

# Analytics Insights Conference

*Innovation at the Intersection of Capital and Analytics*



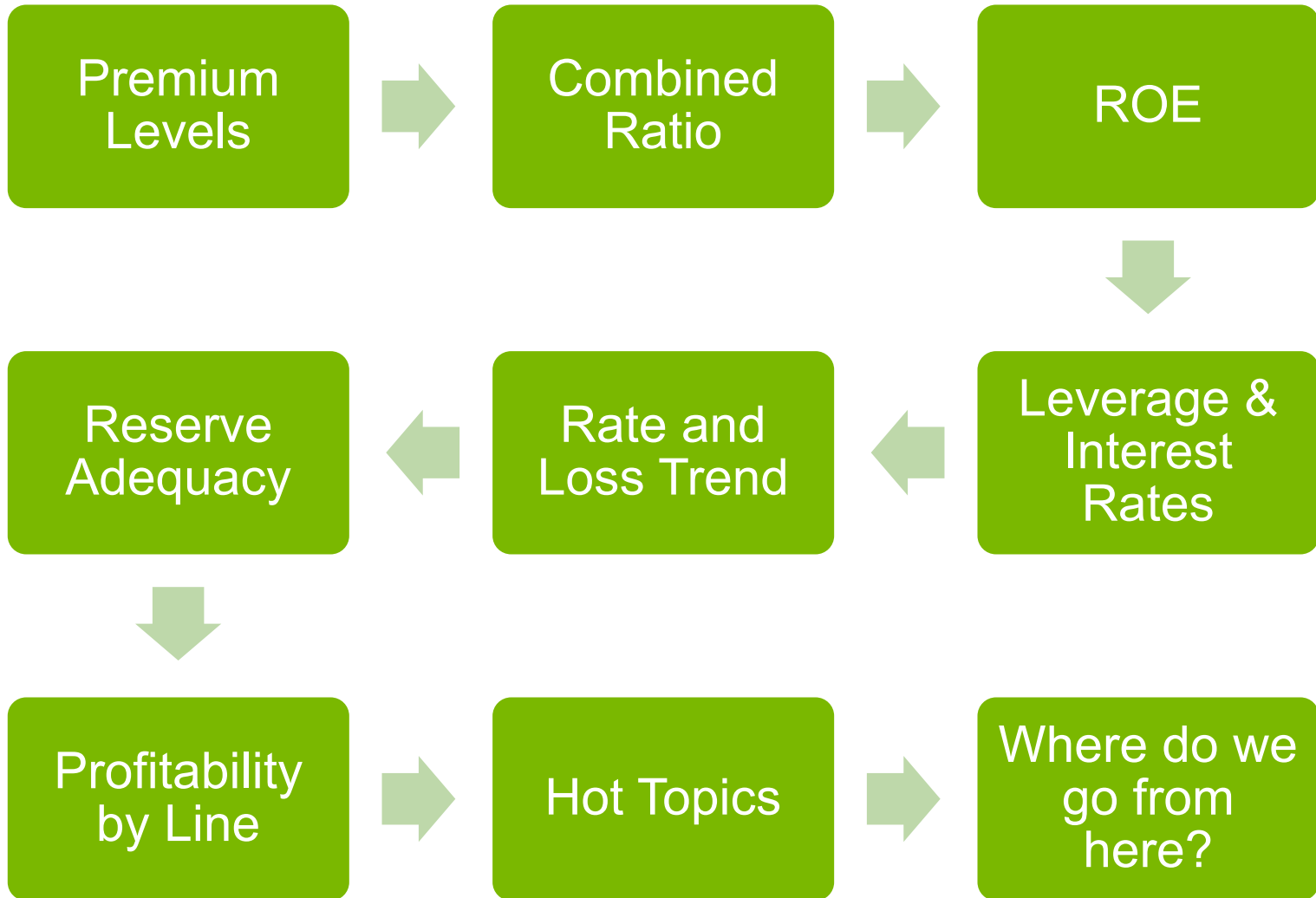
## **The Insurance Cycle: Historical Perspectives and Speculative Projections**

Stephen J. Mildenhall

July 21, 2010

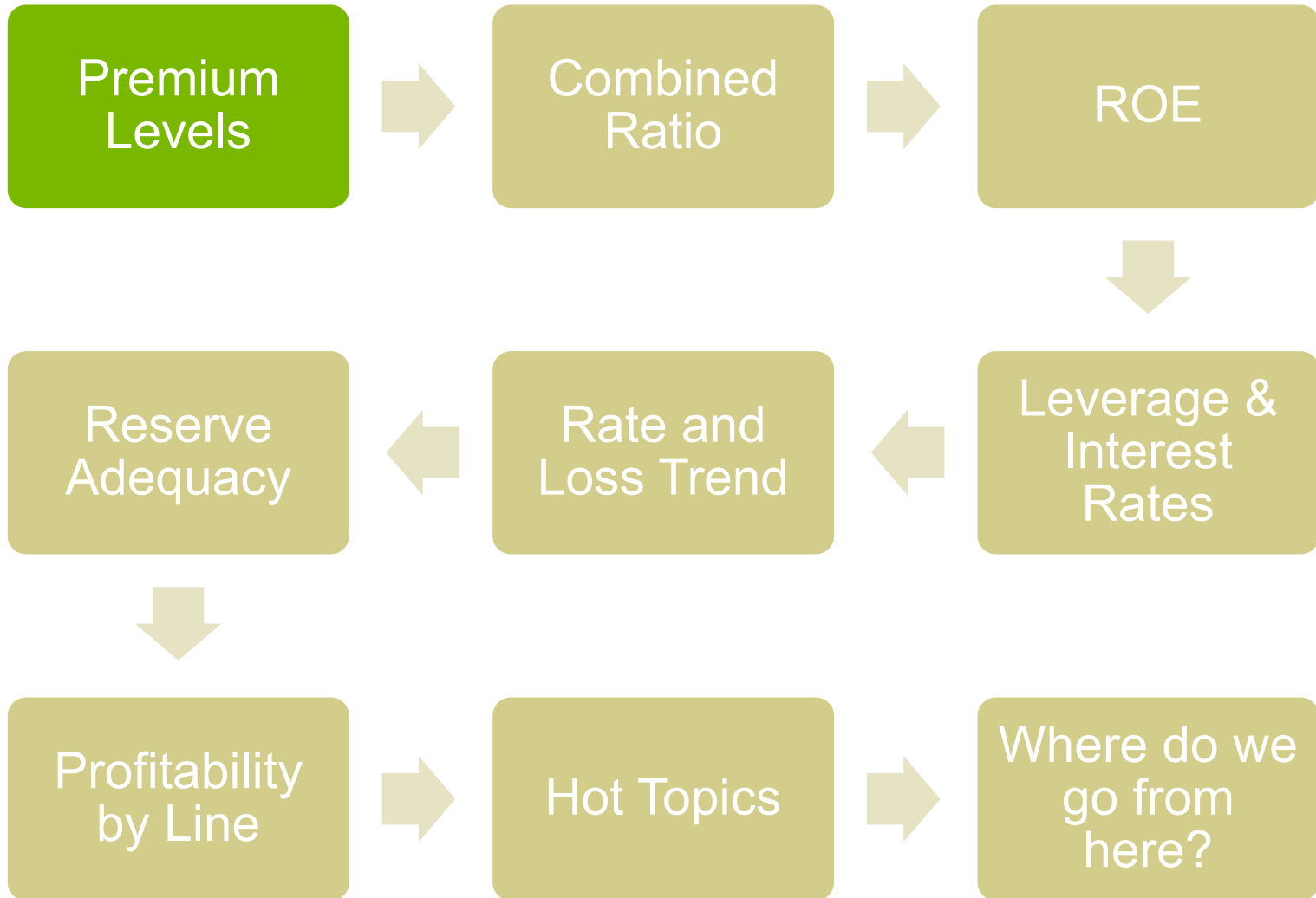
# Outline

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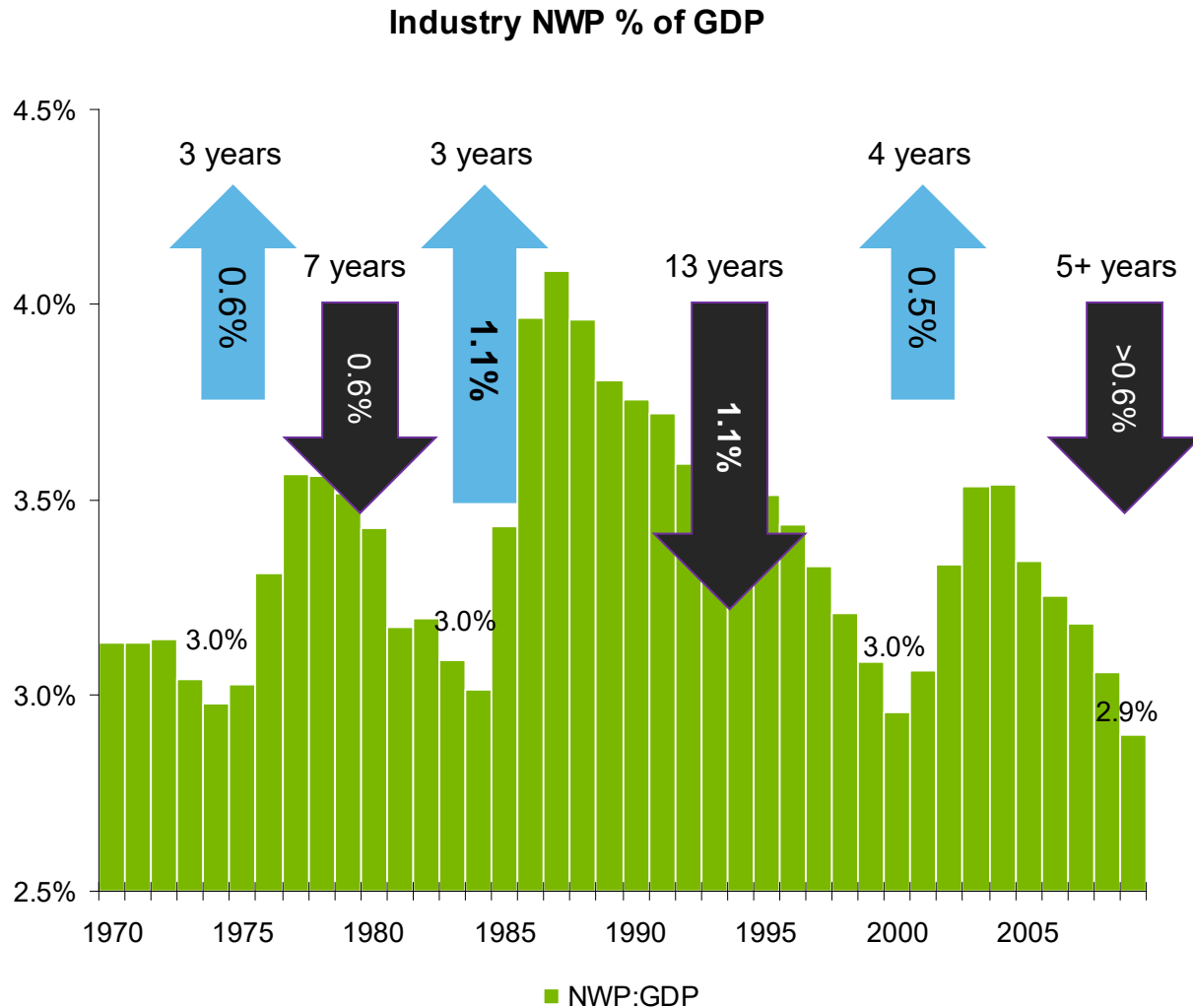


# Outline

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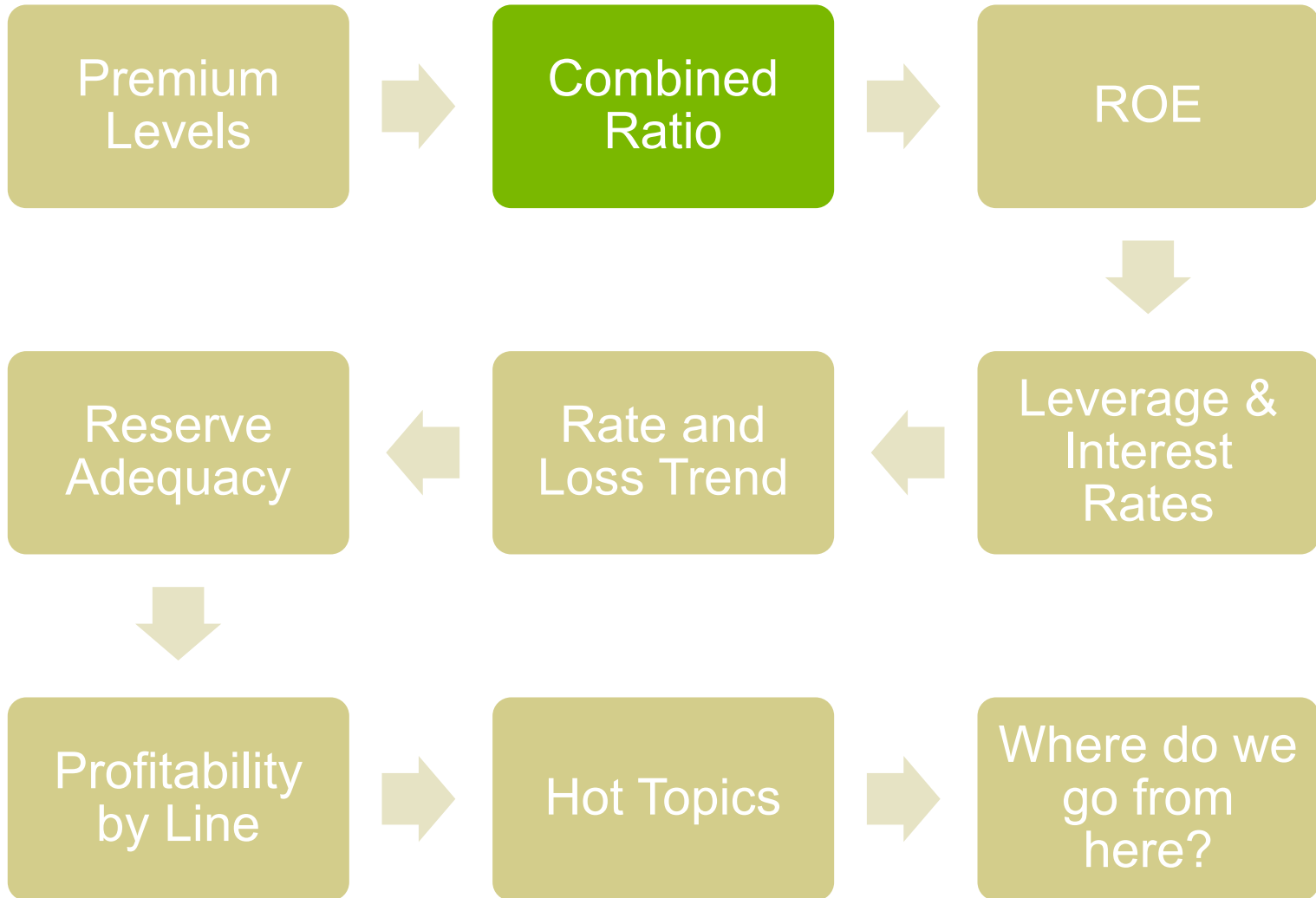


# Overall Premium Levels At Historical Lows Relative to GDP...Is Market Primed To Turn?



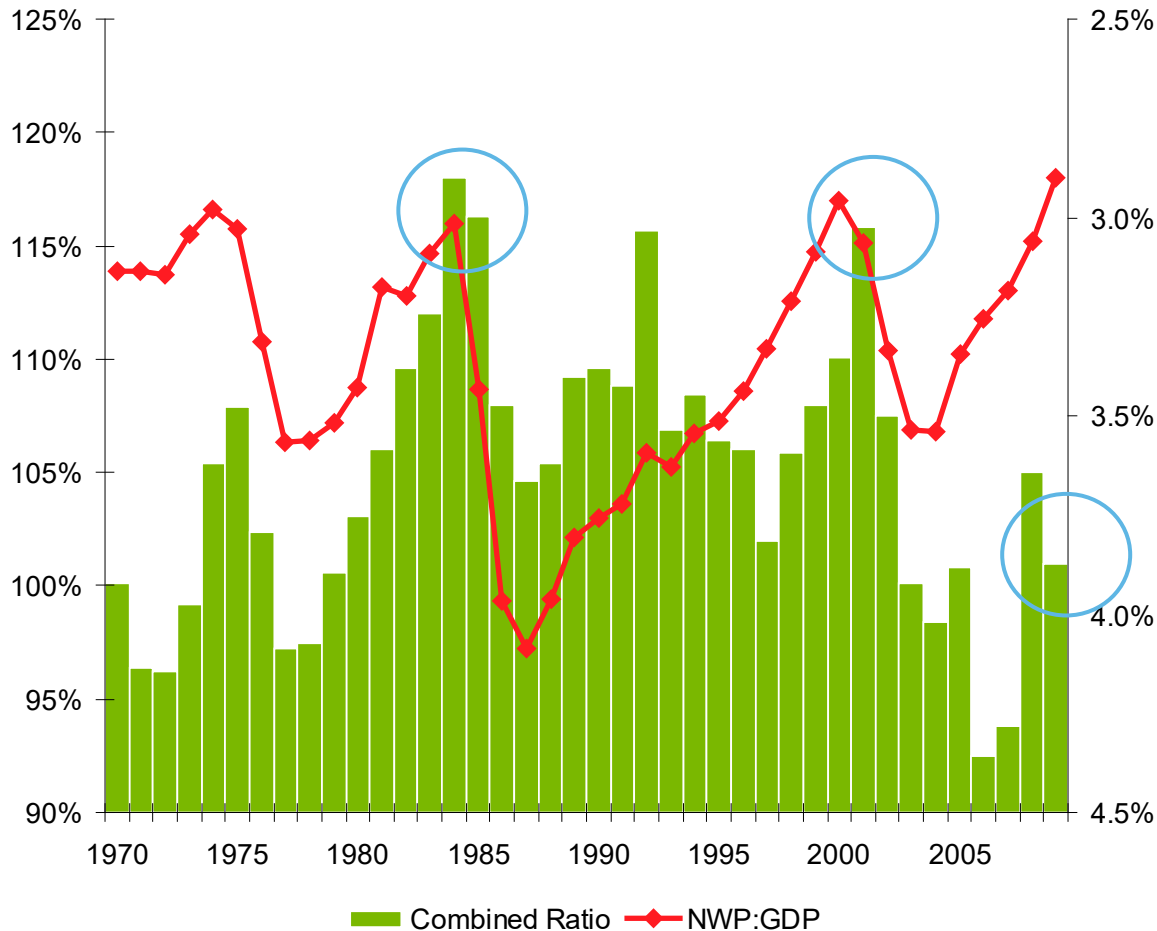
# Outline

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# Calendar Year Results Far Better Than Seen Before Previous Market Turns

**NWP % GDP and Combined Ratio**



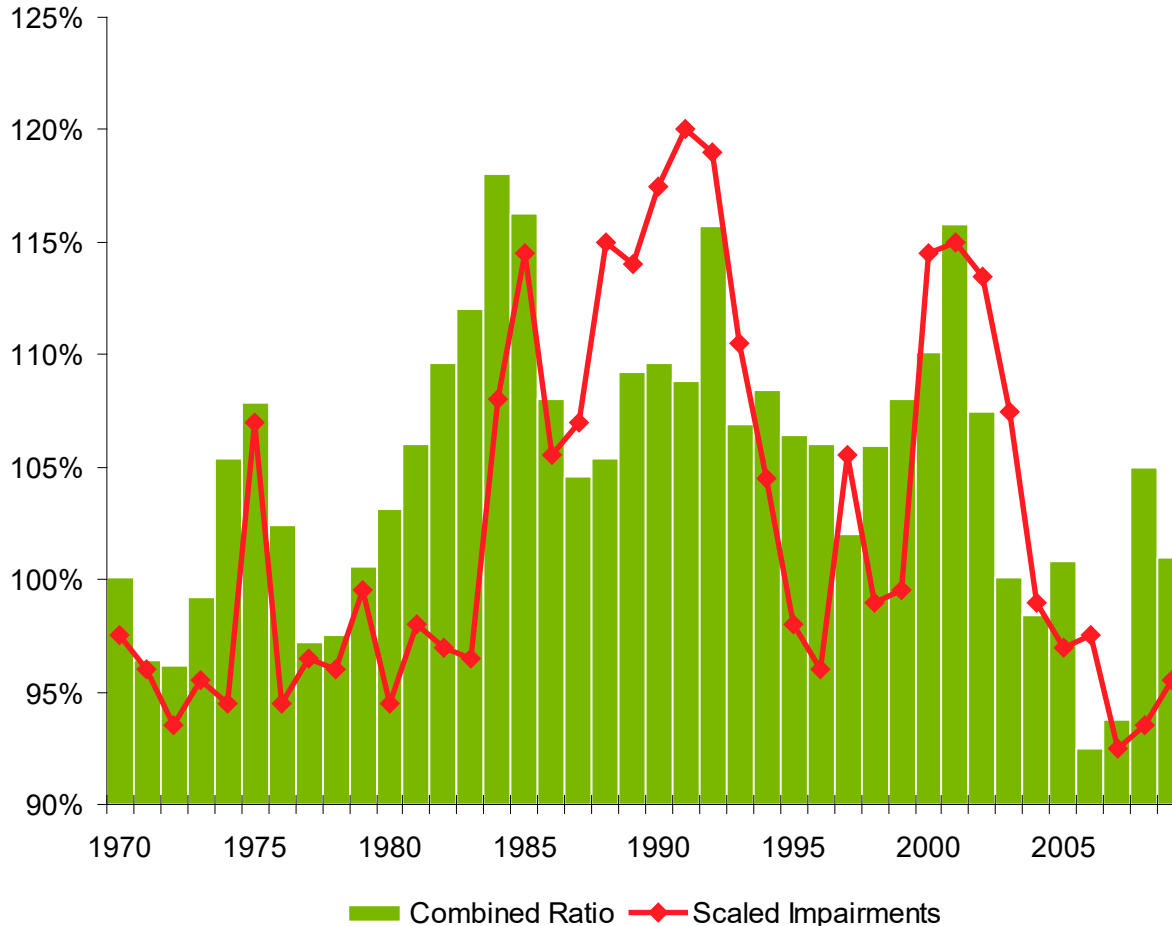
CR > 115%  
before  
'84 & '01 turns



CR only  
101%  
in 2009

# Overall Industry Appears Unstressed Impairments At Historically Low Levels

**Combined Ratio and Impairments**



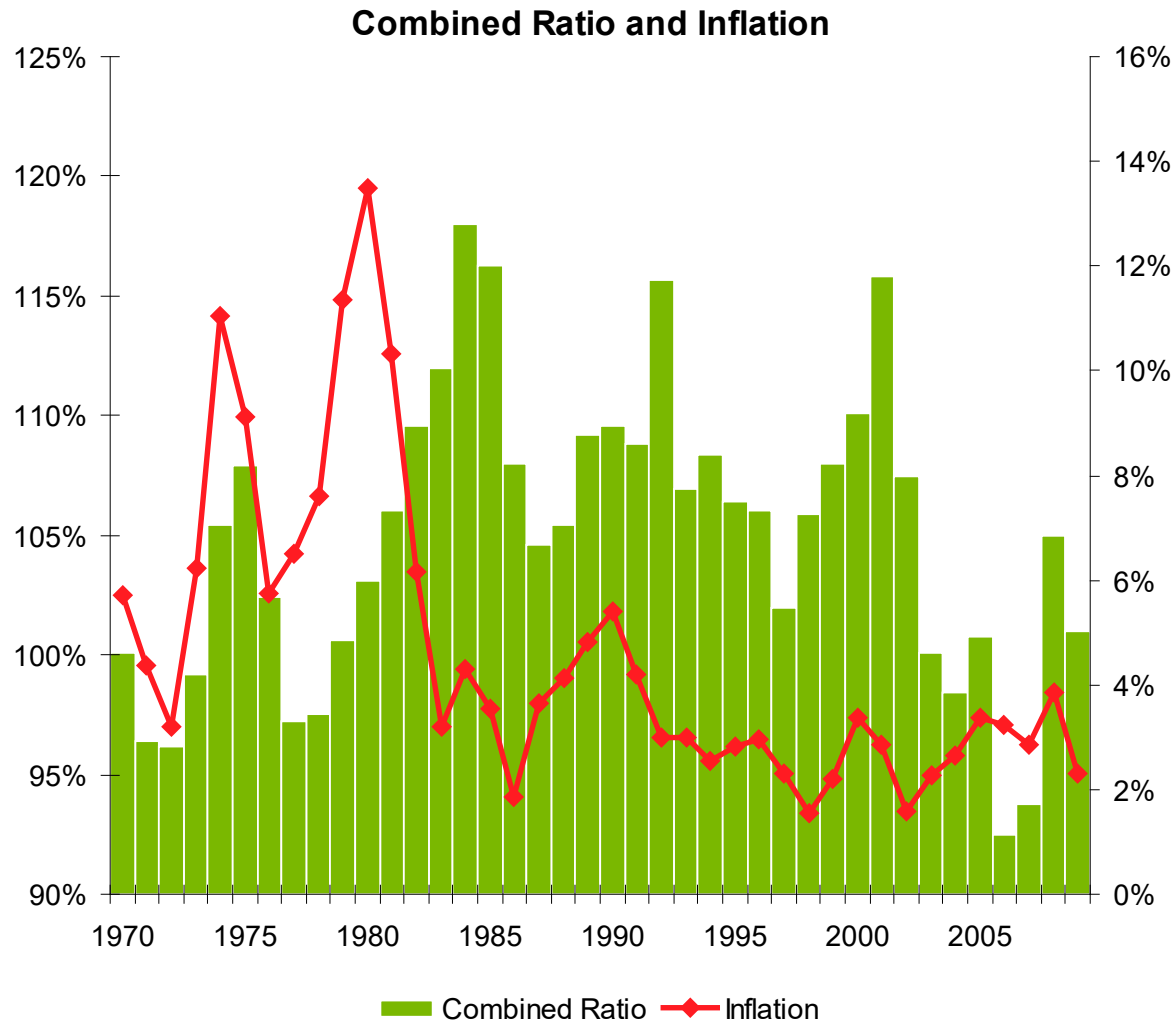
P&C Model Durable

5 impairments in 2007  
lowest on record

7 in 2008, 3<sup>rd</sup> lowest  
since 1970

11 in 2009, 8<sup>th</sup> lowest

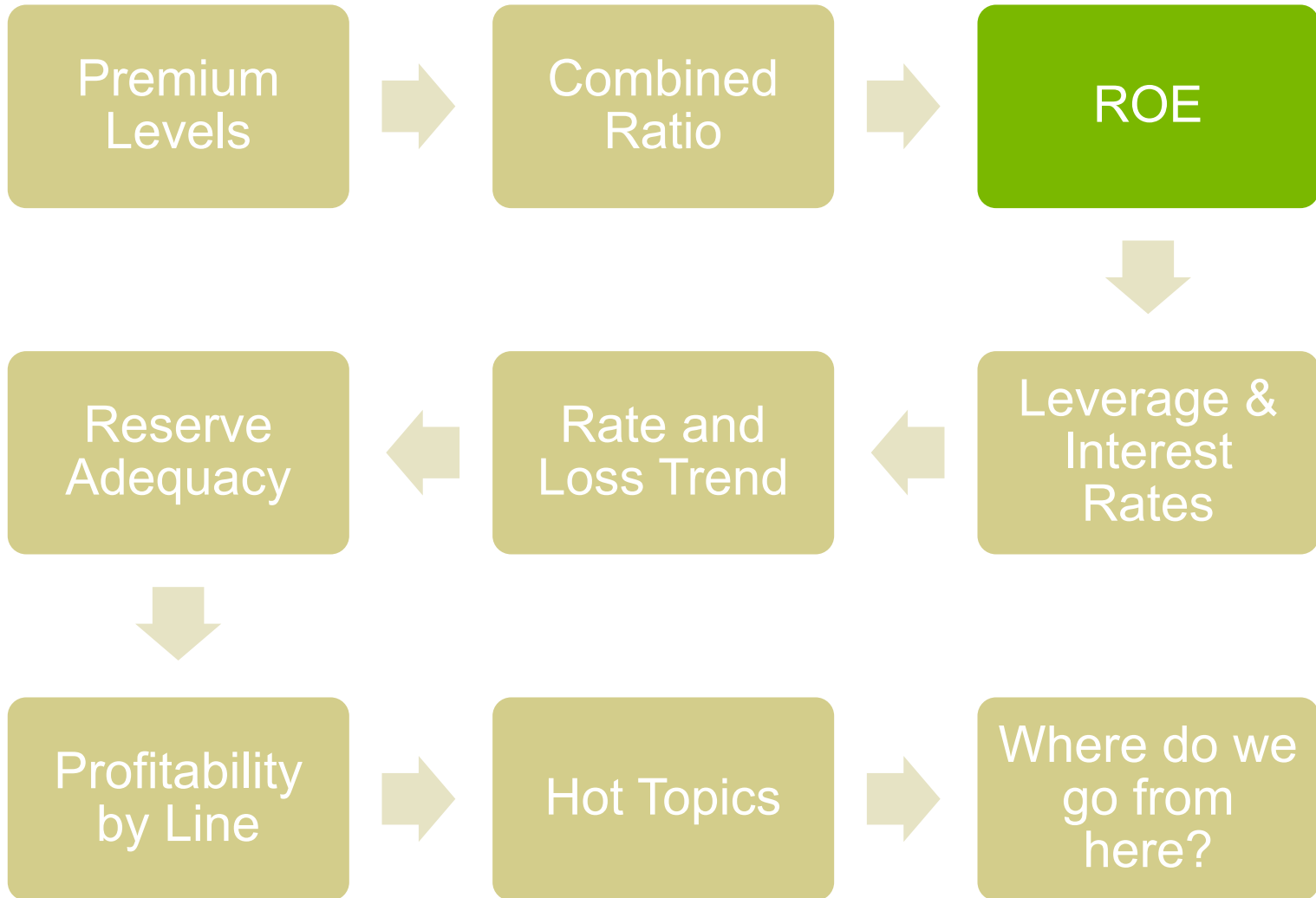
# Specter Of Inflation? Cats And Pricing Have Driven Hard Markets Since 1984 Shock





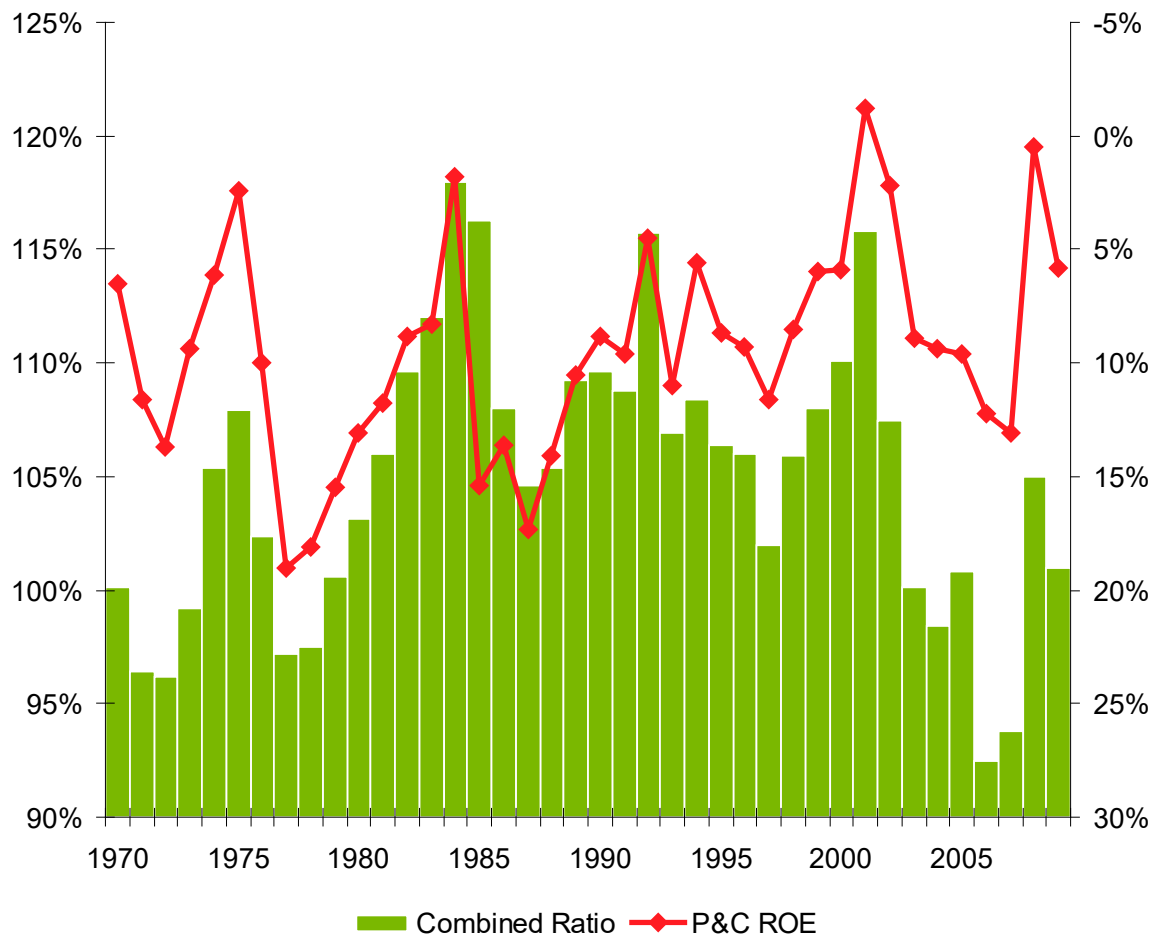
# Outline

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# Historical Return on Equity (ROE) Vs. Combined Ratio

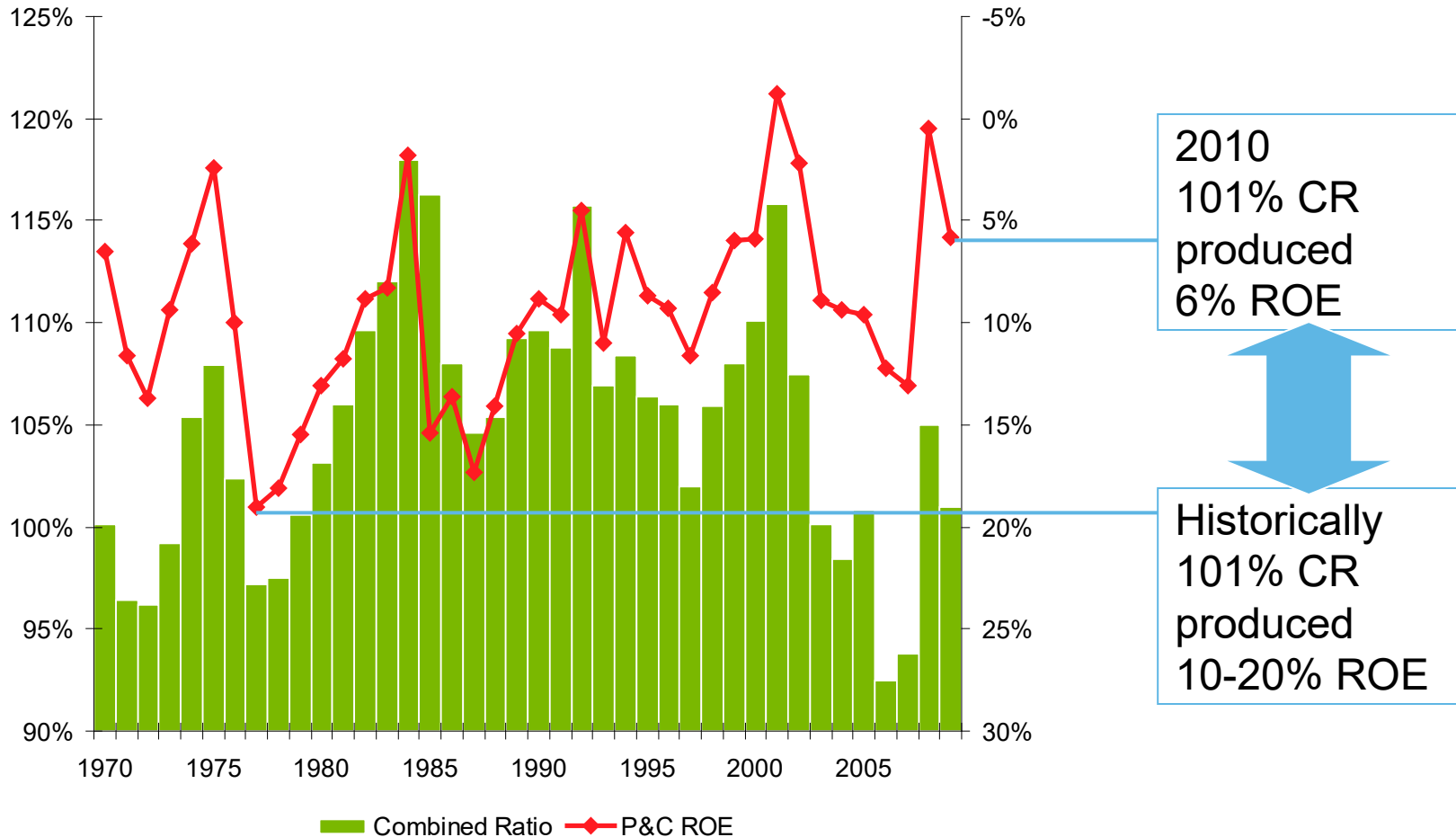
ROE and Combined Ratio



# Low Investment Returns: Lower Pain Threshold?

## ROE 8 Points Lower Than Earlier Periods for Same Combined Ratio

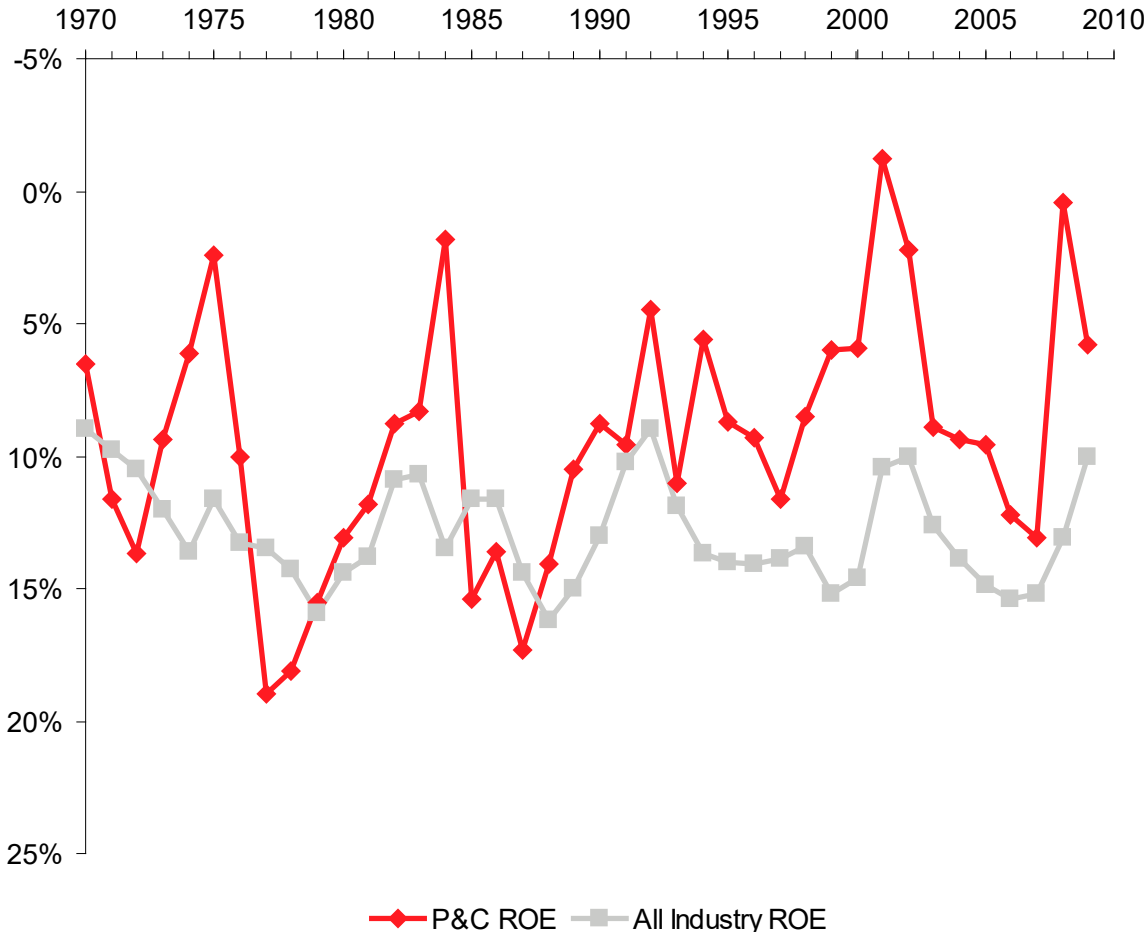
ROE and Combined Ratio



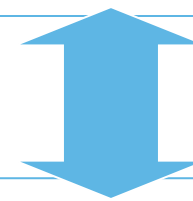
# Aside: Insurance Vs. All Industry Return And Volatility

## Insurance Returns: 73% Of Return With 237% of Volatility

**P&C ROE vs. All Industry ROE**



P&C Industry  
Avg. ROE 9.3%  
Std. Dev. 4.7%

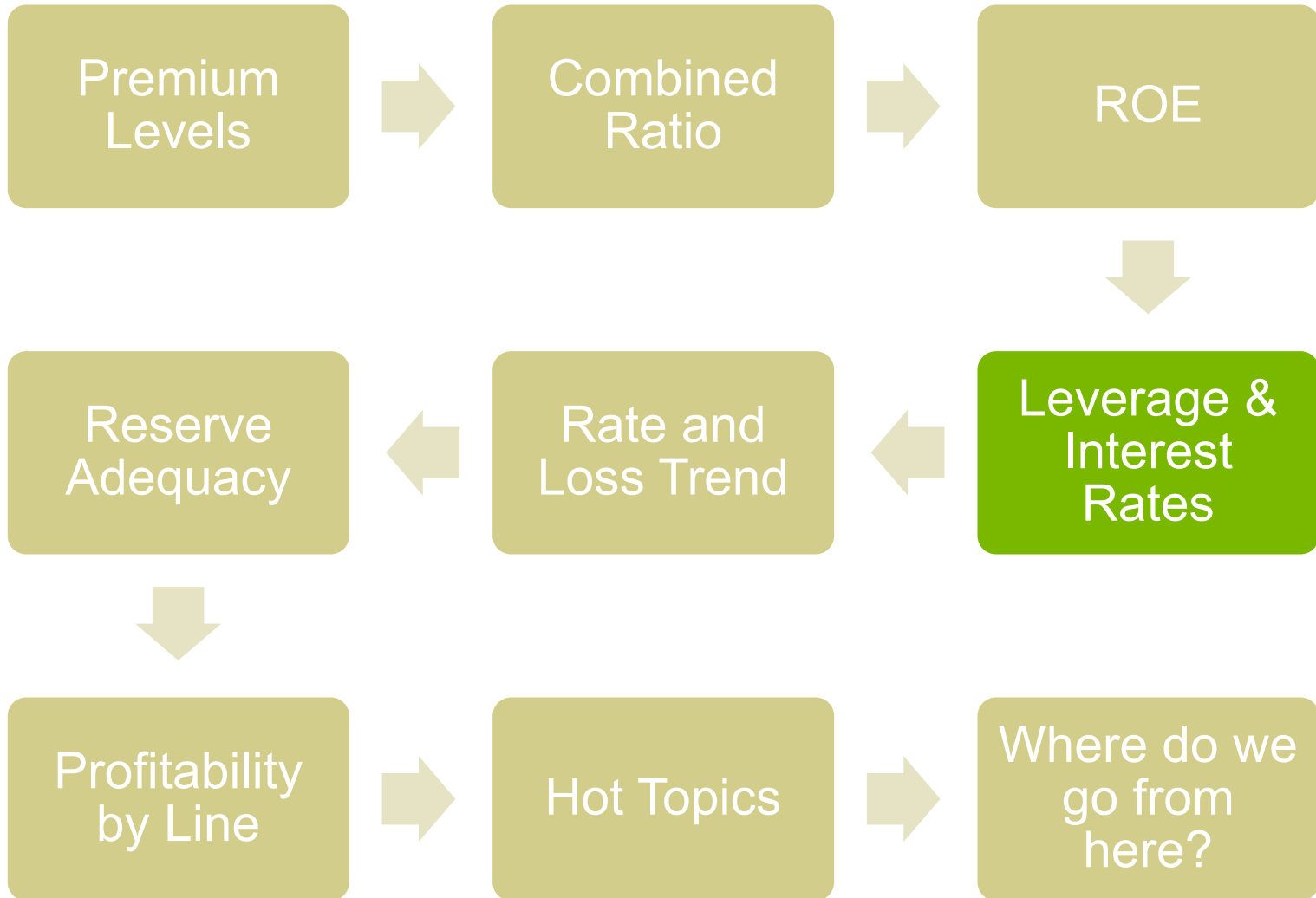


All US Industry  
Avg. ROE 12.8%  
Std. Dev. 2.0%

Correlation: 36%

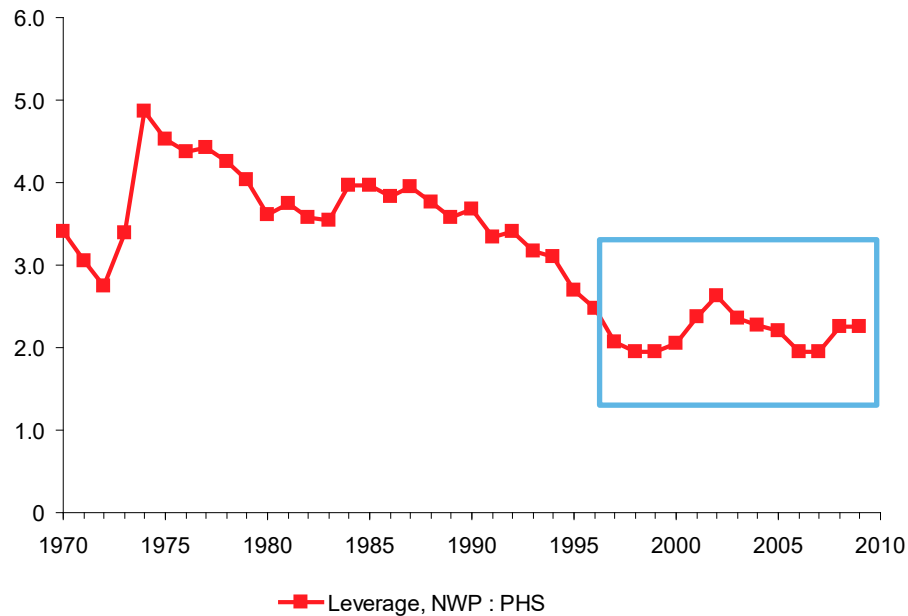
# Outline

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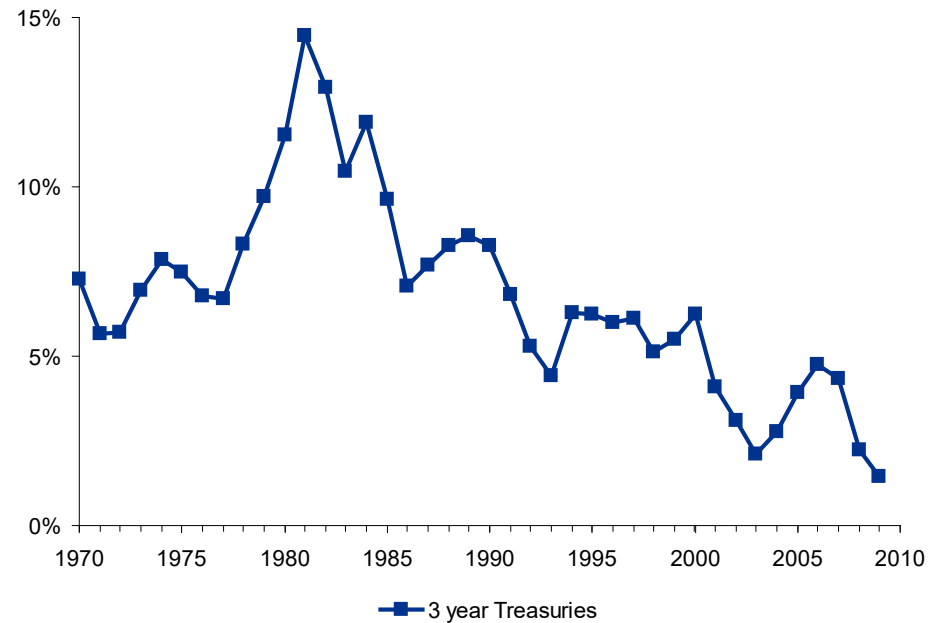


# Leverage And Interest Rates

**Leverage: Reserves + NWP to PHS Ratio**



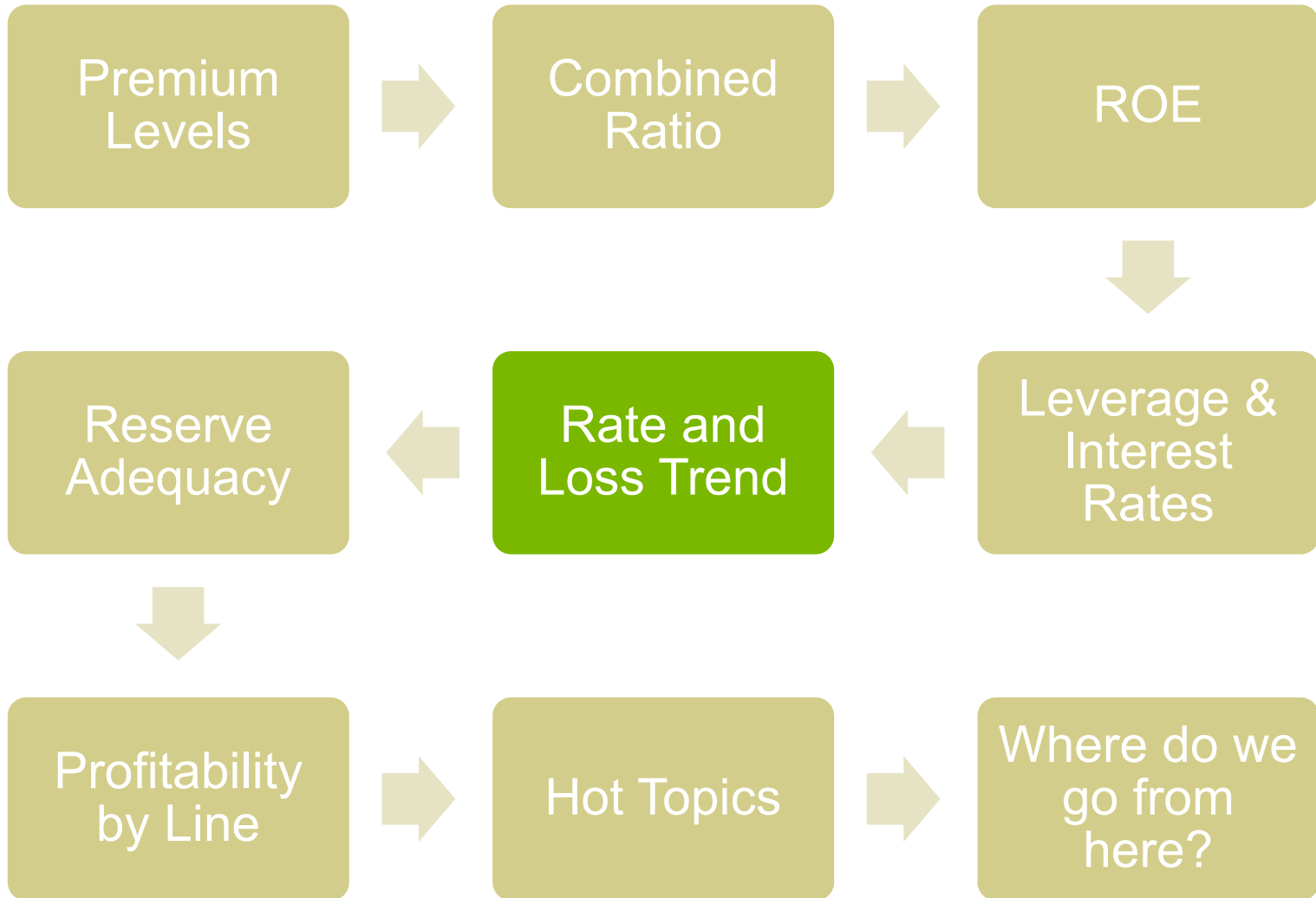
**3 year Treasuries**



- Decline in leverage stable since mid 1990's

# Outline

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# Commercial Lines And Casualty Rate Change History Consensus Of Estimates

## Aon Benfield Company Sample

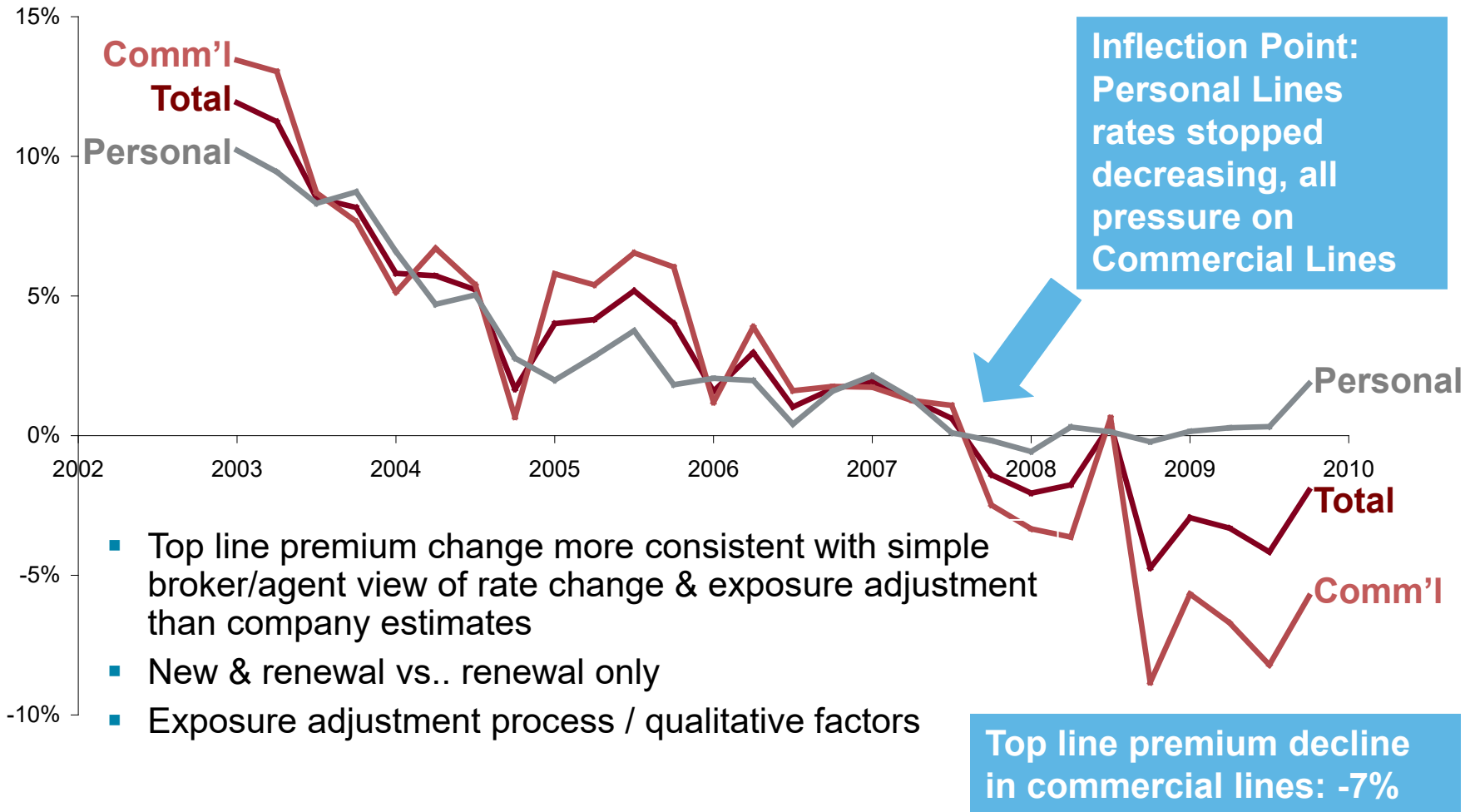
Year	Qtr	CIAB (GL)	Market Scout	Advisen	CLIPS	All Co. Avg	Specialty Co. Avg	Standard Co. Avg
2005	Q2	-10.0%	-2.3%	-7.1%	-2.0%			
2005	Q3	-7.7%	-5.3%	-8.3%	-2.0%			
2005	Q4	-4.7%	-4.7%	-6.6%	-2.0%			
2006	Q1	-6.0%	-5.7%	-4.4%	-2.0%			
2006	Q2	-5.6%	-6.0%	-2.1%	-1.0%			
2006	Q3	-6.3%	-9.0%	-0.4%	-1.0%			
2006	Q4	-8.4%	-8.7%	-1.3%	-3.0%			
2007	Q1	-10.5%	-10.3%	-2.0%	-4.0%	-3.9%	-5.2%	-3.0%
2007	Q2	-11.4%	-13.0%	-2.5%	-5.0%	-6.0%	-8.0%	-4.8%
2007	Q3	-12.1%	-15.0%	-2.9%	-5.0%	-7.5%	-9.4%	-5.4%
2007	Q4	-12.2%	-15.3%	-3.6%	-6.0%	-7.1%	-7.4%	-5.8%
2008	Q1	-12.6%	-13.7%	-5.4%	-6.0%	-6.6%	-6.9%	-5.5%
2008	Q2	-11.9%	-11.3%	-6.0%	-6.0%	-7.6%	-7.8%	-5.9%
2008	Q3	-9.7%	-10.3%	-6.9%	-5.0%	-5.8%	-6.0%	-4.9%
2008	Q4	-5.8%	-9.0%	-6.4%	-3.0%	-3.6%	-4.4%	-2.6%
2009	Q1	-4.2%	-8.0%	-3.9%	0.0%	-0.6%	-0.8%	-0.5%
2009	Q2	-4.9%	-6.3%	-2.8%	1.0%	0.6%	0.0%	1.2%
2009	Q3	-4.7%	-5.0%	-1.7%	0.0%	0.7%	0.6%	0.9%
2009	Q4	-5.6%	-4.7%	-1.7%	0.0%	0.9%	0.9%	0.5%
2010	Q1	-4.9%	-4.3%	-2.4%		-0.1%	-1.0%	0.7%

Broker and agent industry rate/premium changes: -5%

Exposure adjustment from recession: -3%



# Macro Premium Trends: Quarter Over Quarter Change In Industry Direct Written Premium



- Top line premium change more consistent with simple broker/agent view of rate change & exposure adjustment than company estimates
- New & renewal vs.. renewal only
- Exposure adjustment process / qualitative factors

# Rate Summary

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## Personal Lines

- Total premium flat to slightly up
- PPA frequency up-tick
- Severity trend below average
- Weather (especially Midwest tornado hail) continues to drive property volatility

## Commercial

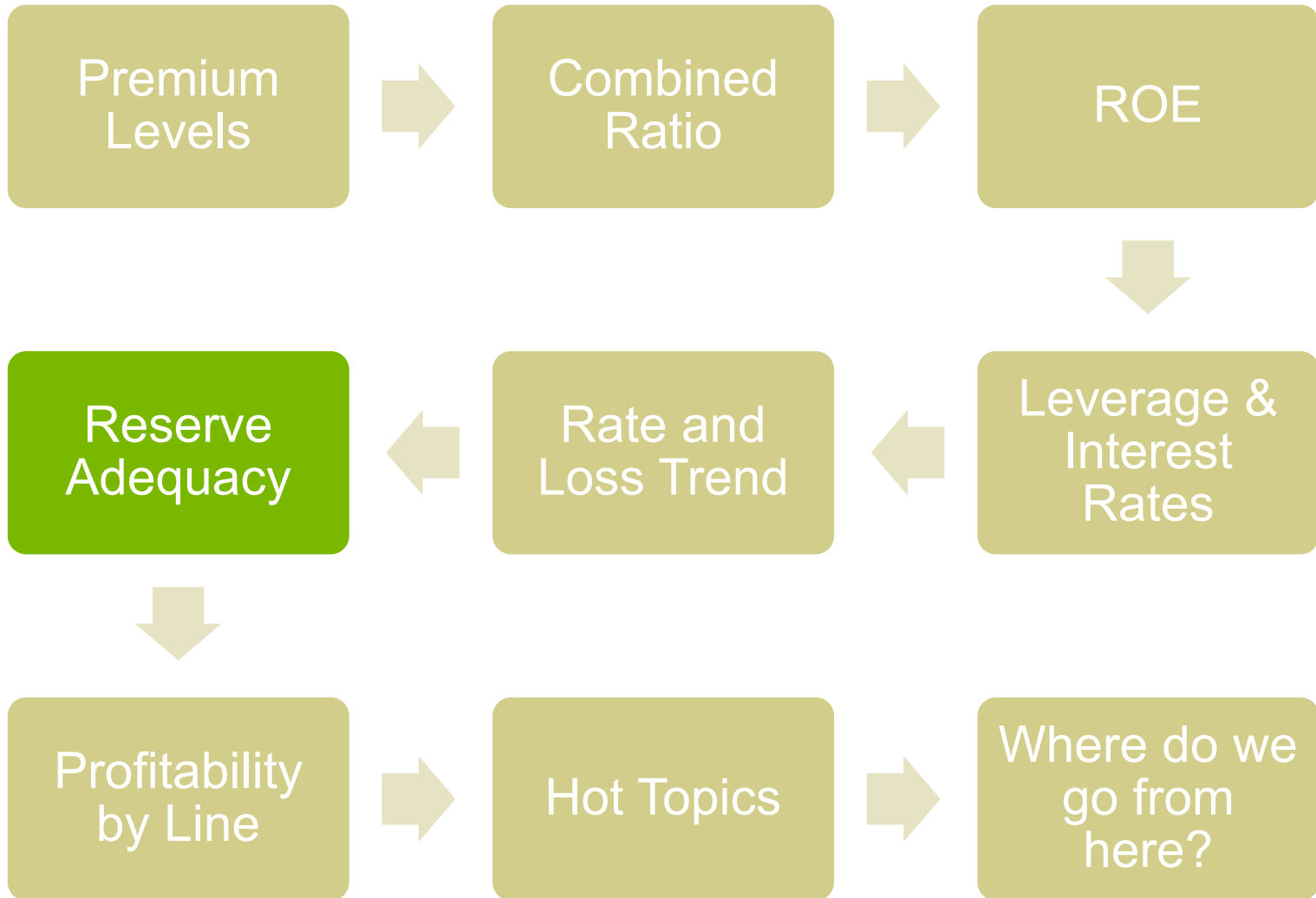
- Premium down 5 to 10 percent, reflecting economic slowdown impact on revenue/payroll
- Quoted rate changes suggest pressure on loss picks
- Signs that tort costs are increasing after benign 2009/10
- Pressure on Med Mal reforms (MS, IL, GA, KS, MD)

## Reinsurance

- Double dip rate-on-rate declines
- Abundant capital and capacity; Q1 2010 industry surplus of \$434B is at an all time high
- US catastrophe rates down 10 to 20 percent at July 1
- Gulf Energy pocket of hardening rate

# Outline

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# Industry Reserve Levels

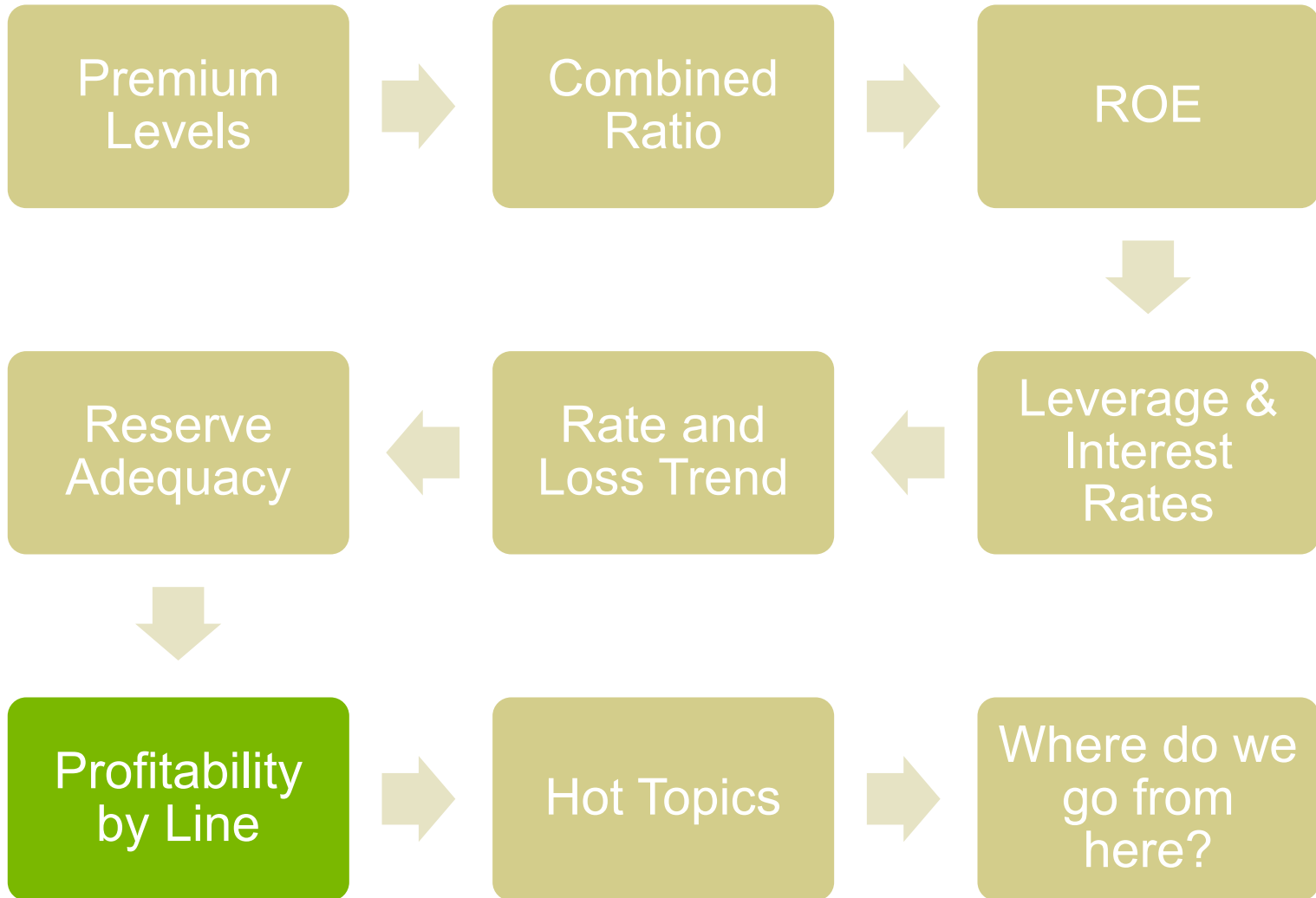
## How Much Gas Is Left In The Tank?

### Reserve Development (\$B)

	Favorable / (Adverse) Development			Remaining Redundancy	Years at Run Rate
	2007	2008	2009		
Home/Farm	0.3	0.5	1.4	(0.3)	N/A
PP Auto Liab	2.1	1.1	1.8	4.2	2.5
Comm Auto Liab	0.7	0.5	0.4	2.1	4.0
Work Comp	1.0	1.1	(0.5)	(0.8)	N/A
CMP	0.9	1.8	1.3	1.5	1.1
Med Prof Liab Occ	0.4	0.3	0.5	2.1	5.4
Med Prof Liab CM	1.5	2.0	1.6	5.5	3.2
Spec Liab	0.1	0.3	0.5	1.7	5.5
Oth Liab Occ	(0.4)	1.6	(0.4)	1.5	5.6
Oth Liab CM	0.4	1.8	0.8	3.1	3.1
International	(0.1)	(0.0)	(0.0)	(0.1)	N/A
Reins NP Prop	0.8	0.8	1.1	2.3	2.6
Reins NP Liab	(1.7)	(0.3)	0.8	(3.0)	N/A
Reins NP Fin	0.1	0.1	0.2	0.6	4.1
Prod Liab Occ	(0.1)	(1.0)	(0.6)	0.7	N/A
Prod Liab CM	0.0	0.0	0.0	0.1	2.0
All Other 2 Yr Lines	3.5	3.8	2.6	2.2	0.7
Total xFin Mort Guaranty	9.5	14.4	11.5	23.2	2.0
Fin Mort Guaranty	(1.2)	(12.6)	7.0	(1.4)	N/A
Total	8.3	1.7	18.6	21.9	2.3

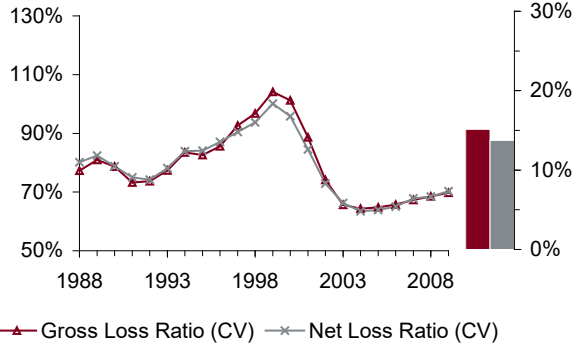
# Outline

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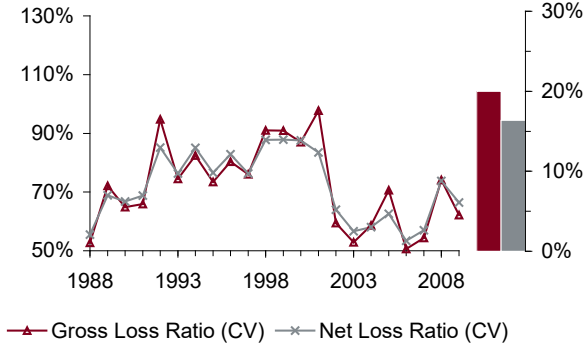


# Standard Lines Historical Gross And Net Accident Year Loss Ratios

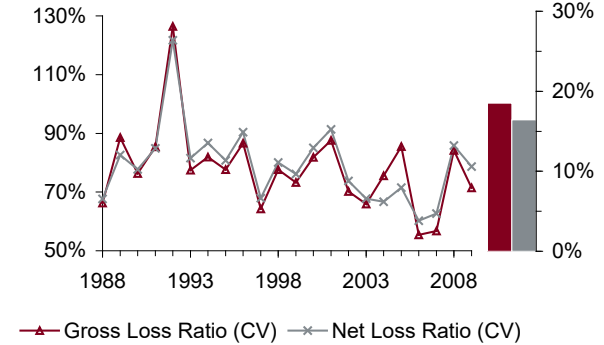
### Commercial Auto Liability



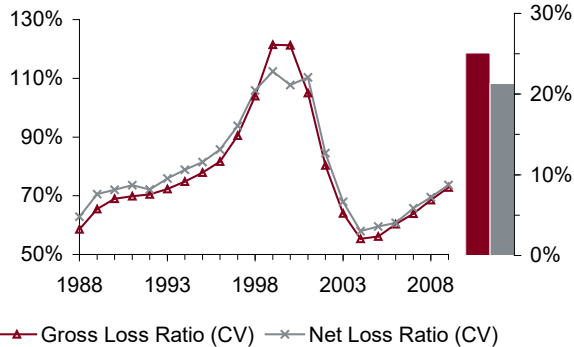
### Commercial Multiple Peril



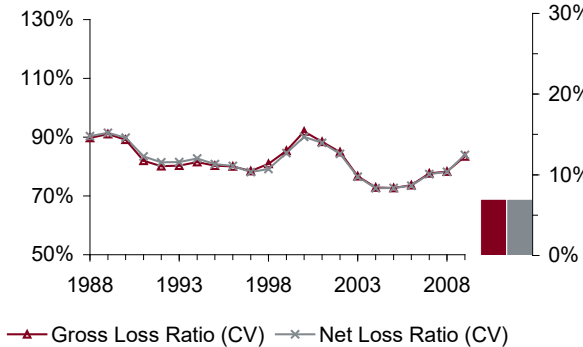
### Homeowners / Farmowners



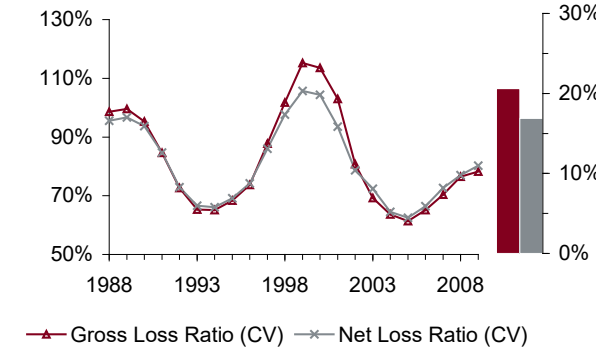
### Other Liability - Occurrence



### Private Passenger Auto Liability

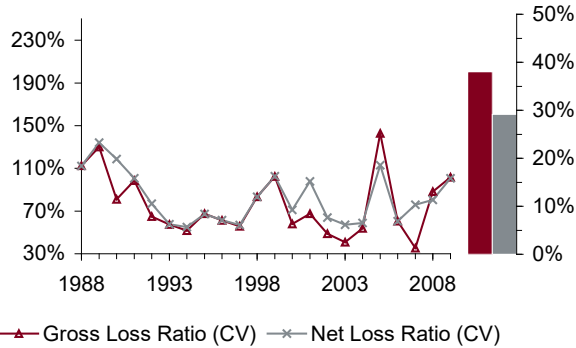


### Workers' Compensation

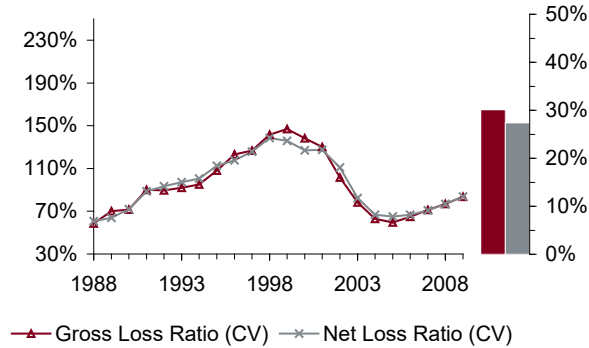


# Specialty Lines Historical Gross And Net Accident Year Loss Ratios

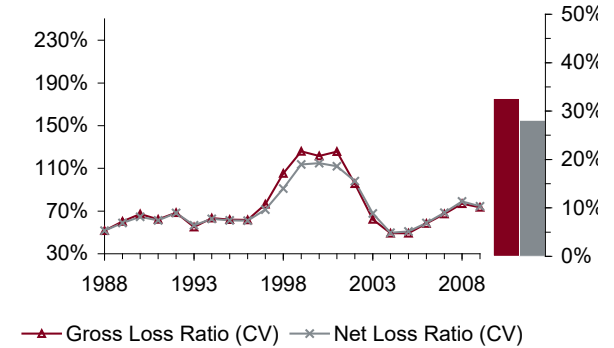
**International**



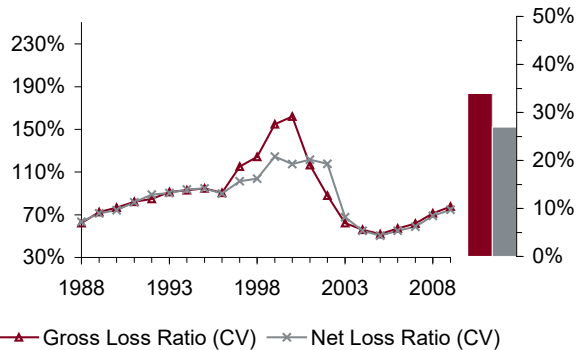
**Medical Malpractice**



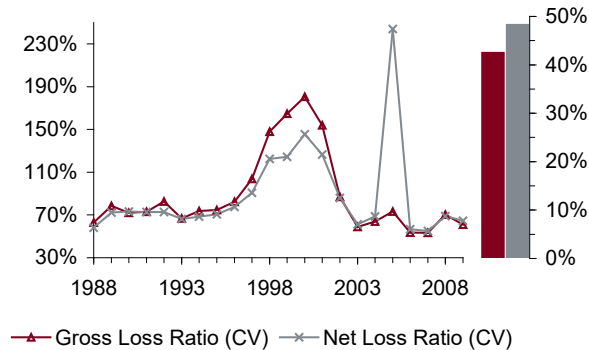
**Other Liability - Claims Made**



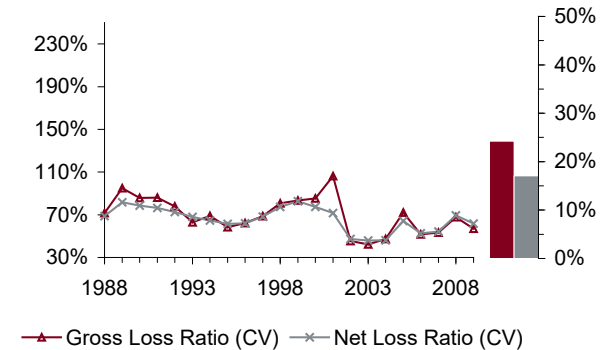
**Product Liability**



**Reinsurance - Liability**

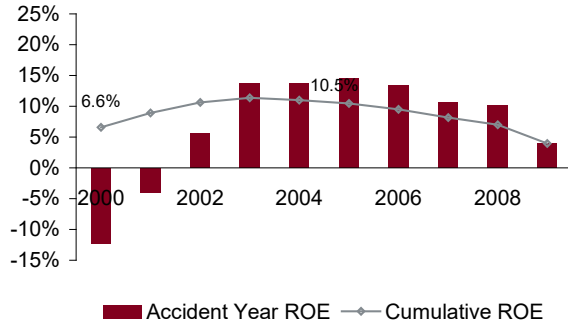


**Special Liability**

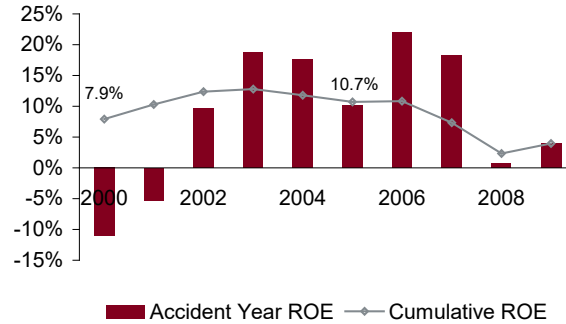


# Standard Lines ROE And Average Accident Year ROE

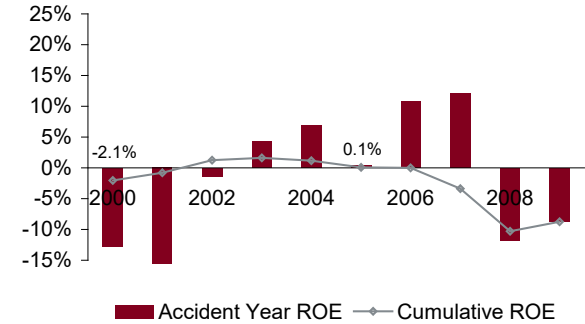
### Commercial Auto Liability



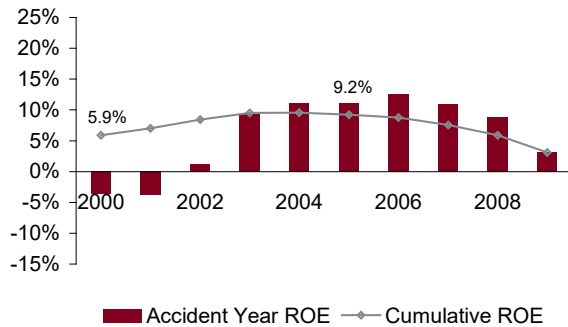
### Commercial Multiple Peril



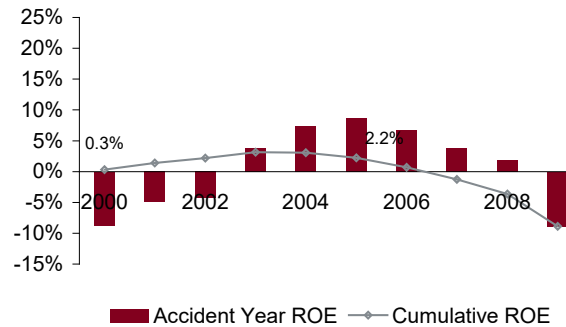
### Homeowners / Farmowners



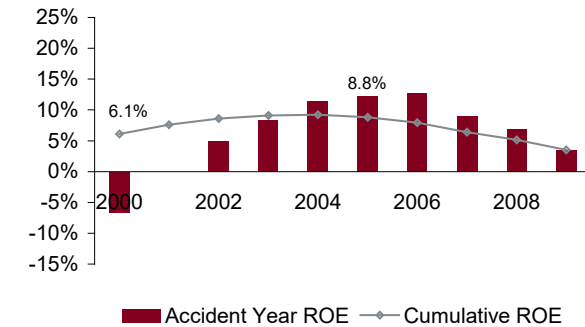
### Other Liability - Occurrence



### Private Passenger Auto Liability



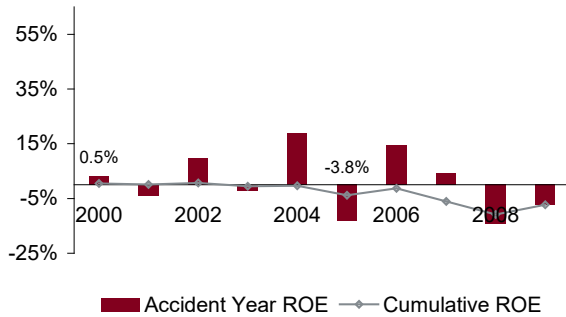
### Workers' Compensation



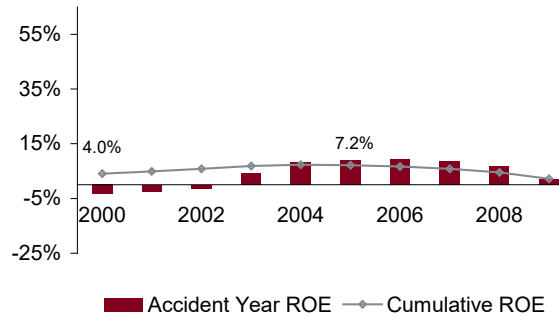


# Specialty Lines ROE And Average Accident Year ROE

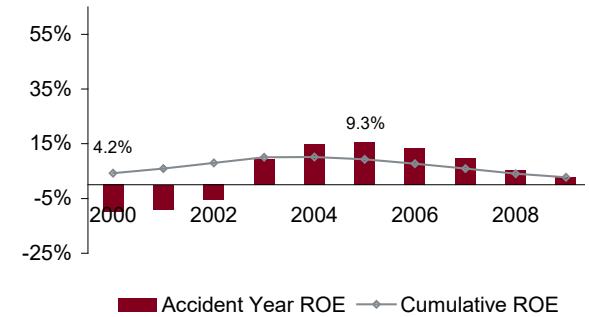
### International



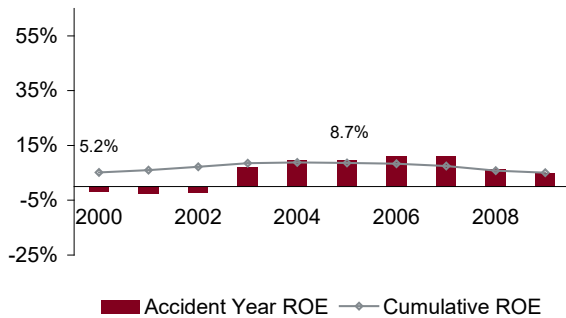
### Medical Malpractice



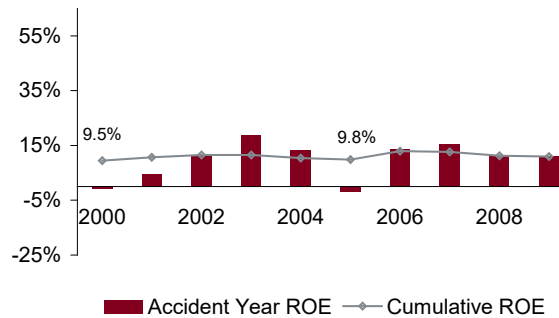
### Other Liability - Claims Made



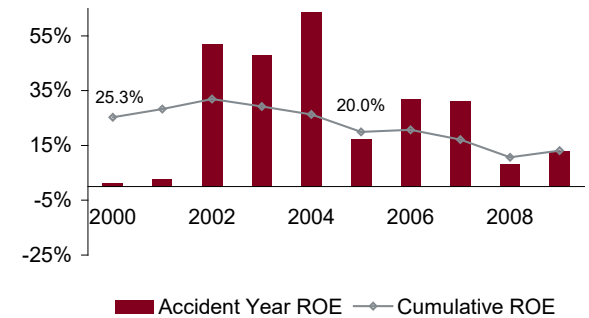
### Product Liability



### Reinsurance - Liability



### Special Liability



# Standard Lines Ranks

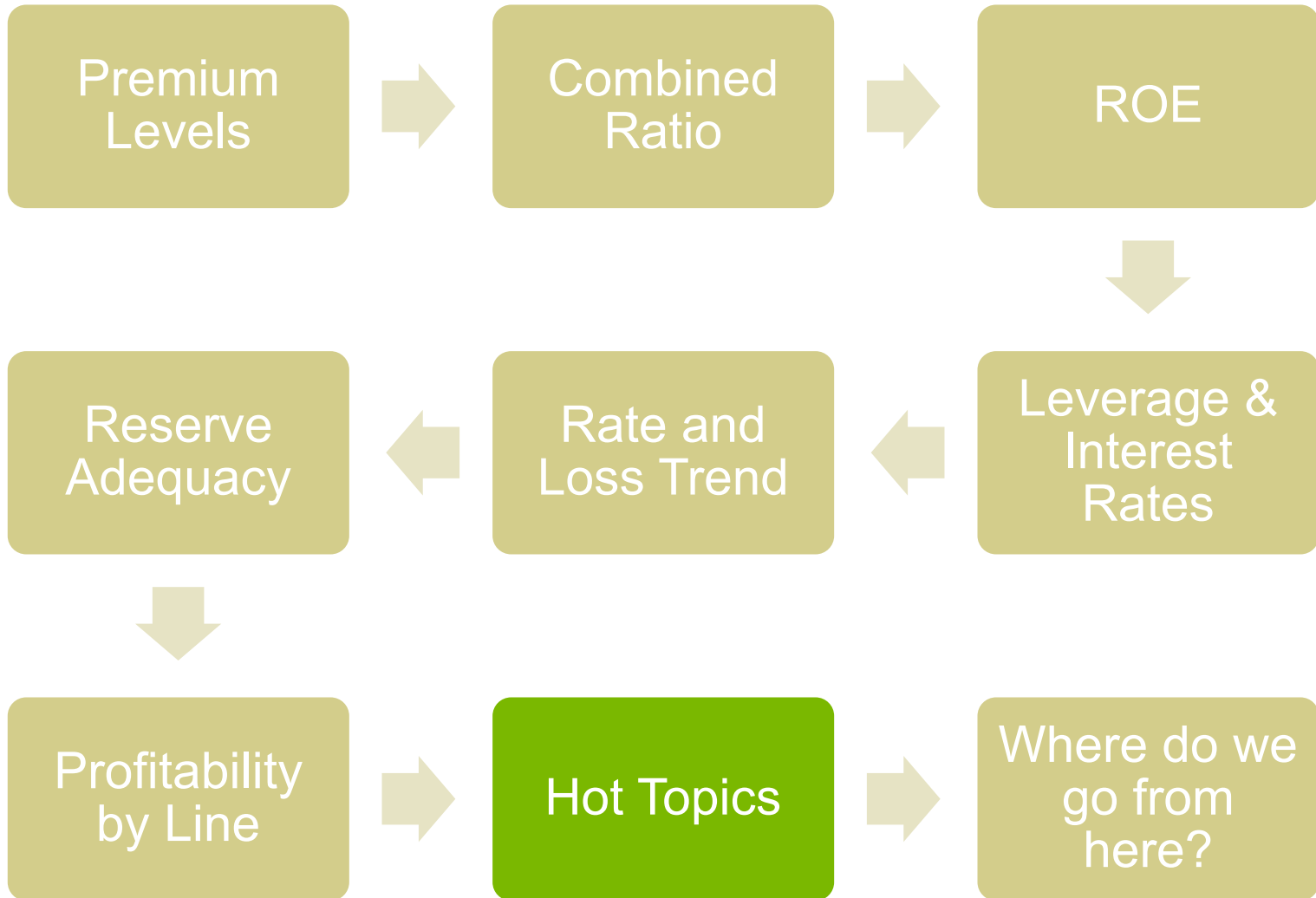
Ranks	Commercial Auto Liability	Commercial Multiple Peril	Homeowners / Farmowners	Other Liability - Occurrence	Private Passenger Auto Liability	Workers' Compensation
10 Year Avg Net Premium Growth	5	4	2	1	6	3
10 Year Average Net Loss Ratio	2	1	4	3	6	5
10 Year Average Net Combined Ratio	3	2	6	1	5	4
Avg CY Development to Premium (+=good)	4	3	2	6	1	5
10 Year Average Calendar Year Loss Ratio	2	1	3	6	5	4
Gross Loss Ratio CV, 1987-08	2	4	3	6	1	5
Net Loss Ratio CV, 1987-08	2	3	4	6	1	5
Worst Gross LR 1987-08	3	2	6	5	1	4
Worst Net LR 1987-08	3	1	6	5	2	4
Biggest Net LR Increase	2	5	6	4	1	3
5 Year Economic ROE	2	1	6	3	5	4
10 Year Economic ROE	2	1	6	4	5	3
2009 Premium to Surplus Ratio	4	3	2	6	1	5
Average Rank	2	1	5	5	3	4

## Specialty Lines Ranks

Ranks	International	Medical Malpractice	Other Liability - Claims Made	Product Liability	Reinsurance - Liability	Special Liability
10 Year Avg Net Premium Growth	6	2	1	4	5	3
10 Year Average Net Loss Ratio	4	5	3	2	6	1
10 Year Average Net Combined Ratio	5	6	4	3	2	1
Avg CY Development to Premium (+=good)	2	1	4	6	5	3
10 Year Average Calendar Year Loss Ratio	2	4	3	6	5	1
Gross Loss Ratio CV, 1987-08	5	2	3	4	6	1
Net Loss Ratio CV, 1987-08	5	3	4	2	6	1
Worst Gross LR 1987-08	3	4	2	5	6	1
Worst Net LR 1987-08	4	5	2	3	6	1
Biggest Net LR Increase	5	1	4	3	6	2
5 Year Economic ROE	6	5	3	4	2	1
10 Year Economic ROE	6	5	4	3	2	1
2009 Premium to Surplus Ratio	2	4	3	6	5	1
Average Rank	5	3	2	4	6	1

# Outline

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accident aces agents **america** asia balance better billion

**business** businesses capabilities **capital** casualty

**china** clients combined commercial countries credit crisis customers distribution

europa **evan** example fact financial focus frankly general **global** good great

**greenberg** grow growing **growth** **huatai** ill important infrastructure

**insurance** international investment largest latin **life** lines

local management **market** markets middle needs officer operating

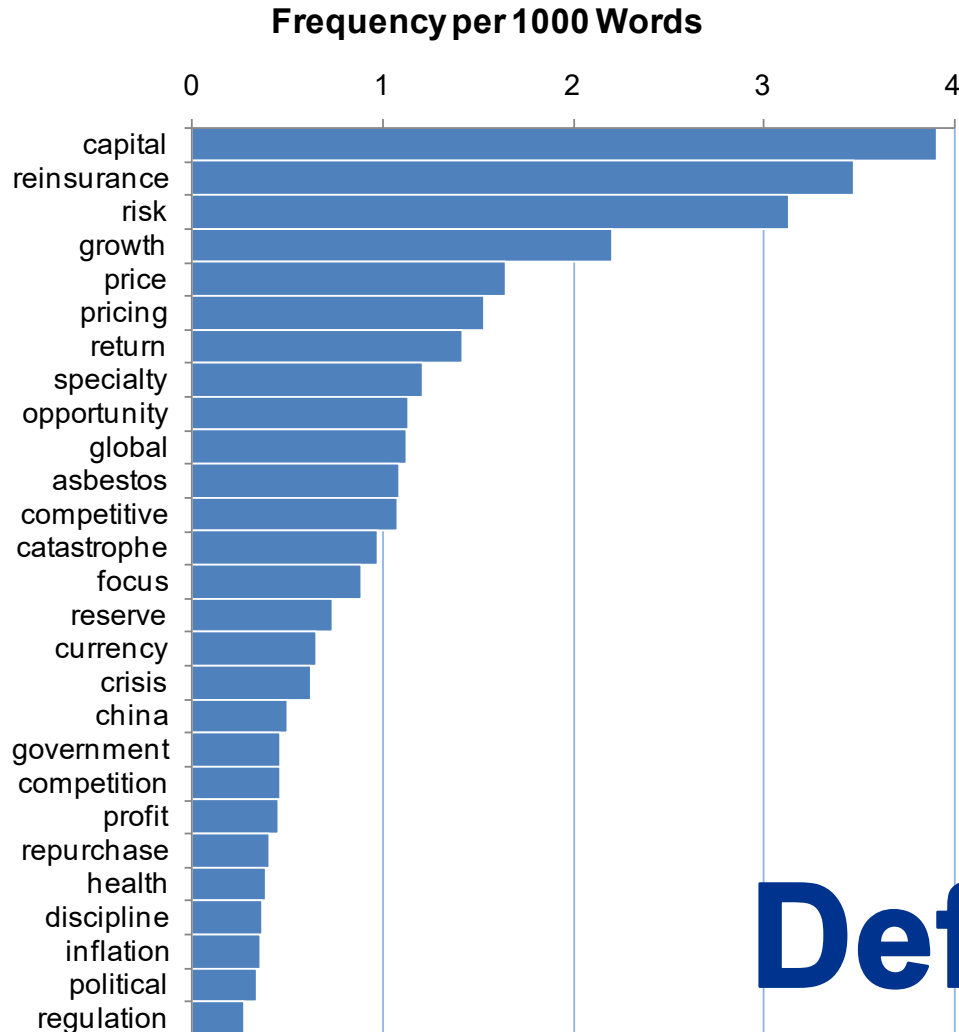
operations opportunities opportunity particularly **personal** portfolio premium

presence pricing probably **product** **products** property question rate

**reinsurance** **risk** sales second services side significant slide small **specialty**

terms terrific travel underwriters **underwriting** value while world **years**

# What Is On Investor's and Senior Management's Minds? Public Document Word Frequency



Selected word frequency  
thirteen selected 10Ks,  
quarterly conference call  
and investor presentation  
transcripts, H1 2010

Ace, Allstate, Axis,  
Chubb, CNA, Hartford,  
Markel, Progressive, Ren  
Re, Travelers, W.R.  
Berkley, XL

# Deflation = 0

## Management Focus

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### Capital

- Capital management #1 challenge for industry

### Reinsurance

- Volatility transfer, capital & capacity

### Risk

- Rating agency, regulator, investor

### Growth

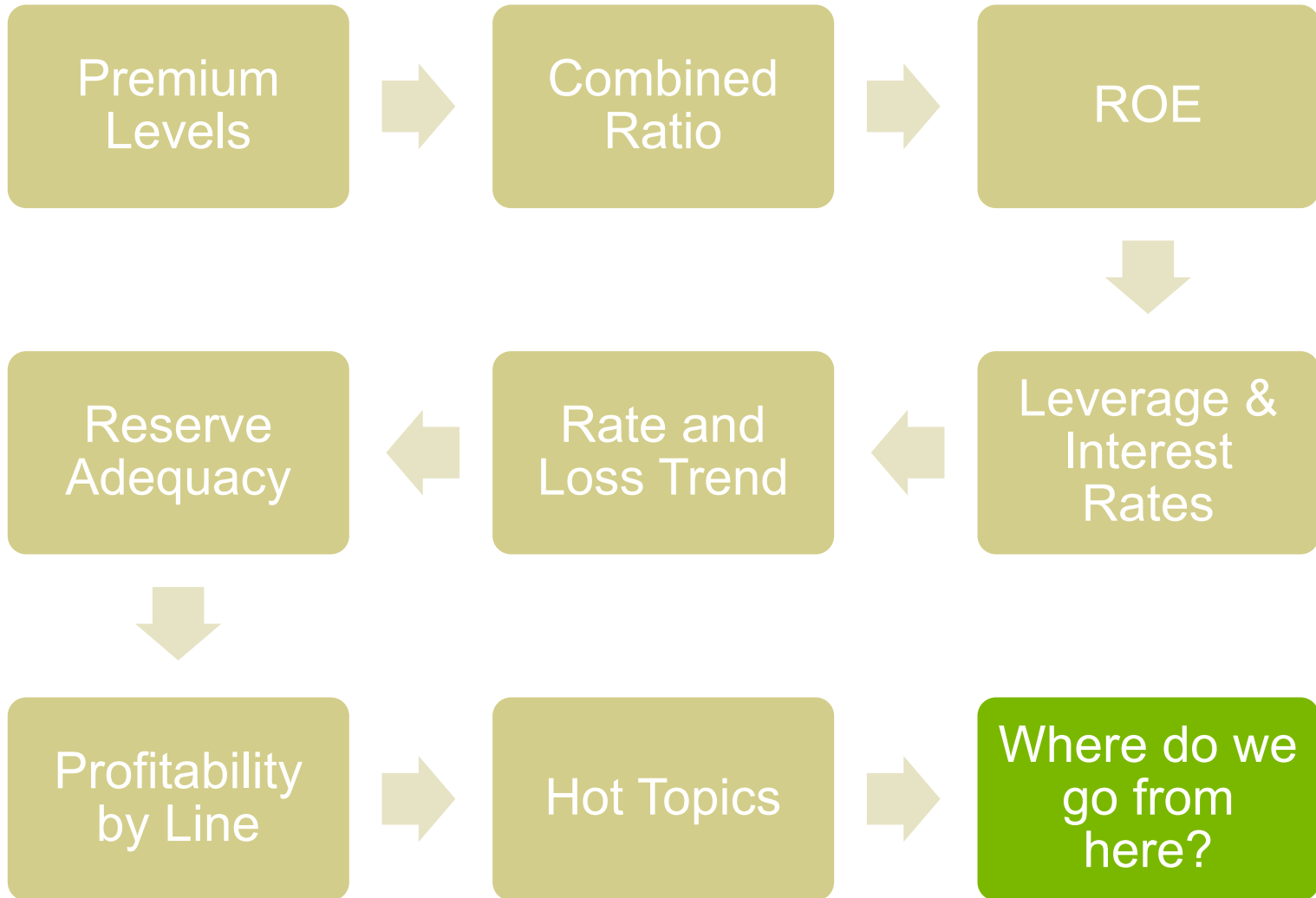
- Product enhancement & differentiation

### Price

- Risk sensitive benchmarks, aligned capital and growth objectives

# Outline

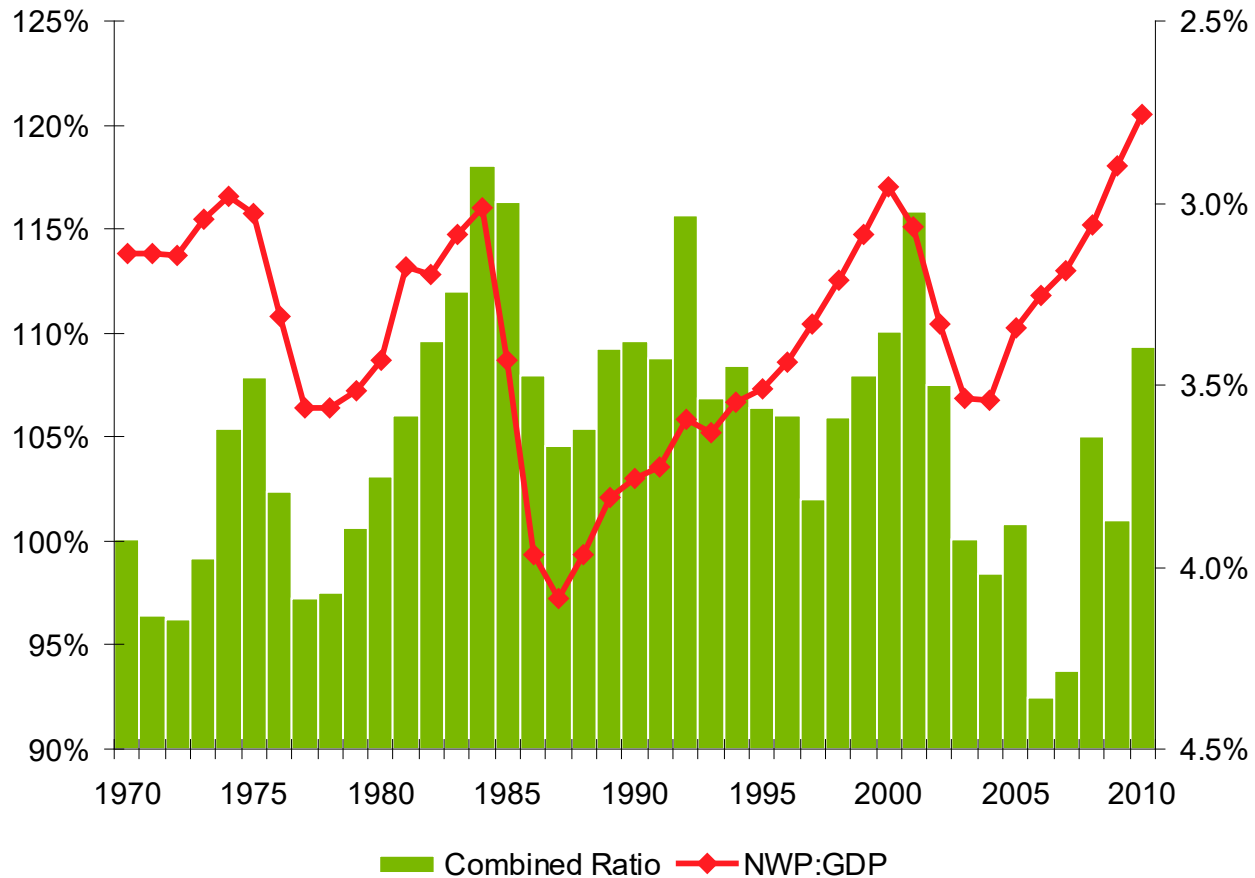
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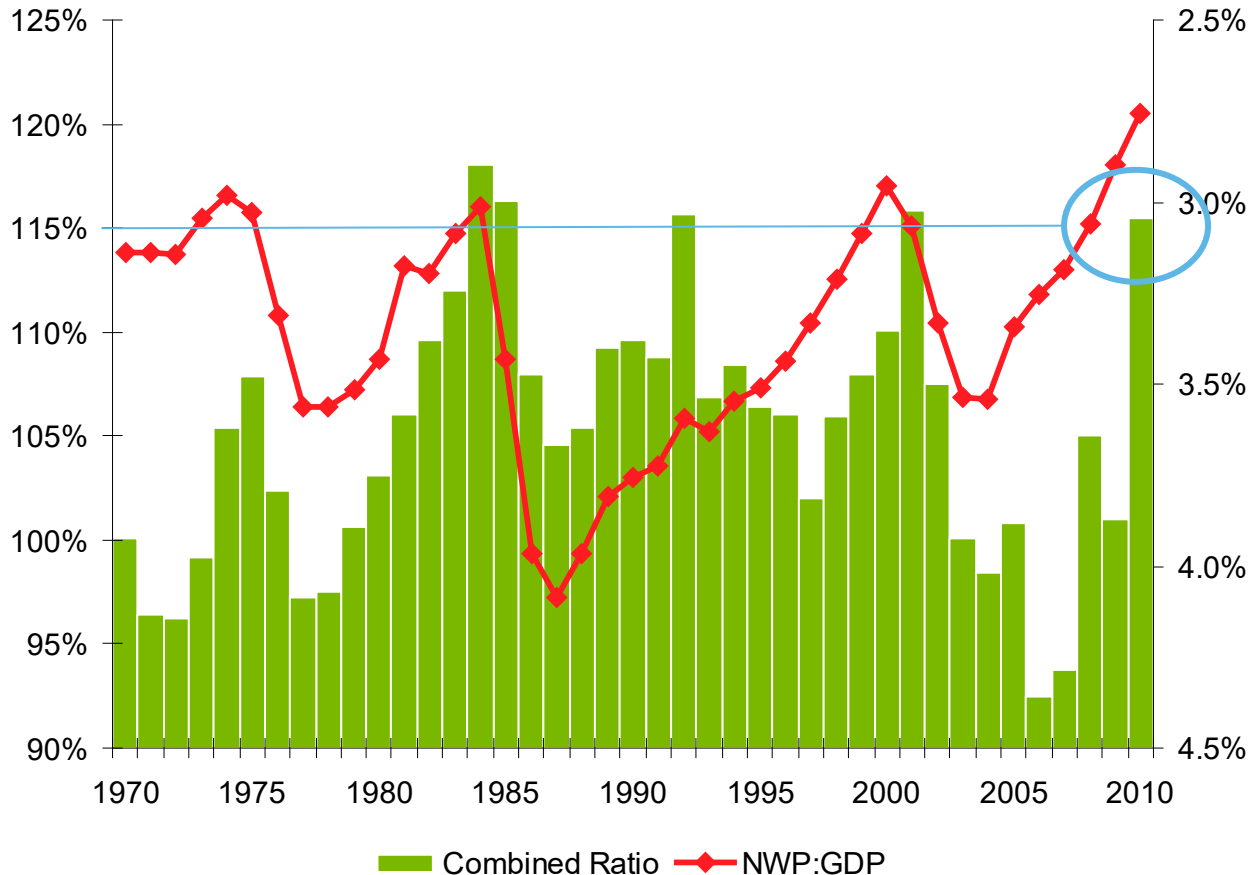
# What Will Turn The Market? - 2010 with \$25B Net Pre-Tax Cat Losses, No Reserve Releases, 3% Rate Cut

**Industry Calendar Year Combined Ratio  
\$25B Extraordinary Cat Losses**



# What Will Turn The Market? - 2010 with \$50B Net Pre-Tax Cat Losses, No Reserve Releases, 3% Rate Cut

**Industry Calendar Year Combined Ratio  
\$50B Extraordinary Cat Losses**



\$50B loss drives combined above 115%



CR only 101% in 2009

## What Industry Event Needed For \$50B Net?

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**Hurricane**  
occurrence  
estimate = 50  
year return period

- \$82B industry event
- \$17B reinsurance recovery net of reinstatement premiums
- \$17B FHCF recovery
- \$48B net industry loss

**Earthquake**  
occurrence  
estimate = 250  
year return period

- \$72B industry event
- \$21B reinsurance recovery net of reinstatement premiums
- \$51B net industry loss

**All region**  
**aggregate**  
estimate = 25  
year return period

- \$81B industry event
- \$18B reinsurance recovery net of reinstatement premiums
- \$13B FHCF recovery
- \$50B net industry loss

## Speculative Projections

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### Rate with No Shock

- Continued downward trend through at least 2012
- Top line pressure moderated by economic rebound

### Shock to Move Market

- \$30-50B net permanent hit to US P&C industry
- Nat cat hurricane/quake most likely trigger

### Reserves

- 2+ years releases available in aggregate
- Current accident year picks aggressive

### Loss Trend

- Severity trend tracking with historical norms
- Frequency trend could reverse with economy

### Investment Income

- Low interest rate environment for next 1-2 years
- Increased volatility in all sectors

### Capital & Leverage

- US capital will keep leverage in 2 to 2.5 range
- EU capital uncertainty from Euro and Solvency II

## Contact

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**Stephen J. Mildenhall**

Chief Executive Officer

Aon Benfield Analytics

+1.312.381.5880 (office)

+1.312.961.8781 (cell)

[stephen.mildenhall@aonbenfield.com](mailto:stephen.mildenhall@aonbenfield.com)