

# Peaks and Troughs: Reserving through the Market Cycle

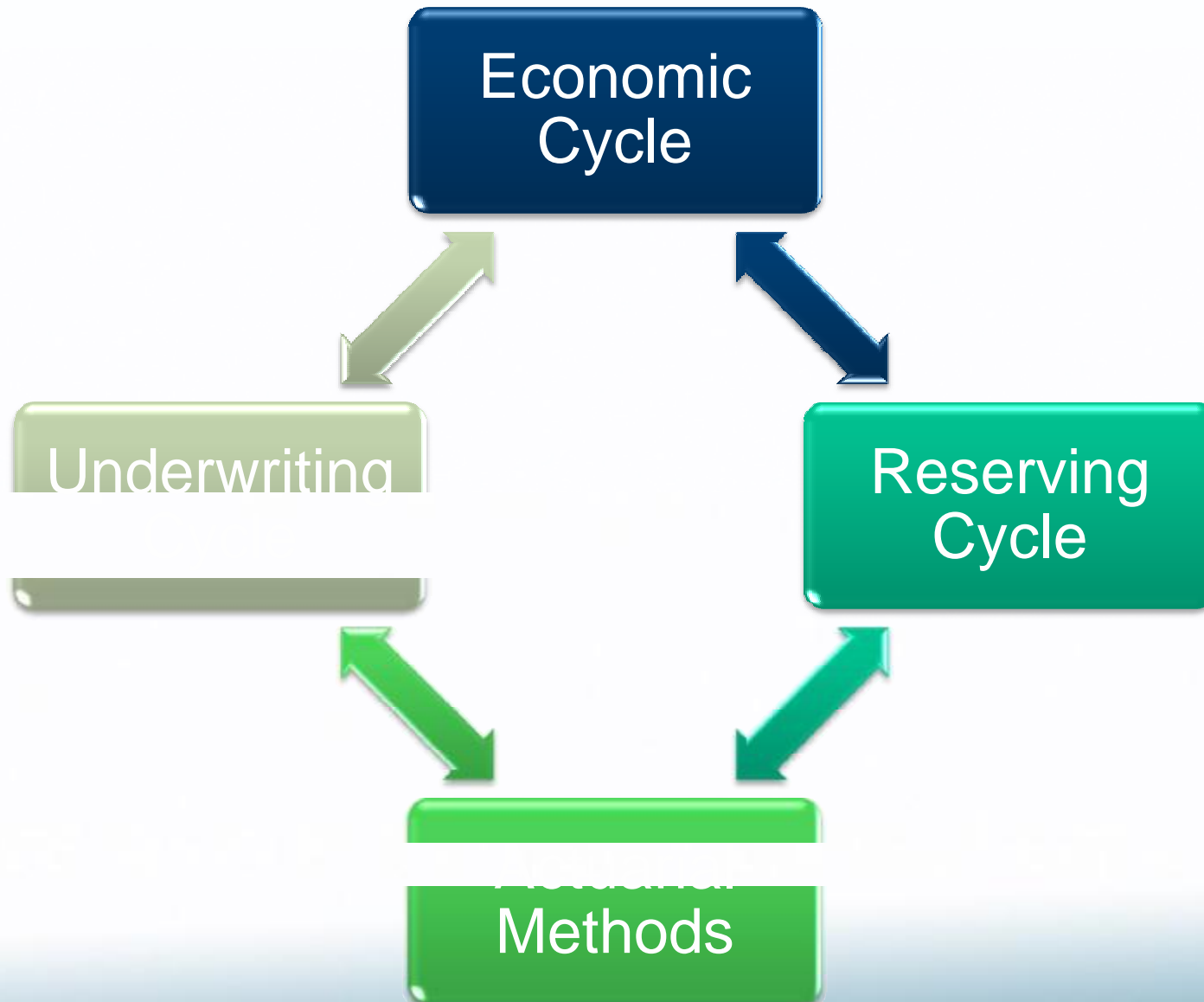
Prepared for: **Casualty Actuarial Society Annual Meeting**

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**Date: November 5, 2013**

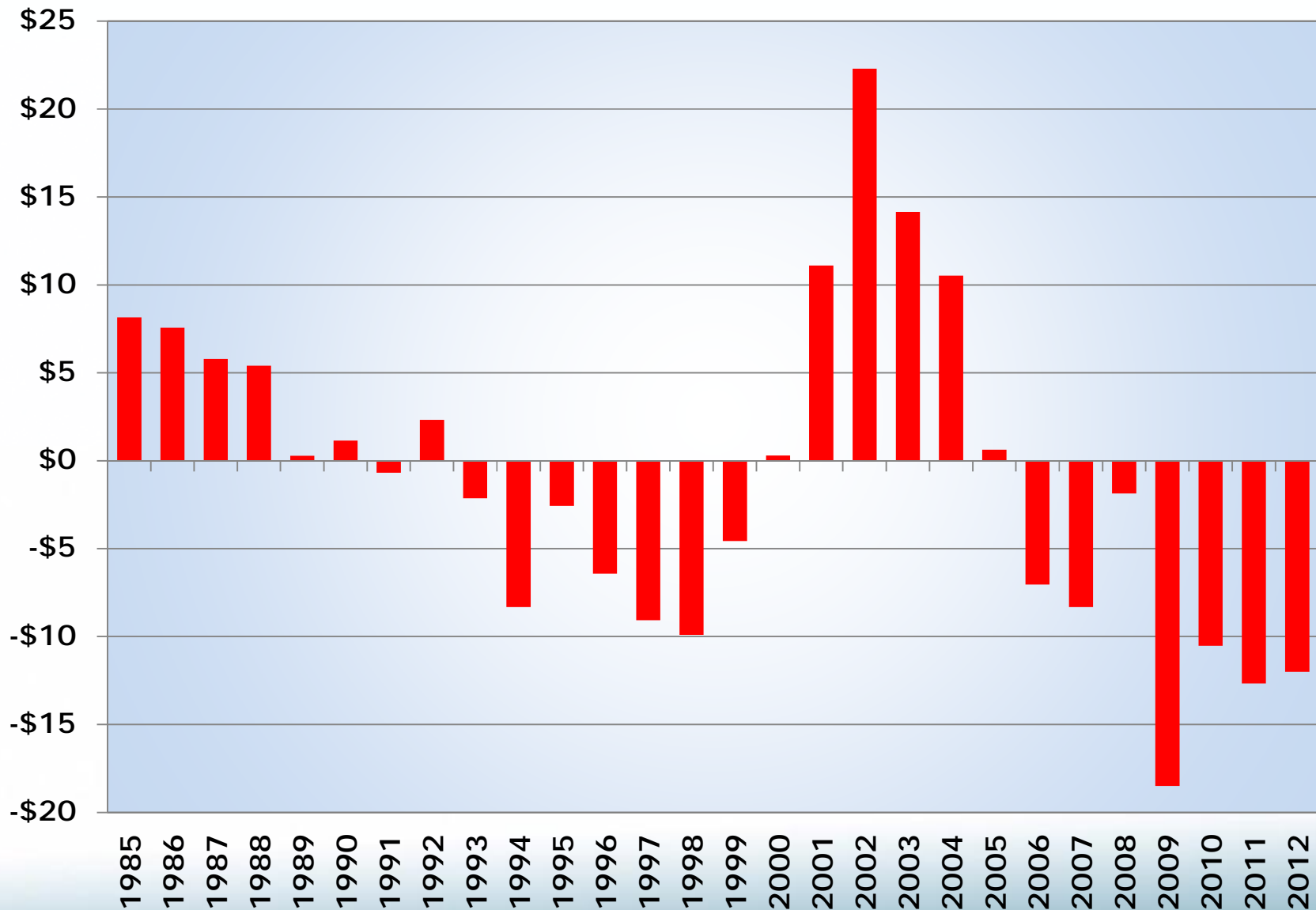
# Overview



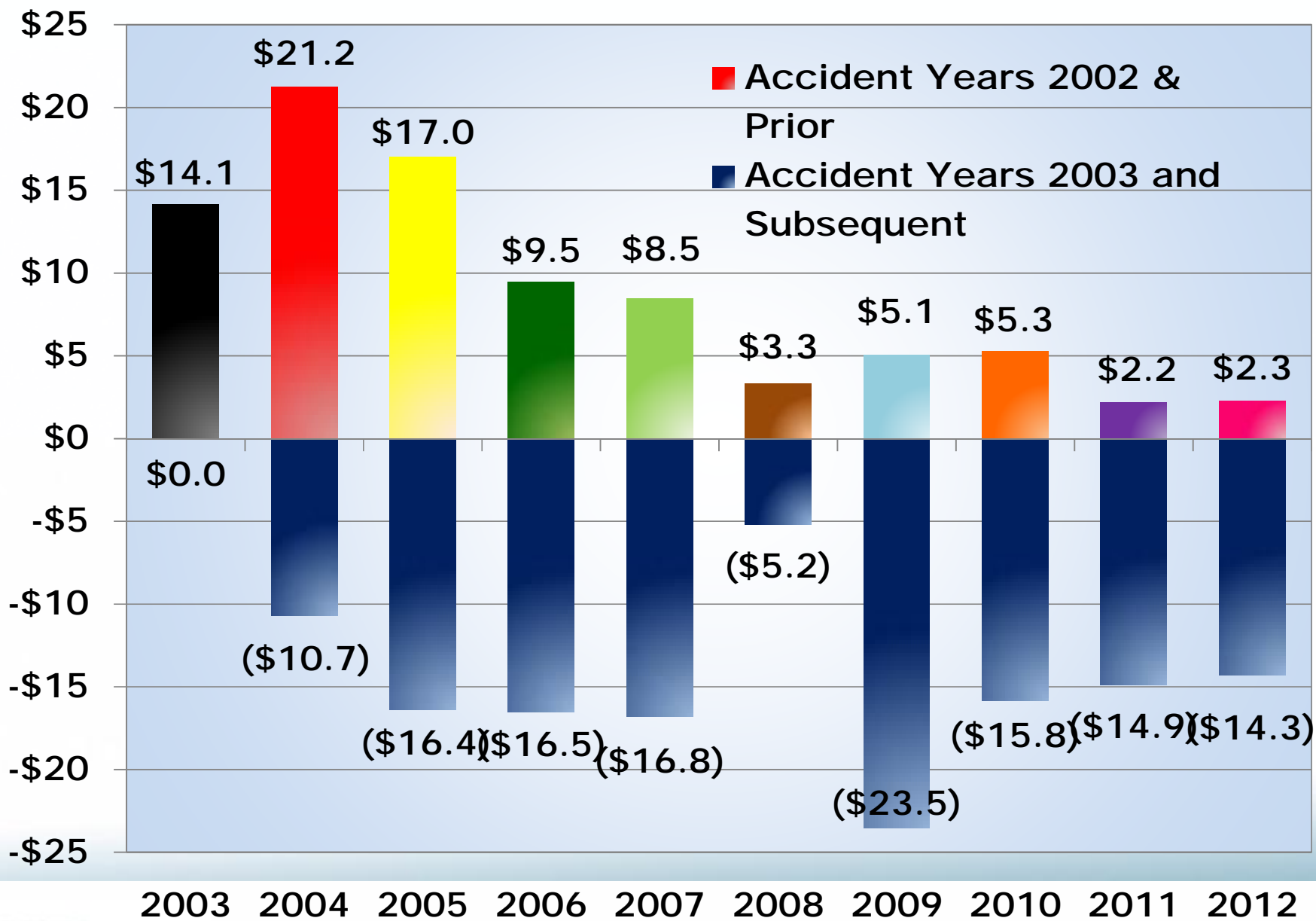
Discussion

# THE RESERVING CYCLE

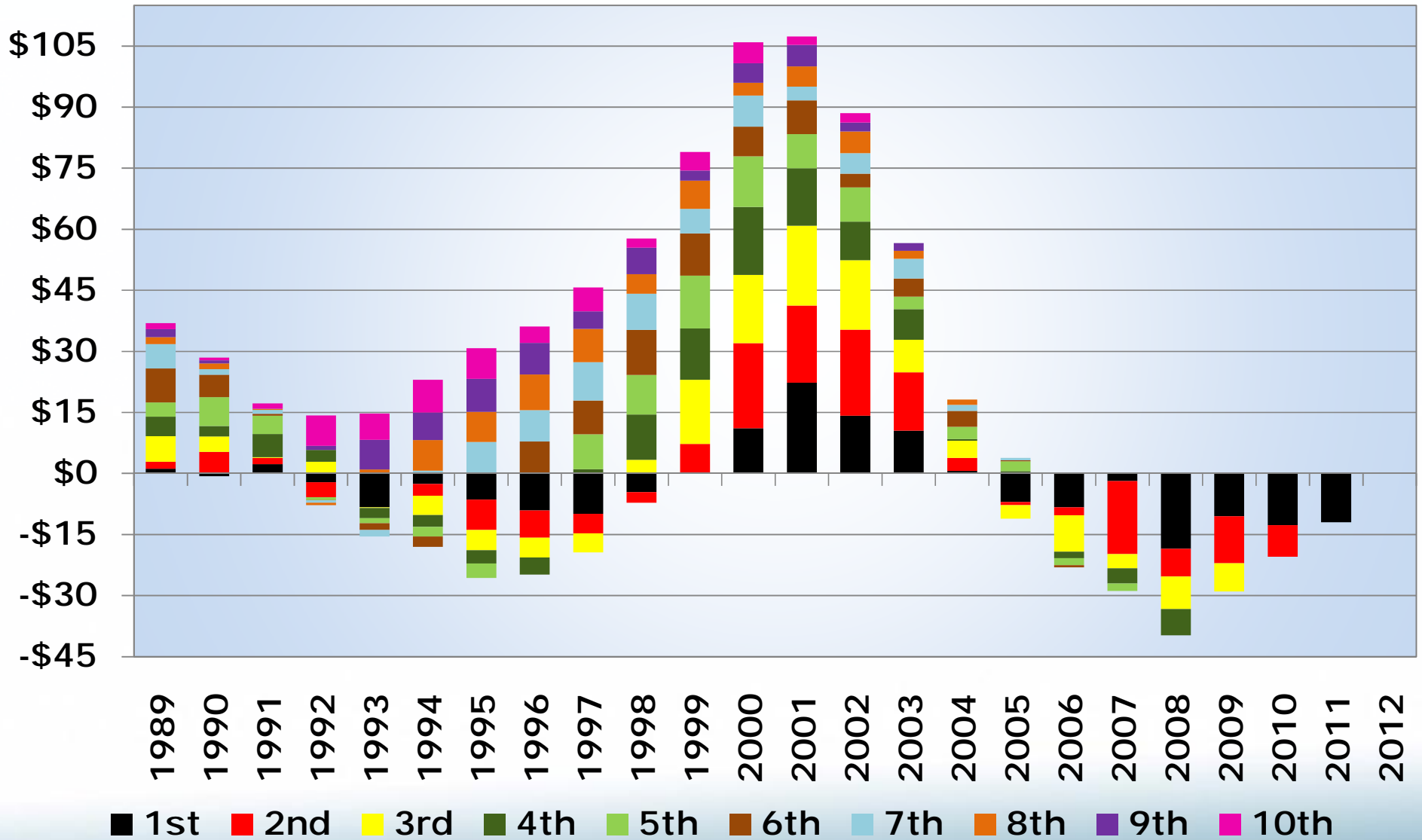
# Reserve Development by Calendar Year (\$B)



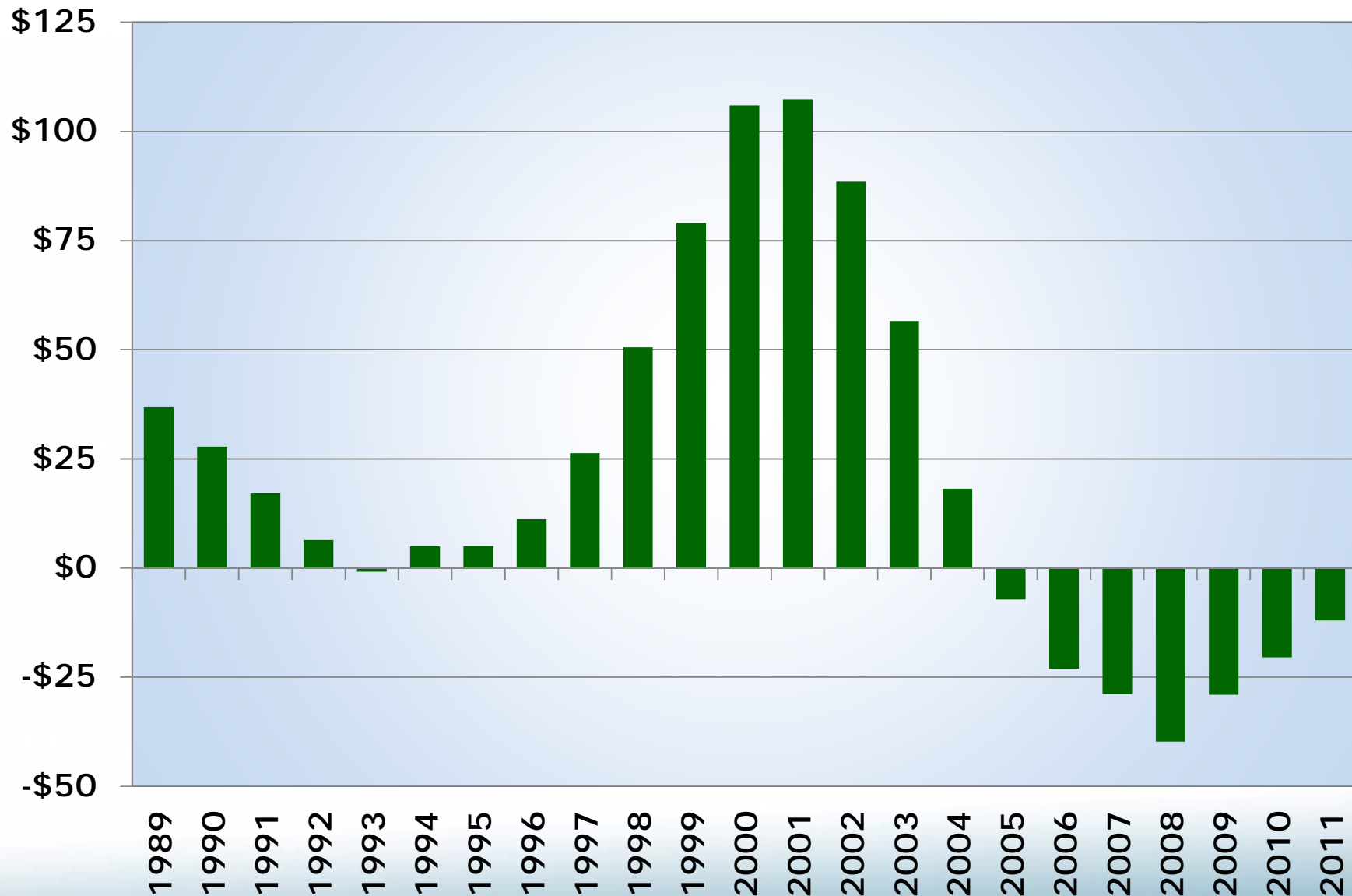
# Reserve Development by Calendar Year (\$B)



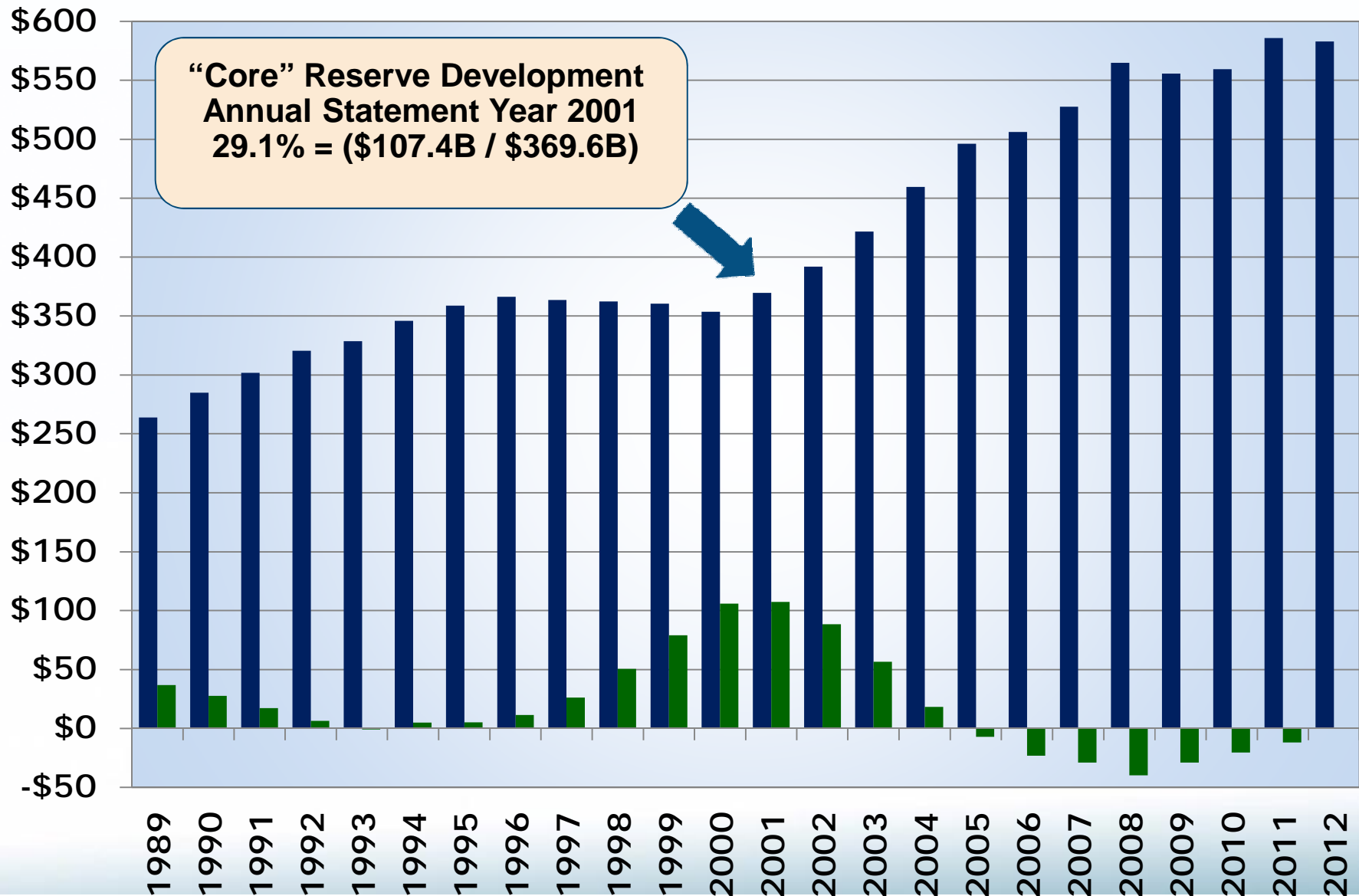
# Reserve Development by Statement Year (\$B)



# Reserve Development by Statement Year (\$B)



# Carried Reserves and Subsequent Development (\$B)

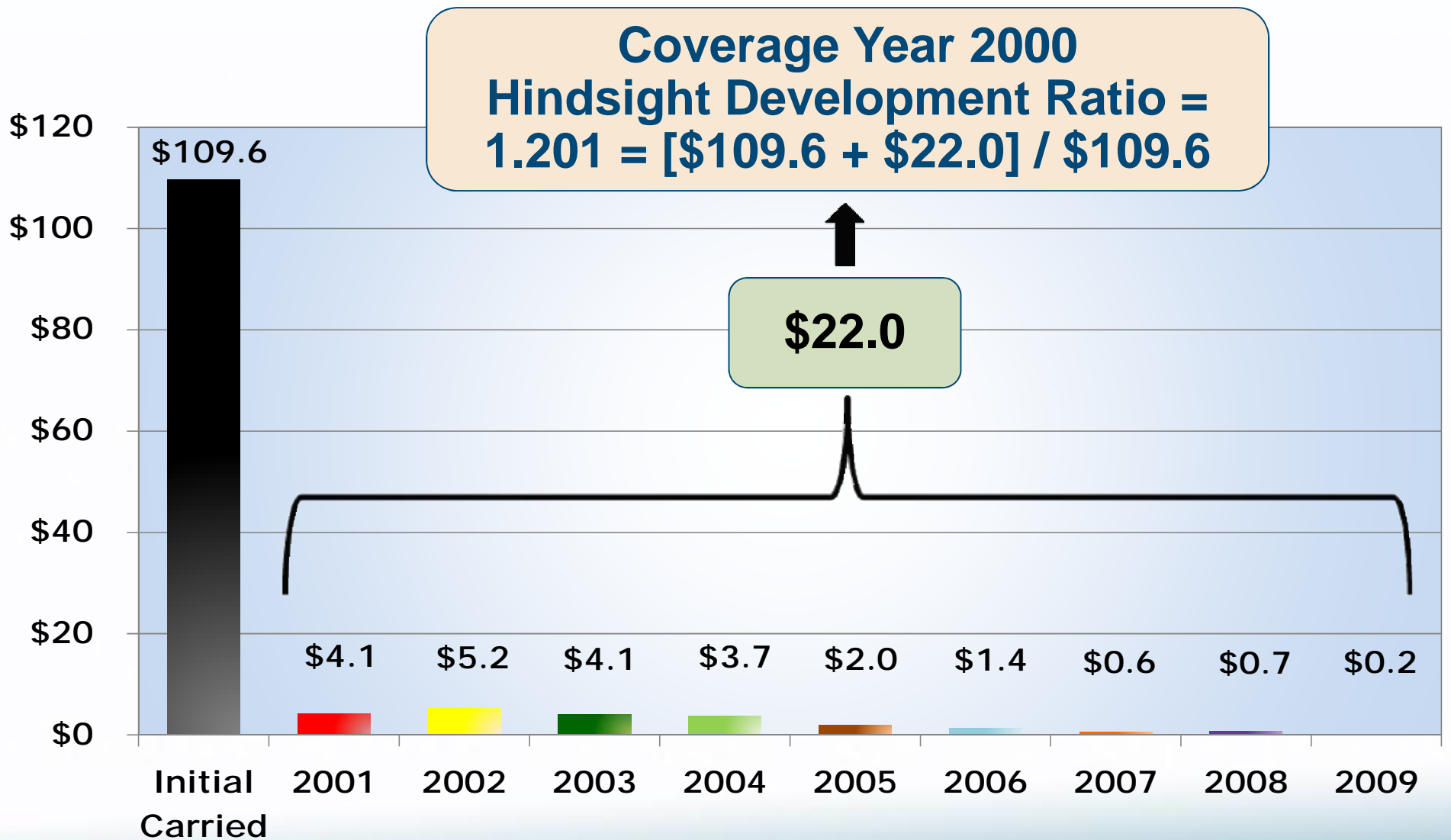




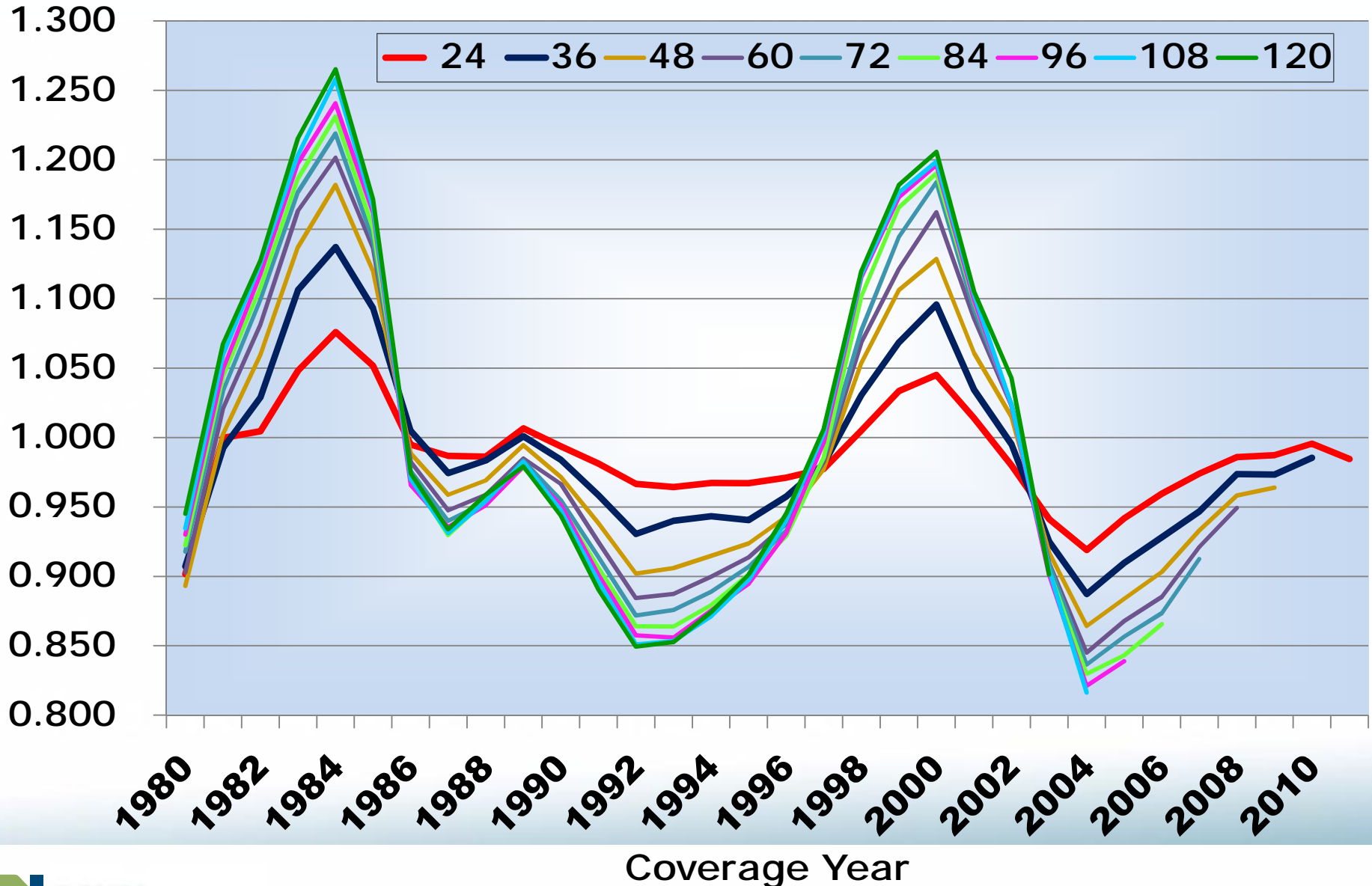
Hindsight Development Ratios

# CARRIED RESERVES

# Hindsight Development Ratio – Example (\$B)



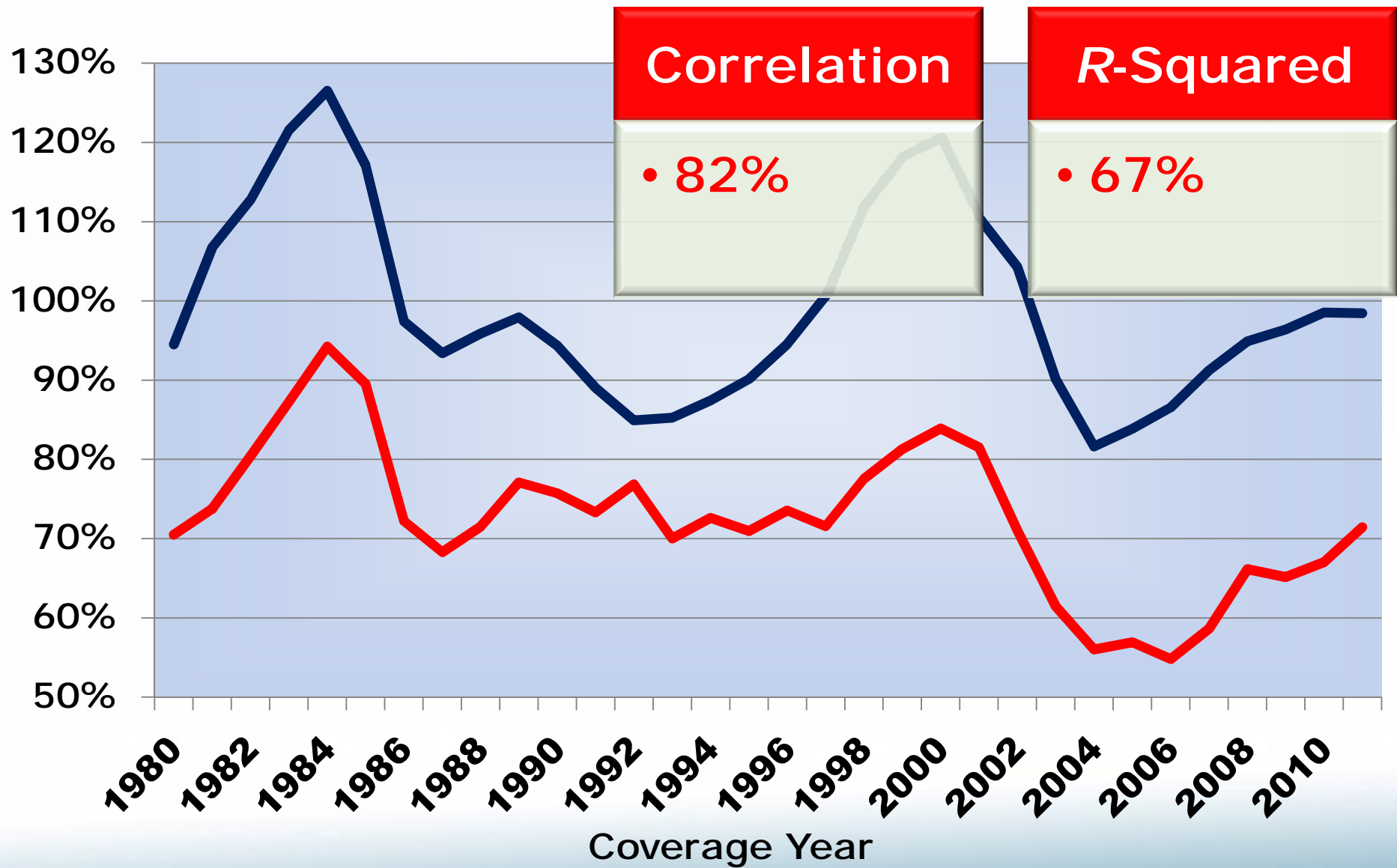
# Hindsight Development by Evaluation Month



Analysis

# THE UNDERWRITING CYCLE

# The Underwriting and Reserving Cycles



# *The Pricing and Reserving Relationship*

## ∅ Reserving as a Response to Pricing

§ Reinsurance Retentions

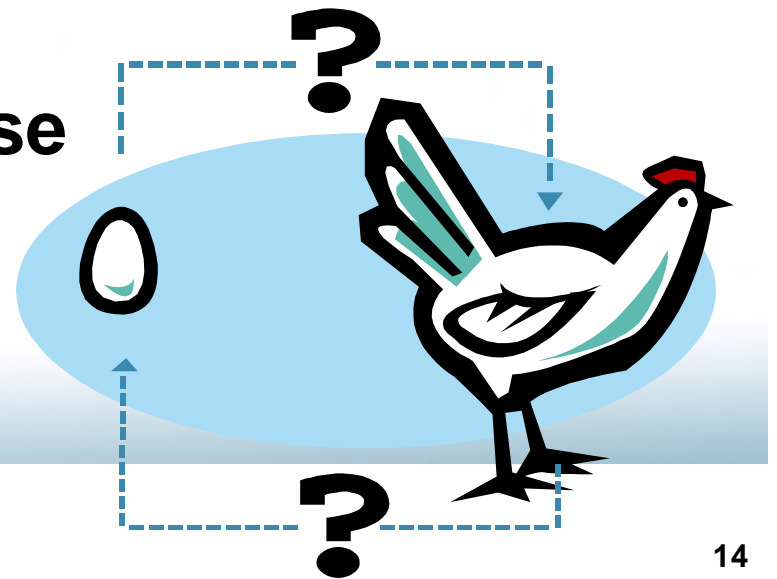
§ Policy Limits

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

## ∅ Pricing as a Response to Reserving

§ Price to Write More/Less

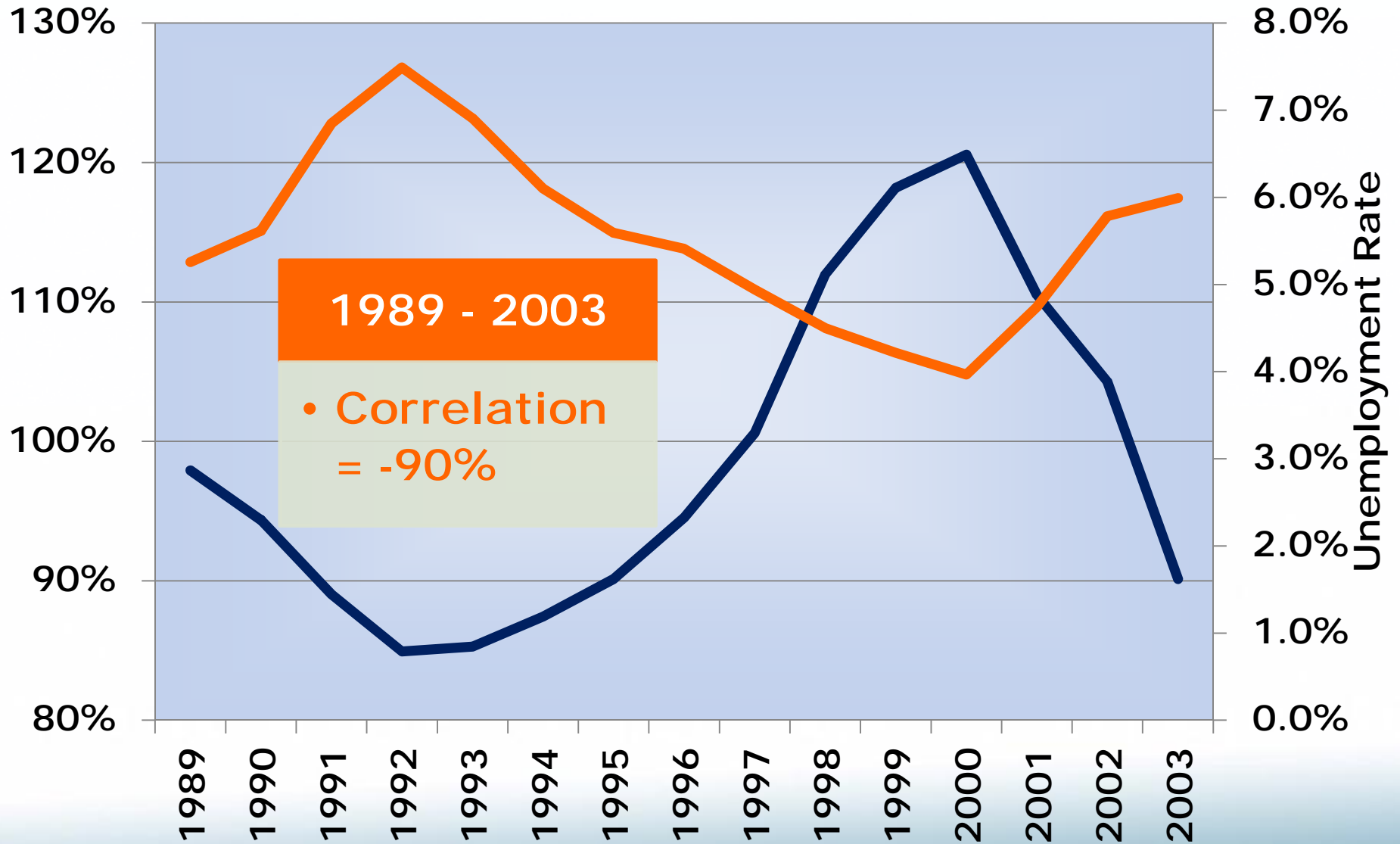
## ∅ Common Underlying Cause



Analysis

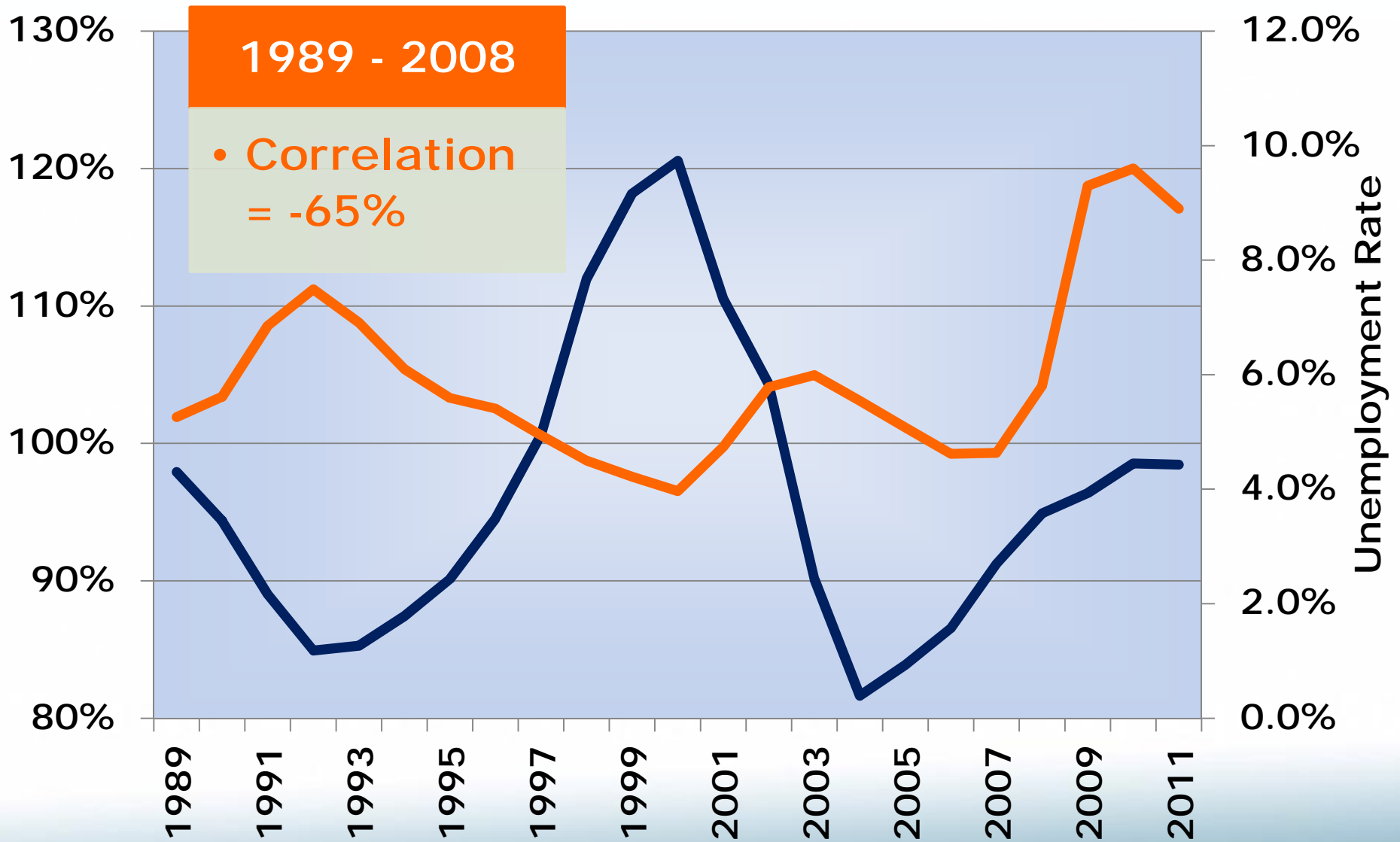
# THE ECONOMIC CYCLE

# The Economic Cycle and the Reserving Cycle

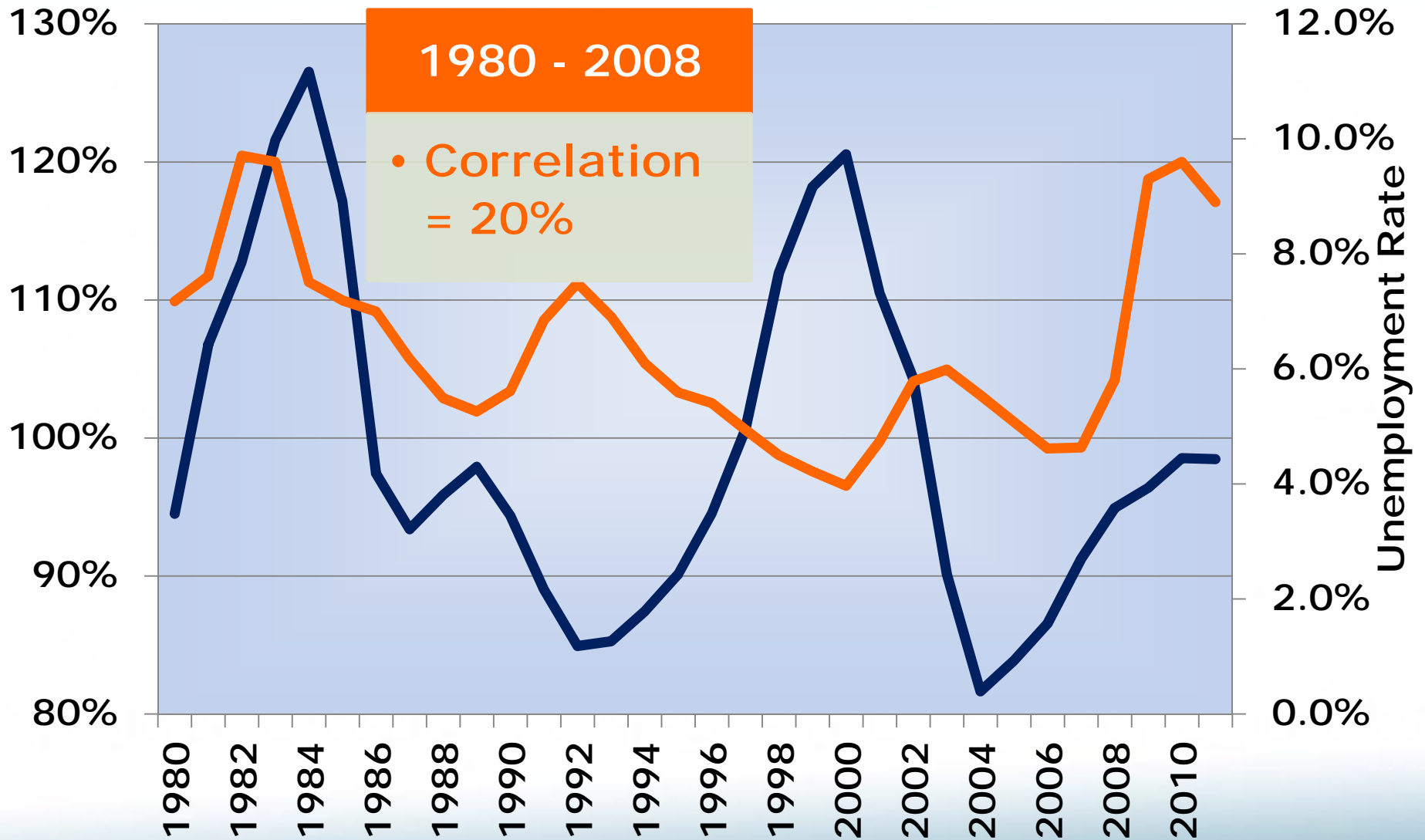




# The Economic Cycle and the Reserving Cycle



# 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

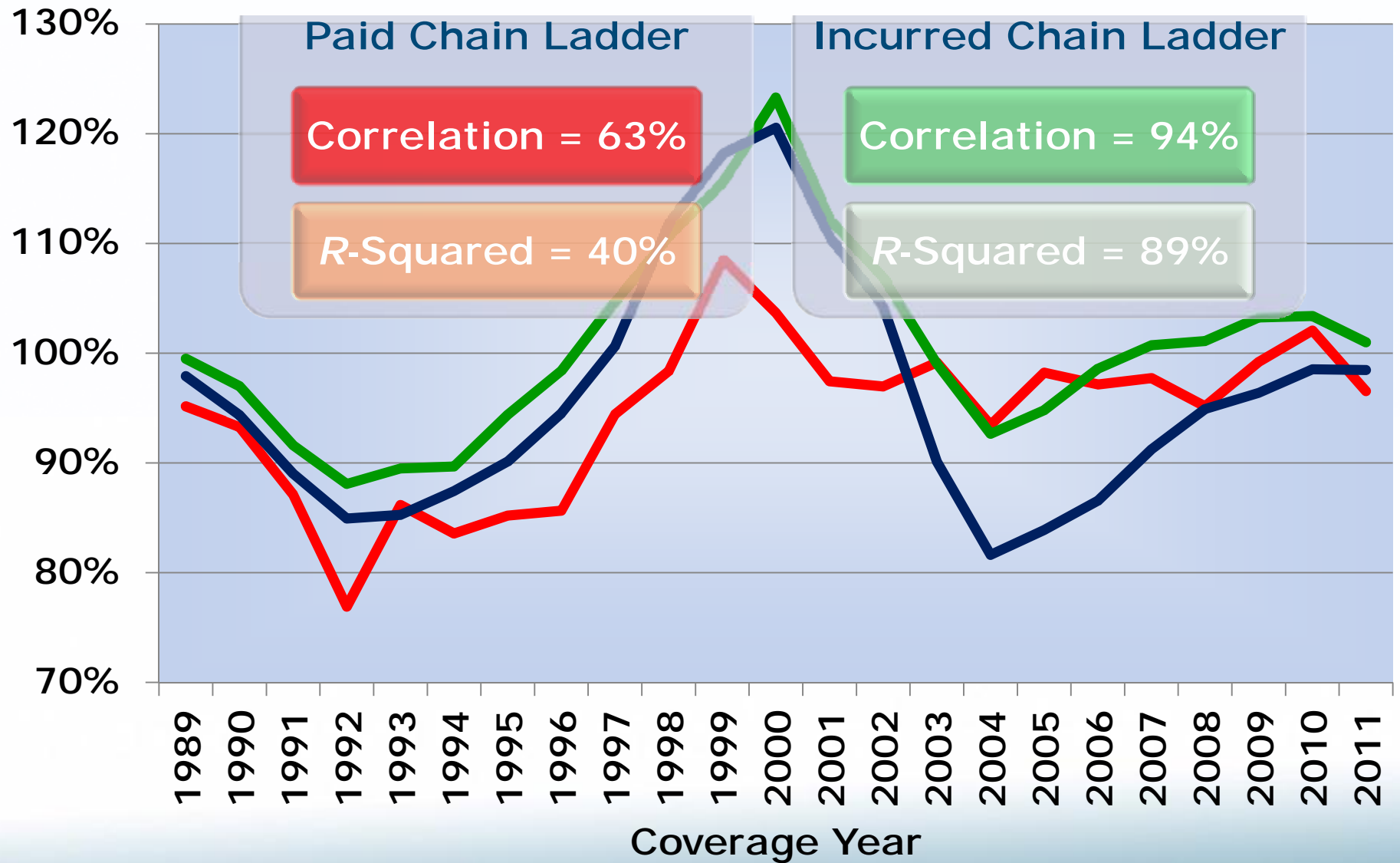
§ Drives Down Pricing

§ But This Takes A Long Time...

Hindsight Development Ratios

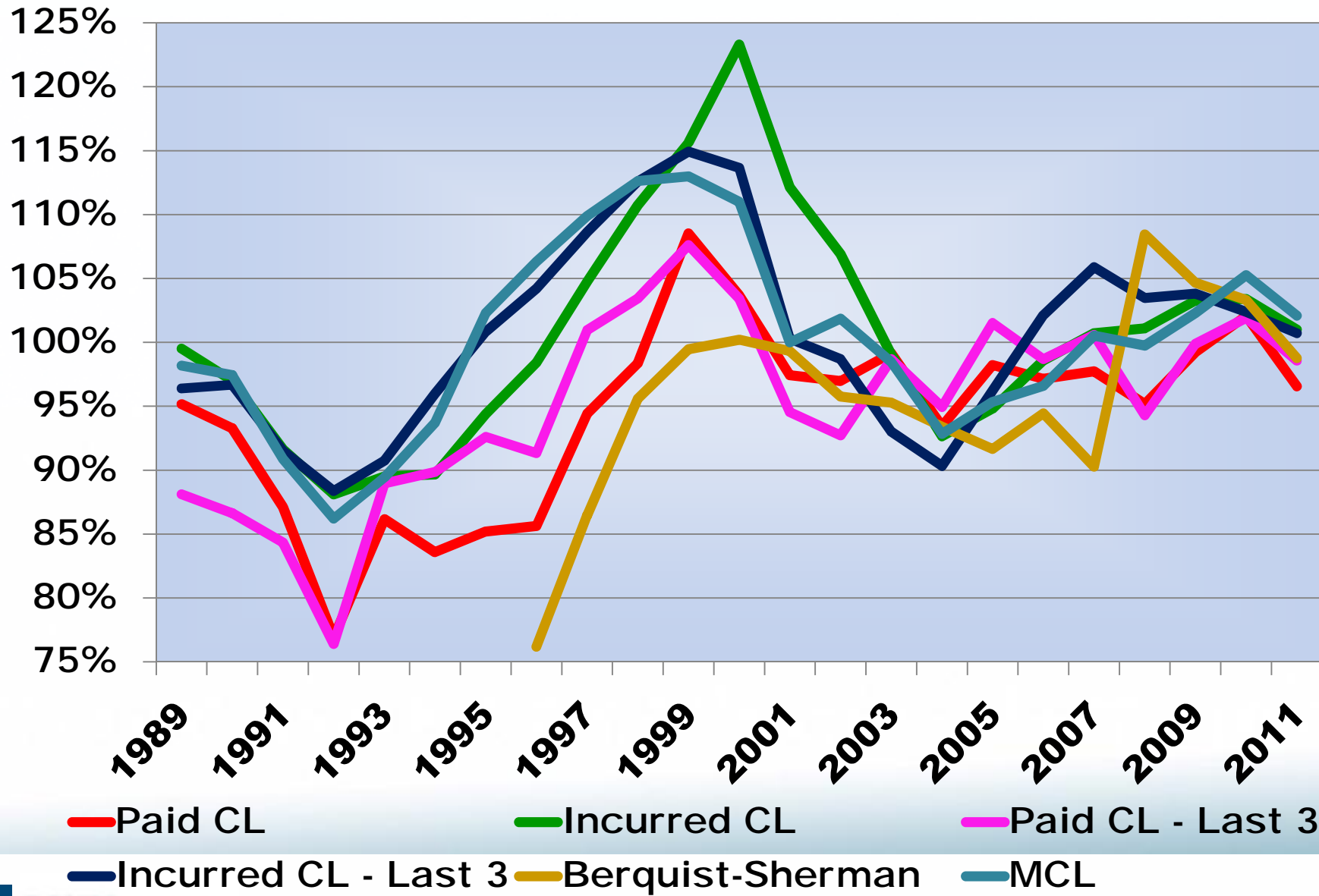
# ACTUARIAL METHODS

# Hindsight Development Ratios

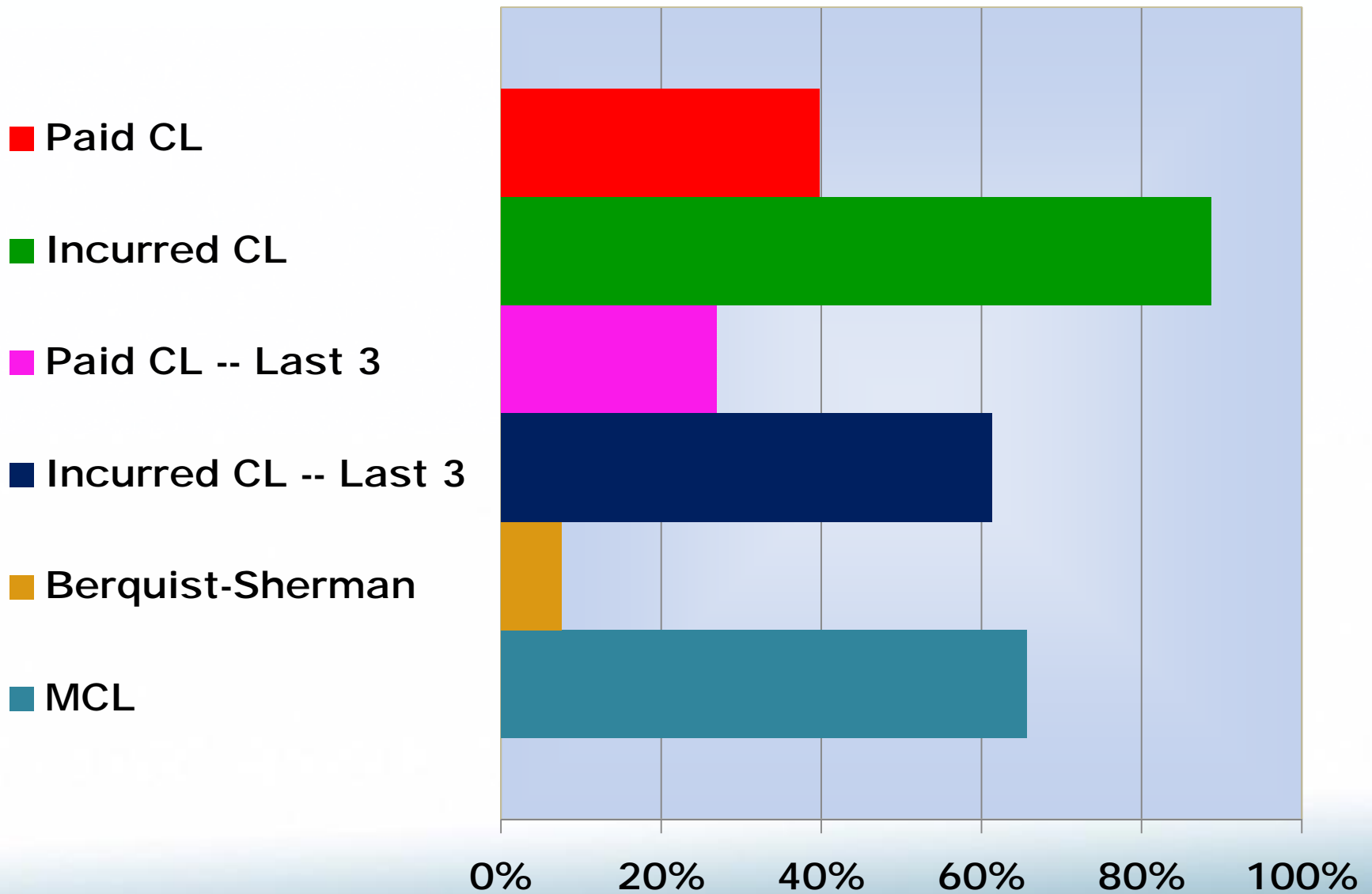


— Paid Chain Ladder — Incurred Chain Ladder — Carried

# Other Actuarial Methods



# R-Squareds of Method HDRs with Carried HDRs



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.

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## Data Reliance

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