Evolution of Classification Rating for Personal Auto

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Definitions of Classification

- Risk Classification System – A system used to assign risks to groups based upon the expected cost or benefit of the coverages or services provided. (ASOP No. 12)

Purpose of Classifications for Private Passenger Auto

Quotes from "***Any Room Left for Skimming the Cream?***" by Robert F. Bailey; Proceedings of the Casualty Actuarial Society – 1960; Vol. XLVII

- "In writing private passenger automobile liability insurance there has always been a need for underwriters to select the good business and turn down the poor because the rate classification systems have never been perfect."

Why Use Classifications for Private Passenger Auto

Bailey went on to also explain:

– "in 1953 the bureau companies attempted to meet the competitive pressure by expanding the three class plan to six or seven classes and sharply increase the spread of relativities"

– "in 1959 the class plan was expanded again to include merit rating in the hope that this would improve their competitive position and would reduce the room for competitors to select the better risks within each rate class.'

Innovations of the 1990's and 2000's

- Predictive Modeling, GLM's
  - Corrects Methodological Flaws
  - Does More With Limited Data
  - Provides Better Statistical Framework
  - Efficiency Gains

- Influx of New Rating Variables
  - Credit
  - Payment Method
  - Tenure with Prior Company
  - Homeowner Losses

Predictive Model Advantages

Better utilizes all of the data

	Male	Female
Youthful	y_{YM}	y_{YF}
Adult	y_{AM}	y_{AF}
Mature	y_{MM}	y_{MF}
Seniors	y_{SM}	y_{SF}

Traditional techniques require data to be segregated and isolated at the granular level

— Quickly results in crumbly cake

Generalized linear modeling creates a web

More complete use of the data results in better estimates

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Rating Classification

Year	Estimated Number of Rating Classifications	Estimated Rating Possibilities	Licensed Motor Vehicles in the US	Ratio of Rating Possibilities to Motor Vehicles
1960	9	2,688,000	74,000,000	0.04
1990	16	3,145,728,000	189,000,000	16.6
2013	20	2,264,924,160,000	250,000,000	9059

Allstate Results Summary

Percent of All Policies That Are Unique Using The Variables Shown

State / Variables	TERRITORY/INSURANCE SCORE/TIER	VEHICLE RATING (MAKE AND MODEL)	LIMIT	CLASS	ABS (NJ)
Illinois	11.6	99.63	99.98	100	100
Colorado	25.39	99.98	100	100	100
Indiana	14.46	99.94	100	100	100
New York	40.84	99.91	99.996	100	100
Minnesota	22.86	99.52	99.92	100	100
Ohio	30.89	99.98	99.998	100	100
New Jersey	4.17	99.349	99.947	99.9995	100
Georgia	37.78	99.99	99.9984	99.9984	99.9984
Pennsylvania	26.13	99.97	100	100	100
Virginia	17.17	99.56	99.89	99.9989	99.9989

Each additional column includes the variables from the previous ones.

In 2 cases, one in GA and one in VA, identical policies consist of twin siblings living in the same house.

They drive the same year, make, and model of vehicle with the same coverage.

So How Has Company Focus Changed

- Definition of Best Risk has gone more from lowest frequency to greater emphasis on profitability, i.e. it is ok for a group to produce "higher than average" losses if we have recognized it and priced for it.
- Class Plans are critical in helping companies avoid adverse selection.
- Companies write a much broader spectrum of business. Preferred, Standard and Non-Standard have new definitions, if they are used at all.
- Greater spread in rates for all companies.

Why Use Classifications for Private Passenger Auto

One last quote from Bob Bailey

- "It is probably safe to say that we will never be able to devise a classification system which will produce a precisely correct rate for each risk, but we attempt to come as close to this ideal as is possible and practical."

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