

# Monitoring Industry Premium, Loss Ratios, and Loss Reserves

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**Abstract:** This paper presents a method to use US insurance industry information and economic data to monitor the relative adequacy of the earned premium volume and the calendar year loss ratios that are being booked. The economic data is updated monthly and the industry data being used is updated and available each quarter which allows for timely monitoring of the likely movement in the industry's loss reserve adequacy.

**Keywords:** reserving, APLR's, a priori loss ratios, expected loss ratios, calendar year, accident year.

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## 1. INTRODUCTION AND BACKGROUND

This paper will suggest a technique for deriving estimates of what the industry loss ratios should be. These loss ratios are then compared to the actual loss ratios that the industry is booking in order to estimate the impact on the industry's loss reserve adequacy. This is done separately for total commercial lines and total personal lines as well as all lines in total.

Appendices A, B, and C display the premium and loss information for accident years 1995-2010 for the major commercial lines of Workers Compensation, Commercial Auto Liability, and Other Liability.<sup>1</sup> The original ultimate loss ratios booked as of 12 months as well as the most recently available booked ultimate loss ratios are also displayed. Examining those exhibits leads to the following 3 general observations for each of the major commercial lines:

1. The volume of ultimate losses increased during the 1996-1999 soft market years as we would expect with exposure and loss trend, but the volume of earned premium did not grow proportionally.
2. The initial ultimate loss ratios booked as of 12 months (accident year-end) did not show nearly as much variation across the years as do the most recently booked ultimate loss ratios. The initial booked loss ratios compared to what they were eventually booked as are too high in the hardest of the hard market years, and are much too low in the softest of the soft market years.
3. The volume of earned premium has been decreasing since the 2006 accident year rather than increasing as we might expect to keep up with exposure and loss trend.

Not surprisingly, the combination of the first 2 observations suggest that the aggregate premiums

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<sup>1</sup> Data source is AM Best Aggregates and Averages

being charged during the soft market years became relatively and progressively less adequate as the market softened. However, the associated loss ratios that were booked did not increase enough to fully reflect the increasing degree of premium inadequacy. Although the core problem underlying the loss reserve inadequacy was the inadequacy of the premium, the loss reserve inadequacy build-up was due to booking loss ratios that were too low to fully reflect the inadequacy of the premium. The combination of the last 2 observations cited above raises the concern that a similar situation could be happening again in the later years of the data set.

## **2. METHODOLOGY**

### **2.1 General Approach for Monitoring the Industry**

The approach set forth in this paper uses US insurance industry information and economic data to monitor the relative adequacy of the earned premium volume and the calendar year loss ratios that are being booked. The economic data is updated monthly and the industry data being used is updated and available each quarter which allows for timely monitoring of the likely movement in the industry's loss reserve adequacy.

In simplistic terms, the approach is to choose a base year (2005) for which we think we know the actual accident year loss ratio with reasonable certainty and is a year we think is in a more neutral part of the cycle with the market being neither very hard nor very soft. In order to maintain the same loss ratio level in subsequent years, the change in earned premium would need to be sufficient to keep pace with the corresponding exposure trend and loss trend. To the extent the earned premium does not keep pace, there needs to be a change in the magnitude of the loss ratio being booked. If the loss ratio does not change as expected and an inaccurate calendar period loss ratio gets booked, then there is an impact on the relative loss reserve adequacy. A loss ratio inaccuracy in one direction for one calendar period can be offset by an inaccuracy in the other direction in another calendar year. Repeated inaccuracies in the same direction will have a cumulative impact on the industry reserve adequacy.

Note that this method is determining the accuracy of the normalized (i.e. adjusted to reflect normal rather than actual levels of catastrophe losses) calendar period loss ratio that was actually booked by comparing it to what the corresponding accident year ultimate loss ratio should be. The accuracy of the loss ratio being booked on the current accident year as well as changes in the accuracy of the loss ratios being booked for prior accident years would all impact the accuracy of the

calendar period loss ratio. Therefore, if this approach indicates an inaccurate calendar period loss ratio was booked, we are not really identifying which accident years were booked inaccurately just that the aggregate impact produces an inaccurate calendar period loss ratio.

## **2.2 Details of the Approach**

Each quarter, ISO releases a Chief Executive Circular on the Property/Casualty Insurance Industry Financial Results<sup>2</sup> that reports on the calendar period results for the US insurance industry. The ISO report provides the written premium, earned premium and incurred loss & LAE for the property/casualty industry for the latest 6 full calendar years and the year-to-date through the latest quarter partial years for the current and prior calendar years. The ISO report also shows the partial calendar year data separately for writers that predominate in Commercial Lines, writers that predominate in Personal Lines, and Balanced Writers. Splitting the Balanced Writers volume evenly between commercial and personal lines allows us to create an approximate industry commercial versus personal lines compilation.

The approach in this paper monitors how we believe the industry loss reserve adequacy has moved since the end of 2005. If the adequacy position of the industry were known for year-end 2005, then an estimate of the current adequacy position could be derived, but it is not necessary to know the precise adequacy level of the industry reserves at year-end 2005 to use this approach to say how the adequacy level has likely moved since then. The US industry loss reserves for both commercial lines and personal lines were probably in a strong position at year-end 2005.

We have deemed the calendar year 2005 industry personal lines reported loss ratio to be equal to the 2005 accident year ultimate loss ratio. That is, the 2005 calendar year loss ratio was not materially distorted by reserve changes on accident years 2004 and prior for personal lines. We are therefore deeming the 2005 calendar year loss ratio to be equal to the 2005 accident year ultimate loss ratio for personal lines.

The Insurance Information Institute reported that calendar year 2005 had \$18.9B of prior year reserve strengthening.<sup>3</sup> Assuming the strengthening was all in commercial lines implies that the commercial lines calendar year 2005 loss ratio is 9.5 points above the corresponding 2005 ultimate accident year loss ratio. Therefore, we are deeming the 2005 ultimate accident year loss ratio for

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<sup>2</sup> For example, ISO Chief Executive Circular CE-AA-2012-008 *Property/Casualty Insurance Industry Financial Results: First-Quarter 2012 Analysis*

<sup>3</sup> Insurance Information Institute November 7, 2007 presentation “P/C Insurance in an Era of Mega-Catastrophes” slide 19.

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commercial lines to be equal to the 2005 calendar year loss ratio reduced by 9.5 points.

The loss ratios can vary by several points from year to year due to the fortuitous magnitude of catastrophe losses, such as from hurricanes. We want to normalize the industry loss ratios in order to state them as what they would be with a “normal” amount of catastrophe losses. The ISO Chief Executive Circular on the Property/Casualty Insurance Industry Financial Results<sup>4</sup> provides the magnitude of the catastrophe losses on a YTD basis each quarter. We remove the actual impact of catastrophes on the reported loss ratios and replace them with the “normal” impact on the YTD loss ratio each quarter. The result is the normalized loss ratio. The “normal” catastrophe loss ratio increases during the second half of the year when hurricanes, a significant contributor to catastrophe losses in the US, occur. For both personal and commercial lines, the “normal” loss ratio impacts are assumed to be 1.5 points through the first and second quarters, 1.9 points YTD through the third quarter, and 2.2 points for the full year. We made an exception in quarters 2-4 of 2011 because the unprecedented 2Q tornado losses impacted personal lines more than they did commercial lines- -for the full 2011 calendar year, the impact of cats increased the all lines loss ratio by 5.3 points more than normal, we assumed that the impact on the personal lines loss ratio was 6.3 points more than normal and the impact on the commercial lines loss ratio was 4.1 points more than normal.

To maintain a consistent degree of premium adequacy, we expect industry earned premium to change with exposure and loss trend. We assume that all business gets renewed somewhere within the US industry, it may not be with the same insurer but it gets renewed by some insurer within the industry. An embedded assumption is that the size of the insured US industry is not materially impacted by changes in use of captives, SIR's, or self-insurance, changes in coverage, or changes in terms and conditions.

Each month, Swiss Re's Economic Research & Consulting team publishes their US Economic Outlook<sup>5</sup>. This provides information on not only what recent changes in the real GDP (real gross domestic product) and CPI (consumer price index) have been, but also forecasts future periods. This gives us a way of using non-insurance industry data to project expected changes in the insurance industry, particularly exposure trend and loss trend.

We have assumed that industry exposure trend for overall Personal Lines is equal to zero. We have assumed that industry exposure trend for overall Commercial Lines is equal to the trend in real GDP.

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<sup>4</sup> Ibid

<sup>5</sup> For example, Swiss Re Economic Research & Consulting, 6 July 2012 *US Economic Outlook*

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The loss trend reflects both frequency and severity trend. This is the trend in the loss per unit of exposure that is sometimes called the pure premium trend. We have assumed that industry loss trends are equal to trends in the CPI plus a judgmental increment to reflect that insurance industry loss trends have traditionally been larger than the CPI trend. The judgmental adjustment also reflects the frequency trend which is not reflected in the CPI. For Personal Lines, the judgmental increment is 0.5 percentage points, except for 2008 where we reflected the favorable impact of the severe recession on personal lines loss trend by using a judgmental decrement of 1 percentage point. For Commercial Lines, the judgmental increment is 2 percentage points. One reason for the judgmental increment being smaller for personal lines is that decreasing frequency trends are more significant for personal lines in aggregate than for commercial lines in aggregate. The severe recession's impact on commercial lines is captured in the exposure trend (real GDP) rather than in the judgmental increment.

The previous assumptions and the information on exposure and loss trend combine to produce the figures in Chart 1 of the needed growth rates from the 2005 earned premium in order to maintain the 2005 normalized loss ratio level.

**Total Commercial Lines**

**Total Personal Lines Chart 1**

Calendar Period	Exposure Trend	CPI % Change	Judgmental Increment to CPI for Ins. Trend	Needed <sup>1</sup> % Change in EP Since 2005	Exposure Trend	CPI % Change	Judgmental Increment to CPI for Ins. Trend	Needed <sup>1</sup> % Change in EP Since 2005
2005	3.2%	3.9%	2.0%	0.0%	0.0%	3.9%	0.5%	0.0%
2006	2.8%	3.2%	2.0%	8.1%	0.0%	3.2%	0.5%	3.7%
2007	2.0%	2.9%	2.0%	15.7%	0.0%	2.9%	0.5%	7.2%
2008	0.4%	3.8%	2.0%	22.9%	0.0%	3.8%	-1.0%	10.2%
2009	-2.6%	-0.3%	2.0%	21.8%	0.0%	-0.3%	0.5%	10.4%
2010	3.0%	1.6%	2.0%	29.9%	0.0%	1.6%	0.5%	12.8%
2011	1.7%	3.1%	2.0%	38.9%	0.0%	3.1%	0.5%	16.8%
1Q 2011	1.7%	3.1%	2.0%		0.0%	3.1%	0.5%	
1Q 2012	2.2%	2.0%	2.0%	41.0%	0.0%	2.0%	0.5%	17.6%

<sup>1</sup> This is the % change needed to maintain the 2005 level of premium adequacy

Exhibit 1 shows how the actual change in earned premium levels since 2005 compares to the change needed to maintain the 2005 normalized loss ratios. The extent of the difference between actual and needed earned premium percentage changes for any given year tells us how much we could expect the loss ratio to be different from 2005. When the actual % change is less than the needed % change, then we should expect the normalized loss ratio to be higher than 2005's. We can compute the expected normalized loss ratio for each year by multiplying the 2005 loss ratio by  $(100 + \% \text{ needed change in EP since 2005}) / (100 + \text{actual \% change in EP since 2005})$ .

To the extent the actual booked industry normalized loss ratios differ from the expected normalized loss ratios, we can infer that the loss ratios that the industry has booked are relatively less accurate than the 2005 loss ratios. The booking of inaccurate loss ratios has a direct impact on industry loss reserve strength. If the booked loss ratios are higher than the expected loss ratios then the industry reserves have become stronger. On the other hand, if the industry booked loss ratios are lower than expected then the industry loss reserves have become weaker and less adequate. The dollar impact on the industry's loss reserve adequacy from any calendar year can be computed by multiplying the earned premium for the year by the difference between the booked normalized loss ratio and the expected normalized loss ratio; positive impacts add to the industry's loss reserve strength and negative impacts weaken the industry's loss reserves. The impacts of individual

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calendar periods accumulate over time resulting in a cumulative impact on industry loss reserve adequacy. When the industry books calendar period loss ratios that are too low for an extended period of time, the industry's loss reserves can become quite inadequate. Likewise, when the industry books calendar period loss ratios that are too high for an extended period of time, the industry's loss reserves can become greater than necessary.

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**US P&C Insurance (\$ Millions)**

**Exhibit 1**

Total Personal + Commercial Lines

Calendar Period	Earned Premium	Booked Normalized Loss Ratio	Needed % Change in EP Since 2005	Actual % Change in EP Since 2005	Expected Normalized Loss Ratio	Year's Impact on Reserve Adequacy	Cumulative Impact on Reserve Adequacy
2005	417,635	63.6%	0.0%	0.0%	63.6%	-	-
2006	435,484	64.1%	5.8%	4.3%	64.5%	(1,655)	(1,655)
2007	438,908	68.0%	11.3%	5.1%	67.3%	3,430	1,775
2008	438,316	74.3%	16.3%	5.0%	70.4%	17,796	19,572
2009	422,302	72.0%	15.8%	1.1%	72.8%	(2,646)	16,926
2010	422,200	72.4%	20.9%	1.1%	76.1%	(14,361)	2,565
2011	433,941	74.1%	27.3%	3.9%	77.9%	(15,006)	(12,441)
1Q 2011	105,232	69.9%					
1Q 2012	107,944	68.3%	28.7%	6.6%	76.8%	(8,804)	(21,245)

Total Commercial Lines

Calendar Period	Earned Premium	Booked Normalized Loss Ratio	Needed % Change in EP Since 2005	Actual % Change in EP Since 2005	Expected Normalized Loss Ratio	Year's Impact on Reserve Adequacy	Cumulative Impact on Reserve Adequacy
2005	198,757	60.1%	0.0%	0.0%	60.1%	-	-
2006	213,961	62.3%	8.1%	7.6%	60.3%	4,201	4,201
2007	218,956	66.0%	15.7%	10.2%	63.1%	6,434	10,635
2008	212,204	74.7%	22.9%	6.8%	69.1%	11,722	22,357
2009	200,905	70.2%	21.8%	1.1%	72.3%	(4,227)	18,129
2010	195,359	71.7%	29.9%	-1.7%	79.4%	(14,901)	3,229
2011	201,799	74.7%	38.9%	1.5%	82.1%	(14,957)	(11,729)
1Q 2011	49,190	72.9%					
1Q 2012	50,754	68.0%	41.0%	4.8%	80.8%	(6,501)	(18,230)



US P&C Insurance (\$ Millions)

Exhibit 1 (cont.)

Total Personal Lines

Calendar Period	Earned Premium	Booked Normalized Loss Ratio	Needed % Change in EP Since 2005	Actual % Change in EP Since 2005	Expected Normalized Loss Ratio	Year's Impact on Reserve Adequacy	Cumulative Impact on Reserve Adequacy
2005	218,878	66.8%	0.0%	0.0%	66.8%	-	-
2006	221,523	65.8%	3.7%	1.2%	68.4%	(5,855)	(5,855)
2007	219,952	69.9%	7.2%	0.5%	71.3%	(3,004)	(8,859)
2008	226,112	74.0%	10.2%	3.3%	71.3%	6,075	(2,785)
2009	221,397	73.7%	10.4%	1.2%	72.9%	1,581	(1,204)
2010	226,841	72.9%	12.8%	3.6%	72.7%	540	(664)
2011	232,142	73.6%	16.8%	6.1%	73.6%	(48)	(712)
1Q 2011	56,042	67.3%					
1Q 2012	57,190	68.5%	17.6%	8.2%	72.6%	(2,302)	(3,014)

### 3. OBSERVATIONS

#### 3.1 Current Cycle

As seen in exhibit 1, the personal lines booked loss ratios have increased from the 2005 levels but they have done so by amounts close to what we should expect, meaning that there has not been a material impact on the overall industry loss reserve adequacy for personal lines.

The commercial lines in exhibit 1 show an increase in the booked normalized loss ratios from 2005 through 2008. These increases are slightly more than we might have expected. This indicates that the industry commercial lines loss reserves became stronger during the 2005-2008 calendar years. However, this situation abruptly reversed in 2009 with the booked normalized loss ratio being about 2 points less than expected. The situation deteriorated further in 2010, 2011, and so far in 2012 with the booked normalized loss ratios being about 8, 7, and 13 points less than expected, respectively. The industry booked a 68.0% normalized commercial lines loss ratio for the first 3 months of calendar year 2012 when we should have expected it to be 80.8%. This indicates that the industry commercial lines loss reserves have weakened by almost \$41 billion during the 3.25 calendar years from 2009 through the first 3 months of 2012.

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The indication that the calendar year 2011 commercial lines normalized loss ratio that was booked was 7 points lower than it should have been implies that the loss ratio booked for calendar year 2011 may have been 7 points lower than the ultimate loss ratio for AY (accident year) 2011. Note that this does not necessarily mean that AY 2011 itself was being booked 7 points low. The aggregate impact of AY 2011 and all the prior AY's on the 2011 calendar year resulted in the 2011 calendar year being booked 7 points lower than what the 2011 ultimate AY normalized loss ratio should be. However, since the calendar year normalized loss ratios that were booked until sometime in 2009 looked appropriate, there is a strong implication that AY's since 2009 are being booked too low.

### **3.2 Prior Cycle**

We were curious to see how well this approach would have worked during the last soft market. We selected 1995 as the base year and used assumptions similar to those of the current market cycle except we used 2 percentage points for the judgmental increment to CPI for both personal and commercial lines. This is the adjustment to reflect that insurance industry loss trends have traditionally been larger than the CPI trend. The results for the prior soft market are displayed in exhibit 2. Rather than using the same excess catastrophe loss ratio impact on both total personal lines and total commercial lines, we assumed that the 2001 personal lines unadjusted loss ratio was at a normal level regarding cat losses and that the unusually large cat loss ratio was due to the 9/11 World Trade Center terrorist attack losses and the impact was assumed to be all in commercial lines.

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US P&C Insurance (\$ Millions)

Exhibit 2

Total Personal + Commercial Lines

Calendar Period	Earned Premium	Booked Normalized Loss Ratio	Needed % Change in EP Since 1995	Actual % Change in EP Since 1995	Expected Normalized Loss Ratio	Year's Impact on Reserve Adequacy	Cumulative Impact on Reserve Adequacy
1995	254,172	74.8%	0.0%	0.0%	74.8%	-	-
1996	263,351	77.6%	6.1%	3.6%	76.6%	2,672	2,672
1997	271,502	73.7%	12.2%	6.8%	78.6%	(13,141)	(10,469)
1998	277,690	74.6%	17.9%	9.3%	80.7%	(16,977)	(27,446)
1999	282,791	77.7%	24.6%	11.3%	83.7%	(17,065)	(44,511)
2000	294,024	81.8%	32.6%	15.7%	85.7%	(11,523)	(56,034)
2001	311,529	85.0%	38.8%	22.6%	84.7%	987	(55,046)

Total Commercial Lines

Calendar Period	Earned Premium	Booked Normalized Loss Ratio	Needed % Change in EP Since 1995	Actual % Change in EP Since 1995	Expected Normalized Loss Ratio	Year's Impact on Reserve Adequacy	Cumulative Impact on Reserve Adequacy
1995	115,909	74.4%	0.0%	0.0%	74.4%	-	-
1996	118,489	78.6%	8.0%	2.2%	78.6%	(50)	(50)
1997	120,150	74.9%	16.7%	3.7%	83.8%	(10,712)	(10,762)
1998	123,357	75.9%	25.0%	6.4%	87.5%	(14,264)	(25,026)
1999	128,040	77.8%	35.0%	10.5%	91.0%	(16,871)	(41,897)
2000	135,088	79.9%	46.3%	16.5%	93.4%	(18,325)	(60,223)
2001	144,353	83.5%	53.7%	24.5%	91.9%	(12,136)	(72,358)

Total Personal Lines

Calendar Period	Earned Premium	Booked Normalized Loss Ratio	Needed % Change in EP Since 1995	Actual % Change in EP Since 1995	Expected Normalized Loss Ratio	Year's Impact on Reserve Adequacy	Cumulative Impact on Reserve Adequacy
1995	138,263	75.1%	0.0%	0.0%	75.1%	-	-
1996	144,862	76.8%	4.5%	4.8%	74.9%	2,722	2,722
1997	151,352	72.8%	8.5%	9.5%	74.4%	(2,429)	293
1998	154,333	73.5%	12.1%	11.6%	75.4%	(2,713)	(2,420)
1999	154,751	77.6%	16.3%	11.9%	78.0%	(193)	(2,613)
2000	158,936	83.5%	21.9%	15.0%	79.6%	6,802	4,189
2001	167,176	86.3%	27.2%	20.9%	79.0%	13,123	17,312

The personal lines industry loss ratios remained reasonably close to the expected loss ratios for the 1996-2000 calendar years of the last soft market, meaning that personal lines did not significantly contribute to the industry's loss reserve problem that developed during the last soft market.

The industry commercial lines booked normalized loss ratios started being significantly lower than the expected loss ratios as early as 1997 meaning that this monitoring approach would have signaled a problem fairly early in that soft market. The commercial lines booked loss ratio for calendar year 1997 was almost 9 points lower than the expected loss ratio, implying a weakening in the industry commercial lines loss reserves of \$10.7 billion. The industry continued booking loss ratios through calendar year 2001 that did not fully reflect the inadequacy of the commercial lines premium and continued building up a commercial lines loss reserve inadequacy.

Exhibit 2 indicates that the industry reserves for all lines weakened by \$55 billion between 1995 and 2001. An examination of the industry Schedule P Part 2 Summary<sup>6</sup> reveals that the industry strengthened the reserves held at year-end 2001 by \$105.3 billion dollars between 2002 and 2009 with most of that strengthening occurring before 2006. The \$105.3 billion included significant strengthening on asbestos and environmental reserves (A&E). We estimate that about \$65 billion of the strengthening was for other than A&E. The \$65B of strengthening taken on other than A&E would offset the indicated \$55 billion of weakening that exhibit 6 shows built up between 1995 and 2001.

This approach for monitoring the industry would have worked well during the last soft market. It would have signaled a problem with the loss ratios being booked as early as 1997. It also would have computed a cumulative reserve weakening that agreed well with the strengthening subsequently taken.

#### **4. CONCLUSIONS**

The method for monitoring the industry explained in this paper suggests that the industry commercial lines booked loss ratios started being too low in calendar year 2009 with the gap growing in calendar year 2010 and continuing at least through the first three months of 2012. This implies a \$41 billion weakening of the industry commercial lines loss reserves since year-end 2008. Back testing this method shows that it would have performed very well during the last soft market

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<sup>6</sup> AM Best's Aggregates and Averages

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by providing both an early signal that the industry was booking loss ratios that were too optimistic and a reasonably accurate estimate of the magnitude of reserve weakening that took place.

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Appendix A

US P&C Industry  
Workers Compensation (\$000,000,000s)<sup>7</sup>

Accident Year	Net Earned Premium	Net Ultimate Loss & DCC <sup>8</sup>	Original Ult Loss Ratio (at 12 months)	Current <sup>9</sup> Ult Loss Ratio
1995	27.87	18.06	73%	65%
1996	28.74	20.45	73%	71%
1997	26.49	21.73	76%	82%
1998	25.57	23.58	80%	92%
1999	23.69	23.68	82%	100%
2000	26.68	26.52	80%	99%
2001	30.81	28.48	78%	92%
2002	36.10	28.33	72%	78%
2003	41.70	28.35	73%	68%
2004	46.25	26.80	71%	58%
2005	47.19	26.46	69%	56%
2006	47.74	29.09	68%	61%
2007	44.76	30.39	71%	68%
2008	41.51	30.54	73%	74%
2009	36.69	27.93	76%	76%
2010	34.64	27.54	80%	80%

<sup>7</sup> Source: AM Best's Aggregates & Averages

<sup>8</sup> As displayed in Schedule P Part 2

<sup>9</sup> As of year-end 2010 or after 10 years development. Equals ratio of second column to net earned premium.

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Appendix B

US P&C Industry  
Commercial Auto Liability (\$000,000,000s)<sup>10</sup>

Accident Year	Net Earned Premium	Net Ultimate Loss & DCC <sup>11</sup>	Original Ult Loss Ratio (at 12 months)	Current <sup>12</sup> Ult Loss Ratio
1995	11.42	8.92	78%	78%
1996	11.87	9.60	77%	81%
1997	12.04	10.08	78%	84%
1998	11.87	10.21	77%	86%
1999	11.83	10.93	79%	92%
2000	12.67	11.19	77%	88%
2001	13.88	10.76	73%	78%
2002	15.72	10.39	67%	66%
2003	17.47	10.45	64%	60%
2004	18.75	10.67	62%	57%
2005	19.17	11.03	61%	58%
2006	19.24	11.17	62%	58%
2007	19.07	11.67	62%	61%
2008	18.28	11.25	62%	62%
2009	17.01	10.32	63%	61%
2010	16.28	10.52	65%	65%

<sup>10</sup> Source: AM Best's Aggregates & Averages

<sup>11</sup> As displayed in Schedule P Part 2

<sup>12</sup> As of year-end 2010 or after 10 years development. Equals ratio of second column to net earned premium.

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**Appendix C**

US P&C Industry  
Other Liability Occurrence + Claims-Made (\$000,000,000s)<sup>13</sup>

Accident Year	Net Earned Premium	Net Ultimate Loss & DCC <sup>14</sup>	Original Ult Loss Ratio (at 12 months)	Current <sup>15</sup> Ult Loss Ratio
1995	16.11	11.29	78%	70%
1996	17.10	12.37	78%	72%
1997	17.78	14.53	78%	82%
1998	18.72	17.88	78%	96%
1999	17.55	18.79	76%	107%
2000	18.72	19.54	76%	104%
2001	19.92	20.71	84%	104%
2002	26.78	22.82	71%	85%
2003	33.61	21.41	68%	64%
2004	39.66	20.21	67%	51%
2005	40.73	20.91	64%	51%
2006	43.52	23.80	64%	55%
2007	43.04	26.51	66%	62%
2008	41.31	28.03	67%	68%
2009	38.98	27.13	69%	70%
2010	37.60	25.76	69%	69%

<sup>13</sup> Source: AM Best's Aggregates & Averages

<sup>14</sup> As displayed in Schedule P Part 2

<sup>15</sup> As of year-end 2010 or after 10 years development. Equals ratio of second column to net earned premium.



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**Biography of the Author**

**John Captain** is Vice President and Reserving Actuary at Swiss Re in Schaumburg, IL. He is a Fellow of the CAS and a Member of the American Academy of Actuaries.