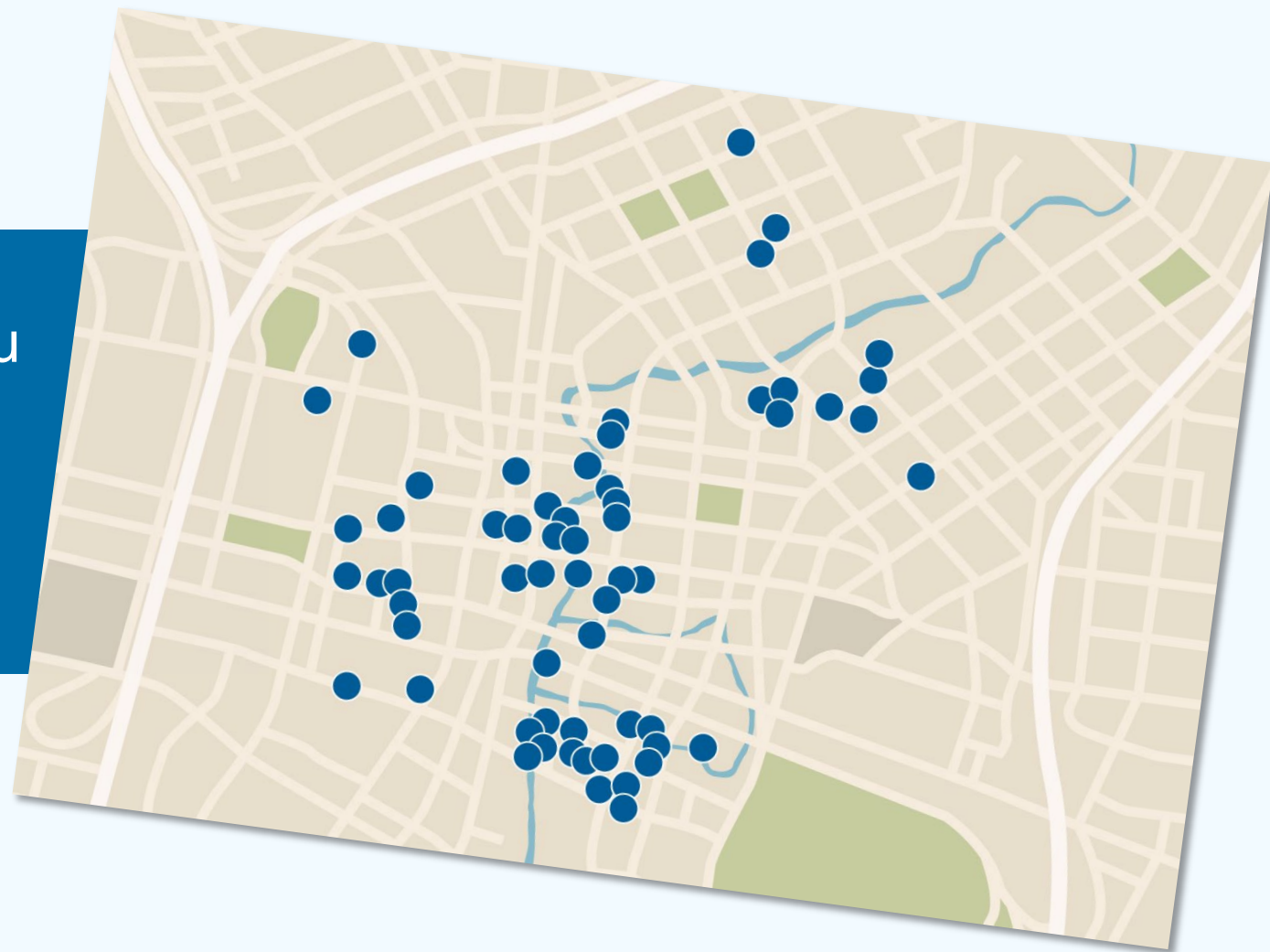
Ralph Dweck, FCAS MAAA



ISO Risk Analyzer Environmental

Geographic risk landscape

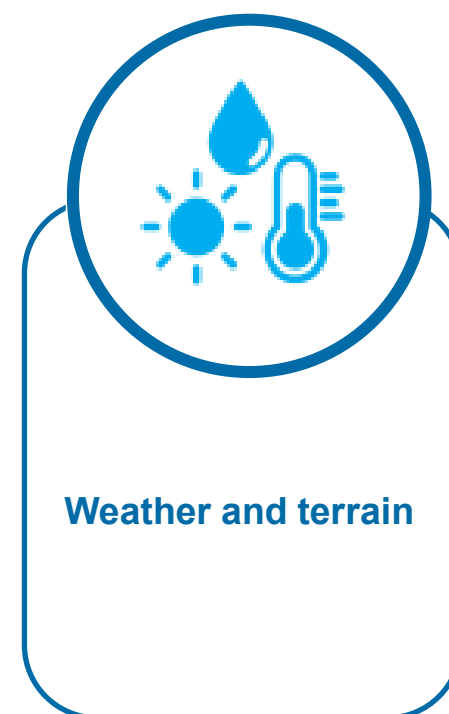
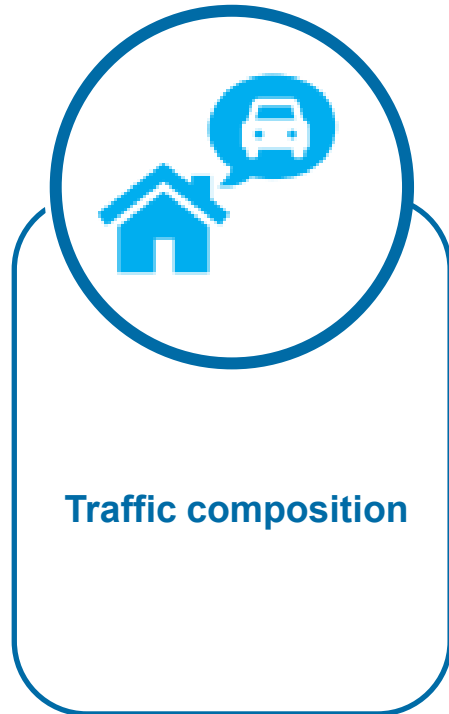
Location-specific data to help you classify, segment, and price risk with laser precision



ISO Risk Analyzer Personal Auto and Commercial Auto

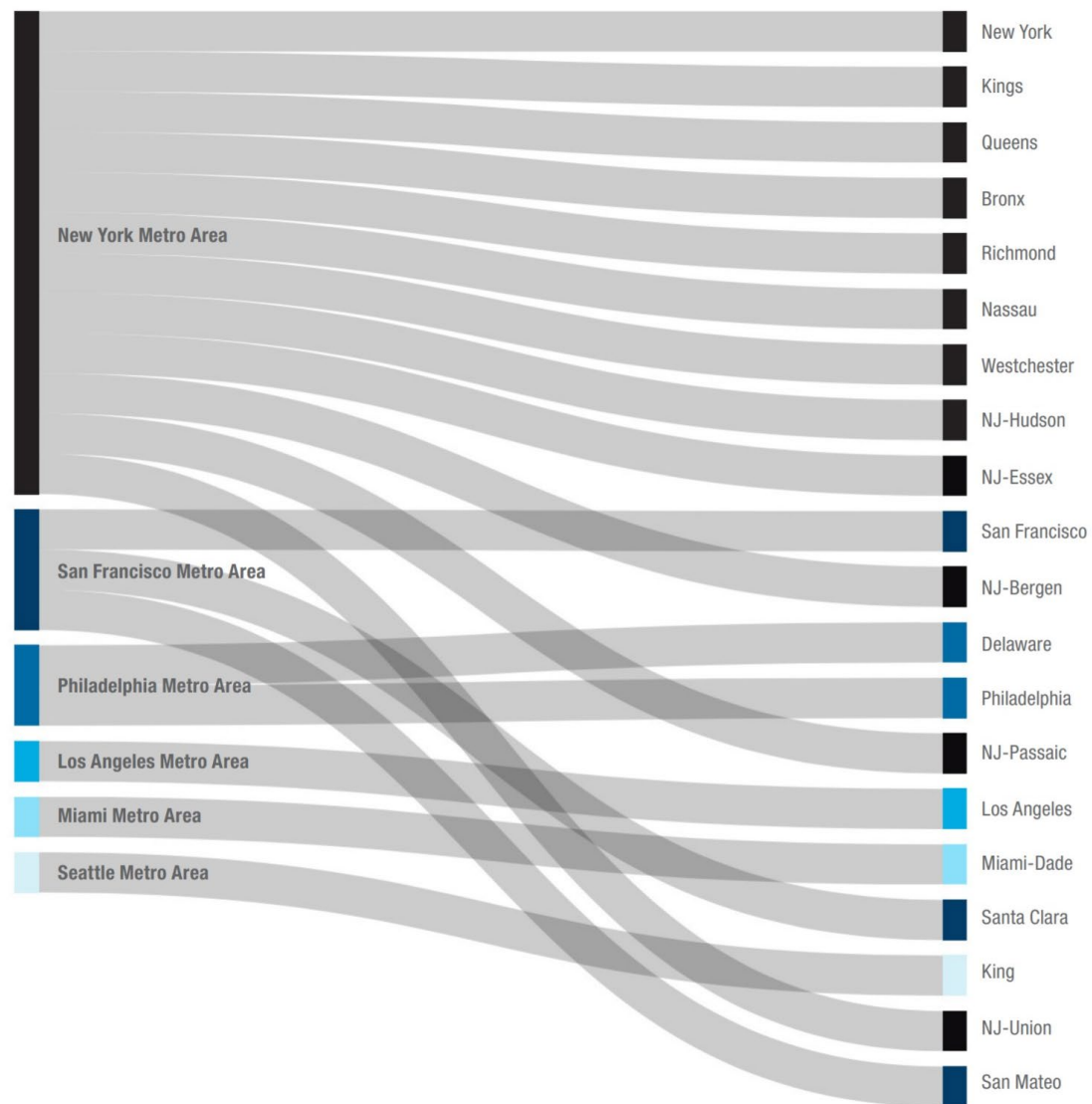
Environmental Module

Examine the “environment” around a risk. For each risk’s garaging location, the Environmental module analyzes the interactive effects of hundreds of variables, such as:





Counties with highest average traffic scores, by metro area

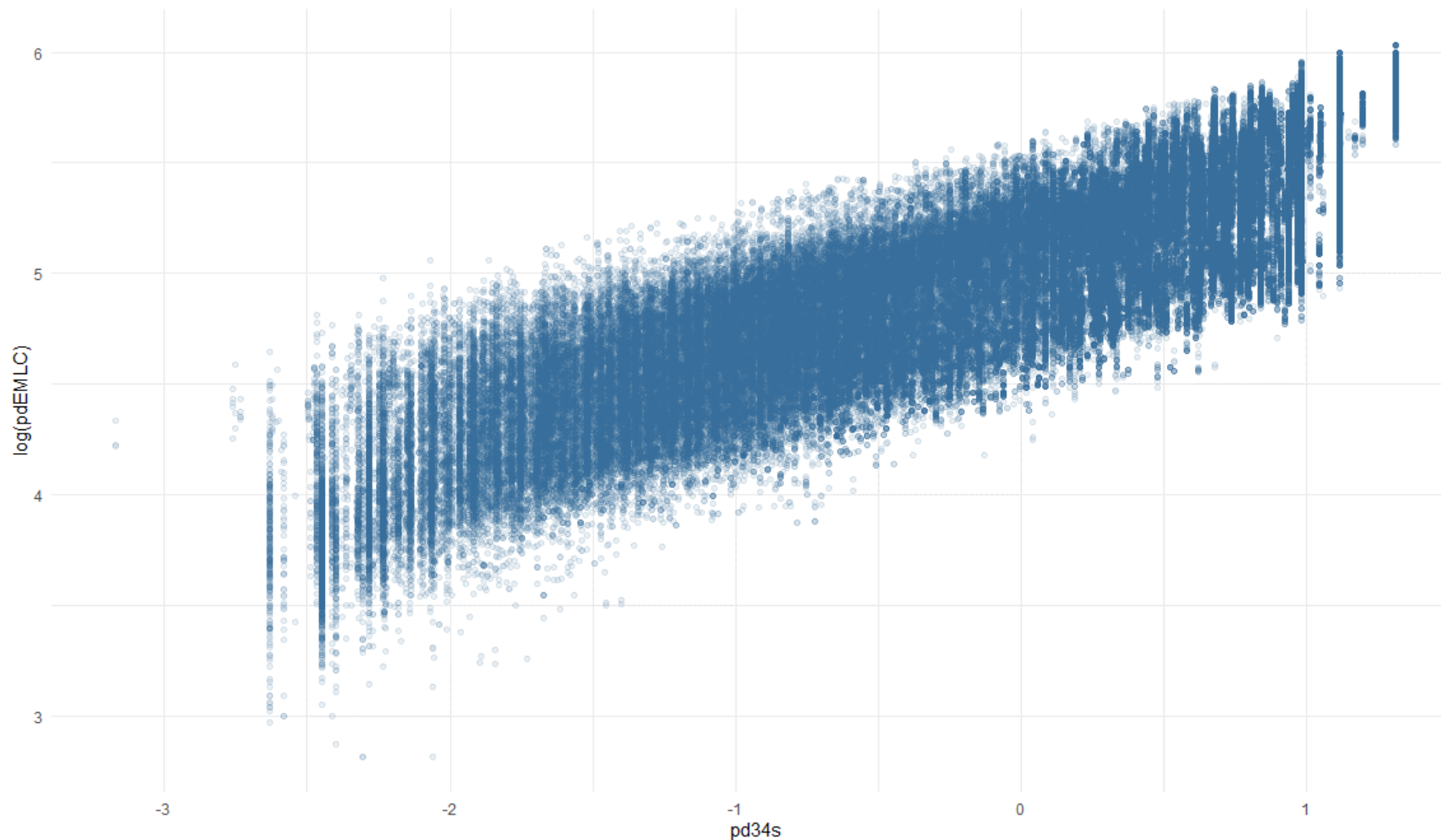


Commercial Auto TTT PD



Risk Analyzer Estimated Loss Cost vs. Traffic Score

Commercial Auto TTT Property Damage





Relationship between RA Traffic Score and RA loss costs

The RA loss cost relationship is inherently defined such that the loss cost estimate in any one Census Block Group (CBG) is as follows:

$$\begin{aligned} \text{Ln}(\text{LC}_{\text{CBG}}) = & \text{Traffic Score}_{\text{CBG}} + \text{Weather}_{\text{CBG}} \\ & + \text{Composition}_{\text{CBG}} + \text{Experience Score}_{\text{CBG}} \end{aligned}$$

If we hone in on the relationship between Loss Cost and Traffic Score, we could reduce the relationship to

$$\text{Ln}(\text{LC}_{\text{CBG}}) = \text{Traffic Score}_{\text{CBG}} + \text{Other Effects}_{\text{CBG}}$$

To which we can fit our best 'guess' for each CBG loss cost, just knowing the Traffic Score

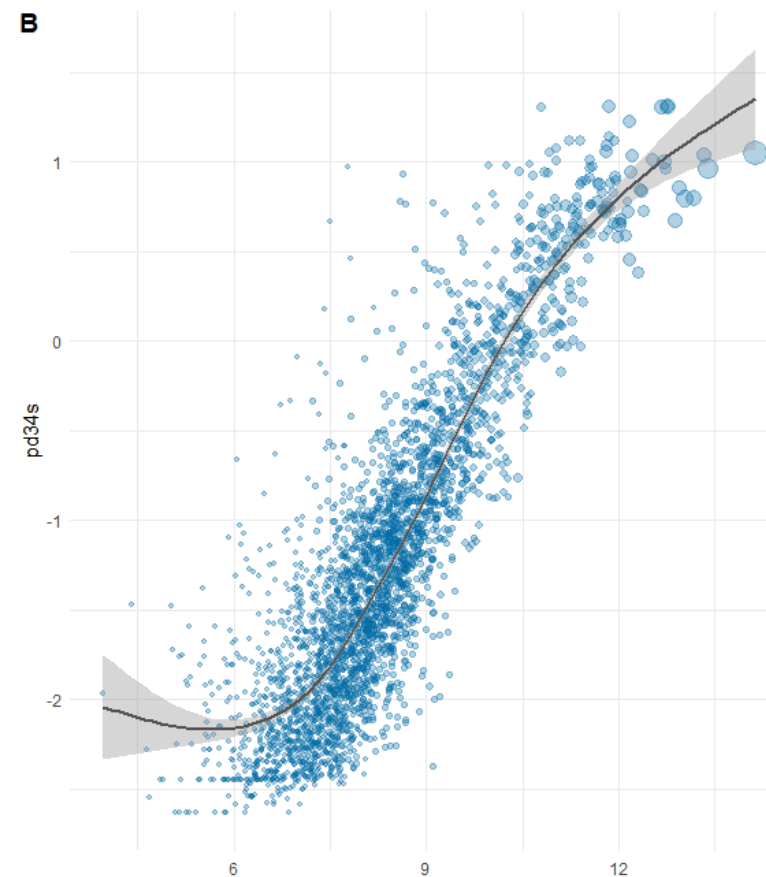
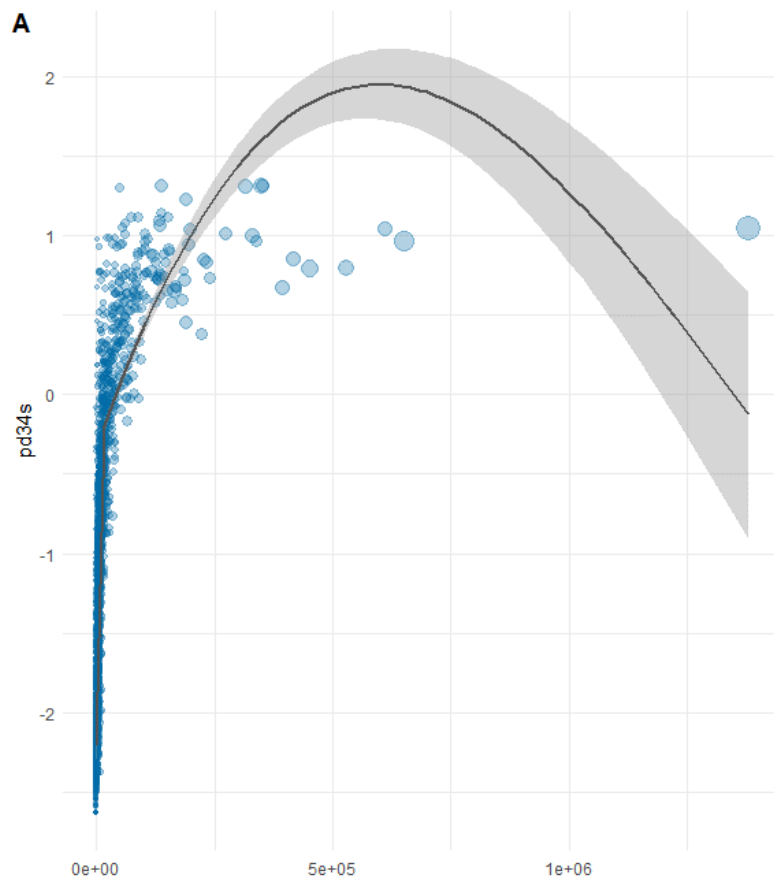
$$\text{Ln}(\widehat{\text{LC}}_{\text{CBG}}) = \beta_1 * \text{Traffic Score}_{\text{CBG}} + \beta_0 + e_{\text{CBG}}$$

Leveraging an economic indicator for more intuitive scenario testing



Traffic Score and ISO MarketStance Commercial Insight Data

- A. Traffic Score vs. Num of Operating Locations
- B. Traffic Score vs. Ln(Num. of Operating Locations)



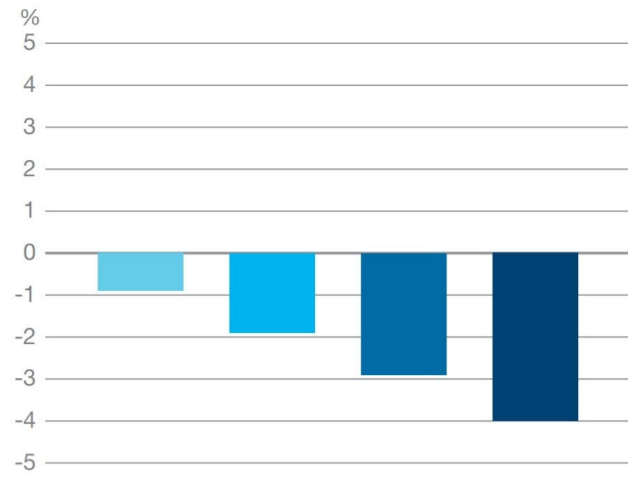


Scenario Testing

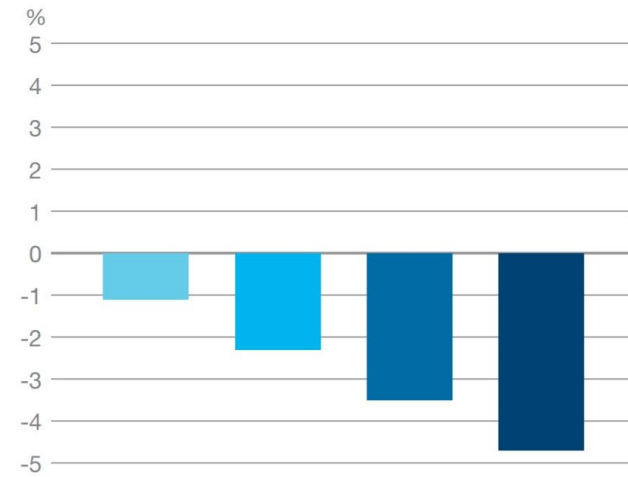
- Fit a relationship between the Traffic Score and the MarketStance operating location data
- Then scenario test different forecasts of number of operating locations
- The operating location forecast can be translated into an effect on traffic score, and cascade into an effect on loss cost using our established fits

Scenario Testing Commercial Auto TTT

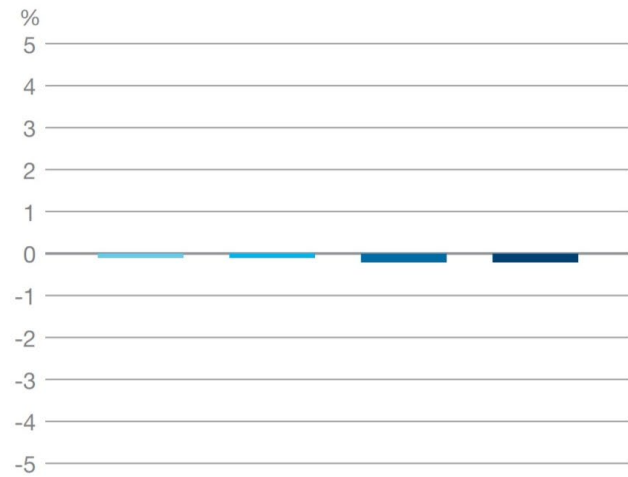
Bodily Injury



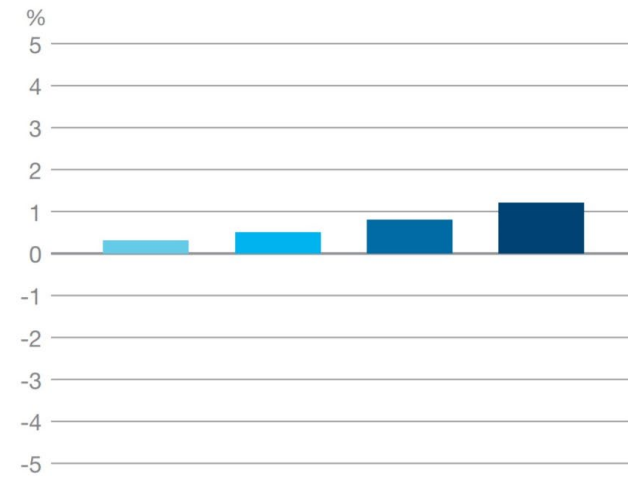
Property Damage



Collision



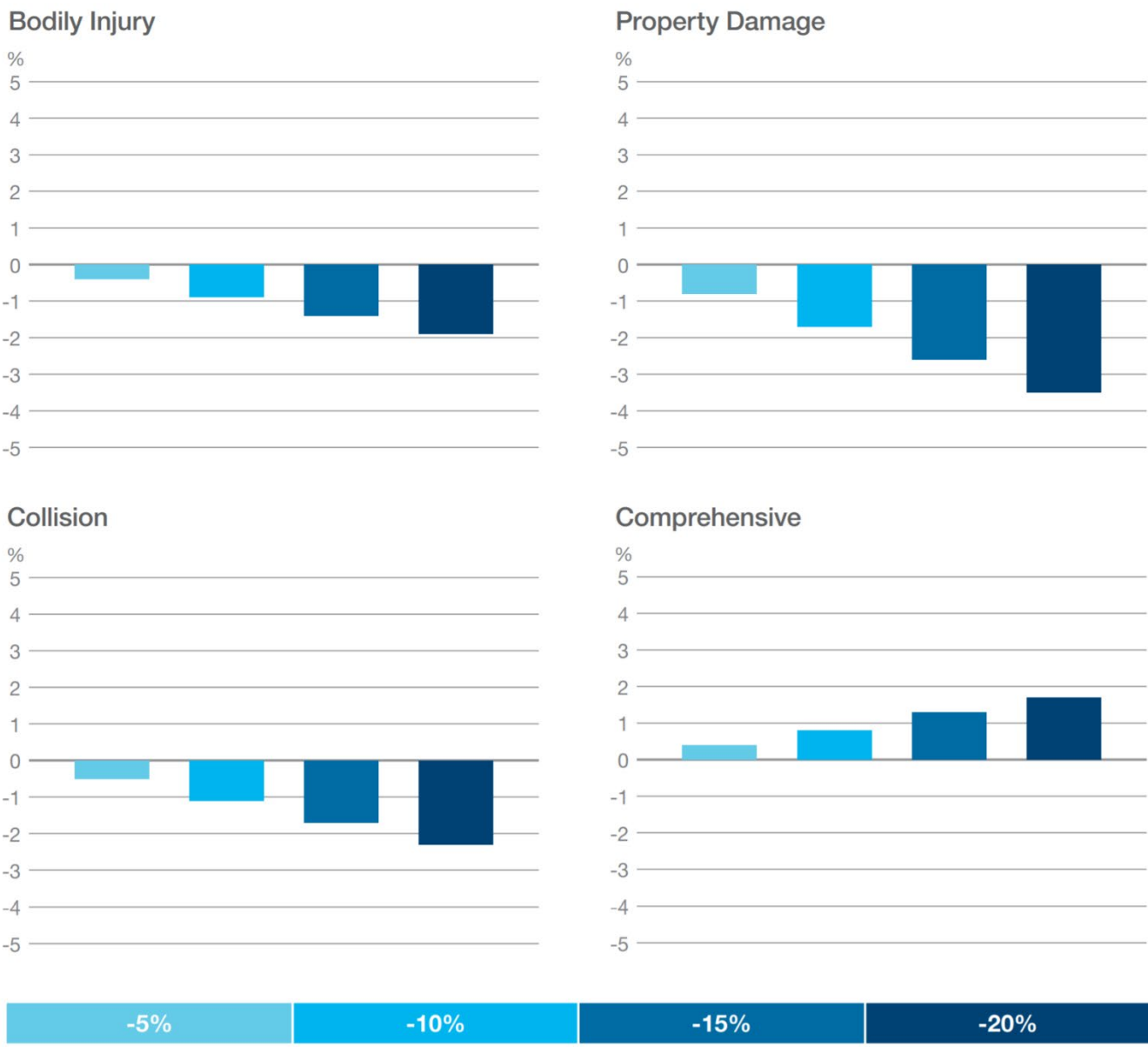
Comprehensive



Scenario:



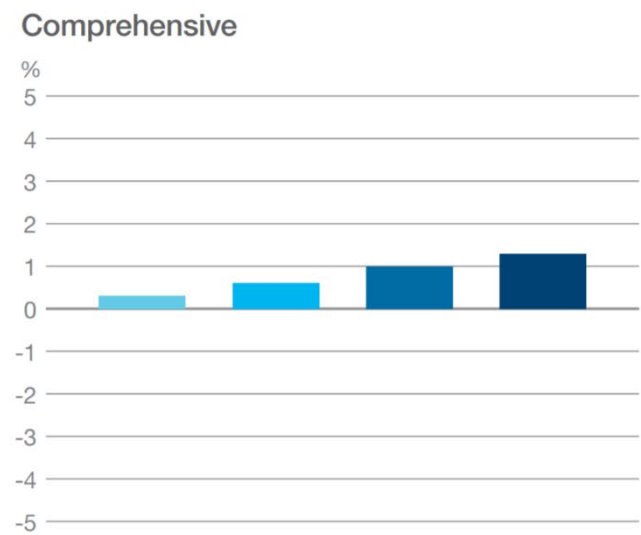
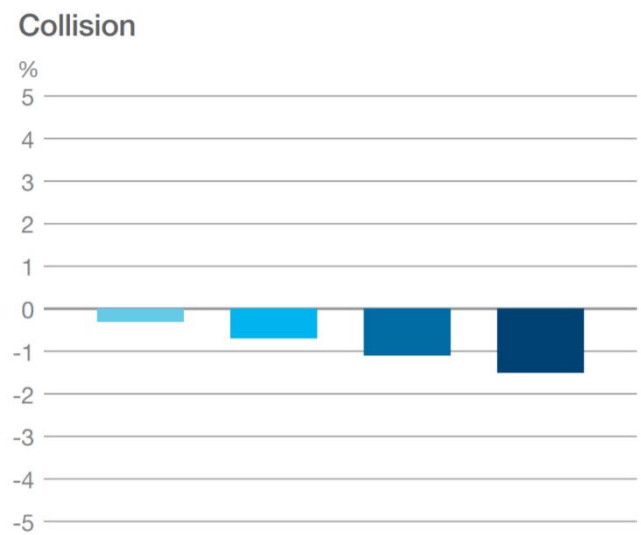
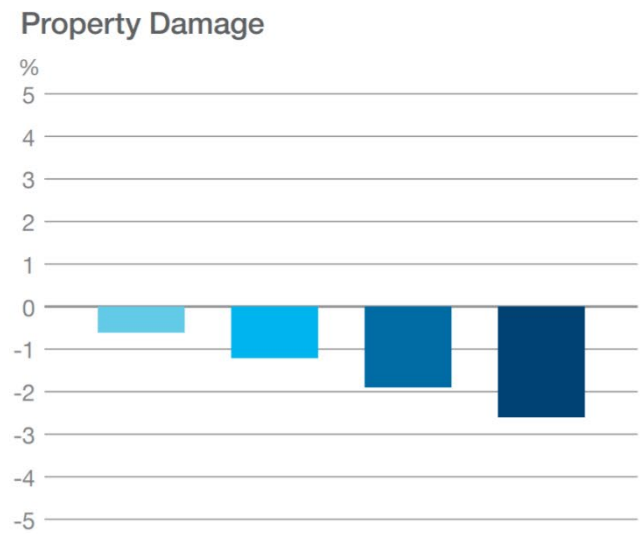
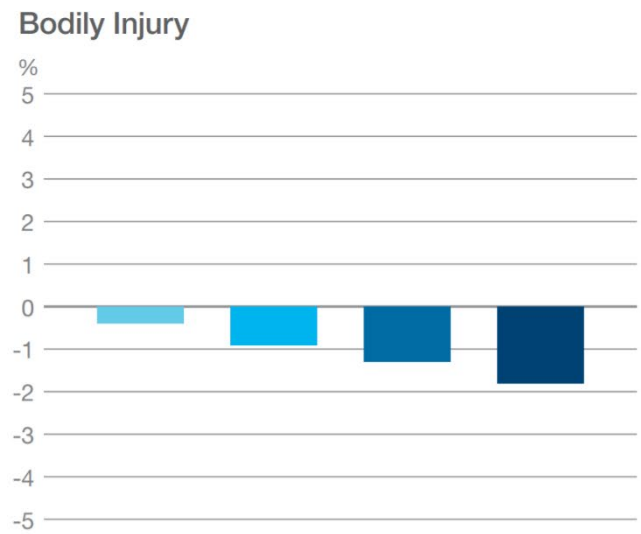
Scenario Testing Commercial Auto PPT



Scenario:



Scenario Testing Personal Auto



Questions?

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