




**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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Introduction

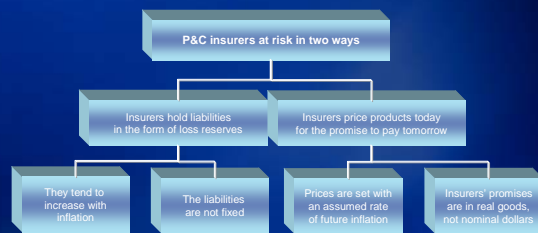
- ◆ Today's turbulent financial environment has challenged all corporations, but none so much as financial institutions.
- ◆ Publicly held insurers have also seen significant reductions in their market capitalizations as a result of asset write-downs.
- ◆ Property and casualty (P&C) insurers generally 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.



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What Does This Mean for P&C Insurers



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What Does This Mean for P&C Insurers

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.



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What Does This Mean for P&C Insurers

- 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.

Line of Business	Premium in 2008(EP)	Reserves at Year-End 2008 (Millions)	Duration of Policy at Inception	Duration of Industry Reserve Portfolio	Impact of a One Percent Increase in Inflation as a Ratio to Premiums Earned		
					Reserve Impact (to EP)	Current Accident Year Loss Ratio Impact (to EP)	Calendar Year Operating Ratio Impact
	(1)	(2)	(3)	(4)	(5) = $\frac{[(1)\% \times (2)] \times (4)}{(1)}$	(6) = $1\% \times (3) \times 2007$ Loss Ratio	(7) = (5)+(6)
Personal Lines	218,008	115,078	92%	121%	0.6%	0.7%	1.4%
Commercial Lines	182,016	351,001	209%	203%	3.9%	1.7%	5.6%
Specialty Lines	21,874	44,847	230%	224%	4.6%	1.7%	6.3%
Medical Malpractice	9,659	30,012	290%	228%	7.1%	2.4%	9.5%
Reinsurers	12,172	47,153	219%	255%	9.9%	1.6%	11.5%
Total	443,731	588,091	192%	212%	2.8%	1.6%	4.4%

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

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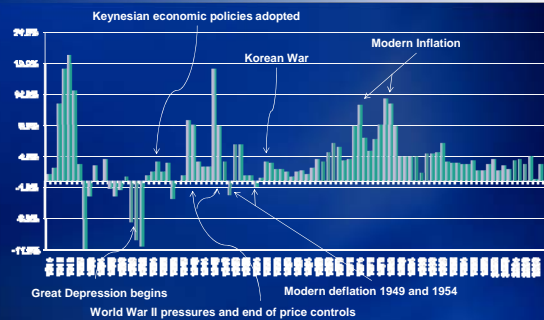
What Does This Mean for P&C Insurers

- 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.

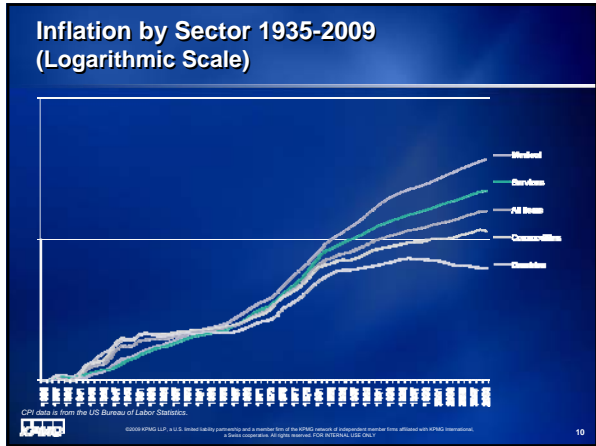
Impact of Inflation Change on the Current Calendar Year for the Industry			
Assumed Increase in Inflation Rate	1.0%	2.0%	3.0%
Current Accident Year Loss Ratio Impact (ratio to EP)	1.6%	3.2%	4.8%
Reserve Impact (ratio to EP)	2.8%	5.6%	8.4%
One Year Impact on CY Loss Ratio (ratio to EP)	4.4%	8.8%	13.2%
Assumed Premium to Surplus Ratio	150%	150%	150%
Impact on Capital	6.6%	13.2%	19.8%

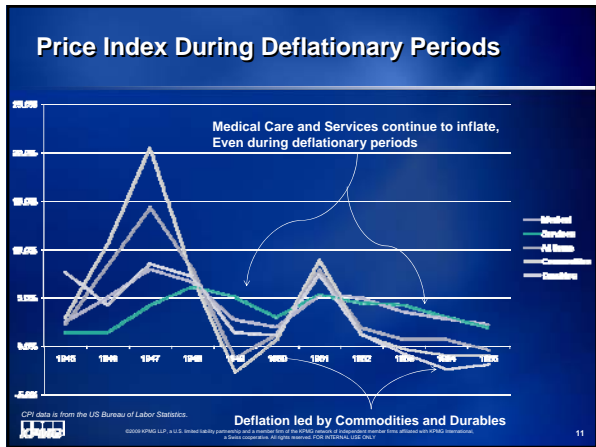
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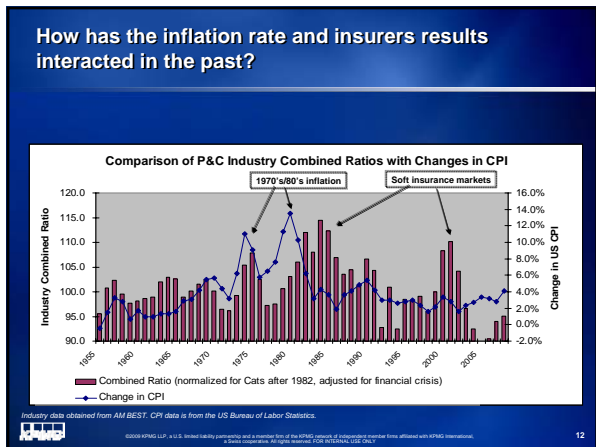
Historic All Item US Inflation Rate



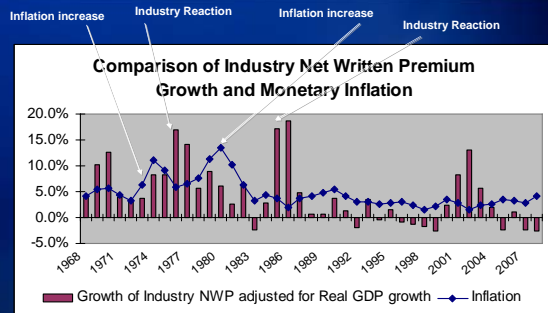
CPI data is from the US Bureau of Labor Statistics.







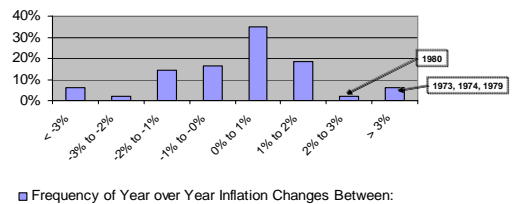
How has industry premium growth kept up with inflation? Is the U/W cycle the more dominant influence?



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

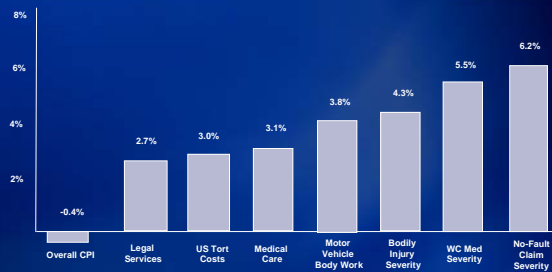
How volatile has the inflation rate been?

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



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.

Even in a low inflation environment, claims costs have escalated



Source: Insurance Information Institute (I.I.) compiled the information. CPI is Blue Chip Economic Indicator 2009 estimate, 12/09; Legal services, medical care and motor vehicle body work are avg. monthly year-over-year change from BLS. BI and no-fault figures from ISO Fast Track data for 4 quarters ending 09:Q3. Tort costs is 2009 Towers-Perrin estimate. WC figure is I.I. estimate based on historical NCCL data.

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)



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A Method in Assessing Impact of Change in Inflation Rate

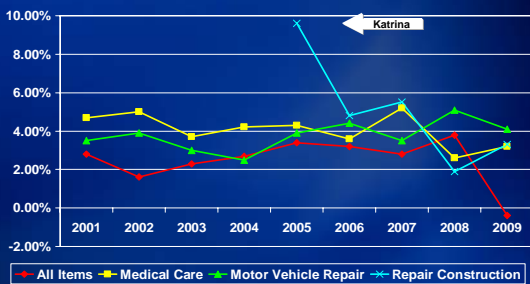
- ◆ Historical Inflation Rates by Major Types of Claim Costs
- ◆ An Exercise in Assessing Impact of Change in Inflation Rate
- ◆ Conclusion
- ◆ Discussion



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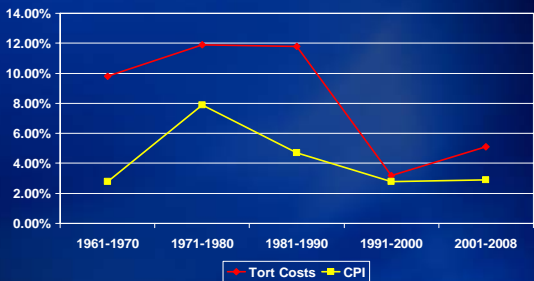
Inflation Rates – Medical Care, Auto Repair and Construction Costs



Sources: U.S. Bureau of Labor Statistics – CPI for All Urban Consumers, Producer Price Index

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Inflation Rates Versus Tort Costs



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



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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



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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



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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.?



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

Estimating Reserves with No Special Treatment of Inflation



Private Passenger Auto Liability

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

AY	12	24	36	48	60	72	84	96
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

AY	12	24	36	48	60	72	84	96
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	15,699	6,706	3,780	1,910	902	392	207
2004	21,980	14,907	6,463	3,887	1,851	825	379	200
2005	21,782	14,746	6,401	3,877	1,837	816	375	198
2006	21,487	14,474	6,357	3,543	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

AY	12	24	36	48	60	72	84	96
2001								217
2002							392	200
2003						825	379	200
2004					1,837	816	375	198
2005				3,543	1,812	805	370	195
2006			6,570	3,646	1,861	827	380	201
2007		14,694	6,401	3,552	1,813	805	370	196

Inflation Adjustment Factor @7.0% p.a.

AY	12	24	36	48	60	72	84	96
2001								1,358
2002								1,453
2003								1,555
2004					1,358	1,453	1,555	1,664
2005					1,453	1,555	1,664	1,780
2006				1,358	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

Private Passenger Auto Liability

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

AY	12	24	36	48	60	72	84	96
2001								295
2002							532	301
2003						1,121	561	312
2004					2,495	1,186	583	330
2005				4,820	2,633	1,251	615	348
2006			8,923	5,298	2,893	1,375	676	382
2007		19,957	9,302	5,523	3,016	1,433	705	399

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

AY	Estimated Reserves	Paid Losses	Estimated Ultimate Losses
2001	0	56,331	56,331
2002	295	58,479	58,774
2003	823	57,147	57,971
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
Total	77,253	408,132	485,385

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



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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%

Source: Schedule P from Highline data



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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.



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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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