


Pinnacle
The Power of Choice



Underwrite the Car, Not Just the Driver

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Gary Wang, FCAS, MAAA

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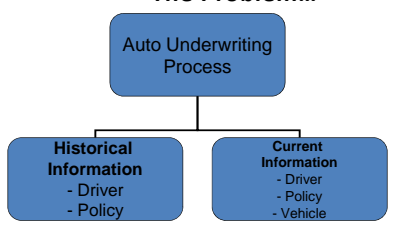
Underwriting the Car

- We know that a policy's history, in addition to the current policy characteristics, impact the future experience of a policy
- Now, there is vehicle history data that is available that has an impact of the future experience of the risk
- Vehicle history information can be applied in several areas of an insurance company

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The Problem...




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graph TD; A[Auto Underwriting Process] --> B[Historical Information  
- Driver  
- Policy]; A --> C[Current Information  
- Driver  
- Policy  
- Vehicle];
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Historical Information
- Driver
- Policy

Current Information
- Driver
- Policy
- Vehicle


Policy Characteristics

<ul style="list-style-type: none">▪ Current policy characteristics<ul style="list-style-type: none">□ Age□ Gender□ Marital Status□ Number of drivers/operators□ Insurance score□ Multi-line□ Territory	<ul style="list-style-type: none">▪ Policy history characteristics<ul style="list-style-type: none">□ Accidents□ Violations□ Cancel / reinstatements□ Prior limits□ Prior insurance
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Vehicle Characteristics


<ul style="list-style-type: none">▪ Current Vehicle Characteristics<ul style="list-style-type: none">□ Symbol□ Model year□ Vehicle characteristics□ Anti-theft device□ Passive restraint□ Anti-lock□ Existing damage	<ul style="list-style-type: none">▪ Historical Vehicle Characteristics<ul style="list-style-type: none">□ ????
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The Need to Understand a Vehicle's History

- We know that a policy's history, in addition to the current policy characteristics, impact the future experience of a policy
- Likewise, a vehicle's history will impact future experience
 - Vehicle performance
 - Damageability
 - Reparability





What Vehicle History Information is Available?

Available Data Elements

<p>Severe Problems</p> <ul style="list-style-type: none"> Title Brands Salvage Flood Fire <p>Total Loss</p> <p>Severe Accidents</p> <p>Frame Damage</p> <p>Airbag Deployment</p> <p>Previously Stolen</p>	<p>Potential Damage</p> <p>Other Accidents</p> <p>Frame Inspection</p> <p>Failed Emissions</p> <p>Failed Safety Inspection</p> <p>CARFAX Flood Advisory</p>	<p>Ownership Info</p> <p>Number of Owners</p> <p>Type of Ownership</p> <p>Length of Ownership</p>
		<p>Odometer Info</p> <p>Avg Annual Mileage ¹</p> <p>Odometer Readings</p>

Available Data Elements

- **Severe problems:** vehicle's structural integrity may have been compromised due to salvage, flood, rollover, frame damage and other severe accident indicators
- **Potential damage:** pre-existing damage based upon accident reports failed safety or emissions inspections, frame inspections, flood advisories
- **Ownership information:** vehicle's number of previous owners and the current length of ownership, identify rental, fleet, commercial and lease vehicles which have a statistically higher propensity for future loss
- **Odometer information:** Verify odometer readings and self-reported mileage using the vast collection of odometer readings reported from thousands of data sources.

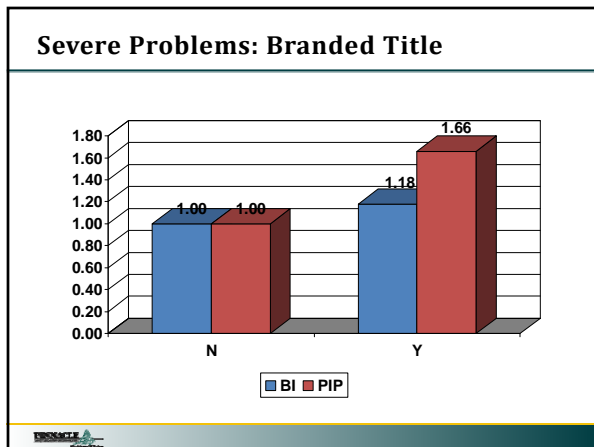
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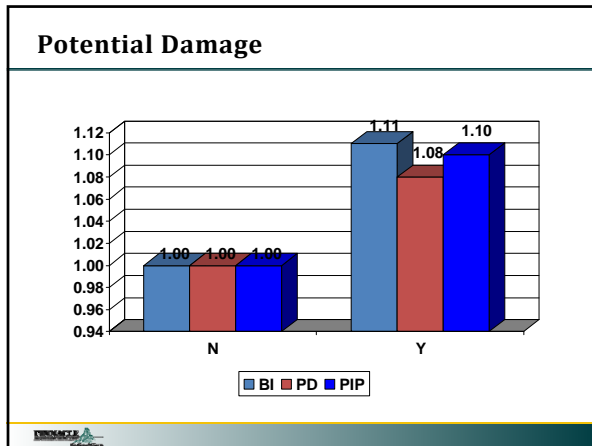
What Does the Information Tell Us?

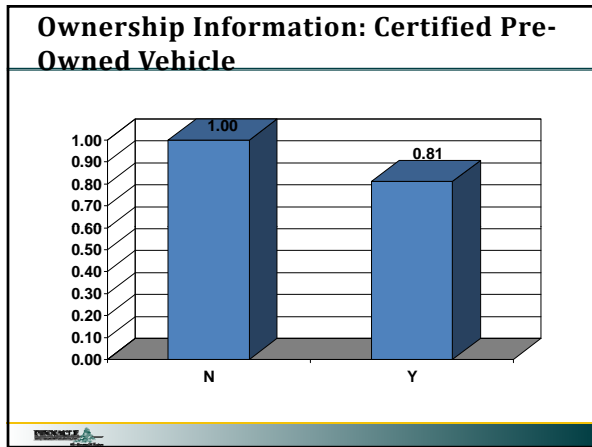
Analysis

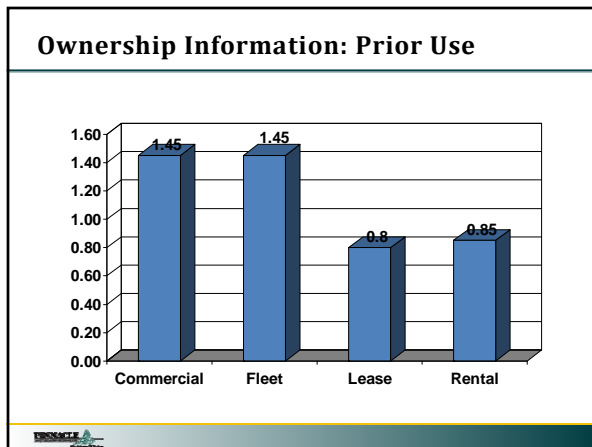
- Matched by VIN and report dates
- Include potentially correlated factors
 - Driver information
 - Vehicle characteristics
 - Policy details
 - Insurance score
- Multivariate analysis performed to determine value of vehicle history beyond current rating plans

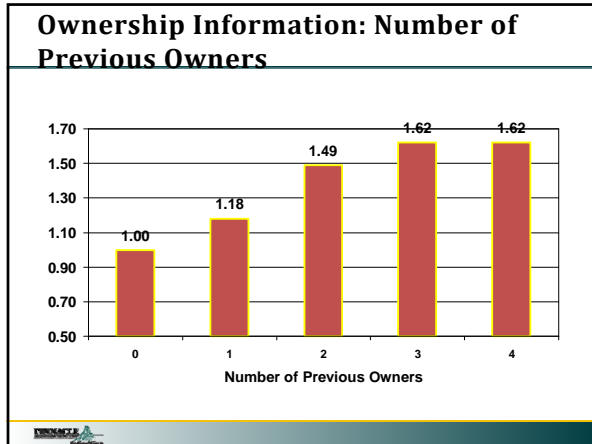
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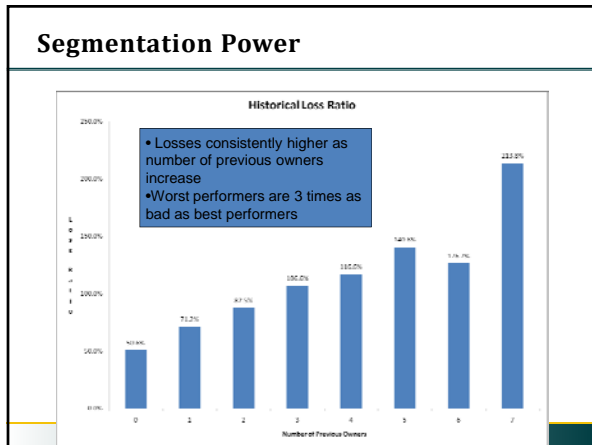








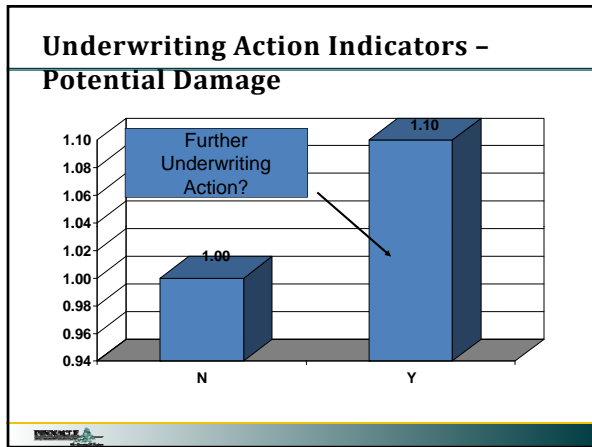


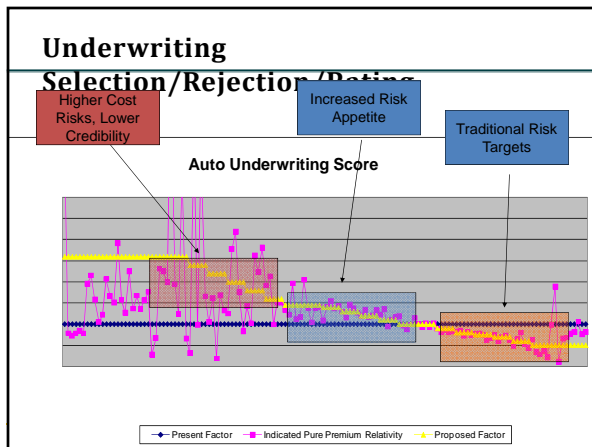


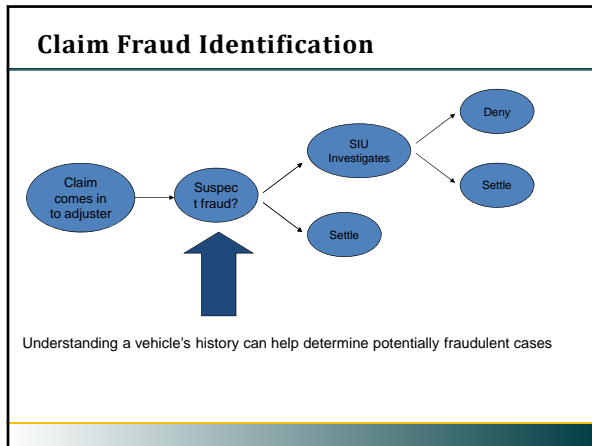
Applications of Vehicle History

Applications

- Rating
 - Certified pre-owned discount
 - Original owner discount (i.e. Allstate)
- Marketing
 - Selection/rejection
 - Action indicator
 - Increased risk appetite
- Underwriting
 - Fraud detection





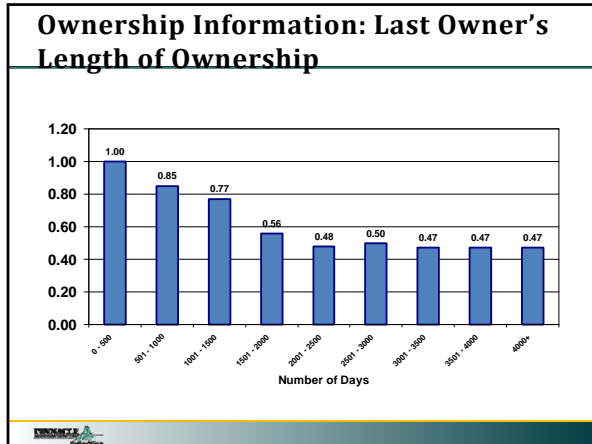



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"Those who cannot remember the past are condemned to repeat it."
- George Santayana

History is indeed the witness of the times,
the light of truth."
- Cicero



 Visit us at pinnacleactuaries.com

Thank You for Your Attention

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