



AMERICAN ACADEMY *of* ACTUARIES

AN UPDATE TO P/C RISK-BASED CAPITAL FACTORS:

REPORT TO THE NATIONAL ASSOCIATION OF INSURANCE COMMISSIONERS (NAIC) CAPITAL ADEQUACY TASK FORCE

**American Academy of Actuaries
P/C Risk Based-Capital Committee**

June 25, 2004

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Executive Summary

At the request of the NAIC, we updated the Risk-Based Capital (RBC) charges for the reserving and premium components and the associated investment income offset factors. In order to compare updated factors with those currently being employed, we used the same methodology.

The majority of the RBC factors for reserving and premium, along with the investment income offsets, have not changed in over ten years. During this time, the insurance industry has seen a hard market in which many lines witnessed increased price levels and reserve redundancies. Table 1 below displays selected new factors. They were chosen so that the change from the old factors would be capped at plus or minus twenty percent. The uncapped factors are shown in Table 2. Even with the capping, most of the major lines are showing a decrease in both reserving and premium RBC factors. Medical Malpractice and Products Liability show the biggest increases. Tables 3-5 show what the factors would be at a 75% percentile, a 90% percentile level, and with a volume weighted average.

We also tested Table 1 factors to see the impact of these changes on certain companies' authorized control levels (ACL). The test group included three types of companies: those currently in trouble; those with an RBC ratio between 200-300%; and larger, more stable companies. The majority of companies (including the troubled companies) saw decreases in their ACLs, which increases their RBC ratios.

Following the tables is a technical summary of the methodology used and accompanying exhibits.

We do not recommend adopting factors from this analysis at this time. The current methodology assumes that prior trends will continue or reoccur within the time frames covered. This implies the hard market will continue, along with reserve redundancies. The result is that less capital is indicated.

We feel that there are better approaches to derive the reserving and pricing RBC factors. We have included in Tables 1 and 3-5 some possible enhancements to the current methodology along with the corresponding impacts. We look forward to discussing next steps with the NAIC.

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Table 1 – Capped (committee selected factors)

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Risk Base Capital Subgroup on Pricing & Reserving Charges as well as Investment Income Offset											
Summary of Results											
New Values						Old Values					
Line	Line Letter	Reserves - Industry Loss & Expense RBC %	Adjustment for Investment Income on Reserves	Net Written Premium - Industry Loss & Expense Ratio	Adjustment for Investment Income on Premium	Reserving RBC charge	Reserving IIO	Premium RBC Charge	Premium IIO	Impact from Reserving	Impact from Premium
(1) H/F	A	0.220	0.943	0.901	0.927	0.275	0.928	0.917	0.942	-18.7%	-3.3%
(2) PPA	B	0.203	0.926	0.884	0.898	0.254	0.921	1.046	0.924	-19.6%	-17.9%
(3) CA	C	0.230	0.914	0.913	0.869	0.287	0.905	1.013	0.900	-19.2%	-13.0%
(4) WC	D	0.218	0.824	0.941	0.814	0.273	0.872	1.008	0.836	-24.4%	-9.2%
(5) CMP	E	0.299	0.870	0.798	0.871	0.374	0.880	0.917	0.884	-20.9%	-14.3%
(6) MM Occurrence	F1	0.851	0.842	1.734	0.753	0.709	0.788	1.761	0.719	28.2%	3.1%
(7) MM CM	F2	0.415	0.889	1.152	0.826	0.346	0.829	1.072	0.800	28.7%	10.9%
(8) SL	G	0.293	0.892	0.810	0.877	0.244	0.887	0.917	0.913	20.7%	-15.1%
(9) OL	H	0.416	0.868	0.866	0.819	0.520	0.832	1.082	0.808	-16.5%	-18.9%
(11) Spec Prop	I	0.192	0.954	0.811	0.881	0.160	0.956	1.014	0.949	19.8%	-25.7%
(12) Auto Phys Damage	J	0.192	0.955	0.774	0.950	0.160	0.970	0.853	0.968	18.2%	-11.0%
(10) Fidelity & Surety	K	0.323	0.929	0.742	0.912	0.269	0.946	0.875	0.913	17.8%	-15.3%
(13) Other	L	0.192	0.830	0.817	0.938	0.160	0.954	0.867	0.952	4.4%	-7.2%
(15) International	M	0.392	0.876	1.280	0.866	0.327	0.864	1.169	0.879	21.7%	7.9%
(16) Property & Financial	N&P	0.376	0.879	1.469	0.850	0.313	0.849	1.224	0.879	24.3%	16.0%
(17) Reinsurance Liab	O	1.006	0.840	1.228	0.762	0.838	0.733	1.379	0.762	37.5%	-10.9%
(18) Products Liability	R	0.638	0.844	0.931	0.840	0.532	0.832	1.095	0.808	21.7%	-11.6%
(14) Fin & Mort	S	0.160	0.942	1.400	0.913	0.160	0.942	1.400	0.913	0.0%	0.0%

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Table 2 – Simple Straight Average (Unadjusted Average)

Line	Line Letter	New Values				Old Values				Impact from Reserving	Impact from Premium
		Reserves - Industry Loss & Expense RBC %	Adjustment for Investment Income on Reserves	Net Written Premium - Industry Loss & Expense Ratio	Adjustment for Investment Income on Premium	Reserving RBC charge	Reserving IIO	Premium RBC Charge	Premium IIO		
(1) HF	A	0.055	0.943	0.901	0.927	0.275	0.928	0.917	0.942	-79.7%	-3.3%
(2) FPA	B	0.030	0.926	0.884	0.898	0.254	0.921	1.046	0.924	-88.1%	-17.9%
(3) CA	C	0.094	0.914	0.913	0.869	0.287	0.905	1.013	0.900	-66.9%	-13.0%
(4) WC	D	0.086	0.824	0.941	0.814	0.273	0.872	1.008	0.836	-70.2%	-9.2%
(5) CVP	E	0.160	0.870	0.798	0.871	0.374	0.880	0.917	0.884	-57.7%	-14.3%
(6) MM Occurrence	F1	1.556	0.842	1.734	0.753	0.709	0.788	1.761	0.719	134.5%	3.1%
(7) MM CM	F2	15.314	0.889	1.152	0.826	0.346	0.829	1.072	0.800	4645.7%	10.9%
(8) SL	G	1.348	0.892	0.810	0.877	0.244	0.887	0.917	0.913	455.5%	-15.1%
(9) CL	H	0.086	0.868	0.787	0.819	0.520	0.832	1.082	0.808	-82.7%	-26.3%
(11) Spec Prop	I	2.601	0.954	0.752	0.881	0.160	0.956	1.014	0.949	1522.8%	-31.1%
(12) Auto Phys Damage	J	29.231	0.955	0.774	0.950	0.160	0.970	0.853	0.968	17891.5%	-11.0%
(10) Fidelity & Surety	K	1.330	0.929	0.773	0.912	0.269	0.946	0.875	0.913	385.3%	-11.8%
(13) Other	L	3.134	0.830	0.817	0.938	0.160	0.954	0.867	0.952	1604.7%	-7.2%
(15) International	M	1.348	0.876	1.280	0.866	0.327	0.864	1.169	0.879	318.1%	7.9%
(16) Property & Finance N&P	N&P	1.397	0.879	1.740	0.850	0.313	0.849	1.224	0.879	362.3%	37.4%
(17) Reinsurance Liab	O	1.630	0.840	1.228	0.762	0.838	0.733	1.379	0.762	122.9%	-10.9%
(18) Products Liability	R	5.708	0.844	0.931	0.840	0.532	0.832	1.095	0.808	988.4%	-11.6%
(14) Fin & Mrt	S	0.160	0.942	0.446	0.913	0.160	0.942	1.400	0.913	0.0%	-68.1%

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Table 3 – Factors at a 75% Percentile Level

Line	Line Letter	New Values				Old Values				Impact from Reserving	Impact from Premium
		Reserves - Industry Loss & Expense RBC %	Adjustment for Investment Income on Reserves	Net Written Premium - Industry Loss & Expense Ratio	Adjustment for Investment Income on Premium	Reserving RBC charge	Reserving IIO	Premium RBC Charge	Premium IIO		
(1) HF	A	0.148	0.943	1.015	0.927	0.275	0.928	0.917	0.942	-45.3%	8.9%
(2) PPA	B	0.005	0.926	0.942	0.898	0.254	0.921	1.046	0.924	-98.0%	-12.5%
(3) CA	C	0.261	0.914	1.035	0.869	0.287	0.905	1.013	0.900	-8.2%	-1.4%
(4) WC	D	0.208	0.824	1.082	0.814	0.273	0.872	1.008	0.836	-28.0%	4.5%
(5) CMP	E	0.198	0.870	0.920	0.871	0.374	0.880	0.917	0.884	-47.6%	-1.2%
(6) MM Occurrence	F1	0.775	0.842	3.000	0.753	0.709	0.788	1.761	0.719	16.8%	78.4%
(7) MM CM	F2	0.526	0.889	1.418	0.826	0.346	0.829	1.072	0.800	63.0%	36.5%
(8) SL	G	0.276	0.892	0.877	0.877	0.244	0.887	0.917	0.913	13.7%	-8.1%
(9) CL	H	0.156	0.868	1.012	0.819	0.520	0.832	1.082	0.808	-68.7%	-5.2%
(11) Spec Prop	I	0.801	0.954	0.151	0.881	0.160	0.956	1.014	0.949	399.7%	-86.2%
(12) Auto Phys Damagr	J	0.153	0.955	0.839	0.950	0.160	0.970	0.853	0.968	-5.8%	-3.5%
(10) Fidelity & Surety	K	0.251	0.929	0.974	0.912	0.269	0.946	0.875	0.913	-8.4%	11.1%
(13) Other	L	0.879	0.830	1.000	0.938	0.160	0.954	0.867	0.952	378.1%	13.6%
(15) International	M	1.067	0.876	1.264	0.866	0.327	0.864	1.169	0.879	230.9%	6.5%
(16) Property & Financi	N&P	0.998	0.879	2.199	0.850	0.313	0.849	1.224	0.879	230.2%	73.7%
(17) Reinsurance Liab	O	0.630	0.840	1.569	0.762	0.838	0.733	1.379	0.762	-13.9%	13.8%
(18) Products Liability	R	0.355	0.844	1.190	0.840	0.532	0.832	1.095	0.808	-32.3%	13.0%
(14) Fin & Mort	S	0.160	0.942	0.446	0.913	0.160	0.942	1.400	0.913	0.0%	-68.1%

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Table 4 – Factors at a 90% Percentile Level

Line	Line Letter	New Values				Old Values				Impact from Reserving	Impact from Premium
		Reserves - Industry Loss & Expense RBC %	Adjustment for Investment Income on Reserves	Net Written		Reserving RBC charge	Reserving IIO	Premium			
				Reserves - Industry Loss & Expense Ratio	Adjustment for Investment Income on Premium			RBC Charge	Premium IIO		
(1) HF	A	0.452	0.943	1.161	0.927	0.275	0.928	0.917	0.942	67.0%	24.6%
(2) PPA	B	0.081	0.926	1.089	0.898	0.254	0.921	1.046	0.924	-67.9%	1.2%
(3) CA	C	0.456	0.914	1.291	0.869	0.287	0.905	1.013	0.900	60.4%	23.0%
(4) WC	D	0.387	0.824	1.238	0.814	0.273	0.872	1.008	0.836	34.0%	19.5%
(5) CMP	E	0.617	0.870	1.163	0.871	0.374	0.880	0.917	0.884	63.1%	24.9%
(6) MM Occurrence	F1	2.146	0.842	3.000	0.753	0.709	0.788	1.761	0.719	223.5%	78.4%
(7) MM CM	F2	104.855	0.889	1.788	0.826	0.346	0.829	1.072	0.800	32394.2%	72.1%
(8) SL	G	1.000	0.892	1.673	0.877	0.244	0.887	0.917	0.913	312.1%	75.3%
(9) CL	H	0.551	0.868	1.245	0.819	0.520	0.832	1.082	0.808	10.6%	16.7%
(11) Spec Prop	I	0.696	0.954	1.088	0.881	0.160	0.956	1.014	0.949	334.2%	-0.4%
(12) Auto Phys Damage	J	0.984	0.955	0.965	0.950	0.160	0.970	0.853	0.968	505.6%	11.0%
(10) Fidelity & Surety	K	0.911	0.929	2.304	0.912	0.269	0.946	0.875	0.913	232.4%	162.9%
(13) Other	L	4.046	0.830	1.477	0.938	0.160	0.954	0.867	0.952	2100.7%	67.9%
(15) International	M	2.357	0.876	1.683	0.866	0.327	0.864	1.169	0.879	631.1%	41.8%
(16) Property & Finance	N&P	2.193	0.879	3.000	0.850	0.313	0.849	1.224	0.879	625.7%	136.9%
(17) Reinsurance Liab	O	4.553	0.840	3.000	0.762	0.838	0.733	1.379	0.762	522.6%	117.7%
(18) Products Liability	R	1.239	0.844	2.514	0.840	0.532	0.832	1.095	0.808	136.2%	138.6%
(14) Fin & Mort	S	0.160	0.942	0.446	0.913	0.160	0.942	1.400	0.913	0.0%	-68.1%

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Table 5 – Volume Weighted Averages

Line	Line Letter	New Values				Old Values				Impact from Reserving	Impact from Premium
		Reserves - Industry Loss & Expense RBC %	Adjustment for Investment Income on Reserves	Net Written Premium -		Reserving RBC charge	Reserving IIO	Premium			
				Industry Loss & Expense Ratio	Adjustment for Investment Premium			RBC Charge	Premium IIO		
(1) H/F	A	0.144	0.943	0.919	0.927	0.275	0.928	0.917	0.942	-46.8%	-1.4%
(2) PPA	B	0.008	0.926	0.899	0.898	0.254	0.921	1.046	0.924	-96.8%	-16.5%
(3) CA	C	0.202	0.914	0.975	0.869	0.287	0.905	1.013	0.900	-29.0%	-7.1%
(4) WC	D	0.079	0.824	1.004	0.814	0.273	0.872	1.008	0.836	-72.7%	-3.1%
(5) CMP	E	0.109	0.870	0.855	0.871	0.374	0.880	0.917	0.884	-71.2%	-8.2%
(6) MM Occurrence	F1	0.544	0.842	1.430	0.753	0.709	0.788	1.761	0.719	-18.0%	-15.0%
(7) MM CM	F2	0.320	0.889	1.311	0.826	0.346	0.829	1.072	0.800	-0.8%	26.2%
(8) SL	G	1.384	0.892	0.840	0.877	0.244	0.887	0.917	0.913	470.4%	-12.0%
(9) OL	H	0.126	0.868	0.961	0.819	0.520	0.832	1.082	0.808	-74.7%	-10.0%
(11) Spec Prop	I	41.685	0.954	0.964	0.881	0.160	0.956	1.014	0.949	25907.5%	-11.7%
(12) Auto Phys Damag	J	3.755	0.955	0.793	0.950	0.160	0.970	0.853	0.968	2211.2%	-8.8%
(10) Fidelity & Surety	K	1.275	0.929	0.618	0.912	0.269	0.946	0.875	0.913	365.3%	-29.5%
(13) Other	L	1.036	0.830	0.831	0.938	0.160	0.954	0.867	0.952	463.5%	-5.6%
(15) International	M	6.091	0.876	1.211	0.866	0.327	0.864	1.169	0.879	1789.2%	2.1%
(16) Property & Financi	N&P	0.245	0.879	1.669	0.850	0.313	0.849	1.224	0.879	-18.9%	31.8%
(17) Reinsurance Liab	O	0.337	0.840	1.200	0.762	0.838	0.733	1.379	0.762	-53.9%	-12.9%
(18) Products Liability	R	2.983	0.844	1.045	0.840	0.532	0.832	1.095	0.808	468.8%	-0.8%
(14) Fin & Mort	S	0.160	0.942	0.446	0.913	0.160	0.942	1.400	0.913	0.0%	-68.1%

Technical Summary

Reserve and Premium Risk-Based Capital Charges

A. History

From available records, it appears these RBC charges were last updated in 1993. The short tail lines were updated in 1999.

B. Methodology

The methodology used to update these factors was taken from NAIC Property/Casualty Insurance Company Risk-Based Capital Requirements (Feldblum, Proceedings of the Casualty Actuarial Society, 1996). This methodology was used since our task was to update these factors using the procedures outlined in Feldblum's paper. Following is a brief recap of the methodology used.

B 1. Reserving RBC Charge

This charge, in the risk-based capital formula, measures the risk that adverse loss (and LAE) development has on currently reported reserves. As pointed out in Feldblum's paper, it does not measure the adequacy of a company's carried reserves. The data used comes from the NAIC and contains the most recent ten years of schedule P data (see below for more details).

The charge is composed of a numerator and a denominator. The numerator is the increase in estimated ultimate incurred losses between two statement dates. This data comes from Schedule P, Part 2. The denominator is the held loss reserves at the earlier statement date. This ratio is then calculated by individual company, by Schedule P line of business and statement date. For each line of business, the result is a matrix (size = number of companies x 9) of these ratios. At this point, companies that have less than ten years of data, negative incurred values or negative reserves are discarded. Simple averages are then taken down each statement date and the largest average is chosen to be the reserving RBC charge.

Example of Reserving RBC Charge Calculation:

Exhibit I is a sample of some company's numerators for the Workers Compensation line (WC). The 417K in Row One under the column "Sum of 1994" represents the change in incurred ultimate between 2002 and 1994 for accident years 1993 through 1994. The -238K in the next column represents the change in incurred ultimate between 2002 and 1995 for accident years 1993 through 1995. The 1,825K (Row One under the column "Sum of 2001") is the change in incurred ultimate between 2002 and 2001 for accident years 1993 through 2001. Notice that the last column on Exhibit I is all zeros.

Exhibit II has the corresponding denominators for these companies. The 7,636K in Row One under the column "Sum of 2001" represents the loss reserves held at the end of 12/31/2001 for accident years 1993 through 2001.

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Exhibit III displays the adverse development ratios for these companies. The 224.2% in Row One under column “1994” is the 417K in Exhibit I divided by 186K on Exhibit II. Similarly, the 23.9% in Row One under the column “2001” is the 1,825K in Exhibit I divided by 7,636K on Exhibit II. Exhibit IV shows the data to be used in the final calculation after companies with less than ten years of data are eliminated. Notice that on Exhibit I we started with 1,071 WC companies but by Exhibit IV we are down to 561 companies that can be used (see data filters below under “Data” section). Once the data has been filtered, simple averages are calculated. The summary of the simple average and other averages are on Exhibit V. In this case a charge of 8.6% would initially be selected.

B 2. Premium RBC Charge

This charge in the Risk-Based Capital formula measures the risk that a company’s future business will be unprofitable. As pointed out in Feldblum’s paper, the premium charge uses a time horizon of one year and captures the potential underwriting losses that may occur during the next year. The data used comes from the NAIC and contains the most recent ten years of schedule P data (see below for more details).

The premium charge is determined in a way similar to the reserving charge development. For each company, the loss and LAE ratios are determined by accident year and by line of business, using data from Schedule P, Part1, for the past ten years. Simple averages are then taken by line and by accident year across all companies and the highest loss and LAE ratio is chosen as the premium factor.

Example of Premium RBC Charge Calculation:

Exhibit VI is a sample of net loss and LAE ratios by accident year for the workers compensation line. The data used was from the 2002 Schedule P’s.

Exhibit VII has the corresponding net earned premium for those companies by accident (calendar) year.

The next step was to eliminate ratios that were equal to or less than zero (Exhibit VIII). Next, companies with less than ten years of data were eliminated (Exhibit IX). Notice that at this point only 517 companies remain. The last filter to apply is to eliminate companies with low premium volumes. This is defined as any of the ten years for a company having earned premium less than 20% of its ten-year average earned premium (Exhibit X). At this point only 497 companies remain. Once the data has been filtered, simple averages are calculated.

A summary of the simple average and other averages is in Exhibit XI. In this case, a loss and LAE ratio of 94.1% would initially be selected.

C. Data

All data used was provided by the NAIC.

For the reserving charge, we received Schedule P Parts 2 and 3 for each individual company. Some companies had incomplete data or had a mismatch between their paid and incurred triangles (some companies would show payments for an accident year but no corresponding incurred values). The following filters were applied to exclude companies with any of the following: incurred loss values <0, case reserves <0 and companies with less than ten years of data.

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For the premium charge, we received net earned premium and incurred loss and LAE from Part 1 for each individual company. The following filters were applied to exclude companies with any of the following: loss ratios <0, companies with less than ten years of data or too low of premium volume.

D. Initial Selection

Exhibit XII shows the initial selected charges for premium and reserving as well as the current factors. We capped the change in the RBC charges by plus or minus 20% and the final column shows our initial selections reflecting the capping, based on current methodology. Note that almost all lines were capped. A brief explanation of each column follows.

Reserve and Premium Investment Income Offset (IIO)

A. History

From records that were available to this committee, it appears these RBC charges were last updated in 1993. The short tail lines were updated in 1999.

B. Methodology

Reserve

There is an “implicit” margin in reserves when reserves are not discounted. The investment income offset factor reflects this cushion. The factor varies by line of business. The method for determining the loss payout pattern is the same method the IRS uses for its loss reserve discounting procedure. The payout pattern is determined by comparing paid losses to incurred losses by accident year and line of business using Schedule P, Part 1 data. In the past, RBC investment income factors were calculated using a flat 5% discount rate. For this analysis, we used the IRS sixty-month moving average of the Federal Midterm Rate, which was 5.27%.

Example of Reserve IIO

Exhibit XIII shows a sample of how the reserving IIO factor was calculated.

Premium

The premium IIO is not the same as the IIO for reserving. The premium IIO reflects the expected investment income from policy inception to final loss payment for a new policy, while the reserving IIO reflects the expected investment income on assets supporting the loss reserves currently held by the company.

Example of Premium IIO

Exhibit XIII shows a sample of how the premium IIO factor was calculated.

C. Data

Data used for the investment income offset is from Schedule P Part 1 and from the Department of the Treasury.

D. Initial Selection

Exhibit XIII shows the selection of the investment income offset for both premium and reserving.

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Exhibit I

Pivot of Incurred Development (numerator)

Co Id	Data									
	Sum of 1993	Sum of 1994	Sum of 1995	Sum of 1996	Sum of 1997	Sum of 1998	Sum of 1999	Sum of 2000	Sum of 2001	Sum of 2002
1	-	417	(238)	(1,905)	(2,259)	(925)	980	1,017	1,825	-
2	-	-	-	-	-	-	-	13,798	5,888	-
3	(2,830)	(4,911)	(6,694)	(4,735)	(191)	1,126	1,927	2,272	(742)	-
4	-	(1,608)	(3,761)	(4,054)	(1,798)	1,356	2,949	2,122	478	-
5	-	-	-	-	-	-	-	-	-	-
6	-	34	(102)	(236)	(193)	(299)	(196)	(95)	(46)	-
7	-	-	(347)	(483)	(467)	939	1,217	-	-	-
8	-	-	-	-	-	-	-	-	-	-
9	(75)	(122)	(1)	121	207	348	705	623	282	-
10	(143)	(159)	(319)	(384)	(296)	(281)	(159)	-	(7)	-
11	(36,627)	(64,871)	(72,382)	(86,179)	(80,736)	(45,865)	(35,697)	(16,565)	1,029	-
12	-	-	-	-	-	-	-	4	1	-
13	-	(589)	(684)	(33)	(1,007)	(989)	(936)	(498)	(55)	-
14	(2,707)	(1,387)	(2,565)	(1,466)	(709)	1,532	3,474	4,735	2,295	-
15	-	(9)	(62)	-	(152)	(53)	(199)	9	255	-
16	-	(120)	(225)	(262)	(251)	(169)	(84)	63	2	-
17	-	-	(21)	(118)	-	-	-	-	-	-
18	-	-	(262)	(421)	(501)	(310)	(18)	96	197	-
19	(17,803)	(29,963)	(27,654)	(23,295)	(14,353)	(8,095)	(7,577)	(4,501)	(2,350)	-

AAA P/C RBC Committee

Exhibit II

Pivot of Case Reserves (denominator)

co id	Data									
	Sum of 1993	Sum of 1994	Sum of 1995	Sum of 1996	Sum of 1997	Sum of 1998	Sum of 1999	Sum of 2000	Sum of 2001	Sum of 2002
1	-	186	1,611	3,419	4,584	3,798	3,163	4,952	7,636	9,750
2	-	-	-	-	-	-	-	35,796	31,110	25,342
3	12,423	16,686	19,347	16,623	12,667	585	356	520	3,820	2,835
4	-	4,086	8,043	9,304	8,037	7,273	6,355	7,598	5,416	3,711
5	-	-	-	-	-	-	-	-	-	-
6	-	14	320	733	855	1,064	786	734	1,133	732
7	-	-	504	1,445	2,285	2,830	6,103	-	14	5
8	-	-	-	-	-	-	-	-	-	-
9	319	460	359	255	241	351	771	1,746	2,070	1,892
10	645	865	1,299	1,516	1,585	1,732	1,709	-	173	362
11	94,641	148,964	178,957	218,625	237,395	226,129	241,765	263,487	287,627	360,008
12	-	-	-	-	-	-	-	-	3	2
13	-	950	1,670	1,657	2,186	2,197	1,977	1,549	1,509	1,487
14	13,107	19,314	25,018	27,988	31,429	33,497	34,621	34,944	42,676	48,131
15	-	52	136	210	446	401	778	680	656	1,021
16	-	787	1,050	1,170	1,332	1,524	1,685	2,885	3,182	3,333
17	-	-	254	597	-	-	-	-	-	-
18	-	-	1,749	2,097	2,424	2,516	2,473	2,526	2,552	2,761
19	68,133	113,536	143,566	159,275	158,937	121,729	91,749	70,232	54,027	41,083

AAA P/C RBC Committee

Exhibit III

of companies 652 682 707 726 747 773 786 801 825

Adverse Development Ratios
(Intermediate Step - eliminate companies with less than 10 yrs of data)

CO ID	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	<i>eliminate less than 10 yrs of data</i>
1		224.2%	-14.8%	-55.7%	-49.3%	-24.4%	31.0%	20.5%	23.9%		8
2								38.5%	18.9%		2
3	-22.8%	-29.4%	-34.6%	-28.5%	-1.5%	192.5%	541.3%	436.9%	-19.4%		9
4		-39.4%	-46.8%	-43.6%	-22.4%	18.6%	46.4%	27.9%	8.8%		8
5											0
6		242.9%	-31.9%	-32.2%	-22.6%	-28.1%	-24.9%	-12.9%	-4.1%		8
7			-68.8%	-33.4%	-20.4%	33.2%	19.9%				5
8											0
9	-23.5%	-26.5%	-0.3%	47.5%	85.9%	99.1%	91.4%	35.7%	13.6%		9
10	-22.2%	-18.4%	-24.6%	-25.3%	-18.7%	-16.2%	-9.3%		-4.0%		8
11	-38.7%	-43.5%	-40.4%	-39.4%	-34.0%	-20.3%	-14.8%	-6.3%			
12											
13		-62.0%	-41.0%	-2.0%	-46.1%	-45.0%	-47.3%	-32.1%			
14	-20.7%	-7.2%	-10.3%	-5.2%	-2.3%	4.6%	10.0%	13.6%			
15		-17.3%	-45.6%		-34.1%	-13.2%	-25.6%	1.3%			
16		-15.2%	-21.4%	-22.4%	-18.8%	-11.1%	-5.0%	2.2%			
17			-8.3%	-19.8%							
18			-15.0%	-20.1%	-20.7%	-12.3%	-0.7%	3.8%			
19	-26.1%	-26.4%	-19.3%	-14.6%	-9.0%	-6.7%	-8.3%	-6.4%			

AAA P/C RBC Committee

Exhibit IV

Number of companies 561 561 561 561 561 561 561 561 561

Final loss development

CO ID	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1										
2										
3	-22.8%	-29.4%	-34.6%	-28.5%	-1.5%	192.5%	541.3%	436.9%	-19.4%	
4										
5										
6										
7										
8										
9	-23.5%	-26.5%	-0.3%	47.5%	85.9%	99.1%	91.4%	35.7%	13.6%	
10										
11	-38.7%	-43.5%	-40.4%	-39.4%	-34.0%	-20.3%	-14.8%	-6.3%	0.4%	
12										
13										
14	-20.7%	-7.2%	-10.3%	-5.2%	-2.3%	4.6%	10.0%	13.6%	5.4%	
15										
16										
17										
18										
19	-26.1%	-26.4%	-19.3%	-14.6%	-9.0%	-6.7%	-8.3%	-6.4%	-4.3%	

Exhibit V

Workers Compensation

Underwriting Risk - Reserves

	1993	1994	1995	1996	1997	1998	1999	2000	2001	Worst
Simple Average	-13.4%	-19.1%	-23.2%	-18.7%	-11.4%	-3.8%	2.1%	8.6%	5.6%	8.6%
5.0% Percentile	-70.3%	-57.5%	-66.8%	-63.9%	-58.5%	-51.6%	-46.5%	-38.7%	-32.5%	-32.5%
25.0% Percentile	-32.7%	-33.4%	-36.0%	-33.3%	-28.6%	-22.1%	-13.3%	-5.8%	-3.2%	-3.2%
50.0% Percentile	-21.5%	-23.8%	-22.9%	-17.1%	-12.2%	-4.0%	0.3%	7.8%	4.3%	7.8%
75.0% Percentile	-7.0%	-11.8%	-12.6%	-7.4%	-0.8%	8.9%	14.1%	20.8%	11.5%	20.8%
90.0% Percentile	15.5%	3.6%	1.3%	7.5%	17.7%	32.7%	38.7%	34.6%	24.9%	38.7%
95.0% Percentile	42.9%	15.7%	10.4%	20.9%	34.4%	46.1%	56.4%	51.3%	37.1%	56.4%
99.0% Percentile	126.0%	74.0%	52.4%	65.3%	90.9%	99.0%	101.2%	109.7%	149.8%	149.8%
Vol Wgt	-17.8%	-14.7%	-16.4%	-9.3%	-5.4%	2.2%	6.6%	7.9%	5.7%	7.9%
Max	1514.5%	1744.9%	273.0%	155.3%	401.1%	507.3%	541.3%	436.9%	487.1%	
Min	-101.8%	-130.5%	-103.1%	-129.8%	-169.1%	-258.3%	-911.1%	-206.7%	-280.0%	

AAA P/C RBC Committee

Exhibit VI

LLAE Ratios w/ no limitations

Sum of	Year										
COCC	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	
1		93.1%	51.6%	46.5%	53.4%	78.1%	132.9%	124.2%	100.5%	72.8%	
2	65.8%	73.2%	91.3%	132.1%	155.8%	129.5%	117.2%	120.8%	36.5%	-1144.7%	
3	59.4%	53.6%	60.6%	63.7%	87.6%	73.1%	241.5%	283.6%	3864.3%	1175.0%	
4		58.8%	54.5%	82.2%	98.1%	146.3%	162.6%	116.8%	10.9%		
5	9.8%										
6		158.8%	49.0%	57.4%	59.6%	65.2%	110.4%	97.3%	90.5%	73.6%	
7			36.4%	47.0%	78.0%	89.3%	85.0%	74.4%	60.9%	63.2%	
8	61.0%	65.7%	82.3%	85.3%	108.3%	122.6%	92.4%	124.2%	100.6%	80.0%	
9	47.3%	49.1%	66.3%	50.7%	65.1%	68.9%	80.6%	46.4%	56.9%	47.2%	
10	63.4%	53.6%	56.8%	69.0%	77.7%	101.3%	109.9%	111.9%	98.4%	99.7%	
11							44.4%	39.3%	39.4%		
12		34.2%	58.2%	64.9%	23.4%	47.6%	62.9%	77.9%	109.0%	70.4%	
13	55.5%	65.1%	64.7%	66.6%	76.1%	82.3%	84.8%	74.6%	90.4%	67.3%	
14		87.9%	42.6%	171.1%	40.1%	143.5%	50.6%	154.4%	107.6%	88.8%	
15		58.9%	56.5%	61.4%	70.8%	83.8%	86.1%	75.5%	76.5%	58.6%	
16			49.0%	70.7%	79.2%						
17			53.5%	59.4%	64.7%	81.4%	85.9%	87.3%	86.5%	86.1%	
18	66.1%	72.1%	124.5%	157.8%	160.4%	170.0%	56.7%	76.1%	123.7%	71.2%	
19			86.6%	12722.2%	108150.0%	176050.0%	186.4%	-0.7%	0.0%	31.8%	

Exhibit VII

Pivot of Net Earned Premium

Sum of PR	Year											
COCCODE	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Avg NEP	
1		997	3447	4586	5229	2852	2351	4436	8357	9578	4,648	
2	2711	12299	22514	30988	25213	13935	14521	14275	4589	-76	14,097	
3	23942	22818	20321	15906	12629	9551	313	238	14	16	10,575	
4		5822	7496	5212	4876	4106	3231	3699	230		4,334	
5	51										51	
6		34	602	863	690	733	270	409	568	599	530	
7			492	1961	1429	2667	5333	1446	23	95	1,681	
8	603	475	327	273	254	464	931	1626	1397	953	730	
9	1274	792	754	758	745	807	602	360	466	672	723	
10	151850	159050	144635	127500	114000	88785	89435	114000	137496	180446	130,720	
11							9	28	33		23	
12		1689	2122	2045	1877	1438	1506	1301	1306	1795	1,675	
13	22988	21208	21251	20132	18512	18888	17114	16923	18298	22734	19,805	
14		58	101	97	267	69	549	248	485	358	248	
15		875	945	960	989	1078	1105	1912	1941	2417	1,358	
16			772	845	629						749	
17			1440	1614	1610	1471	1579	1509	1613	1592	1,554	
18	114352	106540	74652	60244	45933	9766	476	259	241	250	41,271	
19			18689	9	2	2	623	-137	2316	22	2,691	

AAA P/C RBC Committee

Exhibit VIII

Loss & LAE Ratios									
Eliminates Negative or Zero Loss Ratios									
(Intermediate Step)									
1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
0.0%	93.1%	51.6%	46.5%	53.4%	78.1%	132.9%	124.2%	100.5%	72.8%
65.8%	73.2%	91.3%	132.1%	155.8%	129.5%	117.2%	120.8%	36.5%	0.0%
59.4%	53.6%	60.6%	63.7%	87.6%	73.1%	241.5%	283.6%	3864.3%	1175.0%
0.0%	58.8%	54.5%	82.2%	98.1%	146.3%	162.6%	116.8%	10.9%	0.0%
9.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	158.8%	49.0%	57.4%	59.6%	65.2%	110.4%	97.3%	90.5%	73.6%
0.0%	0.0%	36.4%	47.0%	78.0%	89.3%	85.0%	74.4%	60.9%	63.2%
61.0%	65.7%	82.3%	85.3%	108.3%	122.6%	92.4%	124.2%	100.6%	80.0%
47.3%	49.1%	66.3%	50.7%	65.1%	68.9%	80.6%	46.4%	56.9%	47.2%
63.4%	53.6%	56.8%	69.0%	77.7%	101.3%	109.9%	111.9%	98.4%	99.7%
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	44.4%	39.3%	39.4%	0.0%
0.0%	34.2%	58.2%	64.9%	23.4%	47.6%	62.9%	77.9%	109.0%	70.4%
55.5%	65.1%	64.7%	66.6%	76.1%	82.3%	84.8%	74.6%	90.4%	67.3%
0.0%	87.9%	42.6%	171.1%	40.1%	143.5%	50.6%	154.4%	107.6%	88.8%
0.0%	58.9%	56.5%	61.4%	70.8%	83.8%	86.1%	75.5%	76.5%	58.6%
0.0%	0.0%	49.0%	70.7%	79.2%	0.0%	0.0%	0.0%	0.0%	0.0%
0.0%	0.0%	53.5%	59.4%	64.7%	81.4%	85.9%	87.3%	86.5%	86.1%
66.1%	72.1%	124.5%	157.8%	160.4%	170.0%	56.7%	76.1%	123.7%	71.2%
0.0%	0.0%	86.6%	12722.2%	108150.0%	176050.0%	186.4%	0.0%	0.0%	31.8%

Exhibit IX

Number of Companies 517 517 517 517 517 517 517 517 517 517

Loss and LAE Ratios

Eliminates Companies without a full 10 Years

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
1										
2										
3	59.4%	53.6%	60.6%	63.7%	87.6%	73.1%	241.5%	283.6%	3864.3%	1175.0%
4										
5										
6										
7										
8	61.0%	65.7%	82.3%	85.3%	108.3%	122.6%	92.4%	124.2%	100.6%	80.0%
9	47.3%	49.1%	66.3%	50.7%	65.1%	68.9%	80.6%	46.4%	56.9%	47.2%
10	63.4%	53.6%	56.8%	69.0%	77.7%	101.3%	109.9%	111.9%	98.4%	99.7%
11										
12										
13	55.5%	65.1%	64.7%	66.6%	76.1%	82.3%	84.8%	74.6%	90.4%	67.3%
14										
15										
16										
17										
18	66.1%	72.1%	124.5%	157.8%	160.4%	170.0%	56.7%	76.1%	123.7%	71.2%

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Exhibit X

Number of Companies 497 497 497 497 497 497 497 497

Loss and LAE Ratios (Final)

Applies de minimus test to eliminate low premium volumes years for a company.

Eliminates Companies without a full 10 Years

	1993	1994	1995	1996	1997	1998	1999	2000
1								
2								
3								
4								
5								
6								
7								
8	61.0%	65.7%	82.3%	85.3%	108.3%	122.6%	92.4%	124.2%
9	47.3%	49.1%	66.3%	50.7%	65.1%	68.9%	80.6%	46.4%
10	63.4%	53.6%	56.8%	69.0%	77.7%	101.3%	109.9%	111.9%
11								
12								
13	55.5%	65.1%	64.7%	66.6%	76.1%	82.3%	84.8%	74.6%
14								
15								
16								
17								

Exhibit XI

U/W Risk - Pricing	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	Worst
Simple Avg	64.7%	64.2%	62.4%	65.8%	75.4%	82.1%	93.9%	94.1%	86.0%	83.2%	94.1%
Percentile	34.7%	41.8%	34.0%	40.4%	41.8%	45.1%	49.6%	49.1%	56.7%	50.5%	56.7%
Percentile	55.5%	55.1%	51.3%	54.2%	64.1%	68.4%	79.6%	76.9%	73.4%	68.6%	79.6%
Percentile	64.3%	62.5%	61.2%	64.3%	73.5%	82.3%	89.3%	91.1%	85.4%	79.1%	91.1%
Percentile	71.4%	69.8%	71.2%	74.1%	83.7%	93.4%	108.2%	103.9%	96.0%	92.2%	108.2%
Percentile	85.2%	79.7%	81.8%	91.1%	102.5%	114.0%	121.2%	123.8%	110.6%	105.8%	123.8%
Percentile	94.7%	87.7%	86.0%	93.3%	108.3%	119.6%	156.3%	133.9%	121.2%	126.1%	156.3%
Percentile	118.8%	116.0%	110.1%	117.7%	131.8%	139.7%	191.7%	252.4%	160.7%	186.2%	252.4%
Vol Wgt	70.0%	69.7%	72.6%	77.0%	87.6%	93.9%	100.4%	94.1%	89.5%	84.7%	100.4%
Max	300.0%	300.0%	300.0%	201.5%	300.0%	190.4%	279.6%	300.0%	210.9%	300.0%	300.0%
Min	2.0%	16.2%	9.5%	2.3%	7.9%	0.3%	11.4%	9.9%	1.6%	10.2%	16.2%

AAA P/C RBC Committee

Exhibit XII

RBC Premium Charge							
Line of Business	Current Factor	Simple Avg w/ NAIC Adj	-20% of current	+20% of current		Selected	Change
(1) H/F	0.917	0.901	0.734	1.100		0.901	-1.7%
(2) PPA	1.046	0.884	0.837	1.255		0.884	-15.5%
(3) CA	1.013	0.913	0.810	1.216		0.913	-9.9%
(4) WC	1.008	0.941	0.806	1.210		0.941	-6.6%
(5) CMP	0.917	0.798	0.734	1.100		0.798	-13.0%
(6) MM Occurrence	1.761	1.734	1.409	2.113		1.734	-1.5%
(7) MM CM	1.072	1.152	0.858	1.286		1.152	7.5%
(8) SL	0.917	0.810	0.734	1.100		0.810	-11.7%
(9) OL	1.082	0.787	0.866	1.298		0.866	-20.0%
(11) Spec Prop	1.014	0.752	0.811	1.217		0.811	-20.0%
(12) Auto Phys Damage	0.853	0.774	0.682	1.024		0.774	-9.3%
(10) Fidelity & Surety	0.875	0.742	0.700	1.050		0.742	-15.2%
(13) Other	0.867	0.817	0.694	1.040		0.817	-5.8%
(15) International	1.169	1.280	0.935	1.403		1.280	9.5%
(16) Property & Financi	1.224	1.740	0.979	1.469		1.469	20.0%
(17) Reinsurance Liab	1.379	1.228	1.103	1.655		1.228	-10.9%
(18) Products Liability	1.095	0.931	0.876	1.314		0.931	-15.0%
(14) Fin & Mort	1.400	0.446	1.120	1.680		1.400	0.0%
RBC Reserving Charge							
Line of Business	Current Factor	Simple Avg w/ NAIC Adj	-20% of current	+20% of current		Selected	Change
(1) H/F	0.275	0.055	0.220	0.330		0.220	-20.0%
(2) PPA	0.254	0.030	0.203	0.305		0.203	-20.0%
(3) CA	0.287	0.094	0.230	0.344		0.230	-20.0%
(4) WC	0.273	0.086	0.218	0.328		0.218	-20.0%
(5) CMP	0.374	0.160	0.299	0.449		0.299	-20.0%
(6) MM Occurrence	0.709	1.556	0.567	0.851		0.851	20.0%
(7) MM CM	0.346	15.314	0.277	0.415		0.415	20.0%
(8) SL	0.244	1.348	0.195	0.293		0.293	20.0%
(9) OL	0.520	0.086	0.416	0.624		0.416	-20.0%
(11) Spec Prop	0.160	2.601	0.128	0.192		0.192	20.0%
(12) Auto Phys Damage	0.160	29.231	0.128	0.192		0.192	20.0%
(10) Fidelity & Surety	0.269	1.330	0.215	0.323		0.323	20.0%
(13) Other	0.160	3.134	0.128	0.192		0.192	20.0%
(15) International	0.327	1.348	0.262	0.392		0.392	20.0%
(16) Property & Financi	0.313	1.397	0.250	0.376		0.376	20.0%
(17) Reinsurance Liab	0.838	1.630	0.670	1.006		1.006	20.0%
(18) Products Liability	0.532	5.708	0.426	0.638		0.638	20.0%
(14) Fin & Mort	0.160	n/a	0.128	0.192		0.160	0.0%

AAA P/C RBC Committee

Exhibit XIII

Workers' Compensation - Part D

	Net Paid	Net Incurred	Cumulative % Paid	Incremental % Paid	Incremental % Unpaid	Incremental % Paid	Long Tail Extension of Pmts	Adjusted % Unpaid	Adjusted % Paid	Discounted % Unpaid	Loss Resv Discount Factor	Adjusted Discount Factor	Implied Reserve	Payout Pattern for Premiums
AY+0	5,013,451	26,709,001	18.8%	18.8%	81.2%	18.8%		81.2%	18.8%	68.6%	84.5%	84.5%	21,695,550	18.8%
AY+1	12,221,221	25,640,737	47.7%	28.9%	52.3%	28.9%		52.3%	28.9%	42.6%	81.4%	81.4%	13,419,516	28.9%
AY+2	16,148,183	24,046,468	67.2%	19.5%	32.8%	19.5%		32.8%	19.5%	24.8%	75.6%	75.6%	7,898,285	19.5%
AY+3	16,896,489	22,622,058	74.7%	7.5%	25.3%	7.5%		25.3%	7.5%	18.4%	72.8%	72.8%	5,725,569	7.5%
AY+4	17,638,129	22,655,229	77.9%	3.2%	22.1%	3.2%		22.1%	3.2%	16.1%	72.9%	72.9%	5,017,100	3.2%
AY+5	17,503,860	21,801,183	80.3%	2.4%	19.7%	2.4%		19.7%	2.4%	14.5%	73.5%	73.5%	4,297,323	2.4%
AY+6	17,041,749	20,634,844	82.6%	2.3%	17.4%	2.3%		17.4%	2.3%	12.9%	74.1%	74.1%	3,593,095	2.3%
AY+7	16,997,402	20,401,995	83.3%	0.7%	16.7%	0.7%		16.7%	0.7%	12.8%	76.9%	76.9%	3,404,593	0.7%
AY+8	18,416,145	21,676,763	85.0%	1.6%	15.0%	1.6%		15.0%	1.6%	11.8%	78.6%	78.6%	3,260,618	1.6%
AY+9	19,975,737	23,180,506	86.2%	1.2%	13.8%	1.2%		13.8%	1.2%	11.2%	81.0%	81.0%	3,204,769	1.2%
AY+10						1.2%	1.2%	12.6%	1.2%	10.5%	83.6%	83.6%		1.2%
AY+11	<u>AY +10 Incremental Paid Options:</u>					↑	1.2%	11.4%	1.2%	9.8%	86.5%	86.5%		1.2%
AY+12	AY+10 Increment = % Outstanding after AY+9				TRUE	1.2%	1.2%	10.2%	1.2%	9.1%	89.6%	89.6%		1.2%
AY+13	AY+10 Increment = AY+9 Increment				FALSE	13.8%	1.2%	9.0%	1.2%	8.4%	93.2%	93.2%		1.2%
AY+14	AY+10 Increment = Average of AY+7,8,9 Increments				FALSE	1.2%	1.2%	7.7%	1.2%	7.5%	97.5%	97.5%		1.2%
AY+15	AY+10 Increment = Average of AY+6,7,8,9 Increments				FALSE	1.5%	7.7%	0.0%	7.7%	0.0%	100.0%	100.0%		7.7%
	AY+10 Increment = Average of AY+5,6,7,8,9 Increments				FALSE	1.7%								
"PRIOR"												91.12%	26,215,766	
Weighted Average Discount Factor												82.40%		81.4%