

# How One Insurer Discovered a Surprising Number of Rate-Adequate Risks in “Risky” Vehicle Segments

## The Challenge: Old-School Underwriting Practices Limit Growth

Like most insurers, this non-standard auto insurance carrier considered vehicle make and model to be an important underwriting factor. So much so that this insurer had shut off entire segments of vehicles that had previously experienced higher loss ratios.

Although shutting off segments is a common practice, most would agree that these vehicles do not automatically make any policy they're on inadequately rated. The pure premium required for any given vehicle or policy is a function of a number of elements, including characteristics of the vehicle, of the driver, of the environment, etc.

Nevertheless, examining dozens of contributing risk factors and how they interrelate is nearly impossible for human underwriters, so the practice of shutting off entire vehicle segments has continued.

## The Theory: Rate Adequate Business Exists In “Risky” Vehicle Segments

This insurer suspected that many risks within these “risky” vehicle segments were actually adequately rated - and, therefore, not all policies with these vehicles on them were unprofitable to write. However, within the set of policies they wrote that had these vehicles on them, they could not tell how adequately rated one policy was relative to another.

They wondered if they could turn on all vehicle segments and leverage the Soteris's AI pricing algorithms to identify which risks were adequately rated, based on their overall risk profile – not just the make and model.

To test this theory, the insurer asked Soteris to run blind tests using data from previous policy years on three vehicle makes: Mustangs, Priuses, and Camaros.

### For each vehicle make, Soteris:

- 1 Evaluated all characteristics of each risk, considering dozens of interrelated factors - not just make or model.
- 2 Assigned a Soteris rate adequacy risk score to each policy, based solely on what the policy looked like when it was written as New Business.
- 3 Ranked the policies - on a policy-by-policy basis - from most rate adequate to least rate based on the Soteris scores.
- 4 Divided the applications into bins based on the scores given by the Soteris AI algorithm.
- 5 Evaluated the actual corresponding loss ratios of these bins of policies relative to the rate adequacy scores from Soteris's AI algorithms.

## What the Data Revealed

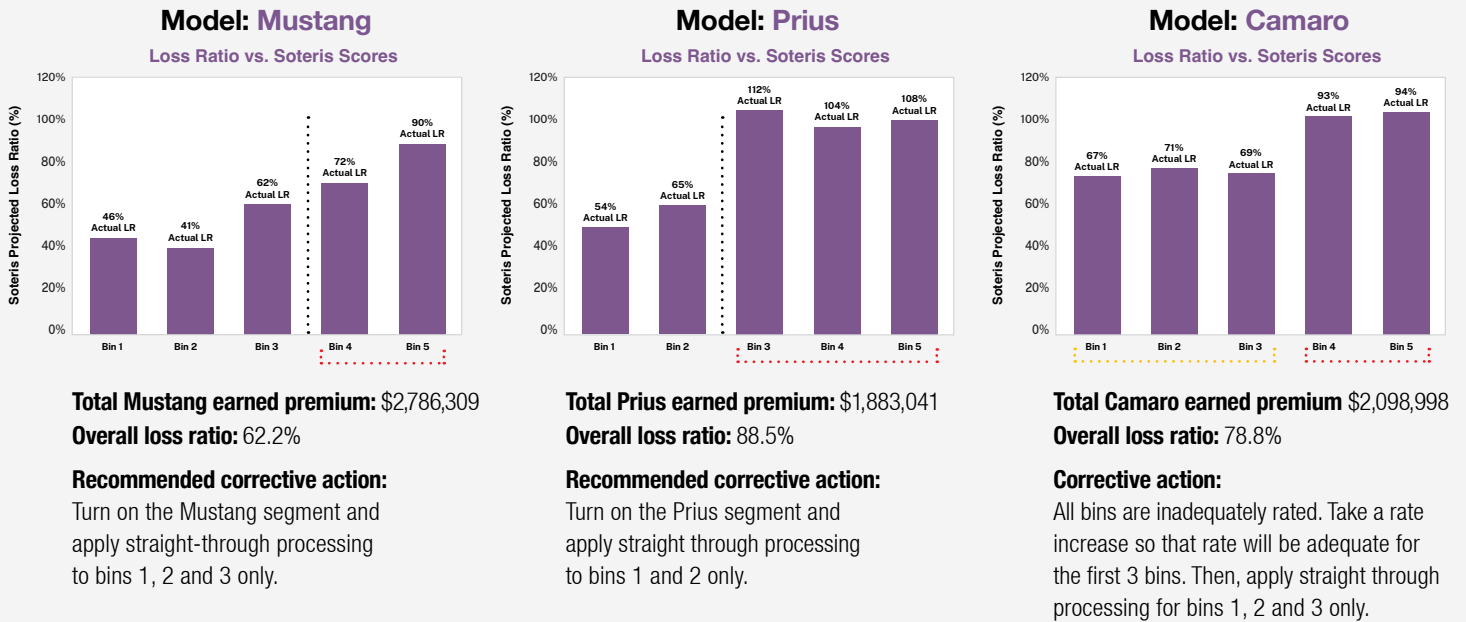
While each of these “risky” vehicle make or model segments had high overall loss ratios, the Soteris algorithm showed a definitive ability to pick out the risks that ended up with low loss ratios.

A chart showing the Soteris algorithm’s performance on each unprofitable vehicle make or model is depicted below. The policies that received the most rate-adequate scores from the Soteris algorithm are on the left side of each chart, and the ones that received the most rate-inadequate scores are on the right side of each chart.

Take, for example, Mustangs. The 20% of policies with Mustangs that received the most rate-inadequate scores from Soteris appear in the bin on the right - and it turned out that these policies had an actual loss ratio of 90%. The 20% of policies with Mustangs that received the most rate-adequate scores appear in the bin on the left - and it turned out that these policies had an actual loss ratio of just 41%.

This confirmed the carrier’s theory that all policies with Mustangs are not unprofitable policies to write. It’s the combination of all risk factors, as well as a comparison with the filed rate, that indicates whether or not an individual policy with a Mustang on it can be written at a profit.

The following results were derived from an analysis of this carrier’s data prior to implementing Soteris.



Loss data timeframe: April 2018 through August 2023

## The Possibilities

Now, this non-standard auto insurance carrier has some interesting growth opportunities to consider. They can turn on all segments for all vehicle makes and models, and use Soteris to instantly evaluate rate adequacy, at a policy-level and at point-of-sale, to make sure they’re writing only the rate adequate policies.