



**Skating to Where the Puck Will Be:**  
*How P&C Insurers Can Prepare Now for  
Risks that Fall Out from the Financial  
Crisis*

ADVISORY

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This presentation is based on a Thought Leadership article prepared by members of KPMG LLP's Actuarial Services Group and does not necessarily represent the views or professional advice of KPMG LLP



# Introduction

- ◆ Today's turbulent financial environment has challenged all corporations, but none so much as financial institutions.
- ◆ Publicly held insurers have also seen significant reductions in their market capitalizations as a result of asset write-downs.
- ◆ Property and casualty (P&C) insurers generally have not been impacted as severely, unless their product lines include mortgage insurance or other financial guarantees.
- ◆ A number of economists have asserted that the unprecedented levels of monetary stimulus and government spending undertaken in response to the financial crisis increases the risk of rising inflation in the intermediate term.
- ◆ High levels of inflation can have serious consequences for P&C insurers, as P&C capital bases are directly impacted by changes in their reserve levels and by the profitability of business written.
- ◆ On the other side of the inflation debate, some observers have argued that deflationary risks still loom even with the massive stimulus efforts undertaken thus far, given deflationary factors such as excess global capacity, significant financial de-leveraging, and the widespread credit contraction prompted by the crisis
- ◆ While there are as many different views of what the future economy holds as there are people willing to share them, higher inflation scenarios are being considered by many to be a risk

# The Economic Environment

(1/3)

- ◆ Using a classical monetary view of the economy, national product can be viewed as the product of the supply of money times the velocity of money.

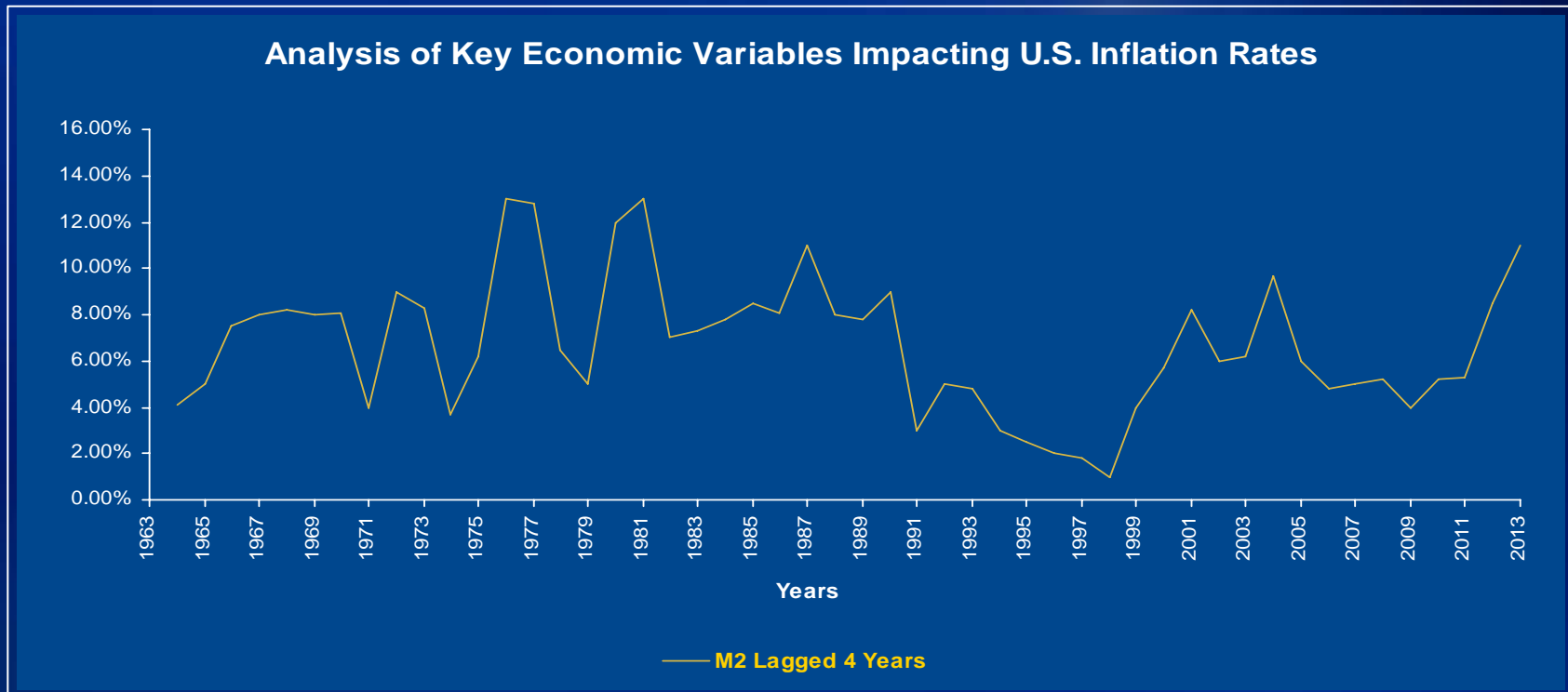
$$\text{Supply of Money} \times \text{Velocity of Money} = \text{Price of Goods} \times \text{Quantity of Goods} = \text{National Product}$$

- The money supply implies the cash and bank deposits that are easily accessible for spending (e.g., as checking and savings accounts).
- Velocity is the number of times each dollar in the money supply is spent in a given year.
- ◆ In healthy economic times, the national product can grow in real terms only at the rate resources and productivity increase.
- ◆ In the current economic climate, consumers are fearful of the future, and tend to hold on to income rather than spend it.
- ◆ The velocity of money drops, decreasing the national product, which threatens to create a downward spiral.
- ◆ Government can use a variety of tools to combat the spiral, including increasing government spending through stimulus packages and easing monetary policy.
- ◆ Velocity could decrease to make up the difference, but if money supply and/or the velocity of money grow together at a rate faster than productivity, the economy is in the danger of high inflation.

# The Economic Environment

(2/3)

- ◆ The following chart shows historical and current movements in U.S. money supply through December 2008, but at a four-year lag.
- ◆ The money supply measure used is “M2,” which includes cash, checking, and basic savings accounts. A four-year lag is used since M2 historically tends to impact inflation after such a lag.



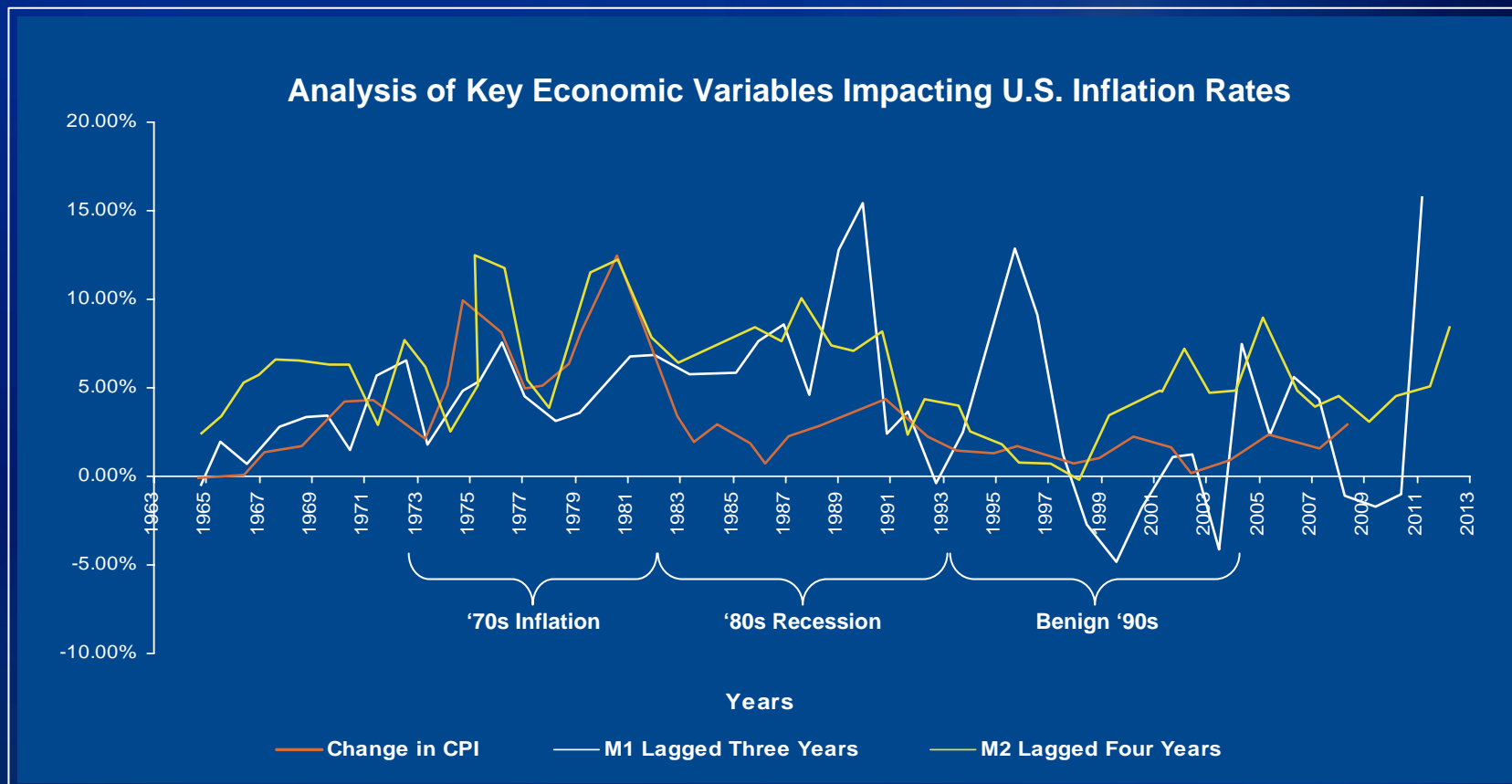
- ◆ Changes in money supply tend to impact changes in Consumer Price Index (CPI). Increases in M2 are usually followed by increases in inflation but with a lag.

*Money supply information was taken from the Federal Reserve website*

# The Economic Environment

(3/3)

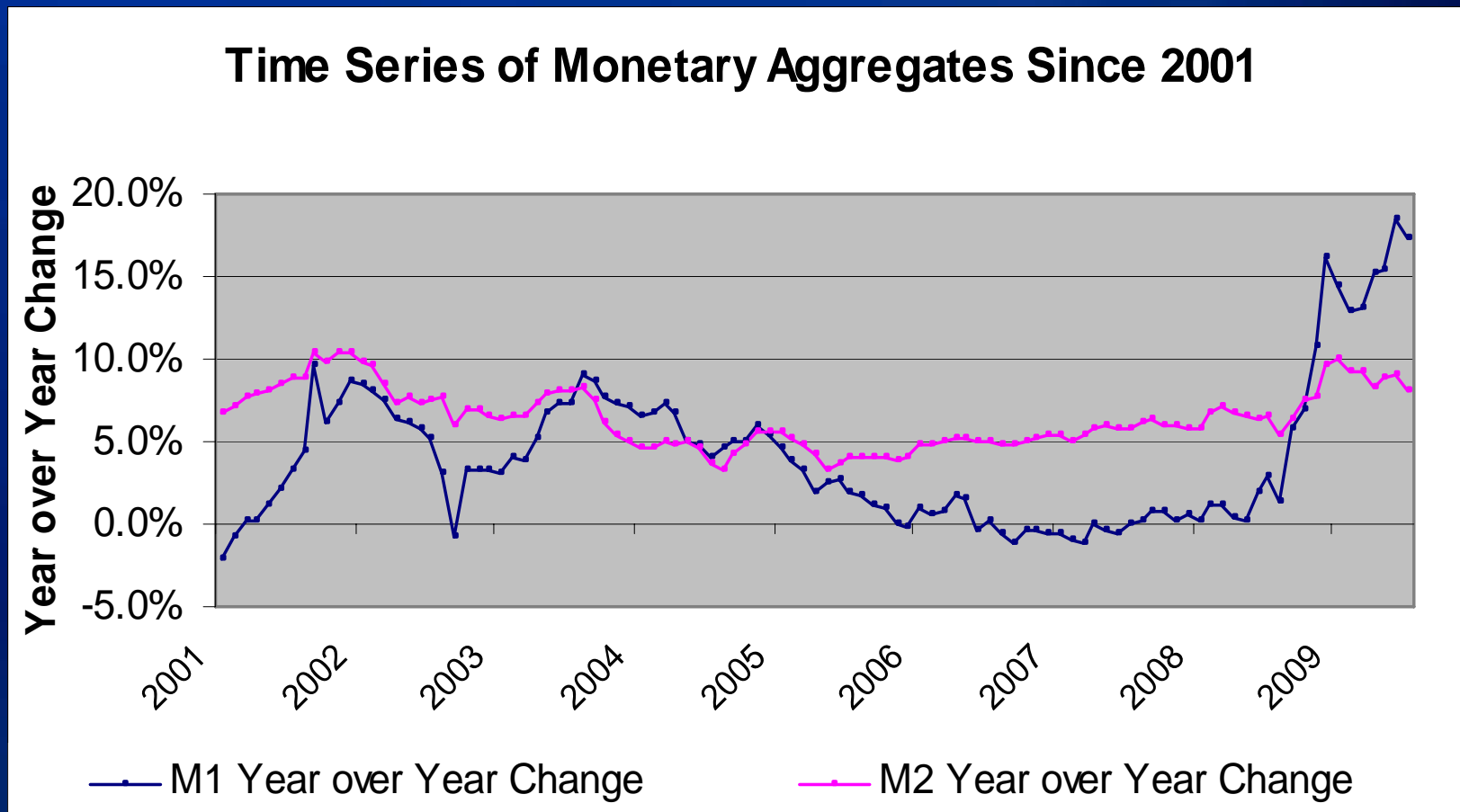
- ◆ Surges in the supply of money in the 2000s, including the dramatic increase in the current year, raise the specter of the 1970s style inflation impacting the economy in the decade to come.



Money supply information was taken from the Federal Reserve website



# What is currently happening in monetary policy?



Money supply information was taken from the Federal Reserve website



# What is the indication of inflation that markets expect?

## Comparative Yields on Treasury Inflation Protected Securities (TIPS) Compared to Constant Yield Treasuries

Term	Constant Yield	Principal Protected
One Year	0.5%	None
Five Year	2.7%	1.3%
Ten Year	3.8%	1.8%
Twenty Year	4.5%	2.3%

*Interest rate information was taken as of 8/07/2009 from the Federal Reserve website*

# Do the current times parallel the 1970's?

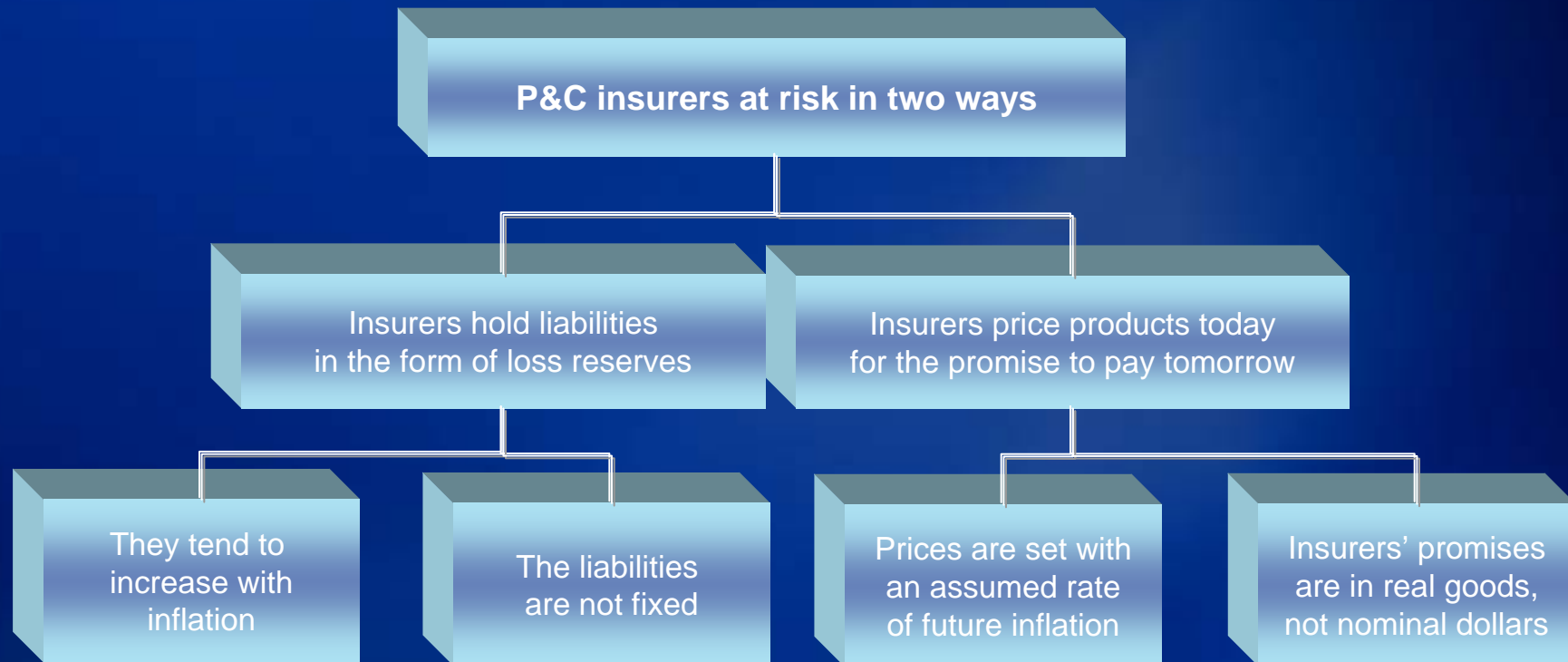
	1970's	Late 2000's
<b>Money Supply</b>	Upward spikes in M1 and M2 preceded the period	Upward spikes in M1 and M2 are occurring
<b>Trade Deficit</b>	Historic surpluses had turned to deficits	Persistent deficits have widened significantly
<b>Government Deficit</b>	Small deficits had turned upward significantly	Persistent deficits have widened significantly
<b>Recession</b>	Recession followed inflation, in some part to control the inflation	Inflation risk is heightened in part due to response to existing recession

# Inflation Risk: Summary

- ◆ **Some factors point to heightened risk; such as:**
  - Monetary stimulus
  - Fiscal deficit
  - Trade deficit
- ◆ **Some factors point to mitigation; such as:**
  - Nominal yields don't depart greatly from TIPS yields
  - The Fed has ample tools (and the will to use them?)
  - Current inflation measures are near -0- and the economy remains weak
- ◆ **However, it is clear that inflation risk is heightened, and managements are prudent to consider that risk carefully**

# What Does This Mean for P&C Insurers

(1/4)



# What Does This Mean for P&C Insurers

(2/4)

Insurers hold liabilities in the form of loss reserves

- ◆ Changes in the inflationary environment impact claims payments stemming from all current and past exposure periods.
- ◆ When all past exposure periods are considered, it becomes clear that a sudden increase in inflation would have an impact on reserves and ultimate payments greater than the change in inflation rate.

Insurers price products today for the promise to pay tomorrow

- ◆ Prices for many lines of business are subject to regulatory reviews, and there can be a considerable lag between the time inflation is recognized and integrated into requests for rate changes, and when the requests are approved.
- ◆ Insurers dealing with competitive pressures may be slow to react to inflationary turning points, as market prices may be slow to respond to the change in the environment.

# What Does This Mean for P&C Insurers

(3/4)

- ◆ To help insurers understand the degree of risk, data from the statutory annual statement for the composite P&C industry is used to calculate average durations of losses and loss reserves.

## Impact of a One Percent Increase in Inflation as a Ratio to Premiums Earned

Line of Business	Premium in 2007(EP)	Reserves at Year-End 2007 (Millions)	Duration of Policy at Inception	Duration of Industry Reserve Portfolio	Reserve Impact (to EP)	Current Accident Year Loss Ratio Impact (to EP)	Calendar Year Operating Ratio Impact
	(1)	(2)	(3)	(4)	(5)= [1%×(2)×(4)]/(1)	(6)=1%× (3)×2007 Loss Ratio	(7)=(5)+(6)
Personal Lines	218,248	110,522	115%	123%	0.6%	0.8%	1.5%
Commercial Lines	182,727	313,982	227%	230%	4.0%	1.6%	5.5%
Specialty Lines	22,180	43,788	302%	210%	4.1%	2.0%	6.1%
Medical Malpractice	9,978	30,450	672%	301%	9.2%	5.5%	14.7%
Reinsurers	11,983	49,214	290%	128%	5.3%	1.7%	6.9%
<b>Total</b>	<b>445,116</b>	<b>547,956</b>	<b>193%</b>	<b>228%</b>	<b>2.8%</b>	<b>1.4%</b>	<b>4.2%</b>

Industry data obtained from Highline Data Services. Premiums and reserves in US\$ millions.



# What Does This Mean for P&C Insurers

(4/4)

- ◆ The following table shows the potential impact on an “all lines” insurer with a business portfolio similar to that of the total line shown in the previous slide.

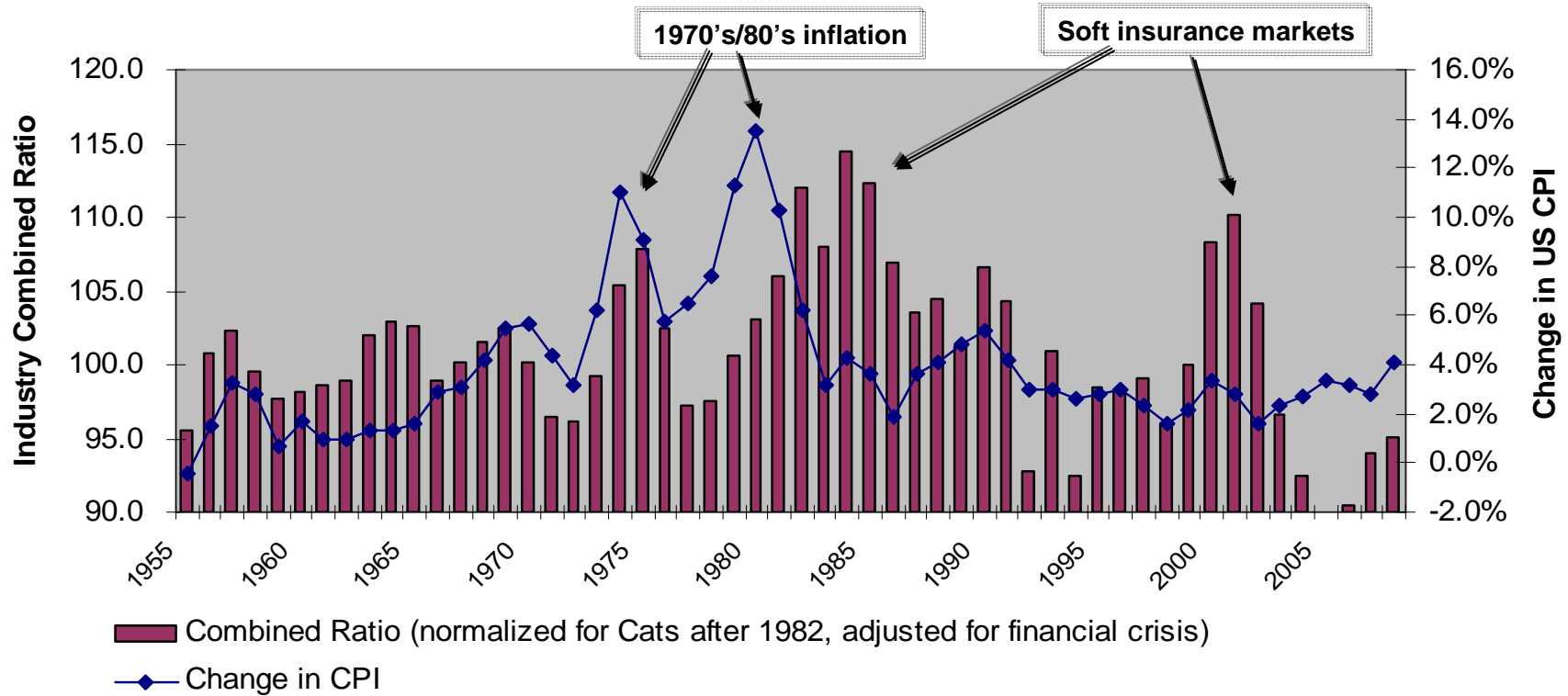
## Impact of Inflation Change on the Current Calendar Year for the Industry

Assumed Increase in Inflation Rate	1.0%	2.0%	3.0%
Current Accident Year Loss Ratio Impact (ratio to EP)	1.4%	2.8%	4.2%
Reserve Impact (ratio to EP)	2.8%	5.6%	8.4%
One Year Impact on CY Loss Ratio (ratio to EP)	4.2%	7.8%	12.6%
Assumed Premium to Surplus Ratio	150%	150%	150%
Impact on Capital	6.3%	11.7%	18.9%



# How has the inflation rate and insurers results interacted in the past?

## Comparison of P&C Industry Combined Ratios with Changes in CPI



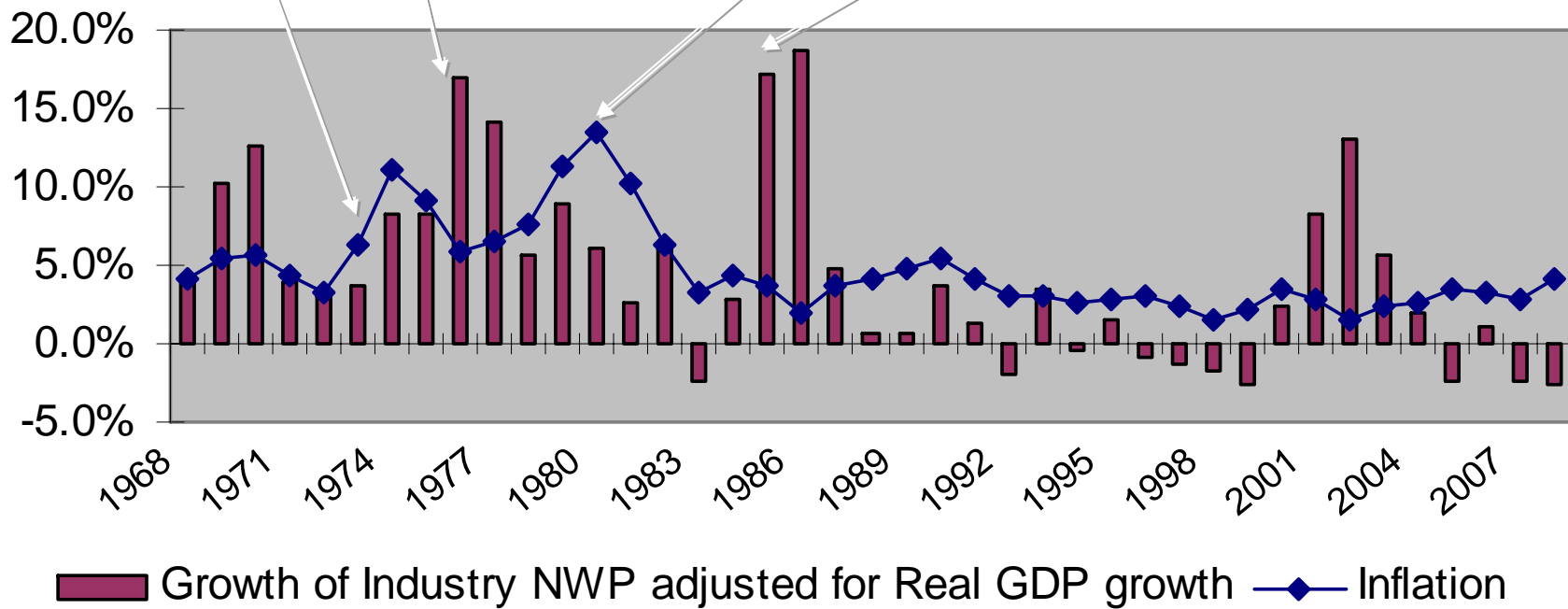
Industry data obtained from AM BEST. CPI data is from the US Bureau of Labor Statistics.



# How has industry premium growth kept up with inflation? Is the U/W cycle the more dominant influence?

Inflation increase      Industry Reaction      Inflation increase      Industry Reaction

## Comparison of Industry Net Written Premium Growth and Monetary Inflation

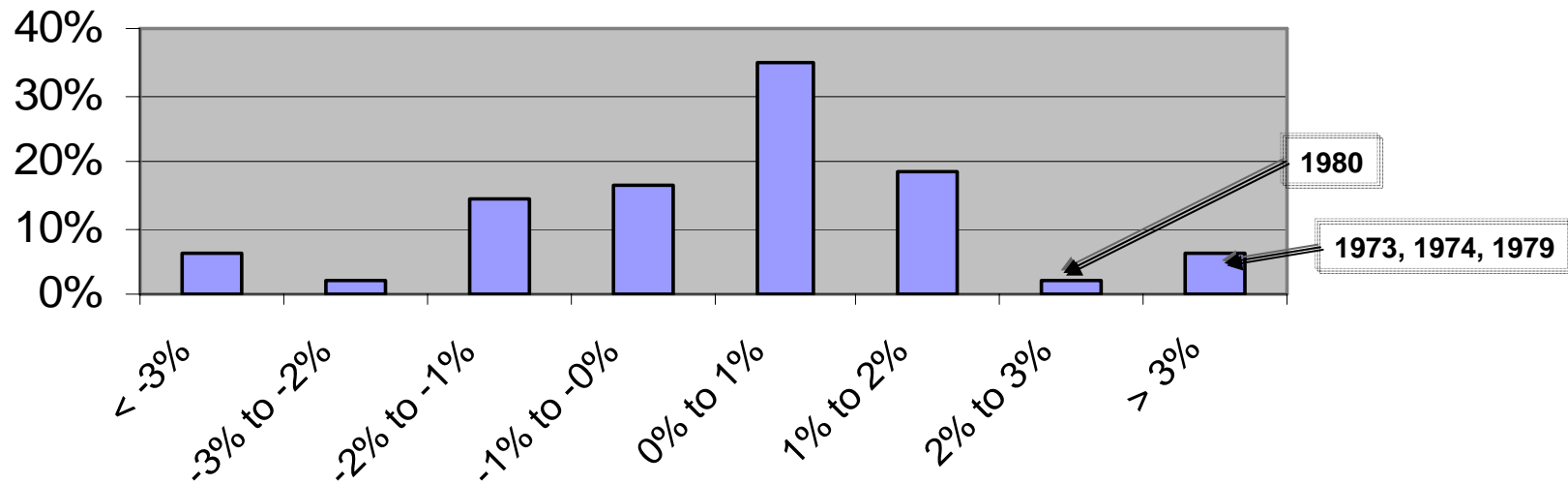


Industry data obtained from AM BEST. CPI data is from the US Bureau of Labor Statistics.



# How volatile has the inflation rate been?

## Frequency of Year over Year Changes in CPI Rate by Size of Change Since 1960



■ Frequency of Year over Year Inflation Changes Between:

Note these are the change in the rate of change. So in 1974 when the inflation rate went from 6.2% to 11.0%, it appears above as 4.8%.

CPI data is from the US Bureau of Labor Statistics.

# What Can Insurers Do

- ◆ Forward-looking companies have a number of paths to pursue when assessing and managing inflationary risk.
- ◆ Managements should be considering what tools can be developed to measure the effects of a high-inflation scenario.
- ◆ Once the potential impacts are understood, companies further need to consider and prioritize those activities to mitigate the worst outcomes in the event of a period of high inflation.



# What Can Insurers Do

## *Stress Test the Balance Sheet*

- ◆ In the current crisis, many financial services companies were impacted adversely due to unanticipated risks or the unintended consequences of risk interactions.
- ◆ Robust stress testing is one valuable tool to address such shortcomings as companies prepare for a potentially tough future.
- ◆ Relevant questions for management include:
  - Does your enterprise risk management program and capital modeling include sufficient treatments of inflation scenarios considering the risks raised by the current environment?
  - Should management react to these scenarios by expanding capital enough to weather possible impacts?
  - Does the model cover handling changes in risk correlation and risk interactions in extreme event scenarios?
  - Are tools in the company's loss reserving and pricing arsenals adequate to analyze and evaluate inflation scenarios that deviate from recent history?
  - What impacts would reasonably foreseeable inflationary scenarios have on the company's balance sheet and income statement?

# What Can Insurers Do

## *Pricing Discipline*

- ◆ In pricing a line of business, individual risk, or coverage level, management should consider the risks — including inflation — that the insurer will be exposed to.
- ◆ For example, the risk premium for a long-tailed line, such as workers' compensation may need to be higher given the increased uncertainty around how the losses will eventually play out.
- ◆ However, expanding writings in a short-tailed line may be a very attractive prospect for an insurer to help mitigate the risk arising from long-tailed lines. Such factors should be considered in current pricing activities.
- ◆ Management should be asking:
  - Has the company developed pricing strategies that reflect elevated inflation risk?
  - Does operational management understand the financial impacts of risks that they are underwriting in the light of a potentially inflationary environment?
  - Does operational management have the tools needed to evaluate the pricing risk and pricing impacts of inflationary scenarios?

# What Can Insurers Do

## *Hedging the Inflation Risk*

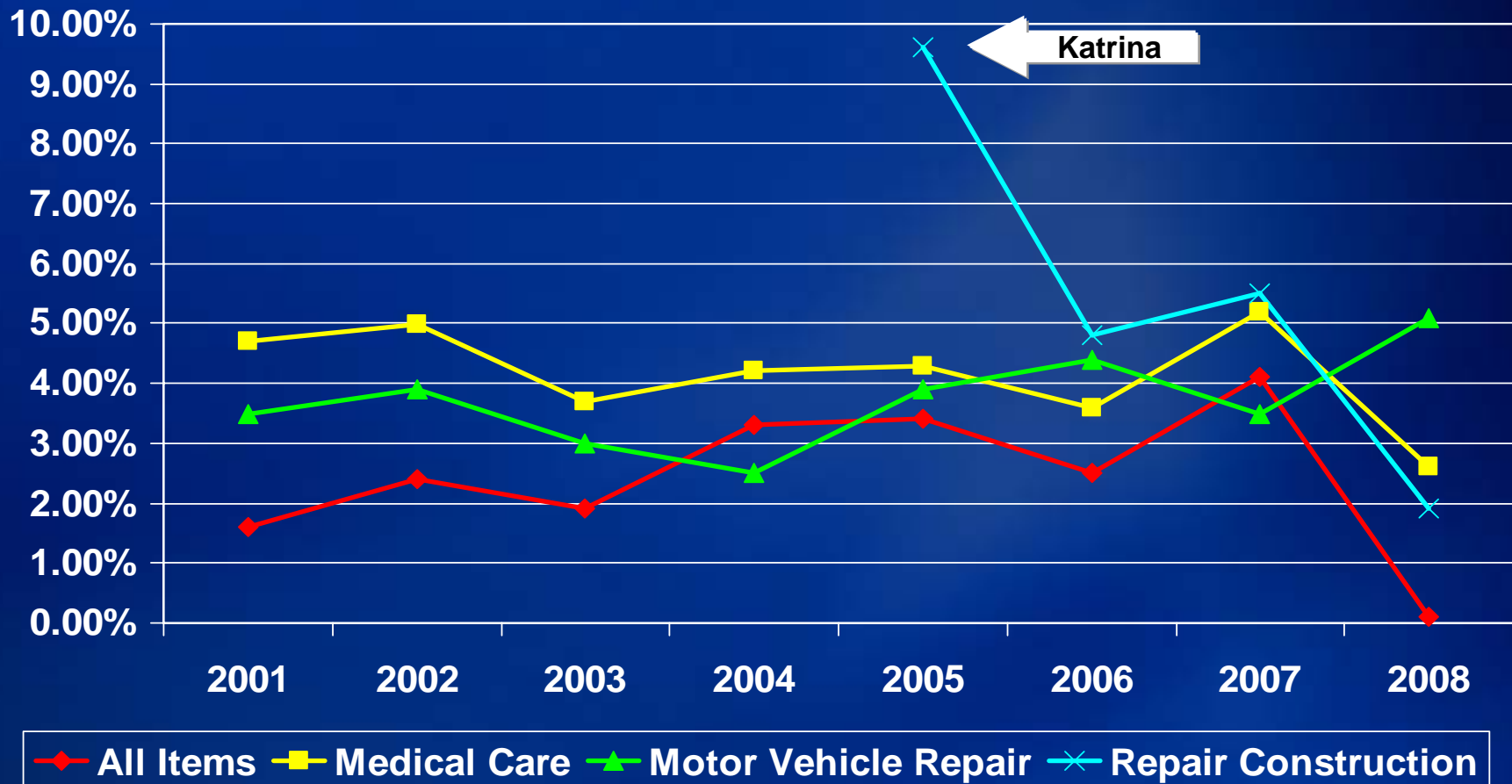
- ◆ **Management may also want to consider the following hedging approaches:**
  - Examining the investment strategy in light of the liability cash flows and how they may change in a higher inflationary environment
  - Adapting underwriting strategies to protect net liabilities in the event of inflation increases such as holding lower net limits, or indexing reinsurance retentions and limits.
  - Utilizing inflation sensitive exposure bases on policies written whenever possible
  - Tailoring policy conditions by giving the insurer the ability to respond to inflation as it appears (e.g., commutation clauses in reinsurance assumed contracts that expose the company to longer-term inflation risk, or limiting or eliminating guaranteed replacement cost coverage on property policies).
  - Matching the duration and expected cash flows of assets backing reserves with the duration and expected cash flows of liabilities
  - Maintaining sound earning ability (e.g., personal skills, owning quality companies)



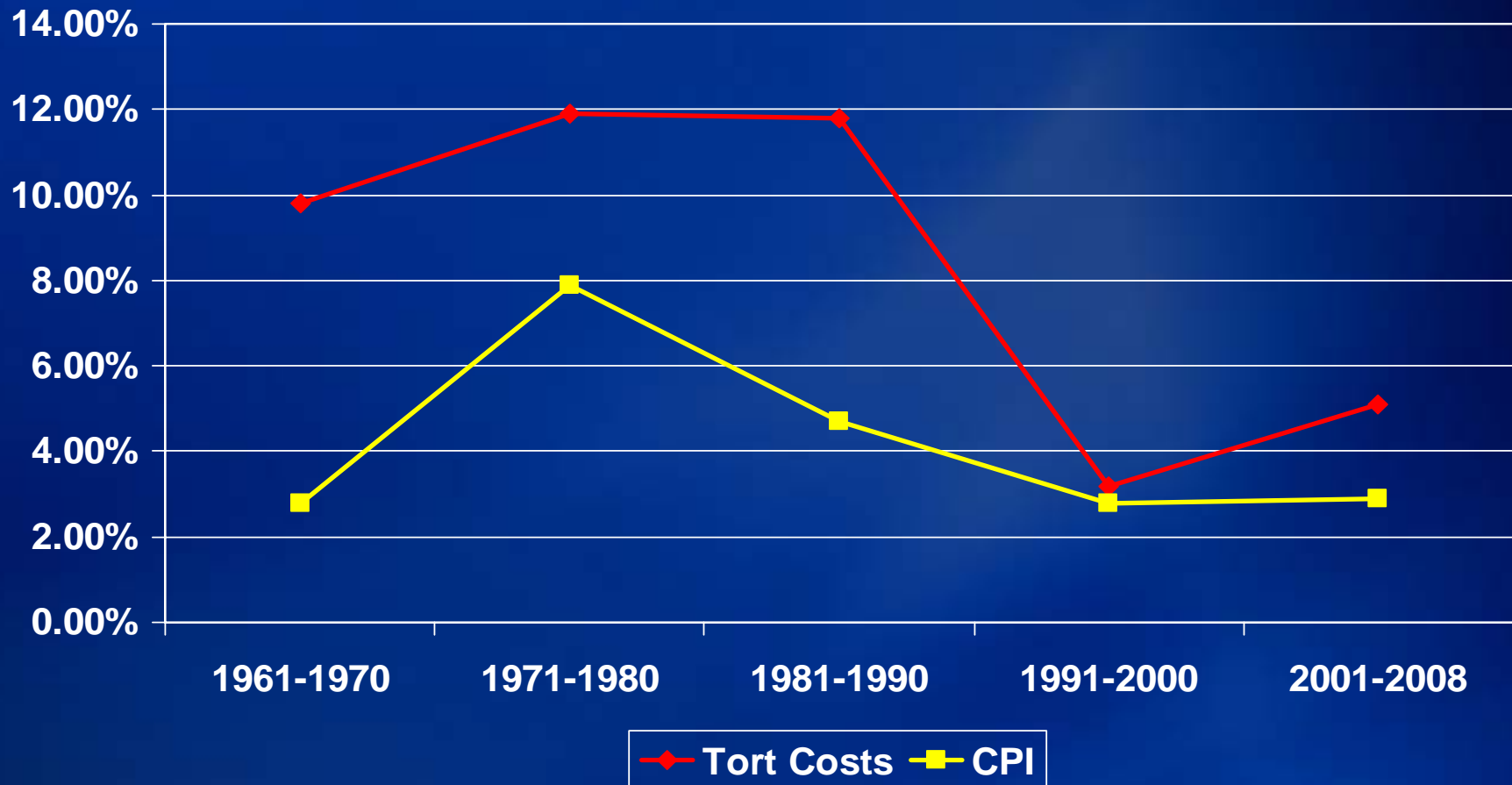
# A Method in Assessing Impact of Change in Inflation Rate

- ◆ Historical Inflation Rates by Major Types of Claim Costs
- ◆ An Exercise in Assessing Impact of Change in Inflation Rate
- ◆ Conclusion
- ◆ Discussion

# Inflation Rates – Medical Care, Auto Repair and Construction Costs



# Inflation Rates Versus Tort Costs














Sources: US Bureau of Labor Statistics, Tillinghast-Towers Perrin, *2008 Update on U.S. Tort Costs*; Insurance Info. Inst.

# A Simple Method for Assessing the Impact of Inflation on Loss Reserves

- ◆ Estimate distribution of loss payments by type of claim cost (medical, wage etc).
- ◆ Identify economic indices which best measure the inflation in those loss costs.
- ◆ Determine the timing of the inflationary impact:
  - Medical on WC: time of payment
  - Wage indemnity on WC: time of accident
  - Pain and suffering: time of settlement

Source: Based on the paper “Evaluating the impact of inflation on loss reserves” by William Richards

# Estimate Claim Costs Component and Establish Economic Indices

Line of Business	Claim Costs Components			
	Medical Cost	Automobile Repair Costs	Construction Cost	Others
Workers Comp.		-----	-----	
Automobile		 to 	-----	
Property	-----	-----		-----
General Liability	 to 	-----	-----	 to 

 – Severe,  – Moderate,  - Low

# **A Simple Method for Assessing the Impact of Inflation on Loss Reserves**

**An Exercise Assessing the Impact of Inflation on Reserves for Private Passenger Auto Liability Using Industry Data**

# Simple Method

## Establish Economic Indices

Year	CPI Medical Index	NCCI Wage Index	I = 60% Med + 40% Wage	Implied Inflation
2001	100.0	100.0	100.0	N/A
2002	105.0	102.4	104.0	4.0%
2003	108.9	104.5	107.1	3.0%
2004	113.5	107.0	110.9	3.5%
2005	118.3	110.0	115.0	3.7%
2006	122.6	113.8	119.1	3.5%
2007	129.0	117.6	124.4	4.5%
2008	132.3	118.8	126.9	2.0%

- ◆ The average implied inflation rate is 3.5% p.a.
- ◆ What is the impact if inflation rate goes to 7.0% p.a.?

Sources: Medical Index is from U.S. Bureau of Labor Statistics, Wage Indices for 2001 to 2007 are from NCCI, 2008 is estimated as one third of the inflation in 2007.



# **A Simple Method for Assessing the Impact of Inflation on Loss Reserves**

## **Estimating Reserves with No Special Treatment of Inflation**

# Private Passenger Auto Liability – Paid Losses Development Method

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	40,194	47,894	52,215	54,512	55,553	56,057	56,331
2002	24,131	41,878	49,966	54,469	56,889	57,955	58,479	
2003	24,107	41,413	49,126	53,626	56,002	57,147		
2004	24,368	41,512	49,207	53,794	56,143			
2005	25,051	42,608	50,571	55,112				
2006	25,583	43,589	51,659					
2007	27,198	46,283						
2008	26,977							

<u>AY</u>	<u>12 - 24</u>	<u>24 - 36</u>	<u>36 - 48</u>	<u>48 - 60</u>	<u>60 - 72</u>	<u>72 - 84</u>	<u>84 - 96</u>	<u>96 -</u>
2001	1.744	1.192	1.090	1.044	1.019	1.009	1.005	
2002	1.735	1.193	1.090	1.044	1.019	1.009		
2003	1.718	1.186	1.092	1.044	1.020			
2004	1.704	1.185	1.093	1.044				
2005	1.701	1.187	1.090					
2006	1.704	1.185						
2007	1.702							
2008								

<b>Average</b>	1.715	1.188	1.091	1.044	1.019	1.009	1.005	
<b>Selected</b>	1.715	1.188	1.091	1.044	1.019	1.009	1.005	1.000

Source: Industry Schedule P from Highline data, paid losses figures in millions

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# Private Passenger Auto Liability

## Paid Losses Development Method with no additional inflation adjustment

<u>AY</u>	<u>Paid Losses</u>	<u>Factors to Ultimate</u>	<u>Estimated Ultimate Losses</u>	<u>Estimated Reserves</u>
2001	56,331	1.000	56,331	0
2002	58,479	1.005	58,764	285
2003	57,147	1.014	57,947	799
2004	56,143	1.034	58,035	1,891
2005	55,112	1.079	59,481	4,369
2006	51,659	1.177	60,827	9,169
2007	46,283	1.399	64,746	18,463
2008	26,977	2.400	64,734	37,757
Total	408,132		480,865	72,733

Figures in millions.



# Private Passenger Auto Liability

## Assessing Impact of Changes in Inflation

**Step 1: Deflating Historical Paid Losses with Selected Indices (Assuming Inflation Impact at Time of Payment)**

# Private Passenger Auto Liability

## Cumulative Paid Loss Triangles

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	40,194	47,894	52,215	54,512	55,553	56,057	56,331
2002	24,131	41,878	49,966	54,469	56,889	57,955	58,479	
2003	24,107	41,413	49,126	53,626	56,002	57,147		
2004	24,368	41,512	49,207	53,794	56,143			
2005	25,051	42,608	50,571	55,112				
2006	25,583	43,589	51,659					
2007	27,198	46,283						
2008	26,977							

## Incremental Paid Loss Triangles

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	17,147	7,699	4,321	2,297	1,041	505	274
2002	24,131	17,746	8,088	4,504	2,420	1,065	524	
2003	24,107	17,305	7,713	4,500	2,376	1,145		
2004	24,368	17,145	7,694	4,587	2,350			
2005	25,051	17,557	7,963	4,541				
2006	25,583	18,006	8,070					
2007	27,198	19,085						
2008	26,977							

# Private Passenger Auto Liability

## Deflation Adjustment Factors to 2001 \$ (Assume impact at time of payment)

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	100	104	107	111	115	119	124	127
2002	104	107	111	115	119	124	127	
2003	107	111	115	119	124	127		
2004	111	115	119	124	127			
2005	115	119	124	127				
2006	119	124	127					
2007	124	127						
2008	127							

## Adjusted Incremental Paid Losses Triangle (Adjusted to 2001 \$)

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	16,492	7,187	3,898	1,997	875	406	216
2002	23,209	16,565	7,295	3,916	2,033	856	413	
2003	22,503	15,609	6,706	3,780	1,910	902		
2004	21,980	14,907	6,463	3,687	1,851			
2005	21,782	14,746	6,401	3,577				
2006	21,487	14,474	6,357					
2007	21,863	15,036						
2008	21,253							

# Private Passenger Auto Liability

## Assessing Impact of Changes in Inflation

### Step 2: Estimating Reserves with Deflated Paid Loss Development Triangles



# Private Passenger Auto Liability

## Adjusted Cumulative Paid Losses Triangle (Adjusted to 2001 \$)

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	39,539	46,726	50,624	52,621	53,495	53,901	54,116
2002	23,209	39,774	47,070	50,986	53,018	53,875	54,288	
2003	22,503	38,112	44,819	48,599	50,509	51,411		
2004	21,980	36,887	43,350	47,037	48,888			
2005	21,782	36,529	42,929	46,507				
2006	21,487	35,961	42,319					
2007	21,863	36,898						
2008	21,253							

## Assess and select LDF (Adjusted to 2001 \$)

<u>AY</u>	<u>12 - 24</u>	<u>24 - 36</u>	<u>36 - 48</u>	<u>48 - 60</u>	<u>60 - 72</u>	<u>72 - 84</u>	<u>84 - 96</u>	<u>96 -</u>
2001	1.716	1.182	1.083	1.039	1.017	1.008	1.004	
2002	1.714	1.183	1.083	1.040	1.016	1.008		
2003	1.694	1.176	1.084	1.039	1.018			
2004	1.678	1.175	1.085	1.039				
2005	1.677	1.175	1.083					
2006	1.674	1.177						
2007	1.688							
2008								

<b>Average</b>	1.691	1.178	1.084	1.039	1.017	1.008	1.004	
<b>Selected</b>	1.691	1.178	1.084	1.039	1.017	1.008	1.004	1.000

# Private Passenger Auto Liability

## Adjusted Cumulative Paid Losses Triangle (Adjusted to 2001 \$) – Based on Selected LDF

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	39,539	46,726	50,624	52,621	53,495	53,901	54,116
2002	23,209	39,774	47,070	50,986	53,018	53,875	54,288	54,505
2003	22,503	38,112	44,819	48,599	50,509	51,411	51,803	52,010
2004	21,980	36,887	43,350	47,037	48,888	49,713	50,092	50,292
2005	21,782	36,529	42,929	46,507	48,344	49,160	49,534	49,732
2006	21,487	35,961	42,319	45,868	47,679	48,484	48,854	49,049
2007	21,863	36,898	43,469	47,114	48,975	49,802	50,181	50,382
2008	21,253	35,947	42,348	45,899	47,712	48,517	48,887	49,083

# Private Passenger Auto Liability

## Assessing Impact of Changes in Inflation

**Step 3: Replacing the Impact of Inflation @ 7.0% p.a.  
(Assuming Impact at Time of Payment)**

# Private Passenger Auto Liability

## Projected Cumulative Paid Losses Triangle (Adjusted to 2001 \$) – Based on Selected LDF

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	39,539	46,726	50,624	52,621	53,495	53,901	54,116
2002	23,209	39,774	47,070	50,986	53,018	53,875	54,288	54,505
2003	22,503	38,112	44,819	48,599	50,509	51,411	51,803	52,010
2004	21,980	36,887	43,350	47,037	48,888	49,713	50,092	50,292
2005	21,782	36,529	42,929	46,507	48,344	49,160	49,534	49,732
2006	21,487	35,961	42,319	45,868	47,679	48,484	48,854	49,049
2007	21,863	36,898	43,469	47,114	48,975	49,802	50,181	50,382
2008	21,253	35,947	42,348	45,899	47,712	48,517	48,887	49,083

## Projected Incremental Paid Losses Triangle (Adjusted to 2001 \$) – Based on Selected LDF

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001	23,047	16,492	7,187	3,898	1,997	875	406	216
2002	23,209	16,565	7,295	3,916	2,033	856	413	217
2003	22,503	15,609	6,706	3,780	1,910	902	392	207
2004	21,980	14,907	6,463	3,687	1,851	825	379	200
2005	21,782	14,746	6,401	3,577	1,837	816	375	198
2006	21,487	14,474	6,357	3,549	1,812	805	370	195
2007	21,863	15,036	6,570	3,646	1,861	827	380	201
2008	21,253	14,694	6,401	3,552	1,813	805	370	196

# Private Passenger Auto Liability

## Projected Reserves to be Paid (Adjusted to 2001 \$) – Based on Selected LDF

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001								
2002								217
2003							392	207
2004						825	379	200
2005					1,837	816	375	198
2006				3,549	1,812	805	370	195
2007			6,570	3,646	1,861	827	380	201
2008		14,694	6,401	3,552	1,813	805	370	196

## Inflation Adjustment Factor @7.0% p.a.

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001								
2002								1.358
2003							1.358	1.453
2004						1.358	1.453	1.555
2005					1.358	1.453	1.555	1.664
2006					1.453	1.555	1.664	1.780
2007			1.358	1.453	1.555	1.664	1.780	1.905
2008		1.358	1.453	1.555	1.664	1.780	1.905	2.038

**2008 Index of  
1.269 x 1.07**

**2009 Index of  
1.358 x 1.07**

# Private Passenger Auto Liability

## Projected Reserves to be Paid @ inflation rate of 7% p.a.

<u>AY</u>	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	<u>96</u>
2001								
2002								295
2003							532	301
2004						1,121	551	312
2005					2,495	1,186	583	330
2006				4,820	2,633	1,251	615	348
2007			8,923	5,298	2,893	1,375	676	382
2008		19,957	9,302	5,523	3,016	1,433	705	399

## Estimated Reserves with inflation rate @7.0% p.a.

<u>AY</u>	<u>Estimated Reserves</u>	<u>Paid Losses</u>	<u>Estimated Ultimate Losses</u>
2001	0	56,331	56,331
2002	295	58,479	58,774
2003	833	57,147	57,981
2004	1,983	56,143	58,126
2005	4,593	55,112	59,705
2006	9,667	51,659	61,326
2007	19,548	46,283	65,832
2008	40,334	26,977	67,311
<b>Total</b>	<b>77,253</b>	<b>408,132</b>	<b>485,385</b>

# Private Passenger Auto Liability

(Figures in millions)

2008 Earned Premiums (a):	94,421
Estimated reserves @ historical inflation rate:	72,733
Estimated reserves with inflation rate @ 7.0% p.a.:	77,253
Impact of increase in inflation rate:	4,520
Impact on calendar year loss ratio:	5%

Source: Schedule P from Highline data



# Private Passenger Auto Liability

(Figures in millions)

	Inflation @ 5%	Inflation @ 7%	Inflation @ 10%
2008 Earned Premiums (a):	94,421	94,421	94,421
Estimated reserves @ historical inflation rate:	72,733	72,733	72,733
Estimated reserves @ inflation rate:	74,471	77,253	81,602
Change in reserves estimates:	1,738	4,520	8,869
Impact on calendar year loss ratio:	2%	5%	9%



# Conclusion

- ◆ **While inflationary risk may be painful, it need not be fatal if companies recognize the coming risk and take action.**
- ◆ **Companies with strong enterprise risk management programs in place are better prepared to deal with inflationary risk.**
- ◆ **Well-prepared companies should assess a wide program of risk mitigation and hedging strategies now to avoid the possibility of even more painful impacts in the future.**

# Conclusion

- ◆ **Companies can understand the potential impacts of inflation risk by using actuarial approaches to measure those impacts under several scenarios.**
  - Using multiple methods and assumptions in assessing the impact of inflation.
  - Understand the strengths and shortcomings of each method and set of assumptions used.
  - Stress testing various scenarios to identify the major driver of increase in claim costs from inflation.
- ◆ **By skating to where the puck may be, rather than where it is now, companies can increase their chances of emerging as winners in the difficult times to come.**

# *Discussion*

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