

## Workers Compensation Excess Loss Development

**Kirt Dooley, FCAS, MAAA**  
Practice Leader and Senior Actuary  
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### Overview

- This updates our prior study by adding five more years of experience
- Losses are case incurred indemnity + medical
- Large deductible claims are excluded, unless otherwise noted
- Loss adjustment expenses are excluded

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### Excess Loss and Claim Count Emergence

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### Large Loss and Catastrophe "Call 31"

- Initiated to facilitate procedure for treating large losses in aggregate ratemaking
- Includes Accident Years 1984 and forward, valued at year-end 1998 and subsequent
- At each year-end valuation, all claims with total case incurred losses over \$500K are reported
- Because claims may exceed \$500K for only some year-end valuations, we don't have a complete claims history and, therefore, can't derive ground-up loss development

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### Trending Individual Claims

- Over time, trends in claim costs shift the relative size of a fixed attachment point compared to average claim size
  - \$500K in 1984 dollars is much higher than \$500K in 2014 dollars
- For example, if costs double over ten years, then development patterns today excess of \$2M will be comparable to those excess of \$1M ten years ago
- We compensate for this by trending individual claim amounts to Accident Year 2014 with a 5% annual inflationary trend

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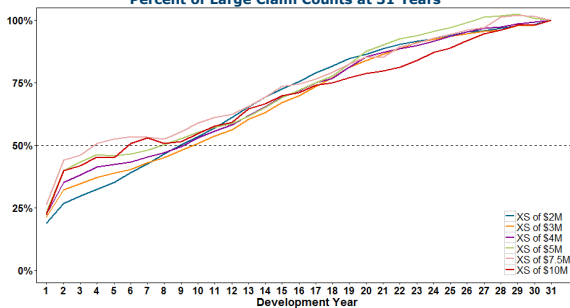
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### Initially Claims Above \$5M Emerge Faster Large Claim Counts Emergence Percent of Large Claim Counts at 31 Years



Source: Call 31 data, Accident Years 1984-2013, Calendar Years 2000-2014  
Individual claims trended to Accident Year 2014 using 5% trend  
Based on data for the states where NCCI provides ratemaking services, excluding TX and WV

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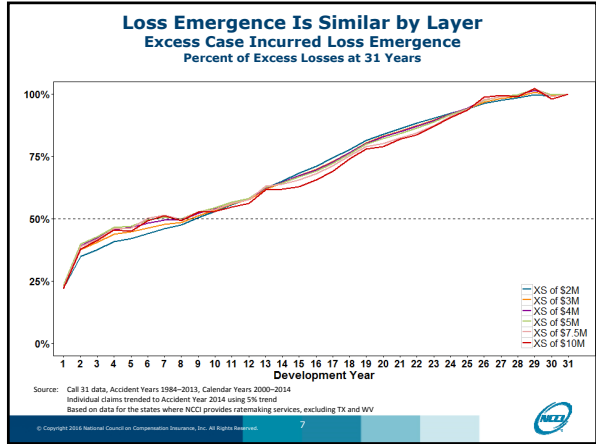
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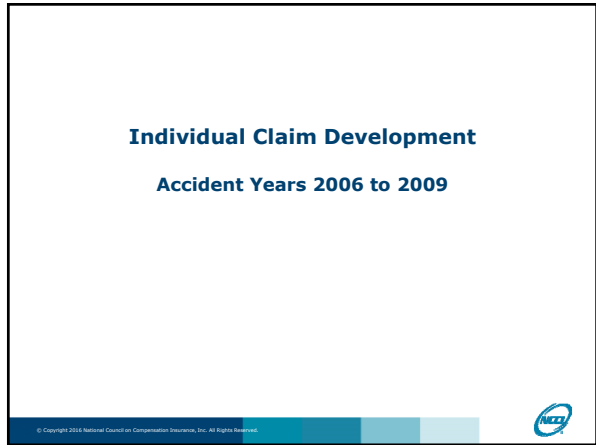
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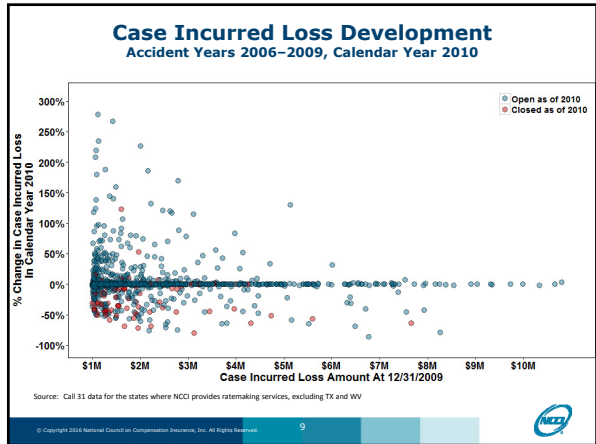
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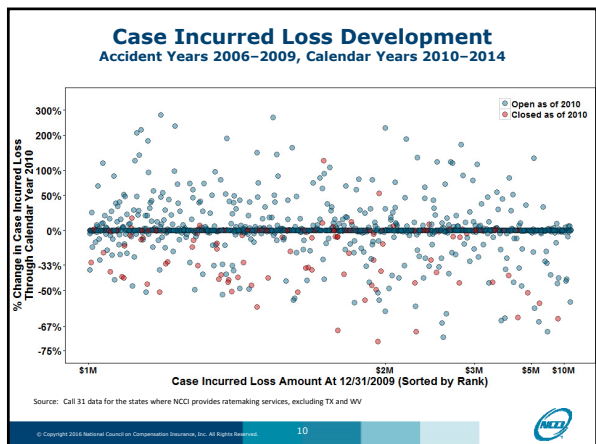
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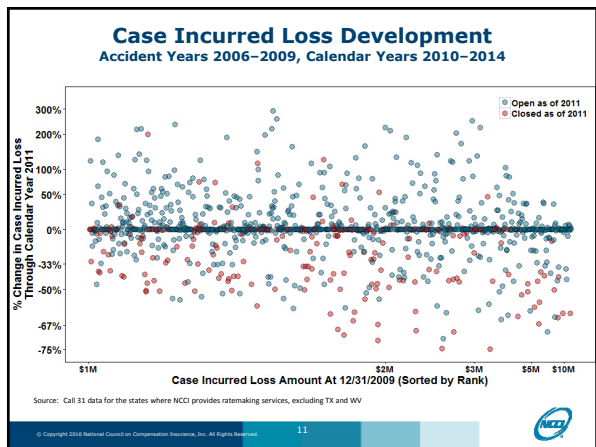
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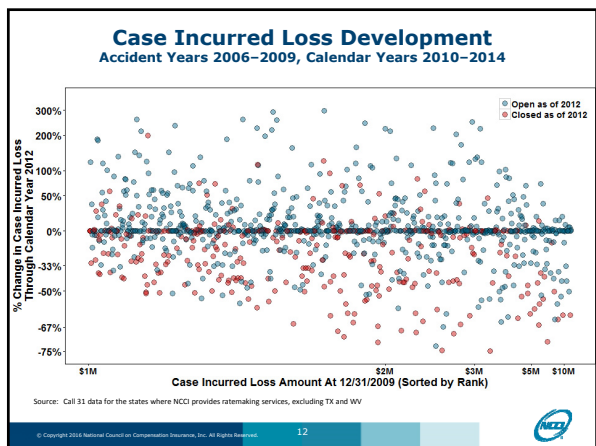
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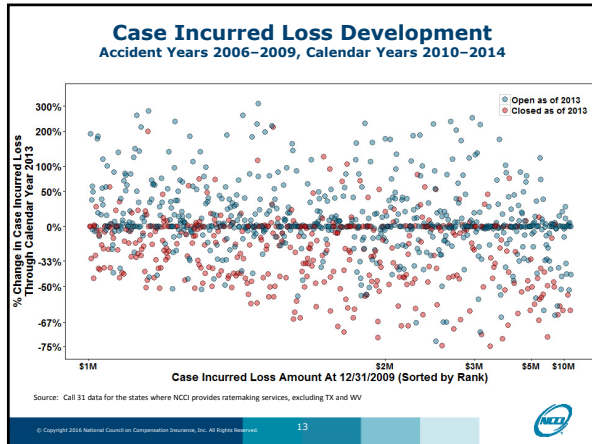
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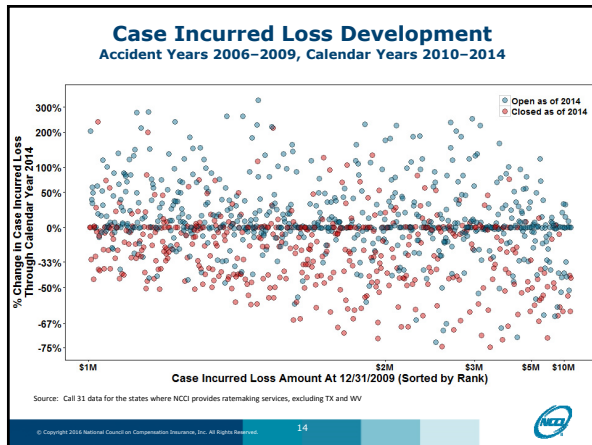
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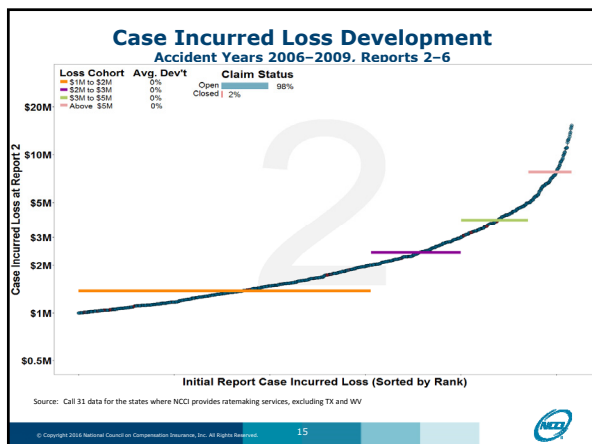
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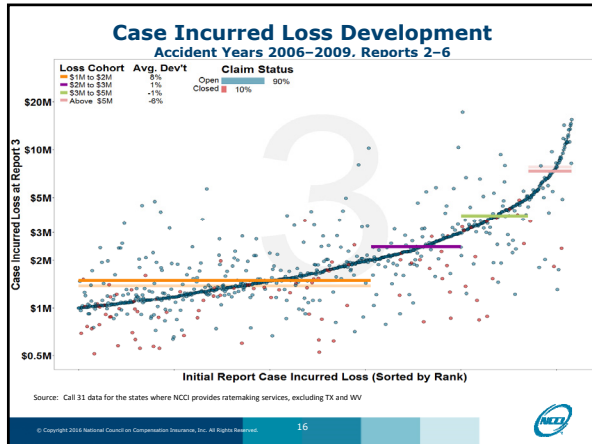
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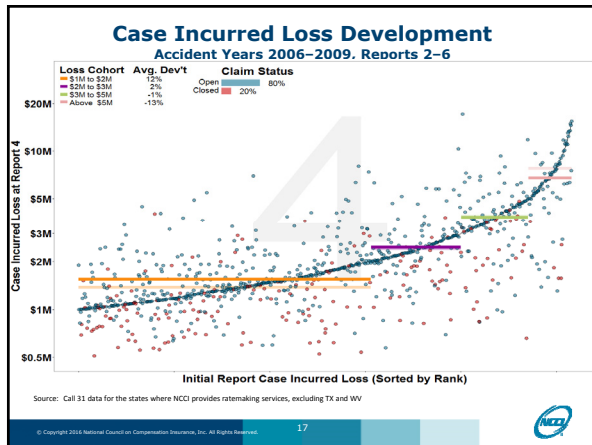
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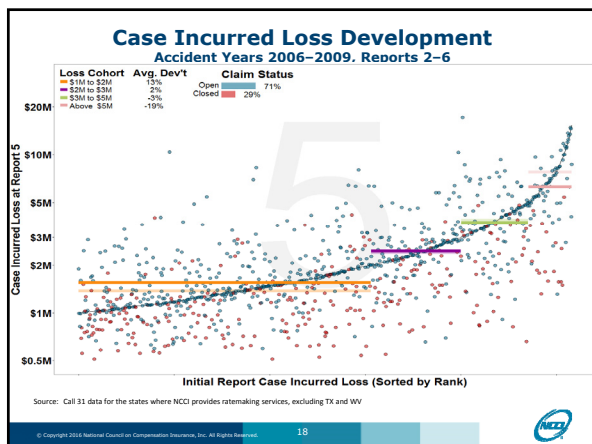
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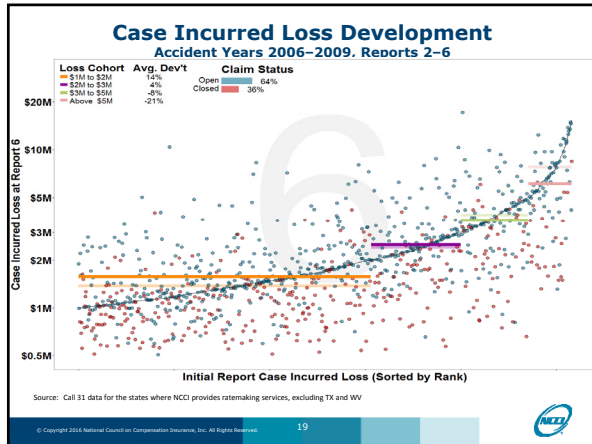
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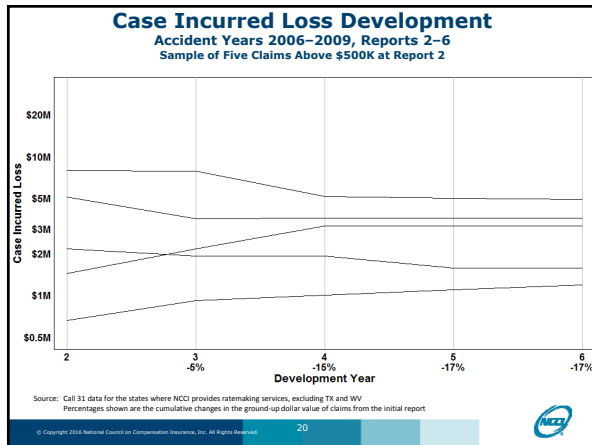
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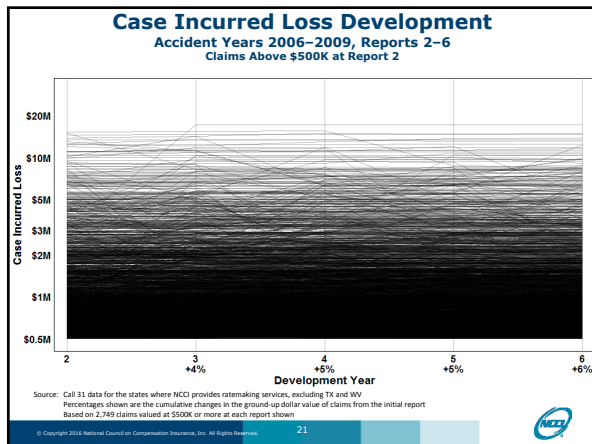
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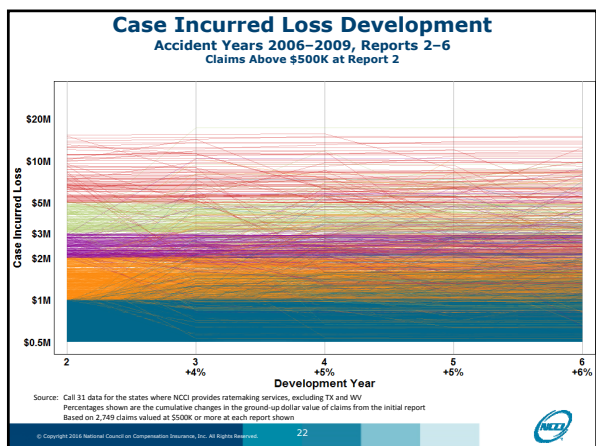
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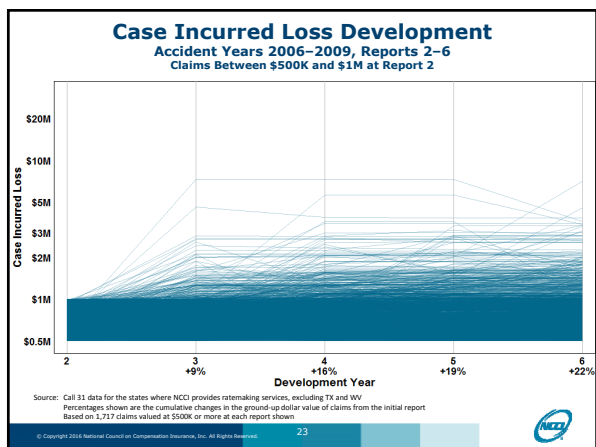
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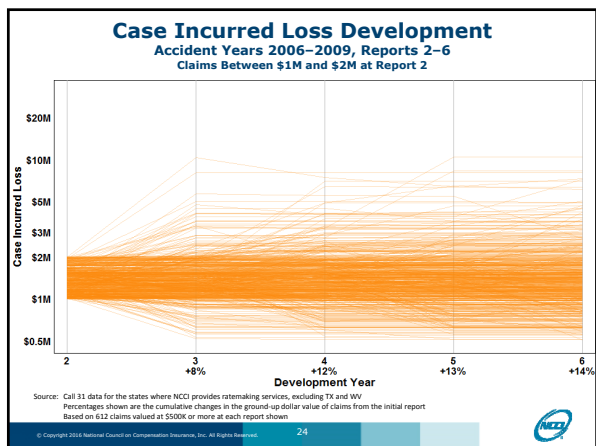
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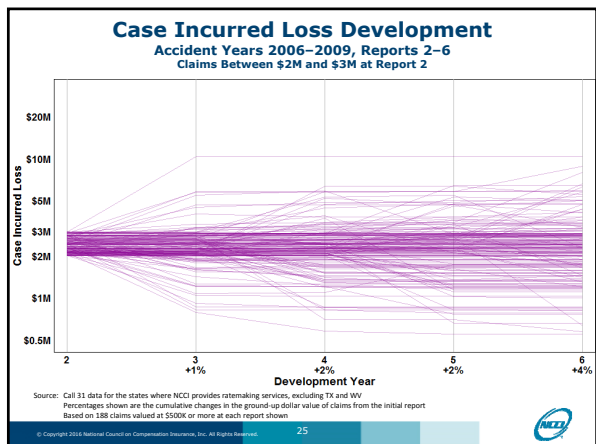
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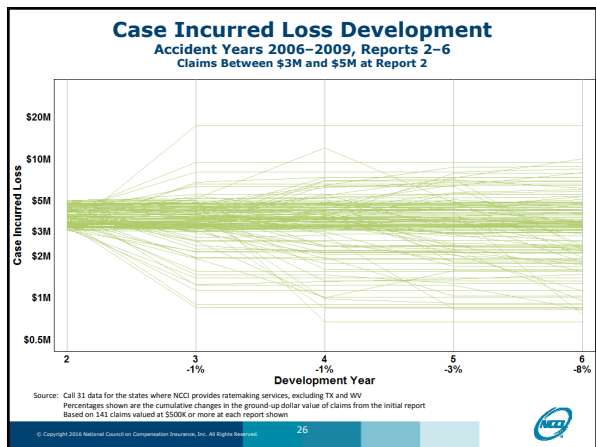
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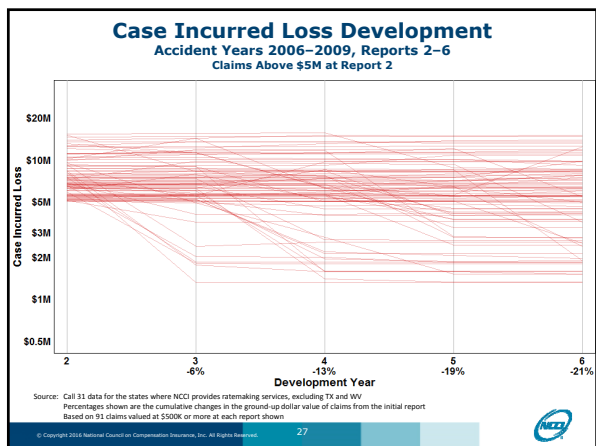
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## Individual Claim Development

### Accident Years 1990 to 1995



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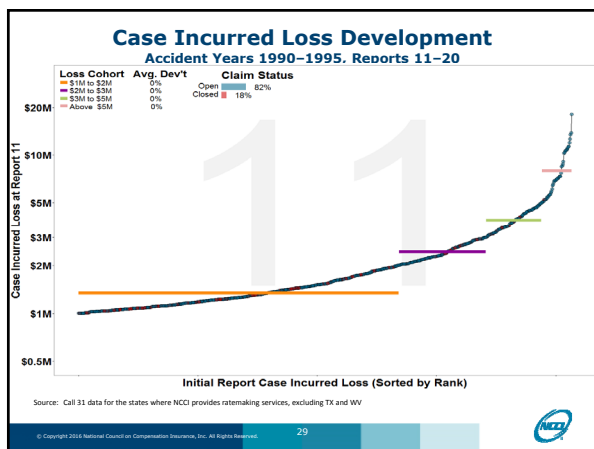
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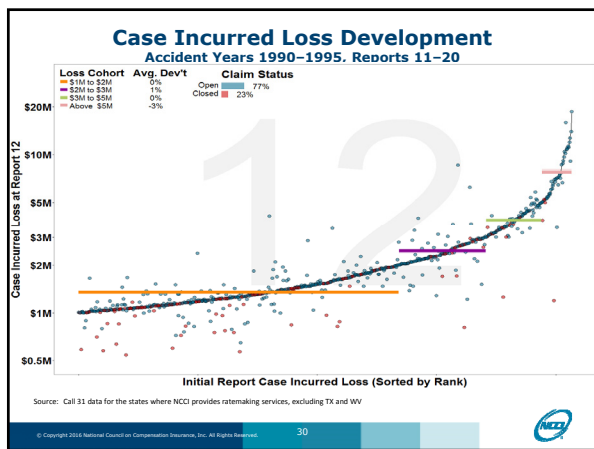
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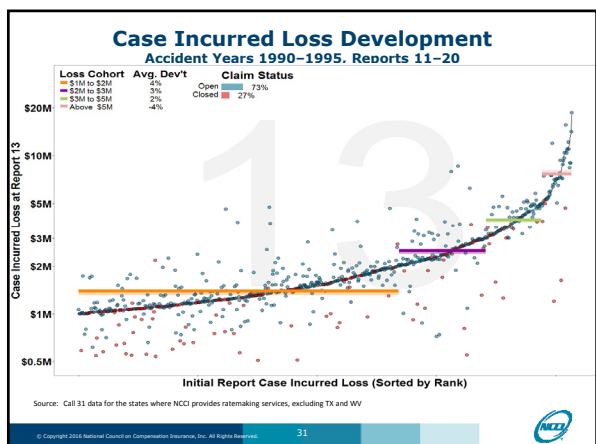
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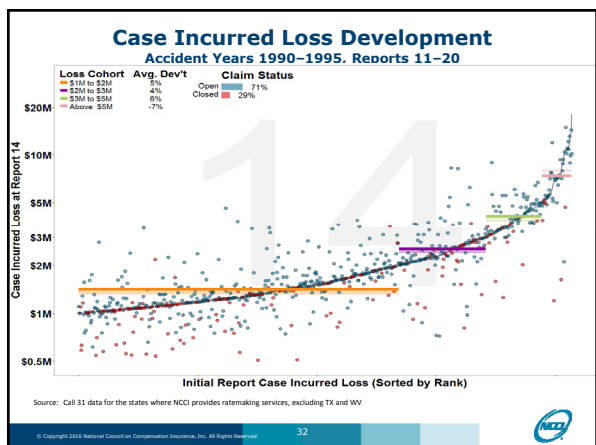
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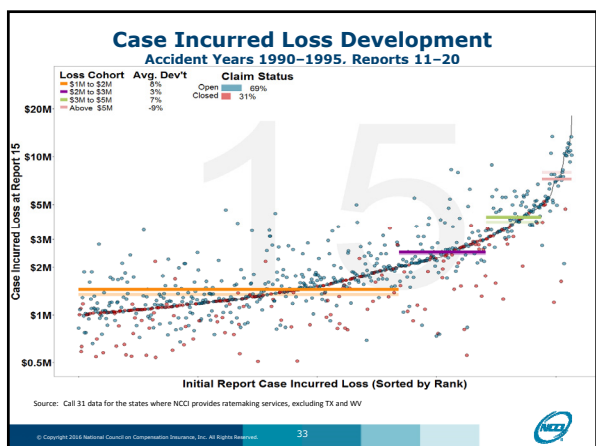
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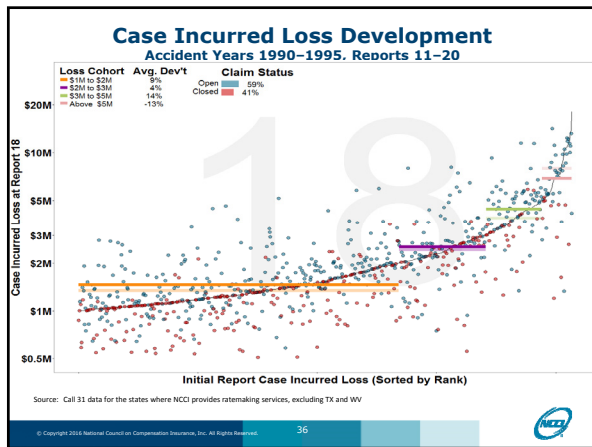
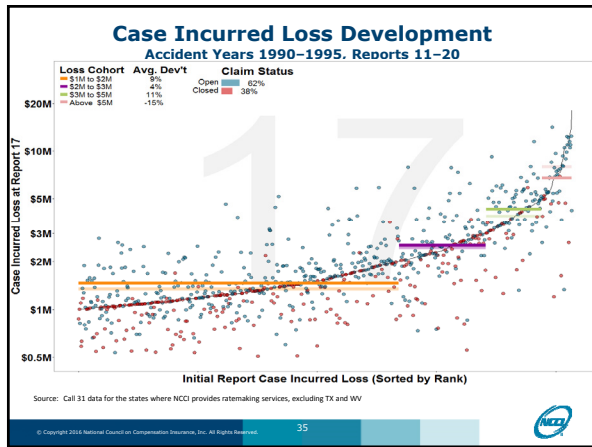
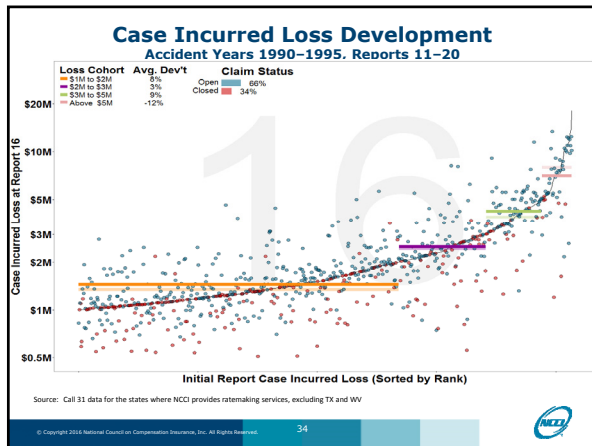
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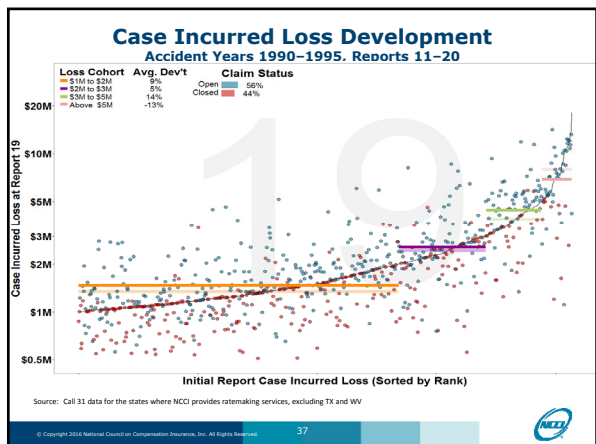
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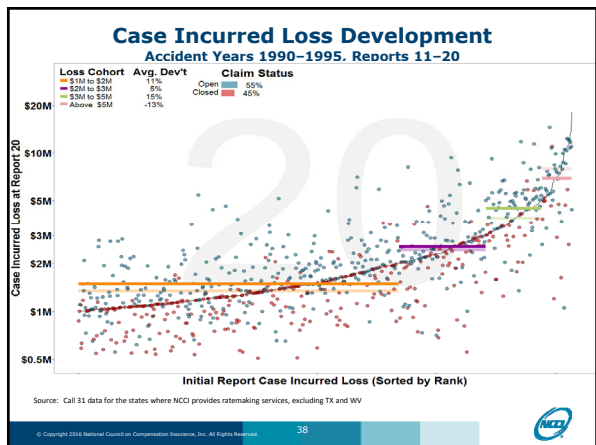
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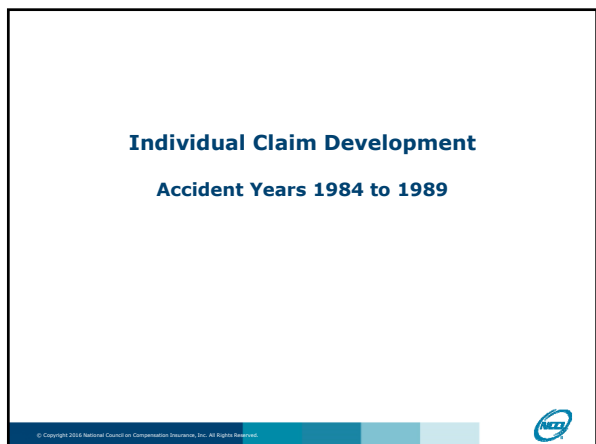
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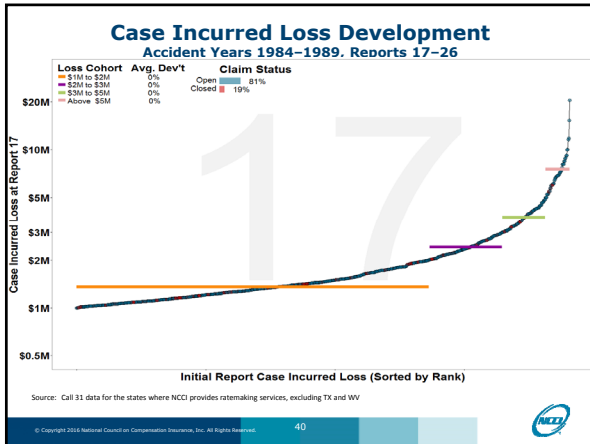
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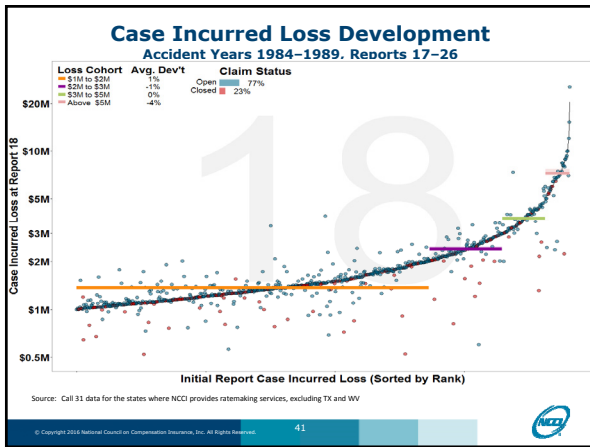
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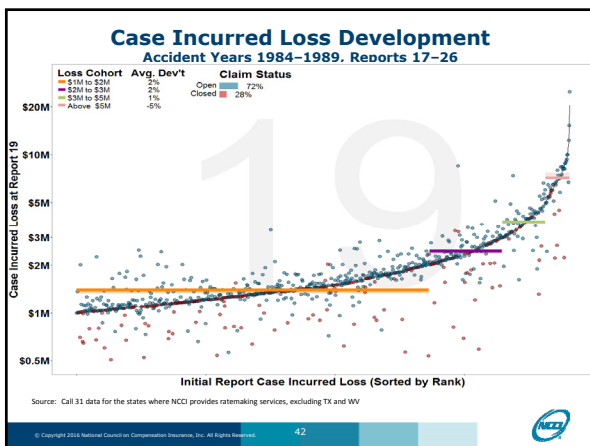
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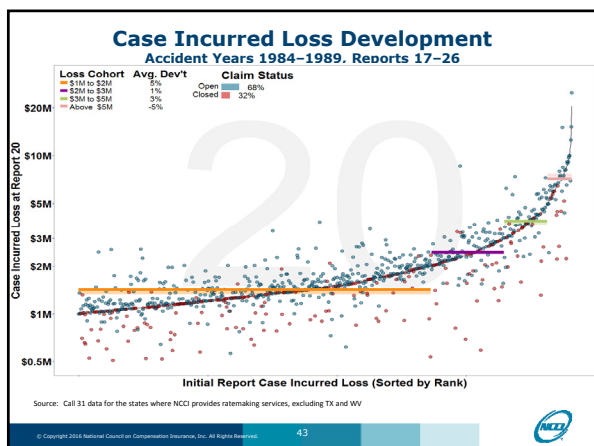
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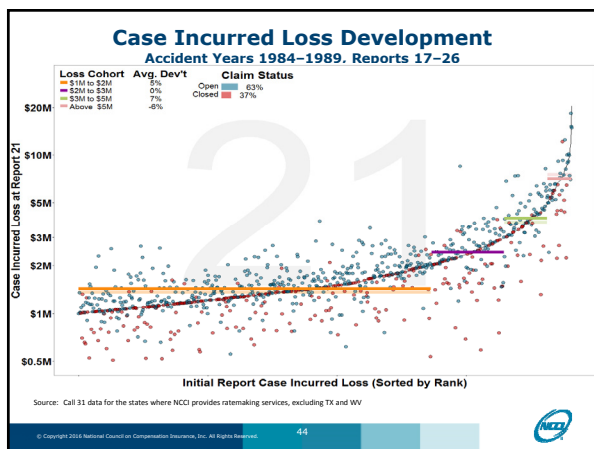
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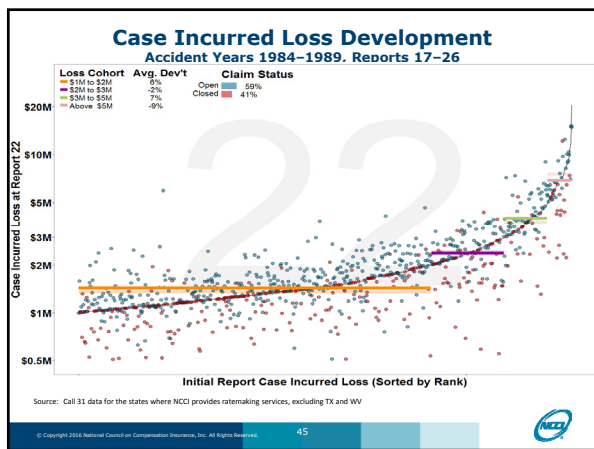
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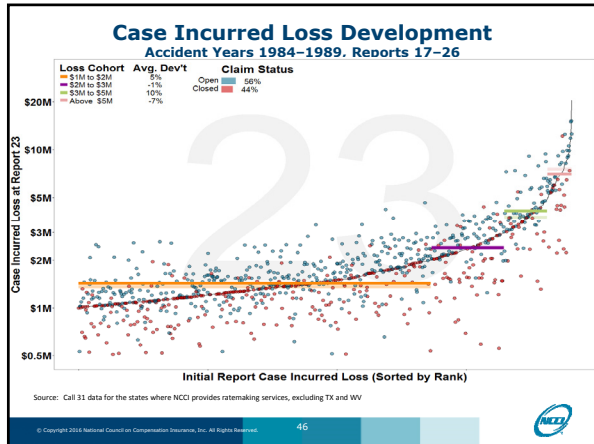
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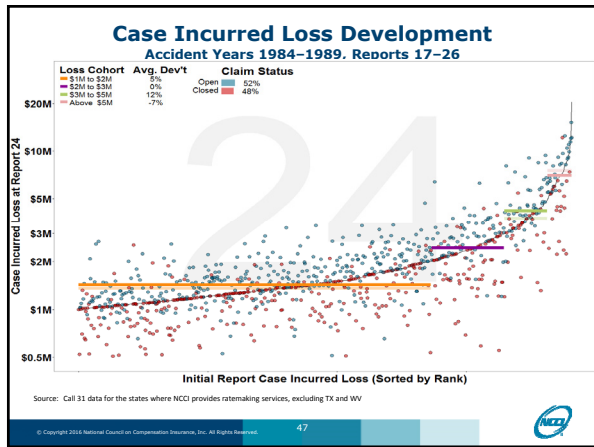
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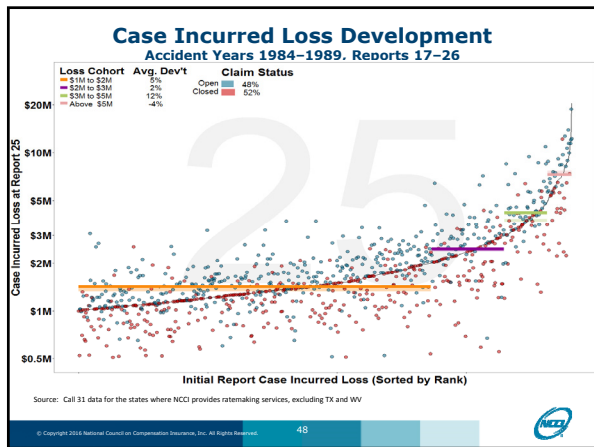
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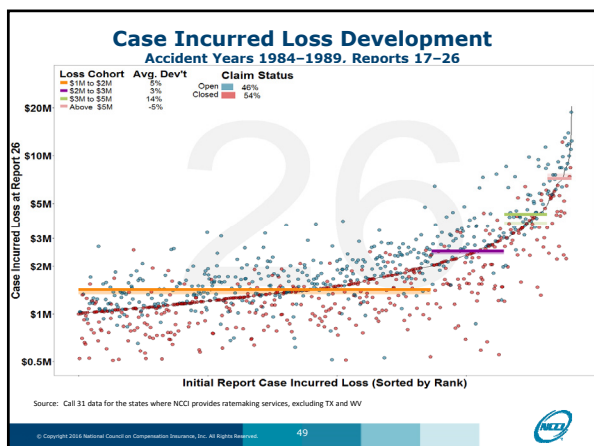
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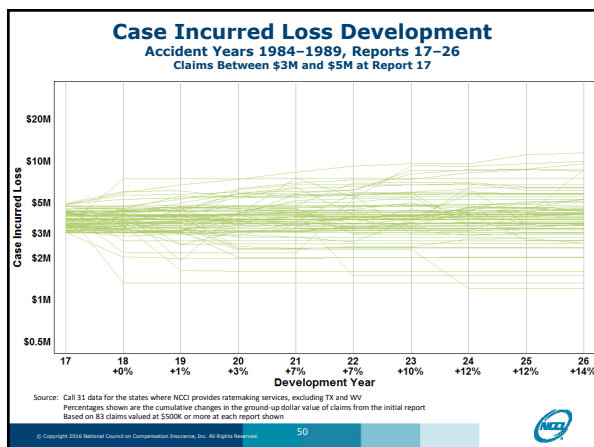
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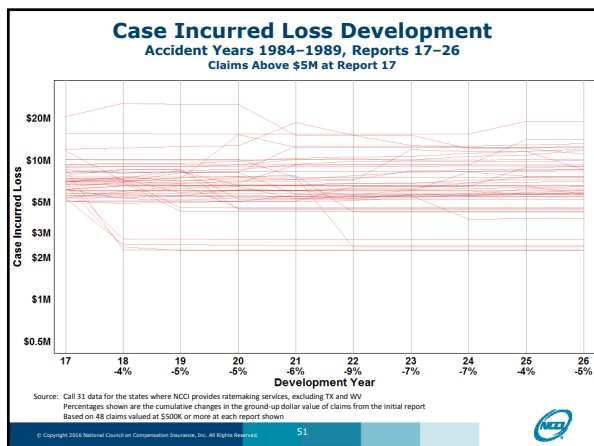
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## Statistical Summary



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### Average Development and Claim Counts Grouped by Size of Loss at Initial Report

Accident Years	Statistic	< \$1M	\$1M to \$2M	\$2M to \$3M	\$3M to \$5M	\$5M +	All Claims
<b>2006 to 2009</b>	Avg Dev't	22%	14%	4%	-8%	-21%	6%
	# of Claims	1,717	612	188	141	91	2,749
<b>2001 to 2005</b>	Avg Dev't	37%	16%	7%	-9%	-21%	8%
	# of Claims	1,012	494	164	122	77	1,869
<b>1996 to 2000</b>	Avg Dev't	30%	7%	1%	-3%	-23%	9%
	# of Claims	1,201	398	104	81	44	1,828
<b>1990 to 1995</b>	Avg Dev't	20%	11%	5%	15%	-13%	12%
	# of Claims	2,105	537	146	93	51	2,932
<b>1984 to 1989</b>	Avg Dev't	15%	5%	3%	14%	-5%	9%
	# of Claims	2,493	682	141	83	48	3,447

Source: Call 31 data for the states where NCCI provides ratemaking services, excluding TX and WV  
Average development is the percentage change in the ground-up dollar value of the cohort of claims from the initial report to the final report.



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## Comparisons of Excess Loss Development Factors



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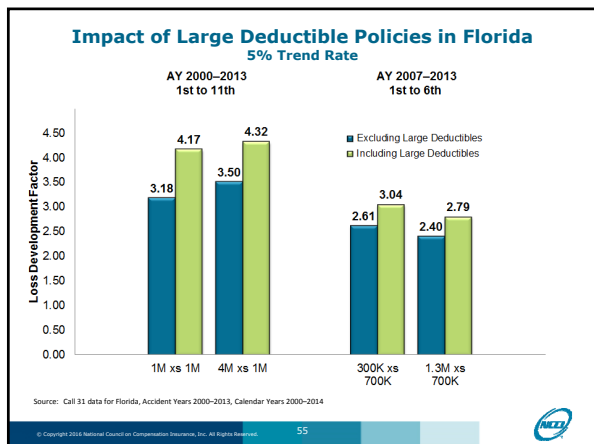
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### Sensitivity of Excess Development to Trend Selection Comparison of 3% and 5% Trend Rate

Layers	Trend Rate		Trend Rate		Trend Rate	
	3%	5%	3%	5%	3%	5%
	1st to 31st		1st to 16th		16th to 31st	
XS of \$2M	4.18	4.56	2.95	3.23	1.42	1.41
XS of \$3M	4.10	4.40	2.86	3.07	1.43	1.43
XS of \$4M	4.14	4.32	2.87	3.01	1.44	1.44
XS of \$5M	4.22	4.30	2.90	2.97	1.46	1.45
XS of \$7.5M	4.62	4.46	2.97	3.04	1.56	1.47
XS of \$10M	4.89	4.56	2.83	3.00	1.73	1.52

Source: Call 31 data, Accident Years 1984-2013, Calendar Years 2000-2014  
Individual claims trended to Accident Year 2014 using 3% and 5% trend  
Based on data for the states where NCCI provides ratemaking services, excluding TX and WV

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### Excess Development Changes Over Time Comparison of Research Update 2011 vs. 2016

Layers	Research Update		Research Update		Research Update
	2011	2016	2011	2016	2016
	1st to 26th		11th to 26th		26th to 31st
XS of \$2M	4.71	4.39	1.85	1.73	1.04
XS of \$3M	4.45	4.26	1.83	1.73	1.03
XS of \$4M	4.33	4.21	1.81	1.72	1.03
XS of \$5M	4.30	4.19	1.82	1.72	1.03
XS of \$7.5M	4.38	4.37	1.89	1.74	1.02
XS of \$10M	4.36	4.50	1.99	1.80	1.01

Source: Call 31 data, Based on data for the states where NCCI provides ratemaking services, excluding TX and WV  
2011 Research: Accident Years 1984-2008, Calendar Years 2000-2009, 5% trend, losses trended from AY to 2010  
2016 Research: Accident Years 1984-2013, Calendar Years 2000-2014, 5% trend, losses trended from AY to 2014

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**Conclusion**

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**Summary**

- Claims less than \$3M generally develop upward, while claims over \$5M generally develop downward
- Claims between \$3M and \$5M generally develop:
  - Downward during the early report periods
  - Upward during the late report periods
- The most recent calendar years suggest excess loss development continues beyond 26 reports

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**Appendix**

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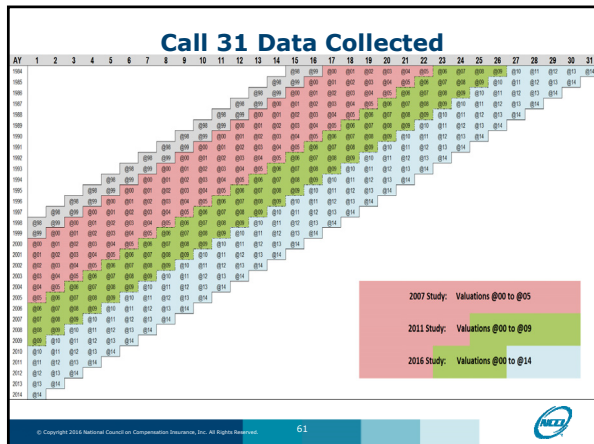
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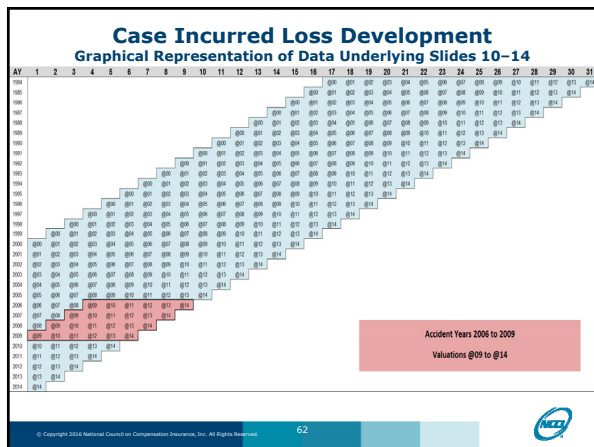
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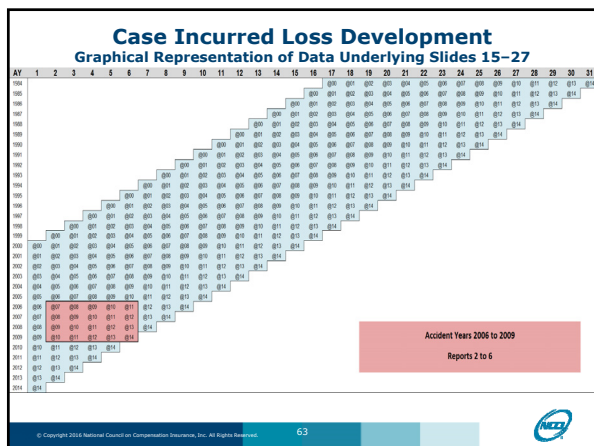
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