



# Next generation enhancements to credit-based insurance scores

2016 CAS RPM Conference

March 16, 2016

Stothard Deal  
Director, Product Development  
TransUnion – Insurance Services Group





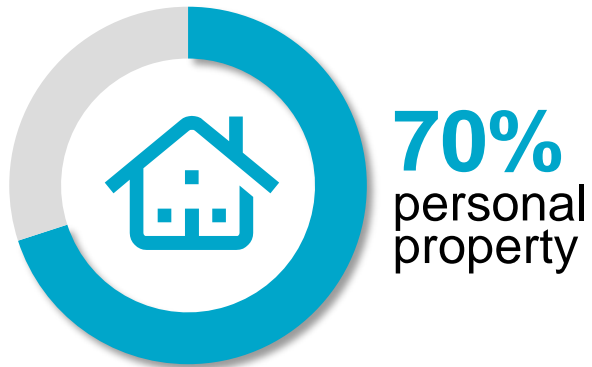
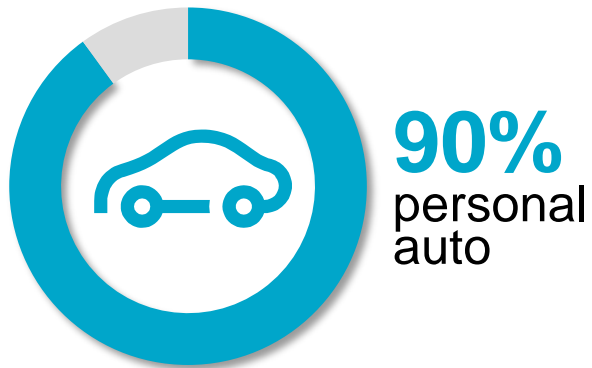
## Antitrust notice

The Casualty Actuarial Society is committed to adhering strictly to the letter and spirit of the antitrust laws. Seminars conducted under the auspices of the CAS are designed solely to provide a forum for the expression of various points of view on topics described in the programs or agendas for such meetings.

Under no circumstances shall CAS seminars be used as a means for competing companies or firms to reach any understanding – expressed or implied – that restricts competition or in any way impairs the ability of members to exercise independent business judgment regarding matters affecting competition.

It is the responsibility of all seminar participants to be aware of antitrust regulations, to prevent any written or verbal discussions that appear to violate these laws, and to adhere in every respect to the CAS antitrust compliance policy.

# Use of credit data in Property & Casualty (P&C) personal lines pricing and underwriting is an established practice



**Use of credit data** - estimated market penetration

## Benefits of credit-based insurance scores

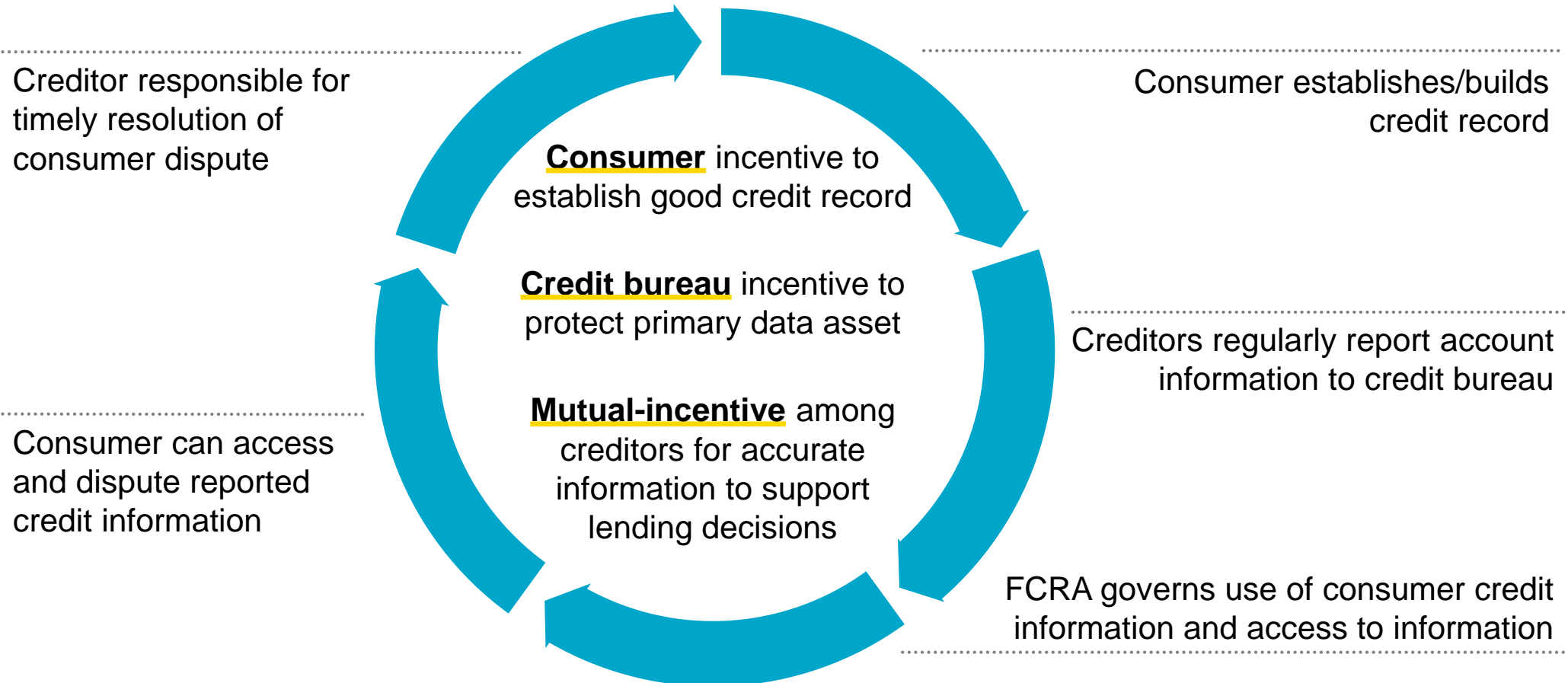
- ✓ *Strong correlation with insurance loss costs*
- ✓ *Objectivity of measurement*
- ✓ *Scale and ease of administration*

**Use of credit data in underwriting is accepted by most state insurance regulators**



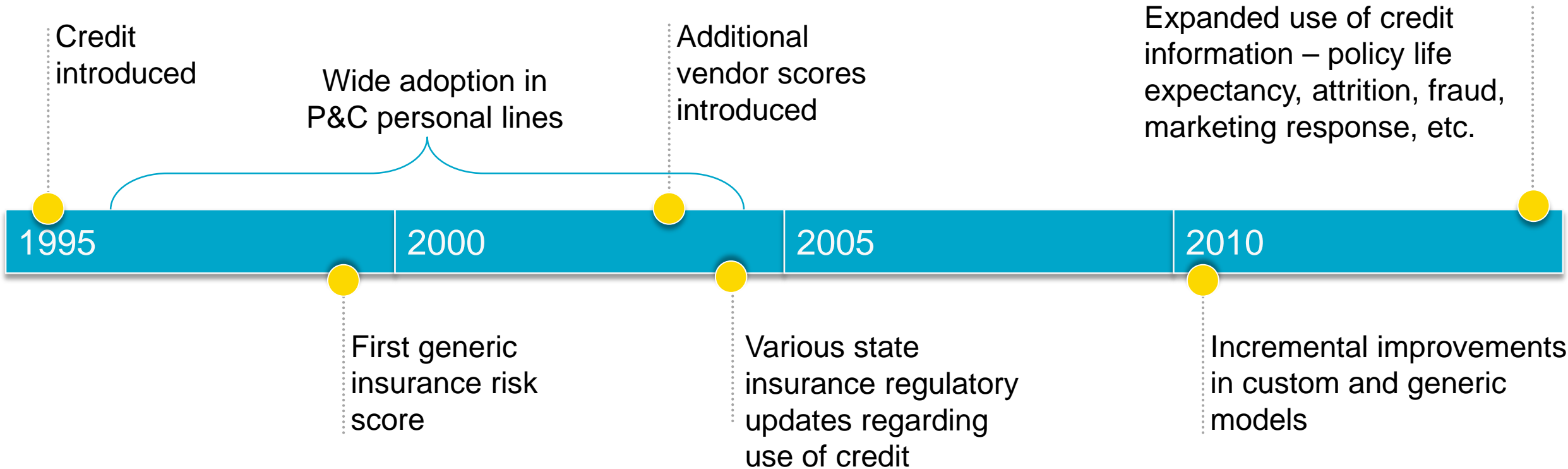
# Consumer credit data is one of the most accurate and complete data sources for insurance customers

Reporting standards and dispute resolution create self-managing system





# A brief history of insurance use of credit





# Early adoption of credit created large segmentation improvements in the P&C personal lines markets

Today we will review some next generation innovations for uses of consumer credit data in insurance:

Understand how trended, time series credit data provides new insights into consumer behaviors



Use of trended credit utilization measures to improve segmentation



Use of alternative credit data to reduce the occurrence and improve risk segmentation of no-hits and thin files



# Today, much of the credit view is static, making it difficult to know where consumers came from, or where they're going

## Limitations of traditional credit data

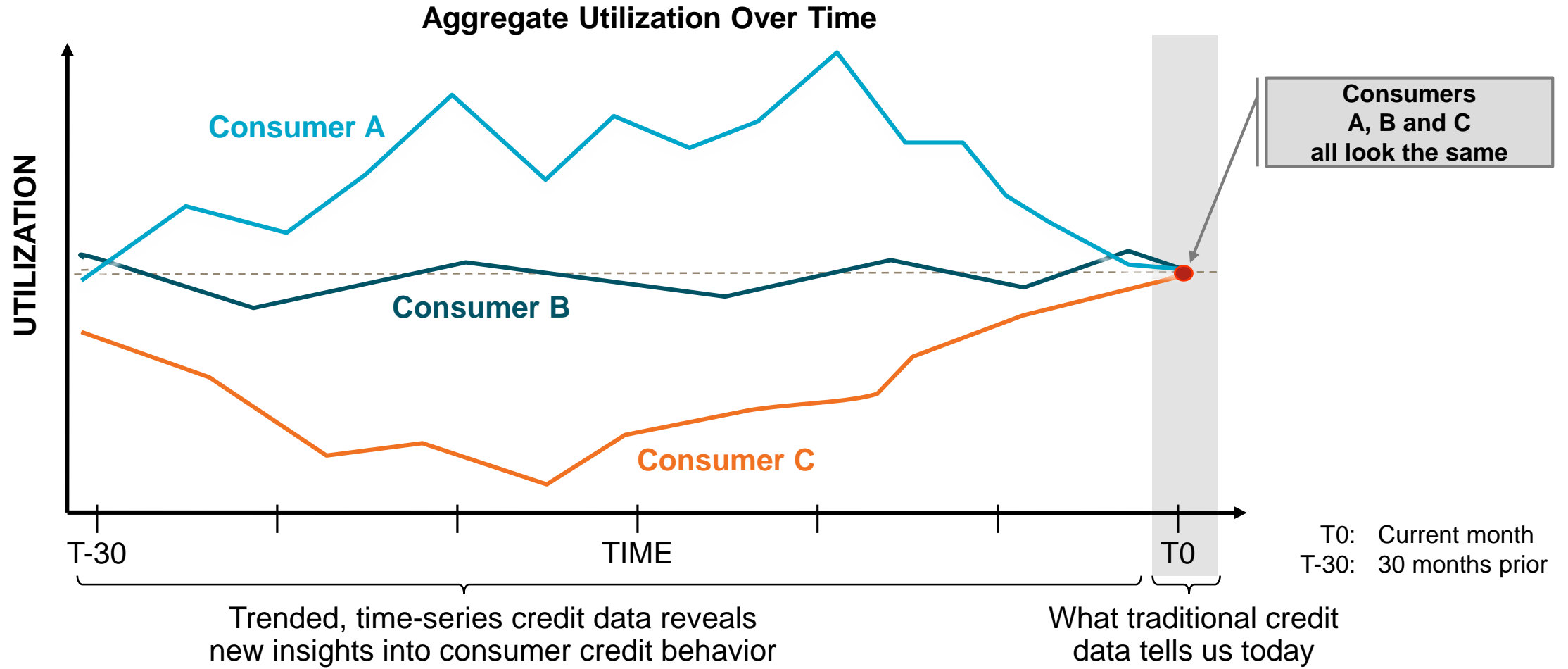
- Point-in-time view of balance, minimum payment, high credit, credit limit, etc.
- No view of historical payment patterns
- Can lead to anecdotal outcomes –

“ I normally have good credit, I just had a bad month ”

## What's occurring in reality

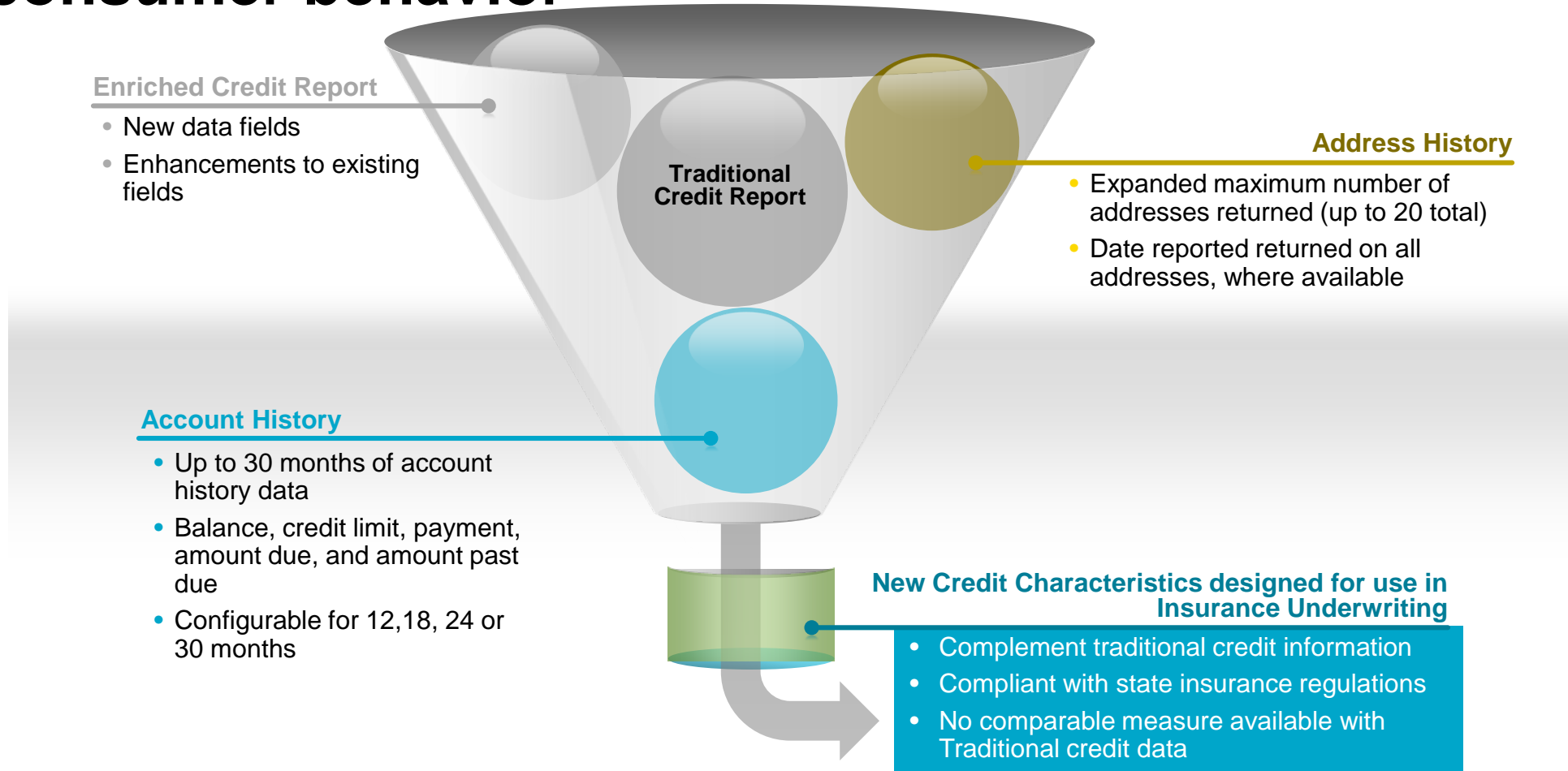
- Aggregate average insurance scores remain relatively stable over time
- However, individual-level scores do move over time, and the movement is predictive of risk
- Over time, more than **70%** of risks move in a meaningful way
  - Generally masked by overall lower lost costs associated with renewals

# Consumers who appear to display the same credit behavior today may actually have arrived there very differently





# Trended credit data provides carriers with new insight into consumer behavior



Account history measures uncover new insights into credit-based, loss cost segmentation

# Example: Payment to Balance Ratio



## Traditional Credit Data

Balance at time of credit report pull

### Gaps

- Historical balance
- Payment amount
- Cannot determine the historical balance and payment information

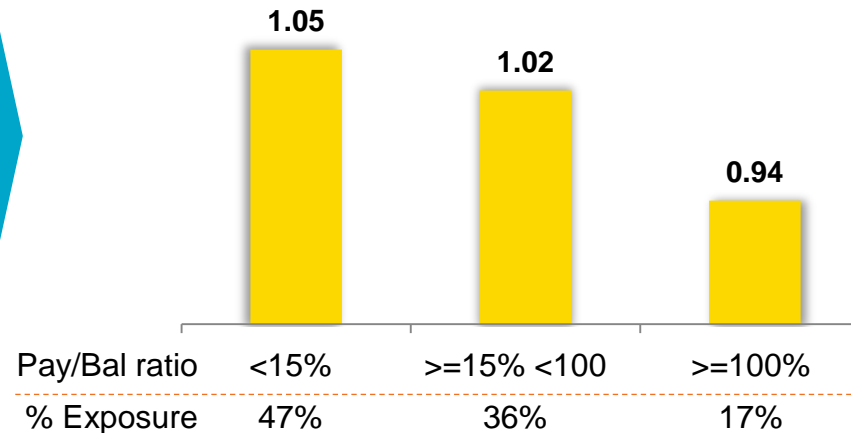
No comparable variable available



## Trended Credit Data

Ratio of aggregate payment to balance over past 12 months

Pure Premium Relativity  
By Aggregate Payment to Balance Ratio



# Example: Slope of Credit Card Utilization



## Traditional Credit Data

Balance at time of credit report pull  
 Credit limit at time of credit report pull

### Gaps

- Historical balance
- Historical credit limit

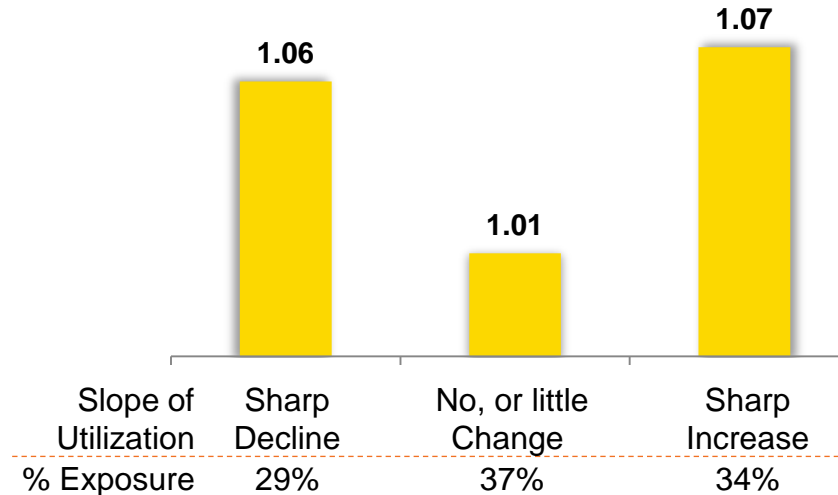
No comparable variable available



## Trended Credit Data

Slope of credit card utilization, after payment, over last 12 months

Pure Premium Relativity  
 By Slope of Credit Card Utilization



# Example: Number of Balance Decreases



## Traditional Credit Data

Balance at time of credit report pull

### Gaps

- Historical balance

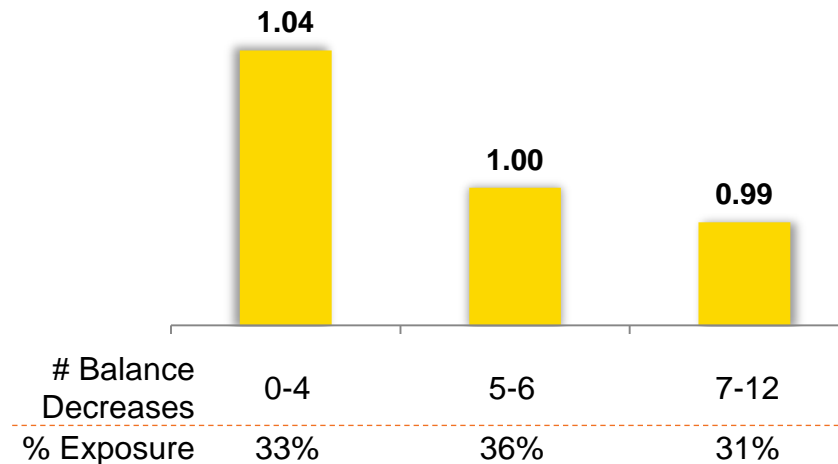
No comparable variable available



## Trended Credit Data

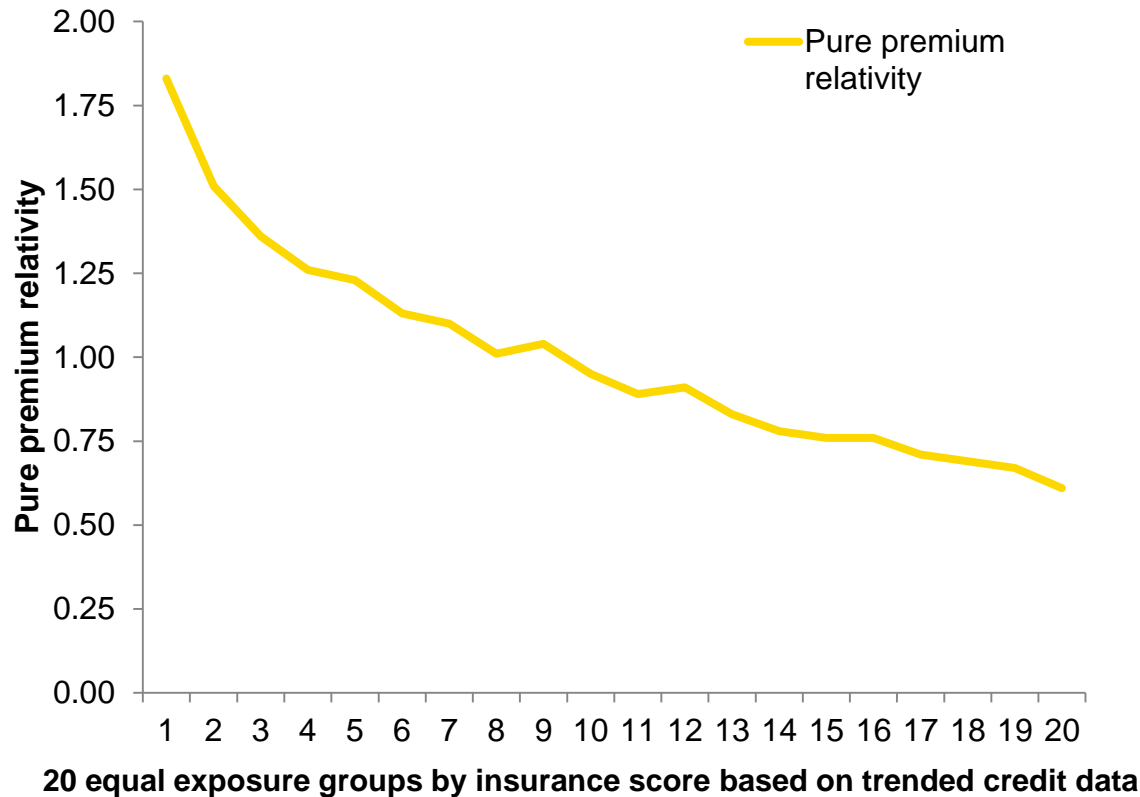
Number of balance decreases over last 12 months

Pure Premium Relativity  
By Number of Balance Decreases

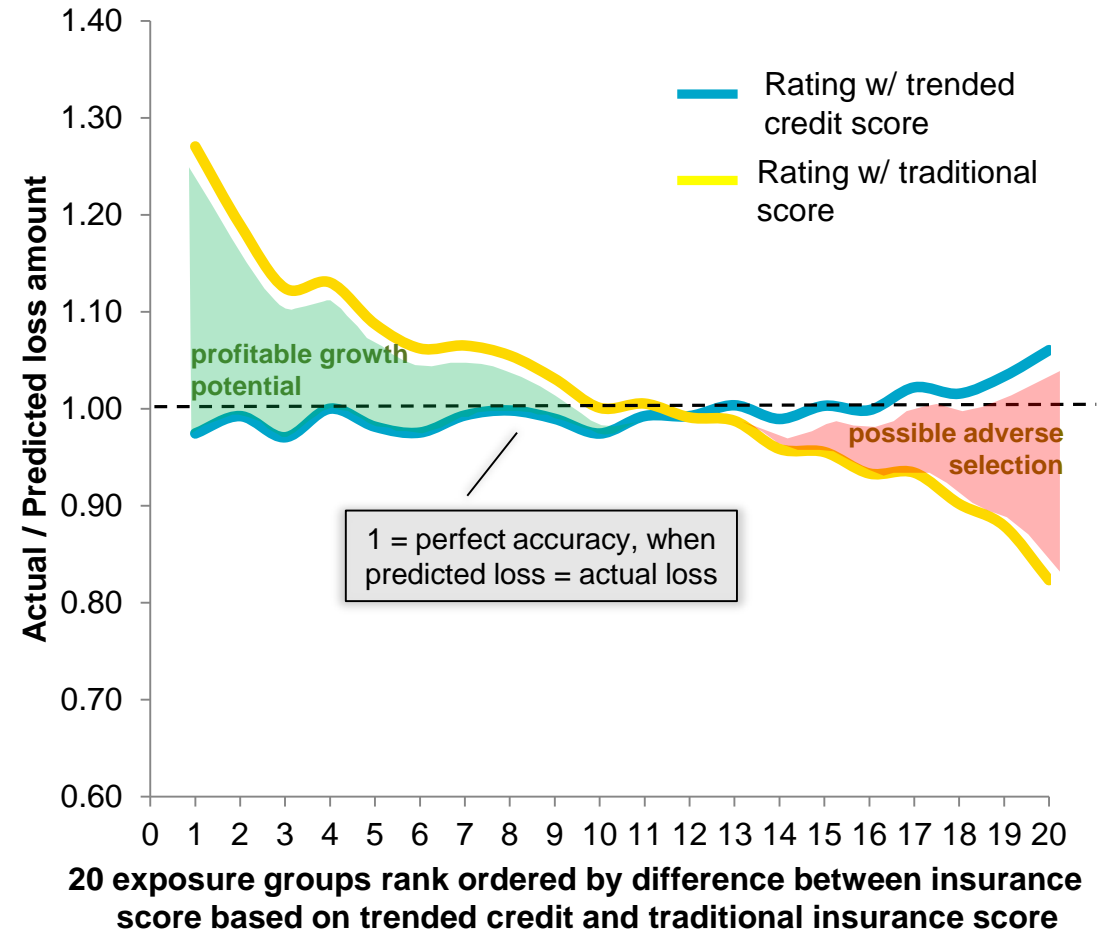


# Rate plans adding trended credit data have demonstrable improvement in accuracy

Relative pure premium



Actual versus predicted loss amount



# Trended credit data creates direct benefits for insurance carriers



Historical balance and payment history to be used in risk assesment



Shifts in bankcard balances, between cards, may be indicative of other behaviors (insurance shopping)



Address history information could offer new insights into insurance loss behaviors

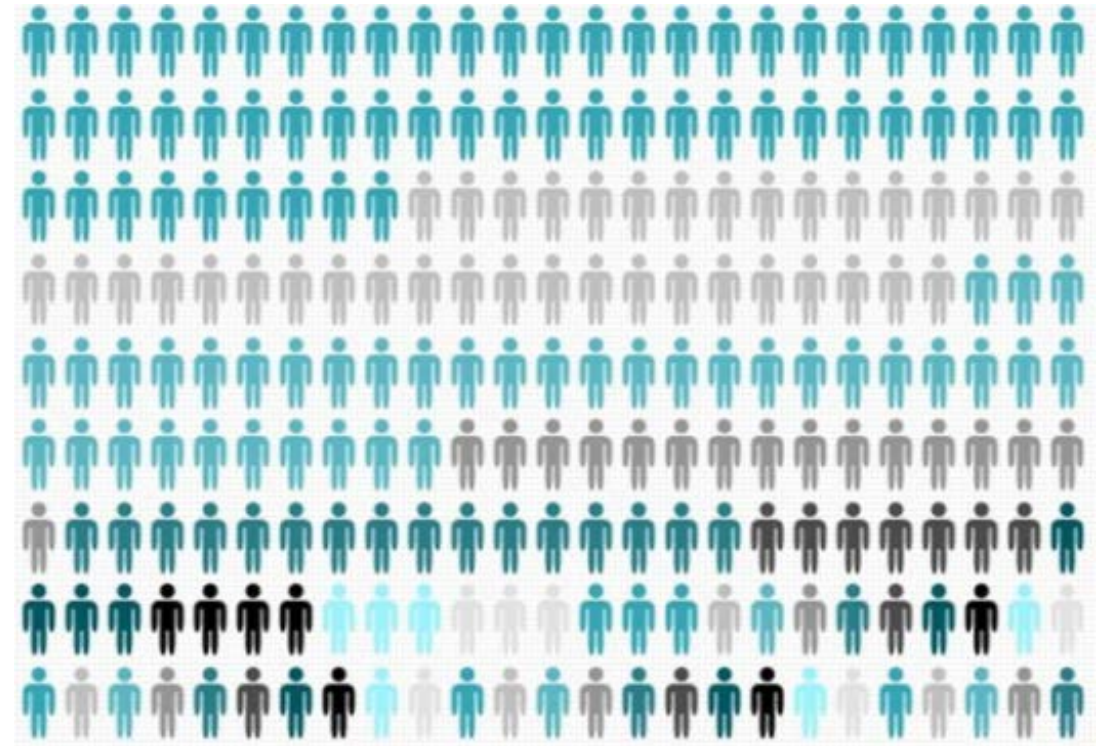


Trended credit data presents promising opportunities, but what about the under-banked population that don't have established, traditional credit?



# As many as 50 million under-banked consumers represent a diverse and growing customer base

- Nearly 2-in-10 consumers lack full credit record:
  - Age limitations
  - Limited access to credit
  - Acculturating immigrants
  - Distrust of credit system
- Lack of credit information leads to:
  - Inability to objectively evaluate customer base
  - Limited product offering
  - Generalized treatment of customers



# Alternative data sources

- Identified alternative credit data sources with up to 300 million consumer records from a variety of industries.
  - Considered *specialty consumer reporting agencies (CRA)* – Governed by FCRA
  - Several hundred data attributes available
  - Up to 50% hit-rate on sample set of TransUnion credit no-hit and thin-file records

## Banking

- Inquiries
- Account closures
- Fraudulent closures

## Consumer Rental

- Rent-to-own, etc.
- Inquiries
- Charge-offs

## Utility

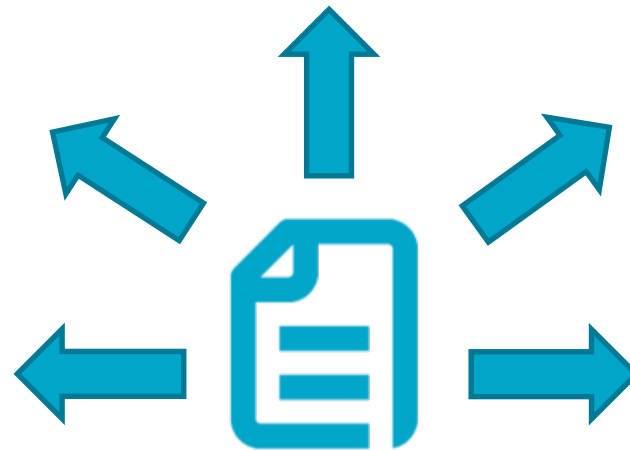
- Inquiries

## Consumer Finance

- Non-banking loan inquiries (Cash Advance, Auto, etc.)
- Credit issuance
- Charge-offs

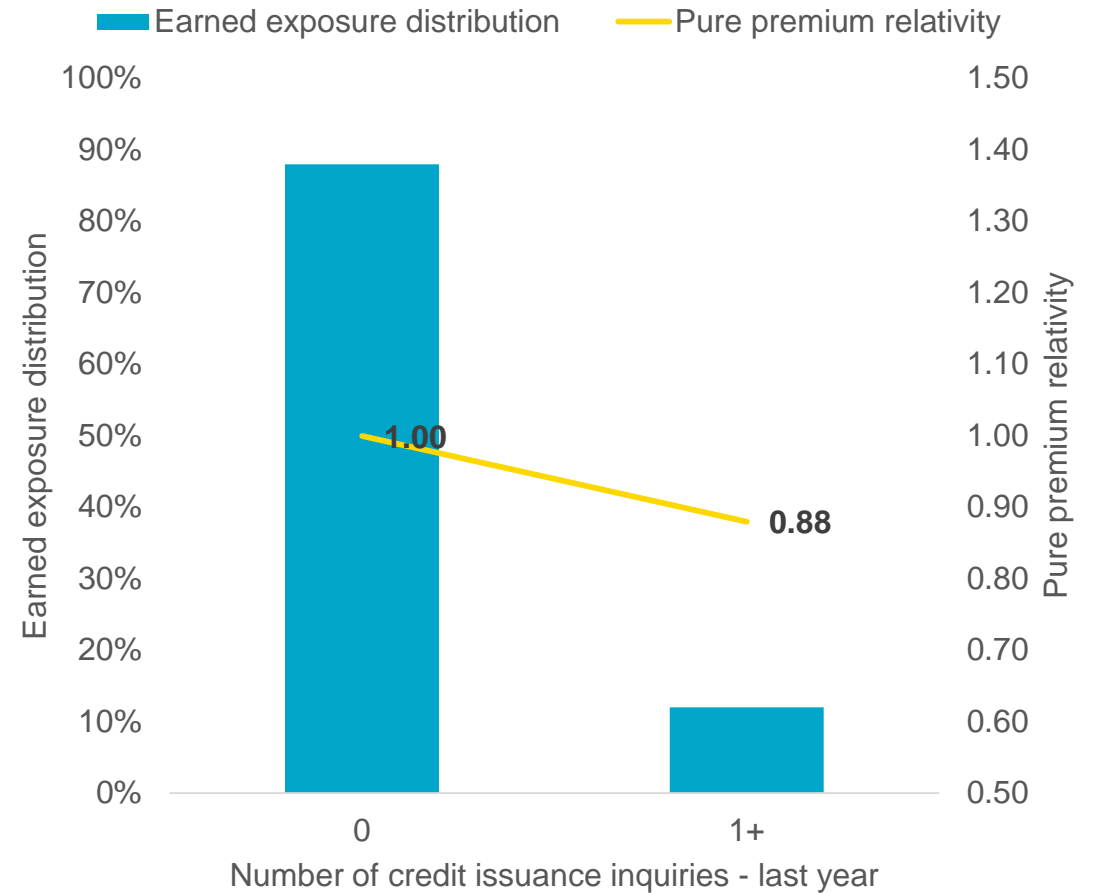
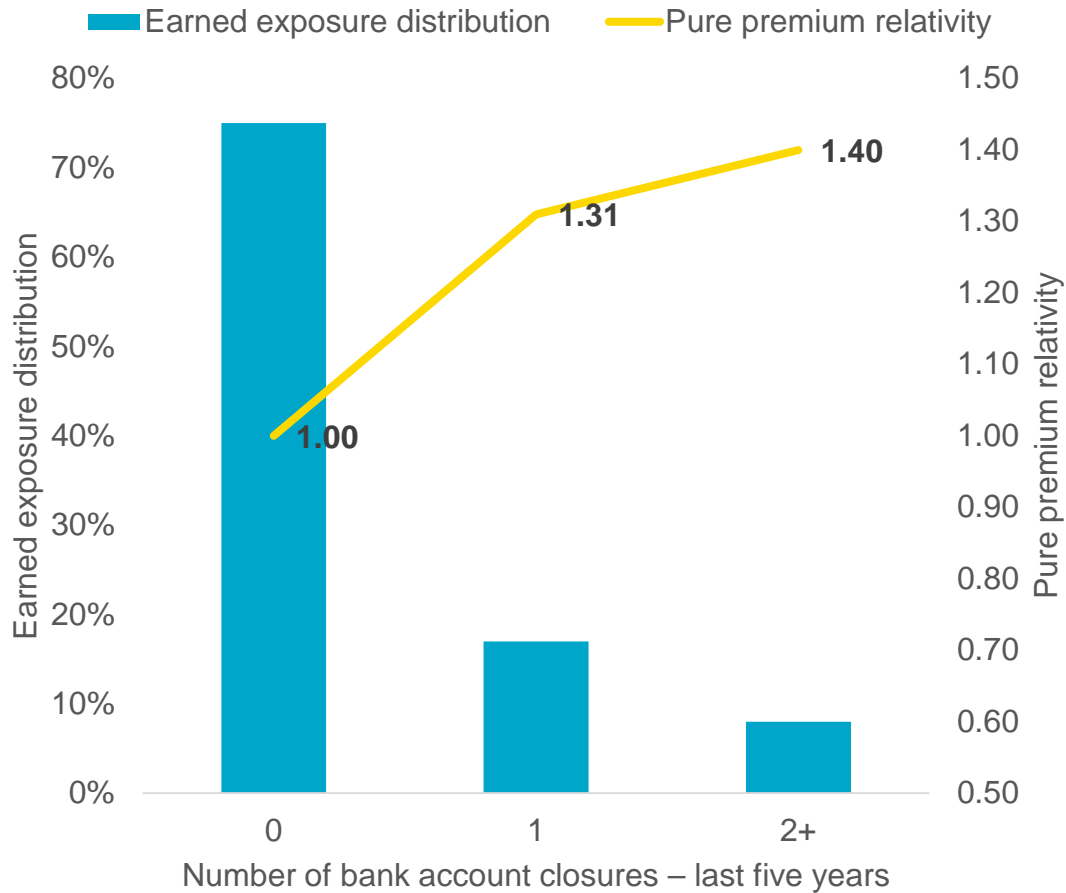
## Subscription/Clubs

- Orders
- Payments
- Write-offs





# Alternative credit data is a predictive and valuable supplement to traditional credit data



# Alternative credit data characteristics can be used to build an insurance risk score

## Analytic dataset



Policy record	Performance	Standard Rating Characteristics		
		Policy Characteristics	Driver Characteristics	Vehicle Characteristics
Policy 1	..	..	..	..
Policy 2	..	..	..	..
...	..	..	..	..

## Modeling Methodology

Insurance Losses =

Standard Rating Characteristics

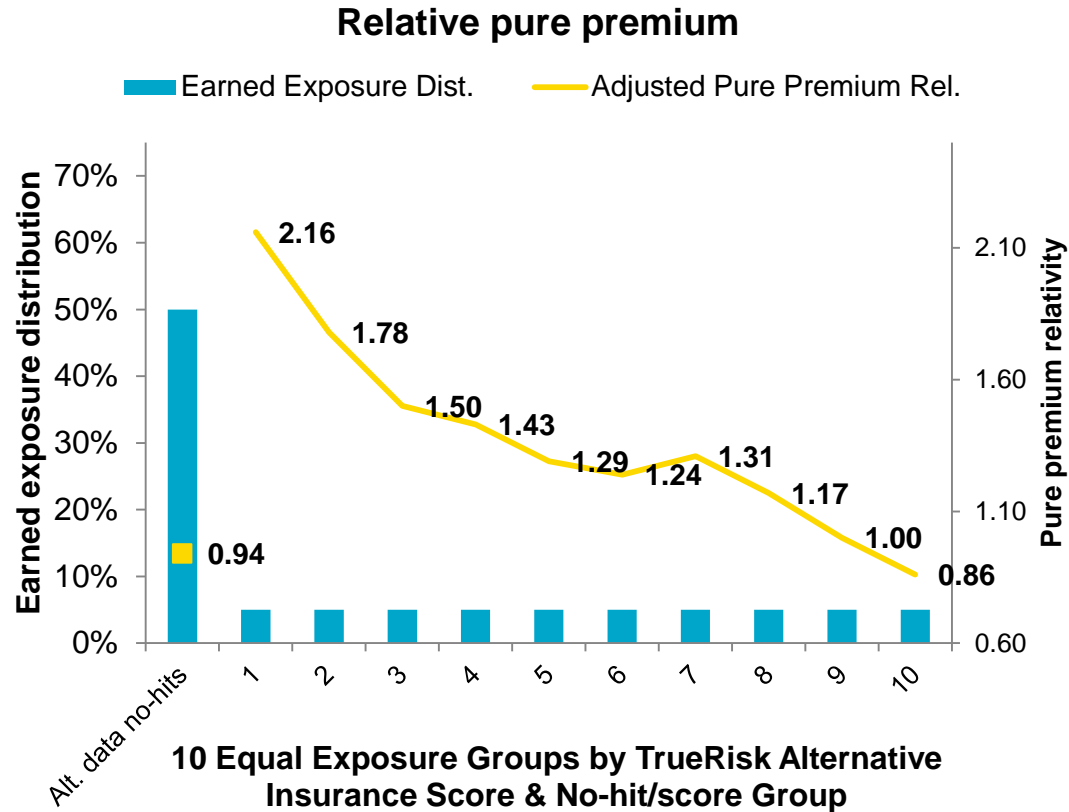


Alternative credit data attributes



Alternative credit insurance risk score

# Example: Pure premium lift of alternative credit insurance score on a multi-carrier dataset



- ✔ 50% hit-rate on sample set of TransUnion credit no-hit and thin-file records
- ✔ 2.5x times pure premium pure premium separation between the highest/lowest risk deciles
- ✔ Additional segmentation opportunity for 50% if risk classified as alternative data no-hits/scores

# Alternative credit data creates direct benefits for insurance carriers



Reduces the occurrence of no-hits and thin-files



Improves segmentation and pricing accuracy within existing rating plan



Offers additional segmentation opportunity on credit-active population





# Summary: Next generation enhancements to credit-based insurance scores

- New credit data provides the opportunity to improve risk segmentation and pricing accuracy
  - Improved underwriting results
  - Improved competitive position in market
- New credit data can be incorporated into existing pricing and underwriting process
  - Standalone attributes
  - Insurance risk score
- New credit data is an extension of existing consumer credit information
  - Governed by Fair Credit Reporting Act (FCRA)
  - Fits within most states' regulations regarding the use of credit information in insurance underwriting