



NATALIE A. HUBLEY
PRESIDENT

COMMONWEALTH AUTOMOBILE REINSURERS

101 Arch Street, Suite 400 Boston, Massachusetts 02110
www.commauto.com 617-338-4000

NOTICE OF MEETING

ACTUARIAL COMMITTEE

A meeting of the Actuarial Committee will be held at the Automobile Insurers Bureau Conference Center at 101 Arch Street, 7th Floor, Boston, on

TUESDAY, SEPTEMBER 11, 2018 AT 10:30 A.M.

MEMBERS OF THE COMMITTEE

Ms. Lynellen Ramirez – Chair
Arbella Insurance Group

Mr. Geoffrey Arnold
Ms. Sarah Clemens
Mr. Hall Crowder
Mr. Christopher Dupill
Mr. Glenn Hiltbold
Mr. Greg Karabinos
Mr. Todd Lehmann
Mr. Sean Thompson
Ms. Meredith Woodcock

Plymouth Rock Assurance Corporation
MAPFRE U.S.A. Corporation
Allstate Insurance Company
EM Freedman Insurance Agency, Inc.
Safety Insurance Company
The Norfolk & Dedham Group
Quincy Mutual Group
The Hanover Insurance Company
Liberty Mutual Group

AGENDA

AC

18.01 Records of Previous Meeting

The Records of the Actuarial Committee meeting of June 13, 2018 should be read and approved.

AC

18.03 CAR Conflict of Interest Policy

The Chair will read a statement relative to CAR's Conflict of Interest Policy.

AC

18.04 Quota Share Credits for Policies Effective April 1, 2019 and Later

At its June 13, 2018 meeting, the Committee began discussions relative to the April 1, 2019 Credit Offer. The Committee agreed to study alternative approaches to allow for gradual changes to credit factors to minimize market impact while allowing a transition toward indicated credit need.

The Committee directed staff to prepare several alternative models for consideration. Attached are the following exhibits related to the Quota Share Credits to assist in the Committee's credit discussion:

- A Summary of Quota Share Credit Exhibits and results. These exhibits reflect statistically reported data through the June, 2018 accounting shipment. (Docket #AC18.04, Exhibit #4)
- Class and Territory summaries reflecting results using the residual market share ranges reflected in Rule 29. (Docket #AC18.04, Exhibit #5)
- Class and Territory summaries reflecting results using the "Indexed" residual market share range methodology proposed by the Committee last year. The ranges are indexed to a ratio of the current residual market rate ratio of the 2011 residual market rate, the year the original ranges were introduced. (Docket #AC18.04, Exhibit #6)
- Class and Territory summaries reflecting results for a methodology that keeps 80% of a credit factor for cells that are indicated to be eliminated, otherwise, the current Rule 29 methodology applies. This methodology was used with varying percentages shown on Exhibit #4, ranging from 50% to 90%. (Docket #AC18.04, Exhibit #7)
- A proposal that keeps 80% of a credit factor for cells that are indicated to be eliminated. Additionally, for cells that are indicated to introduce a credit, a 20% factor is applied. Otherwise, the current Rule 29 methodology applies. (Docket #AC18.04, Exhibit #8)
- A proposal initiated by Allstate Insurance Company that tempers the credit factor decrease over four years, using the current residual market share ranges reflected in Rule 29. This methodology was also calculated with a five year timeframe, with the results shown on Exhibit #4. (Docket #AC18.04, Exhibit #9)
- A proposal submitted by Plymouth Rock Assurance Company that includes provisions for annual increases and decreases in the credit offer that vary as a direct function of each cell's (class-territory combination) representation in MAIP. (Docket #AC18.04, Exhibit #10)

The Committee should be prepared to review these exhibits and to continue discussions relative to quota share credits for policies effective April 1, 2019 and later in order to formulate its recommendation to the Governing Committee at its meeting in November 2018.

AC

18.05 Potential Impact of Registry System Changes on Quota Share Credits

Staff will report on the status of the impacts of the Registry of Motor Vehicles system issues on company reported data due to the recent migration to the ATLAS system.

Other Business

To transact any other business that may properly come before this Committee.

Executive Session

The Actuarial Committee may convene in Executive Session in accordance with the provisions of G.L. c. 30A, § 21.

TIMOTHY GALLIGAN
Actuarial/Statistical Services Director

Attachments

Boston, Massachusetts
August 30, 2018

**Actuarial Committee Rule 29 Credit Offer
 4/1/2019 Methodology Summary
 Using Data Through June, 2018 (2018 Rates)**

	Methodology	<u>Δ Exp</u>	<u>Δ Prem</u>
Exh #5	DOI Current Methodology	-80.9%	-72.7%
Exh #6	Indexed Ranges	-17.4%	-12.1%
Exh #7	If credit cell goes to zero, then a. give 0.50 b. give 0.80 c. give 0.85 d. give 0.90 Otherwise DOI Current Methodology	0.3% 0.3% 0.3% 0.3%	-36.8% -15.3% -11.7% -8.1%
Exh #8	If credit cell goes down from 1 to 0, then give 0.8 If credit cell goes up from 0 to 1, then give 0.2 Otherwise DOI Current Methodology	0.3%	-15.6%
Exh #9	Allstate's Tempering Methodology Multiple years tempering using current method a. 4-year tempering (0.75 -> 0.5 -> 0.25 -> 0) b. 5-year tempering (0.8 -> 0.6 -> 0.4 -> 0.2 -> 0)	0.3% 0.3%	-18.9% -15.3%
Exh #10	Plymouth Rock's Tempering Methodology 33.3% decrease tempering factor and 16.7% increase tempering factor	72.7%	8.7%

**Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Rate Class**

4/1/2018 Credit Factors				4/1/19 Indicated - Residual Market Share Group Methodology			
Rate Class	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium	Credit Eligible Exposures	%Δ	Potential Credit Premium	%Δ
10	3,132,743	308,597	554,238,627	48,799	-84.2%	112,111,401	-79.8%
15	888,490	9,533	15,652,568	2,336	-75.5%	3,833,152	-75.5%
17	171,806	75,469	170,463,779	10,850	-85.6%	33,389,339	-80.4%
18	55,560	1,239	2,320,191	1,348	8.8%	3,641,373	56.9%
20	39,291	38,379	160,489,888	19,763	-48.5%	92,849,763	-42.1%
21	14,759	5,250	15,496,959	1,395	-73.4%	4,836,786	-68.8%
25	84,167	5,118	23,110,729	1,406	-72.5%	7,881,551	-65.9%
26	61,754	418	1,588,836	0	-100.0%	0	-100.0%
30	62,623	621	1,141,748	92	-85.1%	196,701	-82.8%
M/M	172,303	20,019	5,626,829	2,579	-87.1%	830,047	-85.2%
Total	4,683,496	464,642	950,130,153	88,567	-80.9%	259,570,112	-72.7%
% of Total Mkt. Exp.		9.9%		1.9%			
Estimated Credits Used Credit Utilization			906,526,754 95.4%	Estimated Credits Used Credit Utilization		239,931,886 92.4%	
				Residual Mark Share Group	Keep Out Credits		
				0	0.00		
				1	1.00		
				2	1.00		
				3	1.00		
				4	1.25		
				5	1.50		
				6	1.75		
				7	2.00		
				8	2.25		
				9	2.50		

Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Territory

4/1/2018 Credit Factors

4/1/19 - Residual Market Share Group

Territory	4/1/2018 Credit Factors			4/1/19 - Residual Market Share Group			
	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium	Credit Eligible Exposures	%Δ	Potential Credit Premium	%Δ
1	186,954	0	0	0	0.0%	0	0.0%
2	250,665	1,199	3,113,276	0	-100.0%	0	-100.0%
3	538,495	2,883	7,968,904	0	-100.0%	0	-100.0%
4	341,409	1,569	4,745,583	0	-100.0%	0	-100.0%
5	529,296	3,675	10,657,268	0	-100.0%	0	-100.0%
6	353,127	1,905	5,839,739	0	-100.0%	0	-100.0%
7	362,510	15,688	30,978,991	0	-100.0%	0	-100.0%
8	206,027	8,090	17,485,535	1,374	-83.0%	4,649,113	-73.4%
9	207,370	10,469	23,791,145	0	-100.0%	0	-100.0%
10	99,797	4,923	11,098,498	763	-84.5%	2,738,878	-75.3%
11	74,211	610	2,426,128	0	-100.0%	0	-100.0%
12	199,908	8,656	22,441,178	1,815	-79.0%	7,158,531	-68.1%
13	223,406	20,959	38,978,117	3,511	-83.2%	13,584,040	-65.1%
14	75,814	7,779	20,226,512	1,153	-85.2%	5,200,953	-74.3%
15	27,245	2,977	7,529,046	1,205	-59.5%	2,176,661	-71.1%
16	14,915	13,363	24,462,062	524	-96.1%	2,165,537	-91.1%
17	17,732	532	1,480,176	95	-82.2%	372,970	-74.8%
18	16,502	13,868	26,047,897	195	-98.6%	936,605	-96.4%
19	16,212	631	1,956,288	563	-10.9%	1,742,371	-10.9%
20	19,022	15,374	32,616,394	1,268	-91.8%	4,650,255	-85.7%
21	49,776	48,554	118,703,198	41,865	-13.8%	106,790,316	-10.0%
22	16,530	16,530	41,869,167	16,030	-3.0%	39,757,029	-5.0%
23	45,144	2,982	8,752,784	587	-80.3%	2,728,040	-68.8%
24	25,847	1,254	2,986,460	408	-67.5%	1,653,765	-44.6%
25	17,866	624	2,109,957	147	-76.4%	641,736	-69.6%
26	23,111	1,925	5,734,943	755	-60.8%	1,623,748	-71.7%
27	426,596	2,055	4,451,869	0	-100.0%	0	-100.0%
40	22,003	17,653	27,756,775	523	-97.0%	1,999,256	-92.8%
41	62,663	53,099	72,900,481	1,170	-97.8%	4,087,263	-94.4%
42	79,990	64,343	125,646,386	1,849	-97.1%	8,804,957	-93.0%
43	50,088	41,789	83,538,792	3,268	-92.2%	11,281,954	-86.5%
44	38,457	34,017	53,632,587	4,555	-86.6%	10,721,070	-80.0%
45	53,420	44,669	108,204,016	4,947	-88.9%	24,105,064	-77.7%
99	11,390	0	0	0	0.0%	0	0.0%
Total	4,683,496	464,642	950,130,153	88,567	-80.9%	259,570,112	-72.7%

% of Total Mkt. Exp. **9.9%**

1.9%

Residual Mark Share Group	Keep Out Credits
0	0.00
1	1.00
2	1.00
3	1.00
4	1.25
5	1.50
6	1.75
7	2.00
8	2.25
9	2.50

Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Indexed Market Share Group Ranges By Year
Summary by Rate Class

4/1/2018 Credit Factors

4/1/19 Indicated - Indexed Ranges By Year

<u>Rate Class</u>	<u>Total Mkt Exposures</u>	<u>Credit Eligible Exposures</u>	<u>Potential Credit Premium</u>	<u>Credit Eligible Exposures</u>	<u>%Δ</u>	<u>Potential Credit Premium</u>	<u>%Δ</u>
10	3,132,743	308,597	554,238,627	228,857	-25.8%	427,880,337	-22.8%
15	888,490	9,533	15,652,568	12,382	29.9%	19,450,458	24.3%
17	171,806	75,469	170,463,779	68,752	-8.9%	161,522,720	-5.2%
18	55,560	1,239	2,320,191	1,348	8.8%	3,641,373	56.9%
20	39,291	38,379	160,489,888	37,987	-1.0%	166,139,279	3.5%
21	14,759	5,250	15,496,959	6,962	32.6%	19,824,851	27.9%
25	84,167	5,118	23,110,729	6,745	31.8%	27,677,120	19.8%
26	61,754	418	1,588,836	369	-11.6%	1,405,818	-11.5%
30	62,623	621	1,141,748	1,573	153.4%	2,754,075	141.2%
M/M	172,303	20,019	5,626,829	18,701	-6.6%	5,224,928	-7.1%
Total	4,683,496	464,642	950,130,153	383,677	-17.4%	835,520,959	-12.1%

% of Total Mkt. Exp. **9.9%**

8.2%

Estimated Credits Used
Credit Utilization

906,526,754
95.4%

Estimated Credits Used
Credit Utilization

792,009,901
94.8%

<u>Group</u>	<u>Factor</u>	<u>Original (2011) Ranges</u>		<u>2017 Ranges</u>		<u>2018 Ranges</u>		<u>2019 Ranges</u>	
		<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>	<u>Lower</u>	<u>Upper</u>
0	0	0.00	0.05	0.000	0.026	0.000	0.027	0.000	0.024
1	1	0.05	0.08	0.026	0.042	0.027	0.042	0.024	0.039
2	1	0.08	0.11	0.042	0.058	0.042	0.058	0.039	0.053
3	1	0.11	0.17	0.058	0.089	0.058	0.090	0.053	0.082
4	1.25	0.17	0.23	0.089	0.120	0.090	0.122	0.082	0.111
5	1.5	0.23	0.29	0.120	0.152	0.122	0.154	0.111	0.140
6	1.75	0.29	0.35	0.152	0.183	0.154	0.186	0.140	0.169
7	2	0.35	0.41	0.183	0.214	0.186	0.218	0.169	0.198
8	2.25	0.41	0.47	0.214	0.246	0.218	0.250	0.198	0.227
9	2.5	0.47	1.00	0.246	1.000	0.250	1.000	0.227	1.000
		MAIP Volume:	2.58%	MAIP Volume:	1.35%	MAIP Volume:	1.37%	MAIP Volume:	1.25%
				Relativity to Base:	0.52	Relativity to Base:	0.53	Relativity to Base:	0.48

Relative Ranges for each year are scaled to the original upper and lower bounds based on Residual Market Rate Ratio to Original Ranges (2011)

Example: 2019 Upper Threshold .024 = (1.25 (2018 Res. Mkt. Rate) / 2.58 (2011 Res. Mkt. Rate)) * .05 (Original Upper Threshold)

Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Territory

4/1/2018 Credit Factors

4/1/19 Indicated - Indexed Ranges By Year

<u>Territory</u>	<u>4/1/2018 Credit Factors</u>			<u>4/1/19 Indicated - Indexed Ranges By Year</u>			
	<u>Total Mkt Exposures</u>	<u>Credit Eligible Exposures</u>	<u>Potential Credit Premium</u>	<u>Credit Eligible Exposures</u>	<u>%Δ</u>	<u>Potential Credit Premium</u>	<u>%Δ</u>
1	186,954	0	0	807	0.0%	1,793,238	0.0%
2	250,665	1,199	3,113,276	0	-100.0%	0	-100.0%
3	538,495	2,883	7,968,904	2,883	0.0%	7,968,904	0.0%
4	341,409	1,569	4,745,583	1,569	0.0%	4,745,583	0.0%
5	529,296	3,675	10,657,268	3,675	0.0%	10,657,268	0.0%
6	353,127	1,905	5,839,739	1,905	0.0%	5,839,739	0.0%
7	362,510	15,688	30,978,991	16,567	5.6%	32,887,052	6.2%
8	206,027	8,090	17,485,535	1,374	-83.0%	4,649,113	-73.4%
9	207,370	10,469	23,791,145	10,469	0.0%	23,791,145	0.0%
10	99,797	4,923	11,098,498	4,923	0.0%	11,098,498	0.0%
11	74,211	610	2,426,128	610	0.0%	2,426,128	0.0%
12	199,908	8,656	22,441,178	9,479	9.5%	24,659,428	9.9%
13	223,406	20,959	38,978,117	24,173	15.3%	50,212,690	28.8%
14	75,814	7,779	20,226,512	62,079	698.1%	111,513,826	451.3%
15	27,245	2,977	7,529,046	22,253	647.4%	39,605,820	426.0%
16*	14,915	13,363	24,462,062	13,363	0.0%	24,061,250	-1.6%
17	17,732	532	1,480,176	847	59.1%	1,661,830	12.3%
18	16,502	13,868	26,047,897	13,690	-1.3%	25,656,368	-1.5%
19	16,212	631	1,956,288	863	36.8%	2,350,919	20.2%
20*	19,022	15,374	32,616,394	18,544	20.6%	36,356,098	11.5%
21*	49,776	48,554	118,703,198	49,063	1.0%	125,124,464	5.4%
22*	16,530	16,530	41,869,167	16,482	-0.3%	43,203,667	3.2%
23	45,144	2,982	8,752,784	2,231	-25.2%	7,331,378	-16.2%
24	25,847	1,254	2,986,460	408	-67.5%	1,653,765	-44.6%
25	17,866	624	2,109,957	873	40.0%	2,343,602	11.1%
26*	23,111	1,925	5,734,943	1,987	3.2%	5,359,221	-6.6%
27	426,596	2,055	4,451,869	2,055	0.0%	4,451,869	0.0%
40*	22,003	17,653	27,756,775	2,348	-86.7%	5,240,721	-81.1%
41*	62,663	53,099	72,900,481	6,250	-88.2%	11,509,216	-84.2%
42*	79,990	64,343	125,646,386	7,935	-87.7%	20,949,058	-83.3%
43*	50,088	41,789	83,538,792	4,557	-89.1%	16,793,909	-79.9%
44*	38,457	34,017	53,632,587	34,249	0.7%	52,839,865	-1.5%
45*	53,420	44,669	108,204,016	45,171	1.1%	116,785,325	7.9%
99	11,390	0	0	0	0.0%	0	0.0%
Total	4,683,496	464,642	950,130,153	383,677	-17.4%	835,520,959	-12.1%

% of Total Mkt. Exp.

9.9%

8.2%

***Summary for Key Territories cited by the Division of Insurance**

Total	429,975	351,317	695,064,802	199,947	-43.1%	458,222,795	-34.1%
% of Total Mkt. Exp.		81.7%		46.5%			

Indexed Market Share Group Ranges by Year

Base Year			>	≤	Credits	
	2011	0	0.00	0.05	0.00	0
		1	0.05	0.08	1.00	1
MAIP:	2.58%	2	0.08	0.11	1.00	2
Relativity:	1.00	3	0.11	0.17	1.00	3
		4	0.17	0.23	1.25	4
		5	0.23	0.29	1.50	5
		6	0.29	0.35	1.75	6
		7	0.35	0.41	2.00	7
		8	0.41	0.47	2.25	8
		9	0.47	1.00	2.50	9

			>	≤	Credits	
	2017	0	0.000	0.026	0.00	0
		1	0.026	0.042	1.00	1
MAIP:	1.35%	2	0.042	0.058	1.00	2
Relativity:	0.523	3	0.058	0.089	1.00	3
		4	0.089	0.120	1.25	4
		5	0.120	0.152	1.50	5
		6	0.152	0.183	1.75	6
		7	0.183	0.214	2.00	7
		8	0.214	0.246	2.25	8
		9	0.246	1.000	2.50	9

			>	≤	Credits	
	2018	0	0.000	0.027	0.00	0
		1	0.027	0.042	1.00	1
MAIP:	1.37%	2	0.042	0.058	1.00	2
Relativity:	0.531	3	0.058	0.090	1.00	3
		4	0.090	0.122	1.25	4
		5	0.122	0.154	1.50	5
		6	0.154	0.186	1.75	6
		7	0.186	0.218	2.00	7
		8	0.218	0.250	2.25	8
		9	0.250	1.000	2.50	9

			>	≤	Credits	
	2019	0	0.000	0.024	0.00	0
		1	0.024	0.039	1.00	1
MAIP:	1.25%	2	0.039	0.053	1.00	2
Relativity:	0.484	3	0.053	0.082	1.00	3
		4	0.082	0.111	1.25	4
		5	0.111	0.140	1.50	5
		6	0.140	0.169	1.75	6
		7	0.169	0.198	2.00	7
		8	0.198	0.227	2.25	8
		9	0.227	1.000	2.50	9

**Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Rate Class**

4/1/2018 Credit Factors				4/1/19 Indicated - Residual Market Share Group Methodology			
Rate Class	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium	Credit Eligible Exposures	%Δ	Potential Credit Premium	%Δ
10	3,132,743	308,597	554,238,627	308,597	0.0%	465,813,182	-16.0%
15	888,490	9,533	15,652,568	9,533	0.0%	13,288,684	-15.1%
17	171,806	75,469	170,463,779	75,469	0.0%	143,048,891	-16.1%
18	55,560	1,239	2,320,191	2,437	96.7%	5,167,667	122.7%
20	39,291	38,379	160,489,888	38,379	0.0%	136,985,986	-14.6%
21	14,759	5,250	15,496,959	5,250	0.0%	13,364,924	-13.8%
25	84,167	5,118	23,110,729	5,118	0.0%	20,064,893	-13.2%
26	61,754	418	1,588,836	418	0.0%	1,271,069	-20.0%
30	62,623	621	1,141,748	621	0.0%	952,738	-16.6%
M/M	172,303	20,019	5,626,829	20,019	0.0%	4,667,473	-17.0%
Total	4,683,496	464,642	950,130,153	465,840	0.3%	804,625,508	-15.3%
% of Total Mkt. Exp.		9.9%		9.9%			
Estimated Credits Used Credit Utilization			906,526,754 95.4%	Estimated Credits Used Credit Utilization		766,658,568 95.3%	
				Residual Mark Share Group	Keep Out Credits		
				0	0.00		
				1	1.00		
				2	1.00		
				3	1.00		
				4	1.25		
				5	1.50		
				6	1.75		
				7	2.00		
				8	2.25		
				9	2.50		

Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Territory

4/1/2018 Credit Factors

4/1/19 - Residual Market Share Group

Territory	4/1/2018 Credit Factors			4/1/19 - Residual Market Share Group			
	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium	Credit Eligible Exposures	%Δ	Potential Credit Premium	%Δ
1	186,954	0	0	0	0.0%	0	0.0%
2	250,665	1,199	3,113,276	1,199	0.0%	2,490,621	-20.0%
3	538,495	2,883	7,968,904	2,883	0.0%	6,375,123	-20.0%
4	341,409	1,569	4,745,583	1,569	0.0%	3,796,466	-20.0%
5	529,296	3,675	10,657,268	3,675	0.0%	8,525,814	-20.0%
6	353,127	1,905	5,839,739	1,905	0.0%	4,671,791	-20.0%
7	362,510	15,688	30,978,991	15,688	0.0%	24,783,193	-20.0%
8	206,027	8,090	17,485,535	8,090	0.0%	14,918,250	-14.7%
9	207,370	10,469	23,791,145	10,469	0.0%	19,032,916	-20.0%
10	99,797	4,923	11,098,498	4,923	0.0%	9,426,574	-15.1%
11	74,211	610	2,426,128	610	0.0%	1,940,902	-20.0%
12	199,908	8,656	22,441,178	8,656	0.0%	19,384,649	-13.6%
13	223,406	20,959	38,978,117	20,959	0.0%	33,899,302	-13.0%
14	75,814	7,779	20,226,512	7,779	0.0%	17,221,400	-14.9%
15	27,245	2,977	7,529,046	2,977	0.0%	6,141,811	-18.4%
16	14,915	13,363	24,462,062	13,363	0.0%	19,361,457	-20.9%
17	17,732	532	1,480,176	532	0.0%	1,184,141	-20.0%
18	16,502	13,868	26,047,897	13,868	0.0%	20,838,317	-20.0%
19	16,212	631	1,956,288	631	0.0%	1,913,505	-2.2%
20	19,022	15,374	32,616,394	15,561	1.2%	26,814,693	-17.8%
21	49,776	48,554	118,703,198	49,063	1.0%	116,245,849	-2.1%
22	16,530	16,530	41,869,167	16,530	0.0%	40,878,676	-2.4%
23	45,144	2,982	8,752,784	2,982	0.0%	7,002,227	-20.0%
24	25,847	1,254	2,986,460	1,254	0.0%	2,719,921	-8.9%
25	17,866	624	2,109,957	624	0.0%	1,816,313	-13.9%
26	23,111	1,925	5,734,943	1,925	0.0%	4,309,996	-24.8%
27	426,596	2,055	4,451,869	2,055	0.0%	3,561,495	-20.0%
40	22,003	17,653	27,756,775	17,653	0.0%	21,928,879	-21.0%
41	62,663	53,099	72,900,481	53,099	0.0%	59,137,837	-18.9%
42	79,990	64,343	125,646,386	64,343	0.0%	100,517,109	-20.0%
43	50,088	41,789	83,538,792	41,789	0.0%	68,086,753	-18.5%
44	38,457	34,017	53,632,587	34,017	0.0%	43,269,308	-19.3%
45	53,420	44,669	108,204,016	45,171	1.1%	92,430,218	-14.6%
99	11,390	0	0	0	0.0%	0	0.0%
Total	4,683,496	464,642	950,130,153	465,840	0.3%	804,625,508	-15.3%
% of Total Mkt. Exp.		9.9%		9.9%			

Residual Mark Share Group	Keep Out Credits
0	0.00
1	1.00
2	1.00
3	1.00
4	1.25
5	1.50
6	1.75
7	2.00
8	2.25
9	2.50

**Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Rate Class**

4/1/2018 Credit Factors				4/1/19 Indicated - Residual Market Share Group Methodology			
Rate Class	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium	Credit Eligible Exposures	%Δ	Potential Credit Premium	%Δ
10	3,132,743	308,597	554,238,627	308,597	0.0%	465,813,182	-16.0%
15	888,490	9,533	15,652,568	9,533	0.0%	13,288,684	-15.1%
17	171,806	75,469	170,463,779	75,469	0.0%	143,048,891	-16.1%
18	55,560	1,239	2,320,191	2,437	96.7%	2,584,428	11.4%
20	39,291	38,379	160,489,888	38,379	0.0%	136,985,986	-14.6%
21	14,759	5,250	15,496,959	5,250	0.0%	13,364,924	-13.8%
25	84,167	5,118	23,110,729	5,118	0.0%	20,064,893	-13.2%
26	61,754	418	1,588,836	418	0.0%	1,271,069	-20.0%
30	62,623	621	1,141,748	621	0.0%	952,738	-16.6%
M/M	172,303	20,019	5,626,829	20,019	0.0%	4,667,473	-17.0%
Total	4,683,496	464,642	950,130,153	465,840	0.3%	802,042,268	-15.6%
% of Total Mkt. Exp.		9.9%		9.9%			
Estimated Credits Used Credit Utilization			906,526,754 95.4%	Estimated Credits Used Credit Utilization		764,215,878 95.3%	
				Residual Mark Share Group	Keep Out Credits		
				0	0.00		
				1	1.00		
				2	1.00		
				3	1.00		
				4	1.25		
				5	1.50		
				6	1.75		
				7	2.00		
				8	2.25		
				9	2.50		

Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Territory

4/1/2018 Credit Factors

4/1/19 - Residual Market Share Group

<u>Territory</u>	<u>Total Mkt Exposures</u>	<u>Credit Eligible Exposures</u>	<u>Potential Credit Premium</u>	<u>Credit Eligible</u>		<u>Potential</u>	
				<u>Exposures</u>	<u>%Δ</u>	<u>Credit Premium</u>	<u>%Δ</u>
1	186,954	0	0	0	0.0%	0	0.0%
2	250,665	1,199	3,113,276	1,199	0.0%	2,490,621	-20.0%
3	538,495	2,883	7,968,904	2,883	0.0%	6,375,123	-20.0%
4	341,409	1,569	4,745,583	1,569	0.0%	3,796,466	-20.0%
5	529,296	3,675	10,657,268	3,675	0.0%	8,525,814	-20.0%
6	353,127	1,905	5,839,739	1,905	0.0%	4,671,791	-20.0%
7	362,510	15,688	30,978,991	15,688	0.0%	24,783,193	-20.0%
8	206,027	8,090	17,485,535	8,090	0.0%	14,918,250	-14.7%
9	207,370	10,469	23,791,145	10,469	0.0%	19,032,916	-20.0%
10	99,797	4,923	11,098,498	4,923	0.0%	9,426,574	-15.1%
11	74,211	610	2,426,128	610	0.0%	1,940,902	-20.0%
12	199,908	8,656	22,441,178	8,656	0.0%	19,384,649	-13.6%
13	223,406	20,959	38,978,117	20,959	0.0%	33,899,302	-13.0%
14	75,814	7,779	20,226,512	7,779	0.0%	17,221,400	-14.9%
15	27,245	2,977	7,529,046	2,977	0.0%	6,141,811	-18.4%
16	14,915	13,363	24,462,062	13,363	0.0%	19,361,457	-20.9%
17	17,732	532	1,480,176	532	0.0%	1,184,141	-20.0%
18	16,502	13,868	26,047,897	13,868	0.0%	20,838,317	-20.0%
19	16,212	631	1,956,288	631	0.0%	1,913,505	-2.2%
20	19,022	15,374	32,616,394	15,561	1.2%	26,436,757	-18.9%
21	49,776	48,554	118,703,198	49,063	1.0%	115,086,538	-3.0%
22	16,530	16,530	41,869,167	16,530	0.0%	40,878,676	-2.4%
23	45,144	2,982	8,752,784	2,982	0.0%	7,002,227	-20.0%
24	25,847	1,254	2,986,460	1,254	0.0%	2,719,921	-8.9%
25	17,866	624	2,109,957	624	0.0%	1,816,313	-13.9%
26	23,111	1,925	5,734,943	1,925	0.0%	4,309,996	-24.8%
27	426,596	2,055	4,451,869	2,055	0.0%	3,561,495	-20.0%
40	22,003	17,653	27,756,775	17,653	0.0%	21,928,879	-21.0%
41	62,663	53,099	72,900,481	53,099	0.0%	59,137,837	-18.9%
42	79,990	64,343	125,646,386	64,343	0.0%	100,517,109	-20.0%
43	50,088	41,789	83,538,792	41,789	0.0%	68,086,753	-18.5%
44	38,457	34,017	53,632,587	34,017	0.0%	43,269,308	-19.3%
45	53,420	44,669	108,204,016	45,171	1.1%	91,384,226	-15.5%
99	11,390	0	0	0	0.0%	0	0.0%
Total	4,683,496	464,642	950,130,153	465,840	0.3%	802,042,268	-15.6%
% of Total Mkt. Exp.		9.9%		9.9%			

<u>Residual Mark Share Group</u>	<u>Keep Out Credits</u>
0	0.00
1	1.00
2	1.00
3	1.00
4	1.25
5	1.50
6	1.75
7	2.00
8	2.25
9	2.50

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 10

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	0.74%	0.74%	0.65%	0	0	0	0	-	-	-	0	0.00	
2	0.77%	0.77%	0.74%	0	0	0	0	-	-	-	1	1.00	
3	0.79%	0.83%	0.81%	0	0	0	0	-	-	-	2	1.00	
4	0.70%	0.75%	0.70%	0	0	0	0	-	-	-	3	1.00	
5	1.07%	1.14%	1.08%	0	0	0	0	-	-	-	4	1.25	
6	1.08%	1.07%	0.99%	0	0	0	0	-	-	-	5	1.50	
7	1.45%	1.49%	1.37%	0	0	0	0	-	-	-	6	1.75	
8	1.30%	1.35%	1.24%	0	0	0	0	-	-	-	7	2.00	
9	1.57%	1.62%	1.53%	0	0	0	0	-	-	-	8	2.25	
10	1.60%	1.63%	1.52%	0	0	0	0	-	-	-	9	2.50	
11	1.27%	1.27%	1.15%	0	0	0	0	-	-	-			
12	1.55%	1.56%	1.39%	0	0	0	0	-	-	-			
13	2.54%	2.64%	2.54%	0	0	0	0	-	-	-			
14	2.60%	2.84%	2.55%	0	0	0	0	-	-	-			
15	2.45%	2.78%	2.65%	0	0	0	0	-	-	-			
16	3.63%	3.47%	3.30%	0	0	0	0	0.80	1.00	(0.20)			
17	1.66%	1.70%	1.41%	0	0	0	0	-	-	-			
18	3.78%	3.29%	2.93%	0	0	0	0	0.80	1.00	(0.20)			
19	2.49%	2.33%	2.25%	0	0	0	0	-	-	-			
20	4.97%	4.90%	4.49%	0	0	0	0	0.80	1.00	(0.20)	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	5.41%	5.85%	5.20%	1	1	1	1	1.00	1.00	-			
22	6.46%	7.63%	6.88%	1	1	1	1	1.00	1.00	-	2019	465,813,182	308,597
23	1.58%	1.62%	1.56%	0	0	0	0	-	-	-			
24	1.34%	1.27%	1.10%	0	0	0	0	-	-	-	2018	554,238,627	308,597
25	1.29%	1.30%	0.92%	0	0	0	0	-	-	-			
26	2.18%	2.20%	1.86%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.57%	0.60%	0.55%	0	0	0	0	-	-	-			
40	2.10%	2.59%	3.00%	0	0	0	0	0.80	1.00	(0.20)	(88,425,445)	-	
41	2.49%	2.59%	2.29%	0	0	0	0	0.80	1.00	(0.20)			
42	2.11%	2.01%	1.81%	0	0	0	0	0.80	1.00	(0.20)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	2.53%	2.64%	2.63%	0	0	0	0	0.80	1.00	(0.20)			
44	4.65%	4.55%	4.22%	0	0	0	0	0.80	1.00	(0.20)	-16.0%	0.0%	
45	3.74%	4.08%	4.04%	0	0	0	0	0.80	1.00	(0.20)			
99	0.53%	0.51%	0.33%	0	0	0	0	-	-	-			
Tot	1.40%	1.46%	1.36%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 15

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	0.27%	0.23%	0.21%	0	0	0	0	-	-	-	0	0.00	
2	0.26%	0.25%	0.21%	0	0	0	0	-	-	-	1	1.00	
3	0.25%	0.25%	0.22%	0	0	0	0	-	-	-	2	1.00	
4	0.25%	0.27%	0.27%	0	0	0	0	-	-	-	3	1.00	
5	0.27%	0.27%	0.25%	0	0	0	0	-	-	-	4	1.25	
6	0.38%	0.39%	0.36%	0	0	0	0	-	-	-	5	1.50	
7	0.43%	0.44%	0.44%	0	0	0	0	-	-	-	6	1.75	
8	0.51%	0.48%	0.47%	0	0	0	0	-	-	-	7	2.00	
9	0.44%	0.48%	0.52%	0	0	0	0	-	-	-	8	2.25	
10	0.53%	0.52%	0.40%	0	0	0	0	-	-	-	9	2.50	
11	0.58%	0.66%	0.74%	0	0	0	0	-	-	-			
12	0.72%	0.72%	0.69%	0	0	0	0	-	-	-			
13	0.98%	0.95%	0.93%	0	0	0	0	-	-	-			
14	1.32%	1.33%	1.40%	0	0	0	0	-	-	-			
15	1.65%	1.47%	1.45%	0	0	0	0	-	-	-			
16	2.41%	2.84%	2.08%	0	0	0	0	-	-	-			
17	0.79%	1.09%	0.99%	0	0	0	0	-	-	-			
18	1.98%	2.17%	1.94%	0	0	0	0	-	-	-			
19	2.09%	1.81%	1.60%	0	0	0	0	-	-	-			
20	2.99%	3.16%	3.23%	0	0	0	0	-	-	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	4.21%	4.37%	4.51%	0	0	0	0	0.80	1.00	(0.20)			
22	5.89%	6.67%	6.21%	1	1	1	1	1.00	1.00	-	2019	13,288,684	9,533
23	1.06%	0.94%	0.91%	0	0	0	0	-	-	-			
24	1.86%	1.38%	1.57%	0	0	0	0	-	-	-	2018	15,652,568	9,533
25	0.80%	0.58%	0.83%	0	0	0	0	-	-	-			
26	1.44%	1.52%	1.15%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.19%	0.20%	0.16%	0	0	0	0	-	-	-			
40	1.22%	1.22%	1.45%	0	0	0	0	-	-	-	(2,363,883)	-	
41	0.81%	0.80%	0.81%	0	0	0	0	-	-	-			
42	1.55%	1.38%	1.25%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	0.77%	0.81%	0.80%	0	0	0	0	-	-	-			
44	1.93%	2.54%	2.65%	0	0	0	0	-	-	-	-15.1%	0.0%	
45	1.70%	2.37%	2.24%	0	0	0	0	-	-	-			
99	0.19%	0.16%	0.20%	0	0	0	0	-	-	-			
Tot	0.51%	0.52%	0.49%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 17

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	1.44%	1.59%	1.33%	0	0	0	0	-	-	-	0	0.00	
2	1.53%	1.61%	1.37%	0	0	0	0	-	-	-	1	1.00	
3	1.74%	1.74%	1.53%	0	0	0	0	-	-	-	2	1.00	
4	1.83%	1.74%	1.61%	0	0	0	0	-	-	-	3	1.00	
5	2.35%	2.44%	2.13%	0	0	0	0	-	-	-	4	1.25	
6	2.41%	2.32%	1.79%	0	0	0	0	-	-	-	5	1.50	
7	2.82%	2.70%	1.95%	0	0	0	0	0.80	1.00	(0.20)	6	1.75	
8	3.07%	2.46%	2.35%	0	0	0	0	0.80	1.00	(0.20)	7	2.00	
9	2.72%	3.32%	3.01%	0	0	0	0	0.80	1.00	(0.20)	8	2.25	
10	3.11%	2.94%	2.46%	0	0	0	0	0.80	1.00	(0.20)	9	2.50	
11	2.36%	2.23%	1.95%	0	0	0	0	-	-	-			
12	3.63%	3.12%	2.44%	0	0	0	0	0.80	1.00	(0.20)			
13	4.26%	4.43%	3.72%	0	0	0	0	0.80	1.00	(0.20)			
14	4.54%	4.31%	3.37%	0	0	0	0	0.80	1.00	(0.20)			
15	4.71%	3.44%	3.06%	0	0	0	0	0.80	1.00	(0.20)			
16	6.07%	4.68%	4.21%	1	0	0	0	0.80	1.00	(0.20)			
17	2.74%	4.71%	4.11%	0	0	0	0	0.80	1.00	(0.20)			
18	7.58%	4.59%	4.38%	1	0	0	0	0.80	1.00	(0.20)			
19	6.60%	6.04%	4.99%	1	1	0	1	1.00	1.00	-			
20	7.18%	7.50%	5.61%	1	1	1	1	1.00	1.00	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	10.11%	10.56%	8.09%	2	2	2	2	1.00	1.00	-			
22	9.59%	8.95%	7.52%	2	2	1	2	1.00	1.00	-	2019	143,048,891	75,469
23	5.97%	3.36%	2.98%	1	0	0	0	0.80	1.00	(0.20)			
24	2.44%	2.52%	1.70%	0	0	0	0	-	-	-	2018	170,463,779	75,469
25	3.93%	5.02%	3.06%	0	1	0	0	0.80	1.00	(0.20)			
26	5.44%	3.56%	1.84%	1	0	0	0	0.80	1.00	(0.20)	<u>Difference:</u>	<u>Difference:</u>	
27	1.45%	1.56%	1.20%	0	0	0	0	-	-	-			
40	4.20%	4.21%	4.68%	0	0	0	0	0.80	1.00	(0.20)	(27,414,888)	-	
41	4.67%	5.08%	3.46%	0	1	0	0	0.80	1.00	(0.20)			
42	2.83%	2.73%	2.06%	0	0	0	0	0.80	1.00	(0.20)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	5.57%	5.09%	4.77%	1	1	0	1	1.00	1.00	-			
44	5.99%	5.19%	5.09%	1	1	1	1	1.00	1.00	-	-16.1%	0.0%	
45	8.61%	9.82%	9.06%	2	2	2	2	1.00	1.00	-			
99	0.48%	0.46%	0.56%	0	0	0	0	-	-	-			
Tot	2.85%	2.82%	2.36%										

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 18

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	0.58%	0.54%	0.43%	0	0	0	0	-	-	-	0	0.00	
2	0.63%	0.69%	0.61%	0	0	0	0	-	-	-	1	1.00	
3	0.60%	0.53%	0.46%	0	0	0	0	-	-	-	2	1.00	
4	0.52%	0.63%	0.60%	0	0	0	0	-	-	-	3	1.00	
5	0.99%	1.04%	0.87%	0	0	0	0	-	-	-	4	1.25	
6	0.87%	0.82%	0.72%	0	0	0	0	-	-	-	5	1.50	
7	0.85%	1.10%	1.22%	0	0	0	0	-	-	-	6	1.75	
8	0.90%	0.88%	0.85%	0	0	0	0	-	-	-	7	2.00	
9	1.41%	1.12%	1.21%	0	0	0	0	-	-	-	8	2.25	
10	1.32%	0.96%	0.94%	0	0	0	0	-	-	-	9	2.50	
11	0.94%	0.81%	0.70%	0	0	0	0	-	-	-			
12	1.16%	1.27%	1.33%	0	0	0	0	-	-	-			
13	2.24%	2.35%	1.66%	0	0	0	0	-	-	-			
14	2.71%	1.88%	1.57%	0	0	0	0	-	-	-			
15	2.50%	2.64%	2.72%	0	0	0	0	-	-	-			
16	1.01%	3.99%	0.81%	0	0	0	0	-	-	-			
17	1.44%	0.84%	1.16%	0	0	0	0	-	-	-			
18	0.84%	0.88%	4.13%	0	0	0	0	0.80	1.00	(0.20)			
19	3.90%	2.00%	0.05%	0	0	0	0	-	-	-			
20	6.45%	6.87%	4.35%	1	1	0	1	0.20	-	0.20	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	4.03%	5.68%	5.22%	0	1	1	1	0.20	-	0.20			
22	3.88%	6.61%	7.76%	0	1	1	1	1.00	1.00	-	2019	2,584,428	2,437
23	0.69%	1.73%	1.17%	0	0	0	0	-	-	-			
24	0.17%	1.59%	0.41%	0	0	0	0	-	-	-	2018	2,320,191	1,239
25	0.86%	3.27%	0.08%	0	0	0	0	-	-	-			
26	1.02%	0.96%	1.44%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.42%	0.36%	0.47%	0	0	0	0	-	-	-			
40	1.03%	1.93%	1.18%	0	0	0	0	0.80	1.00	(0.20)		264,236	1,198
41	2.06%	1.95%	1.97%	0	0	0	0	0.80	1.00	(0.20)			
42	0.62%	1.10%	1.32%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	1.02%	1.86%	2.84%	0	0	0	0	-	-	-			
44	1.96%	2.07%	1.05%	0	0	0	0	-	-	-		11.4%	96.7%
45	4.33%	6.35%	5.37%	0	1	1	1	0.20	-	0.20			
99	0.43%	0.43%	0.00%	0	0	0	0	-	-	-			
Tot	0.99%	1.06%	0.97%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 20

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	5.47%	4.04%	2.92%	1	0	0	0	-	-	-	0	0.00	
2	3.84%	2.18%	2.16%	0	0	0	0	0.80	1.00	(0.20)	1	1.00	
3	4.04%	3.29%	3.12%	0	0	0	0	0.80	1.00	(0.20)	2	1.00	
4	2.90%	2.63%	2.46%	0	0	0	0	0.80	1.00	(0.20)	3	1.00	
5	6.36%	4.35%	3.70%	1	0	0	0	0.80	1.00	(0.20)	4	1.25	
6	5.16%	3.50%	3.36%	1	0	0	0	0.80	1.00	(0.20)	5	1.50	
7	6.46%	4.70%	4.44%	1	0	0	0	0.80	1.00	(0.20)	6	1.75	
8	6.24%	5.69%	4.08%	1	1	0	1	1.00	1.00	-	7	2.00	
9	6.15%	4.82%	4.15%	1	0	0	0	0.80	1.00	(0.20)	8	2.25	
10	7.28%	5.95%	4.45%	1	1	0	1	1.00	1.00	-	9	2.50	
11	6.61%	3.94%	3.96%	1	0	0	0	0.80	1.00	(0.20)			
12	7.64%	5.55%	4.67%	1	1	0	1	1.00	1.00	-			
13	9.26%	8.38%	5.87%	2	2	1	2	1.00	1.00	-			
14	11.27%	9.64%	7.40%	3	2	1	2	1.00	1.00	-			
15	14.61%	11.33%	9.79%	3	3	2	3	1.00	1.25	(0.25)			
16	16.39%	12.01%	10.67%	3	3	2	3	1.00	1.50	(0.50)			
17	14.00%	13.66%	4.59%	3	3	0	3	1.00	1.25	(0.25)			
18	8.63%	9.10%	11.61%	2	2	3	2	1.00	1.25	(0.25)			
19	15.81%	17.14%	12.69%	3	4	3	3	1.00	1.00	-			
20	16.33%	16.15%	11.27%	3	3	3	3	1.00	1.50	(0.50)	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	24.33%	24.69%	19.44%	5	5	4	5	1.50	1.75	(0.25)			
22	27.23%	23.86%	18.65%	5	5	4	5	1.50	1.75	(0.25)	2019	136,985,986	38,379
23	7.28%	6.73%	4.91%	1	1	0	1	1.00	1.25	(0.25)			
24	5.53%	6.27%	3.13%	1	1	0	1	1.00	1.00	-	2018	160,489,888	38,379
25	15.05%	11.07%	8.15%	3	3	2	3	1.00	1.00	-			
26	14.32%	12.78%	9.13%	3	3	2	3	1.00	1.50	(0.50)	<u>Difference:</u>	<u>Difference:</u>	
27	3.97%	3.33%	2.80%	0	0	0	0	0.80	1.00	(0.20)			
40	13.23%	6.71%	5.81%	3	1	1	1	1.00	1.50	(0.50)	(23,503,902)	-	
41	8.88%	8.32%	5.72%	2	2	1	2	1.00	1.00	-			
42	7.59%	5.52%	5.10%	1	1	1	1	1.00	1.25	(0.25)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	12.58%	9.34%	9.32%	3	2	2	2	1.00	1.25	(0.25)			
44	13.72%	11.42%	8.40%	3	3	2	3	1.00	1.50	(0.50)	-14.6%	0.0%	
45	22.95%	21.35%	18.47%	4	4	4	4	1.25	1.25	-			
99	1.37%	1.25%	1.57%	0	0	0	0	-	-	-			
Tot	8.59%	6.93%	5.68%										

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 21

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	1.40%	0.96%	1.09%	0	0	0	0	-	-	-	0	0.00	
2	1.61%	1.72%	1.13%	0	0	0	0	-	-	-	1	1.00	
3	1.39%	1.85%	1.67%	0	0	0	0	-	-	-	2	1.00	
4	1.33%	1.18%	1.03%	0	0	0	0	-	-	-	3	1.00	
5	2.31%	2.23%	1.71%	0	0	0	0	-	-	-	4	1.25	
6	1.65%	2.11%	1.70%	0	0	0	0	-	-	-	5	1.50	
7	3.24%	3.08%	2.27%	0	0	0	0	-	-	-	6	1.75	
8	1.25%	1.73%	2.55%	0	0	0	0	-	-	-	7	2.00	
9	2.60%	2.95%	1.54%	0	0	0	0	0.80	1.00	(0.20)	8	2.25	
10	2.18%	2.88%	3.72%	0	0	0	0	0.80	1.00	(0.20)	9	2.50	
11	1.56%	2.01%	1.49%	0	0	0	0	-	-	-			
12	3.18%	3.36%	2.30%	0	0	0	0	-	-	-			
13	2.67%	4.62%	3.85%	0	0	0	0	0.80	1.00	(0.20)			
14	3.47%	4.04%	2.72%	0	0	0	0	0.80	1.00	(0.20)			
15	5.64%	7.68%	4.49%	1	1	0	1	1.00	1.00	-			
16	6.28%	4.05%	3.18%	1	0	0	0	0.80	1.00	(0.20)			
17	2.48%	1.79%	3.70%	0	0	0	0	-	-	-			
18	5.68%	4.16%	-0.43%	1	0	0	0	0.80	1.00	(0.20)			
19	2.63%	1.65%	1.46%	0	0	0	0	0.80	1.00	(0.20)			
20	4.87%	9.06%	7.18%	0	2	1	1	1.00	1.00	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	7.15%	5.67%	5.80%	1	1	1	1	1.00	1.00	-			
22	3.53%	13.53%	8.85%	0	3	2	2	1.00	1.00	-	2019	13,364,924	5,250
23	3.33%	4.16%	3.62%	0	0	0	0	-	-	-			
24	1.94%	1.63%	0.13%	0	0	0	0	0.80	1.00	(0.20)	2018	15,496,959	5,250
25	2.46%	1.89%	4.08%	0	0	0	0	-	-	-			
26	4.54%	2.21%	3.38%	0	0	0	0	0.80	1.00	(0.20)	<u>Difference:</u>	<u>Difference:</u>	
27	1.41%	0.97%	0.72%	0	0	0	0	-	-	-			
40	3.77%	5.68%	5.28%	0	1	1	1	1.00	1.00	-	(2,132,035)	-	
41	2.15%	3.71%	5.04%	0	0	1	0	0.80	1.00	(0.20)			
42	2.79%	3.53%	3.96%	0	0	0	0	0.80	1.00	(0.20)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	4.00%	2.52%	4.96%	0	0	0	0	0.80	1.00	(0.20)			
44	5.05%	5.17%	4.05%	1	1	0	1	1.00	1.00	-	-13.8%	0.0%	
45	7.38%	7.23%	7.33%	1	1	1	1	1.00	1.00	-			
99	-3.28%	3.97%	0.00%	0	0	0	0	-	-	-			
Tot	2.58%	2.86%	2.49%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 25

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	1.25%	1.06%	0.86%	0	0	0	0	-	-	-	0	0.00	
2	1.10%	1.12%	0.79%	0	0	0	0	-	-	-	1	1.00	
3	1.07%	1.01%	0.96%	0	0	0	0	-	-	-	2	1.00	
4	0.88%	0.95%	0.80%	0	0	0	0	-	-	-	3	1.00	
5	1.62%	1.48%	1.42%	0	0	0	0	-	-	-	4	1.25	
6	1.54%	1.64%	1.40%	0	0	0	0	-	-	-	5	1.50	
7	1.50%	1.20%	1.19%	0	0	0	0	-	-	-	6	1.75	
8	1.84%	1.92%	1.44%	0	0	0	0	-	-	-	7	2.00	
9	1.95%	1.69%	1.53%	0	0	0	0	-	-	-	8	2.25	
10	1.99%	1.55%	1.34%	0	0	0	0	-	-	-	9	2.50	
11	1.68%	1.17%	1.56%	0	0	0	0	-	-	-			
12	2.39%	2.33%	2.01%	0	0	0	0	-	-	-			
13	3.12%	2.66%	2.76%	0	0	0	0	-	-	-			
14	3.46%	2.38%	2.27%	0	0	0	0	0.80	1.00	(0.20)			
15	4.55%	3.38%	2.79%	0	0	0	0	0.80	1.00	(0.20)			
16	5.74%	5.42%	3.90%	1	1	0	1	1.00	1.00	-			
17	1.48%	0.37%	0.00%	0	0	0	0	-	-	-			
18	2.69%	4.59%	5.97%	0	0	1	0	0.80	1.00	(0.20)			
19	0.35%	1.20%	0.09%	0	0	0	0	-	-	-			
20	3.11%	1.88%	1.89%	0	0	0	0	0.80	1.00	(0.20)	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	5.32%	5.16%	3.29%	1	1	0	1	1.00	1.00	-			
22	3.41%	3.64%	3.11%	0	0	0	0	0.80	1.00	(0.20)	2019	20,064,893	5,118
23	1.20%	3.48%	2.27%	0	0	0	0	0.80	1.00	(0.20)			
24	0.49%	0.46%	0.54%	0	0	0	0	0.80	1.00	(0.20)	2018	23,110,729	5,118
25	8.23%	4.59%	3.23%	2	0	0	0	0.80	1.00	(0.20)			
26	3.42%	0.58%	1.99%	0	0	0	0	0.80	1.00	(0.20)	<u>Difference:</u>	<u>Difference:</u>	
27	0.82%	0.91%	0.81%	0	0	0	0	-	-	-			
40	0.78%	3.27%	3.06%	0	0	0	0	-	-	-	(3,045,836)	-	
41	2.01%	3.23%	1.86%	0	0	0	0	-	-	-			
42	2.15%	1.94%	2.10%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	3.61%	3.35%	3.57%	0	0	0	0	0.80	1.00	(0.20)			
44	4.05%	2.49%	2.91%	0	0	0	0	0.80	1.00	(0.20)	-13.2%	0.0%	
45	5.35%	8.21%	8.92%	1	2	2	2	1.00	1.00	-			
99	0.02%	0.40%	0.61%	0	0	0	0	-	-	-			
Tot	1.58%	1.51%	1.38%										

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 26

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits		
	Aug-16	Aug-17	Jun-18	2017	2018	2019							Available Credit Prem:	Credit Eligible Exp:
1	0.27%	0.50%	0.28%	0	0	0	0	-	-	-	0	0.00		
2	0.56%	0.41%	0.40%	0	0	0	0	-	-	-	1	1.00		
3	0.49%	0.45%	0.40%	0	0	0	0	-	-	-	2	1.00		
4	0.39%	0.32%	0.36%	0	0	0	0	-	-	-	3	1.00		
5	0.66%	0.63%	0.57%	0	0	0	0	-	-	-	4	1.25		
6	0.42%	0.56%	0.37%	0	0	0	0	-	-	-	5	1.50		
7	0.74%	0.59%	0.47%	0	0	0	0	-	-	-	6	1.75		
8	0.62%	0.84%	0.70%	0	0	0	0	-	-	-	7	2.00		
9	0.66%	0.65%	0.60%	0	0	0	0	-	-	-	8	2.25		
10	1.08%	1.08%	0.45%	0	0	0	0	-	-	-	9	2.50		
11	0.21%	0.16%	0.37%	0	0	0	0	-	-	-				
12	0.92%	1.25%	0.93%	0	0	0	0	-	-	-				
13	1.10%	1.43%	1.10%	0	0	0	0	-	-	-				
14	0.98%	0.92%	0.39%	0	0	0	0	-	-	-				
15	1.99%	2.99%	1.93%	0	0	0	0	-	-	-				
16	0.43%	2.31%	4.17%	0	0	0	0	-	-	-				
17	0.36%	0.32%	0.34%	0	0	0	0	-	-	-				
18	1.93%	1.06%	0.48%	0	0	0	0	-	-	-				
19	0.11%	0.00%	0.00%	0	0	0	0	-	-	-				
20	4.65%	1.85%	1.68%	0	0	0	0	-	-	-			<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>
21	2.17%	1.74%	2.76%	0	0	0	0	-	-	-				
22	1.79%	0.00%	0.00%	0	0	0	0	0.80	1.00	(0.20)	2019	1,271,069		418
23	1.46%	0.41%	0.27%	0	0	0	0	-	-	-				
24	0.00%	0.27%	1.10%	0	0	0	0	-	-	-	2018	1,588,836		418
25	0.43%	1.21%	0.00%	0	0	0	0	-	-	-				
26	0.36%	0.12%	0.27%	0	0	0	0	-	-	-			<u>Difference:</u>	<u>Difference:</u>
27	0.35%	0.40%	0.39%	0	0	0	0	-	-	-				
40	0.08%	0.68%	2.54%	0	0	0	0	-	-	-			(317,767)	-
41	1.31%	1.11%	1.70%	0	0	0	0	-	-	-				
42	0.66%	1.88%	0.94%	0	0	0	0	-	-	-			<u>Percent Change:</u>	<u>Percent Change:</u>
43	0.54%	1.04%	1.12%	0	0	0	0	-	-	-				
44	1.00%	2.47%	2.43%	0	0	0	0	-	-	-			-20.0%	0.0%
45	2.65%	3.63%	3.63%	0	0	0	0	0.80	1.00	(0.20)				
99	0.78%	0.00%	1.85%	0	0	0	0	-	-	-				
Tot	0.59%	0.62%	0.54%											

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 30

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	Jun-18	2017	2018	2019							
1	0.26%	0.23%	0.31%	0	0	0	0	-	-	-	0	0.00	
2	0.68%	0.60%	0.61%	0	0	0	0	-	-	-	1	1.00	
3	0.57%	0.50%	0.36%	0	0	0	0	-	-	-	2	1.00	
4	0.62%	0.64%	0.55%	0	0	0	0	-	-	-	3	1.00	
5	0.96%	0.94%	1.03%	0	0	0	0	-	-	-	4	1.25	
6	0.74%	0.63%	0.70%	0	0	0	0	-	-	-	5	1.50	
7	0.69%	0.94%	1.15%	0	0	0	0	-	-	-	6	1.75	
8	1.07%	1.24%	1.01%	0	0	0	0	-	-	-	7	2.00	
9	0.95%	1.54%	1.70%	0	0	0	0	-	-	-	8	2.25	
10	1.49%	1.07%	0.72%	0	0	0	0	-	-	-	9	2.50	
11	1.40%	1.03%	1.18%	0	0	0	0	-	-	-			
12	1.49%	1.22%	1.06%	0	0	0	0	-	-	-			
13	1.31%	1.03%	0.99%	0	0	0	0	-	-	-			
14	2.56%	2.21%	2.66%	0	0	0	0	-	-	-			
15	3.32%	4.49%	3.84%	0	0	0	0	0.80	1.00	(0.20)			
16	3.77%	4.28%	6.29%	0	0	1	0	0.80	1.00	(0.20)			
17	1.39%	0.00%	1.15%	0	0	0	0	-	-	-			
18	0.32%	0.55%	1.67%	0	0	0	0	-	-	-			
19	1.94%	0.35%	1.34%	0	0	0	0	-	-	-			
20	1.34%	1.27%	0.69%	0	0	0	0	-	-	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	1.66%	3.04%	2.25%	0	0	0	0	-	-	-			
22	1.87%	6.41%	5.69%	0	1	1	1	1.00	1.00	-	2019	952,738	621
23	0.75%	1.05%	1.16%	0	0	0	0	-	-	-			
24	1.27%	1.22%	0.25%	0	0	0	0	-	-	-	2018	1,141,748	621
25	1.24%	0.83%	0.31%	0	0	0	0	-	-	-			
26	3.39%	3.01%	2.85%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.40%	0.51%	0.53%	0	0	0	0	-	-	-			
40	0.51%	0.00%	0.00%	0	0	0	0	-	-	-	(189,009)	-	
41	1.37%	1.19%	1.14%	0	0	0	0	-	-	-			
42	0.73%	0.44%	0.19%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	3.05%	4.30%	3.16%	0	0	0	0	-	-	-			
44	4.92%	4.96%	4.47%	0	0	0	0	-	-	-	-16.6%	0.0%	
45	1.82%	2.01%	2.43%	0	0	0	0	-	-	-			
99	0.00%	0.00%	1.40%	0	0	0	0	-	-	-			
Tot	0.87%	0.90%	0.89%										

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class MM

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits
	Aug-16	Aug-17	Jun-18	2017	2018	2019						
1	0.97%	1.12%	0.98%	0	0	0	0	-	-	-	0	0.00
2	1.27%	1.00%	0.86%	0	0	0	0	-	-	-	1	1.00
3	1.32%	1.23%	1.07%	0	0	0	0	-	-	-	2	1.00
4	1.09%	1.03%	0.96%	0	0	0	0	-	-	-	3	1.00
5	1.74%	1.53%	1.34%	0	0	0	0	-	-	-	4	1.25
6	1.74%	1.41%	1.10%	0	0	0	0	-	-	-	5	1.50
7	2.26%	1.99%	1.62%	0	0	0	0	-	-	-	6	1.75
8	1.89%	1.67%	1.49%	0	0	0	0	-	-	-	7	2.00
9	2.38%	1.89%	1.79%	0	0	0	0	-	-	-	8	2.25
10	2.00%	1.95%	1.89%	0	0	0	0	-	-	-	9	2.50
11	1.75%	2.15%	1.86%	0	0	0	0	-	-	-		
12	2.98%	2.61%	2.30%	0	0	0	0	-	-	-		
13	3.61%	2.86%	2.49%	0	0	0	0	0.80	1.00	(0.20)		
14	3.47%	3.10%	2.90%	0	0	0	0	0.80	1.00	(0.20)		
15	5.88%	5.72%	5.50%	1	1	1	1	1.00	1.00	-		
16	5.29%	2.99%	2.69%	1	0	0	0	0.80	1.00	(0.20)		
17	3.92%	2.47%	3.07%	0	0	0	0	-	-	-		
18	5.25%	4.05%	2.84%	1	0	0	0	0.80	1.00	(0.20)		
19	3.92%	2.27%	3.00%	0	0	0	0	-	-	-		
20	4.38%	4.48%	3.37%	0	0	0	0	-	-	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>
21	7.83%	6.46%	3.62%	1	1	0	1	1.00	1.00	-		
22	4.92%	4.00%	6.68%	0	0	1	0	0.80	1.00	(0.20)	2019	4,667,473
23	2.83%	2.16%	0.99%	0	0	0	0	0.80	1.00	(0.20)		20,019
24	1.63%	1.76%	1.52%	0	0	0	0	0.80	1.00	(0.20)	2018	5,626,829
25	3.57%	3.60%	1.33%	0	0	0	0	-	-	-		
26	6.82%	5.13%	2.91%	1	1	0	1	1.00	1.00	-	<u>Difference:</u>	<u>Difference:</u>
27	1.05%	0.98%	0.83%	0	0	0	0	-	-	-		
40	3.91%	3.49%	3.04%	0	0	0	0	0.80	1.00	(0.20)	(959,356)	-
41	4.05%	3.65%	3.29%	0	0	0	0	0.80	1.00	(0.20)		
42	4.69%	3.47%	2.90%	0	0	0	0	0.80	1.00	(0.20)	<u>Percent Change:</u>	<u>Percent Change:</u>
43	2.81%	2.42%	1.40%	0	0	0	0	0.80	1.00	(0.20)		
44	8.90%	6.60%	7.55%	2	1	1	1	1.00	1.00	-	-17.0%	0.0%
45	5.03%	4.87%	4.20%	1	0	0	0	0.80	1.00	(0.20)		
99	1.18%	1.23%	1.43%	0	0	0	0	-	-	-		
Tot	1.92%	1.68%	1.45%									

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

**Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Rate Class**

4/1/2018 Credit Factors				4/1/19 Indicated - Allstate Proposal			
Rate Class	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium	Credit Eligible Exposures	%Δ	Potential Credit Premium	%Δ
10	3,132,743	308,597	554,238,627	308,597	0.0%	443,706,821	-19.9%
15	888,490	9,533	15,652,568	9,533	0.0%	12,697,714	-18.9%
17	171,806	75,469	170,463,779	75,469	0.0%	136,195,169	-20.1%
18	55,560	1,239	2,320,191	2,437	96.7%	5,072,274	118.6%
20	39,291	38,379	160,489,888	38,379	0.0%	134,227,472	-16.4%
21	14,759	5,250	15,496,959	5,250	0.0%	12,831,916	-17.2%
25	84,167	5,118	23,110,729	5,118	0.0%	19,303,434	-16.5%
26	61,754	418	1,588,836	418	0.0%	1,191,627	-25.0%
30	62,623	621	1,141,748	621	0.0%	905,486	-20.7%
M/M	172,303	20,019	5,626,829	20,019	0.0%	4,427,633	-21.3%
Total	4,683,496	464,642	950,130,153	465,840	0.3%	770,559,545	-18.9%
% of Total Mkt. Exp.		9.9%		9.9%			
Estimated Credits Used Credit Utilization			906,526,754 95.4%	Estimated Credits Used Credit Utilization		733,738,150 95.2%	
				Residual Mark Share Group	Keep Out Credits		
				0	0.00		
				1	1.00		
				2	1.00		
				3	1.00		
				4	1.25		
				5	1.50		
				6	1.75		
				7	2.00		
				8	2.25		
				9	2.50		

Commonwealth Automobile Reinsurers
4/1/2019 Credit Offer - Data Through June, 2018 (2018 Rates)
Summary by Territory

4/1/2018 Credit Factors				4/1/19 - Allstate Proposal			
Territory	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium	Credit Eligible Exposures	%Δ	Potential Credit Premium	%Δ
1	186,954	0	0	0	0.0%	0	0.0%
2	250,665	1,199	3,113,276	1,199	0.0%	2,334,957	-25.0%
3	538,495	2,883	7,968,904	2,883	0.0%	5,976,678	-25.0%
4	341,409	1,569	4,745,583	1,569	0.0%	3,559,187	-25.0%
5	529,296	3,675	10,657,268	3,675	0.0%	7,992,951	-25.0%
6	353,127	1,905	5,839,739	1,905	0.0%	4,379,804	-25.0%
7	362,510	15,688	30,978,991	15,688	0.0%	23,234,243	-25.0%
8	206,027	8,090	17,485,535	8,090	0.0%	14,276,429	-18.4%
9	207,370	10,469	23,791,145	10,469	0.0%	17,843,359	-25.0%
10	99,797	4,923	11,098,498	4,923	0.0%	9,008,593	-18.8%
11	74,211	610	2,426,128	610	0.0%	1,819,596	-25.0%
12	199,908	8,656	22,441,178	8,656	0.0%	18,620,516	-17.0%
13	223,406	20,959	38,978,117	20,959	0.0%	32,629,598	-16.3%
14	75,814	7,779	20,226,512	7,779	0.0%	16,470,122	-18.6%
15	27,245	2,977	7,529,046	2,977	0.0%	5,893,989	-21.7%
16	14,915	13,363	24,462,062	13,363	0.0%	18,286,712	-25.2%
17	17,732	532	1,480,176	532	0.0%	1,133,443	-23.4%
18	16,502	13,868	26,047,897	13,868	0.0%	19,594,460	-24.8%
19	16,212	631	1,956,288	631	0.0%	1,902,809	-2.7%
20	19,022	15,374	32,616,394	15,561	1.2%	25,429,415	-22.0%
21	49,776	48,554	118,703,198	49,063	1.0%	115,654,878	-2.6%
22	16,530	16,530	41,869,167	16,530	0.0%	40,808,573	-2.5%
23	45,144	2,982	8,752,784	2,982	0.0%	6,735,091	-23.1%
24	25,847	1,254	2,986,460	1,254	0.0%	2,653,286	-11.2%
25	17,866	624	2,109,957	624	0.0%	1,742,902	-17.4%
26	23,111	1,925	5,734,943	1,925	0.0%	4,142,106	-27.8%
27	426,596	2,055	4,451,869	2,055	0.0%	3,338,902	-25.0%
40	22,003	17,653	27,756,775	17,653	0.0%	20,683,277	-25.5%
41	62,663	53,099	72,900,481	53,099	0.0%	55,697,176	-23.6%
42	79,990	64,343	125,646,386	64,343	0.0%	94,785,099	-24.6%
43	50,088	41,789	83,538,792	41,789	0.0%	64,536,453	-22.7%
44	38,457	34,017	53,632,587	34,017	0.0%	41,235,044	-23.1%
45	53,420	44,669	108,204,016	45,171	1.1%	88,159,896	-18.5%
99	11,390	0	0	0	0.0%	0	0.0%
Total	4,683,496	464,642	950,130,153	465,840	0.3%	770,559,545	-18.9%
% of Total Mkt. Exp.		9.9%		9.9%			

Residual Mark Share Group	Keep Out Credits
0	0.00
1	1.00
2	1.00
3	1.00
4	1.25
5	1.50
6	1.75
7	2.00
8	2.25
9	2.50

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 10

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	0.74%	0.74%	0.65%	0	0	0	0	-	-	-	0	0.00	
2	0.77%	0.77%	0.74%	0	0	0	0	-	-	-	1	1.00	
3	0.79%	0.83%	0.81%	0	0	0	0	-	-	-	2	1.00	
4	0.70%	0.75%	0.70%	0	0	0	0	-	-	-	3	1.00	
5	1.07%	1.14%	1.08%	0	0	0	0	-	-	-	4	1.25	
6	1.08%	1.07%	0.99%	0	0	0	0	-	-	-	5	1.50	
7	1.45%	1.49%	1.37%	0	0	0	0	-	-	-	6	1.75	
8	1.30%	1.35%	1.24%	0	0	0	0	-	-	-	7	2.00	
9	1.57%	1.62%	1.53%	0	0	0	0	-	-	-	8	2.25	
10	1.60%	1.63%	1.52%	0	0	0	0	-	-	-	9	2.50	
11	1.27%	1.27%	1.15%	0	0	0	0	-	-	-			
12	1.55%	1.56%	1.39%	0	0	0	0	-	-	-			
13	2.54%	2.64%	2.54%	0	0	0	0	-	-	-			
14	2.60%	2.84%	2.55%	0	0	0	0	-	-	-			
15	2.45%	2.78%	2.65%	0	0	0	0	-	-	-			
16	3.63%	3.47%	3.30%	0	0	0	0	0.75	1.00	(0.25)			
17	1.66%	1.70%	1.41%	0	0	0	0	-	-	-			
18	3.78%	3.29%	2.93%	0	0	0	0	0.75	1.00	(0.25)			
19	2.49%	2.33%	2.25%	0	0	0	0	-	-	-			
20	4.97%	4.90%	4.49%	0	0	0	0	0.75	1.00	(0.25)	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	5.41%	5.85%	5.20%	1	1	1	1	1.00	1.00	-			
22	6.46%	7.63%	6.88%	1	1	1	1	1.00	1.00	-	2019	443,706,821	308,597
23	1.58%	1.62%	1.56%	0	0	0	0	-	-	-			
24	1.34%	1.27%	1.10%	0	0	0	0	-	-	-	2018	554,238,627	308,597
25	1.29%	1.30%	0.92%	0	0	0	0	-	-	-			
26	2.18%	2.20%	1.86%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.57%	0.60%	0.55%	0	0	0	0	-	-	-			
40	2.10%	2.59%	3.00%	0	0	0	0	0.75	1.00	(0.25)	(110,531,807)	-	
41	2.49%	2.59%	2.29%	0	0	0	0	0.75	1.00	(0.25)			
42	2.11%	2.01%	1.81%	0	0	0	0	0.75	1.00	(0.25)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	2.53%	2.64%	2.63%	0	0	0	0	0.75	1.00	(0.25)			
44	4.65%	4.55%	4.22%	0	0	0	0	0.75	1.00	(0.25)	-19.9%	0.0%	
45	3.74%	4.08%	4.04%	0	0	0	0	0.75	1.00	(0.25)			
99	0.53%	0.51%	0.33%	0	0	0	0	-	-	-			
Tot	1.40%	1.46%	1.36%										

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 15

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	0.27%	0.23%	0.21%	0	0	0	0	-	-	-	0	0.00	
2	0.26%	0.25%	0.21%	0	0	0	0	-	-	-	1	1.00	
3	0.25%	0.25%	0.22%	0	0	0	0	-	-	-	2	1.00	
4	0.25%	0.27%	0.27%	0	0	0	0	-	-	-	3	1.00	
5	0.27%	0.27%	0.25%	0	0	0	0	-	-	-	4	1.25	
6	0.38%	0.39%	0.36%	0	0	0	0	-	-	-	5	1.50	
7	0.43%	0.44%	0.44%	0	0	0	0	-	-	-	6	1.75	
8	0.51%	0.48%	0.47%	0	0	0	0	-	-	-	7	2.00	
9	0.44%	0.48%	0.52%	0	0	0	0	-	-	-	8	2.25	
10	0.53%	0.52%	0.40%	0	0	0	0	-	-	-	9	2.50	
11	0.58%	0.66%	0.74%	0	0	0	0	-	-	-			
12	0.72%	0.72%	0.69%	0	0	0	0	-	-	-			
13	0.98%	0.95%	0.93%	0	0	0	0	-	-	-			
14	1.32%	1.33%	1.40%	0	0	0	0	-	-	-			
15	1.65%	1.47%	1.45%	0	0	0	0	-	-	-			
16	2.41%	2.84%	2.08%	0	0	0	0	-	-	-			
17	0.79%	1.09%	0.99%	0	0	0	0	-	-	-			
18	1.98%	2.17%	1.94%	0	0	0	0	-	-	-			
19	2.09%	1.81%	1.60%	0	0	0	0	-	-	-			
20	2.99%	3.16%	3.23%	0	0	0	0	-	-	-			
21	4.21%	4.37%	4.51%	0	0	0	0	0.75	1.00	(0.25)	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
22	5.89%	6.67%	6.21%	1	1	1	1	1.00	1.00	-	2019	12,697,714	9,533
23	1.06%	0.94%	0.91%	0	0	0	0	-	-	-			
24	1.86%	1.38%	1.57%	0	0	0	0	-	-	-	2018	15,652,568	9,533
25	0.80%	0.58%	0.83%	0	0	0	0	-	-	-			
26	1.44%	1.52%	1.15%	0	0	0	0	-	-	-		<u>Difference:</u>	<u>Difference:</u>
27	0.19%	0.20%	0.16%	0	0	0	0	-	-	-			
40	1.22%	1.22%	1.45%	0	0	0	0	-	-	-		(2,954,854)	-
41	0.81%	0.80%	0.81%	0	0	0	0	-	-	-			
42	1.55%	1.38%	1.25%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	0.77%	0.81%	0.80%	0	0	0	0	-	-	-			
44	1.93%	2.54%	2.65%	0	0	0	0	-	-	-		-18.9%	0.0%
45	1.70%	2.37%	2.24%	0	0	0	0	-	-	-			
99	0.19%	0.16%	0.20%	0	0	0	0	-	-	-			
Tot	0.51%	0.52%	0.49%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 17

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	1.44%	1.59%	1.33%	0	0	0	0	-	-	-	0	0.00	
2	1.53%	1.61%	1.37%	0	0	0	0	-	-	-	1	1.00	
3	1.74%	1.74%	1.53%	0	0	0	0	-	-	-	2	1.00	
4	1.83%	1.74%	1.61%	0	0	0	0	-	-	-	3	1.00	
5	2.35%	2.44%	2.13%	0	0	0	0	-	-	-	4	1.25	
6	2.41%	2.32%	1.79%	0	0	0	0	-	-	-	5	1.50	
7	2.82%	2.70%	1.95%	0	0	0	0	0.75	1.00	(0.25)	6	1.75	
8	3.07%	2.46%	2.35%	0	0	0	0	0.75	1.00	(0.25)	7	2.00	
9	2.72%	3.32%	3.01%	0	0	0	0	0.75	1.00	(0.25)	8	2.25	
10	3.11%	2.94%	2.46%	0	0	0	0	0.75	1.00	(0.25)	9	2.50	
11	2.36%	2.23%	1.95%	0	0	0	0	-	-	-			
12	3.63%	3.12%	2.44%	0	0	0	0	0.75	1.00	(0.25)			
13	4.26%	4.43%	3.72%	0	0	0	0	0.75	1.00	(0.25)			
14	4.54%	4.31%	3.37%	0	0	0	0	0.75	1.00	(0.25)			
15	4.71%	3.44%	3.06%	0	0	0	0	0.75	1.00	(0.25)			
16	6.07%	4.68%	4.21%	1	0	0	0	0.75	1.00	(0.25)			
17	2.74%	4.71%	4.11%	0	0	0	0	0.75	1.00	(0.25)			
18	7.58%	4.59%	4.38%	1	0	0	0	0.75	1.00	(0.25)			
19	6.60%	6.04%	4.99%	1	1	0	1	1.00	1.00	-			
20	7.18%	7.50%	5.61%	1	1	1	1	1.00	1.00	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	10.11%	10.56%	8.09%	2	2	2	2	1.00	1.00	-			
22	9.59%	8.95%	7.52%	2	2	1	2	1.00	1.00	-	2019	136,195,169	75,469
23	5.97%	3.36%	2.98%	1	0	0	0	0.75	1.00	(0.25)			
24	2.44%	2.52%	1.70%	0	0	0	0	-	-	-	2018	170,463,779	75,469
25	3.93%	5.02%	3.06%	0	1	0	0	0.75	1.00	(0.25)			
26	5.44%	3.56%	1.84%	1	0	0	0	0.75	1.00	(0.25)	<u>Difference:</u>	<u>Difference:</u>	
27	1.45%	1.56%	1.20%	0	0	0	0	-	-	-			
40	4.20%	4.21%	4.68%	0	0	0	0	0.75	1.00	(0.25)	(34,268,610)	-	
41	4.67%	5.08%	3.46%	0	1	0	0	0.75	1.00	(0.25)			
42	2.83%	2.73%	2.06%	0	0	0	0	0.75	1.00	(0.25)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	5.57%	5.09%	4.77%	1	1	0	1	1.00	1.00	-			
44	5.99%	5.19%	5.09%	1	1	1	1	1.00	1.00	-	-20.1%	0.0%	
45	8.61%	9.82%	9.06%	2	2	2	2	1.00	1.00	-			
99	0.48%	0.46%	0.56%	0	0	0	0	-	-	-			
Tot	2.85%	2.82%	2.36%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 18

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	0.58%	0.54%	0.43%	0	0	0	0	-	-	-	0	0.00	
2	0.63%	0.69%	0.61%	0	0	0	0	-	-	-	1	1.00	
3	0.60%	0.53%	0.46%	0	0	0	0	-	-	-	2	1.00	
4	0.52%	0.63%	0.60%	0	0	0	0	-	-	-	3	1.00	
5	0.99%	1.04%	0.87%	0	0	0	0	-	-	-	4	1.25	
6	0.87%	0.82%	0.72%	0	0	0	0	-	-	-	5	1.50	
7	0.85%	1.10%	1.22%	0	0	0	0	-	-	-	6	1.75	
8	0.90%	0.88%	0.85%	0	0	0	0	-	-	-	7	2.00	
9	1.41%	1.12%	1.21%	0	0	0	0	-	-	-	8	2.25	
10	1.32%	0.96%	0.94%	0	0	0	0	-	-	-	9	2.50	
11	0.94%	0.81%	0.70%	0	0	0	0	-	-	-			
12	1.16%	1.27%	1.33%	0	0	0	0	-	-	-			
13	2.24%	2.35%	1.66%	0	0	0	0	-	-	-			
14	2.71%	1.88%	1.57%	0	0	0	0	-	-	-			
15	2.50%	2.64%	2.72%	0	0	0	0	-	-	-			
16	1.01%	3.99%	0.81%	0	0	0	0	-	-	-			
17	1.44%	0.84%	1.16%	0	0	0	0	-	-	-			
18	0.84%	0.88%	4.13%	0	0	0	0	0.75	1.00	(0.25)			
19	3.90%	2.00%	0.05%	0	0	0	0	-	-	-			
20	6.45%	6.87%	4.35%	1	1	0	1	1.00	-	1.00	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	4.03%	5.68%	5.22%	0	1	1	1	1.00	-	1.00			
22	3.88%	6.61%	7.76%	0	1	1	1	1.00	1.00	-	2019	5,072,274	2,437
23	0.69%	1.73%	1.17%	0	0	0	0	-	-	-			
24	0.17%	1.59%	0.41%	0	0	0	0	-	-	-	2018	2,320,191	1,239
25	0.86%	3.27%	0.08%	0	0	0	0	-	-	-			
26	1.02%	0.96%	1.44%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.42%	0.36%	0.47%	0	0	0	0	-	-	-			
40	1.03%	1.93%	1.18%	0	0	0	0	0.75	1.00	(0.25)		2,752,083	1,198
41	2.06%	1.95%	1.97%	0	0	0	0	0.75	1.00	(0.25)			
42	0.62%	1.10%	1.32%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	1.02%	1.86%	2.84%	0	0	0	0	-	-	-			
44	1.96%	2.07%	1.05%	0	0	0	0	-	-	-		118.6%	96.7%
45	4.33%	6.35%	5.37%	0	1	1	1	1.00	-	1.00			
99	0.43%	0.43%	0.00%	0	0	0	0	-	-	-			
Tot	0.99%	1.06%	0.97%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 20

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	5.47%	4.04%	2.92%	1	0	0	0	-	-	-	0	0.00	
2	3.84%	2.18%	2.16%	0	0	0	0	0.75	1.00	(0.25)	1	1.00	
3	4.04%	3.29%	3.12%	0	0	0	0	0.75	1.00	(0.25)	2	1.00	
4	2.90%	2.63%	2.46%	0	0	0	0	0.75	1.00	(0.25)	3	1.00	
5	6.36%	4.35%	3.70%	1	0	0	0	0.75	1.00	(0.25)	4	1.25	
6	5.16%	3.50%	3.36%	1	0	0	0	0.75	1.00	(0.25)	5	1.50	
7	6.46%	4.70%	4.44%	1	0	0	0	0.75	1.00	(0.25)	6	1.75	
8	6.24%	5.69%	4.08%	1	1	0	1	1.00	1.00	-	7	2.00	
9	6.15%	4.82%	4.15%	1	0	0	0	0.75	1.00	(0.25)	8	2.25	
10	7.28%	5.95%	4.45%	1	1	0	1	1.00	1.00	-	9	2.50	
11	6.61%	3.94%	3.96%	1	0	0	0	0.75	1.00	(0.25)			
12	7.64%	5.55%	4.67%	1	1	0	1	1.00	1.00	-			
13	9.26%	8.38%	5.87%	2	2	1	2	1.00	1.00	-			
14	11.27%	9.64%	7.40%	3	2	1	2	1.00	1.00	-			
15	14.61%	11.33%	9.79%	3	3	2	3	1.00	1.25	(0.25)			
16	16.39%	12.01%	10.67%	3	3	2	3	1.00	1.50	(0.50)			
17	14.00%	13.66%	4.59%	3	3	0	3	1.00	1.25	(0.25)			
18	8.63%	9.10%	11.61%	2	2	3	2	1.00	1.25	(0.25)			
19	15.81%	17.14%	12.69%	3	4	3	3	1.00	1.00	-			
20	16.33%	16.15%	11.27%	3	3	3	3	1.00	1.50	(0.50)	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	24.33%	24.69%	19.44%	5	5	4	5	1.50	1.75	(0.25)			
22	27.23%	23.86%	18.65%	5	5	4	5	1.50	1.75	(0.25)	2019	134,227,472	38,379
23	7.28%	6.73%	4.91%	1	1	0	1	1.00	1.25	(0.25)			
24	5.53%	6.27%	3.13%	1	1	0	1	1.00	1.00	-	2018	160,489,888	38,379
25	15.05%	11.07%	8.15%	3	3	2	3	1.00	1.00	-			
26	14.32%	12.78%	9.13%	3	3	2	3	1.00	1.50	(0.50)	<u>Difference:</u>	<u>Difference:</u>	
27	3.97%	3.33%	2.80%	0	0	0	0	0.75	1.00	(0.25)			
40	13.23%	6.71%	5.81%	3	1	1	1	1.00	1.50	(0.50)	(26,262,416)	-	
41	8.88%	8.32%	5.72%	2	2	1	2	1.00	1.00	-			
42	7.59%	5.52%	5.10%	1	1	1	1	1.00	1.25	(0.25)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	12.58%	9.34%	9.32%	3	2	2	2	1.00	1.25	(0.25)			
44	13.72%	11.42%	8.40%	3	3	2	3	1.00	1.50	(0.50)	-16.4%	0.0%	
45	22.95%	21.35%	18.47%	4	4	4	4	1.25	1.25	-			
99	1.37%	1.25%	1.57%	0	0	0	0	-	-	-			
Tot	8.59%	6.93%	5.68%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 21

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	1.40%	0.96%	1.09%	0	0	0	0	-	-	-	0	0.00	
2	1.61%	1.72%	1.13%	0	0	0	0	-	-	-	1	1.00	
3	1.39%	1.85%	1.67%	0	0	0	0	-	-	-	2	1.00	
4	1.33%	1.18%	1.03%	0	0	0	0	-	-	-	3	1.00	
5	2.31%	2.23%	1.71%	0	0	0	0	-	-	-	4	1.25	
6	1.65%	2.11%	1.70%	0	0	0	0	-	-	-	5	1.50	
7	3.24%	3.08%	2.27%	0	0	0	0	-	-	-	6	1.75	
8	1.25%	1.73%	2.55%	0	0	0	0	-	-	-	7	2.00	
9	2.60%	2.95%	1.54%	0	0	0	0	0.75	1.00	(0.25)	8	2.25	
10	2.18%	2.88%	3.72%	0	0	0	0	0.75	1.00	(0.25)	9	2.50	
11	1.56%	2.01%	1.49%	0	0	0	0	-	-	-			
12	3.18%	3.36%	2.30%	0	0	0	0	-	-	-			
13	2.67%	4.62%	3.85%	0	0	0	0	0.75	1.00	(0.25)			
14	3.47%	4.04%	2.72%	0	0	0	0	0.75	1.00	(0.25)			
15	5.64%	7.68%	4.49%	1	1	0	1	1.00	1.00	-			
16	6.28%	4.05%	3.18%	1	0	0	0	0.75	1.00	(0.25)			
17	2.48%	1.79%	3.70%	0	0	0	0	-	-	-			
18	5.68%	4.16%	-0.43%	1	0	0	0	0.75	1.00	(0.25)			
19	2.63%	1.65%	1.46%	0	0	0	0	0.75	1.00	(0.25)			
20	4.87%	9.06%	7.18%	0	2	1	1	1.00	1.00	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	7.15%	5.67%	5.80%	1	1	1	1	1.00	1.00	-			
22	3.53%	13.53%	8.85%	0	3	2	2	1.00	1.00	-	2019	12,831,916	5,250
23	3.33%	4.16%	3.62%	0	0	0	0	-	-	-			
24	1.94%	1.63%	0.13%	0	0	0	0	0.75	1.00	(0.25)	2018	15,496,959	5,250
25	2.46%	1.89%	4.08%	0	0	0	0	-	-	-			
26	4.54%	2.21%	3.38%	0	0	0	0	0.75	1.00	(0.25)	<u>Difference:</u>	<u>Difference:</u>	
27	1.41%	0.97%	0.72%	0	0	0	0	-	-	-			
40	3.77%	5.68%	5.28%	0	1	1	1	1.00	1.00	-	(2,665,043)	-	
41	2.15%	3.71%	5.04%	0	0	1	0	0.75	1.00	(0.25)			
42	2.79%	3.53%	3.96%	0	0	0	0	0.75	1.00	(0.25)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	4.00%	2.52%	4.96%	0	0	0	0	0.75	1.00	(0.25)			
44	5.05%	5.17%	4.05%	1	1	0	1	1.00	1.00	-	-17.2%	0.0%	
45	7.38%	7.23%	7.33%	1	1	1	1	1.00	1.00	-			
99	-3.28%	3.97%	0.00%	0	0	0	0	-	-	-			
Tot	2.58%	2.86%	2.49%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 2E

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	1.25%	1.06%	0.86%	0	0	0	0	-	-	-	0	0.00	
2	1.10%	1.12%	0.79%	0	0	0	0	-	-	-	1	1.00	
3	1.07%	1.01%	0.96%	0	0	0	0	-	-	-	2	1.00	
4	0.88%	0.95%	0.80%	0	0	0	0	-	-	-	3	1.00	
5	1.62%	1.48%	1.42%	0	0	0	0	-	-	-	4	1.25	
6	1.54%	1.64%	1.40%	0	0	0	0	-	-	-	5	1.50	
7	1.50%	1.20%	1.19%	0	0	0	0	-	-	-	6	1.75	
8	1.84%	1.92%	1.44%	0	0	0	0	-	-	-	7	2.00	
9	1.95%	1.69%	1.53%	0	0	0	0	-	-	-	8	2.25	
10	1.99%	1.55%	1.34%	0	0	0	0	-	-	-	9	2.50	
11	1.68%	1.17%	1.56%	0	0	0	0	-	-	-			
12	2.39%	2.33%	2.01%	0	0	0	0	-	-	-			
13	3.12%	2.66%	2.76%	0	0	0	0	-	-	-			
14	3.46%	2.38%	2.27%	0	0	0	0	0.75	1.00	(0.25)			
15	4.55%	3.38%	2.79%	0	0	0	0	0.75	1.00	(0.25)			
16	5.74%	5.42%	3.90%	1	1	0	1	1.00	1.00	-			
17	1.48%	0.37%	0.00%	0	0	0	0	-	-	-			
18	2.69%	4.59%	5.97%	0	0	1	0	0.75	1.00	(0.25)			
19	0.35%	1.20%	0.09%	0	0	0	0	-	-	-			
20	3.11%	1.88%	1.89%	0	0	0	0	0.75	1.00	(0.25)	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	5.32%	5.16%	3.29%	1	1	0	1	1.00	1.00	-			
22	3.41%	3.64%	3.11%	0	0	0	0	0.75	1.00	(0.25)	2019	19,303,434	5,118
23	1.20%	3.48%	2.27%	0	0	0	0	0.75	1.00	(0.25)			
24	0.49%	0.46%	0.54%	0	0	0	0	0.75	1.00	(0.25)	2018	23,110,729	5,118
25	8.23%	4.59%	3.23%	2	0	0	0	0.75	1.00	(0.25)			
26	3.42%	0.58%	1.99%	0	0	0	0	0.75	1.00	(0.25)	<u>Difference:</u>	<u>Difference:</u>	
27	0.82%	0.91%	0.81%	0	0	0	0	-	-	-			
40	0.78%	3.27%	3.06%	0	0	0	0	-	-	-	(3,807,294)	-	
41	2.01%	3.23%	1.86%	0	0	0	0	-	-	-			
42	2.15%	1.94%	2.10%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	3.61%	3.35%	3.57%	0	0	0	0	0.75	1.00	(0.25)			
44	4.05%	2.49%	2.91%	0	0	0	0	0.75	1.00	(0.25)	-16.5%	0.0%	
45	5.35%	8.21%	8.92%	1	2	2	2	1.00	1.00	-			
99	0.02%	0.40%	0.61%	0	0	0	0	-	-	-			
Tot	1.58%	1.51%	1.38%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 26

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	0.27%	0.50%	0.28%	0	0	0	0	-	-	-	0	0.00	
2	0.56%	0.41%	0.40%	0	0	0	0	-	-	-	1	1.00	
3	0.49%	0.45%	0.40%	0	0	0	0	-	-	-	2	1.00	
4	0.39%	0.32%	0.36%	0	0	0	0	-	-	-	3	1.00	
5	0.66%	0.63%	0.57%	0	0	0	0	-	-	-	4	1.25	
6	0.42%	0.56%	0.37%	0	0	0	0	-	-	-	5	1.50	
7	0.74%	0.59%	0.47%	0	0	0	0	-	-	-	6	1.75	
8	0.62%	0.84%	0.70%	0	0	0	0	-	-	-	7	2.00	
9	0.66%	0.65%	0.60%	0	0	0	0	-	-	-	8	2.25	
10	1.08%	1.08%	0.45%	0	0	0	0	-	-	-	9	2.50	
11	0.21%	0.16%	0.37%	0	0	0	0	-	-	-			
12	0.92%	1.25%	0.93%	0	0	0	0	-	-	-			
13	1.10%	1.43%	1.10%	0	0	0	0	-	-	-			
14	0.98%	0.92%	0.39%	0	0	0	0	-	-	-			
15	1.99%	2.99%	1.93%	0	0	0	0	-	-	-			
16	0.43%	2.31%	4.17%	0	0	0	0	-	-	-			
17	0.36%	0.32%	0.34%	0	0	0	0	-	-	-			
18	1.93%	1.06%	0.48%	0	0	0	0	-	-	-			
19	0.11%	0.00%	0.00%	0	0	0	0	-	-	-			
20	4.65%	1.85%	1.68%	0	0	0	0	-	-	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	2.17%	1.74%	2.76%	0	0	0	0	-	-	-			
22	1.79%	0.00%	0.00%	0	0	0	0	0.75	1.00	(0.25)	2019	1,191,627	418
23	1.46%	0.41%	0.27%	0	0	0	0	-	-	-			
24	0.00%	0.27%	1.10%	0	0	0	0	-	-	-	2018	1,588,836	418
25	0.43%	1.21%	0.00%	0	0	0	0	-	-	-			
26	0.36%	0.12%	0.27%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.35%	0.40%	0.39%	0	0	0	0	-	-	-			
40	0.08%	0.68%	2.54%	0	0	0	0	-	-	-	(397,209)	-	
41	1.31%	1.11%	1.70%	0	0	0	0	-	-	-			
42	0.66%	1.88%	0.94%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	0.54%	1.04%	1.12%	0	0	0	0	-	-	-			
44	1.00%	2.47%	2.43%	0	0	0	0	-	-	-	-25.0%	0.0%	
45	2.65%	3.63%	3.63%	0	0	0	0	0.75	1.00	(0.25)			
99	0.78%	0.00%	1.85%	0	0	0	0	-	-	-			
Tot	0.59%	0.62%	0.54%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 30

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	0.26%	0.23%	0.31%	0	0	0	0	-	-	-	0	0.00	
2	0.68%	0.60%	0.61%	0	0	0	0	-	-	-	1	1.00	
3	0.57%	0.50%	0.36%	0	0	0	0	-	-	-	2	1.00	
4	0.62%	0.64%	0.55%	0	0	0	0	-	-	-	3	1.00	
5	0.96%	0.94%	1.03%	0	0	0	0	-	-	-	4	1.25	
6	0.74%	0.63%	0.70%	0	0	0	0	-	-	-	5	1.50	
7	0.69%	0.94%	1.15%	0	0	0	0	-	-	-	6	1.75	
8	1.07%	1.24%	1.01%	0	0	0	0	-	-	-	7	2.00	
9	0.95%	1.54%	1.70%	0	0	0	0	-	-	-	8	2.25	
10	1.49%	1.07%	0.72%	0	0	0	0	-	-	-	9	2.50	
11	1.40%	1.03%	1.18%	0	0	0	0	-	-	-			
12	1.49%	1.22%	1.06%	0	0	0	0	-	-	-			
13	1.31%	1.03%	0.99%	0	0	0	0	-	-	-			
14	2.56%	2.21%	2.66%	0	0	0	0	-	-	-			
15	3.32%	4.49%	3.84%	0	0	0	0	0.75	1.00	(0.25)			
16	3.77%	4.28%	6.29%	0	0	1	0	0.75	1.00	(0.25)			
17	1.39%	0.00%	1.15%	0	0	0	0	-	-	-			
18	0.32%	0.55%	1.67%	0	0	0	0	-	-	-			
19	1.94%	0.35%	1.34%	0	0	0	0	-	-	-			
20	1.34%	1.27%	0.69%	0	0	0	0	-	-	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	1.66%	3.04%	2.25%	0	0	0	0	-	-	-			
22	1.87%	6.41%	5.69%	0	1	1	1	1.00	1.00	-	2019	905,486	621
23	0.75%	1.05%	1.16%	0	0	0	0	-	-	-			
24	1.27%	1.22%	0.25%	0	0	0	0	-	-	-	2018	1,141,748	621
25	1.24%	0.83%	0.31%	0	0	0	0	-	-	-			
26	3.39%	3.01%	2.85%	0	0	0	0	-	-	-	<u>Difference:</u>	<u>Difference:</u>	
27	0.40%	0.51%	0.53%	0	0	0	0	-	-	-			
40	0.51%	0.00%	0.00%	0	0	0	0	-	-	-	(236,262)	-	
41	1.37%	1.19%	1.14%	0	0	0	0	-	-	-			
42	0.73%	0.44%	0.19%	0	0	0	0	-	-	-	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	3.05%	4.30%	3.16%	0	0	0	0	-	-	-			
44	4.92%	4.96%	4.47%	0	0	0	0	-	-	-	-20.7%	0.0%	
45	1.82%	2.01%	2.43%	0	0	0	0	-	-	-			
99	0.00%	0.00%	1.40%	0	0	0	0	-	-	-			
Tot	0.87%	0.90%	0.89%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class MM

Terr	Residual Market Share			Indicated Mkt Share Range			Selected Range*	2019 Credits	2018 Credits	Change	Residual Mark Shr Group	Keep Out Credits	
	Aug-16	Aug-17	May-18	2017	2018	2019							
1	0.97%	1.12%	0.98%	0	0	0	0	-	-	-	0	0.00	
2	1.27%	1.00%	0.86%	0	0	0	0	-	-	-	1	1.00	
3	1.32%	1.23%	1.07%	0	0	0	0	-	-	-	2	1.00	
4	1.09%	1.03%	0.96%	0	0	0	0	-	-	-	3	1.00	
5	1.74%	1.53%	1.34%	0	0	0	0	-	-	-	4	1.25	
6	1.74%	1.41%	1.10%	0	0	0	0	-	-	-	5	1.50	
7	2.26%	1.99%	1.62%	0	0	0	0	-	-	-	6	1.75	
8	1.89%	1.67%	1.49%	0	0	0	0	-	-	-	7	2.00	
9	2.38%	1.89%	1.79%	0	0	0	0	-	-	-	8	2.25	
10	2.00%	1.95%	1.89%	0	0	0	0	-	-	-	9	2.50	
11	1.75%	2.15%	1.86%	0	0	0	0	-	-	-			
12	2.98%	2.61%	2.30%	0	0	0	0	-	-	-			
13	3.61%	2.86%	2.49%	0	0	0	0	0.75	1.00	(0.25)			
14	3.47%	3.10%	2.90%	0	0	0	0	0.75	1.00	(0.25)			
15	5.88%	5.72%	5.50%	1	1	1	1	1.00	1.00	-			
16	5.29%	2.99%	2.69%	1	0	0	0	0.75	1.00	(0.25)			
17	3.92%	2.47%	3.07%	0	0	0	0	-	-	-			
18	5.25%	4.05%	2.84%	1	0	0	0	0.75	1.00	(0.25)			
19	3.92%	2.27%	3.00%	0	0	0	0	-	-	-			
20	4.38%	4.48%	3.37%	0	0	0	0	-	-	-	<u>Available Credit Prem:</u>	<u>Credit Eligible Exp:</u>	
21	7.83%	6.46%	3.62%	1	1	0	1	1.00	1.00	-			
22	4.92%	4.00%	6.68%	0	0	1	0	0.75	1.00	(0.25)	2019	4,427,633	20,019
23	2.83%	2.16%	0.99%	0	0	0	0	0.75	1.00	(0.25)			
24	1.63%	1.76%	1.52%	0	0	0	0	0.75	1.00	(0.25)	2018	5,626,829	20,019
25	3.57%	3.60%	1.33%	0	0	0	0	-	-	-			
26	6.82%	5.13%	2.91%	1	1	0	1	1.00	1.00	-	<u>Difference:</u>	<u>Difference:</u>	
27	1.05%	0.98%	0.83%	0	0	0	0	-	-	-			
40	3.91%	3.49%	3.04%	0	0	0	0	0.75	1.00	(0.25)	(1,199,196)	-	
41	4.05%	3.65%	3.29%	0	0	0	0	0.75	1.00	(0.25)			
42	4.69%	3.47%	2.90%	0	0	0	0	0.75	1.00	(0.25)	<u>Percent Change:</u>	<u>Percent Change:</u>	
43	2.81%	2.42%	1.40%	0	0	0	0	0.75	1.00	(0.25)			
44	8.90%	6.60%	7.55%	2	1	1	1	1.00	1.00	-	-21.3%	0.0%	
45	5.03%	4.87%	4.20%	1	0	0	0	0.75	1.00	(0.25)			
99	1.18%	1.23%	1.43%	0	0	0	0	-	-	-			
Tot	1.92%	1.68%	1.45%										

*Selection Criteria

- a. If the indicated residual market share group equal in all three years, select that residual market share group.
- b. If two of the three years indicate the same residual market share group, select that residual market share group.
- c. If all three years indicate a different residual market share group, select the median residual market share group.

To: CAR Actuarial Committee
From: Geoff Arnold, Plymouth Rock Assurance Corp.
Subject: AC 18.04 – Quota Share Credits for Policies Effective April 1, 2019 and Later

At its June 13th meeting, the Actuarial Committee considered the likelihood that the credit-setting methodology developed by Commissioner Murphy in 2011 would continue to produce such extreme indications that they would once again be unacceptable to the Governing Committee, the DOI, or both. While there seemed to be a consensus that freezing the credits at the current level might be the only alternative, some remained troubled by the fact that – over time – a frozen credit offer not only continues to give credits to risks that no longer need them, but also denies credits to risks which might have more recently become eligible. But there was also concern that any change to the current methodology intended to address this might need to be so extensive that the resulting offer could not gain DOI approval.

The following describes an approach that addresses the first concern – a lack of responsiveness to changing needs – while making fairly minor changes to Commissioner Murphy’s methodology (see Attachment to CAR Bulletin 953, December 20, 2011). The two goals are straightforward:

- Change as little of the methodology, as currently embodied in Rule 29, as possible.
- Allow annual increases and decreases in the credit offer that vary as a direct function of each cell’s (class-territory combination) representation in MAIP, but which are modest enough to be acceptable.

Toward these ends, there is one non-substantive methodological change, introduced only as a means of simplifying the logic and eliminating the need for multiple tables requiring annual updating. An explicit table of relative ranges replaces the various tables of absolute ranges used previously. In his December 19, 2011, letter to CAR, Commissioner Murphy used cutoffs of 5%, 8%, 11%, 17%, 23%, 29%, 35%, 41% and 47%. The letter also cited [on page 3 of 8] a 2011 residual market share of 2.8%, generating implicit cutoffs, expressed as multiples of the 2.8% MAIP, of 1.785, 2.855, 3.930, 6.070, 8.215, 10.355, 12.500, 14.645 and 16.785. In implementing the following approach, these cutoffs were made explicit – not only for ease of maintenance, as already stated, but also for clarity and transparency. In a very real sense, this move us closer to the spirit of the Commissioner Murphy’s original decision and certainly does not depart from it in any way.

Of course this alone does nothing whatsoever to address the magnitude of changes which the existing methodology continues to generate. That is accomplished by tempering the annual change in the number of credits offered for each of the 340 class-territory combinations covered by the Commissioner’s methodology, while leaving all other aspects of the methodology untouched. Toward this end, two parameters have been introduced, a ‘Credit Decrease Tempering Factor’ and a ‘Credit Increase Tempering Factor’, which limit the decrease or increase that any class-territory can see in a single year. The values selected – although the Actuarial Committee may wish to choose others – were 33.3% and 16.7% respectively. So, for example, a cell with 1.00 credits today, but which now indicates none (Class 25-Territory 24 is one example), would drop to 0.665 credits (All rounding is to the nearest 0.005). In the subsequent years, presumably, that would drop to 0.445, then 0.295, and finally – in the fourth year – to

zero, as there is also a minimum credit value of 0.250 for cells with decreasing indications, below which no credit offer is made.

When using a methodology which permits such fractional credit values between 0.00 and 1.00 (We always have permitted fractional values between 1.00 and 3.00), it seems counterproductive if we do not also expand the Credit Level Group table to include levels that indicate 0.25, 0.50, and 0.75 credits too. The range between the threshold for zero credits (1.195 times the MAIP average) and the threshold for one credit (1.785 times the MAIP average) was quartered, but this is another place in which the Committee may wish to select differently.

By tempering decreases to this degree, the overall class and territory changes no longer include any decreases of the magnitude which led to earlier adverse decisions. Indeed, there is no class or territory with fewer credit eligible exposure than before (see below), and only four territories show even the slightest decrease in Potential Credit Premium – Territory 40 (-0.2%), Territory 18 (-0.2%), Territory 2 (-8.5%), and Territory 42 (-13.0%). It is critical to point out, however, that the number of credit eligible exposures cannot decrease in year one, since it is impossible to go from 1.00 to 0.00 in less than four years. The number can only drop in the long run – a trade-off that is of course implicit in the tempered approach. Nonetheless, during the transition the magnitudes of many factors are gradually dropping, so that the Potential Credit Premium per credit eligible exposure drops markedly even in year one – from \$2,037 of MAIP QS Premium per eligible exposure to \$1,283, a 37.0% decrease.

Since a key concern articulated in June was that there might be frozen cells that have acquired a need for credits since 2014 when the frozen 2015 offer was developed, increases are permitted, but they are tempered more severely than decreases. The ‘Credit Increase Tempering Factor’ is only half the ‘Credit Decrease Tempering Factor’, but again, this is something the Committee might wish to change. There are quite a few cells with very modest increases – going from no credits to 0.165 credits or less. Because the ‘Credit Increase Tempering Factor’ is half the ‘Credit Decrease Tempering Factor’, the Minimum Credit Factor is also halved. Using a 0.125 minimum instead of 0.250 permits a newly eligible cell to get 0.165 credits, but not for example, the somewhat ridiculous 0.040 credits that a preliminary indication of 0.25 credits would produce after tempering. This does impose a higher bar for giving new credits than there is for removing them, and once again the Committee may wish to decide otherwise.

The final credit offer has the potential to be acceptable to the DOI, as it achieves the two goals stated at the outset. While the change in Credit Eligible Exposures is a meaningless number in year one, given that cells can only gain eligibility and will drop from the list only over time, the change in Potential Credit Premium is, for the first time in many years, a modest single-digit number (+8.7%). And, equally important, no single class or territory has anywhere near the magnitude of decrease which led to earlier rejections. Nor should it produce large, unacceptable swings in future years as the credit offer moves gradually toward equilibrium.

CREDIT LEVEL GROUPS

Disproportionality Ranges

>	≤	Group	Credits
0.000	1.195	0	0.000
1.195	1.395	1	0.250
1.395	1.590	2	0.500
1.590	1.785	3	0.750
1.785	2.855	4	1.000
2.855	3.930	5	1.125
3.930	6.070	6	1.250
6.070	8.215	7	1.500
8.215	10.355	8	1.750
10.355	12.500	9	2.000
12.500	14.645	10	2.250
14.645	16.785	11	2.500
16.785	100000	12	3.000

Credit Decrease Tempering Factor = 33.3%
 Credit Increase Tempering Factor = 16.7%
 Minimum Credit Factor = 0.250

Summary by Territory

Territory	Current (Y=0) Credit Factors			Proposed (Y+1) Credit Factors			
	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium (\$000's)	Credit Eligible Exposures	%Δ	Potential Credit Premium (\$000's)	%Δ
1	186,954	-	\$ -	807	#N/A	\$ 340	#N/A
2	250,665	1,199	\$ 3,110	1,199	+0.0%	\$ 2,846	-8.5%
3	538,495	2,883	\$ 7,971	2,883	+0.0%	\$ 7,971	+0.0%
4	341,409	1,569	\$ 4,748	1,569	+0.0%	\$ 4,748	+0.0%
5	529,296	3,675	\$ 10,653	25,004	+580.3%	\$ 15,019	+41.0%
6	353,127	1,905	\$ 5,834	14,087	+639.3%	\$ 8,416	+44.2%
7	362,510	15,688	\$ 30,904	16,567	+5.6%	\$ 31,393	+1.6%
8	206,027	8,090	\$ 17,421	8,090	+0.0%	\$ 17,607	+1.1%
9	207,370	10,469	\$ 23,703	10,469	+0.0%	\$ 23,848	+0.6%
10	99,797	4,923	\$ 11,069	4,923	+0.0%	\$ 11,179	+1.0%
11	74,211	610	\$ 2,425	2,846	+367.0%	\$ 3,104	+28.0%
12	199,908	8,656	\$ 22,389	16,778	+93.8%	\$ 24,156	+7.9%
13	223,406	20,959	\$ 38,878	184,221	+779.0%	\$ 79,798	+105.2%
14	75,814	7,779	\$ 20,188	63,858	+720.9%	\$ 36,446	+80.5%
15	27,245	2,977	\$ 7,508	22,581	+658.5%	\$ 13,063	+74.0%
16	14,915	13,363	\$ 24,373	14,772	+10.5%	\$ 24,781	+1.7%
17	17,732	532	\$ 1,477	948	+78.2%	\$ 1,585	+7.3%
18	16,502	13,868	\$ 25,962	13,868	+0.0%	\$ 25,914	-0.2%
19	16,212	631	\$ 1,949	13,151	+1983.8%	\$ 5,270	+170.3%
20	19,022	15,374	\$ 32,352	18,746	+21.9%	\$ 33,685	+4.1%
21	49,776	48,554	\$ 117,937	49,776	+2.5%	\$ 124,159	+5.3%
22	16,530	16,530	\$ 41,628	16,530	+0.0%	\$ 43,732	+5.1%
23	45,144	2,982	\$ 8,732	3,184	+6.8%	\$ 8,824	+1.0%
24	25,847	1,254	\$ 2,985	2,536	+102.3%	\$ 3,134	+5.0%
25	17,866	624	\$ 2,100	918	+47.2%	\$ 2,216	+5.6%
26	23,111	1,925	\$ 5,732	20,304	+954.7%	\$ 9,343	+63.0%
27	426,596	2,055	\$ 4,449	2,055	+0.0%	\$ 4,449	+0.0%
40	22,003	17,653	\$ 27,732	17,919	+1.5%	\$ 27,679	-0.2%
41	62,663	53,099	\$ 72,571	53,099	+0.0%	\$ 72,853	+0.4%
42	79,990	64,343	\$ 125,477	65,506	+1.8%	\$ 109,211	-13.0%
43	50,088	41,789	\$ 83,292	42,236	+1.1%	\$ 83,736	+0.5%
44	38,457	34,017	\$ 53,487	37,972	+11.6%	\$ 55,367	+3.5%
45	53,420	44,669	\$ 107,573	52,950	+18.5%	\$ 113,348	+5.4%
99	11,390	-	\$ -	-	#N/A	\$ -	#N/A
Total	4,683,496	464,642	\$ 946,609	802,351	+72.7%	1,029,218	+8.7%

Summary by Rate Class

Rate Class	Current (Y=0) Credit Factors			Proposed (Y+1) Credit Factors			
	Total Mkt Exposures	Credit Eligible Exposures	Potential Credit Premium (\$000's)	Credit Eligible Exposures	%Δ	Potential Credit Premium (\$000's)	%Δ
10	3,132,743	308,597	\$ 551,668	571,354	+85.1%	\$ 606,623	+10.0%
15	888,490	9,533	\$ 15,475	24,986	+162.1%	\$ 18,717	+20.9%
17	171,806	75,469	\$ 169,734	111,172	+47.3%	\$ 180,204	+6.2%
18	55,560	1,239	\$ 2,310	4,873	+293.4%	\$ 3,143	+36.1%
20	39,291	38,379	\$ 160,507	39,185	+2.1%	\$ 167,979	+4.7%
21	14,759	5,250	\$ 15,492	8,628	+64.3%	\$ 16,805	+8.5%
25	84,167	5,118	\$ 23,111	11,863	+131.8%	\$ 26,366	+14.1%
26	61,754	418	\$ 1,586	966	+131.3%	\$ 1,745	+10.0%
30	62,623	621	\$ 1,132	2,906	+368.0%	\$ 1,859	+64.2%
M/M	172,303	20,019	\$ 5,593	26,418	+32.0%	\$ 5,775	+3.3%
Total	4,683,496	464,642	\$ 946,609	802,351	+72.7%	1,029,218	+8.7%

Summary Statistics	Current (Y=0) Credit Factors		Proposed (Y+1) Credit Factors			
	Credit Eligible Exposures as a % of Total Mkt.	Average Credit Premium per Eligible Exp.	Credit Eligible Exposures as a % of Total Mkt.	%Δ	Average Credit Premium per Eligible Exp.	%Δ
	9.9%	\$2,037	17.1%	+72.7%	\$1,283	-37.0%

Commonwealth Automobile Reinsurers - 4/1/2016 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 17
Relative Range Methodology
Rate Class 17

Terr	Indication										
	Residual Market Share			Indicated Mkt Share Range			Selected Range	Y=0 Credits	Y+1 Credits	Selection	
	Y-2	Y-1	Y=0	Y-2	Y-1	Y=0				Preliminary	Final
1	1.073	1.162	1.062	0	0	0	0	-	-	-	-
2	1.138	1.177	1.091	0	0	0	0	-	-	-	-
3	1.294	1.274	1.218	1	1	1	1	-	0.250	0.040	-
4	1.356	1.271	1.284	1	1	1	1	-	0.250	0.040	-
5	1.747	1.787	1.698	3	4	3	3	-	0.750	0.125	0.125
6	1.792	1.700	1.427	4	3	2	3	-	0.750	0.125	0.125
7	2.096	1.976	1.553	4	4	2	4	1.000	1.000	1.000	1.000
8	2.279	1.800	1.874	4	4	4	4	1.000	1.000	1.000	1.000
9	2.022	2.424	2.401	4	4	4	4	1.000	1.000	1.000	1.000
10	2.308	2.149	1.965	4	4	4	4	1.000	1.000	1.000	1.000
11	1.753	1.633	1.554	3	3	2	3	-	0.750	0.125	0.125
12	2.693	2.278	1.950	4	4	4	4	1.000	1.000	1.000	1.000
13	3.164	3.239	2.968	5	5	5	5	1.000	1.125	1.020	1.020
14	3.373	3.153	2.684	5	5	4	5	1.000	1.125	1.020	1.020
15	3.500	2.519	2.443	5	4	4	4	1.000	1.000	1.000	1.000
16	4.510	3.421	3.359	6	5	5	5	1.000	1.125	1.020	1.020
17	2.037	3.447	3.281	4	5	5	5	1.000	1.125	1.020	1.020
18	5.633	3.357	3.493	6	5	5	5	1.000	1.125	1.020	1.020
19	4.902	4.418	3.980	6	6	6	6	1.000	1.250	1.040	1.040
20	5.329	5.480	4.471	6	6	6	6	1.000	1.250	1.040	1.040
21	7.510	7.718	6.454	7	7	7	7	1.000	1.500	1.085	1.085
22	7.121	6.542	5.998	7	7	6	7	1.000	1.500	1.085	1.085
23	4.434	2.453	2.380	6	4	4	4	1.000	1.000	1.000	1.000
24	1.812	1.840	1.353	4	4	1	4	-	1.000	0.165	0.165
25	2.920	3.669	2.437	5	5	4	5	1.000	1.125	1.020	1.020
26	4.044	2.606	1.466	6	4	2	4	1.000	1.000	1.000	1.000
27	1.075	1.141	0.956	0	0	0	0	-	-	-	-
40	3.119	3.077	3.736	5	5	5	5	1.000	1.125	1.020	1.020
41	3.469	3.712	2.760	5	5	4	5	1.000	1.125	1.020	1.020
42	2.103	1.996	1.640	4	4	3	4	1.000	1.000	1.000	1.000
43	4.139	3.718	3.806	6	5	5	5	1.000	1.125	1.020	1.020
44	4.449	3.794	4.060	6	5	6	6	1.000	1.250	1.040	1.040
45	6.399	7.184	7.228	7	7	7	7	1.000	1.500	1.085	1.085
99	0.355	0.334	0.447	0	0	0	0	-	-	-	-
Tot	2.114	2.062	1.884								

Credit Eligibility			
Current (Y=0)		Proposed (Y+1)	
Exposures	Premium	Exposures	Premium
-	\$ -	-	\$ -
-	\$ -	-	\$ -
-	\$ -	-	\$ -
-	\$ -	-	\$ -
-	\$ -	20,002	\$ 3,809,143
-	\$ -	12,182	\$ 2,581,397
13,010	\$ 22,165,881	13,010	\$ 22,165,881
6,717	\$ 12,773,606	6,717	\$ 12,773,606
7,768	\$ 14,880,723	7,768	\$ 14,880,723
3,829	\$ 7,450,288	3,829	\$ 7,450,288
-	\$ -	2,237	\$ 629,864
6,842	\$ 15,231,545	6,842	\$ 15,231,545
9,869	\$ 21,395,400	9,869	\$ 21,823,308
3,400	\$ 9,278,561	3,400	\$ 9,464,132
1,094	\$ 3,039,939	1,094	\$ 3,039,939
754	\$ 2,024,765	754	\$ 2,065,261
438	\$ 1,010,469	438	\$ 1,030,679
472	\$ 1,488,521	472	\$ 1,518,291
414	\$ 1,040,168	414	\$ 1,081,775
687	\$ 2,232,877	687	\$ 2,322,192
2,010	\$ 7,509,860	2,010	\$ 8,148,198
863	\$ 3,118,352	863	\$ 3,383,412
1,441	\$ 3,938,036	1,441	\$ 3,938,036
-	\$ -	1,282	\$ 516,328
415	\$ 1,210,101	415	\$ 1,234,303
839	\$ 2,162,832	839	\$ 2,162,832
-	\$ -	-	\$ -
929	\$ 2,124,475	929	\$ 2,166,964
3,149	\$ 6,177,756	3,149	\$ 6,301,311
3,656	\$ 10,199,757	3,656	\$ 10,199,757
2,239	\$ 6,250,481	2,239	\$ 6,375,490
2,336	\$ 5,069,020	2,336	\$ 5,271,781
2,301	\$ 7,961,062	2,301	\$ 8,637,752
-	\$ -	-	\$ -
75,469	\$ 169,734,476	111,172	\$ 180,204,189

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2016 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 20
Relative Range Methodology
Rate Class 20

Terr	Indication										
	Residual Market Share			Indicated Mkt Share Range			Selected Range	Y=0 Credits	Y+1 Credits	Selection	
	Y-2	Y-1	Y=0	Y-2	Y-1	Y=0				Preliminary	Final
1	4.066	2.953	2.331	6	5	4	5	-	1.125	0.190	0.190
2	2.848	1.597	1.719	4	3	3	3	1.000	0.750	0.915	0.915
3	3.001	2.406	2.490	5	4	4	4	1.000	1.000	1.000	1.000
4	2.157	1.920	1.966	4	4	4	4	1.000	1.000	1.000	1.000
5	4.727	3.183	2.951	6	5	5	5	1.000	1.125	1.020	1.020
6	3.834	2.556	2.682	5	4	4	4	1.000	1.000	1.000	1.000
7	4.800	3.434	3.539	6	5	5	5	1.000	1.125	1.020	1.020
8	4.638	4.164	3.251	6	6	5	6	1.000	1.250	1.040	1.040
9	4.571	3.523	3.306	6	5	5	5	1.000	1.125	1.020	1.020
10	5.408	4.349	3.546	6	6	5	6	1.000	1.250	1.040	1.040
11	4.912	2.883	3.162	6	5	5	5	1.000	1.125	1.020	1.020
12	5.673	4.057	3.721	6	6	5	6	1.000	1.250	1.040	1.040
13	6.881	6.131	4.683	7	7	6	7	1.000	1.500	1.085	1.085
14	8.368	7.050	5.904	8	7	6	7	1.000	1.500	1.085	1.085
15	10.848	8.288	7.808	9	8	7	8	1.250	1.750	1.335	1.335
16	12.175	8.778	8.507	9	8	8	8	1.500	1.750	1.540	1.540
17	10.401	9.990	3.657	9	8	5	8	1.250	1.750	1.335	1.335
18	6.408	6.653	9.260	7	7	8	7	1.250	1.500	1.290	1.290
19	11.745	12.536	10.120	9	10	8	9	1.000	2.000	1.165	1.165
20	12.127	11.809	8.990	9	9	8	9	1.500	2.000	1.585	1.585
21	18.068	18.054	15.504	12	12	11	12	1.750	3.000	1.960	1.960
22	20.226	17.445	14.872	12	12	11	12	1.750	3.000	1.960	1.960
23	5.407	4.923	3.916	6	6	5	6	1.250	1.250	1.250	1.250
24	4.105	4.584	2.494	6	6	4	6	1.000	1.250	1.040	1.040
25	11.176	8.097	6.499	9	7	7	7	1.000	1.500	1.085	1.085
26	10.638	9.347	7.278	9	8	7	8	1.500	1.750	1.540	1.540
27	2.951	2.438	2.235	5	4	4	4	1.000	1.000	1.000	1.000
40	9.827	4.907	4.634	8	6	6	6	1.500	1.250	1.415	1.415
41	6.595	6.084	4.562	7	7	6	7	1.000	1.500	1.085	1.085
42	5.636	4.037	4.068	6	6	6	6	1.250	1.250	1.250	1.250
43	9.345	6.832	7.436	8	7	7	7	1.250	1.500	1.290	1.290
44	10.188	8.348	6.699	8	8	7	8	1.500	1.750	1.540	1.540
45	17.047	15.611	14.732	12	11	11	11	1.250	2.500	1.460	1.460
99	1.015	0.915	1.253	0	0	1	0	-	-	-	-
Tot	6.378	5.066	4.528								

Credit Eligibility			
Current (Y=0)		Proposed (Y+1)	
Exposures	Premium	Exposures	Premium
-	\$ -	807	\$ 339,727
1,199	\$ 3,110,197	1,199	\$ 2,845,830
2,883	\$ 7,970,649	2,883	\$ 7,970,649
1,569	\$ 4,747,521	1,569	\$ 4,747,521
3,675	\$ 10,652,969	3,675	\$ 10,866,029
1,905	\$ 5,834,487	1,905	\$ 5,834,487
2,678	\$ 8,738,514	2,678	\$ 8,913,284
1,374	\$ 4,647,773	1,374	\$ 4,833,684
2,043	\$ 7,224,740	2,043	\$ 7,369,234
763	\$ 2,740,730	763	\$ 2,850,360
610	\$ 2,425,392	610	\$ 2,473,900
1,815	\$ 7,157,900	1,815	\$ 7,444,216
3,511	\$ 13,584,657	3,511	\$ 14,739,352
1,153	\$ 5,203,214	1,153	\$ 5,645,487
365	\$ 1,982,456	365	\$ 2,117,263
379	\$ 2,407,879	379	\$ 2,472,089
95	\$ 466,625	95	\$ 498,355
195	\$ 1,173,919	195	\$ 1,211,485
148	\$ 695,251	148	\$ 809,967
269	\$ 2,205,271	269	\$ 2,330,236
1,011	\$ 10,818,346	1,011	\$ 12,116,548
467	\$ 4,962,245	467	\$ 5,557,714
587	\$ 3,410,657	587	\$ 3,410,657
408	\$ 1,653,914	408	\$ 1,720,070
147	\$ 641,200	147	\$ 695,702
348	\$ 2,262,036	348	\$ 2,322,357
2,055	\$ 4,448,743	2,055	\$ 4,448,743
419	\$ 2,539,707	419	\$ 2,395,790
1,170	\$ 4,088,574	1,170	\$ 4,436,102
1,849	\$ 11,000,551	1,849	\$ 11,000,551
1,030	\$ 6,268,907	1,030	\$ 6,469,512
1,200	\$ 6,677,001	1,200	\$ 6,855,054
1,062	\$ 8,764,953	1,062	\$ 10,237,465
-	\$ -	-	\$ -
38,379	\$ 160,506,977	39,185	\$ 167,979,422

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

Commonwealth Automobile Reinsurers - 4/1/2016 Credit Offer
Indicated Private Passenger Auto Residual Market Share Group - Operator Class 21
Relative Range Methodology
Rate Class 21

Terr	Indication										
	Residual Market Share			Indicated Mkt Share Range			Selected Range	Y=0 Credits	Y+1 Credits	Selection	
	Y-2	Y-1	Y=0	Y-2	Y-1	Y=0				Preliminary	Final
1	1.039	0.701	0.867	0	0	0	0	-	-	-	-
2	1.195	1.255	0.905	1	1	0	1	-	0.250	0.040	-
3	1.034	1.355	1.335	0	1	1	1	-	0.250	0.040	-
4	0.989	0.865	0.823	0	0	0	0	-	-	-	-
5	1.714	1.629	1.363	3	3	1	3	-	0.750	0.125	0.125
6	1.228	1.545	1.353	1	2	1	1	-	0.250	0.040	-
7	2.409	2.250	1.807	4	4	4	4	-	1.000	0.165	0.165
8	0.931	1.265	2.032	0	1	4	1	-	0.250	0.040	-
9	1.932	2.157	1.231	4	4	1	4	1.000	1.000	1.000	1.000
10	1.617	2.109	2.965	3	4	5	4	1.000	1.000	1.000	1.000
11	1.160	1.472	1.187	0	2	0	0	-	-	-	-
12	2.359	2.460	1.834	4	4	4	4	-	1.000	0.165	0.165
13	1.980	3.379	3.071	4	5	5	5	1.000	1.125	1.020	1.020
14	2.578	2.957	2.169	4	5	4	4	1.000	1.000	1.000	1.000
15	4.191	5.617	3.580	6	6	5	6	1.000	1.250	1.040	1.040
16	4.666	2.963	2.536	6	5	4	5	1.000	1.125	1.020	1.020
17	1.843	1.309	2.949	4	1	5	4	-	1.000	0.165	0.165
18	4.218	3.044	-	6	5	0	5	1.000	1.125	1.020	1.020
19	1.955	1.203	1.164	4	1	0	1	1.000	0.250	0.750	0.750
20	3.615	6.628	5.723	5	7	6	6	1.000	1.250	1.040	1.040
21	5.308	4.148	4.629	6	6	6	6	1.000	1.250	1.040	1.040
22	2.622	9.896	7.058	4	8	7	7	1.000	1.500	1.085	1.085
23	2.473	3.045	2.883	4	5	5	5	-	1.125	0.190	0.190
24	1.438	1.194	0.107	2	0	0	0	1.000	-	0.665	0.665
25	1.829	1.382	3.255	4	1	5	4	-	1.000	0.165	0.165
26	3.372	1.612	2.698	5	3	4	4	1.000	1.000	1.000	1.000
27	1.049	0.713	0.574	0	0	0	0	-	-	-	-
40	2.804	4.153	4.207	4	6	6	6	1.000	1.250	1.040	1.040
41	1.597	2.713	4.017	3	4	6	4	1.000	1.000	1.000	1.000
42	2.073	2.582	3.154	4	4	5	4	1.000	1.000	1.000	1.000
43	2.970	1.844	3.956	5	4	6	5	1.000	1.125	1.020	1.020
44	3.750	3.778	3.232	5	5	5	5	1.000	1.125	1.020	1.020
45	5.485	5.284	5.848	6	6	6	6	1.000	1.250	1.040	1.040
99	-	2.904	-	0	5	0	0	-	-	-	-
Tot	1.915	2.093	1.982								

Credit Eligibility			
Current (Y=0)		Proposed (Y+1)	
Exposures	Premium	Exposures	Premium
-	\$ -	-	\$ -
-	\$ -	-	\$ -
-	\$ -	-	\$ -
-	\$ -	-	\$ -
-	\$ -	1,327	\$ 343,621
-	\$ -	-	\$ -
-	\$ -	879	\$ 314,208
-	\$ -	-	\$ -
659	\$ 1,597,630	659	\$ 1,597,630
332	\$ 878,289	332	\$ 878,289
-	\$ -	-	\$ -
-	\$ -	823	\$ 365,473
894	\$ 2,330,818	894	\$ 2,377,434
481	\$ 1,479,154	481	\$ 1,479,154
126	\$ 377,857	126	\$ 392,971
100	\$ 263,868	100	\$ 269,145
-	\$ -	101	\$ 41,795
78	\$ 241,713	78	\$ 246,547
69	\$ 213,933	69	\$ 160,450
124	\$ 454,618	124	\$ 472,803
293	\$ 1,156,839	293	\$ 1,203,113
91	\$ 390,643	91	\$ 423,847
-	\$ -	203	\$ 122,610
124	\$ 327,365	124	\$ 217,698
-	\$ -	45	\$ 21,233
118	\$ 350,095	118	\$ 350,095
-	\$ -	-	\$ -
104	\$ 309,104	104	\$ 321,469
341	\$ 776,177	341	\$ 776,177
394	\$ 1,282,256	394	\$ 1,282,256
267	\$ 914,301	267	\$ 932,587
376	\$ 963,541	376	\$ 982,812
280	\$ 1,184,098	280	\$ 1,231,462
-	\$ -	-	\$ -
5,250	\$ 15,492,300	8,628	\$ 16,804,879

*Selection Criteria

- If the indicated residual market share group equal in all three years, select that residual market share group.
- If two of the three years indicate the same residual market share group, select that residual market share group.
- If all three years indicate a different residual market share group, select the median residual market share group.

