

## About the Authors



**LeRoy A. Boison Jr.**  
FCAS, MAAA, LLC

Mr. Boison, a consultant in MHL's New York office, has more than 30 years experience in pricing for property/casualty insurance. A graduate of Fordham University, he was previously a senior vice president at Insurance Services Office, Inc., in charge of International Services, and ISO ratemaking activities before that.



**Brett M. Nunes**  
ASA, MAAA

Mr. Nunes, a consultant in MHL's Chicago office, has 5 years of experience in pricing personal lines insurance. He has also created various Generalized Linear Models and Dynamic Financial Models for clients. A graduate of the University of Waterloo, he previously set loss reserves for Large Risk at Kemper Insurance Companies.



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# Symbols/Vehicle Rating Inconsistent Among Major Insurers

By **LeRoy A. Boison, Jr.**  
and **Brett M. Nunes**

MHL has just completed a study of how major automobile insurers rated more than 1,300 car models for comprehensive and collision insurance. The study focused on "symbol assignment" and how this rate classification impacts the rates each company charges its customers.

If it is true that the symbol assignment accurately measures the risk associated with the damageability or repairability of each car model, then it would be reasonable to expect uniformity among insurers in the rate relativities applied to each car. In other words, the rate charged for one model of car compared to the rate charged for another model of car should be consistent from one insurer to another.

Rather than uniformity, we found a great difference of opinion about how to assess the risk associated with the damageability/repairability of each car model. The variation in rates charged, due solely to symbol assignment, was as much as 190%.



## A Competitive Opportunity

It is possible that one of the insurers assessed the risk accurately, especially if it used multi-variate analysis to identify the interaction of rate factors on each other. But with such a wide divergence in risk assessment among the companies, the only logical conclusion is that the others were very wrong in their symbol assignment. In a similar marketing environment, an insurer would have a great competitive advantage if it knew three facts: 1) the symbol assignment divergence for each car model; 2) the correct assessment of risk; and, 3) how to target the car models that are overpriced.

# The Study

This study compares the pure rate differences associated with variation in “symbol” assignment, by normalizing the programs of each individual insurer to a consistent base and comparing the difference in rates by specific make and model of the vehicle. More than 1,300 individual models are included in the study.

For physical damage coverages (comprehensive and collision) and, increasingly, for first-party medical injury and liability coverages, insurance companies vary their rates by the type of vehicle insured, recognizing that actual losses vary according to the characteristics of the insured vehicle. The overall value of the vehicle, its damageability/repairability and crashworthiness are all taken into consideration.

Each vehicle is assigned a “symbol” or vehicle grouping that has a rating relativity associated with it. This “symbol” is usually determined by the cost of the vehicle when it is new, adjusted for its damageability/repairability characteristics.

Most insurance companies use the symbols determined by the Insurance Services Office, Inc. (ISO). Allstate, Farmers, Progressive, State Farm and a number of other companies use their own symbol assignment systems. This study includes data for all automobile models for which all five of these companies provide symbol information. It is provided in the same level of vehicle detail used by the individual companies to rate their programs and, as such, includes VIN, engine size and other vehicle information.

Since these rating relativities are applied multiplicatively to the base rate or loss cost, the differences of individual companies’ factors can be compared directly in order to determine the pure difference in rates associated with “symbol” assignments.

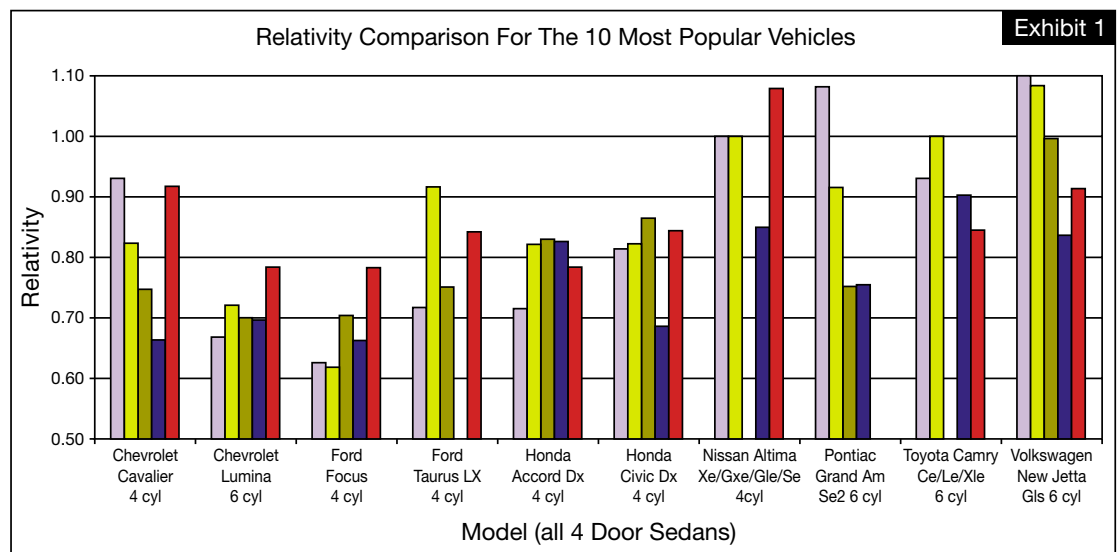
This study documents some of the most notable differences and analyzes these differences by specific market segment.

## Findings for specific vehicles



### **The Ten Most Popular Vehicles<sup>1</sup>** *[Taurus, Accord, Camry, Focus, Cavalier; Lumina, Civic, Altima, Grand Am and Jetta]*

The first phase of this analysis was a simple comparison of the differences in rates for the most commonly produced cars. As a result of the greater volume of data and the relatively high credibility associated with the experiences of these cars, one would expect to see similar results among companies.



However, there are differences among these vehicles which are quite significant, as can be observed in Exhibit 1. The smallest difference between the high and low companies is 16% with the greatest

difference being 44%. The average difference for these cars is 28%. Differences are generally scattered with no discernible pattern.

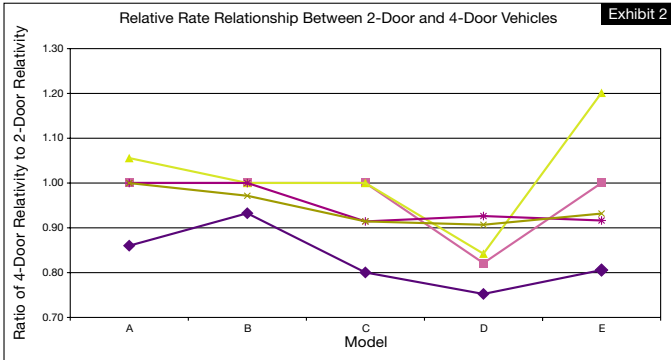
<sup>1</sup> Based upon Automotive News Data Center 4/22/02 North American production statistics: The top 10 cars in rank order – Taurus, Accord, Camry, Focus, Cavalier, Impala/Lumina, Civic, Altima, Grand Am, and Jetta. Note: These 10 cars represent 36% of all cars produced.



### 2-Door vs. 4-Door

[*Accord, Cavalier, Sunfire, Alero and Impreza*]

Exhibit 2 shows an analysis of the differences among several popular cars available in both 2- and 4-door models. (For purposes of this analysis, only the percentage difference between comparable vehicles is displayed so that if a company rates both vehicles the same, the relativity displayed would be 1.000.) While there is a general tendency to rate 2-door models higher than 4-door models, the degree to which this occurs differs significantly among companies.



Speculation exists that a 2-door “surcharge” is not necessarily a function of the actual repairability/damageability of these models. Rather, it likely results from other driving characteristics (e.g., youthful operator, non-family) that may not be properly accounted for in the symbol analysis.

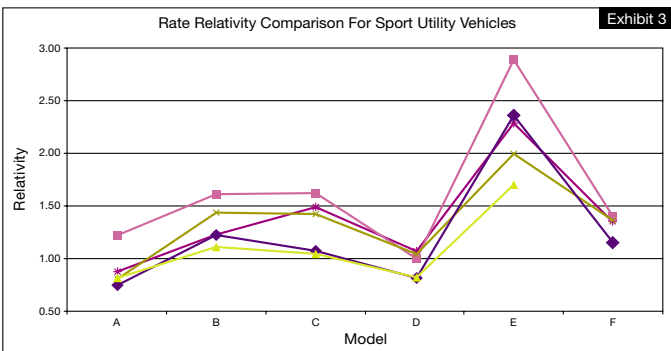
Multi-variate rating analyses, which are designed to account for these potential biases, are becoming very popular tools in the actuarial profession, as they can determine the interactions of multiple rating variables on each other.



### Sport Utility Vehicles (SUVs)

[*Explorer, Grand Cherokee, Navigator, Mountaineer, Pathfinder and Range Rover*]

Exhibit 3 shows the data for six of the most popular Sport Utility Vehicles (SUVs). This graph indicates there may be systematic bias in the way these vehicles are rated, based upon the consistent



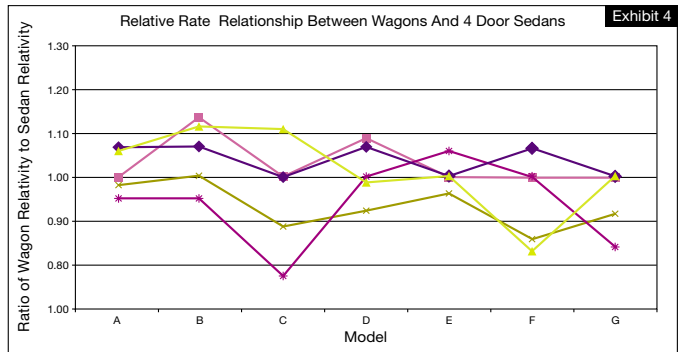
differences displayed among companies. The actual differences for this set of SUVs range from 20% to 70%, with an average difference from high to low of 47%. Also noteworthy are the differences within a company for these similar types of vehicles.



### Station Wagons

[*Ford Focus, Mercury Sable, SAAB 9-5, Volkswagen Passat, Mercedes Benz E320, Daiwoo Nubira and Subaru Impreza*]

Exhibit 4 displays the multiplicative relationship between station wagons and regular 4-door sedans for comparable models. It appears that wagons are rated somewhat higher than the sedans, probably because of their additional cost. However, one of the market leaders has apparently been “discounting” the rate for its wagons, keeping them consistently less than 1.000 and generally less than its competitors.



As with the 2-door and 4-door models, this may be a result of more precise, multi-variate rating analyses by some insurers, enabling them to factor in the effect of potential variables such as “families” in their tiering or rating plans.



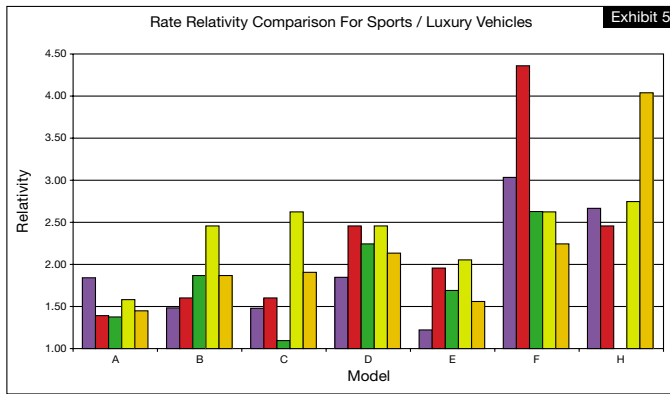
### Sports/Luxury Cars

[*Corvette, Boxster, 911T, Jaguar XJR 8, BMW 750 IL, Mercedes Benz SLK 230 Kompressor, and Audi TT Quattro*]

An analysis of some of the more exotic vehicles is displayed in Exhibit 5. As expected, the variations for this segment are significant (32% to 137%) for the models analyzed. (Some companies do not provide published rates for these vehicles, so the actual difference in rates may be even greater than is calculated here.)

The effect in real dollars can be extremely significant, as some of these vehicles are quite expensive and the rating factors associated with them are very high. While not a significant portion of some insurers’ books of business, these differences can be important for companies specializing in “niche” markets, and

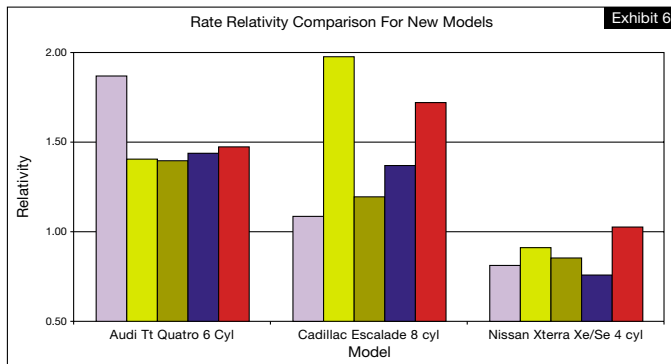
should be considered in the determination of an insurer's underwriting guidelines.



### Newer Models

[Escalade, Audi TT Quattro and XTerra]

When new or substantially redesigned vehicles are introduced, insurers must respond by relying on limited damageability/repairability data, crash tests, or the use of comparable models for rating purposes. Exhibit 6 shows the variability in rating for three relatively new models. For one of these models the difference in rates is more than 80%. In reviewing one insurer's experience with another such vehicle - the Porsche Boxster - we observed that, over time, the symbol assignment was reduced five times from its original rating.



## Summary

This analysis has provided a sampling of the differences in rating that exist among insurers, based on the different symbol/model rating programs being used by the major underwriters. It is by no means exhaustive, and has been done for illustrative purposes only. But the study has shown that significant differences exist for even the most common models.

Moreover, this analysis indicates that differences exist which could result from the use of more sophisticated actuarial techniques (multi-variate analysis) by some insurers. Such companies would be at a distinct advantage in evaluating the total risk for a given individual and, as such, their overall results would be much more likely to be in line with their projections.

Individual companies can conduct a more detailed analysis which focuses on their particular distribution of vehicles, as compared to their key competitors and/or market leaders. It is equally important that insurers' individual tiering programs use this type of evaluation, due to the potential interactions that exist.

If you are interested in obtaining the detailed data used for this study, or desire MHL's assistance in creating a multi-variate rate analysis for your company, please contact the authors: LeRoy Boison (516-746-7149) or Brett Nunes (847-419-1174). You can also visit our Web site at [www.mhlsult.com](http://www.mhlsult.com) for more information and assistance.

### About this study

This study was performed using Miller, Herbers, Lehmann, and Associates, Inc.'s Symbol Rating Comparer, which includes data for all automobile models for which Allstate, Farmers, ISO, Progressive and State Farm insurance companies provide symbol information.

The symbol relativities of each insurer were also entered into the database. These relativities were normalized to a selected base level such that comparisons among companies could be made. For this study, which relies on original cost information, the relativity was adjusted to a \$20,000 original cost new or equivalent basis.

The resultant relativities are the pure multiplicative differences among the rates that would be charged by each company. Therefore, direct comparisons can be made between each company and model. The comparisons can be viewed - for all intents and purposes - as the "rate" for each model. Because different relativities are charged for comprehensive and collision coverages, a combined physical damage factor has been calculated using the countrywide fast track pure premium relationship of one third comprehensive and two thirds collision.

For the purposes of this analysis, researchers used California rate relativities. The relationships shown in this analysis may not apply in other states, as "symbol" rating relativities vary. However, they should be similar.