

# The Power of Individual Equity

Sustaining the Life of the Collective

*Commitment Beyond Numbers*



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# The Power of Individual Equity

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**Premise**: individual equity is a vital component of a sustainable collective risk sharing arrangement

1. Ratemaking Statement of Principles
2. Trends in individual equity
3. The healthy relationship between individual equity and the collective
4. How does the market respond to more individual equity?

# Ratemaking Statement of Principles

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# Statement of Principles Regarding Property and Casualty Insurance Ratemaking (May, 1988)

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- Principle 2: A rate provides for all costs associated with the transfer of risk.
  - “Ratemaking should provide for all costs so that the insurance system is financially sound.” (collective)
- Principle 3: A rate provides for the costs associated with an individual risk transfer.
  - “Ratemaking should provide for the costs of an individual risk transfer so that equity among insureds is maintained. When the experience of an individual risk does not provide a credible basis for estimating these costs, it is appropriate to consider the aggregate experience of similar risks. A rate estimated from such experience is an estimate of the costs of the risk transfer for each individual in the class.” (Individual equity)

# Sustainable Collective Risk Sharing

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# Trends in Individual Equity

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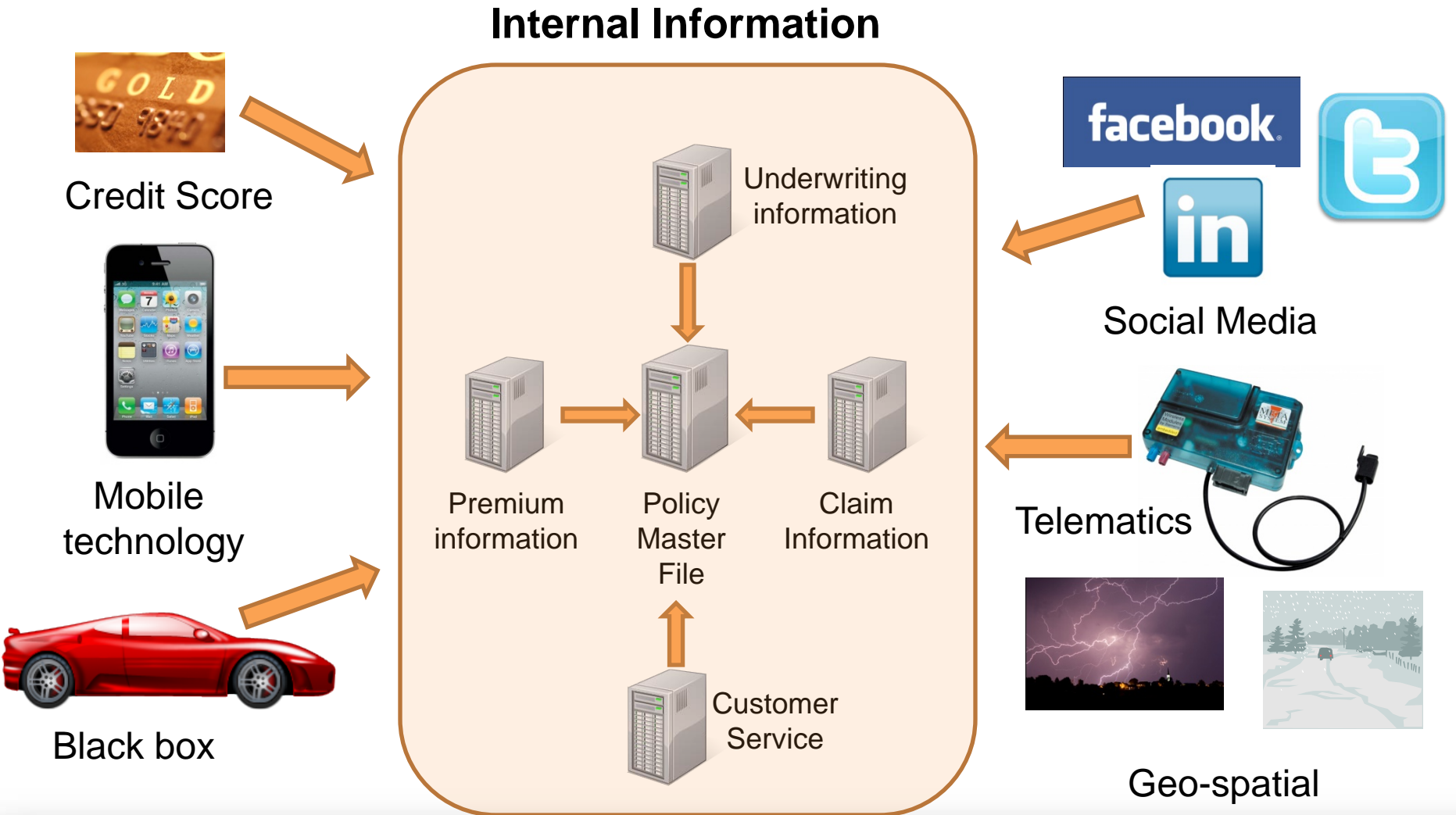
# Digital Power

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- Computing
  - Moore's law: power of computers is doubling every 18 months
- Communication
  - Fiber law: capacity of bandwidth is doubling every 9 months
- Storage
  - Disk law: doubling storage at the same cost every 12 months
- Content
  - Community law: content increases at a rate of  $2n$  when  $n$  is the number of people interacting

“Storytelling: Scientist’s Perspective“ – John Seeley Brown

# Data is Exponentially Increasing





# What is Predictive Analytics?

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- **Analytics**: the **science** of **logical analysis**
- **Analysis**
  - the separating of any material or abstract entity into its constituent elements
  - this process as a method of studying the nature of something or of determining its essential features and their relations
- **Science**: technical process
- **Logical**: reasonable, to be expected
- **Predictive**: future usefulness

# Trends in Individual Equity

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- Increase in Individual Equity
  - More sophisticated analytics techniques
  - Increased amount of information available for underwriting and rating
- How to Limit Individual Equity Trends?
  - Use less sophisticated data analysis techniques?
  - Limit the amount of information we use to understand the insured risk?

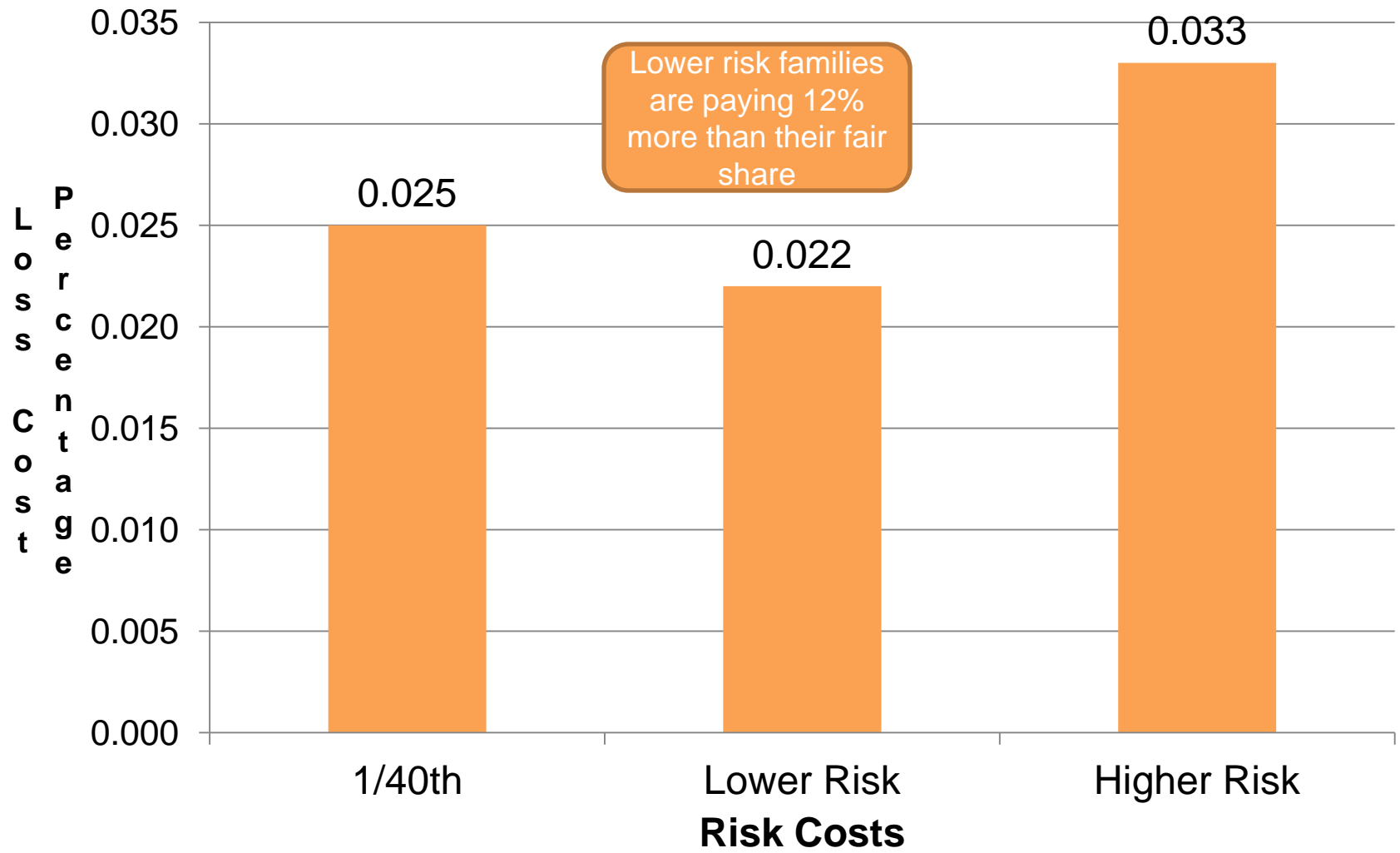
# The Healthy Relationship Between Individual Equity and the Collective

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# 40 Families

Higher risk families are paying 32% less than their fair share



# Three Primary Purposes of Risk Classification

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1. Protection of Program's Financial Soundness (Collective)
  - Without government mandates, overall market will find equilibrium
  - Minimize potential for anti-selection
2. Enhanced Fairness
3. Economic Incentive
  - Increased penetration
  - Efficiency (practical limitation)

Statement of Principles Regarding Property and Casualty Insurance Ratemaking (May, 1988)

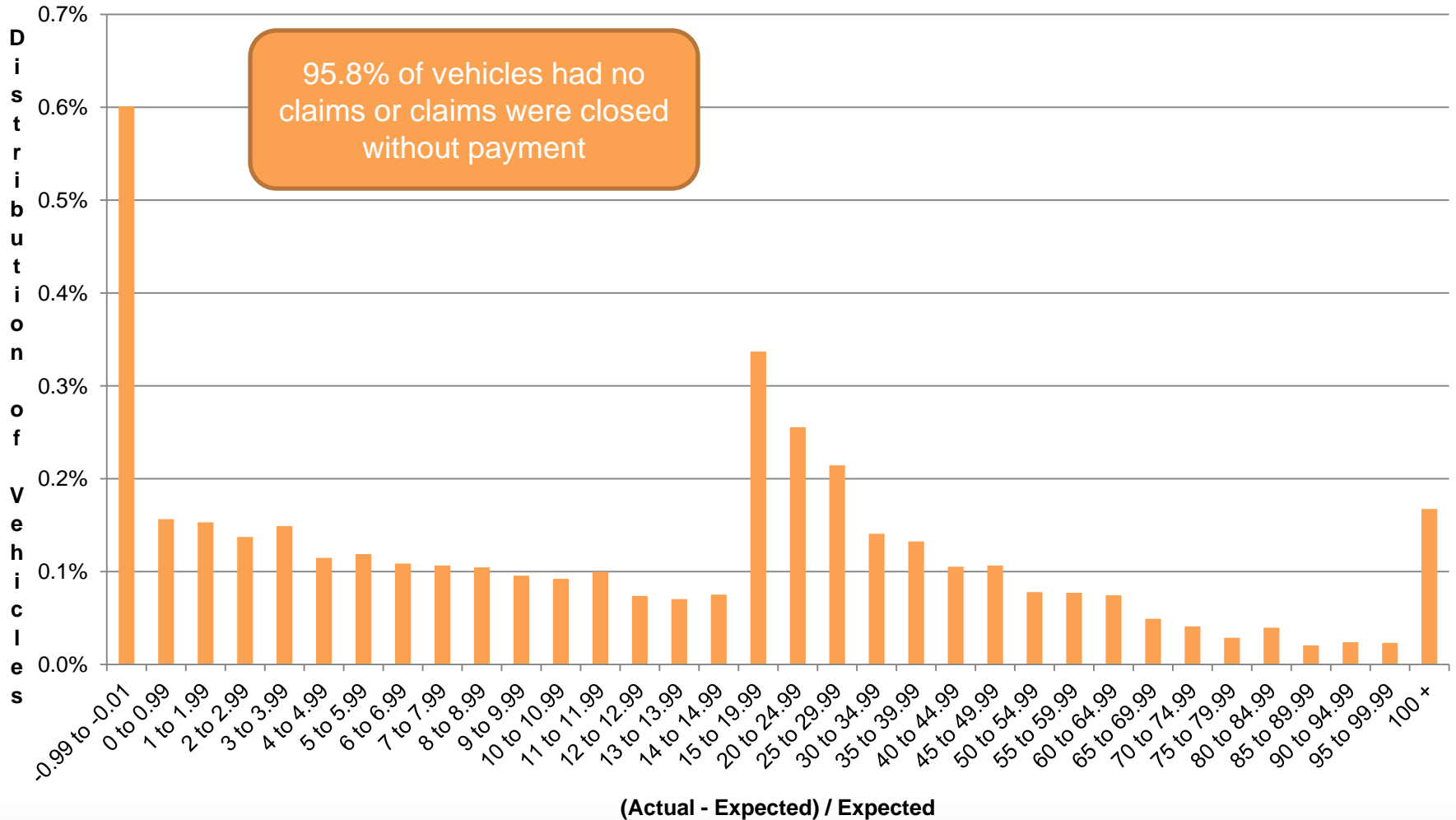
# There Is An Upper Bound to Individual Risk Classification

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- Increased individual equity  $\leftrightarrow$  loss certainty
- $y = h(X\beta) + \text{error}$ 
  - $h(X\beta)$  is the portion we are getting better at predicting
  - Still significant errors present (parameter, random)
- We will never be able to predict loss with certainty
  - DNA test  $\leftrightarrow$  certainty of death prediction
  - Telematics  $\leftrightarrow$  prediction of accident with certainty
- Furthermore, if these covered events ever could be predicted with certainty, the insurance mechanism would be altered significantly

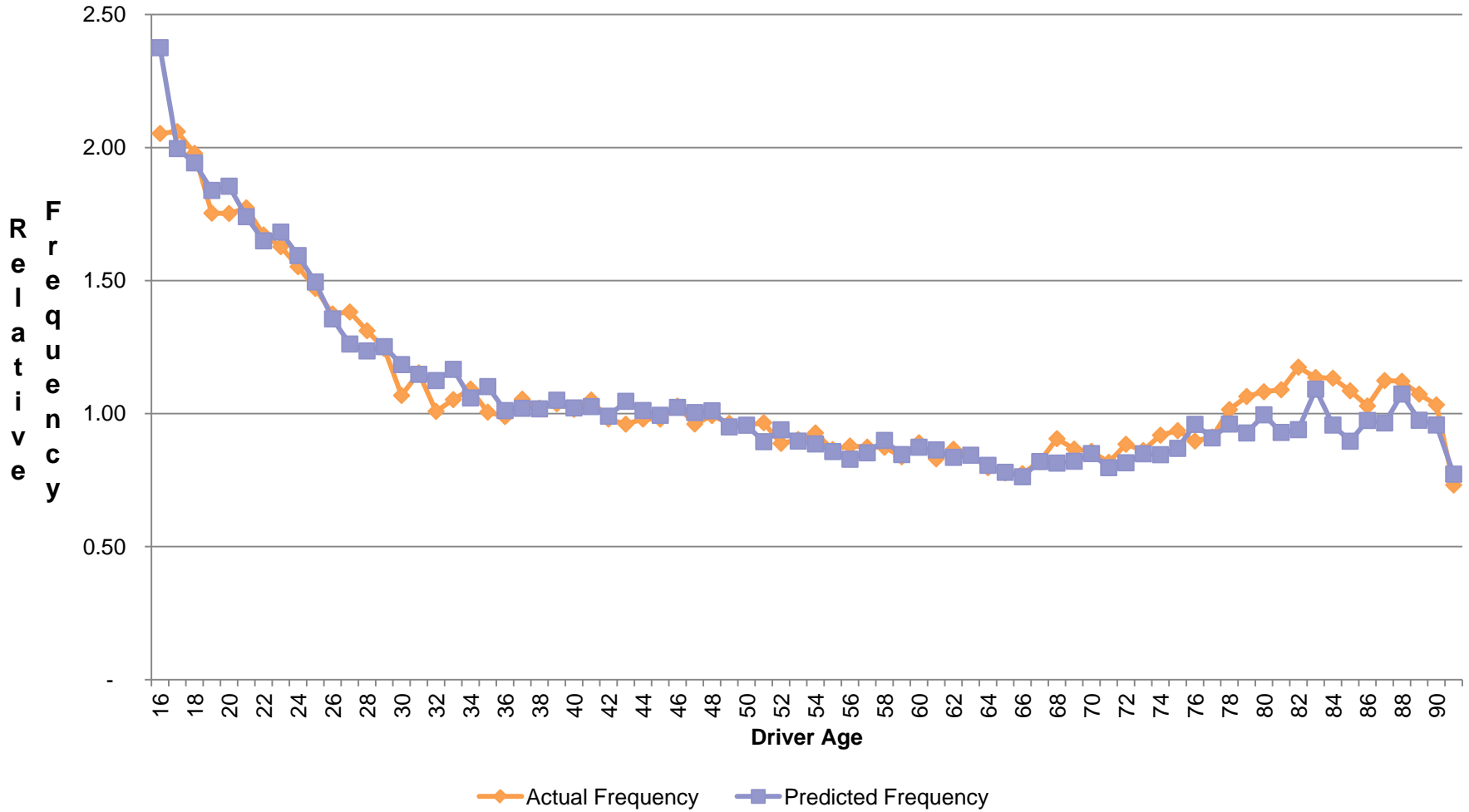
# Predicting Individual Expected Losses

## Distribution of Individual Vehicle Prediction Error



# Driver Age Predictions

## Driver Age





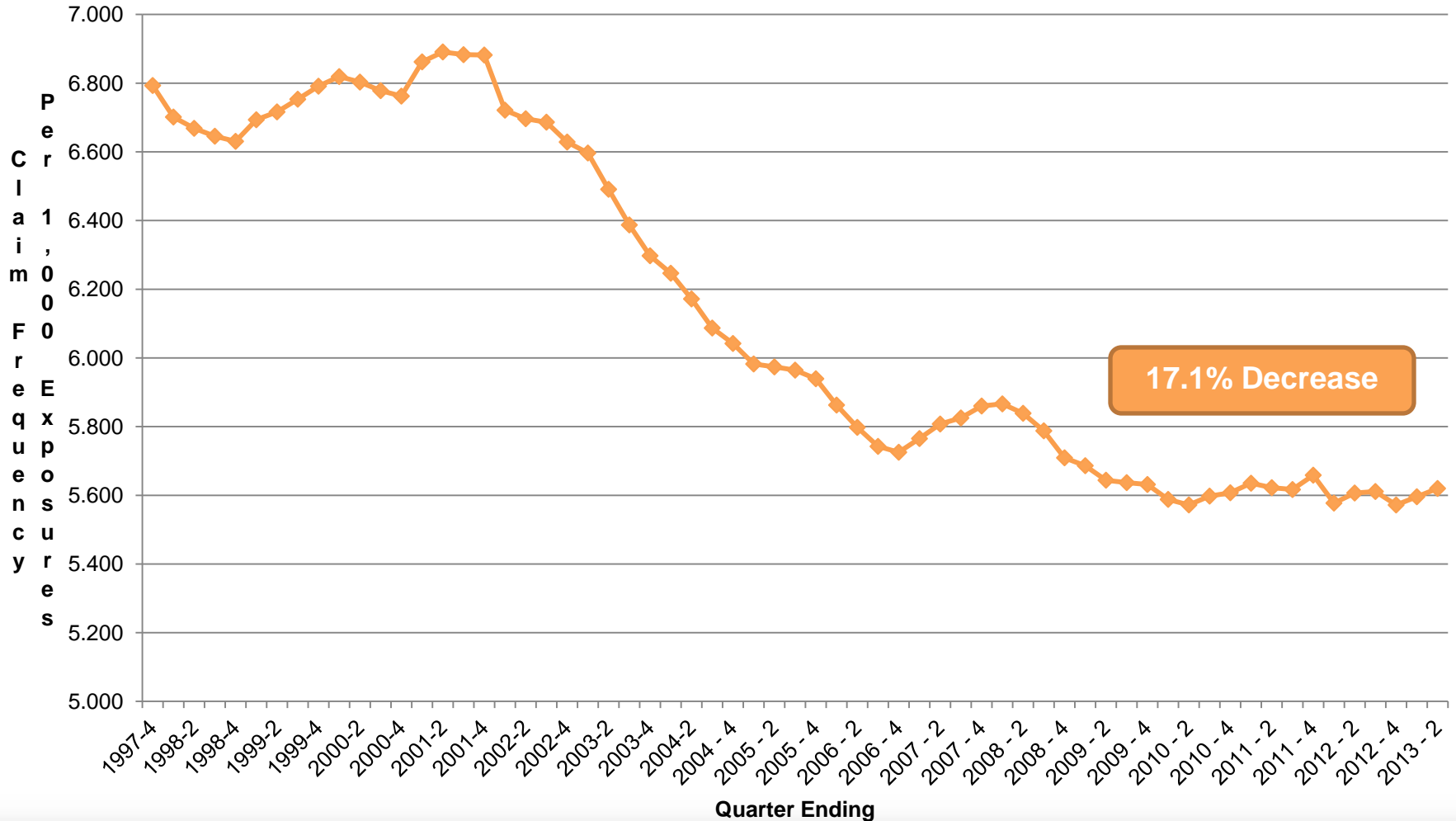
# How Does the Market Respond to More Individual Equity?

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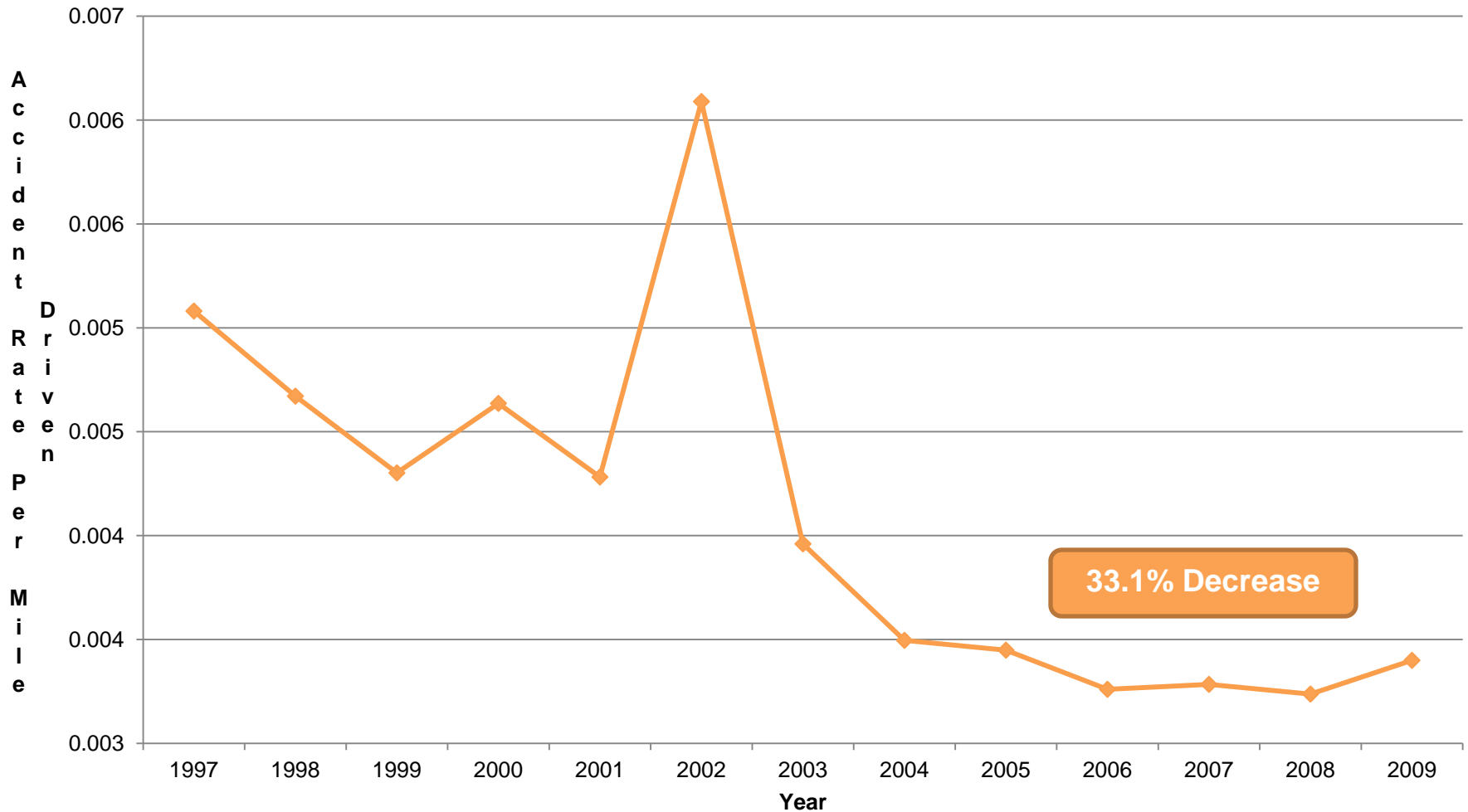
# United States Claim Frequency

## Industry Auto Collision Claim Frequency Trends



# Accident Rate Per Mile Driven

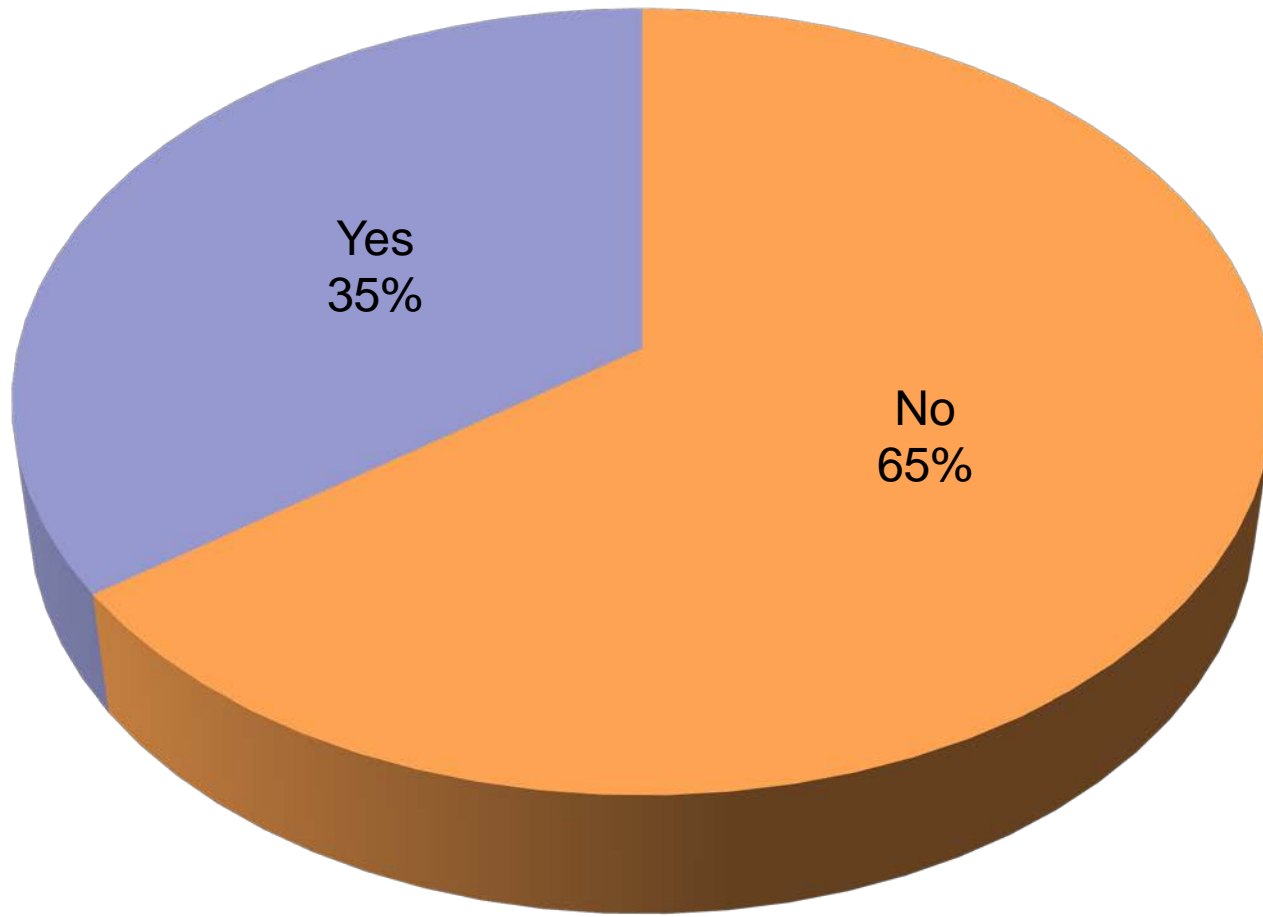
## Accident Rate Per Mile Driven



# Oregon 2006 Ballot Measure 42

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## Vote



# Increased Rate Regulation

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- “Revisiting the Lingering Myths about Proposition 103: A Follow Up Report” – Dr. David Appel, Milliman, September 2004
  - Conclusion is that Proposition 103-form regulation does not benefit consumers in the form of lower insurance rates
- “Consumers Pay More for Insurance Price Regulation; Get Little in Return” – The American Consumer Institute Center for Citizen Research
  - State-based price regulation tends to increase consumer prices
- **Deregulating Property Liability Insurance: Restoring Competition and Increasing Market Efficiency** - J. David Cummins
  - In the long run, rate regulation does not significantly reduce consumer prices. However, it generally reduces availability, increase price volatility and reduces the quality and variety of services available to consumers
- “What Works? A Review of Auto Insurance Regulation in America” – Consumer Federation of America
  - Conclusion: California style regulation was successful at causing rates to decrease by .3% over the last 25 years

# Usage Based Insurance

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- “Consumer Reactions to Usage Based Insurance” – Roosevelt Mosley, September, 2013
  - 76% of the positive comments by customers on Snapshot program are related to saving money
- “The Brink of a Revolution” – Robin Harbage, Alex Laurie, April 2011
  - Two-thirds of drivers would be willing to alter their behavior for a 10% discount
- JD Power Survey Report, 2013
  - Snapshot customers have a dramatically improved perception of their premium, but the Snapshot user experience is disappointing
- “Consumers and Usage Based Insurance: 2013 Consumer Research Results” – LexisNexis, August 2013
  - 76% of respondents see UBI as opportunity to reduce rates

# Conclusion: “The Answer is Profit”

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- Insurance companies are in the business of making a profit, but...
- Insurance consumers are in the business of making a “profit” as well
  - Increase profit by reducing expenditures
  - Customer are less concerned with individual equity vs. the collective, but more concerned about saving money
  - Lower cost insureds save money with more individual equity, higher cost insureds save money with more collective risk sharing
  - Examples: Oregon credit, telematics, insurance commercials
- As long as there is a profit to be made, the pressure for increasing individual equity will exist

# Thank You for Your Attention

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