



Scenario Testing COVID-19 Assumptions with Predictive Models

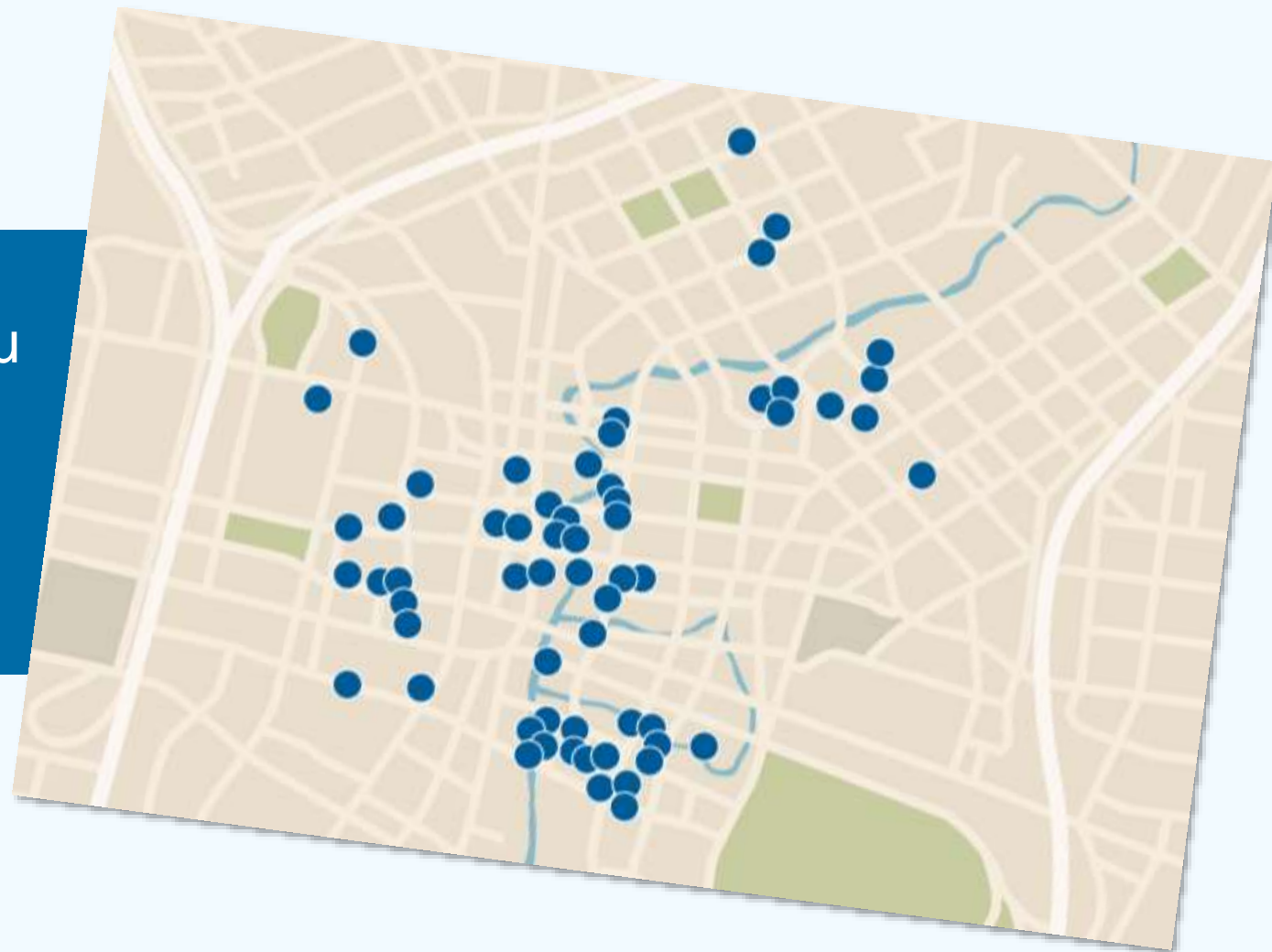
CAGNY Fall 2020 Meeting



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:



Traffic generators



Traffic composition



Traffic density and driving patterns



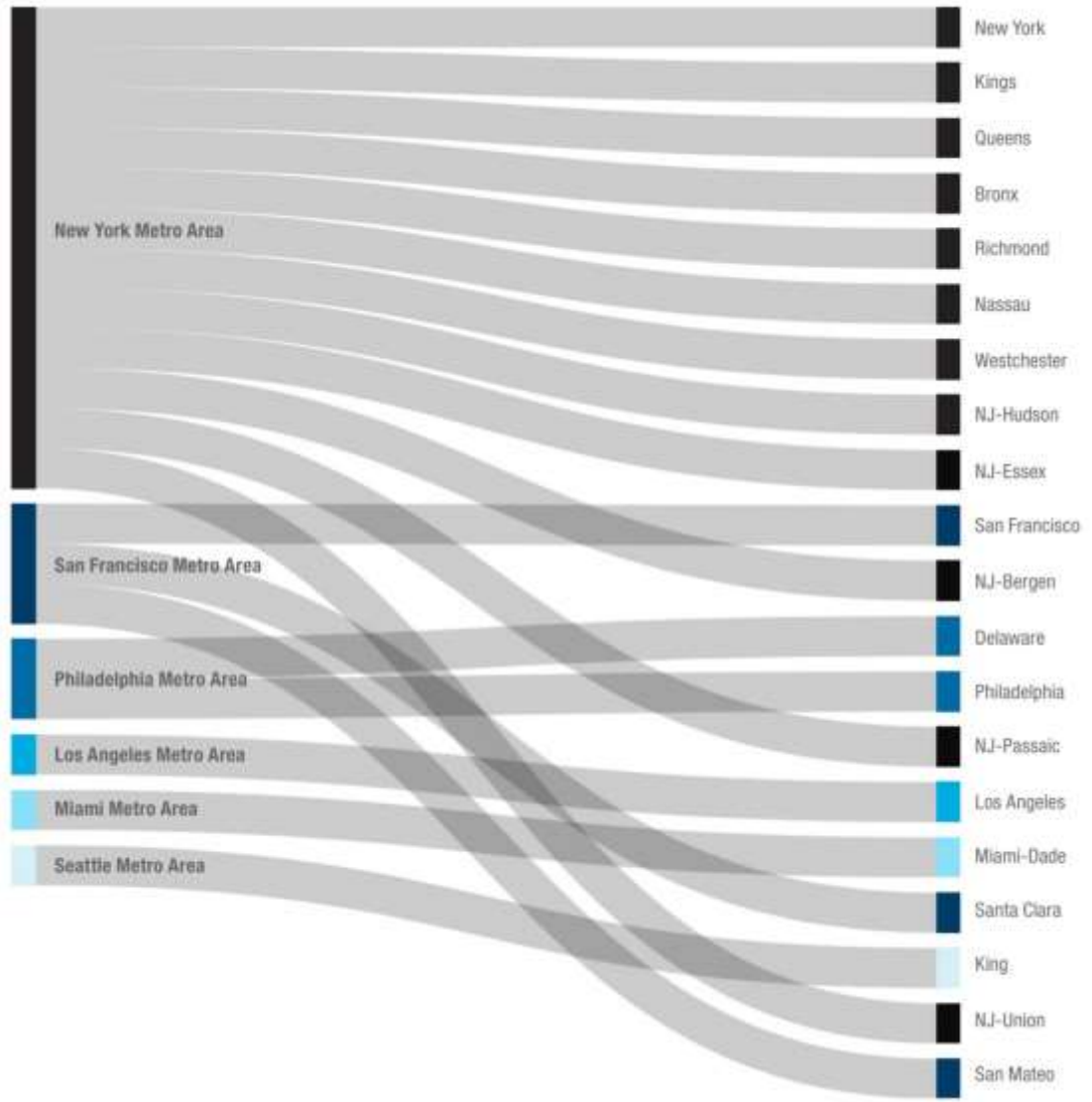
Weather and terrain



Experience and Trend



Counties with highest average traffic scores, by metro area

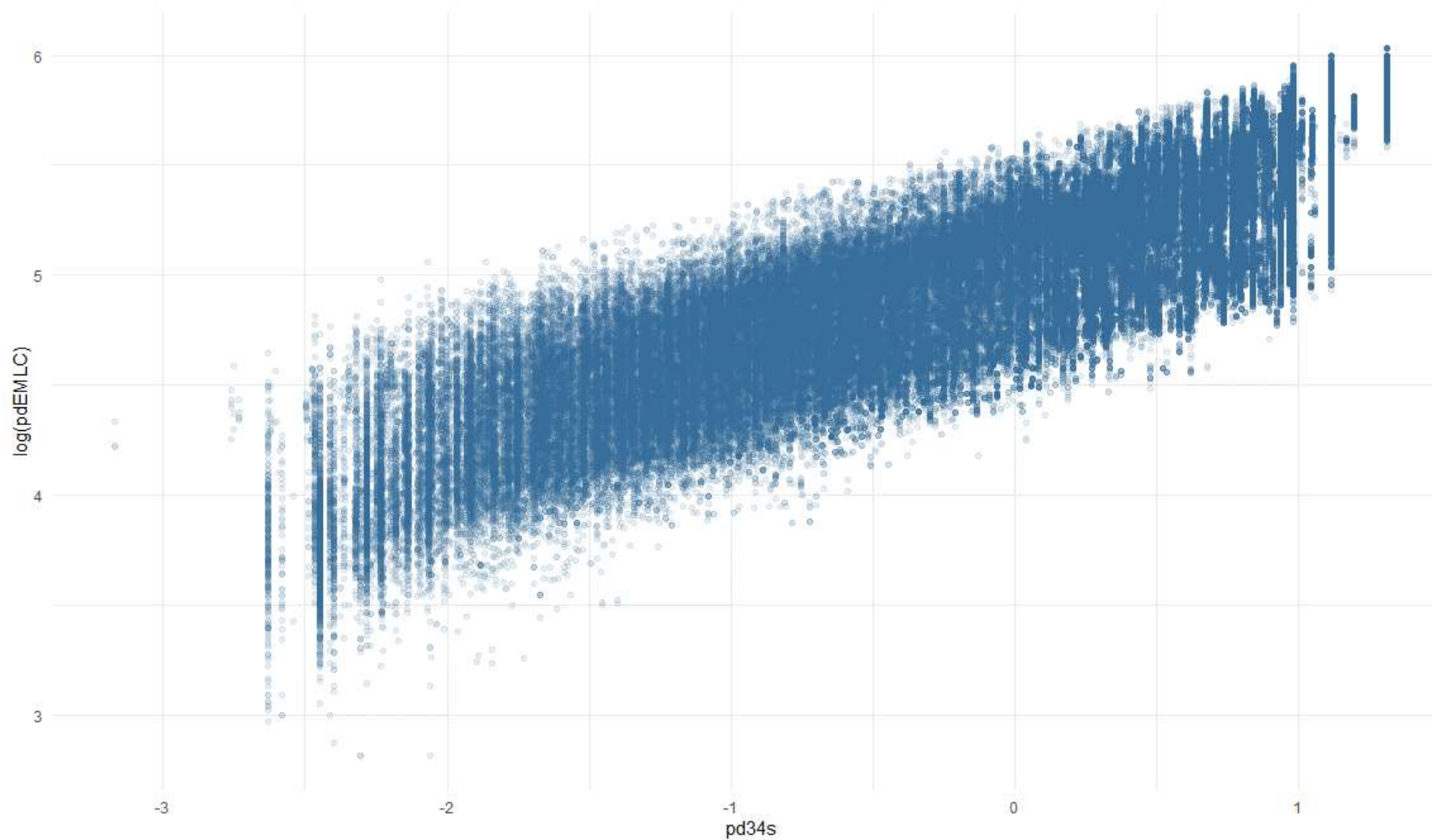


Commercial Auto TTT PD



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:

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

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

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

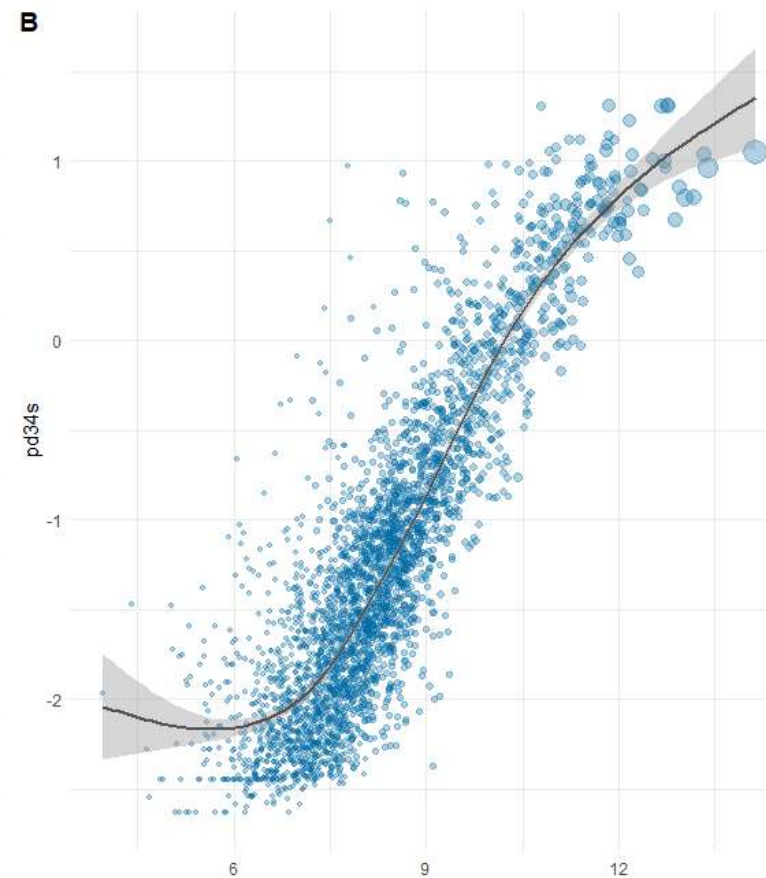
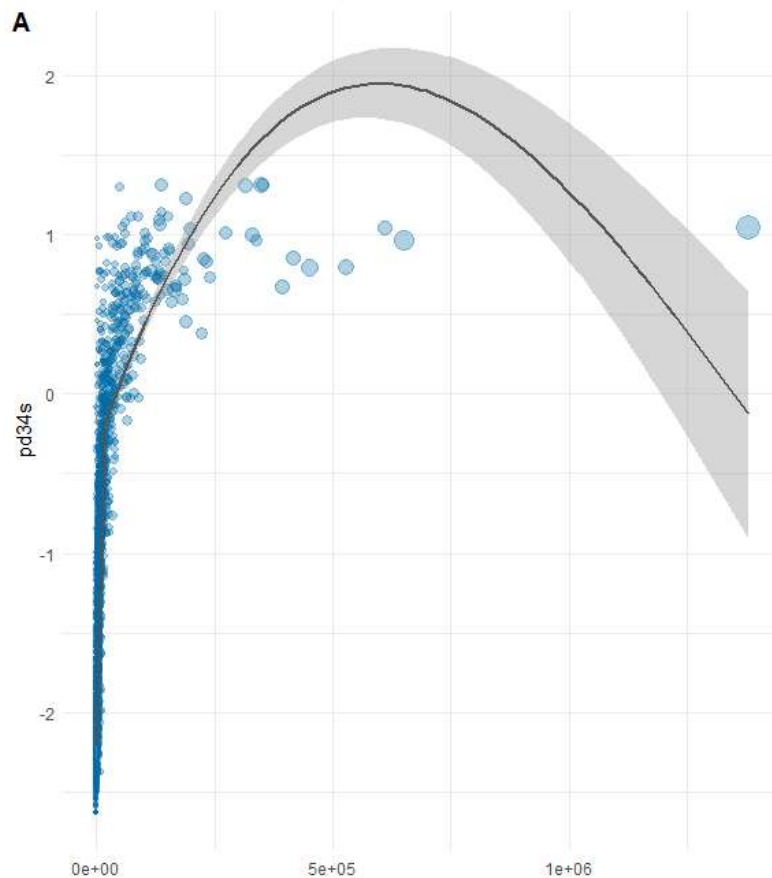
Leveraging an economic indicator for more intuitive scenario testing



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



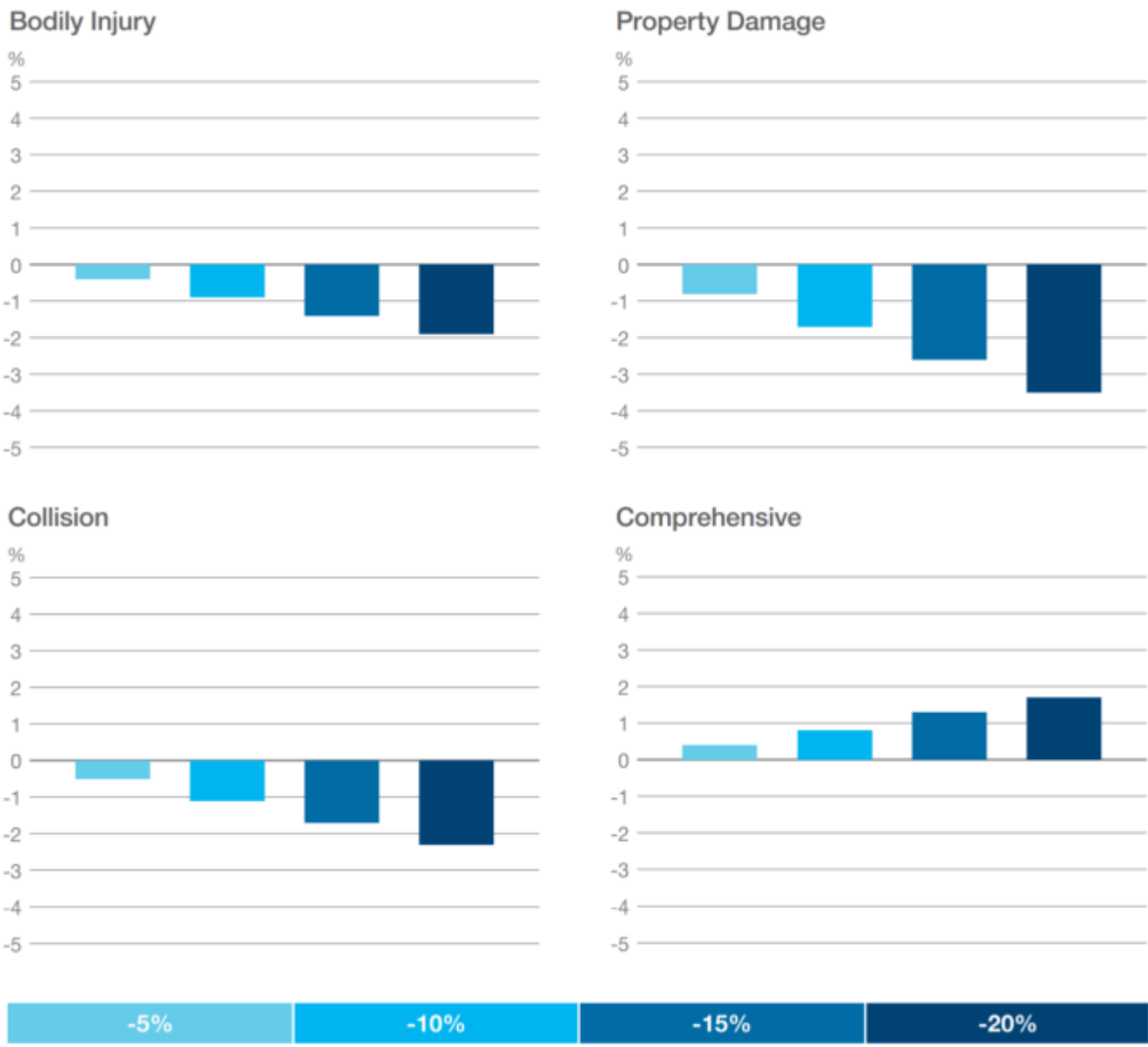
Scenario Testing Commercial Auto TTT



Scenario:



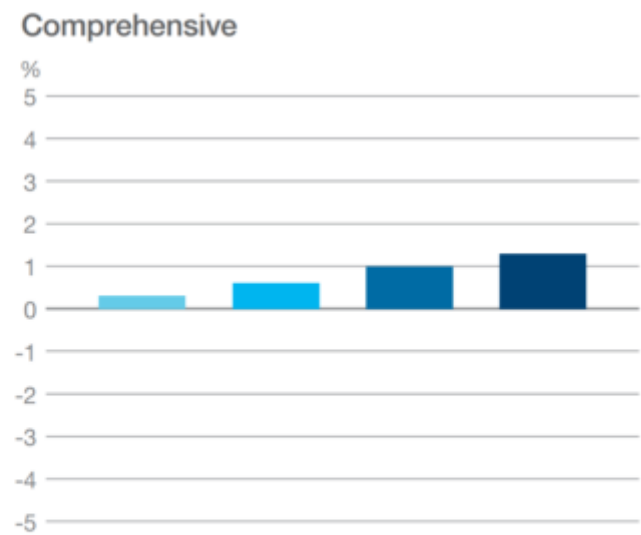
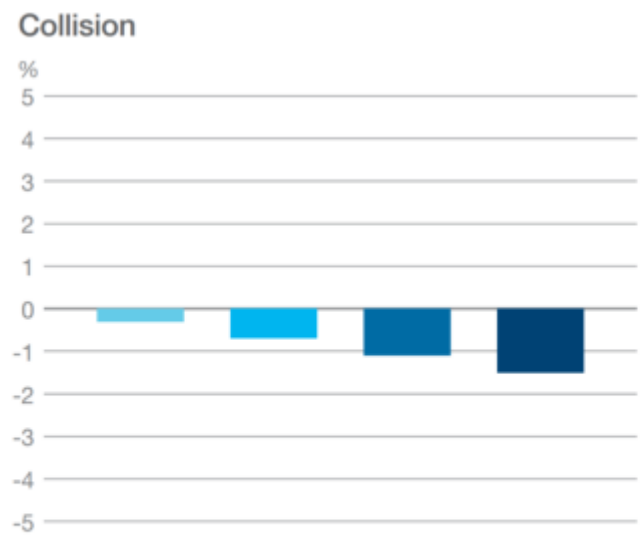
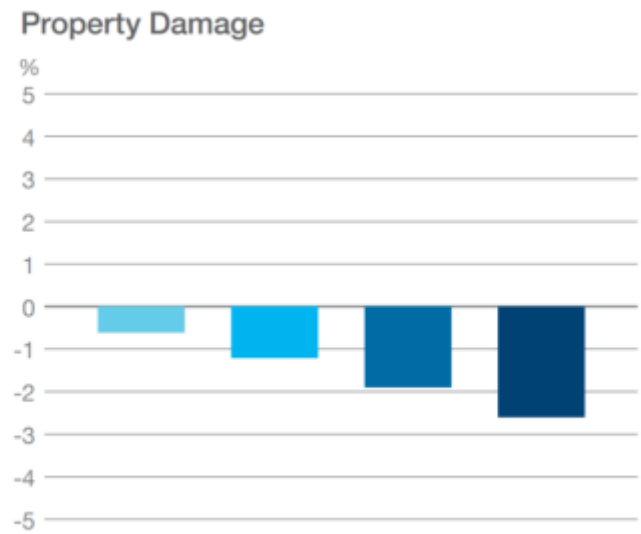
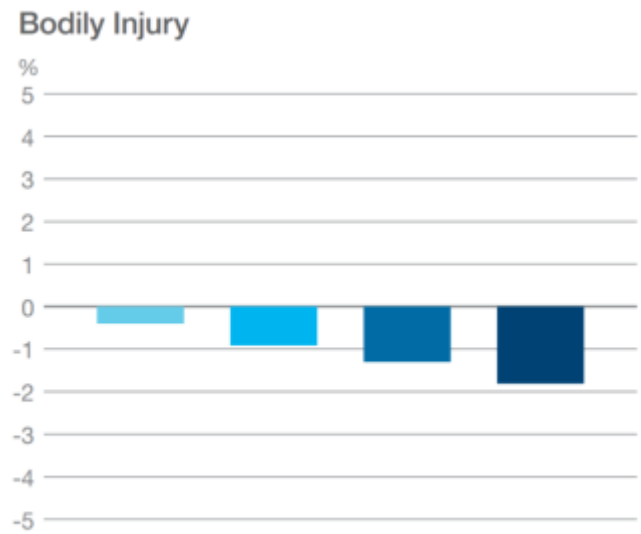
Scenario Testing Commercial Auto PPT



Scenario:



Scenario Testing Personal Auto



Scenario: -5% -10% -15% -20%

Questions?

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