



NATALIE A. HUBLEY  
PRESIDENT

COMMONWEALTH AUTOMOBILE REINSURERS

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## 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, 7<sup>th</sup> Floor, Boston, on

**WEDNESDAY, JUNE 13, 2018 AT 1:00 P.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. Adam Kreuser  
Mr. Todd Lehmann  
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  
The Hanover Insurance Company  
Quincy Mutual Group  
Liberty Mutual Group

### AGENDA

**AC**

#### **17.01 Records of Previous Meeting**

The Records of the Actuarial Committee meeting of October 11, 2017 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**

The Committee should be prepared to begin 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. The Committee should address the following topics:

- Voluntary Classification/Territory Credits:  
The Committee should consider what modifications to the current voluntary “keep-out” credit factors, if any, should be considered. An analysis of historical residual market shares by rate class and territory is attached. (Docket #AC18.04, Exhibit #1)
- Take-Out Credits:  
The Committee should consider what modifications to the current “Take-Out” credit factor, if any, should be considered. An exhibit displaying take-out credit exposures and premium by class and territory using data reported through March, 2017 is attached. (Docket #AC18.04, Exhibit #2)
- February 1, 2018 Rates and Subsidies:  
As part of the quota share credit discussion, the impact of the latest approved MAIP rates and subsidies should be considered, as they affect the amount of calculated credit premium. An exhibit displaying the impact of the February 1, 2018 rates and subsidies to the current data is attached. (Docket #AC18.04, Exhibit #3)

AC

**18.05 Potential Impact of Registry System Changes on Quota Share Credits**

The recent migration to the ATLAS system by the Registry of Motor Vehicles has temporarily eliminated access to prior out of state data, resulting in unreliable quota share credit edit error rates. CAR Staff is researching the issue and monitoring any corrective action by the Registry, and will report on the status of its review at the meeting.

**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  
May 31, 2018



NATALIE A. HUBLEY  
PRESIDENT

## COMMONWEALTH AUTOMOBILE REINSURERS

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www.commauto.com 617-338-4000

### MEMORANDUM

To: Actuarial Committee  
From: Tim Galligan  
Director of Actuarial & Statistical Services  
Date: May 30, 2018  
Re: AC 18.04 Exhibit # 1 - Historical Residual Market Shares

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Attached is an analysis of historical residual market shares by rate class (page 1) and territory (pages 2-4) to assist the Committee in its discussion.

The exhibit displays the past seven years of “Rolling Twelve Month” residual market shares valued as of March of each year, and calculates relativities to the overall statewide average residual market share. The current year uses the most recent data available, April, 2017 – March, 2018.

The Division of Insurance (DOI) territories shown represent those eleven territories previously noted as areas of interest by the Commissioner of Insurance and include Chelsea (16), Hyde Park (20), Dorchester (21), Roxbury (22), Charlestown and East Boston (26), Holyoke (40), Lowell (41), Springfield (42), Lynn (43), Lawrence (44), and Brockton (45).

The exhibit also includes a summary of data that is credit eligible vs. non-credit eligible, using the following approved credit factors:

<b><u>Data:</u></b>	<b><u>Credit Factors</u></b>
Roll 12 @ March, 2018	4/1/2017 Credits
Roll 12 @ March, 2017	4/1/2016 Credits
Roll 12 @ March, 2016	4/1/2015 Credits
Roll 12 @ March, 2015	4/1/2014 Credits
Roll 12 @ March, 2014	4/1/2013 Credits
Roll 12 @ March, 2013	4/1/2012 Credits
Roll 12 @ March, 2012	4/1/2011 Credits

**Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer**  
**Indicated Private Passenger Auto Residual Market Share Group**  
**Residual Market Shares Relativities to Statewide Average**  
**Summary By Rate Class**

Rate Class	"Roll 12" Residual Market Share							Relative to Statewide Average							DOI Territories Residual Mkt Shr							
	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	
10	3.0%	2.7%	2.1%	1.5%	1.4%	1.5%	1.4%	1.1	1.1	1.1	1.0	1.0	1.1	1.1	9.1%	7.5%	5.0%	3.5%	3.3%	3.6%	3.4%	
15	0.8%	0.8%	0.7%	0.6%	0.5%	0.5%	0.5%	0.3	0.3	0.3	0.4	0.4	0.4	0.4	3.4%	3.1%	2.7%	2.3%	1.9%	2.1%	2.1%	
17	6.6%	5.7%	4.3%	3.2%	2.8%	3.0%	2.6%	2.4	2.3	2.2	2.2	2.2	2.1	2.0	15.7%	13.6%	8.7%	6.4%	6.0%	6.4%	5.4%	
18	2.3%	2.0%	1.5%	1.0%	0.9%	1.1%	1.0%	0.8	0.8	0.8	0.7	0.7	0.8	0.8	7.5%	6.0%	3.5%	2.2%	1.8%	3.0%	2.9%	
20	18.0%	15.5%	10.4%	8.2%	8.5%	8.2%	5.9%	6.4	6.2	5.4	5.7	6.6	5.8	4.6	30.3%	27.4%	18.8%	15.0%	15.0%	14.9%	11.1%	
21	6.7%	6.3%	3.8%	2.4%	2.5%	2.9%	2.8%	2.4	2.5	2.0	1.7	1.9	2.1	2.2	12.9%	13.1%	5.8%	3.5%	3.7%	5.3%	5.8%	
25	3.0%	2.8%	2.3%	1.8%	1.5%	1.7%	1.4%	1.1	1.1	1.2	1.2	1.2	1.2	1.1	8.4%	8.0%	5.7%	4.4%	3.6%	3.6%	3.4%	
26	1.1%	1.0%	0.8%	0.6%	0.6%	0.6%	0.6%	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.7%	2.8%	1.7%	1.4%	1.2%	1.6%	1.9%	
30	1.3%	1.2%	1.1%	0.9%	0.8%	0.9%	0.9%	0.5	0.5	0.6	0.6	0.6	0.6	0.7	3.3%	2.9%	2.4%	1.9%	1.6%	2.2%	2.3%	
MC/Misc.	2.8%	2.4%	2.3%	1.9%	1.7%	1.7%	1.5%	1.0	1.0	1.2	1.3	1.3	1.2	1.1	7.7%	6.6%	5.9%	4.8%	4.5%	4.2%	3.5%	
<b>Total</b>	<b>2.8%</b>	<b>2.5%</b>	<b>1.9%</b>	<b>1.4%</b>	<b>1.3%</b>	<b>1.4%</b>	<b>1.3%</b>								<b>8.9%</b>	<b>7.5%</b>	<b>5.1%</b>	<b>3.7%</b>	<b>3.4%</b>	<b>3.7%</b>	<b>3.5%</b>	
<b>Ratio to Statewide Average:</b>																<b>3.2</b>	<b>3.0</b>	<b>2.7</b>	<b>2.6</b>	<b>2.7</b>	<b>2.7</b>	<b>2.7</b>

**Credit Eligible Exposures**

Rate Class	"Roll 12" Residual Market Share							Relative to Statewide Average							DOI Territories Residual Mkt Shr							
	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	
10	9.0%	7.3%	4.9%	3.4%	3.4%	3.7%	3.4%	3.2	2.9	2.5	2.4	2.6	2.6	2.7	9.1%	7.5%	5.0%	3.5%	3.3%	3.7%	3.5%	
15	7.1%	6.2%	5.1%	4.7%	4.5%	4.8%	4.9%	2.5	2.5	2.6	3.3	3.5	3.5	3.8	7.1%	6.2%	5.1%	4.7%	4.5%	4.8%	4.9%	
17	8.9%	7.6%	5.8%	4.3%	4.1%	4.3%	3.6%	3.2	3.1	3.0	3.0	3.2	3.1	2.8	15.7%	13.6%	8.7%	6.4%	6.0%	6.4%	5.4%	
18	7.4%	5.9%	3.2%	2.2%	1.4%	2.5%	2.8%	2.6	2.4	1.7	1.6	1.1	1.8	2.2	7.5%	6.0%	3.5%	2.1%	1.4%	2.7%	2.7%	
20	18.1%	15.5%	10.3%	8.2%	8.5%	8.3%	6.0%	6.5	6.3	5.4	5.7	6.6	5.9	4.6	30.3%	27.4%	18.8%	15.0%	15.0%	14.9%	11.1%	
21	8.5%	8.3%	4.6%	3.0%	3.3%	4.5%	4.4%	3.0	3.3	2.4	2.1	2.6	3.2	3.4	12.9%	13.1%	5.8%	3.5%	3.7%	5.3%	5.8%	
25	6.0%	5.3%	4.8%	4.2%	3.8%	3.9%	3.5%	2.1	2.1	2.5	2.9	2.9	2.8	2.8	8.4%	8.0%	5.7%	4.4%	4.4%	4.5%	4.2%	
26	4.1%	1.4%	0.4%	2.2%	1.5%	2.7%	3.1%	1.5	0.6	0.2	1.5	1.1	2.0	2.4	4.1%	1.4%	0.4%	2.2%	1.5%	2.7%	3.1%	
30	5.2%	3.2%	2.7%	3.0%	2.6%	4.1%	4.5%	1.9	1.3	1.4	2.1	2.0	2.9	3.5	5.2%	3.4%	2.8%	3.5%	2.0%	5.0%	5.6%	
MC/Misc.	6.5%	5.6%	5.4%	4.3%	3.9%	3.6%	3.0%	2.3	2.2	2.8	3.0	3.0	2.6	2.4	7.7%	6.6%	5.9%	4.8%	4.6%	4.2%	3.5%	
<b>Total</b>	<b>9.2%</b>	<b>7.6%</b>	<b>5.4%</b>	<b>3.9%</b>	<b>3.9%</b>	<b>4.2%</b>	<b>3.7%</b>	<b>3.3</b>	<b>3.1</b>	<b>2.8</b>	<b>2.7</b>	<b>3.0</b>	<b>3.0</b>	<b>2.9</b>	<b>9.7%</b>	<b>8.1%</b>	<b>5.5%</b>	<b>3.9%</b>	<b>3.8%</b>	<b>4.2%</b>	<b>3.8%</b>	
<b>Ratio to Statewide Average:</b>																<b>3.5</b>	<b>3.3</b>	<b>2.9</b>	<b>2.7</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>

**Non-Credit Eligible Exposures**

Rate Class	"Roll 12" Residual Market Share							Relative to Statewide Average							DOI Territories Residual Mkt Shr							
	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	
10	2.4%	2.1%	1.7%	1.3%	1.1%	1.2%	1.2%	0.8	0.9	0.9	0.9	0.9	0.9	0.9	0.0%	0.0%	0.0%	0.0%	2.2%	2.3%	2.0%	
15	0.7%	0.7%	0.6%	0.5%	0.5%	0.5%	0.5%	0.2	0.3	0.3	0.4	0.4	0.3	0.4	2.7%	2.5%	2.2%	1.8%	1.5%	1.6%	1.6%	
17	3.7%	3.5%	3.1%	2.3%	1.9%	1.9%	1.7%	1.3	1.4	1.6	1.6	1.4	1.4	1.3	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
18	1.9%	1.7%	1.3%	0.9%	0.9%	1.0%	1.0%	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.0%	0.0%	4.2%	2.3%	2.0%	3.1%	3.0%	
20	3.1%	3.6%	0.0%	0.3%	5.3%	3.6%	3.1%	1.1	1.4	0.0	0.2	4.1	2.6	2.4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
21	4.0%	3.5%	2.3%	1.4%	2.0%	2.1%	1.9%	1.4	1.4	1.2	1.0	1.5	1.5	1.4	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
25	2.4%	2.2%	1.9%	1.6%	1.4%	1.5%	1.3%	0.9	0.9	1.0	1.1	1.1	1.1	1.0	0.0%	0.0%	0.0%	0.0%	2.5%	2.3%	2.3%	
26	1.1%	1.0%	0.8%	0.6%	0.6%	0.6%	0.5%	0.4	0.4	0.4	0.4	0.4	0.4	0.4	3.6%	3.0%	1.8%	1.3%	1.2%	1.4%	1.6%	
30	1.3%	1.2%	1.0%	0.9%	0.7%	0.8%	0.9%	0.4	0.5	0.5	0.6	0.6	0.6	0.7	2.8%	2.7%	2.1%	1.8%	1.6%	2.0%	2.0%	
MC/Misc.	2.3%	2.0%	1.9%	1.6%	1.4%	1.5%	1.3%	0.8	0.8	1.0	1.1	1.1	1.1	1.0	0.0%	0.0%	0.0%	4.1%	3.8%	4.5%	4.0%	
<b>Total</b>	<b>2.0%</b>	<b>1.9%</b>	<b>1.5%</b>	<b>1.1%</b>	<b>1.0%</b>	<b>1.1%</b>	<b>1.0%</b>	<b>0.7</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>2.7%</b>	<b>2.6%</b>	<b>2.2%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.8%</b>	<b>1.8%</b>	
<b>Ratio to Statewide Average:</b>																<b>1.0</b>	<b>1.0</b>	<b>1.1</b>	<b>1.3</b>	<b>1.3</b>	<b>1.3</b>	<b>1.4</b>
Credit / Non-Credit	<b>4.5</b>	<b>4.1</b>	<b>3.5</b>	<b>3.5</b>	<b>3.9</b>	<b>3.8</b>	<b>3.6</b>								<b>3.6</b>	<b>3.2</b>	<b>2.5</b>	<b>2.2</b>	<b>2.3</b>	<b>2.3</b>	<b>2.1</b>	

**Commonwealth Automobile Reinsurers - 4/1/2016 Credit Offer**  
**Indicated Private Passenger Auto Residual Market Share Group**  
**Residual Market Shares Relativities to Statewide Average**  
**Summary By Territory**

**All Exposures (Credit Eligible + Non-Credit Eligible)**

Territory	R12 Residual Market Share							Relative to Statewide Average						
	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18
1	1.3%	1.2%	1.0%	0.7%	0.7%	0.7%	0.6%	0.4	0.5	0.5	0.5	0.5	0.5	0.5
2	1.2%	1.2%	1.0%	0.8%	0.7%	0.8%	0.7%	0.4	0.5	0.5	0.5	0.6	0.5	0.5
3	1.6%	1.5%	1.2%	0.8%	0.7%	0.8%	0.7%	0.6	0.6	0.6	0.6	0.6	0.6	0.6
4	1.3%	1.2%	1.0%	0.8%	0.7%	0.7%	0.7%	0.4	0.5	0.5	0.6	0.5	0.5	0.5
5	2.0%	1.9%	1.5%	1.1%	1.0%	1.1%	1.0%	0.7	0.8	0.8	0.8	0.8	0.8	0.8
6	2.0%	1.9%	1.6%	1.2%	1.0%	1.0%	0.9%	0.7	0.8	0.8	0.8	0.8	0.7	0.7
7	2.7%	2.3%	1.9%	1.4%	1.3%	1.4%	1.3%	0.9	0.9	1.0	1.0	1.0	1.0	1.0
8	2.4%	2.2%	1.8%	1.4%	1.2%	1.3%	1.2%	0.8	0.9	0.9	0.9	0.9	0.9	0.9
9	3.5%	2.9%	2.1%	1.5%	1.4%	1.6%	1.4%	1.3	1.2	1.1	1.0	1.1	1.1	1.1
10	3.0%	2.9%	2.3%	1.7%	1.5%	1.5%	1.4%	1.1	1.2	1.2	1.2	1.2	1.1	1.1
11	2.6%	2.2%	1.8%	1.3%	1.2%	1.2%	1.1%	0.9	0.9	0.9	0.9	0.9	0.9	0.9
12	3.0%	2.6%	2.2%	1.7%	1.5%	1.6%	1.4%	1.1	1.1	1.1	1.2	1.2	1.1	1.1
13	4.8%	4.4%	3.4%	2.5%	2.3%	2.6%	2.4%	1.7	1.8	1.8	1.8	1.8	1.9	1.9
14	5.0%	4.3%	3.4%	2.5%	2.4%	2.8%	2.6%	1.8	1.7	1.8	1.7	1.9	2.0	2.0
15	5.9%	5.1%	3.5%	2.5%	2.5%	2.8%	2.6%	2.1	2.1	1.8	1.7	1.9	2.0	2.0
16	10.0%	7.9%	6.0%	4.3%	3.9%	4.0%	3.5%	3.6	3.2	3.1	3.0	3.1	2.8	2.7
17	2.3%	2.1%	1.8%	1.6%	1.6%	1.6%	1.5%	0.8	0.9	1.0	1.1	1.3	1.1	1.2
18	6.8%	5.8%	4.5%	3.8%	3.6%	3.4%	3.0%	2.4	2.3	2.3	2.7	2.8	2.4	2.3
19	4.8%	4.0%	3.5%	2.9%	2.7%	2.7%	2.2%	1.7	1.6	1.8	2.0	2.1	1.9	1.7
20	8.2%	6.6%	5.3%	4.6%	5.0%	5.1%	4.6%	2.9	2.7	2.8	3.2	3.9	3.6	3.6
21	10.7%	8.9%	7.0%	5.6%	5.8%	6.2%	5.7%	3.8	3.6	3.7	3.9	4.5	4.4	4.4
22	12.7%	11.2%	8.6%	6.4%	6.8%	7.5%	7.3%	4.5	4.5	4.5	4.4	5.3	5.4	5.6
23	4.9%	4.2%	3.1%	2.1%	1.7%	1.7%	1.6%	1.7	1.7	1.6	1.5	1.3	1.2	1.2
24	3.8%	2.8%	2.3%	1.7%	1.5%	1.4%	1.3%	1.3	1.1	1.2	1.2	1.1	1.0	1.0
25	2.8%	2.6%	1.8%	1.5%	1.4%	1.5%	1.2%	1.0	1.0	1.0	1.0	1.1	1.1	0.9
26	5.8%	4.5%	3.3%	2.4%	2.4%	2.5%	2.1%	2.1	1.8	1.7	1.7	1.9	1.8	1.6
27	1.0%	0.9%	0.8%	0.6%	0.5%	0.6%	0.5%	0.3	0.4	0.4	0.4	0.4	0.4	0.4
40	11.4%	8.4%	5.0%	3.2%	2.2%	2.3%	2.9%	4.1	3.4	2.6	2.2	1.7	1.7	2.2
41	6.9%	6.7%	4.0%	2.8%	2.4%	2.7%	2.3%	2.5	2.7	2.1	1.9	1.8	2.0	1.8
42	8.9%	6.9%	5.3%	3.2%	2.3%	2.1%	1.9%	3.2	2.8	2.7	2.3	1.8	1.5	1.5
43	7.7%	6.1%	3.9%	2.6%	2.5%	2.7%	2.6%	2.7	2.5	2.0	1.8	1.9	2.0	2.0
44	9.5%	9.1%	6.0%	4.7%	4.6%	5.0%	4.3%	3.4	3.7	3.1	3.3	3.6	3.6	3.3
45	9.6%	8.0%	4.3%	3.2%	3.5%	4.5%	4.5%	3.4	3.2	2.3	2.3	2.7	3.2	3.4
99	0.7%	0.6%	0.6%	0.5%	0.4%	0.5%	0.5%	0.3	0.3	0.3	0.4	0.3	0.3	0.3
<b>Tot</b>	<b>2.8%</b>	<b>2.5%</b>	<b>1.9%</b>	<b>1.4%</b>	<b>1.3%</b>	<b>1.4%</b>	<b>1.3%</b>							
<b>DOI Terr</b>	<b>8.9%</b>	<b>7.5%</b>	<b>5.1%</b>	<b>3.7%</b>	<b>3.4%</b>	<b>3.7%</b>	<b>3.5%</b>	<b>3.2</b>	<b>3.0</b>	<b>2.7</b>	<b>2.6</b>	<b>2.7</b>	<b>2.7</b>	<b>2.7</b>

**Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer**  
**Indicated Private Passenger Auto Residual Market Share Group**  
**Residual Market Shares Relativities to Statewide Average**  
**Summary By Territory**

<b>Credit Eligible</b>
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<b>R12 Residual Market Share</b>	<b>Relative to Statewide Average</b>
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Territory	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18
1	8.1%	5.2%	4.6%	5.6%	0.0%	0.0%	0.0%	2.9	2.1	2.4	3.9	0.0	0.0	0.0
2	8.7%	7.0%	4.4%	4.1%	4.0%	3.3%	2.0%	3.1	2.8	2.3	2.9	3.1	2.3	1.6
3	9.4%	7.9%	5.0%	3.9%	4.0%	4.0%	3.3%	3.4	3.2	2.6	2.7	3.1	2.8	2.5
4	8.0%	5.8%	4.0%	3.0%	2.7%	3.1%	2.2%	2.9	2.3	2.1	2.1	2.1	2.2	1.7
5	6.1%	5.1%	6.0%	4.4%	5.9%	5.4%	3.7%	2.2	2.1	3.1	3.1	4.6	3.8	2.8
6	12.8%	9.3%	7.4%	5.6%	5.4%	4.8%	3.4%	4.6	3.7	3.8	3.9	4.2	3.5	2.6
7	7.4%	5.8%	4.5%	3.3%	3.5%	3.5%	2.5%	2.6	2.3	2.3	2.3	2.7	2.5	1.9
8	7.5%	6.9%	5.0%	3.9%	3.4%	3.4%	2.8%	2.7	2.8	2.6	2.7	2.7	2.4	2.2
9	7.8%	6.0%	4.4%	3.2%	3.5%	3.8%	3.3%	2.8	2.4	2.3	2.2	2.7	2.7	2.5
10	8.2%	8.0%	5.1%	3.9%	3.6%	3.3%	3.0%	2.9	3.2	2.6	2.7	2.8	2.4	2.3
11	8.2%	6.1%	4.5%	3.0%	6.4%	5.1%	3.4%	2.9	2.5	2.4	2.1	4.9	3.6	2.7
12	7.7%	7.2%	5.4%	4.3%	4.5%	4.3%	3.1%	2.8	2.9	2.8	3.0	3.5	3.1	2.4
13	8.0%	7.4%	5.3%	5.0%	4.6%	5.0%	4.0%	2.8	3.0	2.8	3.5	3.6	3.5	3.1
14	10.1%	8.8%	7.6%	5.6%	5.0%	4.9%	3.9%	3.6	3.5	3.9	3.9	3.9	3.5	3.0
15	12.4%	5.8%	3.8%	2.7%	5.5%	5.3%	5.0%	4.4	2.4	2.0	1.9	4.3	3.8	3.9
16	10.6%	8.4%	6.3%	4.5%	4.1%	4.1%	3.6%	3.8	3.4	3.3	3.2	3.2	2.9	2.8
17	7.4%	7.1%	5.7%	4.9%	5.3%	5.8%	5.0%	2.6	2.9	3.0	3.4	4.1	4.1	3.9
18	7.2%	6.1%	4.8%	4.0%	3.9%	3.6%	3.2%	2.6	2.5	2.5	2.8	3.0	2.6	2.5
19	10.2%	8.5%	8.3%	6.4%	8.6%	9.1%	7.2%	3.7	3.4	4.3	4.5	6.7	6.5	5.6
20	8.9%	7.2%	5.8%	4.9%	5.4%	5.4%	4.9%	3.2	2.9	3.0	3.5	4.2	3.9	3.8
21	10.8%	8.9%	7.0%	5.6%	5.8%	6.3%	5.8%	3.8	3.6	3.7	3.9	4.5	4.5	4.5
22	12.7%	11.2%	8.6%	6.4%	6.8%	7.5%	7.3%	4.5	4.5	4.5	4.5	5.3	5.4	5.6
23	13.6%	11.2%	7.8%	5.4%	5.0%	4.4%	3.3%	4.8	4.5	4.1	3.8	3.9	3.1	2.5
24	9.6%	7.3%	4.5%	3.3%	2.4%	3.3%	2.3%	3.4	2.9	2.4	2.3	1.8	2.4	1.8
25	11.5%	9.3%	6.0%	6.5%	7.6%	6.8%	4.2%	4.1	3.8	3.1	4.5	5.9	4.9	3.3
26	6.4%	4.9%	3.5%	2.5%	6.8%	6.7%	3.7%	2.3	2.0	1.8	1.7	5.3	4.8	2.9
27	8.8%	7.0%	4.2%	2.7%	4.0%	3.2%	3.2%	3.2	2.8	2.2	1.9	3.1	2.3	2.4
40	13.1%	9.7%	5.6%	3.6%	2.4%	2.6%	3.2%	4.7	3.9	2.9	2.5	1.9	1.9	2.5
41	7.6%	7.3%	4.4%	3.0%	2.6%	3.0%	2.6%	2.7	3.0	2.3	2.1	2.0	2.2	2.0
42	9.9%	7.7%	5.7%	3.4%	2.5%	2.3%	2.1%	3.5	3.1	3.0	2.4	1.9	1.6	1.6
43	8.6%	6.9%	4.4%	2.9%	2.8%	3.1%	2.8%	3.1	2.8	2.3	2.0	2.2	2.2	2.2
44	10.1%	9.7%	6.3%	5.0%	5.0%	5.3%	4.5%	3.6	3.9	3.3	3.5	3.9	3.8	3.5
45	10.7%	8.8%	4.7%	3.5%	3.8%	4.9%	4.8%	3.8	3.6	2.4	2.5	3.0	3.5	3.8
99	0.0%	0.0%	1.4%	0.0%	0.0%	0.0%	0.0%	0.0	0.0	0.7	0.0	0.0	0.0	0.0
<b>Tot</b>	<b>9.2%</b>	<b>7.6%</b>	<b>5.4%</b>	<b>3.9%</b>	<b>3.9%</b>	<b>4.2%</b>	<b>3.7%</b>	<b>3.3</b>	<b>3.1</b>	<b>2.8</b>	<b>2.7</b>	<b>3.0</b>	<b>3.0</b>	<b>2.9</b>
<b>DOI Terr</b>	<b>9.7%</b>	<b>8.1%</b>	<b>5.5%</b>	<b>3.9%</b>	<b>3.8%</b>	<b>4.2%</b>	<b>3.8%</b>	<b>3.5</b>	<b>3.3</b>	<b>2.9</b>	<b>2.7</b>	<b>3.0</b>	<b>3.0</b>	<b>3.0</b>

**Commonwealth Automobile Reinsurers - 4/1/2019 Credit Offer  
Indicated Private Passenger Auto Residual Market Share Group  
Residual Market Shares Relativities to Statewide Average  
Summary By Territory**

**Non-Credit Eligible**

Territory	R12 Residual Market Share							Relative to Statewide Average						
	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18	Mar-12	Mar-13	Mar-14	Mar-15	Mar-16	Mar-17	Mar-18
1	1.2%	1.1%	0.9%	0.7%	0.7%	0.7%	0.6%	0.4	0.5	0.5	0.5	0.5	0.5	0.5
2	1.2%	1.1%	1.0%	0.8%	0.7%	0.7%	0.7%	0.4	0.5	0.5	0.5	0.5	0.5	0.5
3	1.5%	1.4%	1.1%	0.8%	0.7%	0.8%	0.7%	0.5	0.6	0.6	0.6	0.5	0.5	0.6
4	1.2%	1.2%	1.0%	0.8%	0.6%	0.7%	0.7%	0.4	0.5	0.5	0.5	0.5	0.5	0.5
5	1.8%	1.7%	1.5%	1.1%	0.9%	1.1%	1.0%	0.6	0.7	0.8	0.8	0.7	0.8	0.8
6	2.0%	1.8%	1.5%	1.2%	1.0%	1.0%	0.9%	0.7	0.7	0.8	0.8	0.8	0.7	0.7
7	2.5%	2.2%	1.8%	1.3%	1.2%	1.3%	1.2%	0.9	0.9	0.9	0.9	0.9	0.9	0.9
8	2.2%	2.1%	1.7%	1.3%	1.1%	1.2%	1.1%	0.8	0.8	0.9	0.9	0.9	0.9	0.9
9	3.3%	2.7%	2.0%	1.4%	1.3%	1.5%	1.3%	1.2	1.1	1.1	1.0	1.0	1.0	1.0
10	2.8%	2.7%	2.2%	1.6%	1.4%	1.4%	1.3%	1.0	1.1	1.2	1.1	1.1	1.0	1.0
11	2.3%	2.0%	1.6%	1.3%	1.1%	1.2%	1.1%	0.8	0.8	0.9	0.9	0.9	0.9	0.9
12	2.7%	2.4%	2.0%	1.6%	1.4%	1.5%	1.4%	1.0	1.0	1.1	1.1	1.1	1.1	1.1
13	4.5%	4.1%	3.2%	2.3%	2.1%	2.4%	2.3%	1.6	1.7	1.7	1.6	1.6	1.7	1.7
14	4.5%	3.9%	3.0%	2.2%	2.2%	2.6%	2.4%	1.6	1.6	1.5	1.5	1.7	1.8	1.9
15	5.2%	2.1%	2.1%	1.4%	2.2%	2.5%	2.3%	1.9	0.8	1.1	0.9	1.7	1.8	1.8
16	3.9%	3.0%	2.5%	2.3%	2.1%	2.8%	2.6%	1.4	1.2	1.3	1.6	1.7	2.0	2.0
17	2.2%	1.9%	1.7%	1.5%	1.5%	1.5%	1.4%	0.8	0.8	0.9	1.1	1.2	1.0	1.1
18	4.1%	3.2%	2.6%	2.6%	1.9%	2.0%	1.9%	1.5	1.3	1.4	1.8	1.4	1.4	1.5
19	4.4%	3.7%	3.3%	2.7%	2.4%	2.4%	2.0%	1.6	1.5	1.7	1.9	1.9	1.7	1.6
20	3.0%	2.8%	2.5%	2.6%	3.1%	3.5%	3.4%	1.1	1.1	1.3	1.8	2.4	2.5	2.6
21	3.9%	3.5%	0.8%	2.7%	2.5%	3.3%	3.6%	1.4	1.4	0.4	1.9	2.0	2.4	2.8
22	8.5%	11.8%	0.0%	0.0%	0.0%	0.0%	0.0%	3.0	4.8	0.0	0.0	0.0	0.0	0.0
23	4.3%	3.7%	2.8%	1.9%	1.5%	1.5%	1.5%	1.5	1.5	1.4	1.3	1.2	1.1	1.2
24	3.4%	2.5%	2.2%	1.5%	1.4%	1.3%	1.2%	1.2	1.0	1.1	1.1	1.1	1.0	1.0
25	2.6%	2.4%	1.7%	1.3%	1.2%	1.3%	1.1%	0.9	1.0	0.9	0.9	1.0	0.9	0.8
26	1.6%	2.1%	1.9%	1.8%	2.1%	2.2%	1.9%	0.6	0.9	1.0	1.2	1.6	1.6	1.5
27	0.9%	0.9%	0.8%	0.6%	0.5%	0.6%	0.5%	0.3	0.4	0.4	0.4	0.4	0.4	0.4
40	2.6%	2.3%	1.9%	1.3%	1.1%	1.2%	1.5%	0.9	0.9	1.0	0.9	0.9	0.9	1.2
41	1.8%	2.2%	1.6%	1.1%	0.9%	1.0%	1.0%	0.7	0.9	0.8	0.8	0.7	0.7	0.8
42	3.3%	3.0%	3.2%	2.5%	1.6%	1.4%	1.3%	1.2	1.2	1.7	1.8	1.3	1.0	1.0
43	1.9%	1.7%	1.3%	1.1%	0.9%	1.0%	1.0%	0.7	0.7	0.7	0.8	0.7	0.7	0.8
44	3.0%	3.3%	2.6%	2.2%	1.9%	2.7%	2.5%	1.1	1.3	1.4	1.6	1.5	1.9	2.0
45	3.3%	2.8%	2.1%	1.5%	1.6%	2.4%	2.4%	1.2	1.1	1.1	1.1	1.3	1.7	1.9
99	0.7%	0.6%	0.6%	0.5%	0.4%	0.5%	0.5%	0.3	0.3	0.3	0.4	0.3	0.3	0.3
<b>Tot</b>	<b>2.0%</b>	<b>1.9%</b>	<b>1.5%</b>	<b>1.1%</b>	<b>1.0%</b>	<b>1.1%</b>	<b>1.0%</b>	<b>0.7</b>	<b>0.7</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>	<b>0.8</b>
<b>DOI Terr</b>	<b>2.7%</b>	<b>2.6%</b>	<b>2.2%</b>	<b>1.8%</b>	<b>1.7%</b>	<b>1.8%</b>	<b>1.8%</b>	<b>1.0</b>	<b>1.0</b>	<b>1.1</b>	<b>1.3</b>	<b>1.3</b>	<b>1.3</b>	<b>1.4</b>

**Commonwealth Automobile Reinsurers  
Take-Out Credit Premium  
Rolling 12 Month Data Through March, 2018**

Territory	Rate Class Group										Total
	10	15	17	18	20	21	25	26	30	Misc/MC	
01	65,244	5,186	7,055	4,616	6,959	-	8,168	1,162	-	388	98,779
02	104,011	9,661	15,881	7,081	11,781	-	11,394	3,644	-	617	164,070
03	266,136	27,706	33,441	5,861	11,965	5,141	21,691	4,478	3,515	242	380,174
04	159,950	19,052	6,084	1,824	12,946	1,133	6,913	3,702	779	639	213,022
05	390,778	35,421	69,514	4,325	30,049	601	12,989	8,891	12,235	2,596	567,399
06	299,838	27,785	32,503	3,131	28,747	4,532	16,870	1,469	3,066	1,137	419,078
07	331,324	21,600	56,080	1,622	14,590	6,404	25,764	8,528	6,804	1,913	474,628
08	218,914	29,961	31,167	2,226	23,294	1,213	10,982	5,616	-	771	324,144
09	257,059	13,105	45,110	7,207	32,225	2,673	18,442	2,628	2,952	947	382,349
10	117,323	8,152	10,712	-	-	2,283	18,087	4,108	5,073	259	165,997
11	75,800	4,681	5,376	1,842	11,279	-	-	-	-	418	99,397
12	251,003	20,195	45,593	755	27,461	2,415	12,275	2,354	8,477	1,349	371,877
13	492,978	42,179	63,365	13,075	54,317	2,238	20,966	5,295	2,427	1,675	698,515
14	183,784	9,434	14,327	5,643	15,975	6,648	6,902	4,666	1,272	1,132	249,782
15	90,583	16,000	3,138	6,022	5,032	-	6,792	-	2,124	608	130,299
16	116,183	6,635	15,392	-	15,903	3,450	1,102	-	4,200	-	162,864
17	43,625	2,547	3,154	-	3,351	2,043	-	-	-	-	54,719
18	96,198	6,502	3,516	-	-	-	2,485	-	-	-	108,700
19	30,238	6,193	2,481	385	6,830	-	-	-	-	-	46,127
20	124,172	18,798	25,326	4,306	22,452	-	1,334	-	-	484	196,873
21	466,032	56,904	54,040	3,331	105,754	5,142	9,154	-	5,882	1,574	707,813
22	148,577	26,159	32,636	2,362	55,166	-	4,898	-	-	-	269,799
23	69,830	5,086	8,762	2,358	10,548	1,548	5,820	-	-	403	104,355
24	25,483	827	5,337	-	5,980	2,356	3,227	-	-	-	43,210
25	24,233	1,889	-	2,258	9,471	-	913	2,869	-	-	41,633
26	61,159	4,457	7,757	-	22,870	-	282	-	-	198	96,723
27	160,366	19,316	16,839	239	13,827	-	13,576	6,365	143	667	231,338
40	64,992	-	10,578	1,631	15,163	-	-	-	-	241	92,605
41	184,622	10,366	21,605	4,657	20,874	1,215	3,752	-	-	702	247,793
42	231,469	15,211	26,190	-	8,959	5,037	1,649	-	-	1,546	290,061
43	219,885	21,113	17,180	2,021	62,085	2,126	11,480	2,632	9,554	1,192	349,268
44	191,462	2,963	22,414	1,871	31,333	5,993	5,756	744	-	375	262,912
45	494,724	31,164	69,796	2,279	133,374	601	27,988	3,244	2,521	1,859	767,549
99	6,779	-	4,100	-	-	-	967	-	-	-	11,846
<b>Total</b>	<b>6,064,751</b>	<b>526,247</b>	<b>786,449</b>	<b>92,927</b>	<b>830,562</b>	<b>64,793</b>	<b>292,617</b>	<b>72,396</b>	<b>71,024</b>	<b>23,933</b>	<b>8,825,698</b>
4/1/2018 Credit Factors											
Tot w/ Keep-Out	2,338,315	83,063	590,318	8,649	823,603	39,762	88,133	3,244	6,325	11,506	3,992,918
% of Take-Out	38.6%	15.8%	75.1%	9.3%	99.2%	61.4%	30.1%	4.5%	8.9%	48.1%	45.2%



**Commonwealth Automobile Reinsurers  
Take-Out Credit Premium Market Share (% Total)  
Rolling 12 Month Data Through March, 2018**

Territory	Rate Class Group										Total	
	10	15	17	18	20	21	25	26	30	Misc/MC		
01	0.7%	0.1%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	1.1%
02	1.2%	0.1%	0.2%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	1.9%
03	3.0%	0.3%	0.4%	0.1%	0.1%	0.1%	0.2%	0.1%	0.0%	0.0%	0.0%	4.3%
04	1.8%	0.2%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	2.4%
05	4.4%	0.4%	0.8%	0.0%	0.3%	0.0%	0.1%	0.1%	0.1%	0.0%	0.0%	6.4%
06	3.4%	0.3%	0.4%	0.0%	0.3%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	4.7%
07	3.8%	0.2%	0.6%	0.0%	0.2%	0.1%	0.3%	0.1%	0.1%	0.0%	0.0%	5.4%
08	2.5%	0.3%	0.4%	0.0%	0.3%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	3.7%
09	2.9%	0.1%	0.5%	0.1%	0.4%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	4.3%
10	1.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	1.9%
11	0.9%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
12	2.8%	0.2%	0.5%	0.0%	0.3%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	4.2%
13	5.6%	0.5%	0.7%	0.1%	0.6%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	7.9%
14	2.1%	0.1%	0.2%	0.1%	0.2%	0.1%	0.1%	0.1%	0.0%	0.0%	0.0%	2.8%
15	1.0%	0.2%	0.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	1.5%
16	1.3%	0.1%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%
17	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.6%
18	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%
19	0.3%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
20	1.4%	0.2%	0.3%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.2%
21	5.3%	0.6%	0.6%	0.0%	1.2%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	8.0%
22	1.7%	0.3%	0.4%	0.0%	0.6%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	3.1%
23	0.8%	0.1%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	1.2%
24	0.3%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
25	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
26	0.7%	0.1%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
27	1.8%	0.2%	0.2%	0.0%	0.2%	0.0%	0.2%	0.1%	0.0%	0.0%	0.0%	2.6%
40	0.7%	0.0%	0.1%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.0%
41	2.1%	0.1%	0.2%	0.1%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%
42	2.6%	0.2%	0.3%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%
43	2.5%	0.2%	0.2%	0.0%	0.7%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	4.0%
44	2.2%	0.0%	0.3%	0.0%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	3.0%
45	5.6%	0.4%	0.8%	0.0%	1.5%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	8.7%
99	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Total</b>	<b>68.7%</b>	<b>6.0%</b>	<b>8.9%</b>	<b>1.1%</b>	<b>9.4%</b>	<b>0.7%</b>	<b>3.3%</b>	<b>0.8%</b>	<b>0.8%</b>	<b>0.3%</b>	<b>100.0%</b>	

4/1/2018 Credit Factors

**Commonwealth Automobile Reinsurers  
 Take-Out Credit Exposures  
 Rolling 12 Month Data Through March, 2018**

<u>Territory</u>	<u>Rate Class Group</u>										<u>Total</u>
	<u>10</u>	<u>15</u>	<u>17</u>	<u>18</u>	<u>20</u>	<u>21</u>	<u>25</u>	<u>26</u>	<u>30</u>	<u>MC/Misc</u>	
01	73	8	4	3	3	-	4	1	-	5	101
02	92	12	10	5	5	-	5	3	-	5	138
03	237	31	21	4	5	3	9	3	2	3	318
04	117	18	4	1	5	1	3	2	1	5	157
05	314	36	42	3	12	0	6	5	7	15	441
06	222	25	16	2	10	2	5	1	2	7	293
07	262	20	34	1	5	3	10	5	6	14	359
08	154	26	16	2	8	1	4	3	-	4	217
09	184	13	25	4	9	1	6	1	2	5	251
10	86	9	6	-	-	1	6	2	1	1	111
11	49	5	3	1	3	-	-	-	-	2	63
12	158	19	21	0	8	1	4	1	5	4	222
13	331	39	29	8	15	1	7	2	1	8	441
14	95	6	5	2	4	2	2	2	1	5	125
15	53	10	1	3	1	-	2	-	1	2	74
16	68	3	6	-	4	2	0	-	2	-	85
17	23	2	1	-	1	1	-	-	-	-	28
18	55	6	1	-	-	-	1	-	-	-	63
19	20	4	1	0	2	-	-	-	-	-	28
20	69	11	9	2	5	-	0	-	-	1	97
21	211	30	16	1	19	1	2	-	2	6	289
22	73	15	9	1	10	-	1	-	-	-	108
23	34	5	3	1	2	1	2	-	-	1	49
24	13	1	2	-	2	1	1	-	-	-	20
25	13	2	-	1	2	-	0	1	-	-	20
26	30	4	3	-	6	-	0	-	-	1	43
27	164	26	12	0	7	-	8	5	0	4	227
40	48	-	5	1	4	-	-	-	-	1	59
41	137	10	10	3	6	1	1	-	-	3	171
42	134	11	8	-	2	2	0	-	-	6	163
43	113	12	6	1	15	1	3	1	4	4	159
44	146	3	10	1	10	2	2	0	-	1	176
45	235	22	22	1	22	0	5	1	1	6	316
99	4	-	2	-	-	-	0	-	-	-	6
<b>Total</b>	<b>4,019</b>	<b>444</b>	<b>364</b>	<b>56</b>	<b>212</b>	<b>27</b>	<b>99</b>	<b>40</b>	<b>38</b>	<b>118</b>	<b>5,418</b>

4/1/2018 Credit Factors

Tot w/ Keep-Out	1,289	44	247	5	209	15	21	1	3	44	1,878
% of Take-Out	32.1%	10.0%	67.9%	8.2%	98.6%	55.0%	21.3%	2.5%	7.9%	36.8%	34.7%

**Commonwealth Automobile Reinsurers  
Take-Out Credit Exposures Market Share (% Total)  
Rolling 12 Month Data Through March, 2018**

<u>Territory</u>	<u>Rate Class Group</u>										<u>Total</u>
	<u>10</u>	<u>15</u>	<u>17</u>	<u>18</u>	<u>20</u>	<u>21</u>	<u>25</u>	<u>26</u>	<u>30</u>	<u>MC/Misc</u>	
01	1.3%	0.2%	0.1%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	1.9%
02	1.7%	0.2%	0.2%	0.1%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	2.5%
03	4.4%	0.6%	0.4%	0.1%	0.1%	0.1%	0.2%	0.1%	0.0%	0.1%	5.9%
04	2.2%	0.3%	0.1%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.1%	2.9%
05	5.8%	0.7%	0.8%	0.1%	0.2%	0.0%	0.1%	0.1%	0.1%	0.3%	8.1%
06	4.1%	0.5%	0.3%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0.1%	5.4%
07	4.8%	0.4%	0.6%	0.0%	0.1%	0.1%	0.2%	0.1%	0.1%	0.3%	6.6%
08	2.8%	0.5%	0.3%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	4.0%
09	3.4%	0.2%	0.5%	0.1%	0.2%	0.0%	0.1%	0.0%	0.0%	0.1%	4.6%
10	1.6%	0.2%	0.1%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	2.1%
11	0.9%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%
12	2.9%	0.4%	0.4%	0.0%	0.1%	0.0%	0.1%	0.0%	0.1%	0.1%	4.1%
13	6.1%	0.7%	0.5%	0.1%	0.3%	0.0%	0.1%	0.0%	0.0%	0.1%	8.1%
14	1.8%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	2.3%
15	1.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.4%
16	1.2%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.6%
17	0.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
18	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%
19	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.5%
20	1.3%	0.2%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.8%
21	3.9%	0.5%	0.3%	0.0%	0.4%	0.0%	0.0%	0.0%	0.0%	0.1%	5.3%
22	1.3%	0.3%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	2.0%
23	0.6%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%
24	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%
25	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%
26	0.6%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.8%
27	3.0%	0.5%	0.2%	0.0%	0.1%	0.0%	0.1%	0.1%	0.0%	0.1%	4.2%
40	0.9%	0.0%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	1.1%
41	2.5%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	3.2%
42	2.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	3.0%
43	2.1%	0.2%	0.1%	0.0%	0.3%	0.0%	0.1%	0.0%	0.1%	0.1%	2.9%
44	2.7%	0.1%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	3.3%
45	4.3%	0.4%	0.4%	0.0%	0.4%	0.0%	0.1%	0.0%	0.0%	0.1%	5.8%
99	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%
<b>Total</b>	<b>74.2%</b>	<b>8.2%</b>	<b>6.7%</b>	<b>1.0%</b>	<b>3.9%</b>	<b>0.5%</b>	<b>1.8%</b>	<b>0.7%</b>	<b>0.7%</b>	<b>2.2%</b>	<b>100.0%</b>

4/1/2018 Credit Factors

## Estimated Impact of February 1, 2018 Rate/Subsidy Change on Potential Credit Premium

	<u>10/1/2016</u>	<u>2/1/2018</u>	<u>% Diff</u>
QS Premium using Cost-Based Rates <sup>(1)</sup>	4,707,894,173	5,246,752,084	11.4%
QS Premium using Manual Rates <sup>(1)</sup>	4,510,397,365	4,739,195,231	5.1%
% Difference	4.4%	10.7%	
Potential Credit Premium <sup>(2)</sup>	868,713,426	961,783,050	10.7%
<hr/>			
Indicated Rate Change (Liability)	10.30%	16.40%	
Approved Rate Change (Liability)	6.10%	5.40%	
Difference	4.20%	11.00%	

(1) Exposure distribution underlying these estimates use the latest 12 policy effective months as of March, 2018 by Rate Class, Territory, and Merit Rating Value.

(2) Potential Credit Premium multiplies the QS Premium with Cost-Based Rates (above) by the approved credit factors.