

# Navigant Consulting, Inc.

## Reserve Developments and the Role of Actuarial Practice

MAF Fall Meeting  
Columbus, OH  
Monday, September 21, 2009



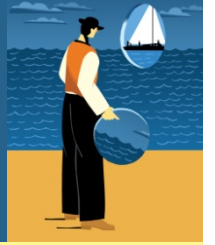
NAVIGANT  
CONSULTING

# Background



- Company Failures/Impairments/Downgrades
- Sarbanes / Oxley Act (2002)
- Severe Reserve Developments 2002-2004
- Nov. 2003 S&P Article

## Words Used by Outsiders



“Actuaries are signing off on reserves that turn out to be wildly inaccurate.”

“... {they have} scope to suppress the bad news.”

“Whether by naiveté or knavery ... reserve additions have undermined confidence in estimates ...”

# Scrutiny and Criticism



Some of their points have merit, but ...

... there are problems with the reasoning

- Observation: “Reserves are developing adversely”
- Conclusion: “Actuaries are either stupid, are crooks, or are both.”

# The Questions



- Are reserve developments a cause of, a symptom of, or a lagging indicator of the industry's problems?
- Is the SAO serving the industry properly?
- What is the role of actuarial practice?

# The Profession's Response



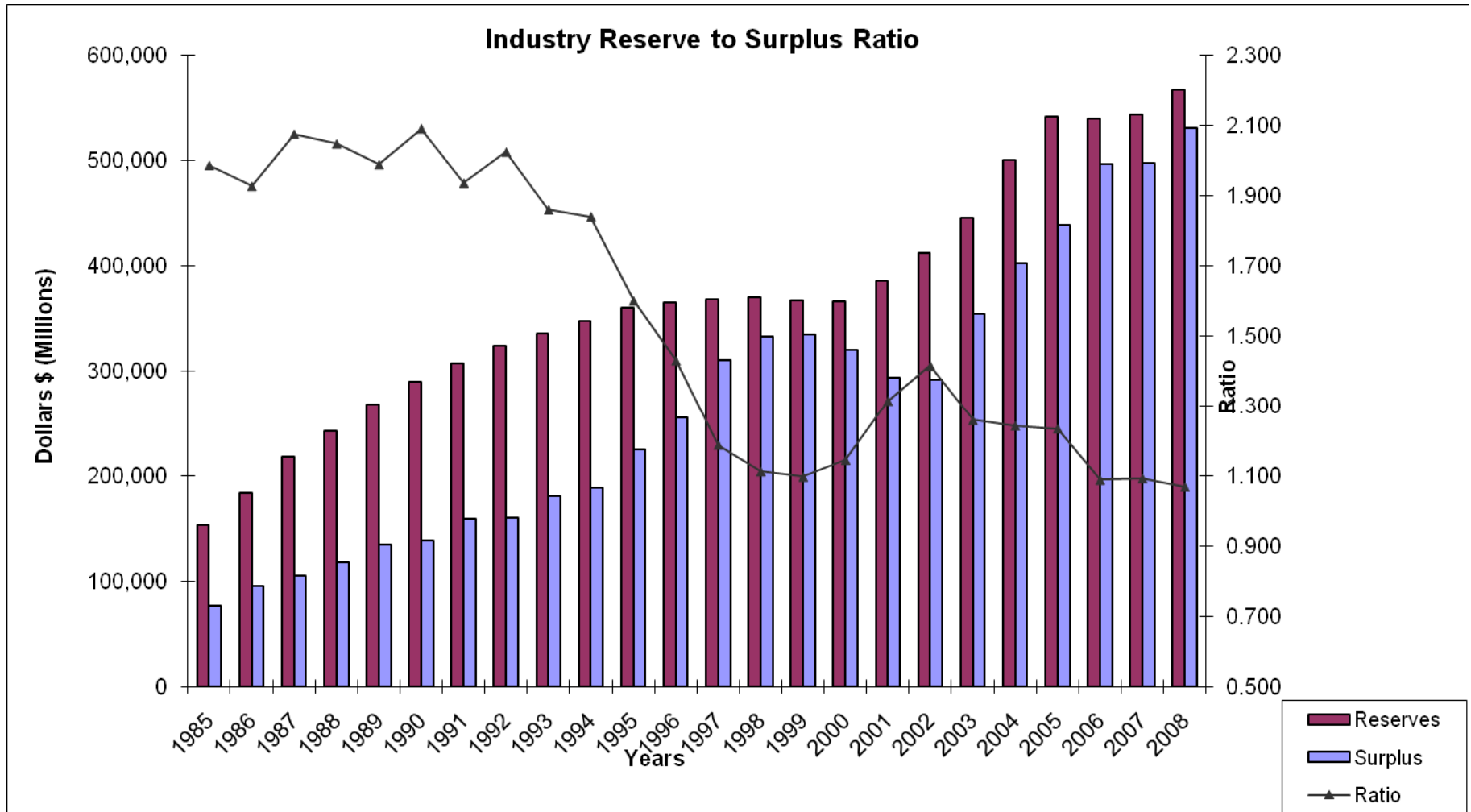
2003 – AAA Response

2005 - CAS Task Force on Actuarial Credibility

Report to membership and other professional bodies  
Focus is primarily on reserving issues and the SAO

2005 to Present - CPC / Others - Research

# Long Historical Look at Industry Data



# Analysis of Historical Data

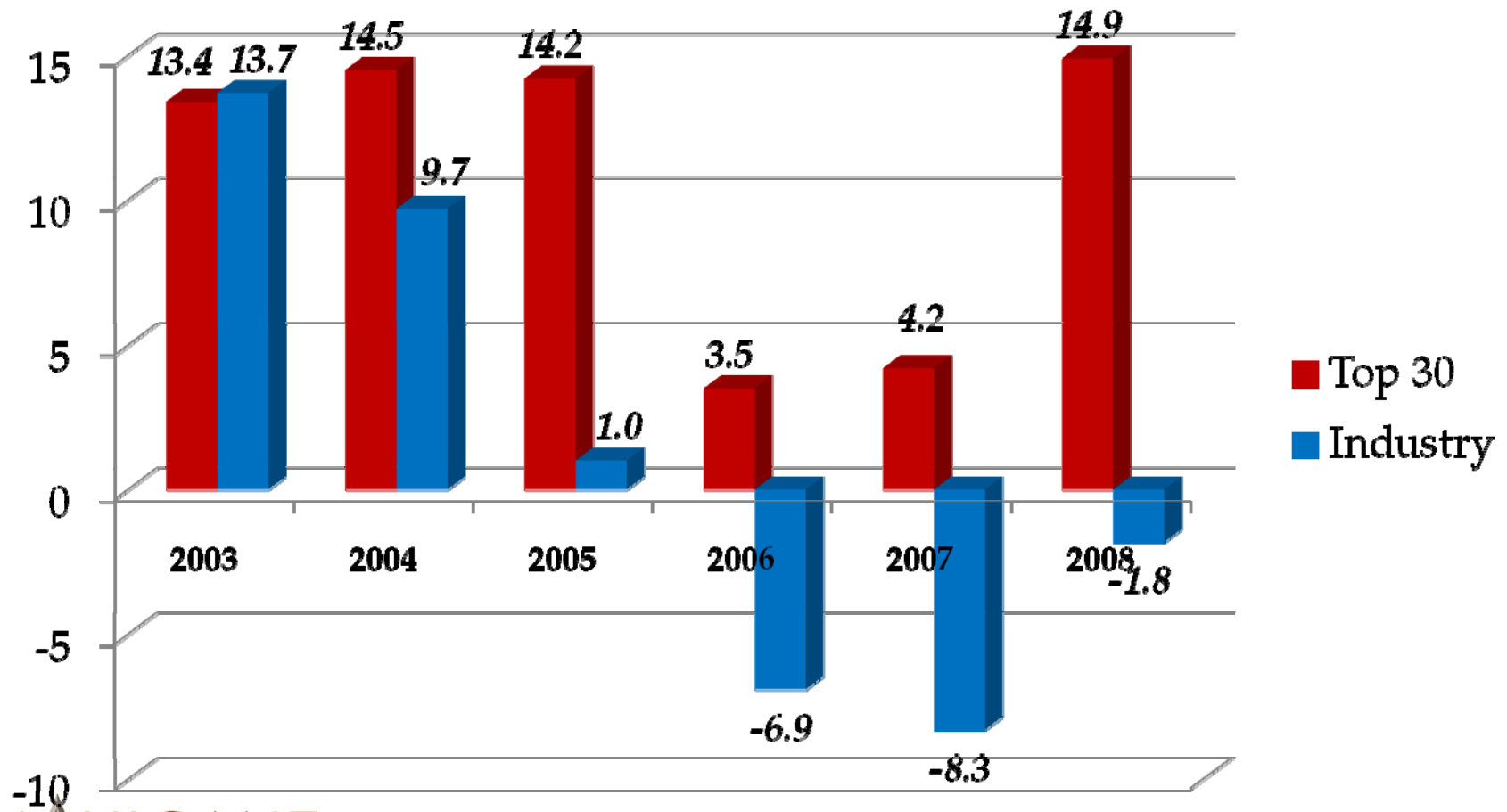


- Reserve leverage has reduced considerably over the long-term
- Early in the 2000's a sharp increase in reserving levels occurred
  - Asbestos liabilities
  - Other Mass torts (construction defects, tobacco)
  - Mold
  - 9-11 liabilities
- Fortunately, capital levels caught-up shortly afterward
- Reserving leverage continues to be at relatively lower levels



# One-Year Development

**\$ Billions**



# Analysis of Historical Developments



- \$15BB over the past year for Top 30 groups as compared to \$4.2BB in 2007 and \$3.5BB in 2006
- Overall industry developments have been trending more favorably each year since 2003. 2008 showed a trend toward more adverse results, but due to a particular reason.
- Massive upward developments earlier in the 2000's, driven heavily by A&E adjustments, fueled the scrutiny from industry observers

# Reserve Developments to Surplus



*Based on number of companies*

	Less than - 10%	Between 5% and -10%	Between 0% and -5%	Between 0% and 5%	Between 5% and 10%	Greater than 10%
1998	18.9%	13.9%	31.8%	21.3%	4.8%	9.3%
1999	15.1%	14.0%	32.1%	24.3%	5.4%	9.0%
2000	13.0%	11.8%	35.2%	24.5%	6.3%	9.2%
2001	12.4%	10.2%	28.0%	26.8%	7.1%	15.5%
2002	9.5%	8.1%	27.1%	29.0%	9.4%	16.8%
2003	9.2%	8.3%	29.6%	27.6%	9.6%	15.7%
2004	9.3%	12.1%	33.0%	28.0%	6.5%	11.1%
2005	9.2%	11.8%	29.2%	41.0%	2.9%	5.9%
2006	9.0%	12.3%	36.3%	34.4%	3.8%	4.2%
2007	13.5%	11.8%	34.7%	32.2%	2.9%	4.8%
2008	13.7%	14.5%	32.5%	31.3%	2.9%	5.2%

# Reserve Developments to Prior Reserves



*Based on number of companies*

	Less than - 10%	Between 5% and -10%	Between 0% and -5%	Between 0% and 5%	Between 5% and 10%	Greater than 10%
1998	33.7%	14.8%	18.9%	13.1%	5.7%	13.8%
1999	31.2%	13.1%	19.2%	17.6%	5.4%	13.5%
2000	29.9%	11.7%	20.5%	16.2%	7.0%	14.8%
2001	28.0%	9.3%	15.3%	17.5%	9.2%	20.7%
2002	25.0%	9.2%	12.4%	19.6%	10.2%	23.7%
2003	24.2%	8.6%	16.3%	19.3%	10.4%	21.1%
2004	26.7%	11.2%	18.9%	19.3%	9.0%	14.9%
2005	23.1%	13.5%	23.8%	25.6%	4.8%	9.3%
2006	26.4%	15.9%	27.5%	17.3%	4.7%	8.2%
2007	32.5%	15.3%	24.7%	14.1%	4.6%	8.8%
2008	32.9%	17.8%	22.6%	13.4%	4.5%	8.8%

# Historical Movements



- Since earlier in the decade, prevailing reserve movements are more frequently to the favorable side
- 2008 adverse movements are not seen in the frequency (number of companies) data. Implies a small number of large movements.

# Company by Company Research



- We chose the Top 30 (“the Dirty 30”) -- The largest 30 companies in terms of the 1-Year Development statistic.
- Companies v Groups
  - We looked at data on both levels
  - Top 30 from this point is using Groups

Top 30 Groups in 2008 One-Year Development

Chart 1

Group Rank	Type of Company	Type of Insurance	Change in					1 Year Dev.	2 Year Dev.	1 Yr Dev / PHS (%)	2 Yr Dev / PHS (%)	2007 Top
			2008 Surplus	2007 Surplus	Surplus	2008 Reserves	2008 Net EP					
1	Stock Company	Comm'l Financial	(2,399,692)	191,983	-1349.9%	4,849,700	279,669	9,773,694	7,697,315	5090.9	3718.3	Y
2	Stock Company	Comm'l Financial	1,052,029	2,059,490	-48.9%	1,677,835	587,995	1,148,404	6,772	55.8	35.1	N
3	Stock Company	Comm'l Financial	3,502,422	3,663,052	-4.4%	1,670,697	906,920	852,412	42,161	23.3	1.0	Y
4	Mutual Company	Personal Lines	53,170,815	63,618,527	-16.4%	30,191,934	48,122,449	404,733	865,724	0.6	1.5	N
5	Stock Company	Comm'l Financial	1,674,280	1,372,632	22.0%	6,622,520	1,410,839	362,929	413,875	26.4	25.4	Y
6	Stock Company	Comm'l Financial	464,833	358,386	29.7%	1,213,126	753,810	245,513	23,517	68.5	7.7	N
7	Stock Company	Personal Lines	13,155,649	18,162,769	-27.6%	16,155,051	26,091,182	235,304	42,922	1.3	0.2	N
8	Mutual Company	Commercial Casualty	37,542			30,063	23,137	219,069	205,401			N
9	Stock Company	Multi-National Insurer	3,902,746	3,784,206	3.1%	7,147,720	5,334,079	163,741	230,381	4.3	6.1	Y
10	Stock Company	Reinsurer	2,216,212	2,976,238	-25.5%	4,991,516	2,624,415	153,091	188,270	5.1	5.8	N
11	Stock Company	Mortgage Insurance	568,019	781,863	-27.4%	2,141,826	774,542	136,788	198,801	17.5	24.3	Y
12	Stock Company	Commercial	13,139,645	13,598,709	-3.4%	13,051,442	15,611,576	135,807	207,758	1.0	1.6	N
13	Mutual Company	Large Multi-Line	261,859	250,372	4.6%	321,468	366,311	117,389	130,462	46.9	51.0	Y
14	Stock Company	Comm'l Financial	1,555,606	3,316,986	-53.1%	1,160,538	1,081,725	112,263	(9,690)	3.4	-0.3	N
15	Stock Company	Reinsurer	2,363,243	2,906,656	-18.7%	4,442,801	1,139,873	111,557	333,534	3.8	12.2	Y
16	Stock Company	Reinsurer	6,038,001	7,198,288	-16.1%	10,536,400	2,222,225	91,395	711,515	1.3	9.2	Y
17	Stock Company	Personal Lines	1,374,267	1,724,921	-20.3%	1,128,072	2,786,826	85,887	77,004	5.0	4.9	N
18	Stock Company	Comm'l Financial	(2,618,757)	66,093	-4062.2%	431,322	22,373	83,307	-	126.0	0.0	N
19	Stock Company	Comm'l Financial	552,744	1,275,201	-56.7%	3,011,535	1,058,882	81,819	71,627	6.4	3.9	Y
20	Stock Company	Medical Malpractice	64,286	261,607	-75.4%	640,215	129,370	73,294	85,851	28.0	66.8	N
21	Stock Company	Multi-Line	332,140	446,053	-25.5%	1,096,303	(1,718)	69,069	385,501	15.5	153.0	Y
22	Stock Company	Commercial Property	66,722	71,734	-7.0%	203,802	154,915	56,623	91,841	78.9	102.5	Y
23	Stock Company	Personal Lines	55,547	100,203	-44.6%	281,413	337,171	37,922	105,660	37.8	2.8	Y
24	Stock Company	Personal Lines	4,471,123	4,589,414	-2.6%	5,932,937	13,632,696	29,614	137,742	0.6	-45.8	Y
25	Stock Company	Runoff	(83,009)	(53,707)	54.6%	253,790	(1,840)	28,797	22,372	-53.6	21.8	N
26	Stock Company	Commercial Liability	530,907	462,951	14.7%	1,216,288	297,300	24,939	90,550	5.4	5.8	N
27	Stock Company	Commercial	350,043	371,976	-5.9%	771,453	425,269	23,887	19,402	6.4	1.7	N
28	Reciprocal Exchange	Commercial Property	231,506	198,320	16.7%	258,603	552,226	23,265	2,007	11.7	9.8	N
29	Stock Company	Commercial Property	465,106	530,510	-12.3%	445,695	299,798	22,830	57,171	4.3	40.2	N
30	Stock Company	Runoff	61,863	84,441	-26.7%	272,253	(10)	22,412	38,838	26.5	NA	N
Subtotal			106,495,834	134,285,435	-20.7%	122,076,064	127,024,017	14,905,342	12,435,446	11.10		
Industry Wide			462,571,269	530,829,829	-12.9%	567,037,874	443,477,108	(1,807,543)	(9,034,040)	-0.34		

# Analysis of Top 30 Financial Data



- 3 Mutuals, 1 Reciprocal, 26 Stock Companies
- Massive influence from carriers which predominantly write financial products / mortgage insurance
  - 8 Groups in Top 19
  - 5 of Top 6
  - \$12.7BB of \$14.9BB
  - Two had PHS go negative
- Three other groups were large personal lines insurers which made the list only due to their size (i.e., small percentages of prior PHS)



# Analysis of Top 30 Financial Data



- 2008 surplus fell across the industry due primarily to reduction in asset values late in the year
- Most of the others (19) had developments from other more traditional reserve sources (A&E, mass torts, reinsurance)
- 13 of the Top 30 Groups were “repeat offenders”

Top 30 Groups in 2008 One-Year Development

Chart 2

Group	Type of Company	Type of Insurance	2008 Actuary Designation	2008 Actuary Affiliation*	Appointed Actuary?	SAO	2008 RMAD?	2007 RMAD?	2006 RMAD?	2008 MS Basis	2008 MS %	
1	Stock Company	Comm'l Financial	F	A	2008	Financial Guaranty Ins.	Reasonable	Yes	Yes	No	Net Revs	10%
2	Stock Company	Comm'l Financial	F	I		Residential Mortgage	Reasonable	Yes	No	No	PHS	10%
3	Stock Company	Comm'l Financial	F	A	2007	Financial Guaranty Ins.	Reasonable	No	No	No	PHS	10%
4	Mutual Company	Personal Lines	F	A		Personal Lines Insurance - Large	Reasonable	No	No	No	Net Revs	15%
5	Stock Company	Comm'l Financial	F	A	2008	Mortgage Insurance	Reasonable	Yes	Yes	No	Net Revs	15%
6	Stock Company	Comm'l Financial	F	A		Mortgage Insurance	Reasonable	Yes	No	No	PHS	25%
7	Stock Company	Personal Lines	A	I		Personal Lines Insurance - Large	Reasonable	No	No	No	Net Revs	10%
8	Mutual Company	Commercial Casualty	F	E		Does Not Belong	Reasonable	No	-	-	PHS	10%
9	Stock Company	Multi-National Insurer	F	A		A&E, Const. Defects, etc.	Reasonable	Yes	Yes	Yes	PHS	1%
10	Stock Company	Reinsurer	F	E	2008	A&E, long tailed lines	Reasonable	Yes	Yes	Yes	RBC	CAL
11	Stock Company	Mortgage Insurance	F	E		Mortgage Insurance	Reasonable	Yes	Yes	-	Judgment	Judgment
12	Stock Company	Commercial	A	I		Construction Business	Reasonable	No	Yes	-	PHS	10%
13	Mutual Company	Large Multi-Line	F	A			Reasonable	No	No	No	Net Revs	10%
14	Stock Company	Comm'l Financial	A	E		Residential Mortgage	Reasonable	Yes	No	No	Net Revs	10%
15	Stock Company	Reinsurer	F	E	2007	A&E, Reins., Mass Tort	Reasonable	Yes	Yes	Yes	PHS	15%
16	Stock Company	Reinsurer	F	I		A&E, Reins., Mass Tort	Reasonable	Yes	Yes	No Discl.	RBC	10%
17	Stock Company	Personal Lines	A	A			Reasonable	No	No	No	Net IBNR	50%
18	Stock Company	Comm'l Financial	A	A	2007	Financial Guaranty Ins.	Reasonable	Yes	Yes	No	Net Revs	10%
19	Stock Company	Comm'l Financial	F	E	2007	Mortgage Insurance	Reasonable	Yes	Yes	No	Net Revs	15%
20	Stock Company	Medical Malpractice	F	E		Medical Malpractice Liability	Reasonable	Yes	Yes	Yes	PHS	10%
21	Stock Company	Multi-Line	O	I		Material A & E exposure	Reasonable	Yes	Yes	Yes	PHS	20%
22	Stock Company	Commercial Property	F	I		Commercial Auto Liability	Deficient	No	No	-	Judgment	Judgment
23	Stock Company	Personal Lines	F	E		PIP claims	Reasonable	Yes	Yes	Yes	RBC	0%
24	Stock Company	Personal Lines	F	I		Personal Lines Insurance - Large	Reasonable	No	No	No	PHS	11%
25	Stock Company	Runoff	F	I		Runoff A&E, long-tailed	Reasonable	Yes	Yes	Yes	Net Revs	5%
26	Stock Company	Commercial Liability	F	A		Excess workers Compensation	Reasonable	Yes	Yes	Yes	PHS	25%
27	Stock Company	Commercial	F	I		Long-Tailed WC	Reasonable	Yes	Yes	Yes	PHS	20%
28	Reciprocal Exchange	Commercial Property	A	I		Special Property	Reasonable	No	No	No	PHS	10%
29	Stock Company	Commercial Property	F	I		Commercial Auto and GL	Reasonable	No	No	No	PHS	15%
30	Stock Company	Runoff	F	A		A&E, Mass Torts	Reasonable	Yes	Yes	?	Net Revs	15%

\* - Affiliation  
 E - Employee  
 A - Actuary from Audit Firm  
 I - Independent

# General Stats of Top 30 - SAO Data



- Professional Designations of AA's for Top 30
  - 23 Fellows
  - 6 Associates
  - 1 Other (permitted signer)
  
- Professional Affiliations of AA's for Top 30
  - 8 Employees
  - 11 Actuaries from Audit Firm
  - 11 Independents
  
- 3 of Top 30 changed AA before 2008
- 4 of Top 30 changed AA before 2007
- 23 remained with AA through the three years

# General Stats of Top 30 - SAO Data



- Risk of Material Adverse Deviation (RMAD) Disclosures
  - 2008:
    - 19 said there was a significant risk
    - 11 said there was not
    - 2 switched
  - 2007:
    - 17 said there was a significant risk
    - 13 said there was not
  - 2006:
    - 9 said there was a significant risk
    - 19 said there was not
    - 1 had no RMAD disclosure
    - 1 discussed but did not take a clear position

# Beyond the Top 30



- Additional Research – Expanding the Field
  - Add to the Top 30 the following:
    - Top 30 for Two-Year Development (\$) Statistic
    - Top 30 for One-Year to '07-PHS (Ratio) Statistic
    - Top 30 for Two-Year to '06-PHS (Ratio) Statistic
  - Eliminate overlaps
  - Result: 76 Groups

# Beyond the Top 30



- Changed in Appointed Actuary
  - 2008: 11 of 76 noted changes
  - 2007: 23 of 76 noted changes

# Beyond the Top 30



- Risk of Material Adverse Deviation (RMAD) Disclosures
  - 2008:
    - 49 said there was a significant risk
    - 17 said there was not
    - 10 missing or N/A
  - 2007:
    - 46 said there was a significant risk
    - 20 said there was not
    - 10 missing or N/A
  - 2006:
    - 27 said there was a significant risk
    - 19 said there was not
    - 30 missing or N/A

# Historically



## RMAD disclosure slow to show

- 50% had RMAD's in 2002
- 67% had RMAD's in 2003
- 83% had RMAD's in 2004
- 70% had RMAD's in 2005
- 71% had RMAD's in 2006
- ?% had RMAD's in 2007
- 74% had RMAD's in 2008



# Beyond the Top 30



- Prevailing Materiality Standards
  - % of PHS (36 of 76)
    - 10% = 18 SAO's
    - 15% = 6 SAO's
    - 20% = 8 SAO's
    - 25% = 4 SAO's
    - Other single SAO's at 1%, 4%, 5%, and 30%

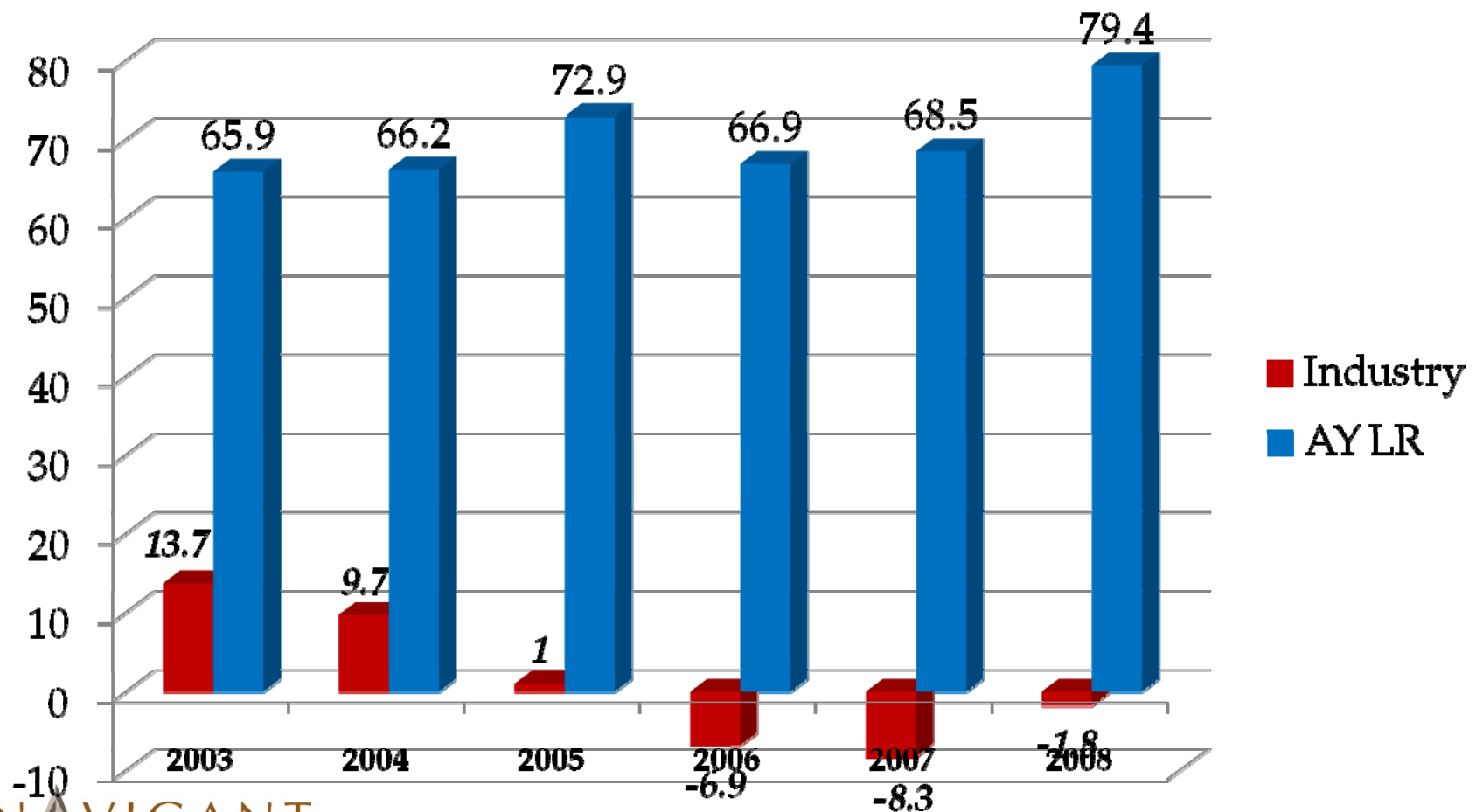
# Beyond the Top 30



- Prevailing Materiality Standards
  - % of Net Reserves (12 of 76)
    - 5% = 2 SAO's
    - 10% = 5 SAO's
    - 15% = 4 SAO's
    - 20% = 1 SAO
  - Other Standards (13 of 76)
    - 9 picked round figures mostly via judgment
    - 1 SAO used 50% of IBNR
    - 3 others used RBC standard (difference to CAL)

# One-Year Development – relation to underwriting cycle

**\$ Billions**



Finally ...



Questions ... ?

Ideas for Further Research ... ?