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Scenario Testing COVID-19 Assumptions with Predictive Models

MAF 2021

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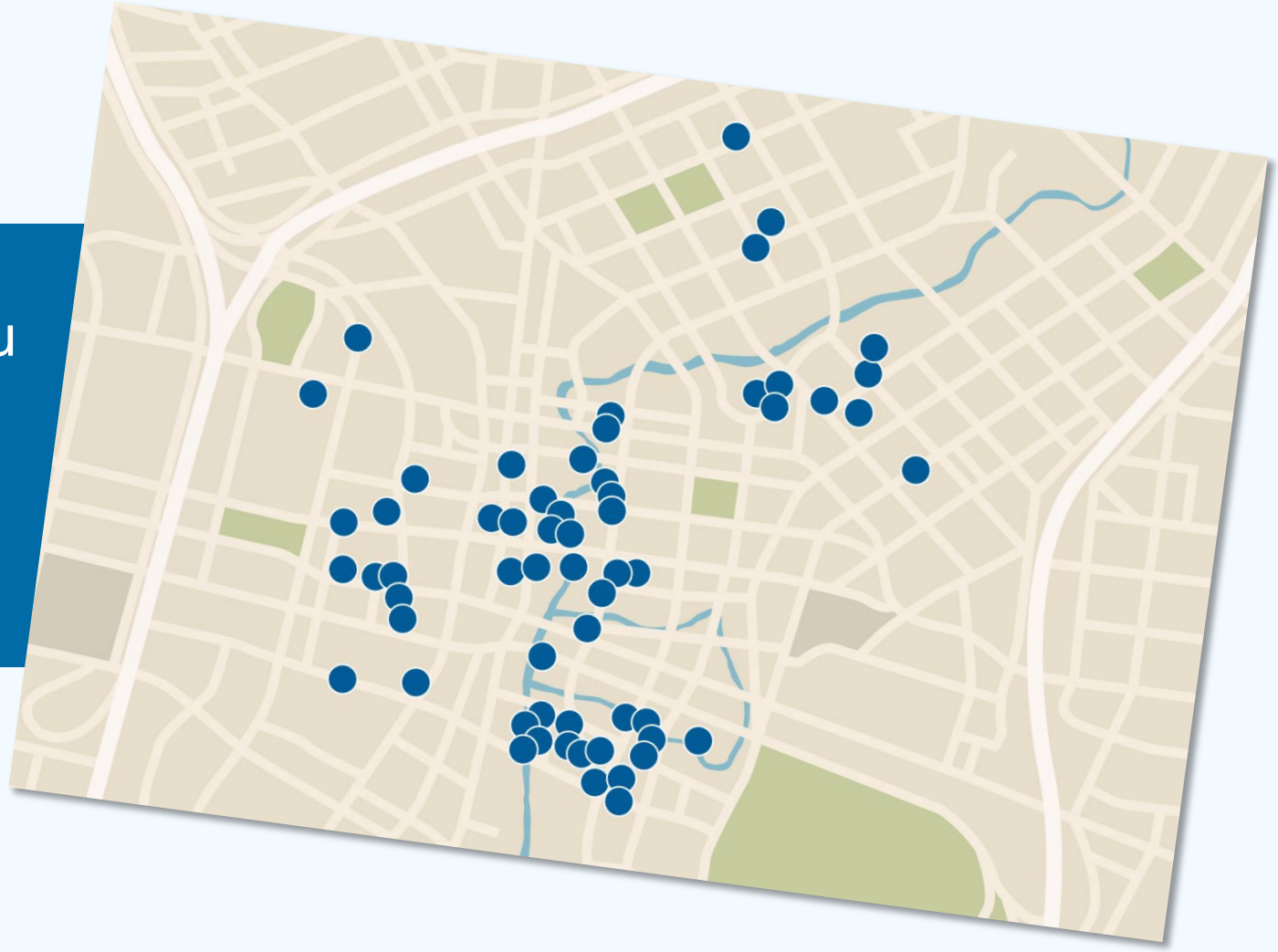
ISO Risk Analyzer Environmental

Geographic risk landscape

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



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ISO Risk Analyzer Personal Auto and Commercial Auto

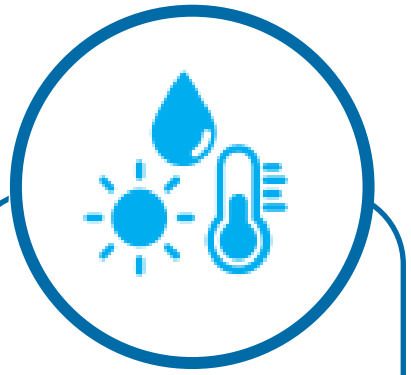
Environmental Module

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

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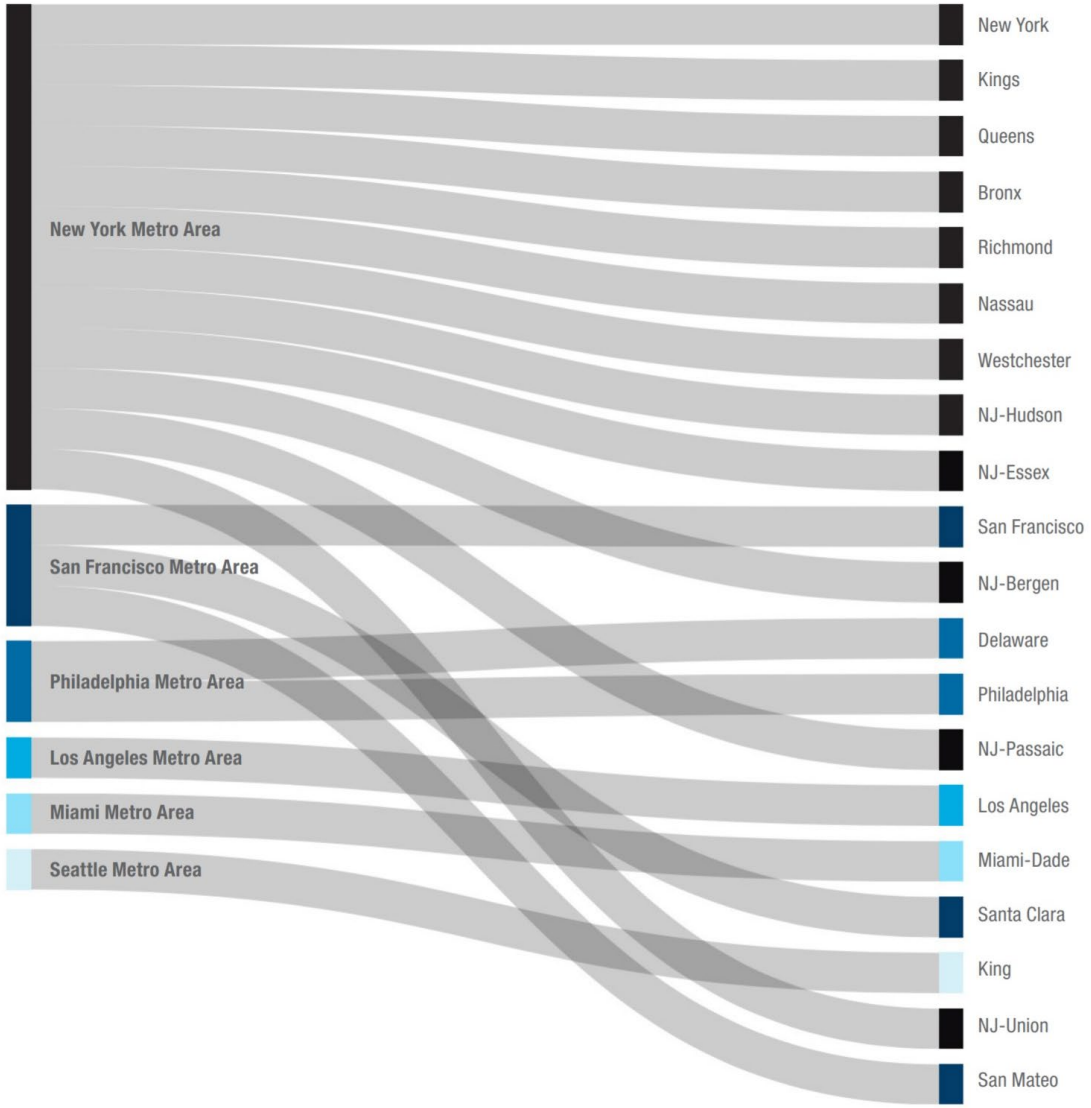
Counties with highest average traffic scores, by metro area



Commercial Auto TTT PD

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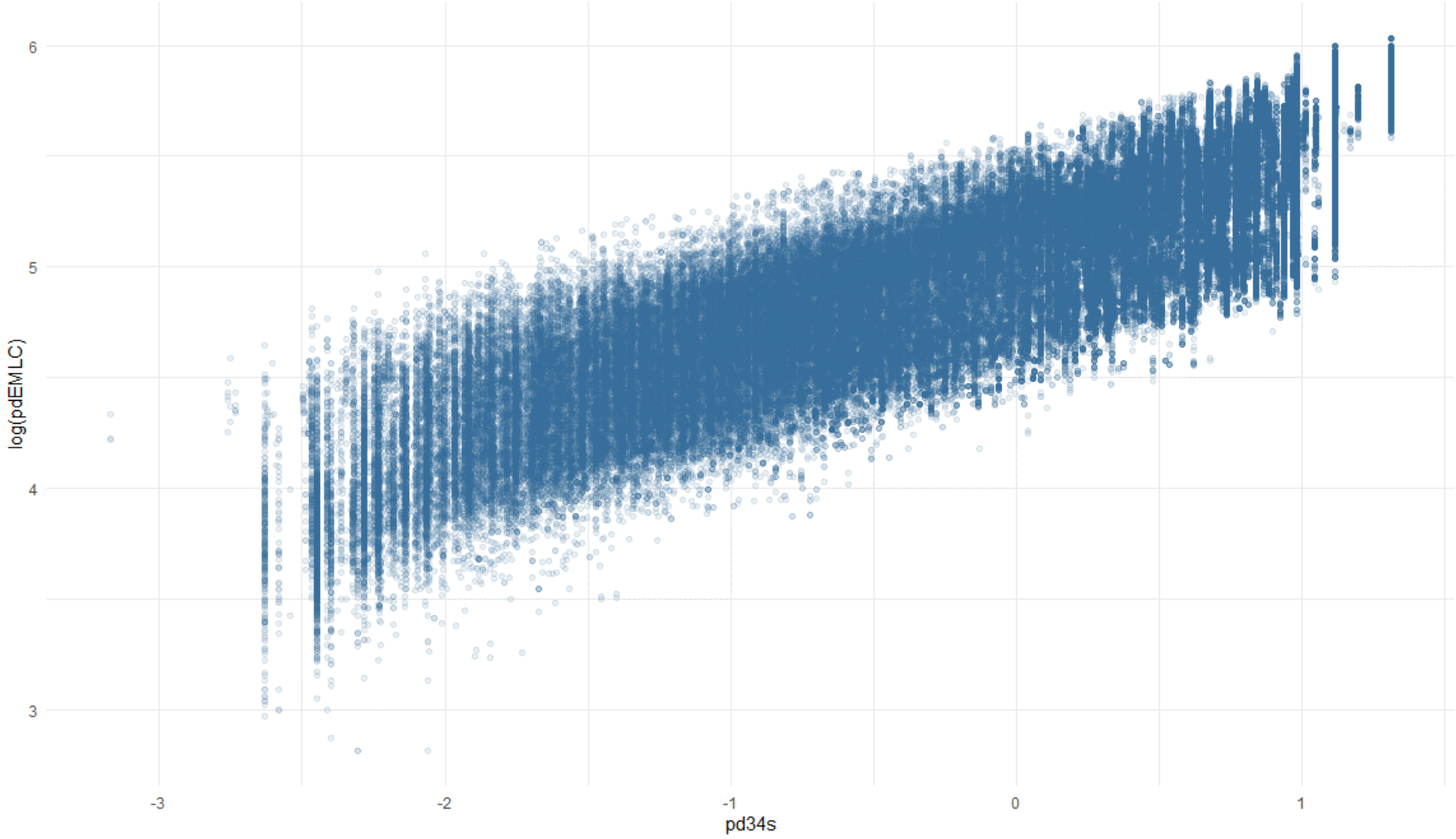
Risk Analyzer Estimated Loss Cost vs. Traffic Score

Commercial Auto TTT Property Damage



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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:

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

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

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

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

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

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Leveraging an economic indicator for more intuitive scenario testing

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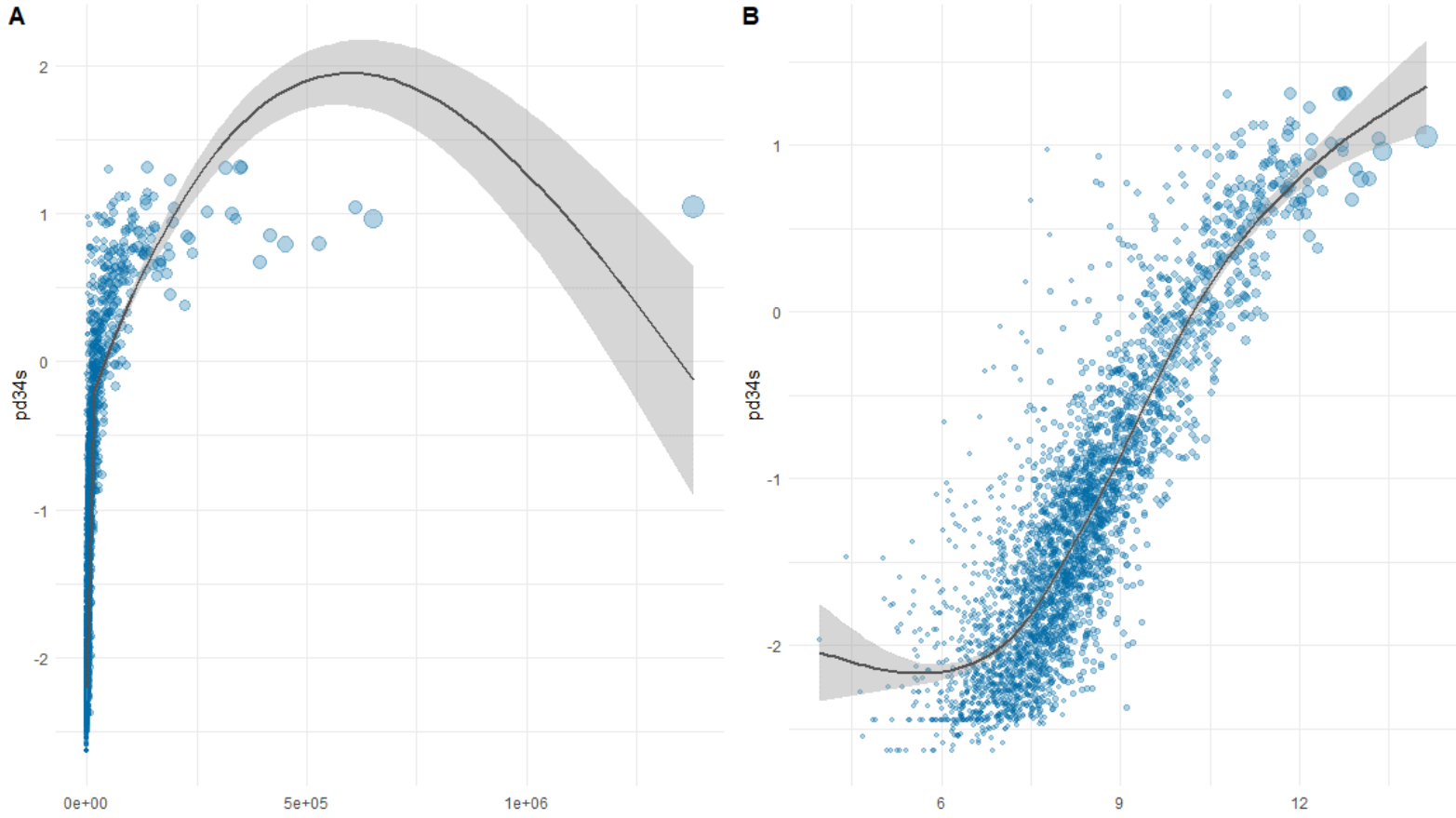
Traffic Score and ISO MarketStance Commercial Insight Data

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



Commercial Auto TTT PD

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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

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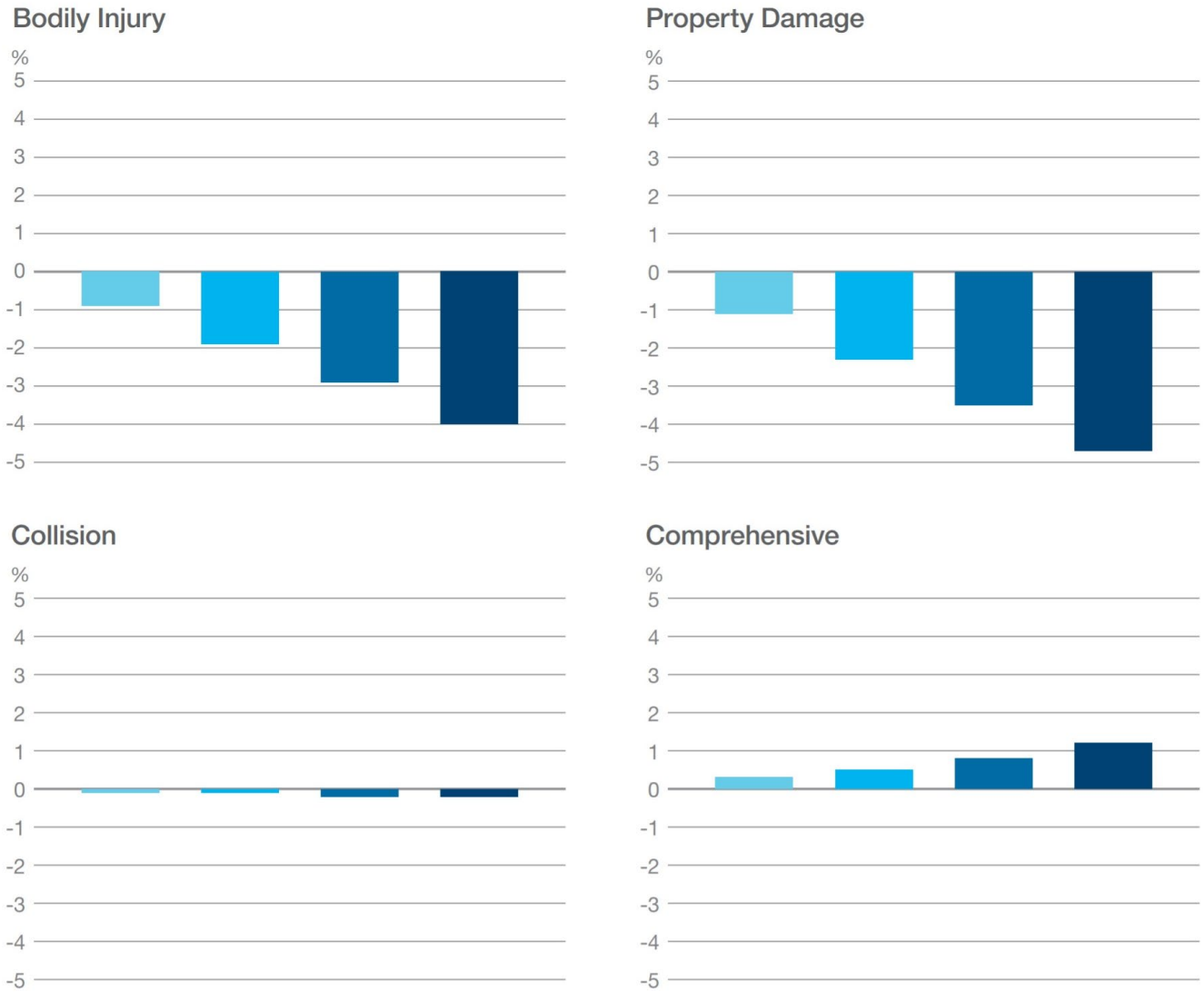
Scenario Testing

Commercial Auto TTT



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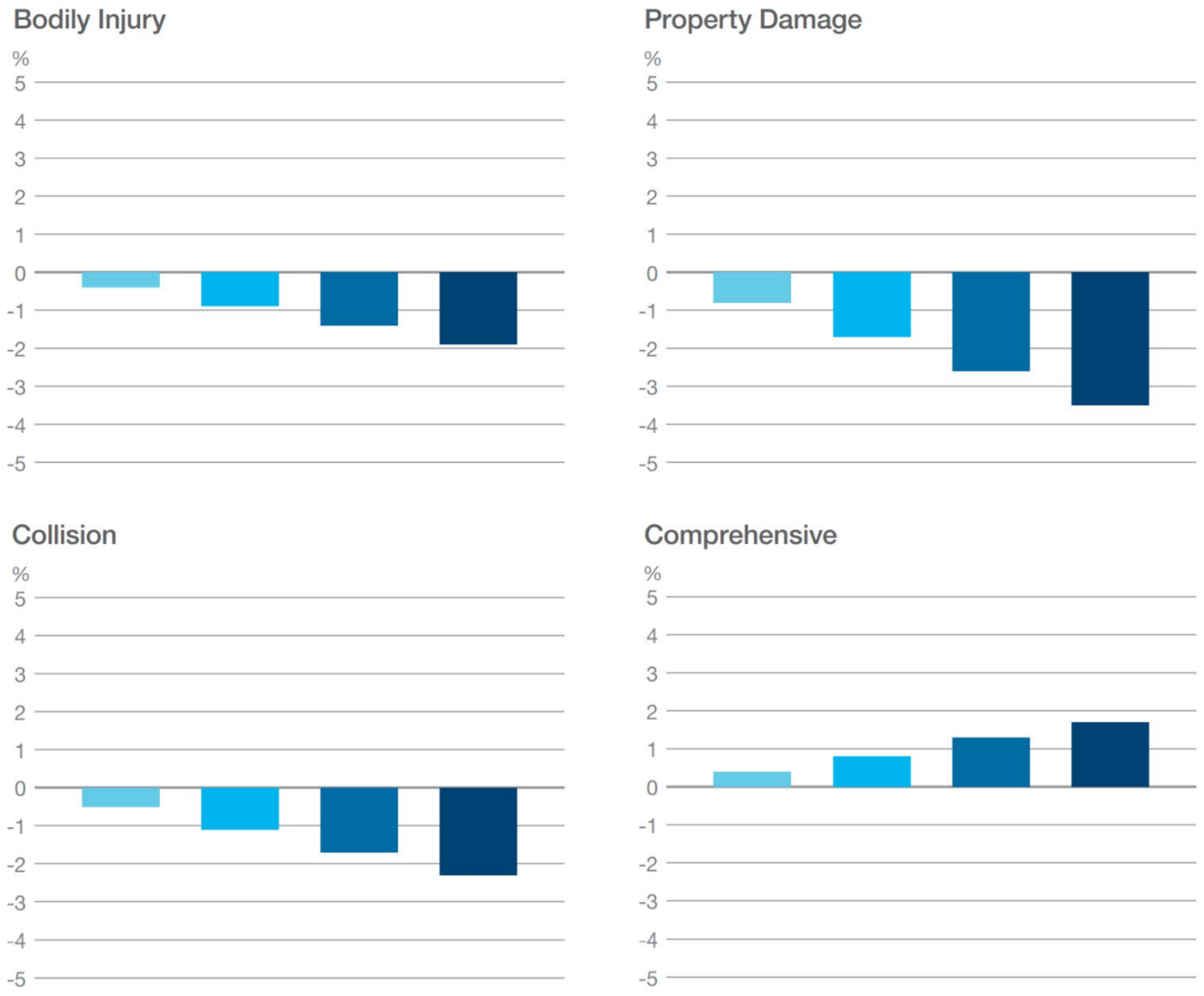
Scenario Testing

Commercial Auto PPT



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Scenario Testing

Personal Auto

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

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Questions?

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