

## **CLEAR: Overview of Methodology**

The rate groups and differentials are developed in six steps:

### **1. Data Normalization**

In order to obtain the data needed for normalization, IBC periodically surveys insurers about each vehicle/model-year's average total premium. In CLEAR, non-vehicle effects are defined as the differences that exist between total premiums and those suggested by CLEAR rate groups. By obtaining total premium information, IBC is able to base CLEAR on data that has been adjusted to statistically remove the effects of such non-vehicle factors as territory, driving record and vehicle use.

### **2. Statistical Estimates**

Using mathematical formulae that link vehicle characteristics with observed insurance claim experience, expected claim frequencies and severities are derived for all vehicles. While CLEAR's goal is to achieve a stable system of rate groups that credibly reflect actual claim experience, a sufficient amount of specific vehicle experience is not always available, especially for newer vehicles. Deriving credible statistical estimates, on the other hand, only requires knowing a vehicle's characteristics.

### **3. Annual Adjustments**

The estimated frequencies and severities are adjusted each year to reflect the actual observed frequencies and severities for each vehicle/model-year combination. If an adjustment reflects a large year-to-year change, then it will be gradually implemented over time. The resulting adjusted frequency and severity estimates are multiplied together in order to obtain the adjusted cost per insured vehicle for each model (i.e., loss cost).

### **4. Special Adjustments**

Because it would be cost prohibitive to update CLEAR's statistical models every year, the system was designed to accommodate specific changes before they can be reflected in either statistical models or actual experience. Currently, there is no such adjustment in place.

## **5. Computation of Initial Relative Loss Costs and Rate Groups**

In order to obtain an initial relative loss cost for each vehicle, the adjusted loss costs are compared to the average loss cost for all vehicles. To ensure that year-to-year changes are implemented gradually, maximum year-to-year reductions and increases are capped.

Based on the capped initial relative loss costs, vehicles are grouped into common rate groups. The process is performed separately for Collision/Direct Compensation - Property Damage (DCPD), Comprehensive and Accident Benefits coverages.

## **6. Final Adjustments to Rate Groups**

Finally, the initial rate groups may be modified to control for:

- a) risks not captured by the statistical models (e.g., high-price vehicles that were not included in the statistical models);
- b) unexplained changes across model-years; and
- c) rate level neutrality (i.e., any CLEAR table's average differential will be equal to the average differential of the previous year's table if both calculations are weighted by the current year's projected exposures).