

# The Market Cycle and Its Impact on Reserves

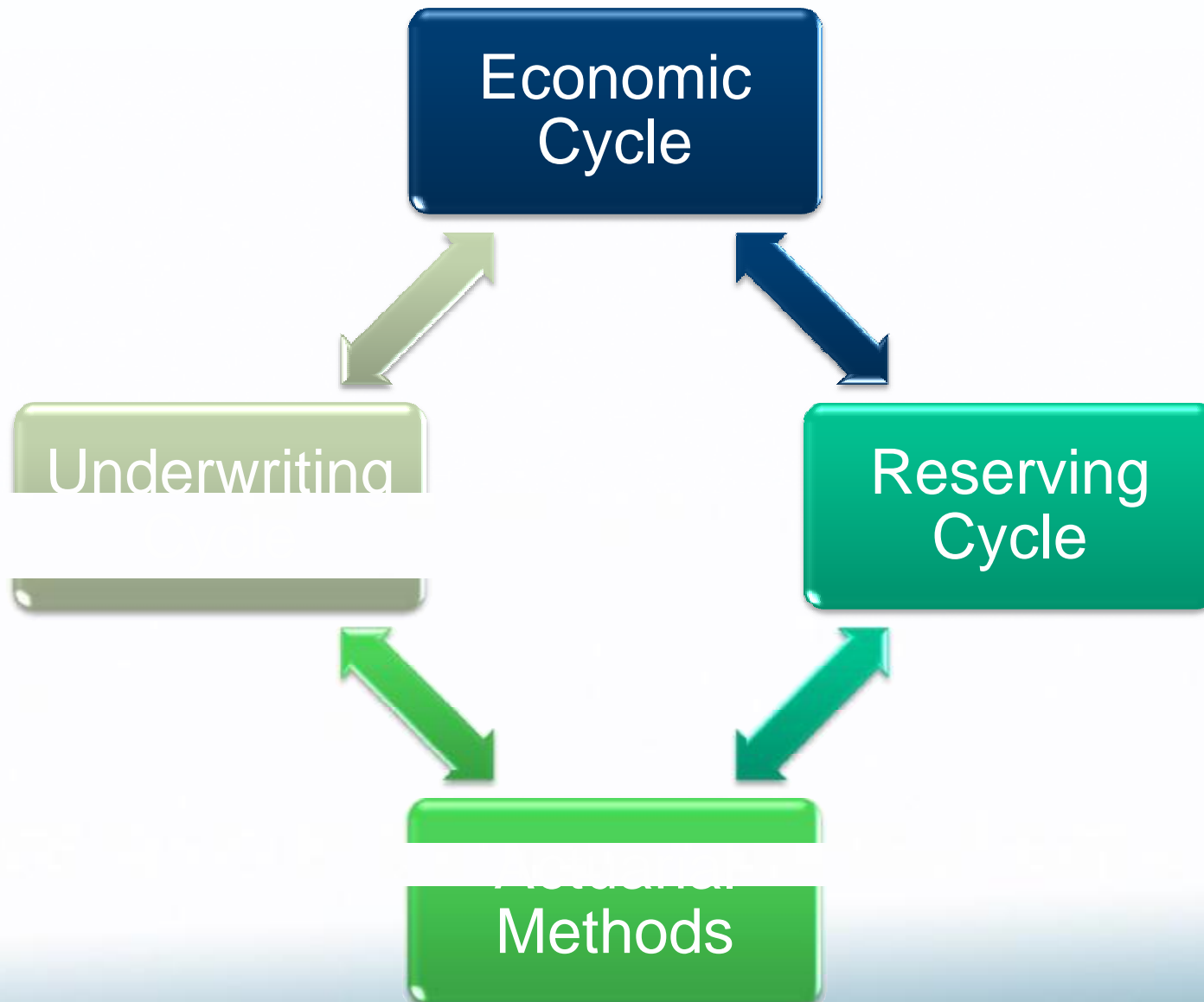
Prepared for: **Casualty Loss Reserve Seminar**

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Date: **September 16, 2013**

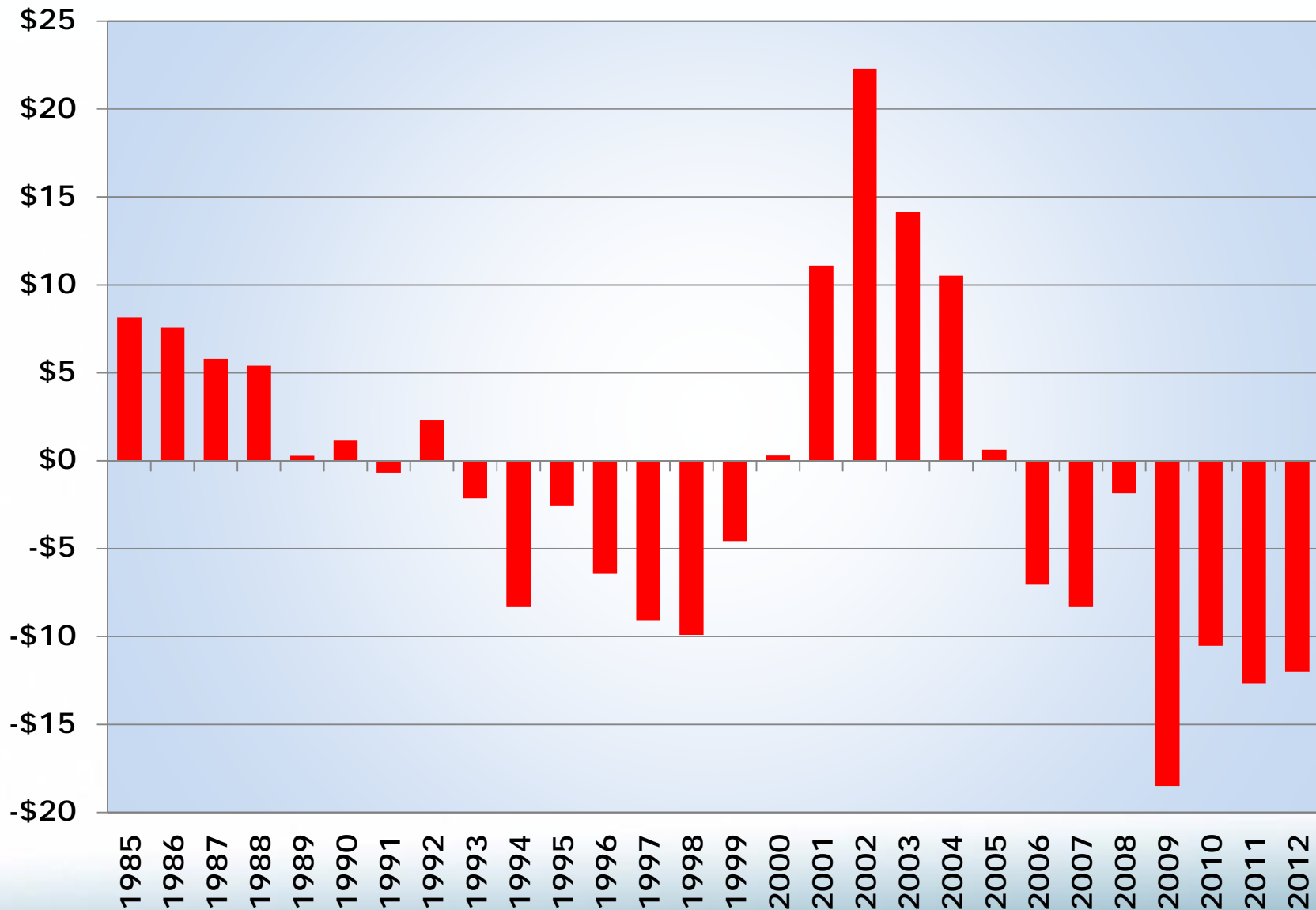
# Overview



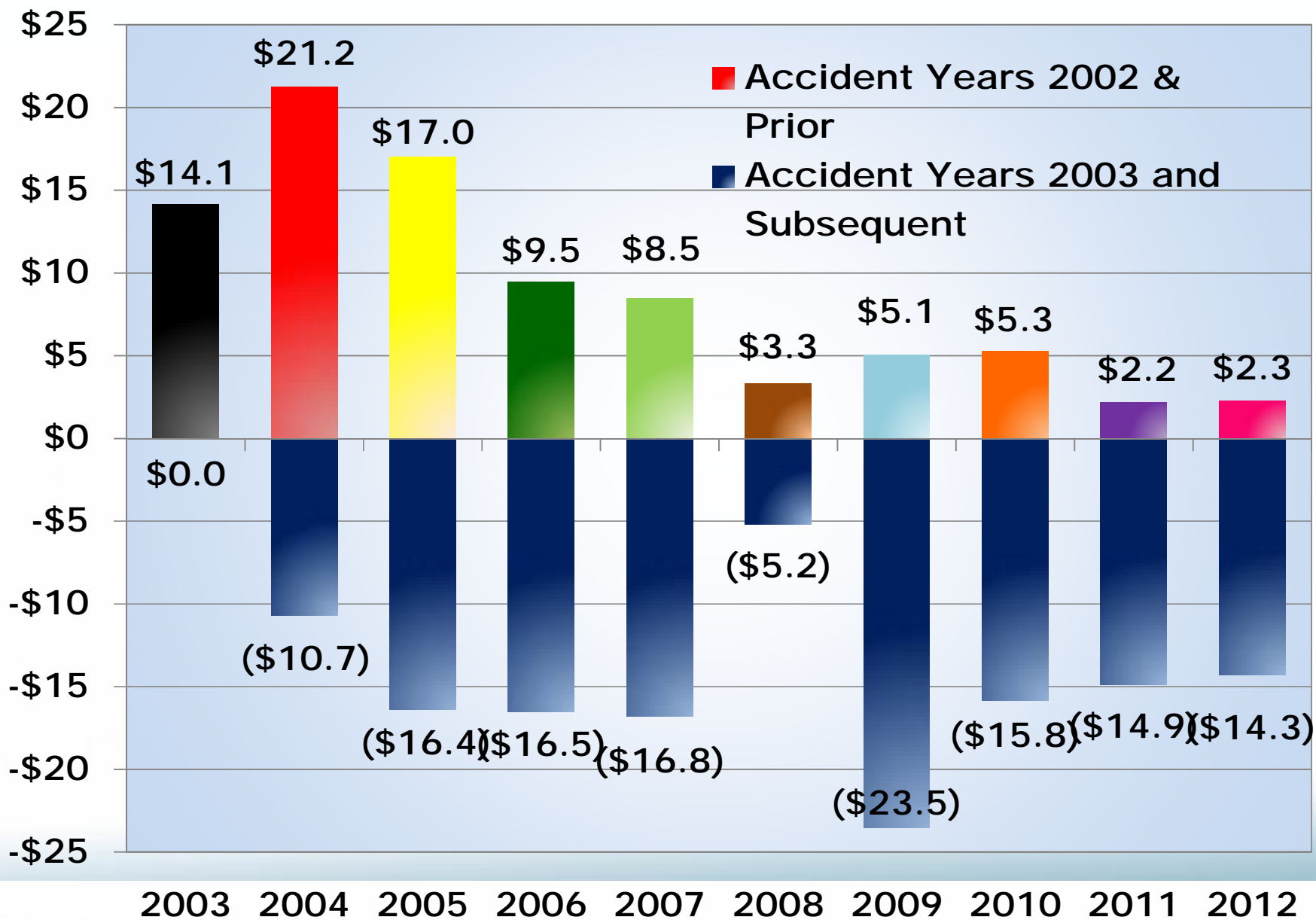
Discussion

# THE RESERVING CYCLE

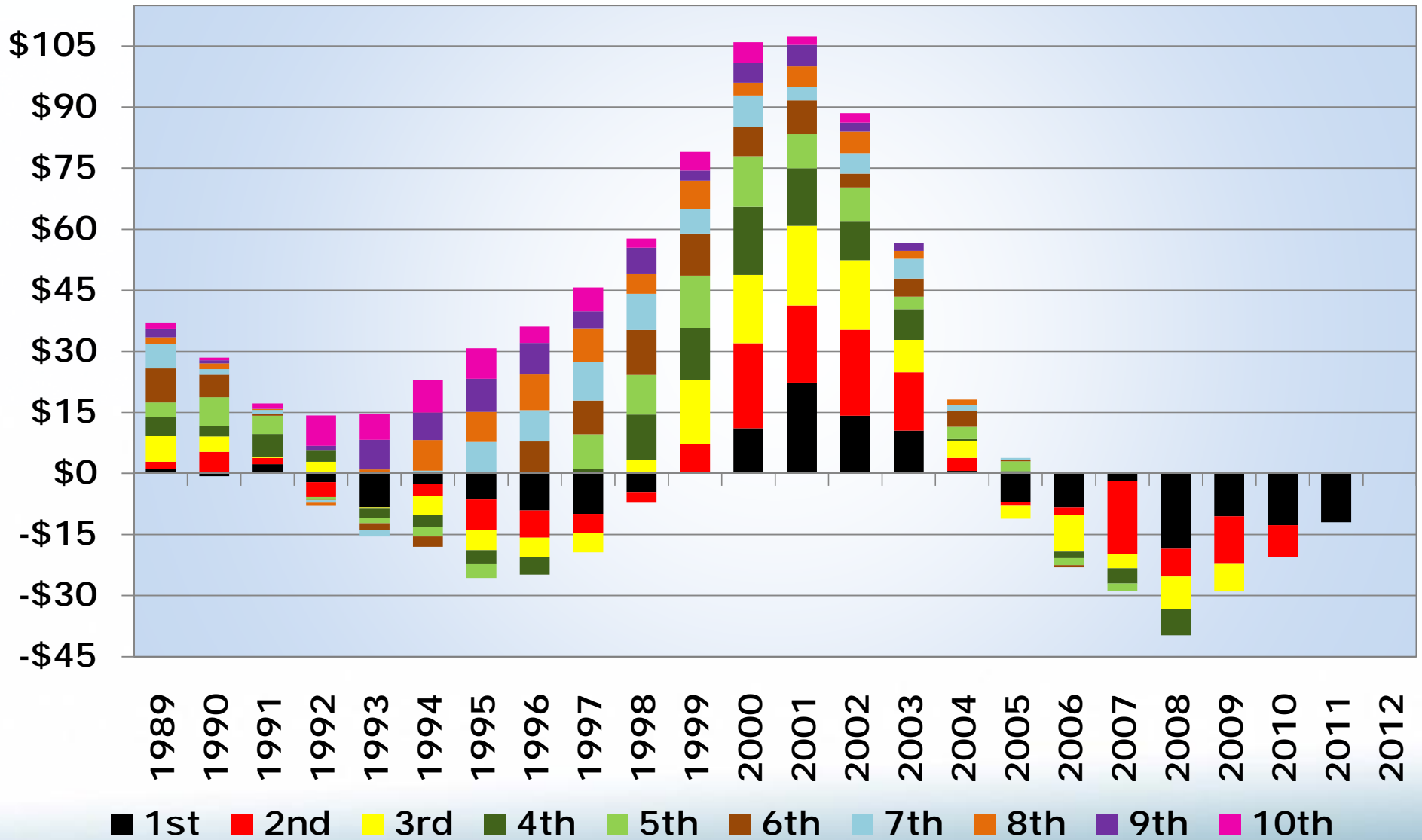
# Reserve Development by Calendar Year (\$B)



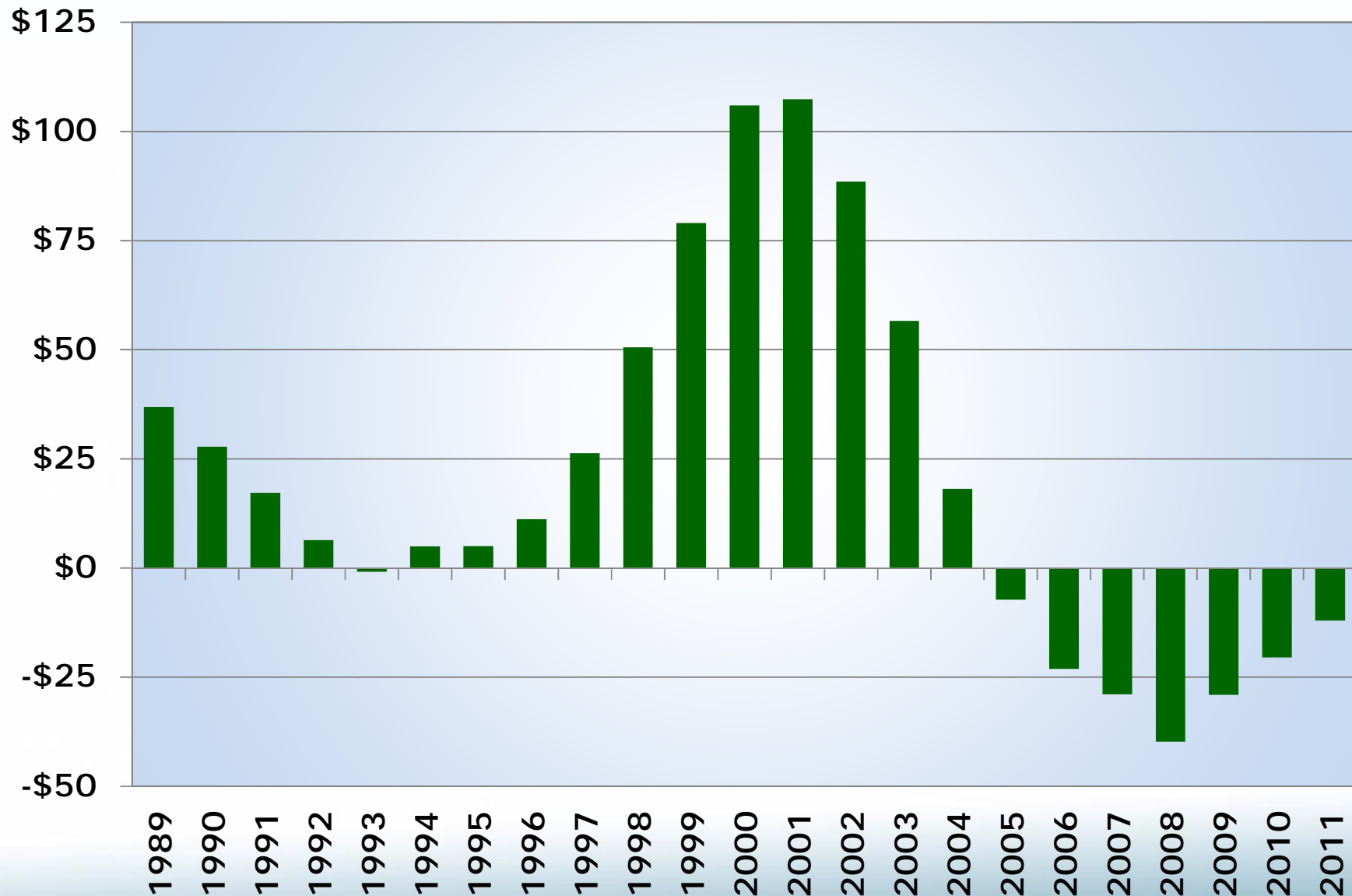
# Reserve Development by Calendar Year (\$B)



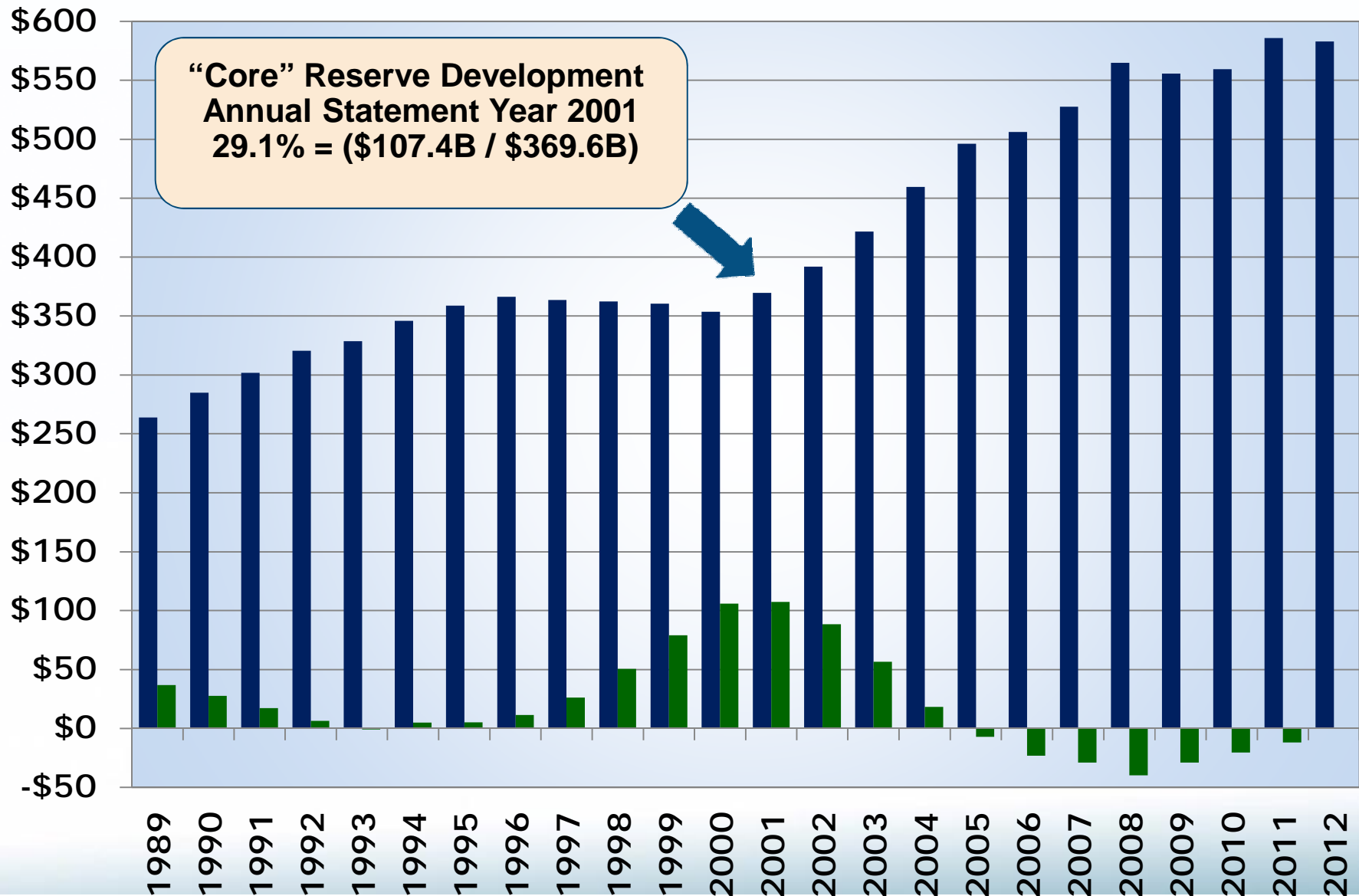
# Reserve Development by Statement Year (\$B)



# Reserve Development by Statement Year (\$B)

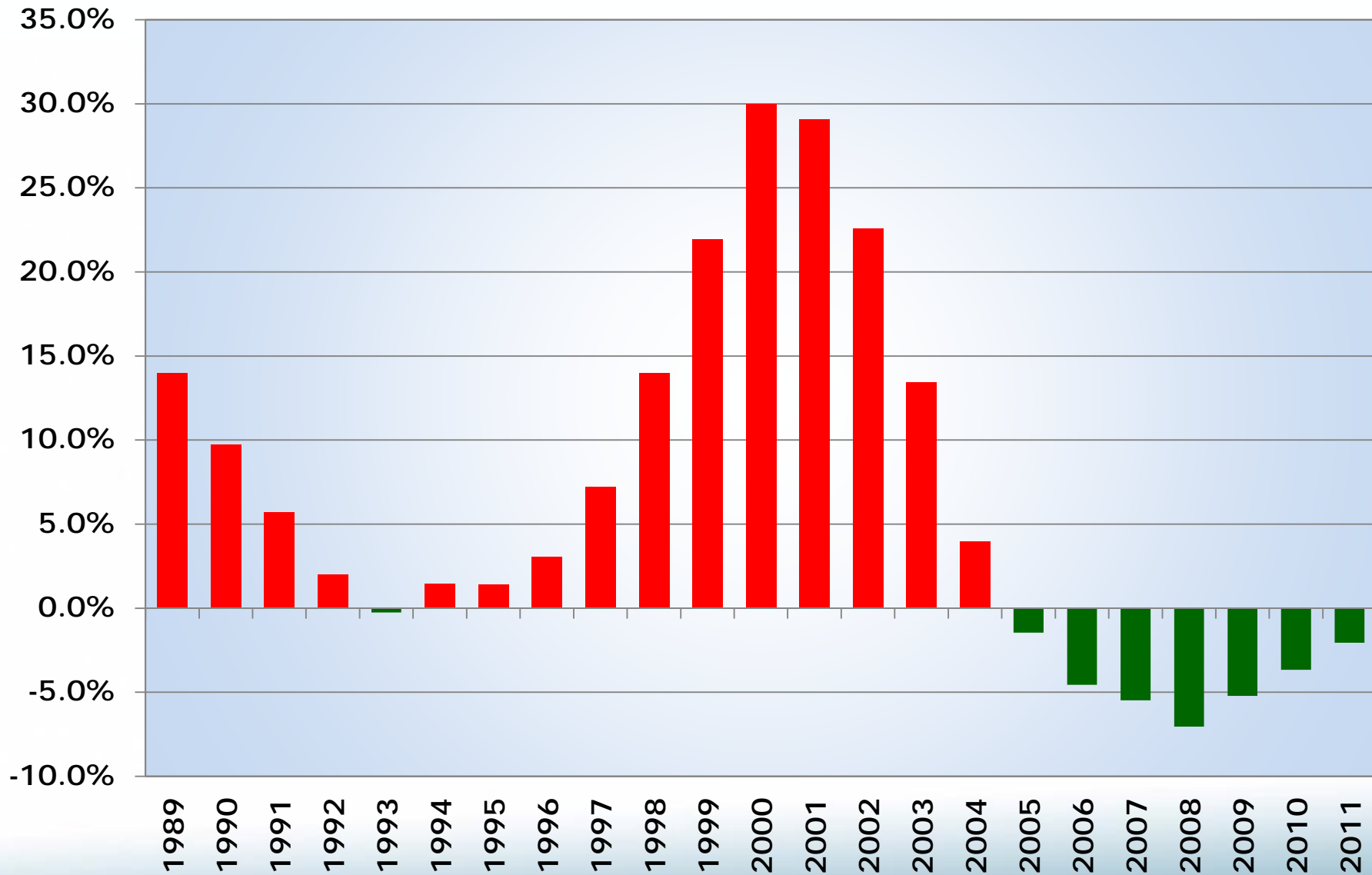


# Carried Reserves and Subsequent Development (\$B)





# “Core” Reserve Development by Statement Year



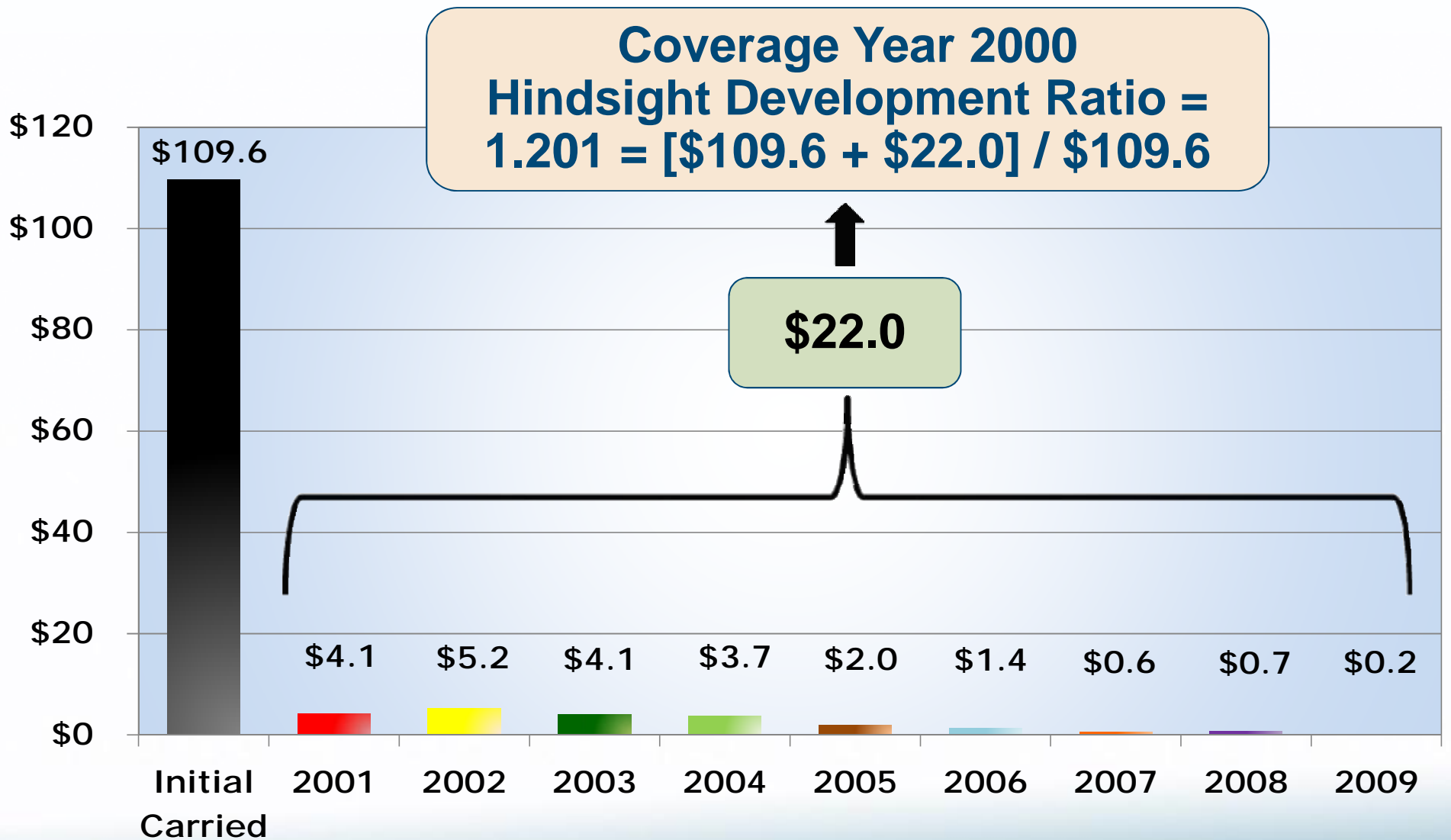


Hindsight Development Ratios

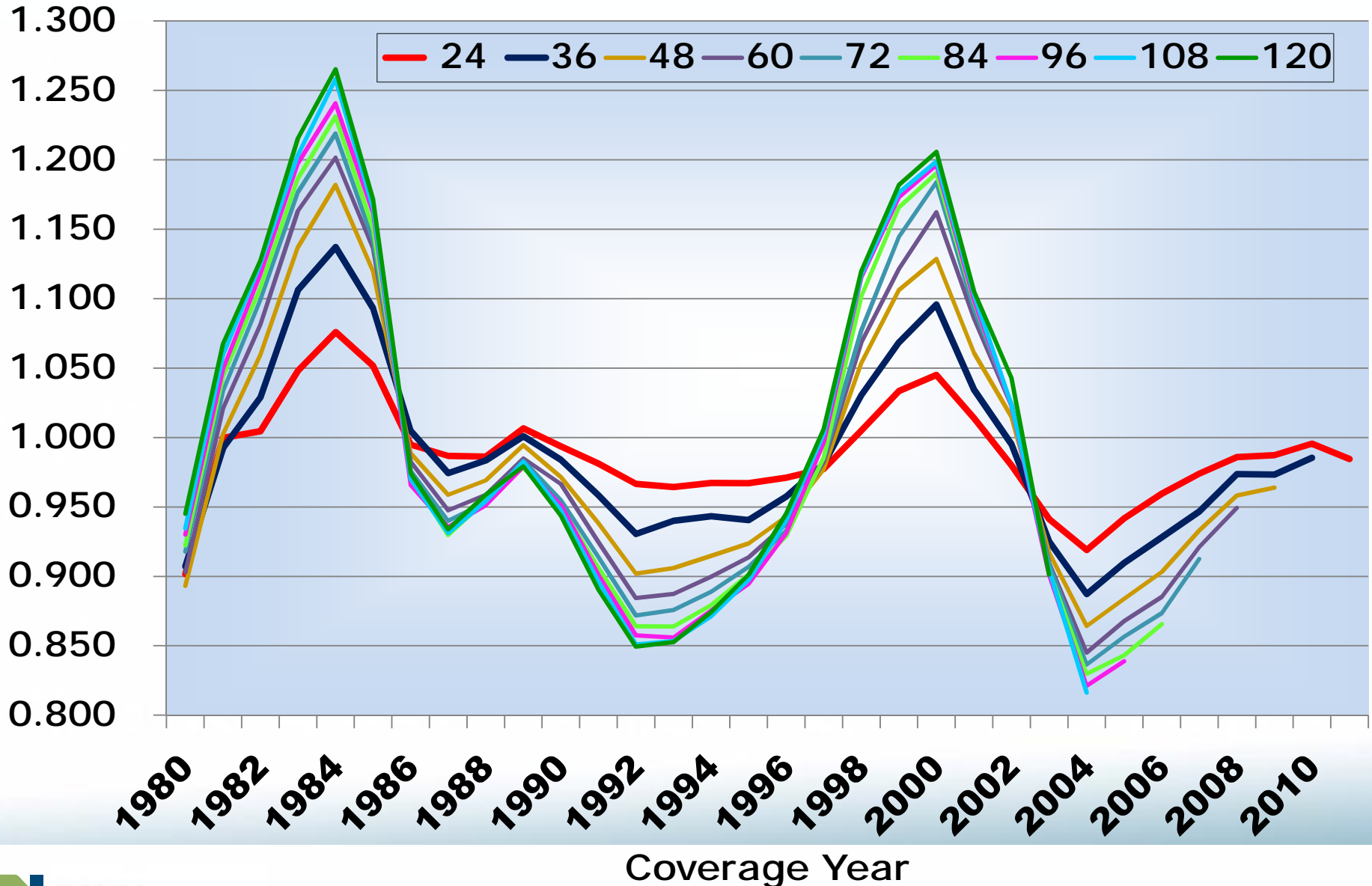
# THE RESERVING CYCLE



# Hindsight Development Ratio – Example (\$B)



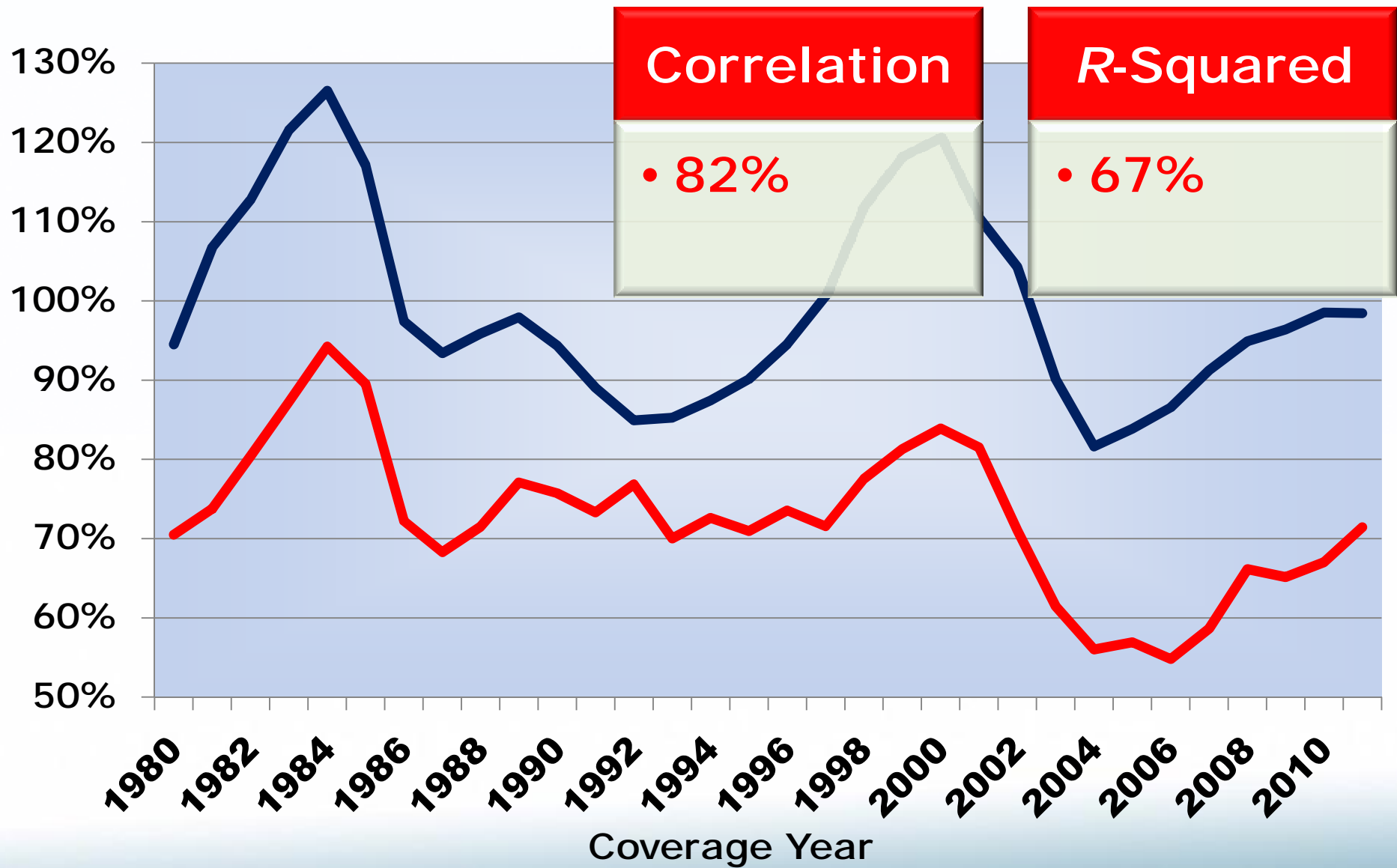
# Hindsight Development by Evaluation Month



Analysis

# THE UNDERWRITING CYCLE

# The Underwriting and Reserving Cycles



# *The Pricing and Reserving Relationship*

## Ø Reserving as a Response to Pricing

§ Reinsurance Retentions

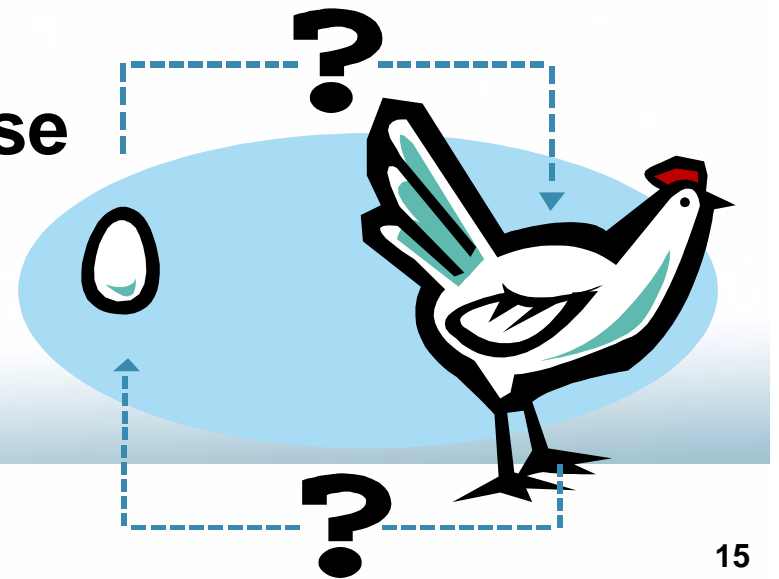
§ Policy Limits

§ Mix of Business, e.g., Self-Insured Exposure

## Ø Pricing as a Response to Reserving

§ Price to Write More/Less

## Ø Common Underlying Cause

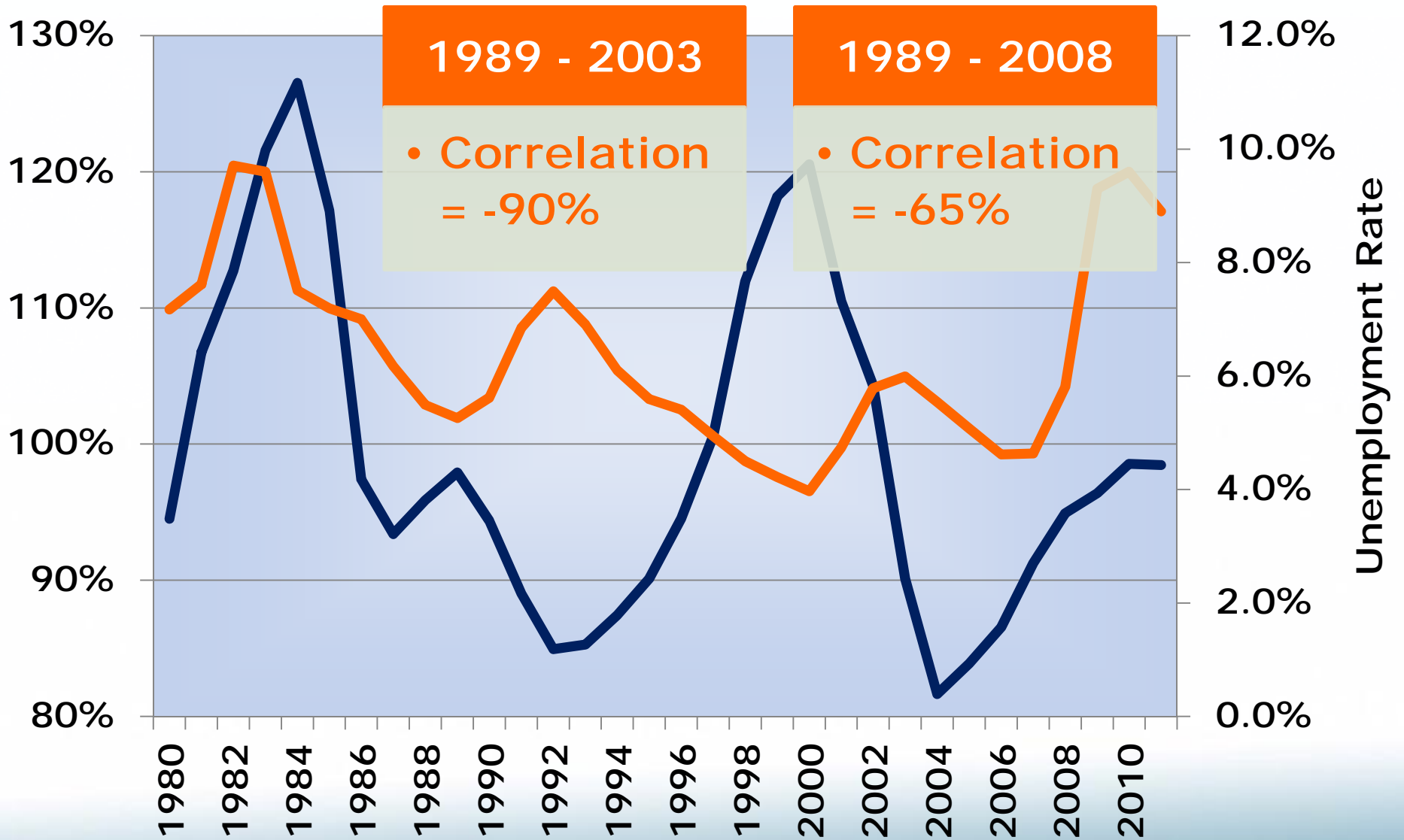


Analysis

# THE ECONOMIC CYCLE



# The Economic Cycle and the Reserving Cycle



# *What Happens When the Economy Is Booming?*

## Ø “More to Lose”

§ More driving, producing, working, etc.

## Ø Inflation – may be higher

## Ø “Supply” is high

§ Supply = Capital

§ Drives Down Pricing

§ But This Takes A Long Time...

Approach to Analysis

# ACTUARIAL METHODS

# Approach to Analysis

## Ø Industry Aggregate Triangles by LOB

Statement Years	Data Source
1984 – 1988	Best's Aggregates & Averages (1985 – 1989 editions)*
1989 - 1995	Best's Aggregates & Averages (1990 – 1996 editions)**
1996 - 2012	SNL Financial LC

\* No 10 year triangles included (single evaluation point, moving to 6 year triangles over time)

\*\* 10 year triangles included

## Ø Hindsight Development Ratios

§ Same Process as for Carried Reserves

§ Based on Actuarial Indications; Formulaic Approach

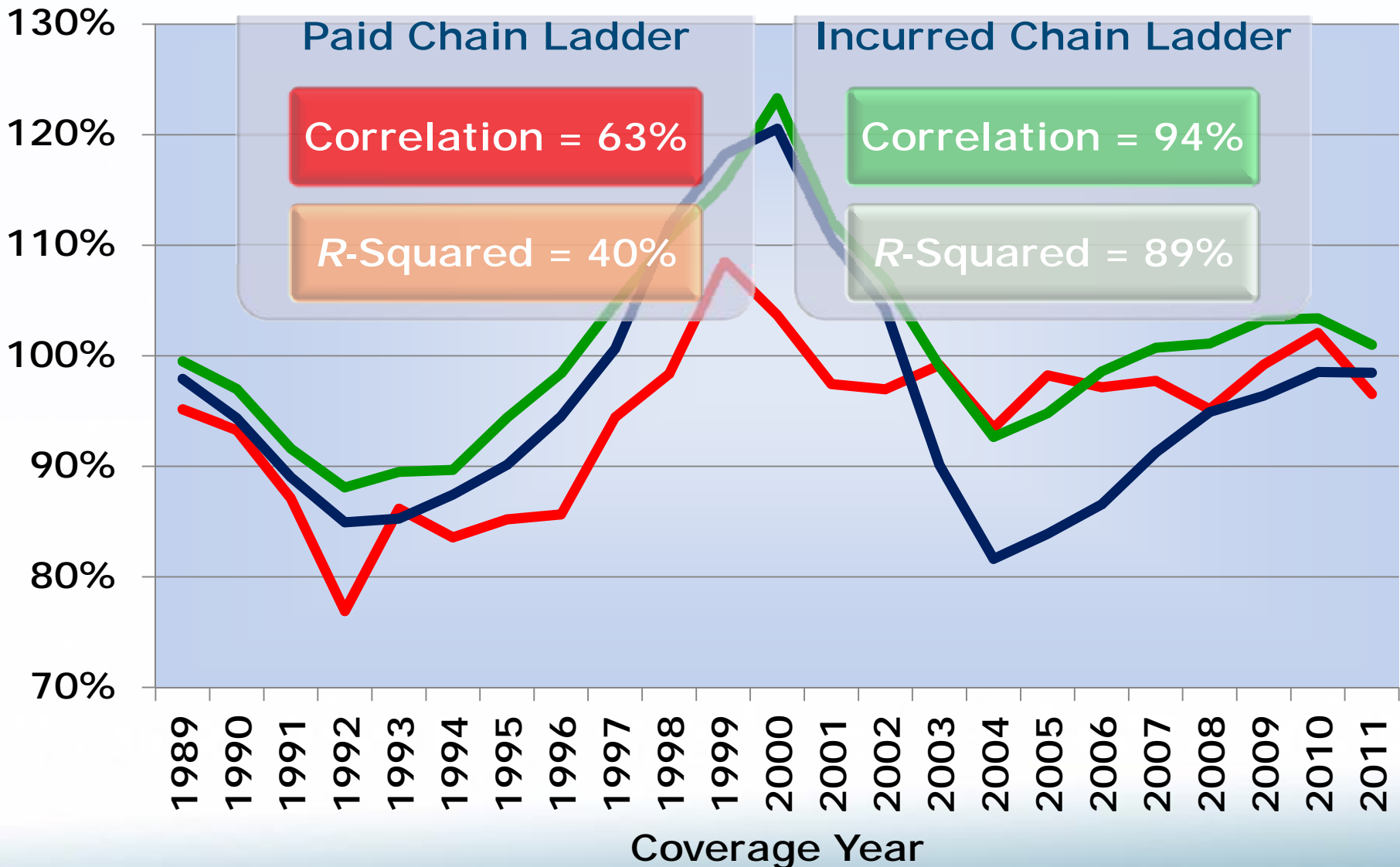
# Actuarial Methods

- § Chain Ladder – 10 (Paid/Incurred WA, L7,L5, L3, L1)
- § Incremental – 5 (Paid/Incurred Incr. Add/Mult, Backwards Recursive)
- § Least Squares – 4 (variants on Brosius)
- § Count-Based – 5 (BS, Claim Closure, HS OS unpaid/IBNR, FS)
- § Loss Ratio – 3
- § Composite – 24 (MCL, BF, Benktander, Cape Cod, Regression, Trend/CPI Adj., Case Reserve + variations of each)
- § Total = 51 methods

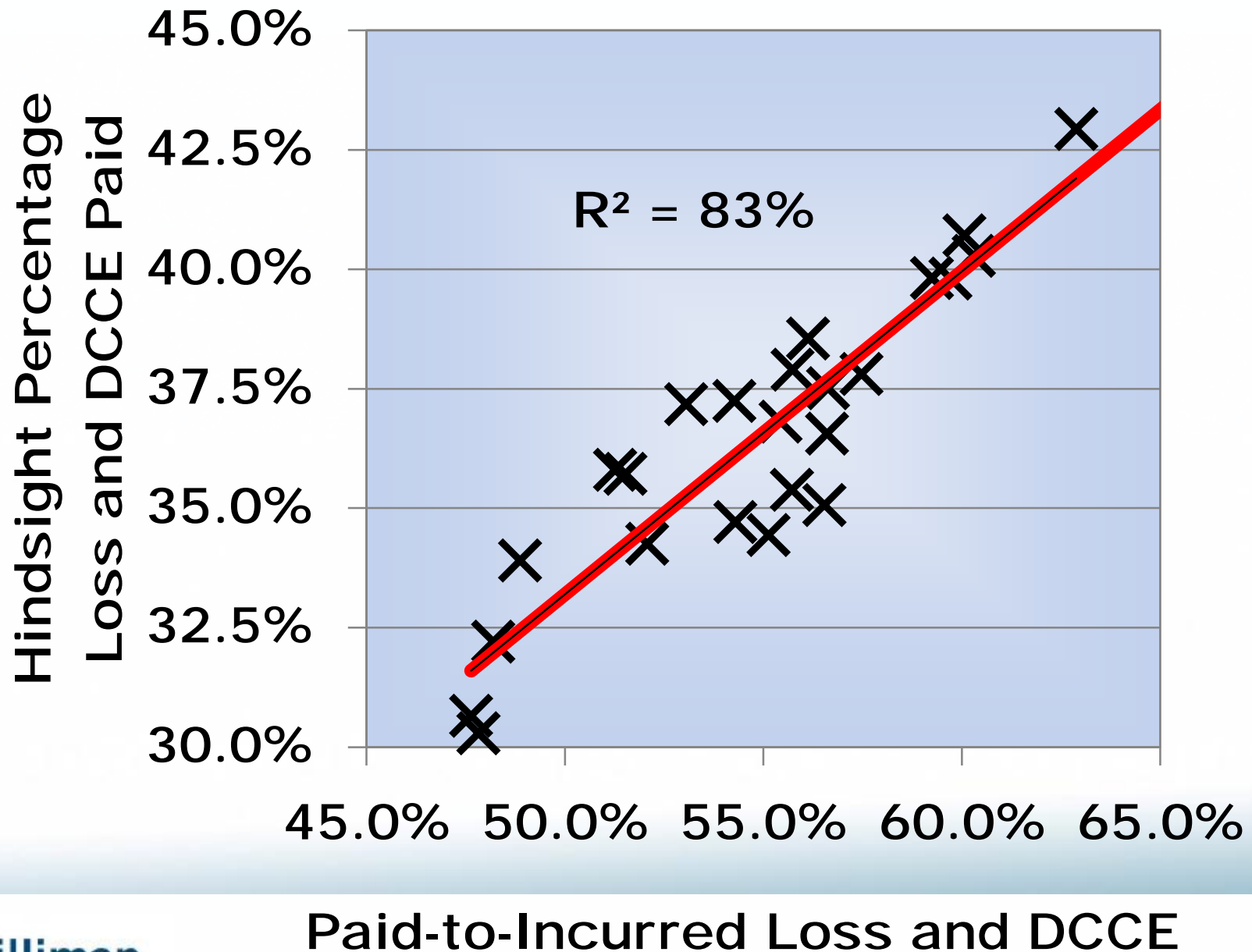
Hindsight Development Ratios

# ACTUARIAL METHODS

# Hindsight Development Ratios

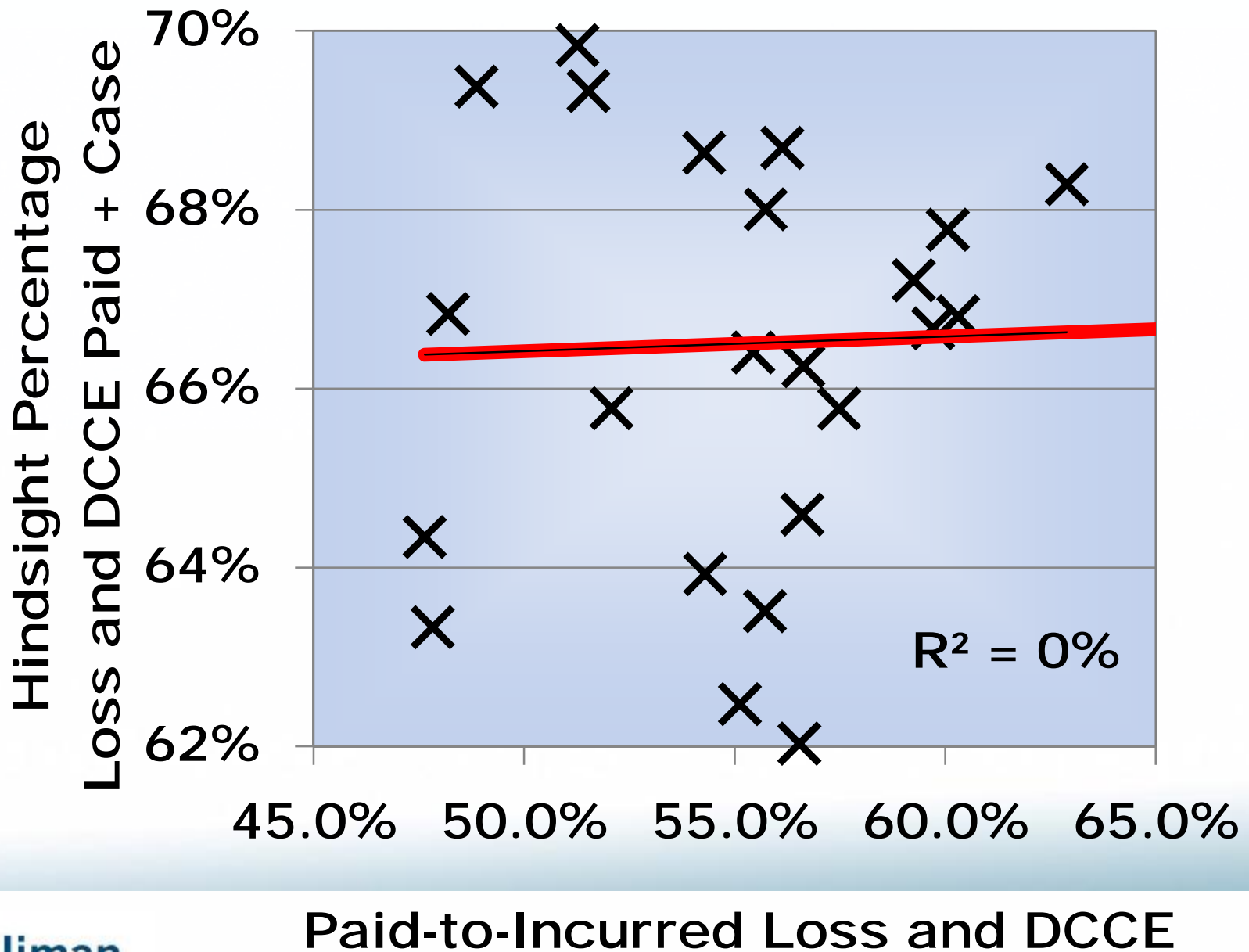


# Projecting Paid Development Factors

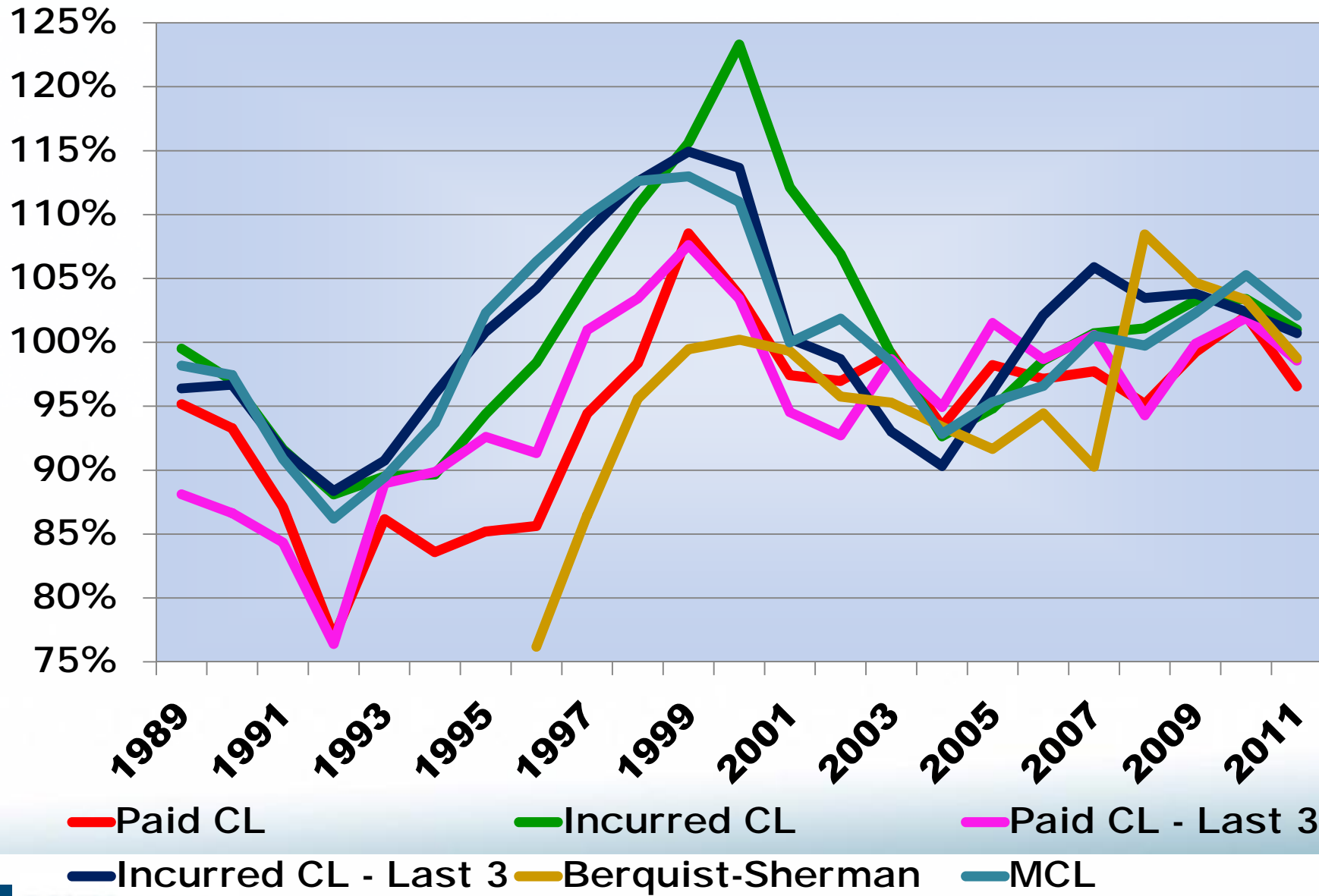




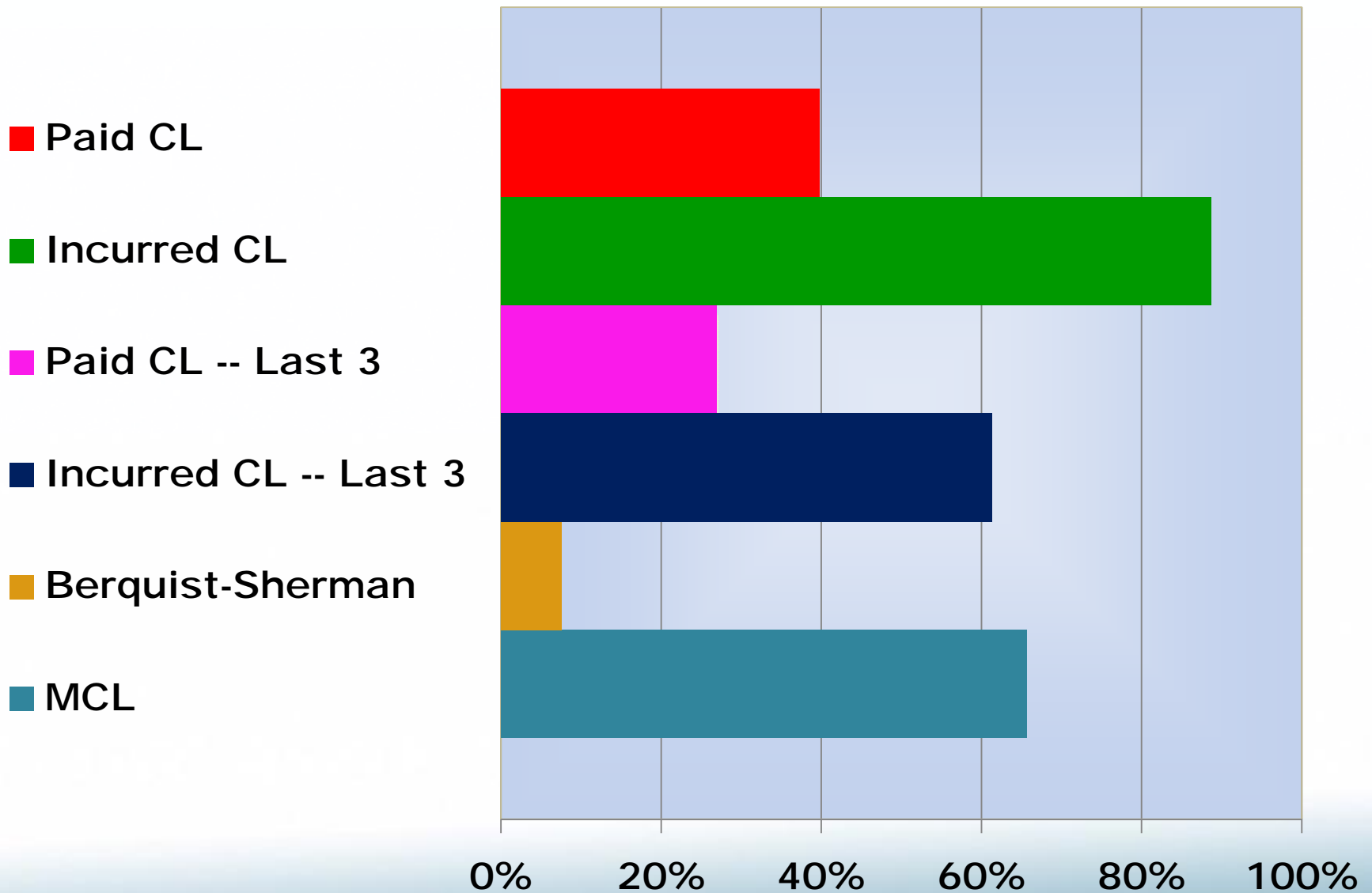
# Projecting Incurred Development Factors



# Other Actuarial Methods



# R-Squareds of Method HDRs with Carried HDRs



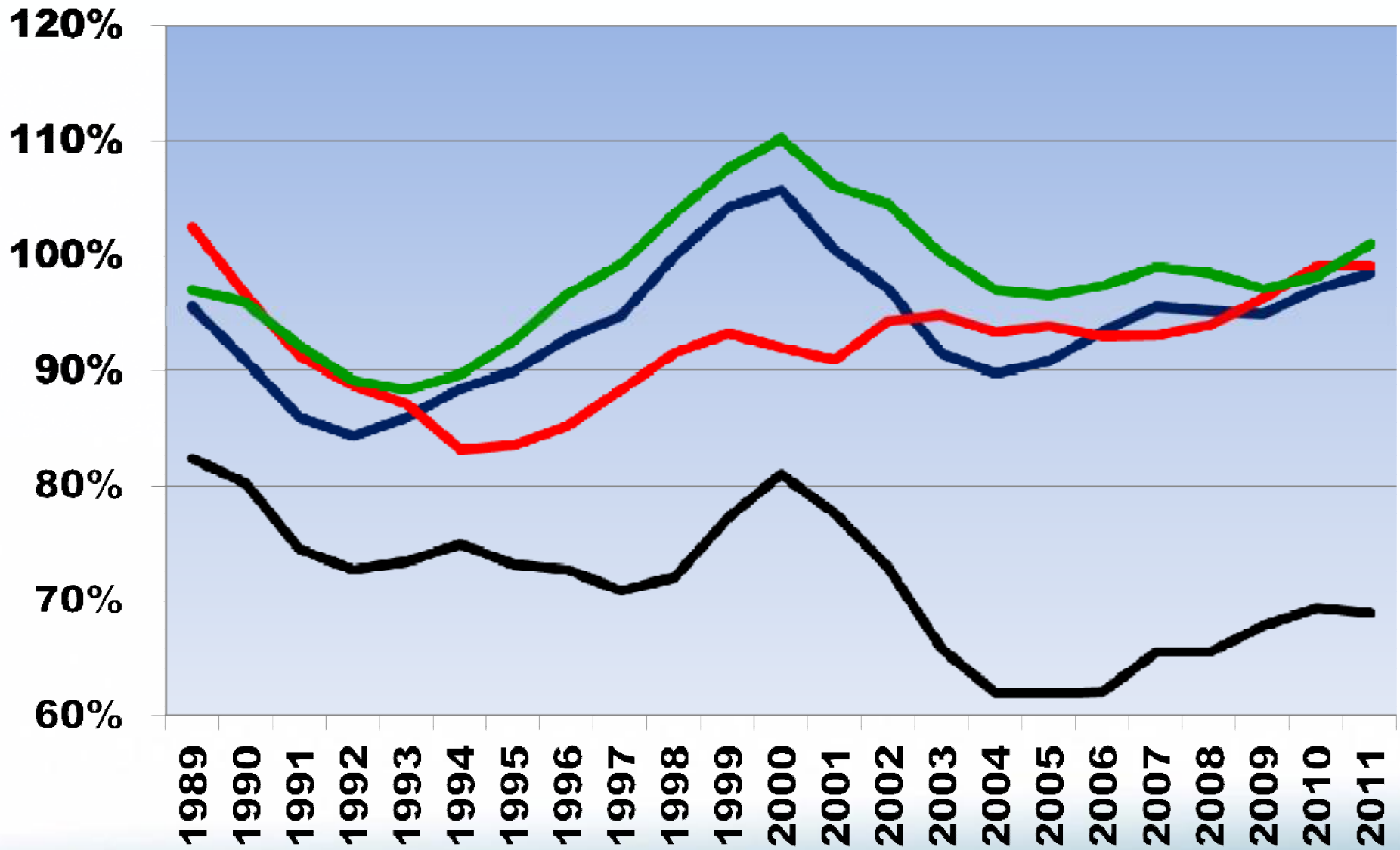


Results by Line of Business

# ACTUARIAL METHODS

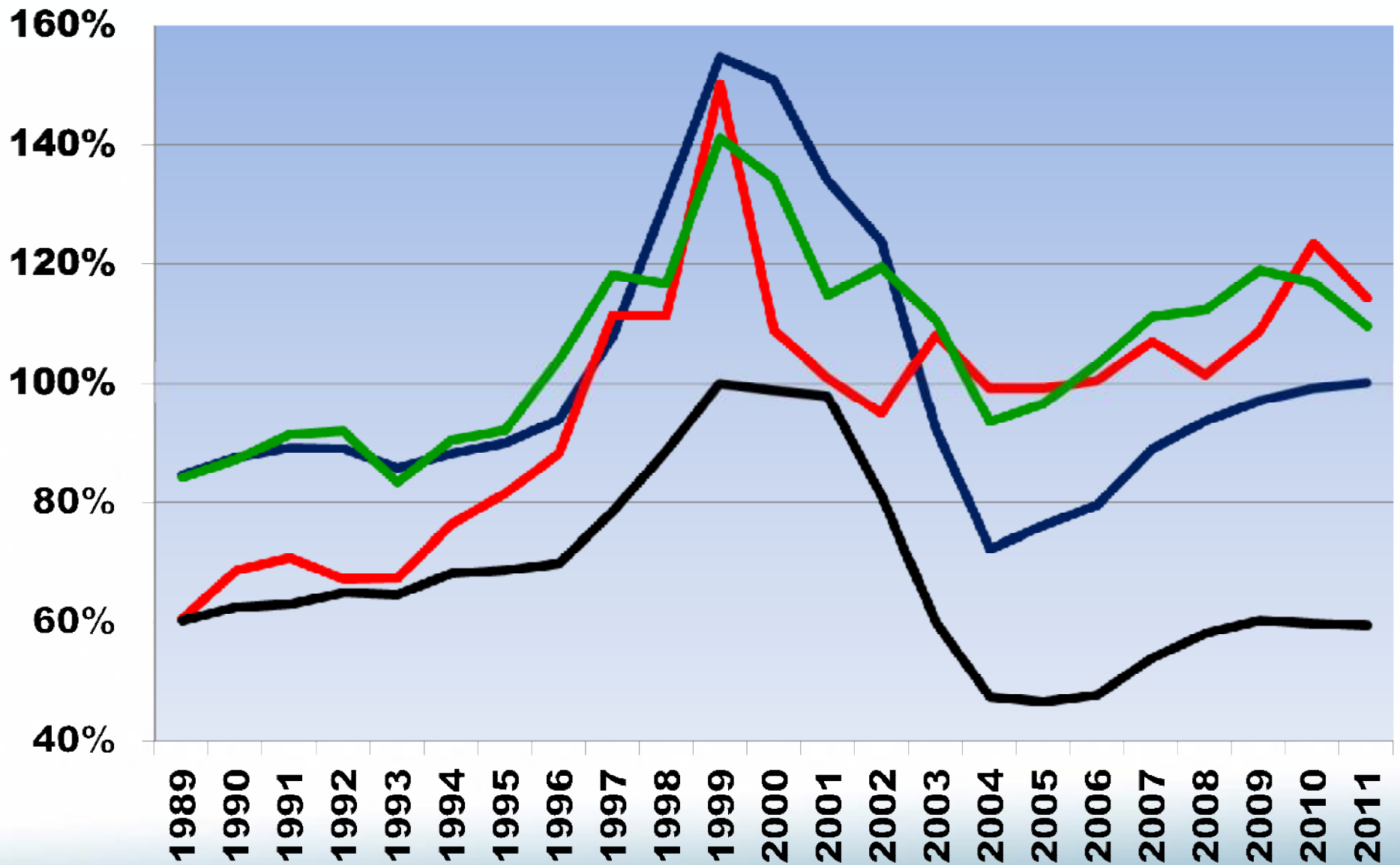


# Auto Liability – Hindsight Development Ratios

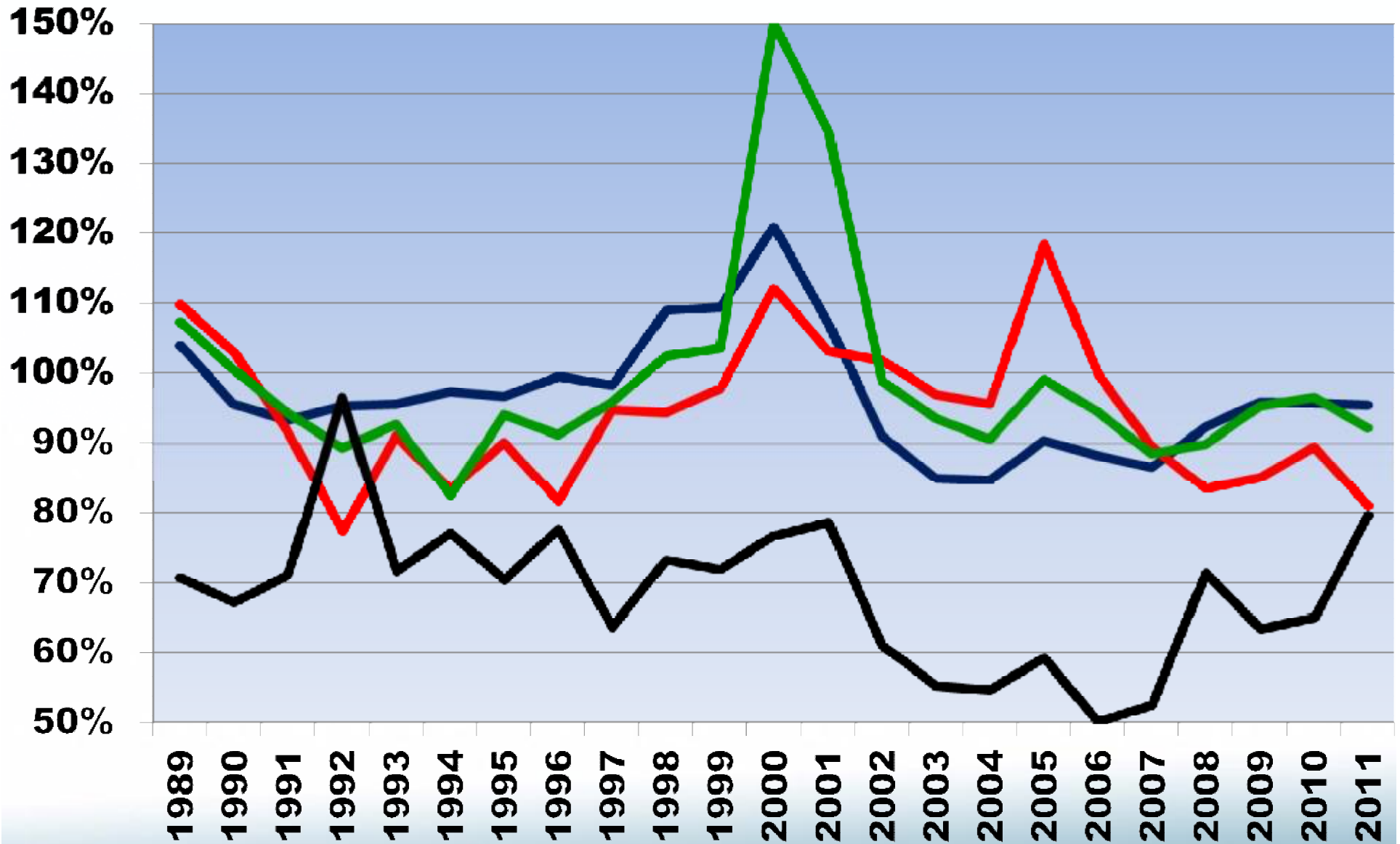


■ Carried 
 ■ Paid CL 
 ■ Incurred CL 
 ■ Loss & DCCE Ratio

# Other Liability – Hindsight Development Ratios



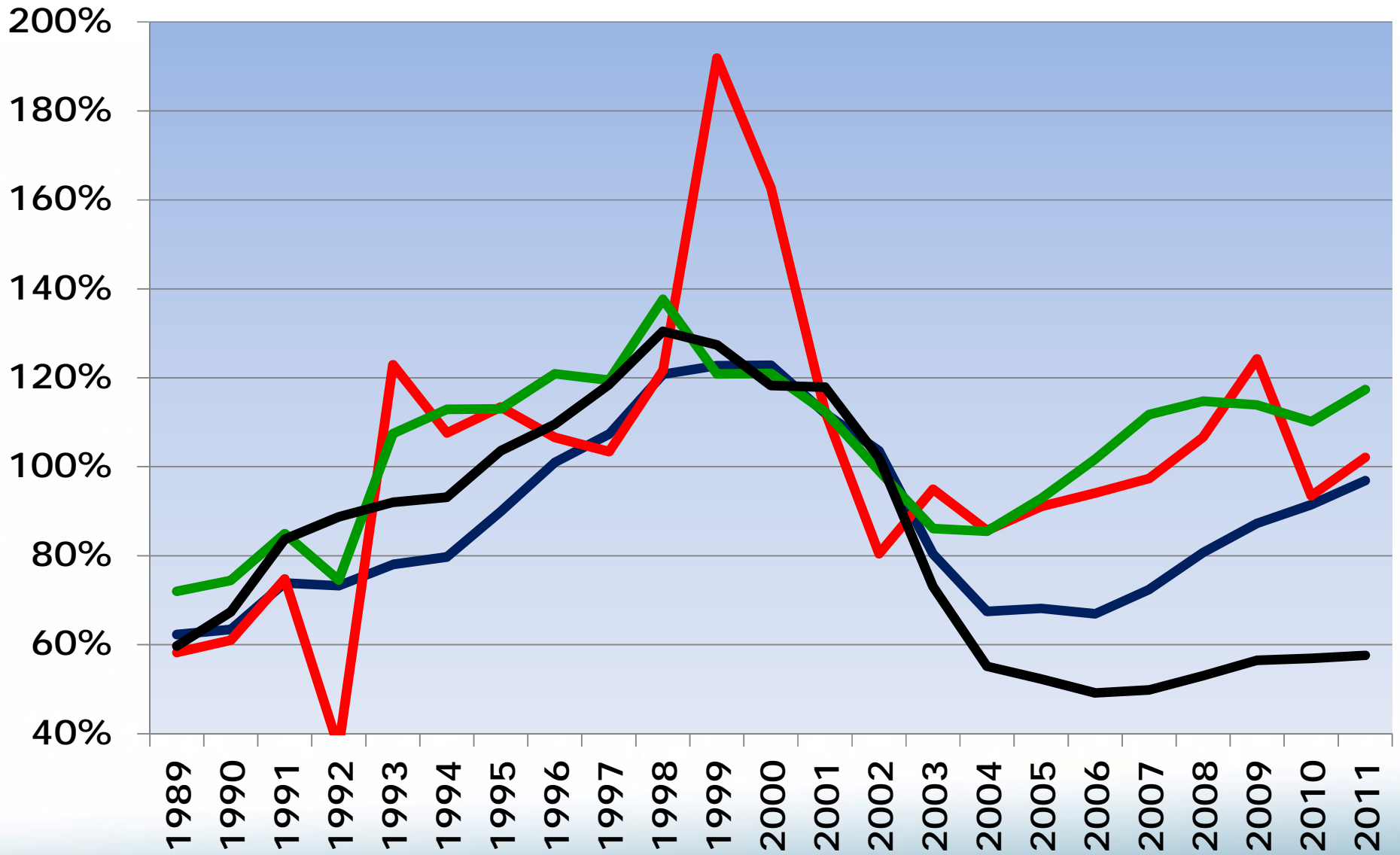
# Homeowners – Hindsight Development Ratios



■ Carried    
 ■ Paid CL    
 ■ Incurred CL    
 ■ Loss & DCCE Ratio

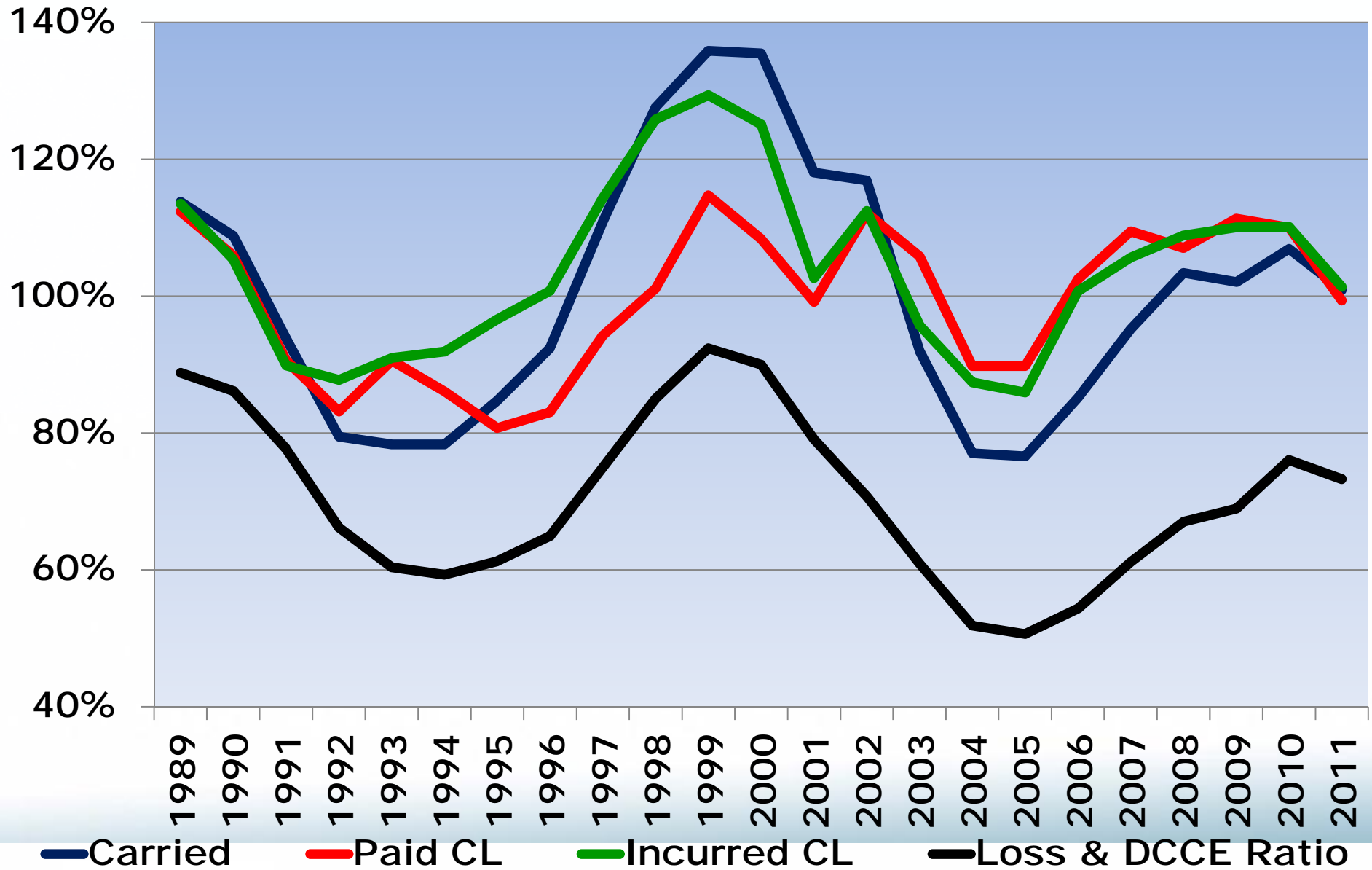
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# Medical Liability – Hindsight Development Ratios

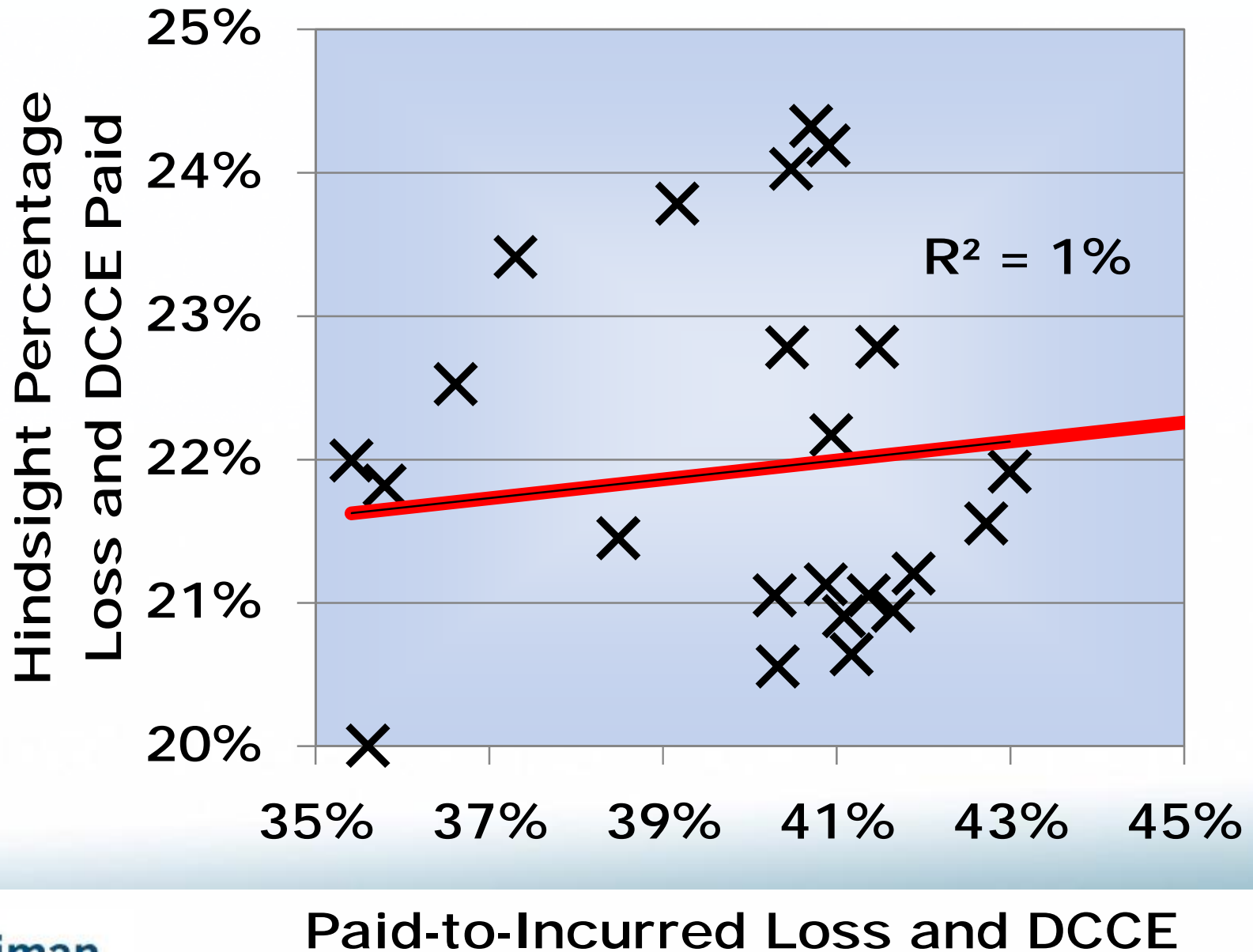




# Workers' Comp – Hindsight Development Ratios



# Workers' Compensation



Discussion of Analysis

# CONCLUSIONS

# *Why Are Actuarial Methods Cyclical?*

## **∅ Economic Reasons**

§ “More to Lose”

§ Inflation

## **∅ Insurance Reasons**

§ Reinsurance Retentions

§ Policy Limits

§ More Cautious in Payments When Experience  
is Worse?

# Reserve Cycle: Where Does The Rest Come From?

## ∅ Actuarial Methods

§ More Cyclical On Individual Books?

## ∅ “Anchoring” to Prior Years’ Loss Ratios

## ∅ Two Pricing Cycles:

§ Target Loss Ratio

§ Business Performance Above/Below Target

- Contributes to Loss Development
- Does Loss Development Contribute to Performance?

§ Implications for Loss Ratio & BF-Type Methods

# QUESTIONS

# OTHER CONSIDERATIONS

# Other Considerations

## Accompanying Oral Discussion

- ∅ This document is not complete without the accompanying oral discussion and explanation of the underlying information and concepts as well as any interpretational limitations.

## Limited Distribution

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## Data Reliance

- ∅ We have relied upon data and other background information prepared by others, as documented throughout this presentation. We have performed a limited review of the data for reasonableness and consistency and have not found material defects in the data. If there are material defects in the data, it is possible that they would be uncovered by a detailed, systematic review and comparison of the data to search for data values that are questionable or relationships that are materially inconsistent. Such a review was beyond the scope of our assignment.