



# The Changing Used Vehicle Market

And its impact on underwriting and pricing vehicle insurance



Wednesday, March 27<sup>th</sup> 2019

# The Used Car Market has Changed

## Not all Used Cars are Quality Products

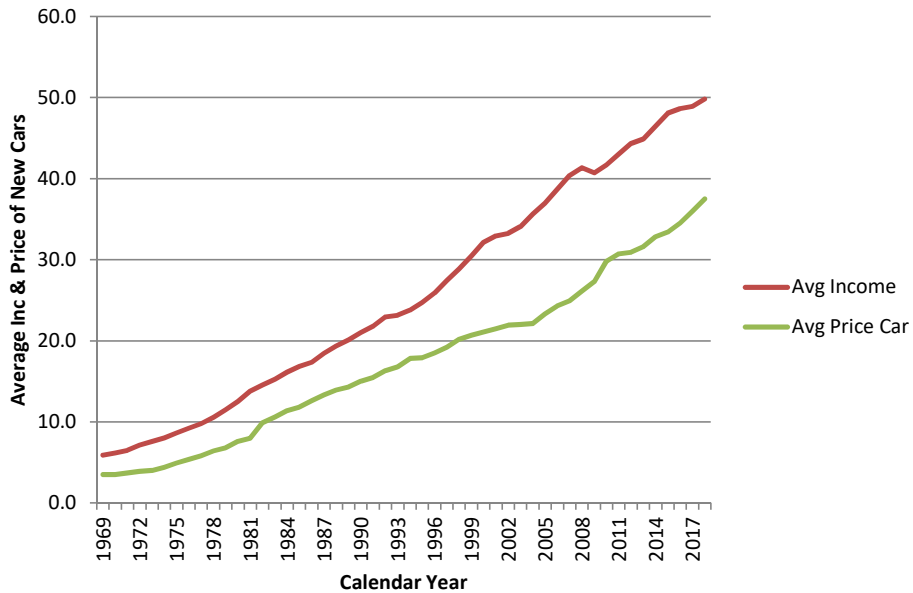
- >> The used car market plays a larger role in car buying
- >> Average age of a car on the road is over 12 years
- >> Not all used cars are clean
  - >> Flooded, Salvaged, Totaled etc...
- >> “Compromised” or “Previously Damaged” Used Vehicles
  - >> Have higher loss ratios and pure premiums
- >> 5 to 7% of used vehicles are ‘Compromised’
  - >> Direct Writers & Non-Standard show higher percentages
- >> “Compromised Vehicles” can impact a carrier’s bottom line by 1 or 2 points



USED VEHICLE MARKET

>> New Vehicles becoming more expensive

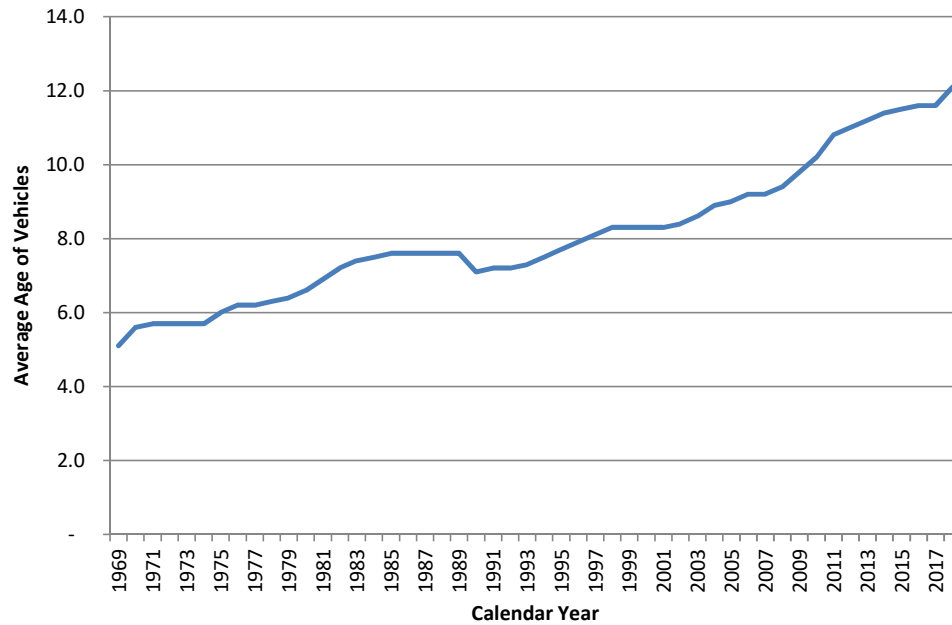
**Avg Income vs Avg Price of US Cars  
1970-2018**



In real dollar terms price of new cars has not risen greatly. However in absolute dollars new cars are out of reach for many Americans. Average Price of new car in 2018 - \$37,500

# >> Vehicle Fleet Becoming Older

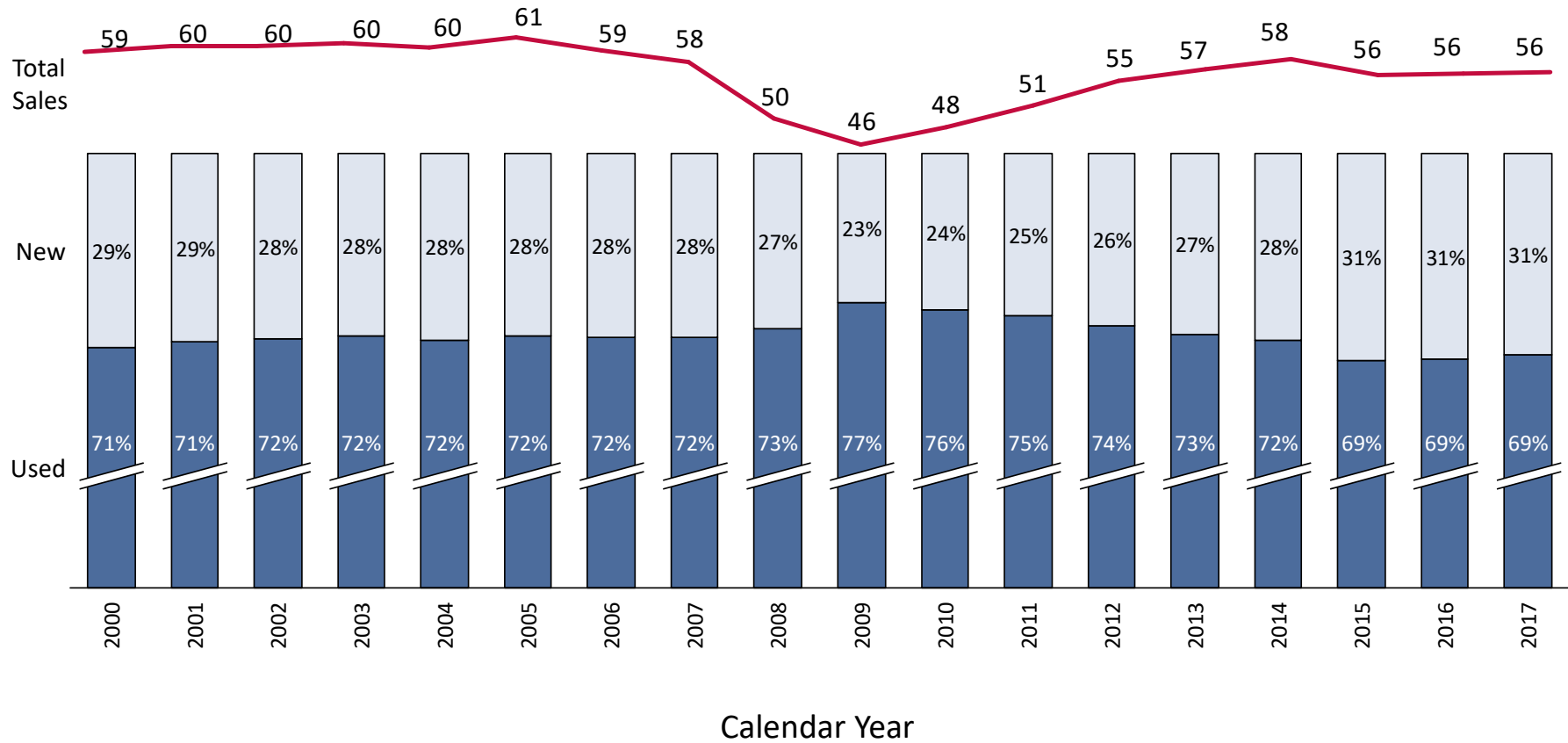
### Average Age of US Cars 1970-2018



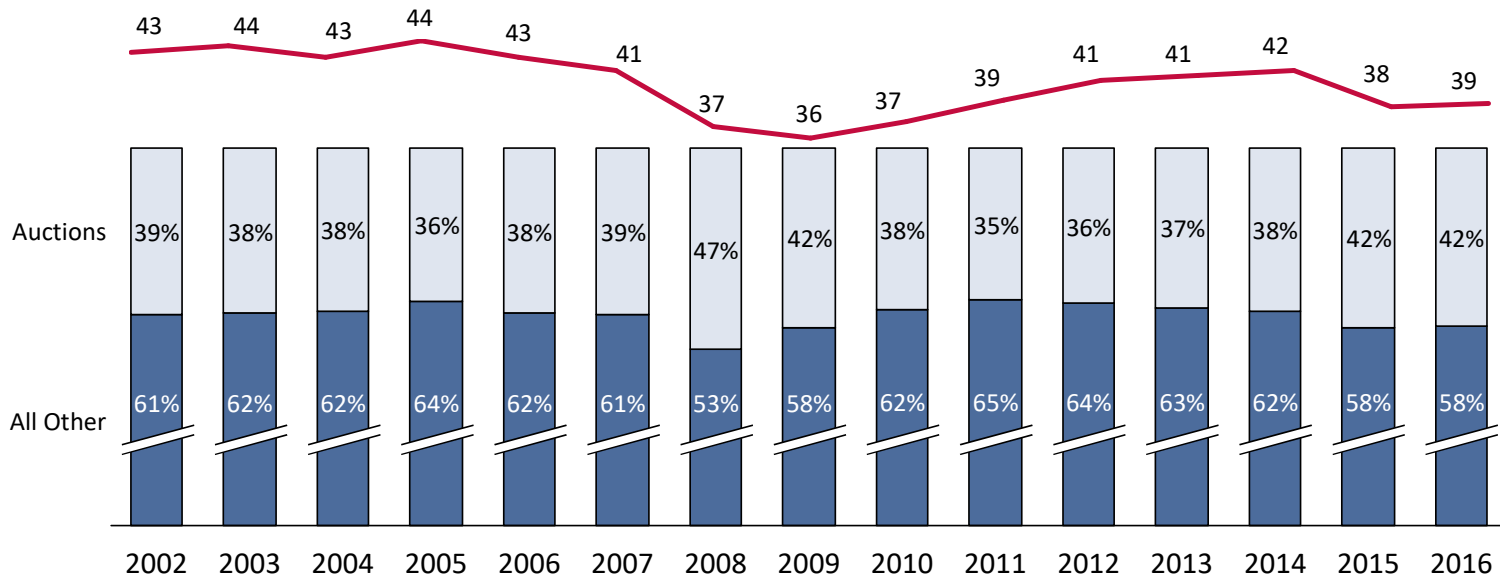
**2018 – Average Age over 12 years old**



# Vehicle Sales: Total and New vs. Used Share



# Auto Auctions: Consistently a major source of Used Vehicles



## Where do the auction vehicles come from

- >> Vehicle Consignment Sources
- >> Dealer Consignment - 44.3%
- >> Fleet/Lease Consignment - 43.7%
- >> Factory Consignment - 8.9%
- >> Other Sources - 3.1%

The automobile auction market is a multi-billion dollar a year industry which is helpful making the used vehicle efficient.

# What are “Compromised Vehicles”?



<https://www.vehiclesafetyfirm.com/wp-content/uploads/2018/03/Anatomy-of-A-Crisis-Getting-Vehicle-Safety-Professionals-RFocused-On-Fighting-The-Insurance-Industry-by-Vehicle-Safety-Lawyer-Todd-Tracy.pdf>

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No. DC-15-09782 Seebachan v John Eagle Collision Center –  
\$ 42 million dollar Verdict



<https://www.vehiclesafetyfirm.com/wp-content/uploads/2018/03/Anatomy-of-A-Crisis-Getting-Vehicle-Safety-Professionals-RFocused-On-Fighting-The-Insurance-Industry-by-Vehicle-Safety-Lawyer-Todd-Tracy.pdf>



# Repair Attributes & Future Subsequent Damage



# Cut and Shut Vehicles



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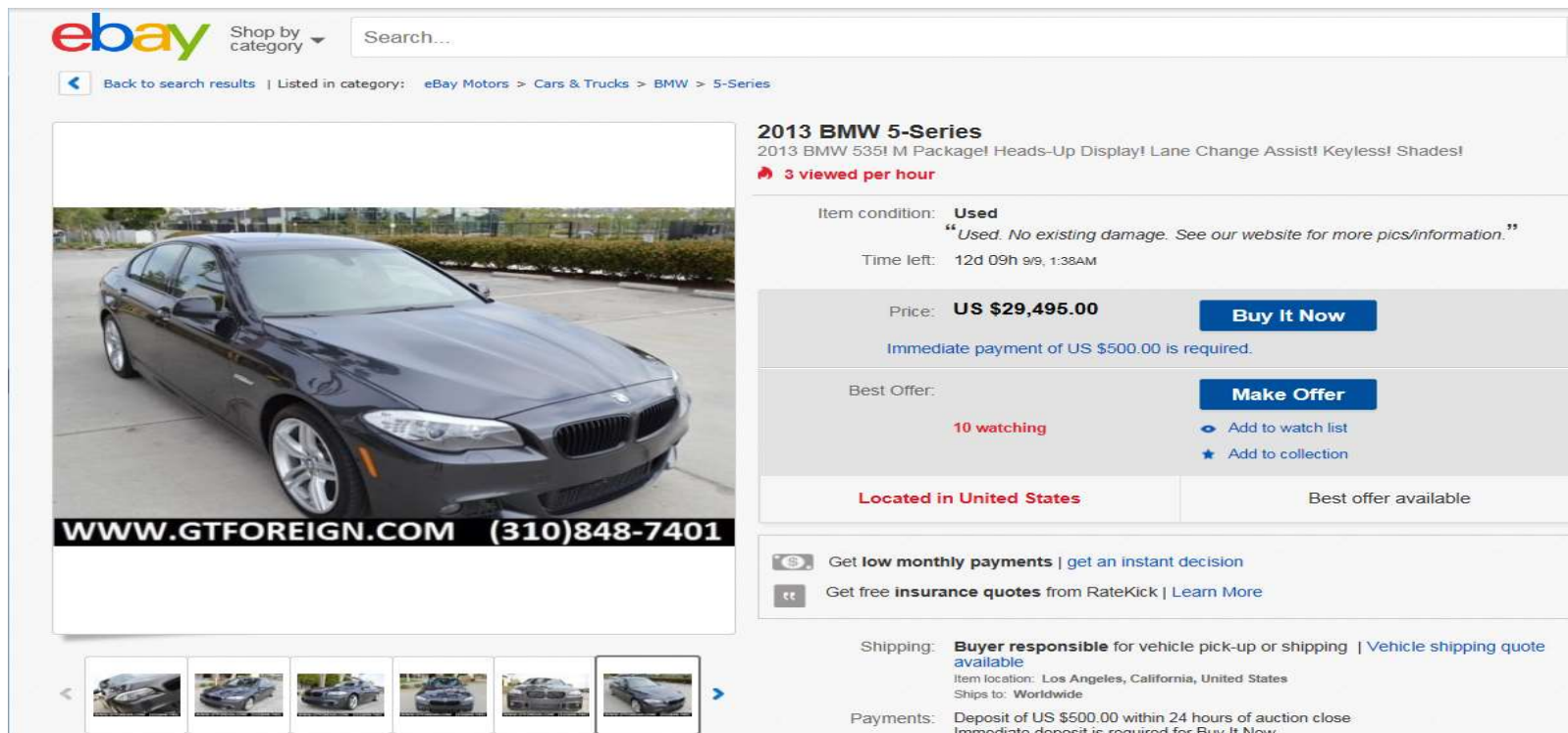
# Buyers' Concerns – Totaled Vehicle

- » Totaled Vehicle
- » Totaled by insurance carrier



# Buyers' Concerns – Rebuilt Vehicle

>> Vehicle verification – Same Vehicle as previous slide



**ebay** Shop by category Search...

Back to search results | Listed in category: eBay Motors > Cars & Trucks > BMW > 5-Series

**2013 BMW 5-Series**  
2013 BMW 535i M Package! Heads-Up Display! Lane Change Assist! Keyless! Shades!  
🔥 3 viewed per hour

Item condition: **Used**  
"Used. No existing damage. See our website for more pics/information."  
Time left: 12d 09h 9/9, 1:38AM

Price: **US \$29,495.00** **Buy It Now**  
Immediate payment of US \$500.00 is required.

Best Offer: **Make Offer**  
10 watching  
Add to watch list  
Add to collection

Located in United States Best offer available

Get low monthly payments | get an instant decision  
Get free insurance quotes from RateKick | Learn More

Shipping: **Buyer responsible** for vehicle pick-up or shipping | Vehicle shipping quote available  
Item location: Los Angeles, California, United States  
Ships to: Worldwide

Payments: Deposit of US \$500.00 within 24 hours of auction close  
Immediate deposit is required for Buy It Now

WWW.GTFOREIGN.COM (310)848-7401

## Flooded Vehicles Moved to all areas of the country

### >> Flood Vehicles

- >> Higher percentage of Compromised Vehicles after a natural disaster
- >> Flood vehicles shipped to other parts of the country after a flood.
- >> Texas – Harvey, Florida – Irma
  - >> These vehicles will turn up for years to come
- >> Auction houses are efficient in moving these vehicles
- >> Insurance Carriers not likely to crush these vehicles



# “Compromised Vehicles” = Higher Loss Costs

- >> **Salvage and Scrapped Vehicles**
  - >> Vehicles unable to be rebuilt and sold as scrap
- >> **Rebuilt Vehicles**
  - >> Vehicles which have had extensive repairs and replacement of parts
- >> **Frame Damage and Unibody Damage**
  - >> High percent of this damage not shown on state DMV records
  - >> Unknown damage that impacts safety and value of a vehicle
- >> **Repossessions**
  
- >> **Impacts all Coverages**
  - >> Crumple Zones aren't as strong
    - >> Coke aluminum can example

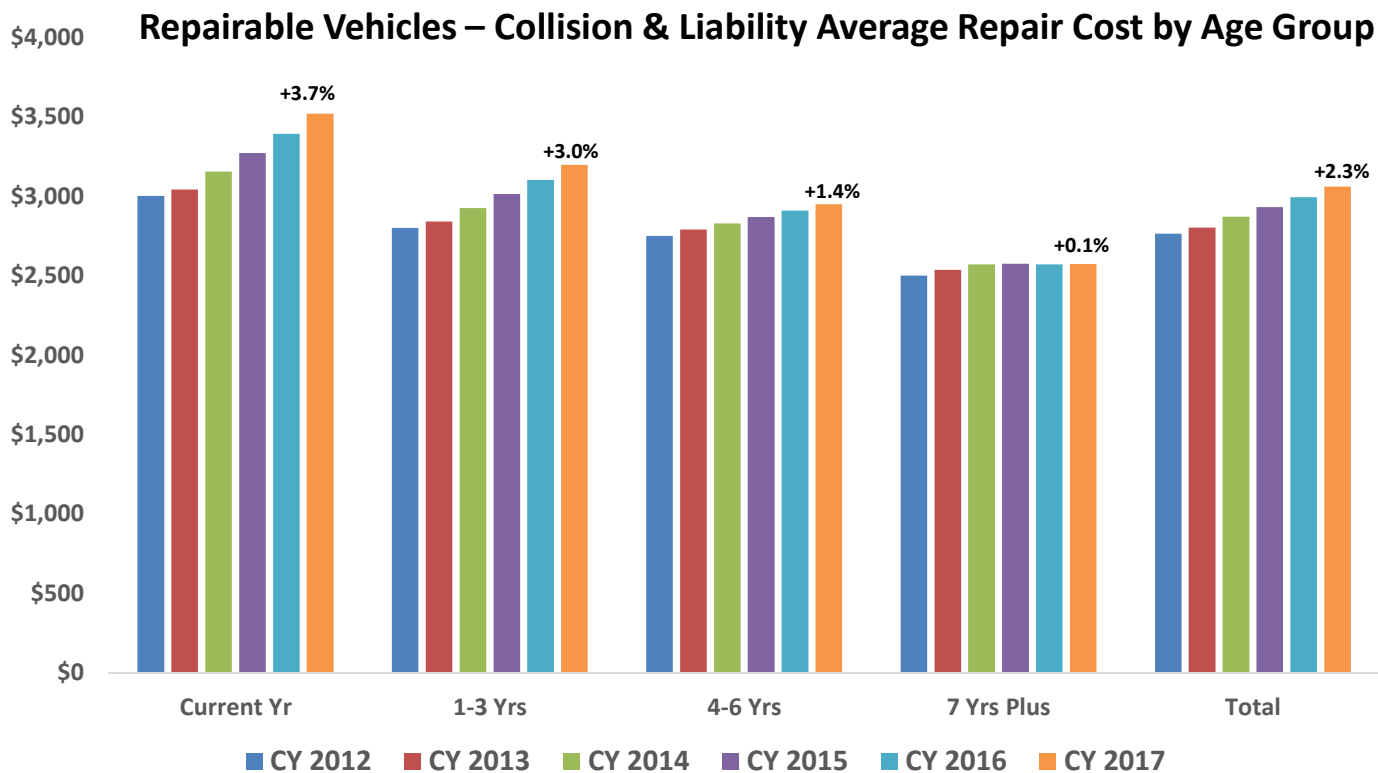


# Top 5 – California – Non-Standard – March 2015

	Severe						Selected	
	Damage	EP	% EP	ECY's	Ult Losses	LR	LR Rel	Rel
<b>BI</b>	\$	<b>48,777,547</b>	<b>26.57%</b>	<b>218,724</b>	<b>25,895,442</b>	<b>53.09%</b>		
N	\$	47,817,826	26.05%	213,655	22,846,744	47.78%	<b>1.00</b>	1.00
Y	\$	959,721	0.52%	5,068	3,048,698	317.67%	<b>6.65</b>	1.30
<b>CL</b>	\$	<b>51,602,504</b>	<b>28.11%</b>	<b>115,077</b>	<b>29,861,629</b>	<b>57.87%</b>		
N	\$	51,063,744	27.82%	113,829	25,548,190	50.03%	<b>1.00</b>	1.00
Y	\$	538,761	0.29%	1,248	4,313,439	800.62%	<b>16.00</b>	1.30
<b>CP</b>	\$	<b>20,819,305</b>	<b>11.34%</b>	<b>115,218</b>	<b>9,866,086</b>	<b>47.39%</b>		
N	\$	20,553,373	11.20%	113,967	8,720,700	42.43%	<b>1.00</b>	1.00
Y	\$	265,932	0.14%	1,251	1,145,387	430.71%	<b>10.15</b>	1.30
<b>MP</b>	\$	<b>2,125,133</b>	<b>1.16%</b>	<b>29,560</b>	<b>1,045,493</b>	<b>49.20%</b>		
N	\$	2,085,148	1.14%	29,070	925,022	44.36%	<b>1.00</b>	1.00
Y	\$	39,985	0.02%	489	120,471	301.29%	<b>6.79</b>	1.30
<b>PD</b>	\$	<b>50,909,394</b>	<b>27.73%</b>	<b>218,779</b>	<b>31,576,878</b>	<b>62.03%</b>		
N	\$	49,797,852	27.13%	213,710	28,810,149	57.85%	<b>1.00</b>	1.00
Y	\$	1,111,542	0.61%	5,070	2,766,730	248.91%	<b>4.30</b>	1.30
<b>UM</b>	\$	<b>8,477,748</b>	<b>4.62%</b>	<b>132,399</b>	<b>2,873,674</b>	<b>33.90%</b>		
N	\$	8,366,187	4.56%	129,647	2,479,582	29.64%	<b>1.00</b>	1.00
Y	\$	111,562	0.06%	2,752	394,091	353.25%	<b>11.92</b>	1.30
<b>UP</b>	\$	<b>856,040</b>	<b>0.47%</b>	<b>44,367</b>	<b>495,353</b>	<b>57.87%</b>		
N	\$	821,706	0.45%	42,714	453,628	55.21%	<b>1.00</b>	1.00
Y	\$	34,334	0.02%	1,653	41,725	121.53%	<b>2.20</b>	1.30
<b>TOTAL</b>	\$	<b>183,567,671</b>	<b>100%</b>	<b>874,124</b>	<b>101,614,555</b>	<b>55.36%</b>		

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# Repair Cost Rising & Accelerating for Newer Vehicles

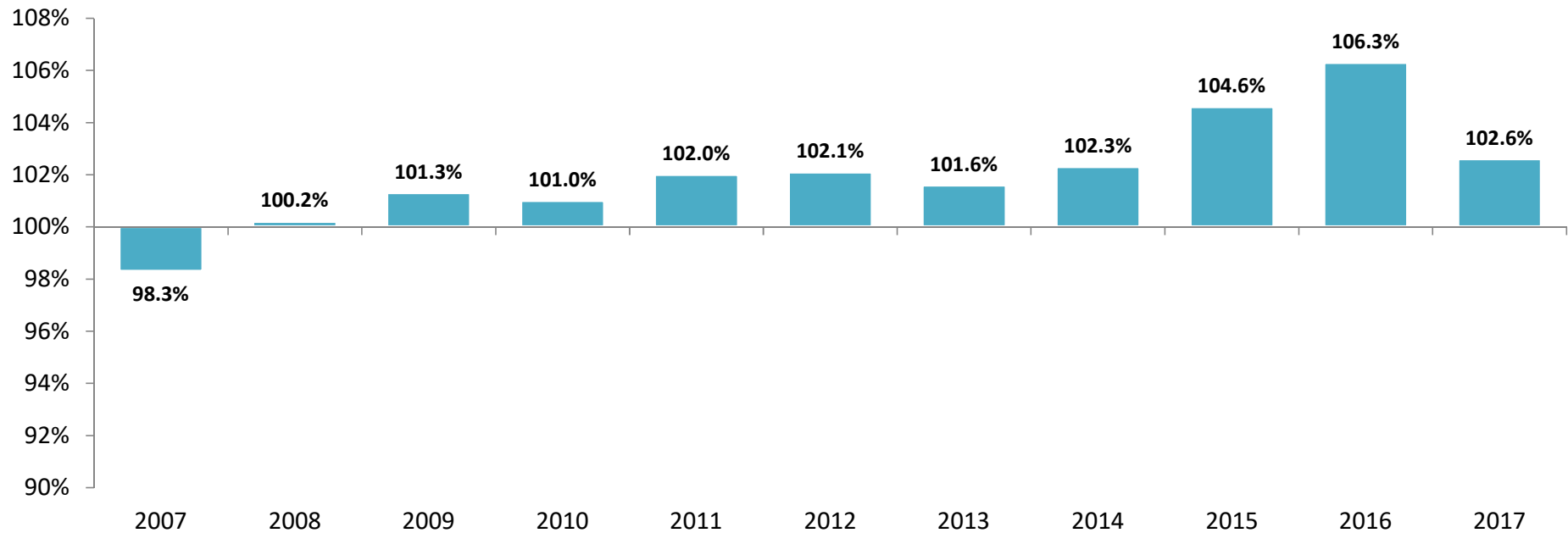


## Why Are Costs Rising?

- >> **Improving Economy**
  - >> More Drivers = More Accidents
  - >> Mile Driven Rising
- >> **Distracted Driving Rising**
- >> **Safety Devices Expensive**
- >> **Faster Driving**
- >> **Legalized Marijuana**



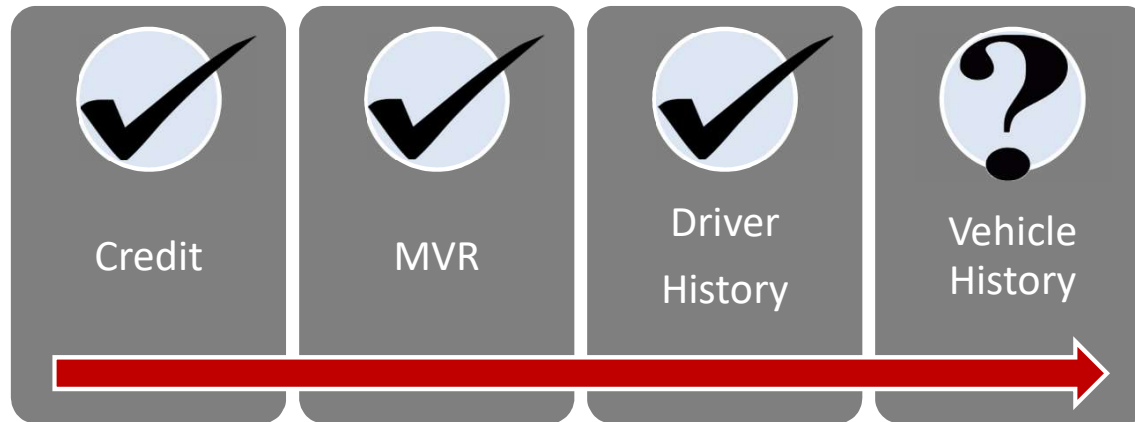
# Personal Auto Combined Ratio



Underwriting Performance Showing Strains of Rising Frequency and Severity Trends

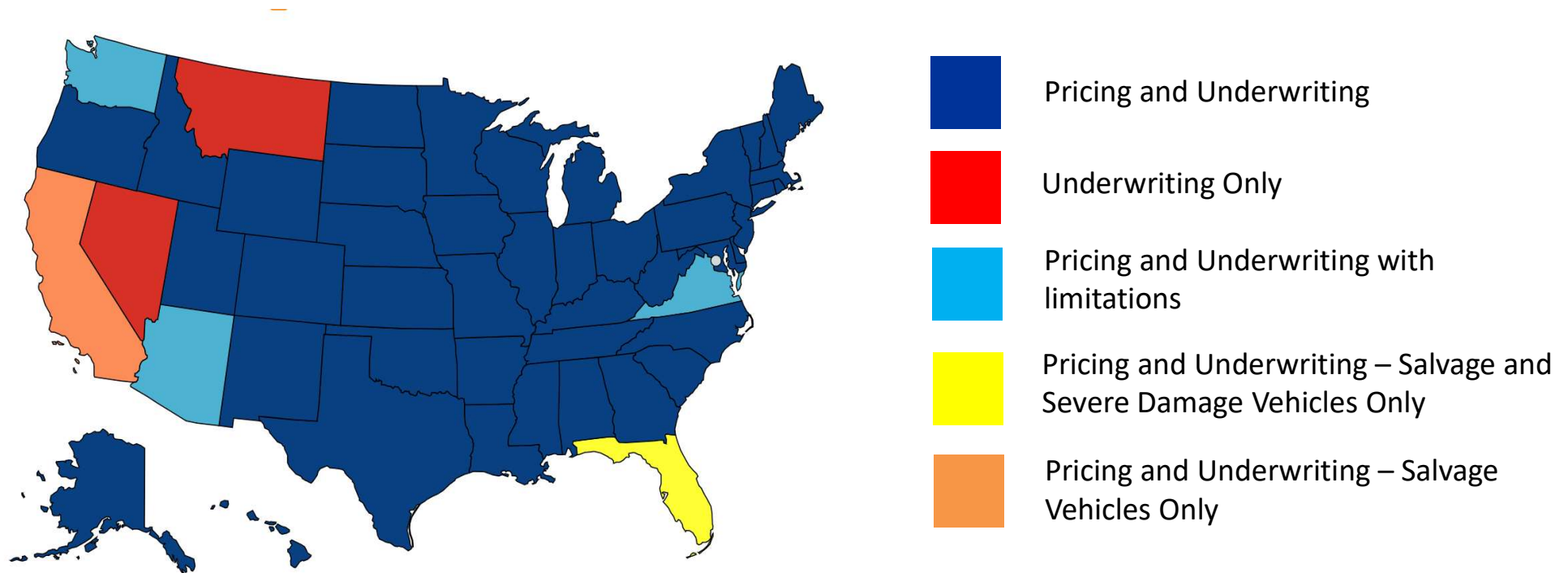
VEHICLE VERIFICATION

## Vehicle History Reports analogous to other U/W Reports



- >> Analogous to an individual's background check
- >> Average Age of Vehicle today is 12 years old
- >> No FCRA rating implications – 800# Customer Service available

# Vehicle History – Allowed for Rating Purposes in Most States



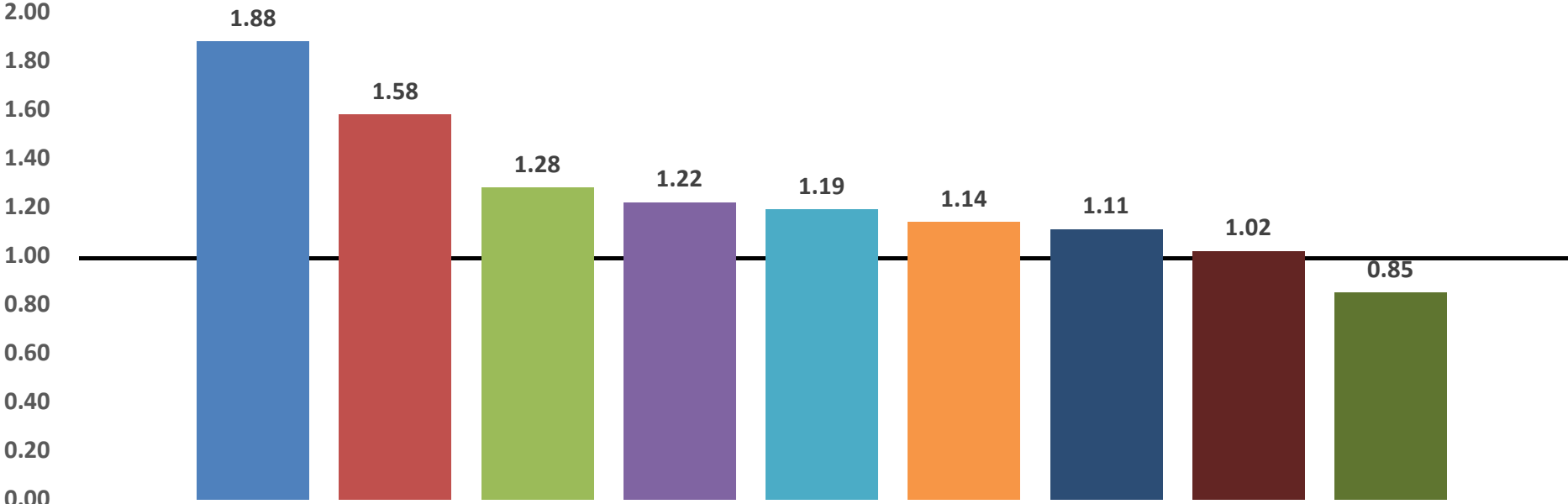
# Rating vs. Underwriting

- >> **Varies by State** - See map previous slide
  
- >> **Automobiles vs. Light Commercial Vehicles**
  - >> **Light Commercial Vehicle**
    - >> Higher Limits and Losses
    - >> More likely to Underwrite away
  - >> **Personal Automobile**
    - >> More likely to Rate higher
    - >> Based on Severity of previous damage
    - >> Many will purchase policy even at higher rates
  
- >> **Preferred vs Non-Standard Writers**
  - >> **Non-Standard**
    - >> Rate Higher
  - >> **Preferred**
    - >> Underwrite away
    - >> Exception – multi-car policy



# Vehicle History – Key Condition Attributes

Pure Premium Relativities



■ Theft ■ Scrapped ■ Minor Dmg ■ Repossessed ■ Prior Fleet ■ Prior Rental ■ Severe Dmg ■ Salvage ■ Failed Inspection

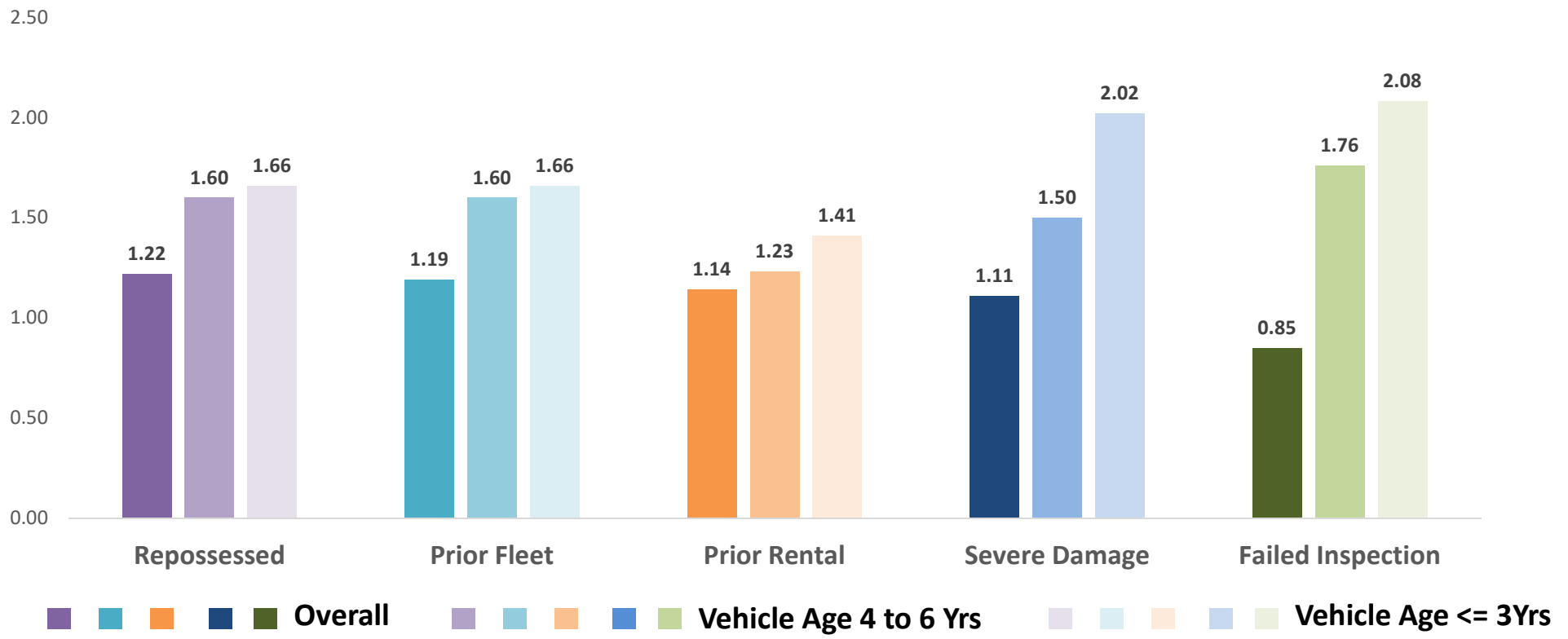
Source: Red Mountain Technologies

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# Vehicle History

## The Importance of Vehicle Age

Pure Premium Relativities



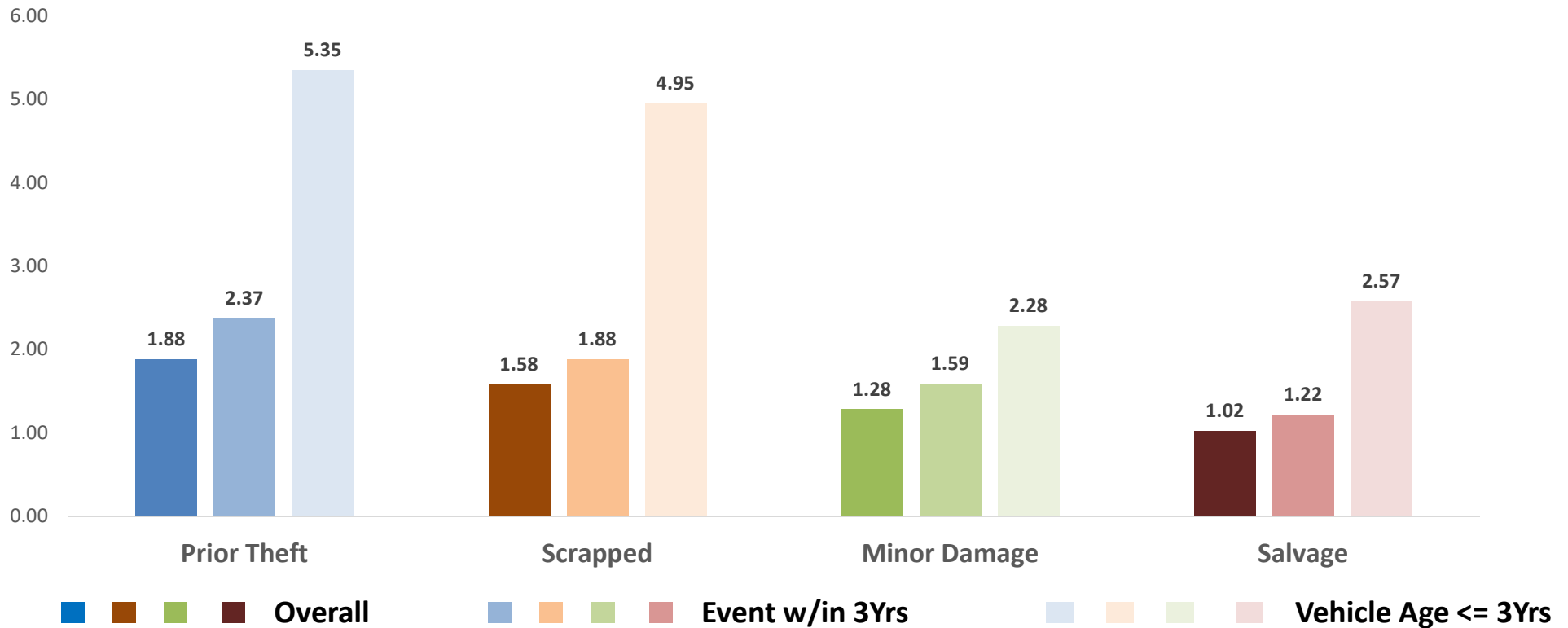
Source: Red Mountain Technologies

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# Vehicle History

## Vehicle Age and Time Since Event

Pure Premium Relativities

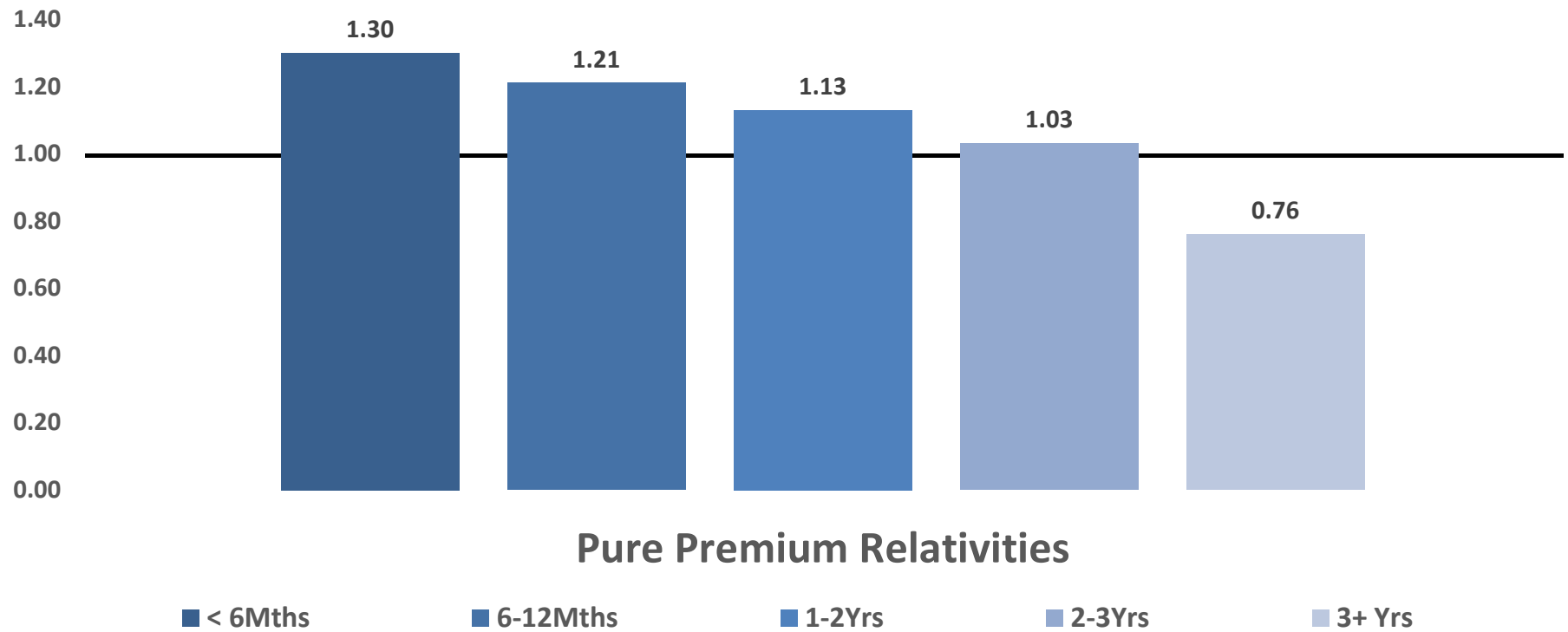


Source: Red Mountain Technologies

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# Vehicle History

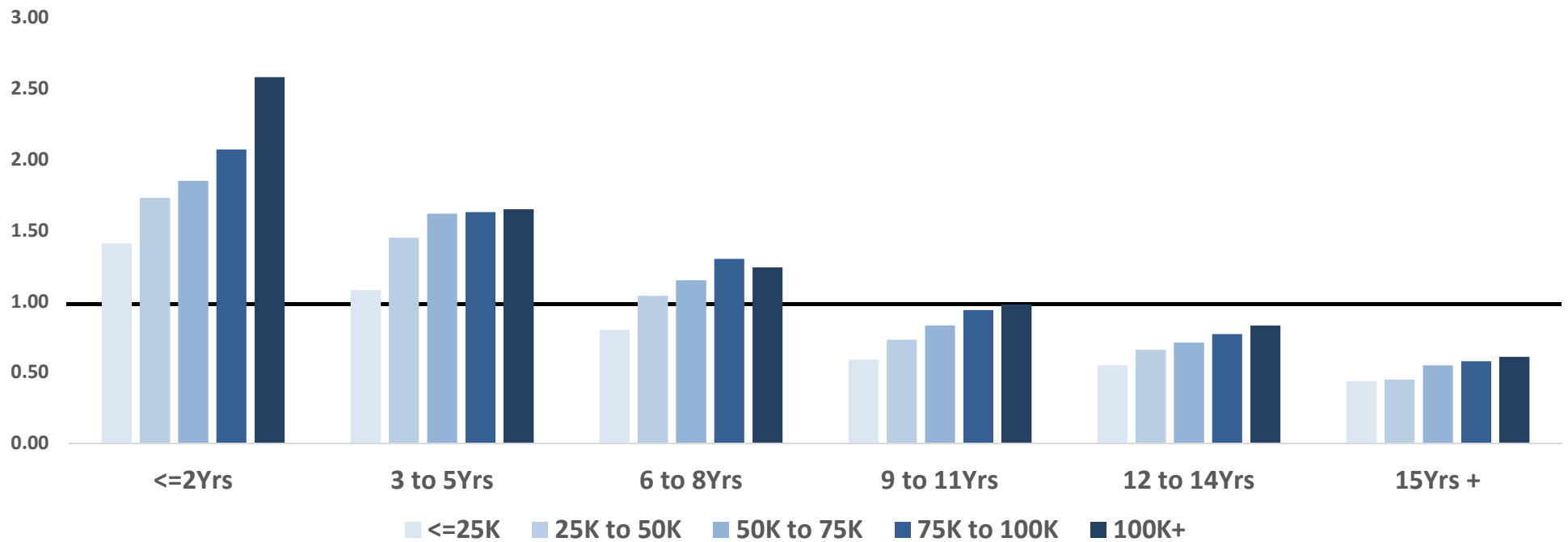
## Does Length of Ownership Matter?





# Vehicle History Sourcing Mileage Information

## Pure Premium by Vehicle Age

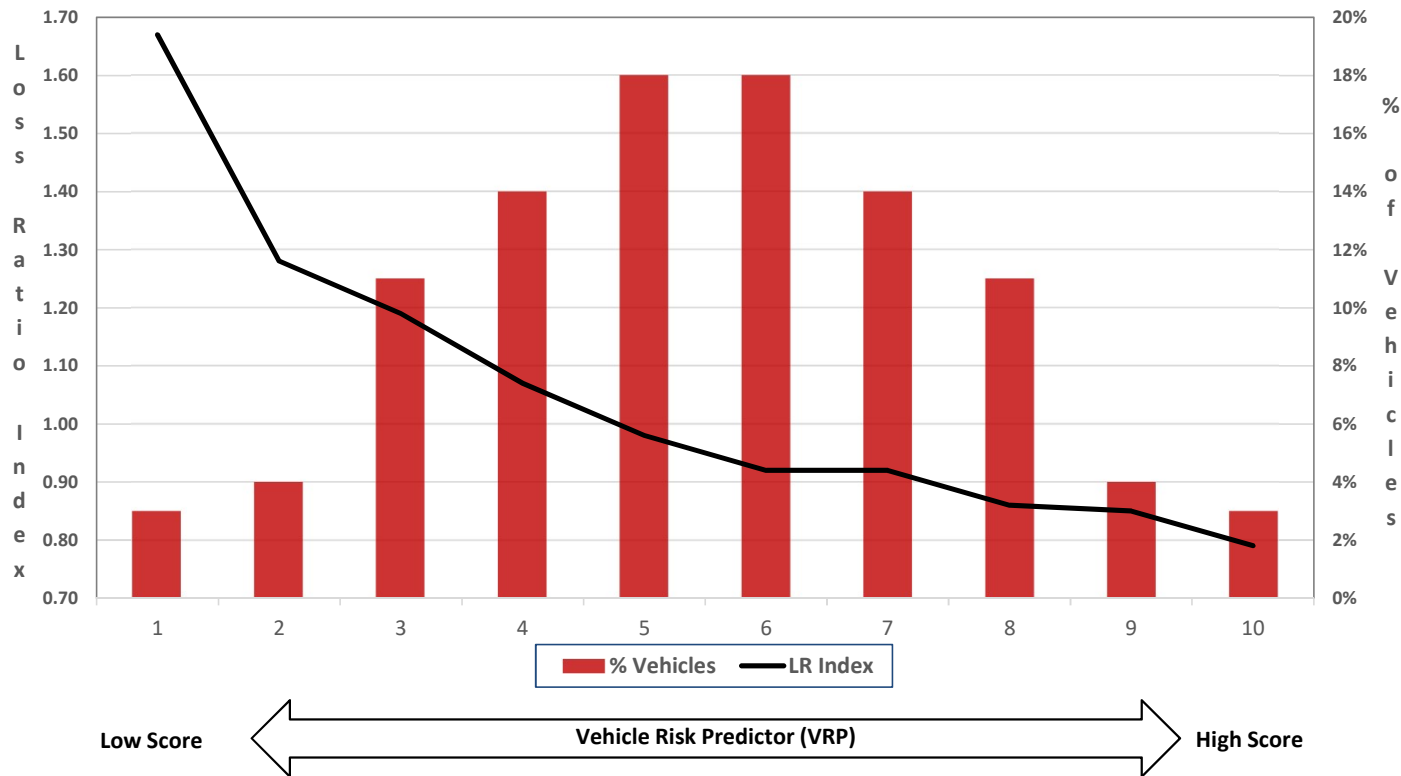


## Vehicle Risk Predictor Scoring Model

- >> Model developed specifically for Personal Automobile Insurance:
  - >> Comprised of 12 unique modeling variables from AutoCheck data
  - >> Model developed using the latest generalized linear modeling techniques
  - >> Modeled within a sophisticated rating plan utilizing credit and other modern variables
  
- >> Model incorporates complete data set:
  - >> Data spans spectrum of auto insurance risk (i.e. nonstandard, ultra preferred, agency, direct, national footprint, etc.)
  - >> Positive model validations performed.

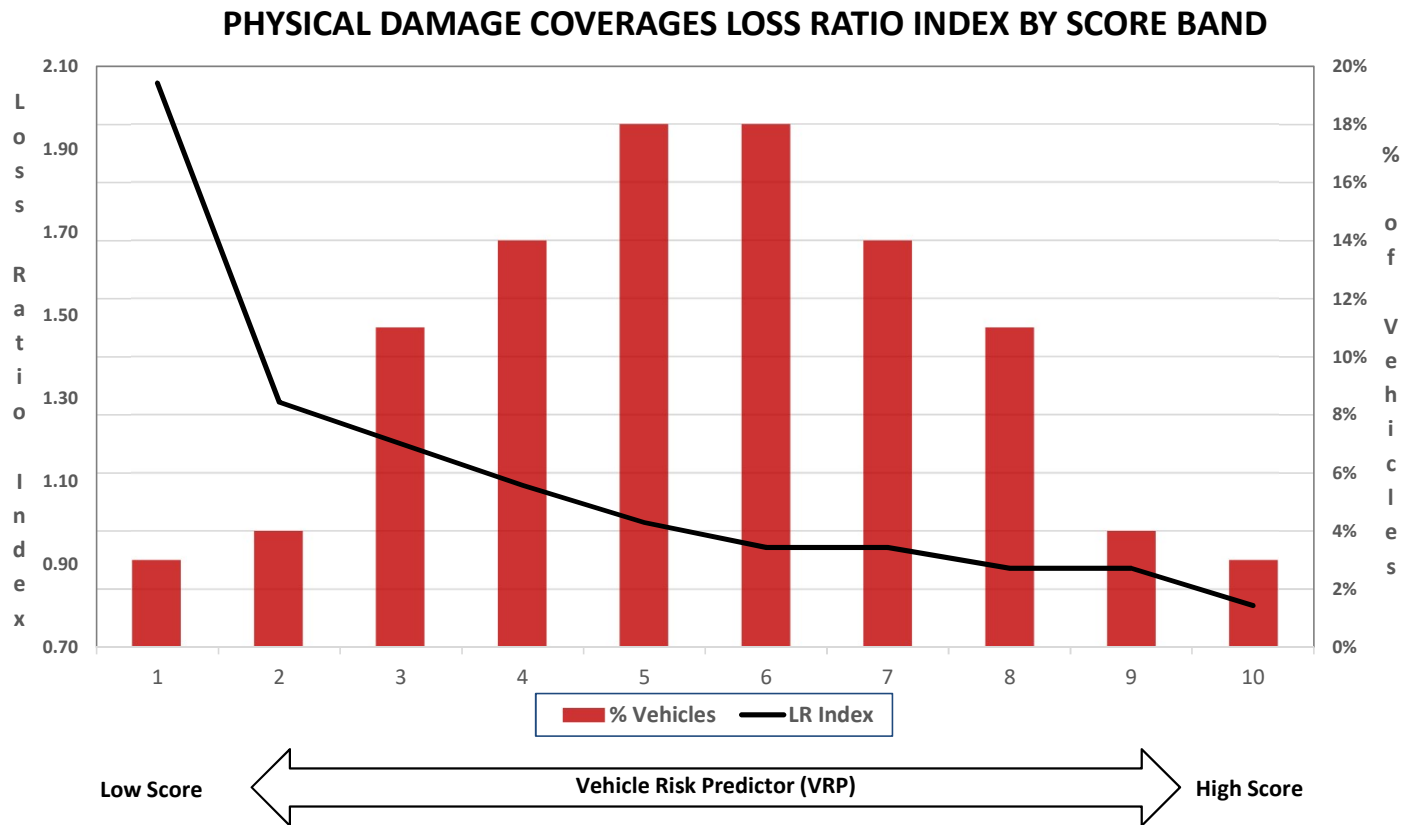
# Vehicle Risk Predictor Score

ALL COVERAGES LOSS RATIO INDEX BY SCORE BAND



10 Bands	% Vehicles VRP Model	All Coverages LR Index
1	3%	1.67
2	4%	1.28
3	11%	1.19
4	14%	1.07
5	18%	0.98
6	18%	0.92
7	14%	0.92
8	11%	0.86
9	4%	0.85
10	3%	0.79
<b>ALL</b>	<b>100%</b>	<b>Lift: 2.11</b>

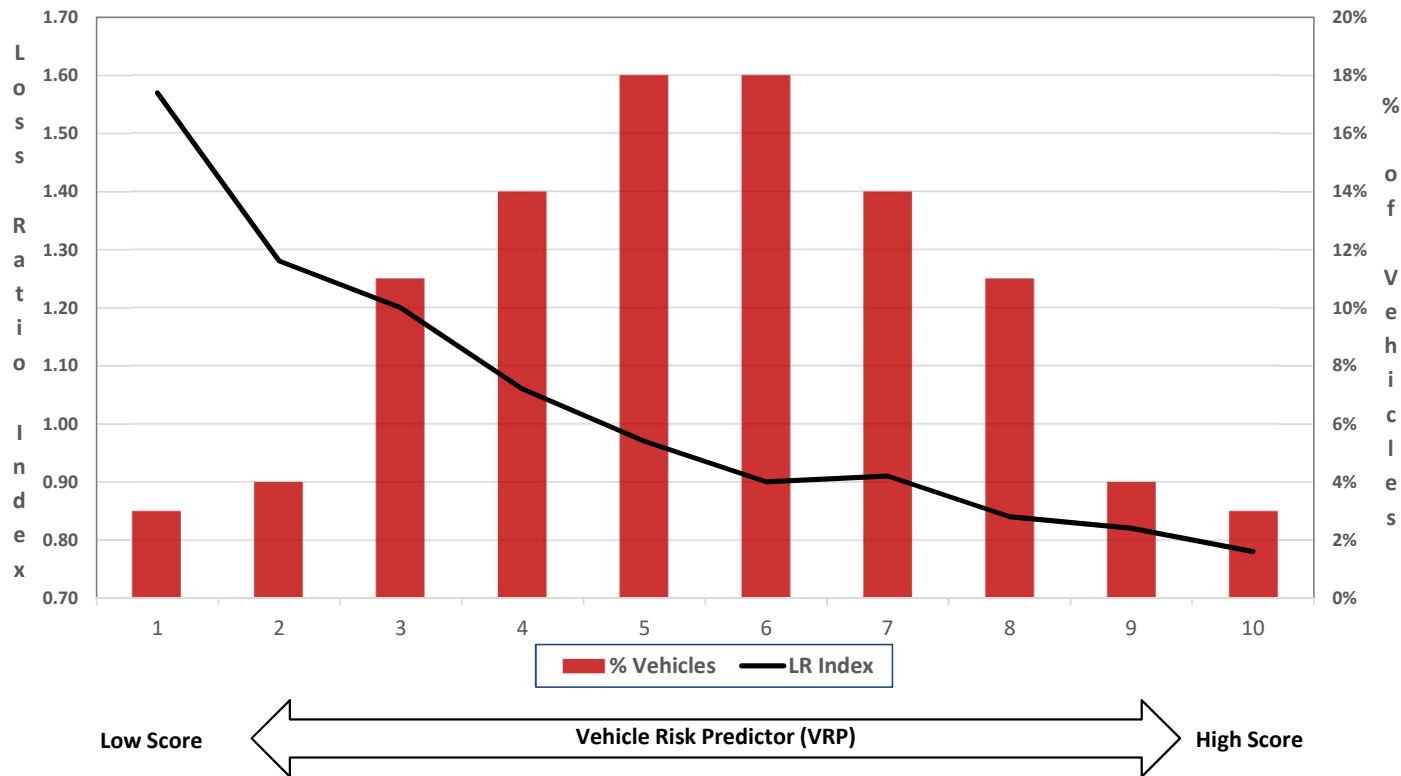
# Vehicle Risk Predictor Score



10 Bands	% Vehicles VRP Model	All Coverages LR Index
1	3%	2.06
2	4%	1.29
3	11%	1.19
4	14%	1.09
5	18%	1.00
6	18%	0.94
7	14%	0.94
8	11%	0.89
9	4%	0.89
10	3%	0.80
<b>ALL</b>	<b>100%</b>	<b>Lift: 2.58</b>

# Vehicle Risk Predictor Score

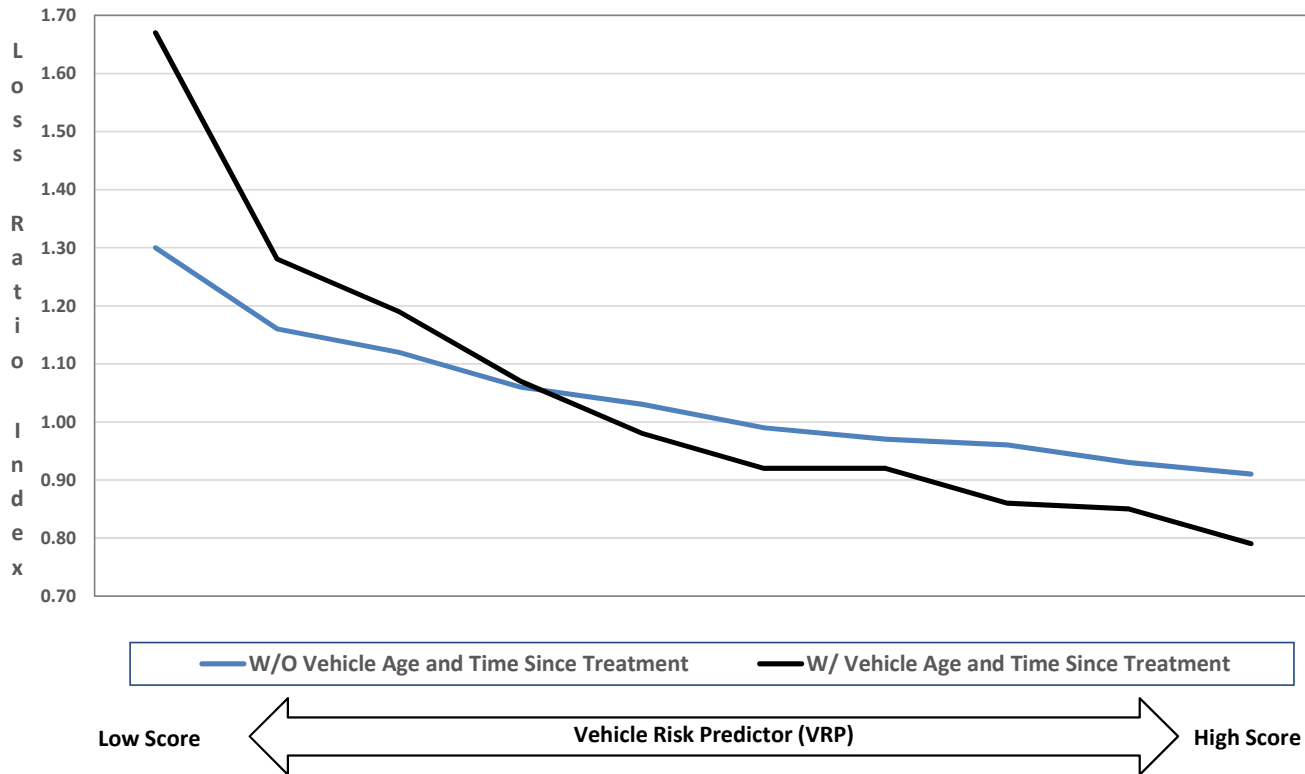
LIABILITY COVERAGES LOSS RATIO INDEX BY SCORE BAND



10 Bands	% Vehicles VRP Model	All Coverages LR Index
1	3%	1.57
2	4%	1.28
3	11%	1.20
4	14%	1.06
5	18%	0.97
6	18%	0.90
7	14%	0.91
8	11%	0.84
9	4%	0.82
10	3%	0.78
<b>ALL</b>	<b>100%</b>	<b>Lift: 2.01</b>

# Vehicle Risk Predictor Score

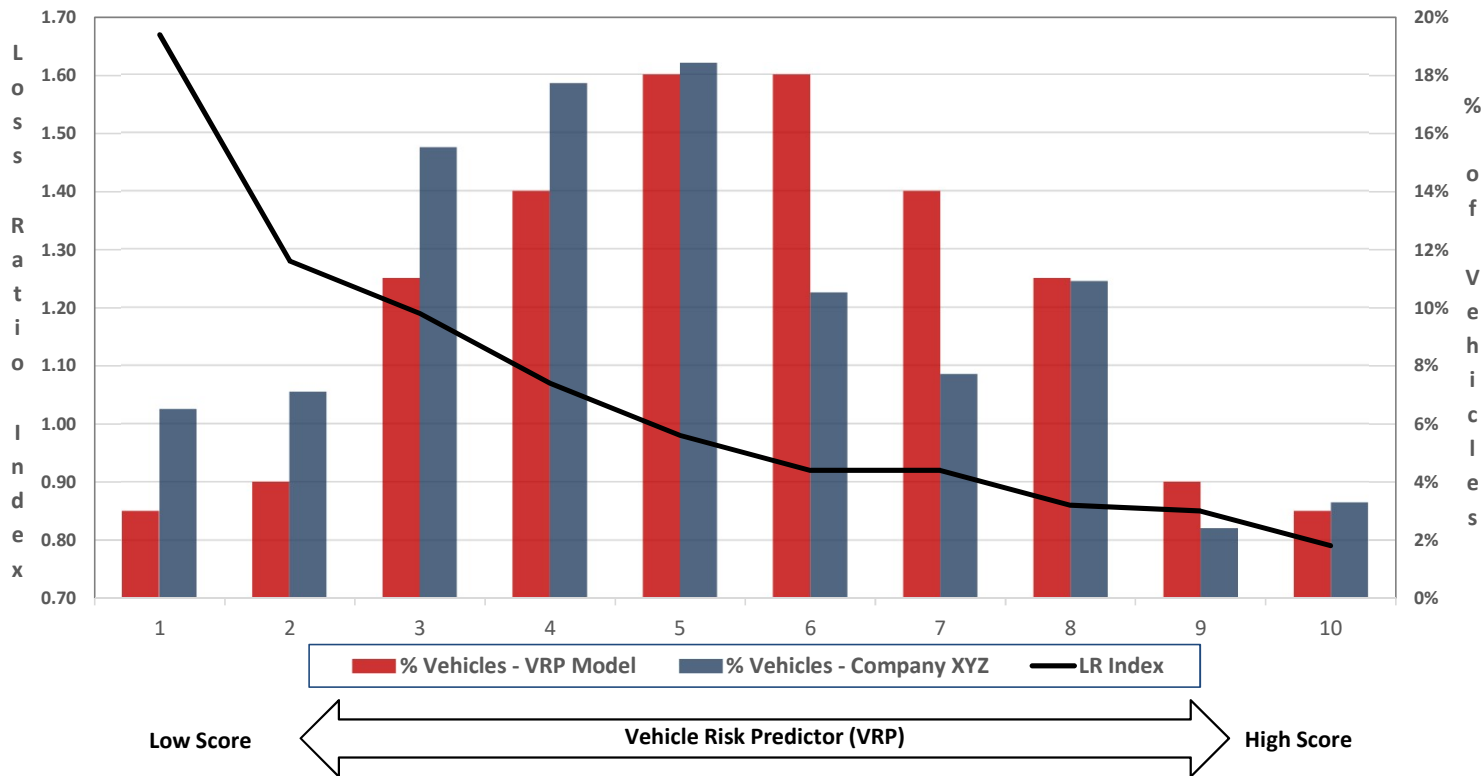
VEHICLE AGE AND TIMESINCE EVENT IMPORTANT ASPECTS OF MODEL LIFT



10 Bands	W/O Age and Time	W/ Age and Time
1	1.30	1.67
2	1.16	1.28
3	1.12	1.19
4	1.06	1.07
5	1.03	0.98
6	0.99	0.92
7	0.97	0.92
8	0.96	0.86
9	0.93	0.85
10	0.91	0.79
<b>ALL</b>	<b>1.43</b>	<b>Lift: 2.11</b>

# Vehicle History Data Elements - Company Example

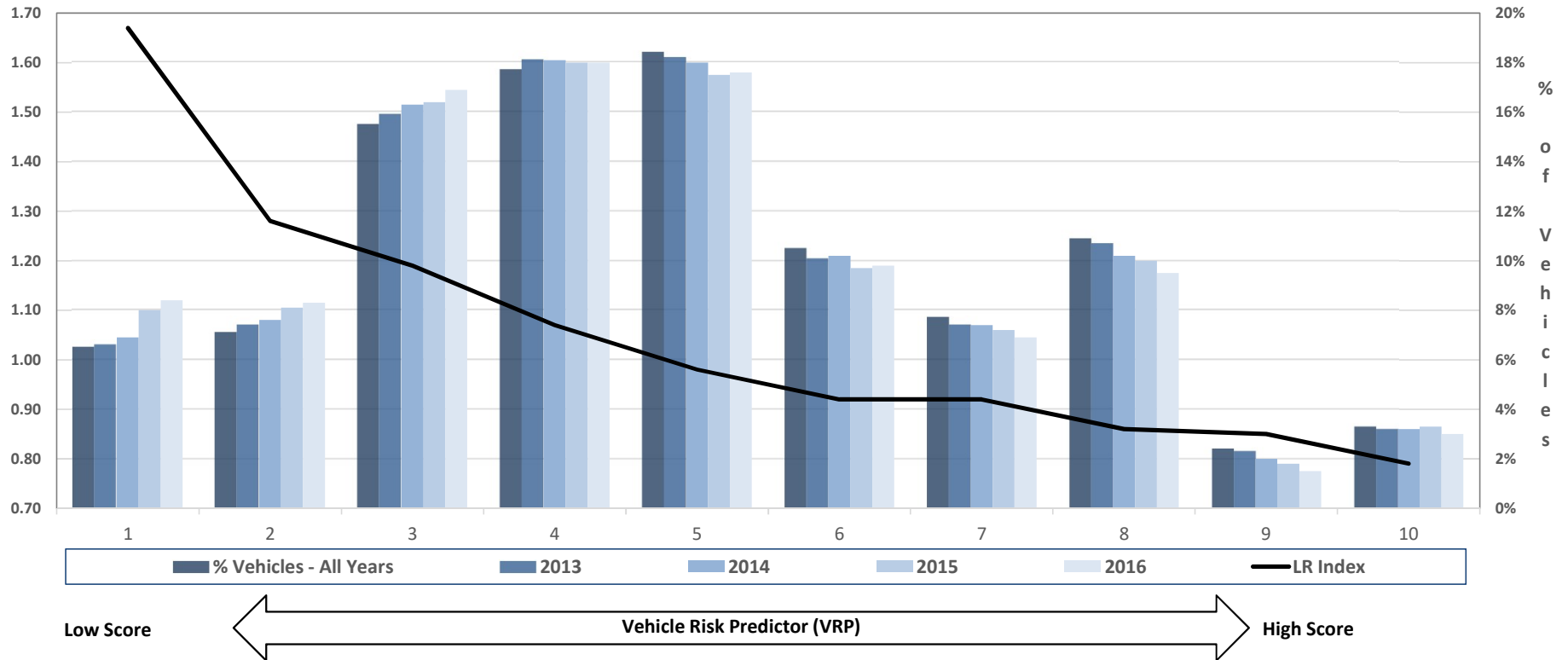
VEHICLE RISK PREDICTOR SCORE - ALL COVERAGES LOSS RATIO INDEX



10 Breaks	% Vehicles VRP Model	All Coverages LR Index
1	3%	1.67
2	4%	1.28
3	11%	1.19
4	14%	1.07
5	18%	0.98
6	18%	0.92
7	14%	0.92
8	11%	0.86
9	4%	0.85
10	3%	0.79
<b>ALL</b>	<b>100%</b>	<b>Lift: 2.11</b>

# Vehicle History Data Elements - Company Example

## VEHICLE RISK PREDICTOR SCORE – DATA OVER TIME







**Thank You For Your Attention**

**Questions or Suggestions?**



## **Contact Information**

**Christopher Whipple**

Sr. National Manager - RMT

[CWhipple@RedMountainTech.com](mailto:CWhipple@RedMountainTech.com)

**Dan Pickens, FCAS**

Chief Actuary - RMT

[DPickens@RedMountainTech.com](mailto:DPickens@RedMountainTech.com)

**Brandon Wockenfuss**

National Manager - RMT

[BWockenfuss@RedMountainTech.com](mailto:BWockenfuss@RedMountainTech.com)