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Moving Beyond The Credit Score

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Outline

- **History of Credit Use in Insurance**
  - Market Impact
  - Uses other than Rating/Underwriting

- **Moving Beyond Credit**
  - TransUnion Vehicle History Score (TUVHS)
    - Model Results
    - Potential Impact
    - Availability & Implementation

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Impact of Credit to the Insurance Industry

- Early Adopters Benefit
  - Carriers first to adopt reaped profits in mid 1990's
  - Others slow to act faced with adverse selection
  - Today over 95% of insurers use credit insurance risk scores

- Segmentation and Lift
  - Best 10% risks demonstrated 60% lower loss ratio levels
  - Worst 10% risks demonstrated 50% higher loss ratio levels
  - No other rating characteristic has contributed as much lift over the past 15 years

- Regulatory and Consumer concerns
  - Fairness ?
  - Confusion ?
  - Not intuitive ?

- Insurance Risk Scores have remained relatively stable throughout recent Financial and Economic crisis

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Available Current Uses of Credit Information

- "Static" Marketing
  - Given a list of candidates, who is most likely to respond/convert at a given point in time?

- "Triggers" Marketing
  - What consumer events or behavior changes are correlated with shopping for insurance?

- Application Verification
  - Are you who you say you are? (Garaging address, additional driver discovery, DOB, invalid SSN, vehicle warnings, etc…)

- Additional Reports Triaging
  - When should I order an MVR or claims history report?

- Underwriting and Rating
  - Risk evaluation for accept/reject, tier placement, or pricing decisioning

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Vehicle History Score provides additional risk segmentation

- TransUnion Vehicle History Score (TUVHS) powered by CARFAX® is an incremental (net-new) rating element with significant lift

- TUVHS utilizes information captured by CARFAX® at the unique 17-digit VIN level

- Innovative rating and underwriting solution can help you:
  – Improve quote accuracy
  – Stay ahead of competitors
  – Decrease adverse selection
  – Increase efficiency and profitability of your underwriting process

TransUnion and CARFAX® provide a powerful combination of new information and insight

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- Consumer reporting agency and information aggregator
  - Maintains more than 220 million consumer files in US provided by 85,000+ data furnishers
  - Does not determine interest rates or approve / reject applicants

- Provider of predictive analytics and decision support systems
  - Developer of insurance scoring models, including Vehicle History Score

- Global operations headquartered in Chicago
  - Current P&C market presence delivers insurance risk and marketing scoring to carriers

CARFAX®

- Maintains comprehensive vehicle data
  - Over 8 billion records and growing
  - Data from more than 34,000 sources

- Subsidiary of R.L. Polk, & Co., headquartered near Washington, D.C.

- Co-developer of Vehicle History Score with TransUnion

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What is CARFAX data and how is it collected?
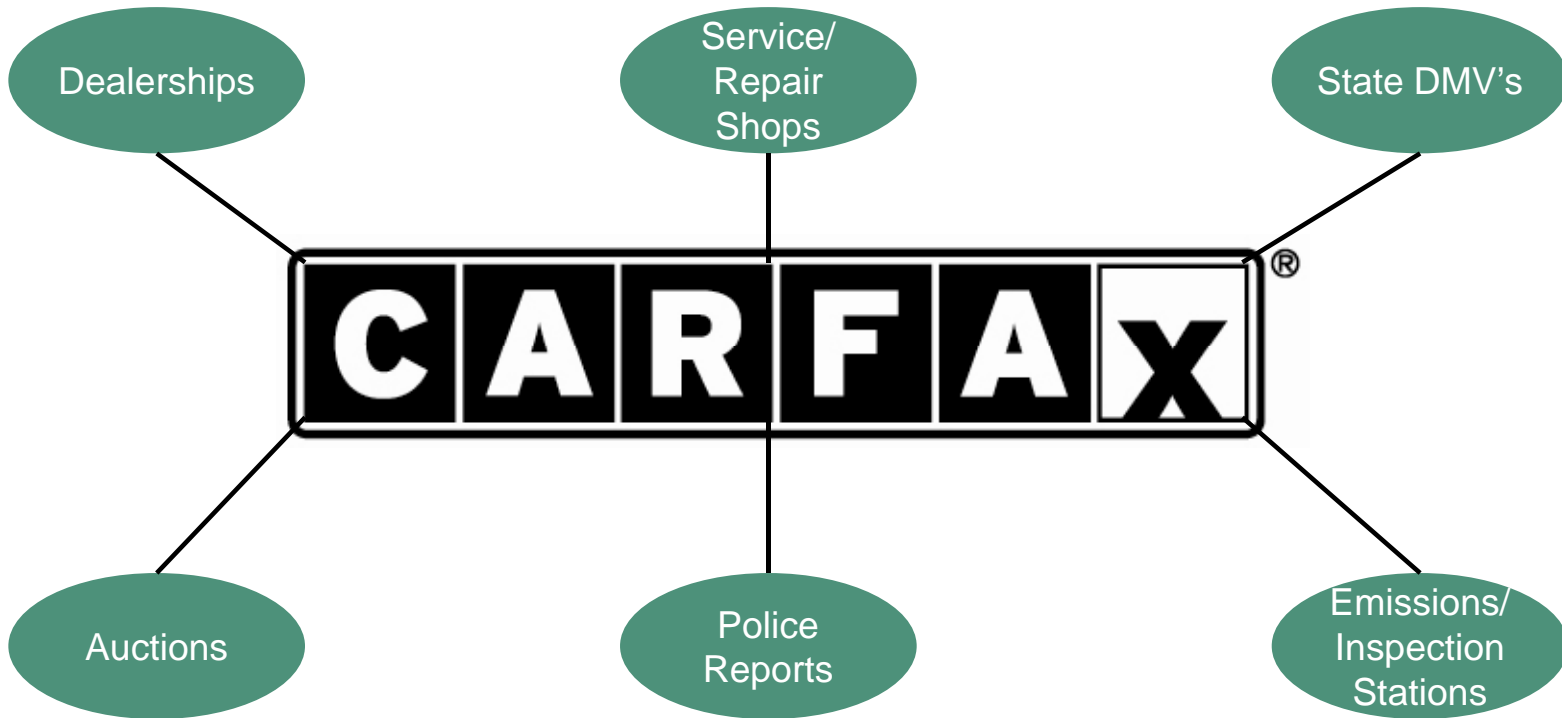
- CARFAX provides data about a specific vehicles history, including *Ownership Length and Type* (personal, commercial, taxi, etc), *Accident History*, *Service History*, *Odometer History*, *Repair History*, and other information

- Data is collected from thousands of data contributors and is updated daily

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Vehicle History Score – Technical Overview

- Built on large and recent industry dataset with advanced modeling technology

- Extensively validated and balanced on hold-out sets from many insurers

- TUVHS' predictive power is incremental to existing rating attributes

- Utilizes CARFAX® vehicle history information
  - Does not use consumer credit data → not subject to FCRA or GLB

- Based on predictive characteristics, including:
  - Ownership history
  - Accident history
  - Repair history
  - Use history

- Provides numeric score indicating likely loss ratio and claim frequency
  - Higher TUVHS = Less likely vehicle will produce loss or file claim

- Requires only VIN for a vehicle from 1981 or later upon input

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Traditional Vehicle Pricing with TUVHS

Adding Vehicle History Score to traditional vehicle pricing allows carriers to further segment risk, based on non-credit attributes

Customer	Model Year	Make	Model	Base Symbol	TUVHS	Adjusted Price
Orig. Owner / 40k Odometer / No Prior Damage	2005	Honda	Accord	$150	*"Good"*	*$125*
Orig. Owner / 65k Odometer / No Prior Damage	2005	Honda	Accord	$150	*"Fair"*	*$140*
Orig. Owner / 90k Odometer / No Prior Damage	2005	Honda	Accord	$150	*"Average"*	*$150*
New Owner / 65k Odometer / No Prior Damage	2005	Honda	Accord	$150	*"Poor"*	*$155*
New Owner / 65k Odometer / Non Severe Damage	2005	Honda	Accord	$150	*"Bad"*	*$175*

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TUVHS validates across coverage selections

TUVHS by Coverage

Legend: BIPD, MED/PIP, UM/UIM, COMP, COLL, TOTAL

Y-axis: Relative Loss Ratio (0.40 to 2.20)

X-axis: Predicted Loss Ratio Vintiles (1 to 20)
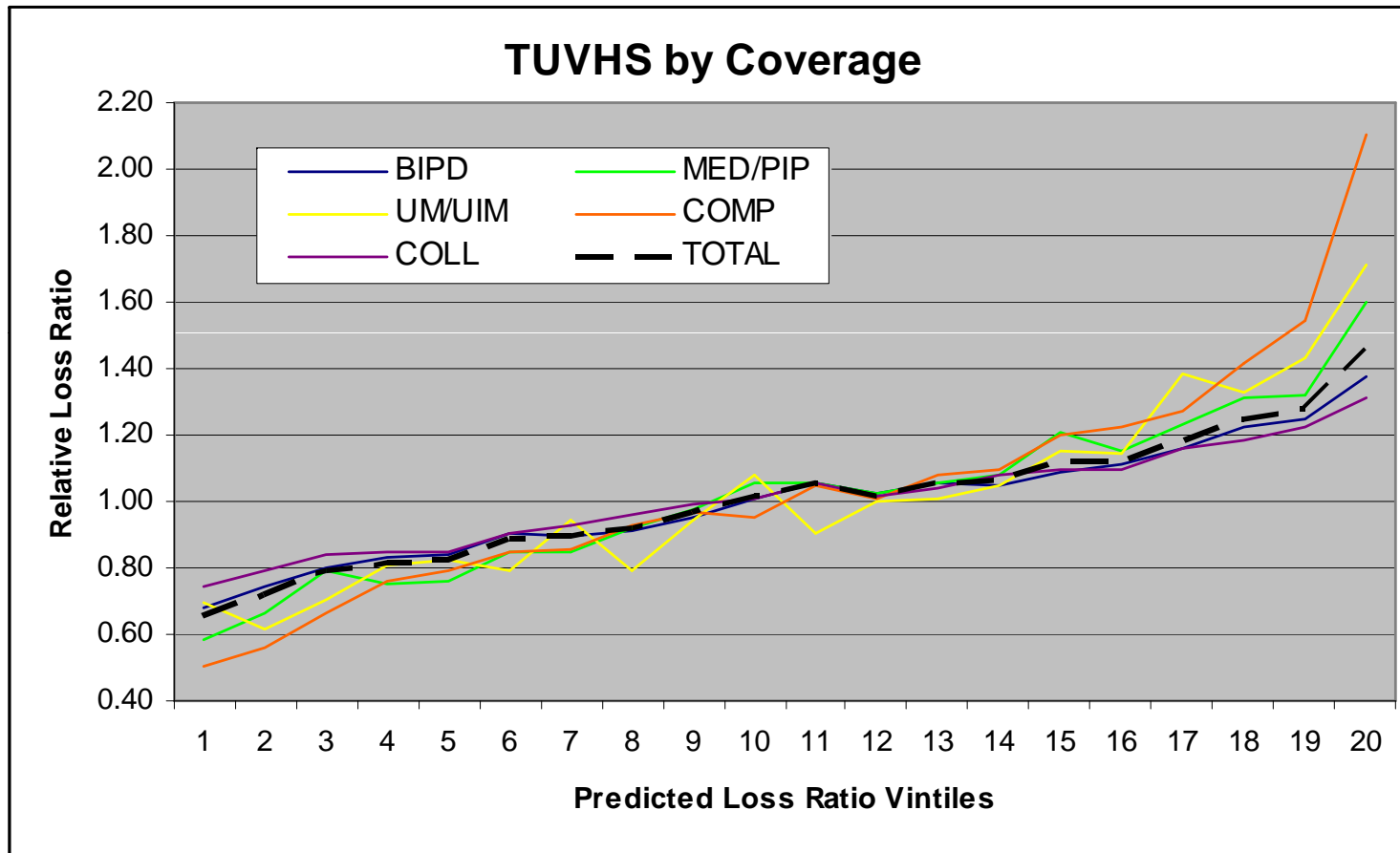
Lift greater for comprehensive; possibly identifying fraudulent theft claims

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TUVHS powerful for both new business and renewal book

Certain TUVHS new business segments outperform renewals

TUVHS Identifies Best New Business Risks

Legend: New Business (blue), Renewals (orange)

Y-axis: Relative Loss Ratio (0.50 to 1.70)

X-axis: TUVHS Vintile Groups (1 to 20)

20% New business segment outperforms 20% Renewal segments!

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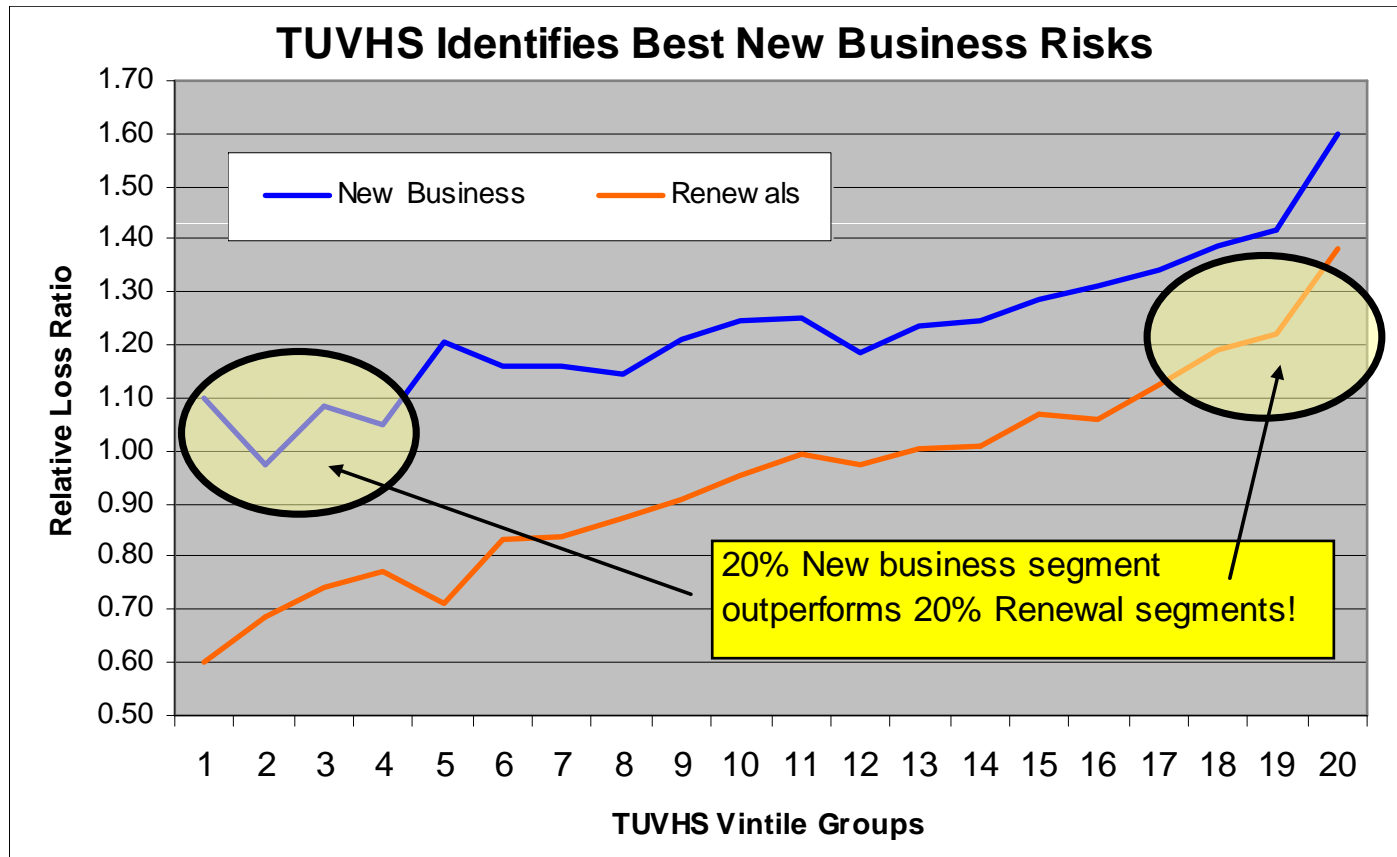
TUVHS corrects for self-reported* mileage

- TUVHS loss ratio lift linear and much more stable than self-reported

- TUVHS exposures more evenly distributed, rather than concentrated at common reporting thresholds (5k, 10k, 12k, 15k, …)

Average Annual Miles:

- 10,400 TUVHS

- 7,200 self-reported

- (44% increase!)

- calculated on ~80% VINs and growing

TUVHS Validates Annual Miles vs. Self-Reported

Legend: Self-Reported %, TUVHS %, Self-Reported LR, TUVHS LR

X-axis: Average Annual Miles (2,000 – 24,000)
Left Y-axis: Relative Loss Ratio (0.60 – 1.40)
Right Y-axis: % Exposure Distribution (0% – 20%)
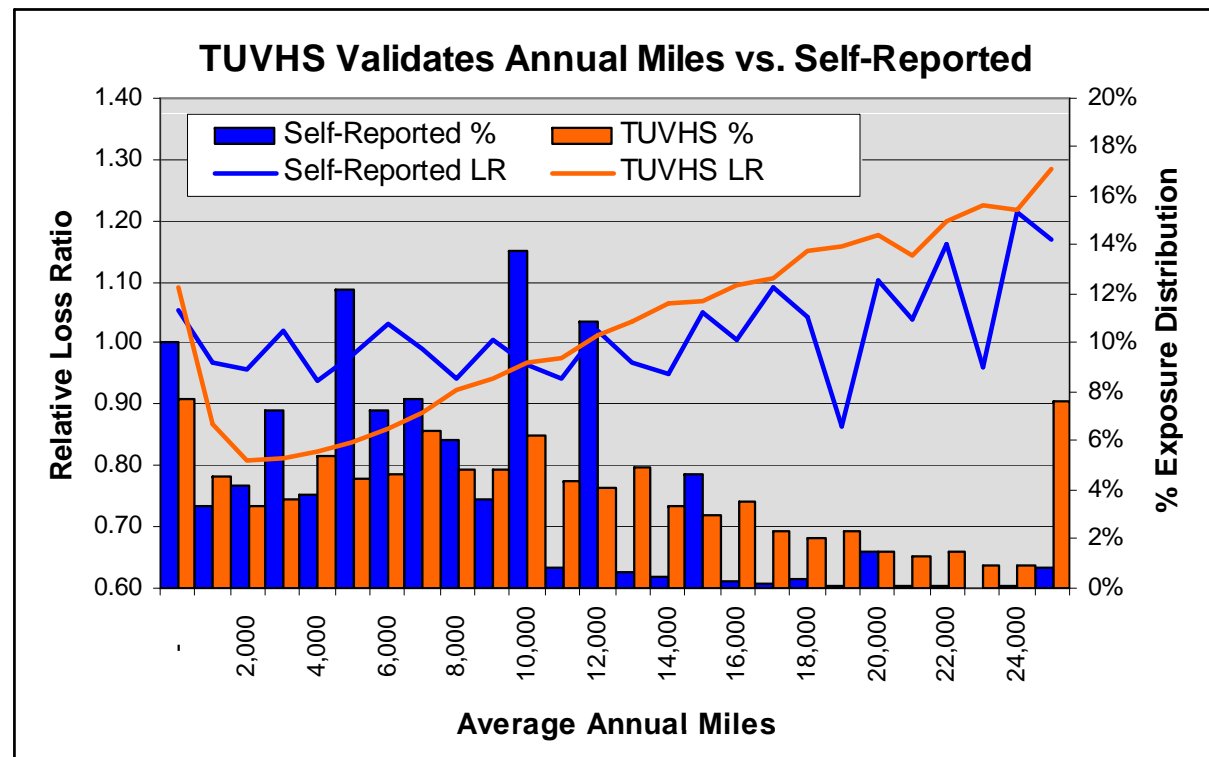
* self-reported for data collected by carriers used in the study

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TUVHS is almost as powerful as credit

TUVHS Segmentation Similar to Credit Risk (TUIRS)

Loss Ratio Relativity vs. Predicted Loss Ratio Decile

Legend: TUVHS, TUIRS

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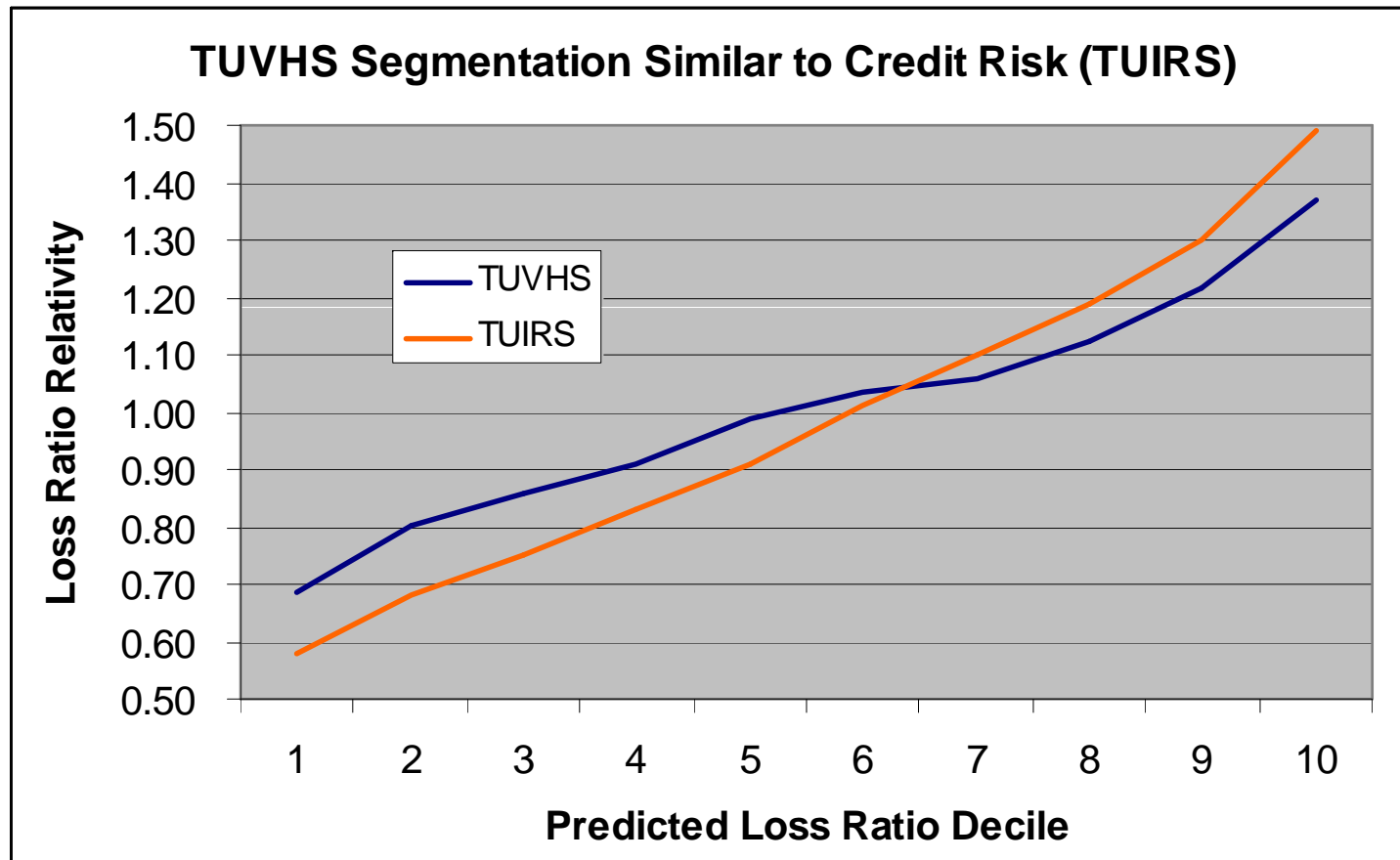
TUVHS Uncorrelated with Insurance Risk Scores (ρ=0.088)

- Small correlation only in the best and worst range of scores
- Sum of diagonal decile population = 11.1% / 10.0% uniform
- Sum of (+/-1) diagonal = 30.4% / 28.0% uniform
- TUVHS will augment insurance risk scores

			TUIRS Credit Score Deciles									
		Good	<===>									Poor
		1	2	3	4	5	6	7	8	9	10
Good	1	**1.37%**	1.13%	1.02%	0.93%	0.93%	0.89%	0.99%	0.94%	0.98%	0.83%
^	2	1.36%	**1.16%**	1.03%	0.99%	0.98%	0.94%	0.94%	0.90%	0.90%	0.80%
‖	3	1.20%	1.11%	**1.05%**	1.03%	0.99%	0.99%	0.95%	0.92%	0.88%	0.89%
‖	4	1.13%	1.06%	1.05%	**1.04%**	0.98%	0.99%	0.96%	0.93%	0.97%	0.87%
‖	5	1.06%	1.05%	1.03%	1.02%	**1.02%**	1.00%	0.98%	0.93%	0.94%	0.97%
‖	6	1.04%	1.07%	1.03%	1.04%	1.04%	**1.01%**	0.94%	0.96%	0.92%	0.94%
‖	7	0.87%	0.99%	1.02%	1.05%	1.06%	1.03%	**0.98%**	0.96%	0.98%	1.05%
‖	8	0.76%	0.90%	0.95%	1.00%	1.02%	1.04%	1.04%	**1.06%**	1.09%	1.14%
v	9	0.71%	0.86%	0.97%	1.00%	1.01%	1.06%	1.05%	1.09%	**1.07%**	1.18%
Poor	10	0.49%	0.67%	0.84%	0.89%	0.96%	1.05%	1.18%	1.31%	1.27%	**1.33%**

TUVHS Vehicle History Deciles (row axis label)

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Loss ratio tests show the benefits of TUVHS

Rating - Assuming overall same rate level, a carrier using TUVHS can grow and reduce LR simultaneously. The carrier not using TUVHS will ultimately lose policies and see rising loss ratios due to adverse selection.

Comparison	Before TUVHS			After TUVHS			
	Vehicles	Total Premium	Loss Ratio	Vehicles	Total Premium without TUVHS	Total Premium with TUVHS	Loss Ratio
Win	-	-	-	408,200	$166,089,919	$136,943,805	46.3%
Tie (within +/-5%)	1,000,000	$406,883,775	56.4%	221,093	$89,959,008	$90,198,705	57.6%
Lose	-	-	-	370,707	$150,834,848	$177,486,213	66.6%
Carrier A	500,000	$203,441,887	56.4%	518,746		$182,043,157	49.1%
Carrier B	500,000	$203,441,887	56.4%	481,254	$195,814,352		64.6%
				+ 3.7%	with TUVHS		- 12.9%
				- 3.7%	without TUVHS		+ 14.4%

Underwriting - A carrier can reject vehicles/policies and improve overall LR

	Underwriting Decision Thresholds		
Base Loss Ratio	62.5.%	62.5%	62.5%
Decision	7.5% Rejected	5.0% Rejected	2.5% Rejected
Rejected LR	86.1%	87.7%	91.8%
Accepted LR	**60.6%**	**61.2%**	**61.7%**

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Maximize TUVHS LIFT and ROI by using the product at "point of quote"

Point of Quote: *Maximum benefit of improved LR and increased market share*

Pros	Cons
Gain full LIFT benefit of product with no impact to customer experience	Potential difficulty in IT implementation

The product was designed for point-of-quote implementation.

In the early stages of credit implementation some carriers first used credit at bind but quickly learned that consumer experience issues became prohibitive due to inaccurate quotes.

- TUVHS is easily integrated into your existing systems

- TUVHS can be delivered at quote over existing TU connectivity

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TUVHS point of quote implementation options

- **Rating or Tiers**
  - Add an extra "symbol" to symbol definitions (i.e. each VIN has 5-10 possible symbols)
  - Add a "vehicle history" variable to their rating structure
  - Carriers can use the score in their tier determination logic

- **Company Placement & Underwriting**
  - Carriers that utilize a multi-company tactic can use the score to place policies into the appropriately priced company
  - Uses a "Yes/No" filter to underwrite a percentage of risks out of their program to improve loss results.

- **Pay-plan Determination**
  - Offer aggressive pay-plans to better-scoring policies, while restricting pay-plans to poor-scoring policies (effectively underwriting them out of the program)

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Utilize TUVHS at endorsement and renewal

- **If TUVHS is used in rating OR underwriting:**

  - Order and apply TUVHS for ALL vehicle endorsements
    (except brand-new vehicles where no Carfax data exists)

  - Order TUVHS at subsequent policy renewals and non-renew policies with
    vehicles that have dramatically deteriorating scores

  - Apply retention measures to policies with dramatically improved scores at
    renewal (retention callouts, diminishing deductibles, etc.)

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Common Questions

- **Does the model correlate or replace credit?**
  - The model has no strong correlation with credit. The model is designed to work in addition to credit, or be used in states where credit is not allowed
  - The model shows LIFT comparable to credit

- **Does the model use mileage?**
  - Yes

- **We use mileage in our rating plan. Will TUVHS still work?**
  - Yes. First, mileage in our model has much to do with past mileage (i.e. the condition of the vehicle). Secondly, mileage is a self-reported variable and is somewhat unreliable. A carrier using mileage may see somewhat reduced LIFT from TUVHS, but the model will still be powerful.

- **What about customer concerns?**
  - If TUVHS is utilized at the point of quote, customer impact (i.e. uprates, discrepancies, etc.) are minimized
  - TUVHS may include optional reason codes to describe why a vehicle does not receive the best score

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Next Steps for Adoptive Carriers

- Retro-analysis validation study to show how the score can perform within your unique book of business by specific segments

- TransUnion and CARFAX® will work with you to identify where Vehicle History Score is best applied to your processes
  - Understand how score can be integrated and implemented, without significant investment or changes

- **Live Production Availability: September 2011**

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