

Aims and Advances in Personal Lines Risk Classification

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Polling question #1

Where are auto writers focusing on improving risk classification?
Rank these criteria (1 - most focus to 5 - least focus)

- A: who drives the car
- B: what is known about the car
- C: where the car is driven
- D: when the car is driven
- E: how the car is driven

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Polling question #2

Where are homeowners writers focusing on improving risk classification?
Rank these criteria (1 - most focus to 5 - least focus)

- A: who lives in the home
- B: what is known about the home
- C: where the home is located
- D: when the home is occupied
- E: how the home is maintained


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Who



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Who is the Insured?
Age/Gender



- Beyond the standard usage of driver age and gender in auto rating plans, household composition variables have become widely used and increasingly granular:

AGE OF YOUNGEST DRIVER	GENDER OF YOUNGEST DRIVER	# OF ELIGIBLE VEHICLES	HOUSEHOLD COMPOSITION 2					
			# OF MARRIED DRIVERS	BT	PD	MP	CP	CL
16-17	F	0-1	1,000	1,000	1,000	1,000	1,000	1,000
16-17	F	0	2+	1,000	1,000	1,000	1,000	1,000
16-17	F	1	0-1	3,400	3,010	2,423	1,186	2,860
16-17	F	1	2+	3,400	3,010	2,423	1,186	2,860
16-17	F	2+	0-1	1,000	1,000	1,000	1,000	1,000
16-17	F	2+	2+	1,000	1,000	1,000	1,000	1,000
16-17	M	0	0-1	1,000	1,000	1,000	1,000	1,000
16-17	M	0	2+	1,000	1,000	1,000	1,000	1,000
16-17	M	1	0-1	4,800	4,040	2,423	1,191	3,240
16-17	M	1	2+	4,800	4,040	2,423	1,191	3,240
16-17	M	2+	0-1	1,000	1,000	1,000	1,000	1,000
16-17	M	2+	2+	1,000	1,000	1,000	1,000	1,000
17	F	0	0-1	1,000	1,000	1,000	1,000	1,000
17	F	0	2+	1,000	1,000	1,000	1,000	1,000

- Gender X now required in some states
 - Is the end state 3 classes of gender or many more?
 - Will gender become less relevant with advances in UBI or public policy concerns on controllability?

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What is Insured?

Vehicle



- Vehicle ownership – carriers are considering length of vehicle ownership and vehicle age when added to policy

Vehicle Year	Vehicle Age	Length of Vehicle Ownership	Multi car	Full corp Status	BI	PD	COMP	COLL	MED	PIP	UMBI	UMPO	LOAN	RENT	TOW
12-23	10-14	B	N	A	1.00	1.07	1.05	1.08	1.13	1.15	1.16	1.08	1.05	1.08	1.08
12-23	10-14	B	N	S	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
12-23	10-14	B	N	N	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
12-23	10-14	B	Y	A	1.12	1.09	1.09	1.06	1.09	1.15	1.09	1.06	1.09	1.06	1.06
12-23	10-14	B	Y	N	1.04	1.04	1.03	1.04	1.04	1.04	1.04	1.04	1.03	1.04	1.04
12-23	10-14	C	N	A	0.97	0.98	0.97	1	1.04	1.06	1.07	1	0.97	1	1
12-23	10-14	C	N	S	0.91	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
12-23	10-14	C	N	N	0.91	0.92	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
12-23	10-14	C	Y	A	1.04	1.01	1	0.97	1.01	1.05	1	0.97	1	0.97	1.07
12-23	10-14	C	Y	N	0.96	0.96	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
12-23	10-19	B	N	A	1.24	1.23	1.22	1.2	1.24	1.25	1.22	1.2	1.22	1.2	1.2
12-23	10-19	B	N	S	1	1	0.99	1	1	1	1	1	0.99	1	1
12-23	10-19	B	N	N	1	1	0.99	1	1	1	1	1	0.99	1	1
12-23	10-19	B	Y	A	1.18	1.18	1.22	1.09	1.21	1.25	1.15	1.09	1.22	1.09	1.09
12-23	10-19	B	Y	N	1.06	1.06	1.09	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
12-23	10-19	C	N	A	1.08	1.05	1.05	1.04	1.08	1.09	1.05	1.04	1.05	1.04	1.04
12-23	10-19	C	N	S	0.87	0.87	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
12-23	10-19	C	N	N	0.87	0.87	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
12-23	10-19	C	Y	A	1.05	1.05	1.09	0.95	1.09	1.09	1.03	0.95	1.09	0.95	0.95
12-23	10-19	C	Y	S	0.95	0.95	0.96	0.94	0.94	0.94	0.94	0.94	0.96	0.94	1
12-23	10-19	C	Y	N	1.24	1.31	1.31	1.31	1.29	1.26	1.26	1.31	1.31	1.31	1.31
12-23	20-999	B	N	S	1	1	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
12-23	20-999	B	N	N	1	1	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
12-23	20-999	B	Y	A	1.21	1.24	1.21	1.11	1.29	1.31	1.21	1.11	1.32	1.11	1.11
12-23	20-999	B	Y	S	1.1	1.1	1.11	1.17	1.09	1.09	1.08	1.17	1.1	1.11	1.11
12-23	20-999	B	Y	N	1.1	1.1	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09	1.09
12-23	20-999	C	N	A	1.08	1.14	1.14	1.15	1.12	1.1	1.1	1.15	1.14	1.12	1.15

What is Insured?

Vehicle



- Vehicle history – carriers are considering history of the individual vehicle (e.g., issues with titles, flooding, etc.)

Vehicle History Trigger	Salvage Title Incident	Age of Junk or Title Incident	NAF With Company count	NAF Without Company count	CMP count	BI	PD	COMP	COLL
N	N	1-999	0	1-999	99.99	99.99	99.99	99.99	99.99
N	N	1-999	1-999	0	0	99.99	99.99	99.99	99.99
N	N	1-999	1-999	0	1-999	99.99	99.99	99.99	99.99
N	N	1-999	1-999	1-999	0	99.99	99.99	99.99	99.99
N	N	1-999	1-999	1-999	1-999	99.99	99.99	99.99	99.99
N	X	0	0	0	100	100	100	100	100
N	X	0	0	0	1-999	100	100	100	100
N	X	0	0	1-999	0	100	100	100	100
N	X	1-999	0	1-999	0	100	100	100	100
N	X	1-999	0	1-999	1-999	100	100	100	100
N	X	1-999	1-999	0	0	100	100	100	100
N	X	1-999	1-999	0	1-999	100	100	100	100
N	X	1-999	1-999	1-999	0	100	100	100	100
N	X	1-999	1-999	1-999	1-999	100	100	100	100
Y	A	0	0	0	109.99	109.99	109.99	109.99	109.99
Y	A	0	0	0	1-999	109.99	109.99	109.99	109.99
Y	A	0	0	1-999	0	109.99	109.99	109.99	109.99
Y	A	0	0	1-999	1-999	109.99	109.99	109.99	109.99

What is Insured?

Home



- Similar to vehicle symbols, trend toward classifying homes into groups based on certain characteristics – e.g.,
 - Dwelling score (age of home, # stories, sq footage, number of rooms/bathrooms, RCV/ACV etc)
 - Roof score (valuation, age, composition, etc)
 - Basement score (includes foundation type and percent of basement finished)

Roof Valuation	Age	Composition Shingle/ Architectural	Slate	Tile	Wood Shingle/ Shake	Metal/ Superior Poured/ Poured Concrete	All Others	Age of Renovation ¹	Plumbing	Heating/ Cooling	Electric	Roof
								0	0.02	0.04	0.06	0.05
								1	0.02	0.04	0.05	0.04
								2	0.01	0.03	0.04	0.03
								3	0.01	0.03	0.03	0.03
								4	0.00	0.02	0.03	0.03
								5	0.00	0.02	0.02	0.02
								6	0.00	0.01	0.01	0.02
RC	All	1.000	1.000	1.000	1.000	1.000	1.000	7	0.00	0.01	0.01	0.01
ACV	0-5	0.951	0.980	0.971	0.971	0.980	0.951	8	0.00	0.01	0.01	0.01
ACV	6-8	0.862	0.945	0.917	0.917	0.945	0.862	9	0.00	0.01	0.01	0.01
ACV	9-11	0.804	0.922	0.862	0.862	0.922	0.804	10-49	0.00	0.00	0.01	0.01
ACV	12-14	0.745	0.838	0.847	0.847	0.838	0.745	50+	0.00	0.00	0.00	0.00
ACV	15-17	0.686	0.874	0.811	0.811	0.874	0.686					
ACV	18-20	0.627	0.851	0.776	0.776	0.851	0.627					
ACV	>20	0.607	0.843	0.764	0.764	0.843	0.607					

Conclusions

- Who: more consideration of the household composition (of drivers) as well as psychographic variables that predict risk
- What: more detailed attributes about the insured risk – including individual risk history and ownership history
- Where: leveraging geo-coding, third party data (including cat model output) to tailor territory rating
- How: more granular details on incidents as well as driving behavior (UBI) and knowledge of what's happening inside the home (smart home sensors)

Public policy concerns may focus on credibility/variability, controllability, causality and disparate impact whereas intermediaries may push for more simplicity/explainability

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