

RULES – IMPLEMENTATION

DECEMBER 12, 2018

COMMERCIAL MULTIPLE LINE

LI-ML-2018-047

## OREGON COMMERCIAL PACKAGE POLICY REVISED PACKAGE MODIFICATION FACTOR REVISION TO BE IMPLEMENTED; EXCEL WORKBOOK NEWLY INCLUDED

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### KEY MESSAGE

Revised Commercial Package Policy package modification factors for an overall statewide change of **-0.1%** to be implemented.

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### BACKGROUND

In circular [LI-ML-2018-044](#), we provided you with information about the Commercial Package Policy modification factor experience review.

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### ISO ACTION

We are implementing ML-2018-RLA1, which presents a review of Commercial Package Policy modification factors experience. Refer to the attachment(s) for complete details.

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### EFFECTIVE DATE

The ISO revision is subject to the following rule of application:

These changes are applicable to all policies written on or after **May 1, 2019**.

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### COMPANY ACTION

If you have authorized us to file on your behalf and decide:

- To use our revision and effective date, you are not required to file anything with the Insurance Department.
- To use our revision with a different effective date, to use our revision with modification, or to not use our revision, you must make an appropriate submission with the Insurance Department.

For guidance on submission requirements, consult the ISO State Filing Handbook.

In all correspondence with the Insurance Department on this revision, you should refer to ISO Filing Designation Number ML-2018-RLA1, NOT this circular number. Communications with the regulator concerning a filing affecting multiple lines of business (i.e., CL, PL, AL filing designation) should specify the line(s) of business that you are addressing.

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### RATING SOFTWARE IMPACT

No new attributes are being introduced with this revision.

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## POLICYHOLDER NOTIFICATION

If you decide to implement this revision, you should check all applicable laws for the state(s) to which this revision applies, to determine whether or not a specific policyholder notice requirement may apply. Please note that circular [LI-CL-2018-044](#) contains the ISO Guide To Renewals With Changed Conditions For Commercial Lines, which is available only as a guide to assist participating companies in complying with various conditional renewal statutes or regulations, for the major commercial lines of insurance serviced by ISO. The information in the Guide does not necessarily reflect all requirements or exceptions that may apply, and it is not intended as a substitute for your review of all applicable statutes and regulations concerning policyholder notification.

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## REVISION DISTRIBUTION

We will issue a Notice to Manualholders with an edition date of 5-19 (or the earliest possible subsequent date), along with any new and/or revised manual pages.

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## REFERENCE(S)

- [LI-CL-2018-044](#) (11/27/2018) Revised Lead Time Requirements Listing
- [LI-ML-2018-044](#) (10/30/2018) Commercial Package Policy Experience Reviewed By Staff

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## ATTACHMENT(S)

- Filing [ML-2018-RLA1](#)
- Excel Workbook

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## FILES AVAILABLE FOR DOWNLOAD

To download all files associated with this circular, including attachments in the full circular PDF and/or any additional files not included in the PDF, search for the circular number on [ISOnet Circulars](#). Then click the Word/Excel link under the Full Circular column on the Search Results screen.

Please note that in some instances, not all files listed in the Attachment(s) block (if applicable) are included in the PDF.

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## ACKNOWLEDGMENT OF ACTUARIAL QUALIFICATIONS

The American Academy of Actuaries' "Qualification Standards for Actuaries Issuing Statements of Actuarial Opinion in the United States" requires that an actuary issuing a Statement of Actuarial Opinion should include an acknowledgment with the opinion that he/she has met the qualification standards of the AAA. ISO considers this rule revision a Statement of Actuarial Opinion; therefore we are including the following acknowledgment:

I, Rimma Maasbach, am an Actuarial Consultant in Actuarial Operations for ISO, and I, Bei Zhou, am an Actuarial Product Director for Commercial Property for ISO. We are jointly responsible for the content of this Statement of Actuarial Opinion. We are both members of the American Academy of Actuaries and we meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.

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# OREGON

## ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

### COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

### EXECUTIVE SUMMARY

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#### PURPOSE

This document:

- presents a review of advisory Package Modification Factors (PMFs). PMFs are relativity factors used to adjust monoline loss costs as appropriate for multiline risks.
- provides the analyses used to derive these advisory PMFs.

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#### PMF CHANGES

The proposed Commercial Package Policy (CPP) Package Modification Factor changes are:

<u>Type of Policy</u>	<u>Property</u>	<u>Liability</u>	<u>Prop. &amp; Liab.</u> <u>Total</u>
Motel/Hotel	0.0%	+4.2%	+2.9%
Apartment	0.0	0.0	0.0
Office	-3.0	+3.5	+2.3
Mercantile	-5.1	0.0	-2.2
Institutional	0.0	0.0	0.0
Services	-1.0	+1.0	+0.2
Indust./Proc.	-8.7	+4.8	+0.1
Contractors	<u>-3.0</u>	<u>0.0</u>	<u>-0.2</u>
Statewide	-3.2%	+1.4%	-0.1%

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#### INDICATED VS. CAPPED

Indicated PMF changes are based on standard ISO methodology. Differences between indicated and capped PMF changes are caused by rounding each indicated PMF to the nearest one percent and applying an upper cap of 1.00, where necessary.

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# OREGON

## ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

### COMMERCIAL PACKAGE POLICY ML-2018-RLA1

#### EXECUTIVE SUMMARY

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##### HISTORICAL SOURCE DATA

The data used in this review is from ISO reporting companies for:

- Basic Group I: five fiscal accident years ending 06/30/17.
  - Basic Group II: ten fiscal accident years ending 06/30/17.
  - Special Causes of Loss: five fiscal accident years ending 06/30/17.
  - Crime: calendar year ending 06/30/16.
  - Inland Marine: five calendar accident years ending 12/31/16.
  - Fidelity: policy year ending 12/31/15.
  - Owners, Landlords, and Tenants: five fiscal accident years ending 06/30/17.
  - Manufacturers and Contractors: five fiscal accident years ending 06/30/17.
  - Products: three calendar accident years ending 12/31/16.
  - Local Products and Completed Operations: three calendar accident years ending 12/31/16.
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##### PRIOR ISO REVISIONS

The latest revisions in this state are:

<u>Filing</u>	ML-15-RLA1	ML-12-RLA1	ML-10-RLA1
<u>Dates</u>			
Implemented	06/01/16	10/01/12	10/01/10
<u>Changes</u>			
Indicated	-0.1%	+5.7%	+4.2%
Filed	-0.1%	+4.3%	+4.2%
Implemented	-0.1%	+4.3%	+4.2%

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ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

EXECUTIVE SUMMARY

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ADJUSTMENTS  
TO REPORTED  
EXPERIENCE

Standard actuarial procedures have been used in the reviews underlying the calculation of the PMFs, including adjusting the fire and liability losses to ultimate settlement level and, for all coverages, reflecting all loss adjustment expenses and trend. Specific procedures vary by subline.

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TEN LARGEST  
GROUPS IN  
ISO DATA BASE

Insurers are listed in descending order based on the percent of statewide written premium volume from Annual Statement Page 15 for the year ending 12/31/17 for the Annual Statement Line of Business (ASLOB) indicated.

COMMERCIAL MULTI PERIL (ASLOB 51 & 52)

1. Liberty Mutual Insurance Company
  2. Travelers Indemnity Company
  3. Tokio Marine Companies
  4. Continental Casualty Company
  5. Cincinnati Insurance Company
  6. American Hallmark Insurance Company of Texas
  7. Hanover Insurance Company
  8. Hartford Accident & Indemnity Company
  9. Admiral Insurance Company
  10. Country Mutual Insurance Company
- 

SIZE OF ISO  
DATA BASE

The market share of ISO participating insurers as measured by Annual Statement Page 15 written premium for the year ending 12/31/17 is:

Commercial Multi Peril (ASLOB 51 & 52). 57.5%.

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ADDITIONAL  
SUPPORTING  
MATERIAL

Additional supporting material underlying the calculation of the experience review indications used in this PMF analysis may be found in the respective monoline experience review documents for each line.

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ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2018-RLA1

EXECUTIVE SUMMARY

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COMPANY DECISION

We encourage each insurer to decide independently whether the judgments made and the procedures or data used by ISO in developing the PMFs contained herein are appropriate for your use. We have included within this document the information upon which ISO relied in order to enable companies to make such independent judgments. The data underlying the enclosed material comes from companies reporting to Insurance Services Office, Inc. Therefore, the ISO experience permits the establishment of a much broader statistical ratemaking base than could be employed by using any individual company's data. A broader data base enhances the validity of ratemaking analysis derived therefrom.

At the same time, however, an individual company may benefit from a comparison of its own experience to the aggregate ISO experience, and may reach valid conclusions with respect to the manner in which its own costs can be expected to differ from ISO's projection based on the aggregate data.

Some calculations included in this document involve areas of ISO staff judgment. Each company should carefully review and evaluate whether the ISO selected PMFs are appropriate for its use.

The material has been developed exclusively by the staff of Insurance Services Office, Inc.

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COMMERCIAL PACKAGE POLICY

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## COMMERCIAL PACKAGE POLICY METHODOLOGY OVERVIEW

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### OBJECTIVE

A Commercial Package Policy (CPP) is essentially a combination of monoline coverages. CPP pricing employs monoline loss costs modified by Package Modification Factors (PMFs). These factors vary by the eight CPP types of policy and are reviewed annually. Monoline and multiline experience are combined and reviewed via a monoline/multiline relativity analysis. The resulting indicated PMFs represent the loss cost for a CPP relative to that for monoline policies providing the same coverages.

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### STEP 1: THE RELATIVITY ANALYSES

Each line of insurance develops indicated changes to monoline and multiline aggregate loss costs based on an experience ratio relativity analysis for that coverage. The monoline indication represents the needed change to monoline loss costs. The multiline indication represents the needed change to multiline aggregate loss costs, which is implemented through changes to the PMFs. For this PMF analysis, multiline indications are developed for each line of insurance and Type of Policy. Relativity analyses are explained in Section B.

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### STEP 2: CALCULATION OF THE PMFs

The procedure described above generates indicated Implicit PMFs (IPMFs) which vary by the various lines of insurance and by type of policy. IPMFs represent what the PMF would be for the CPP risk if only a single coverage were written. For each Type of Policy, IPMFs are weighted by CPP aggregate loss costs to determine the indicated property and liability PMFs. These PMFs may be capped, or rounded to the nearest one percent, and certain component IPMFs appropriately adjusted for this change. These calculations are explained in the remainder of Section A.

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TABLE 1  
COMMERCIAL PACKAGE POLICY  
SUMMARY OF THIS REVIEW

The display below summarizes the review and shows the capped Package Modification Factors for Property and Liability. For each type of risk, the PMFs are determined to be those factors which when applied to the monoline loss costs produce the appropriate CPP aggregate loss cost level as determined by an analysis of the CPP experience.

TYPE OF POLICY	PROPERTY PMFS			LIABILITY PMFS			PROP. & LIAB. TOTAL
	CURRENT	CAPPED	% CHANGE	CURRENT	CAPPED	% CHANGE	% CHANGE
MOTEL/HOTEL (31)	1.00	1.00	0.0%	0.96	1.00	4.2%	2.9%
APARTMENT (32)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
OFFICE (33)	1.00	0.97	-3.0%	0.86	0.89	3.5%	2.3%
MERCANTILE (34)	0.99	0.94	-5.1%	0.83	0.83	0.0%	-2.2%
INSTITUTION (35)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
SERVICES (36)	0.99	0.98	-1.0%	0.97	0.98	1.0%	0.2%
IND/PROC (37)	0.92	0.84	-8.7%	0.84	0.88	4.8%	0.1%
CONTRACTORS (38)	0.99	0.96	-3.0%	0.90	0.90	0.0%	-0.2%
STATEWIDE			-3.2%			1.4%	-0.1%

OREGON  
TABLE 2  
COMMERCIAL PACKAGE POLICY  
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

MOTEL/HOTEL (31) *****	(1) AGGREG- ATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
<u>COVERAGE</u>					
PROPERTY-					
BASIC GRP I	351,044	0.910	-3.3%	0.880	0.875
BASIC GRP II	108,173	1.346	10.7	1.490	1.482
SP CAUSE/LOSS	189,073	1.095	-2.8	1.064	1.058
*CRIME	2,068	0.908	0.0	0.908	0.908
*INL. MAR.	3,978	0.850	7.1	0.910	0.910
*FIDELITY	5,170	1.000	0.0	1.000	1.000
TOTAL	659,506	1.00	0.5%	1.005	1.00
LIABILITY-					
OL&T	1,459,938	0.965	5.2%	1.015	1.000
TOTAL	1,459,938	0.96	5.7%	1.015	1.00
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PROP. & LIAB. TOTAL	2,119,444		4.1%		

  

APARTMENT (32) *****	(1) AGGREG- ATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
<u>COVERAGE</u>					
PROPERTY-					
BASIC GRP I	1,383,059	1.058	-4.2%	1.014	1.046
BASIC GRP II	287,247	0.796	6.2	0.845	0.873
SP CAUSE/LOSS	707,389	0.983	-3.4	0.950	0.980
*CRIME	2,808	0.908	0.0	0.908	0.908
*INL. MAR.	635	0.850	7.1	0.910	0.910
*FIDELITY	13,640	1.000	0.0	1.000	1.000
TOTAL	2,394,778	1.00	-3.1%	0.969	1.00
LIABILITY-					
OL&T	955,687	1.000	10.7%	1.107	1.000
TOTAL	955,687	1.00	10.7%	1.107	1.00
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PROP. & LIAB. TOTAL	3,350,465		0.8%		

\* indicates coverage for which reviews are on a MULTISTATE basis.

OREGON  
TABLE 2  
COMMERCIAL PACKAGE POLICY  
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

OFFICE (33) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-					
BASIC GRP I	322,391	1.040	-2.9%	1.010	1.010
BASIC GRP II	94,195	0.816	5.3	0.859	0.860
SP CAUSE/LOSS	301,315	1.031	-5.2	0.977	0.978
*CRIME	4,613	0.908	0.0	0.908	0.908
*INL. MAR.	9,673	0.850	7.1	0.910	0.910
*FIDELITY	18,120	1.000	0.0	1.000	1.000
TOTAL	750,307	1.00	-2.8%	0.972	0.97
LIABILITY-					
OL&T	2,955,652	0.877	2.9%	0.902	0.905
M&C	314,934	0.745	5.2	0.784	0.786
TOTAL	3,270,586	0.86	3.4%	0.889	0.89
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PROP. & LIAB. TOTAL	4,020,893		2.2%		

  

MERCANTILE (34) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-					
BASIC GRP I	2,803,969	1.109	-3.8%	1.067	1.067
BASIC GRP II	535,012	0.904	6.5	0.963	0.963
SP CAUSE/LOSS	1,240,722	0.818	-10.5	0.732	0.732
*CRIME	19,036	0.908	0.0	0.908	0.908
*INL. MAR.	272,498	0.850	7.1	0.910	0.910
*FIDELITY	217,395	1.000	0.0	1.000	1.000
TOTAL	5,088,632	0.99	-4.6%	0.944	0.94
LIABILITY-					
OL&T	4,279,761	0.736	2.7%	0.756	0.758
M&C	936,848	0.944	5.5	0.996	0.998
LOCAL PRODUCT	689,800	1.227	2.5	1.258	1.261
*MULTI PRODUCT	954,584	0.831	3.8	0.862	0.862
TOTAL	6,860,993	0.83	0.2%	0.831	0.83
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	11,949,625		-1.9%		

\* indicates coverage for which reviews are on a MULTISTATE basis.

OREGON  
TABLE 2  
COMMERCIAL PACKAGE POLICY  
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

INSTITUTION (35) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-					
BASIC GRP I	1,761,203	1.252	-4.1%	1.201	1.230
BASIC GRP II	378,395	0.818	6.0	0.867	0.888
SP CAUSE/LOSS	686,999	0.721	-2.8	0.701	0.718
*CRIME	16,401	0.908	0.0	0.908	0.908
*INL. MAR.	3,643	0.850	7.1	0.910	0.910
*FIDELITY	136,794	1.000	0.0	1.000	1.000
TOTAL	2,983,435	1.00	-2.2%	0.978	1.00
LIABILITY-					
OL&T	982,505	1.020	9.1%	1.113	1.021
M&C	54,460	0.763	1.8	0.777	0.713
TOTAL	1,036,965	1.00	9.0%	1.090	1.00
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PROP. & LIAB. TOTAL	4,020,400		0.7%		

  

SERVICES (36) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-					
BASIC GRP I	1,791,708	1.205	-1.3%	1.189	1.190
BASIC GRP II	386,711	0.990	9.7	1.086	1.086
SP CAUSE/LOSS	677,209	0.665	-3.3	0.643	0.643
*CRIME	7,990	0.908	0.0	0.908	0.908
*INL. MAR.	25,091	0.850	7.1	0.910	0.910
*FIDELITY	116,481	1.000	0.0	1.000	1.000
TOTAL	3,005,190	0.99	-0.7%	0.983	0.98
LIABILITY-					
OL&T	1,587,421	0.824	4.7%	0.863	0.866
M&C	1,744,735	0.931	0.6	0.937	0.941
LOCAL PRODUCT	914,804	1.500	0.5	1.507	1.500
*MULTI PRODUCT	153,670	0.940	-2.7	0.914	0.914
TOTAL	4,400,630	0.97	1.1%	0.981	0.98
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	7,405,820		0.4%		

\* indicates coverage for which reviews are on a MULTISTATE basis.

OREGON  
TABLE 2  
COMMERCIAL PACKAGE POLICY  
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

IND/PROC (37) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	1,829,465	1.133	-5.3%	1.073	1.073
BASIC GRP II	199,774	0.529	5.3	0.557	0.557
SP CAUSE/LOSS	845,103	0.700	-15.0	0.595	0.595
*CRIME	5,758	0.908	0.0	0.908	0.908
*INL. MAR.	3,833	0.850	7.1	0.910	0.910
*FIDELITY	75,362	1.000	0.0	1.000	1.000
TOTAL	2,959,295	0.92	-9.1%	0.836	0.84
LIABILITY-					
M&C	3,366,490	0.846	5.7	0.894	0.896
LOCAL PRODUCT	171,669	0.826	-1.5	0.814	0.816
*MULTI PRODUCT	2,070,903	0.841	2.2	0.860	0.860
TOTAL	5,609,062	0.84	4.6%	0.879	0.88
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	8,568,357		-0.1%		

  

CONTRACTORS (38) *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE <u>LOSS COSTS</u>	CURRENT IMPLICIT <u>PMF</u>	NET <u>INDICATION</u>	INDIC. <u>PMF</u>	CAPPED <u>PMF</u>
COVERAGE					
PROPERTY-					
BASIC GRP I	319,879	0.898	-2.5%	0.876	0.876
BASIC GRP II	95,183	1.107	6.0	1.173	1.174
SP CAUSE/LOSS	358,818	1.068	-7.3	0.990	0.990
*CRIME	1,442	0.908	0.0	0.908	0.908
*INL. MAR.	2,756	0.850	7.1	0.910	0.910
*FIDELITY	40,225	1.000	0.0	1.000	1.000
TOTAL	818,303	0.99	-3.1%	0.960	0.96
LIABILITY-					
M&C	5,956,724	0.859	3.8	0.892	0.894
LOCAL PRODUCT	9,384,136	0.919	-1.4	0.906	0.908
TOTAL	15,340,860	0.90	0.0%	0.900	0.90
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	16,159,163		-0.1%		

\* indicates coverage for which reviews are on a MULTISTATE basis.

OREGON  
TABLE 2  
COMMERCIAL PACKAGE POLICY  
CALCULATION OF REVISED CPP PACKAGE MODIFICATION FACTORS (PMF)

STATEWIDE *****	(1)	(2)	(3)	(4)	(5)
	AGGREGATE	CURRENT	NET	INDIC.	CAPPED
COVERAGE	<u>LOSS COSTS</u>	<u>IMPLICIT</u>	<u>INDICATION</u>	<u>PMF</u>	<u>PMF</u>
PROPERTY-		PMF			
BASIC GRP I	10,562,718	1.124	-3.7%	1.083	1.092
BASIC GRP II	2,084,690	0.846	7.0	0.905	0.913
SP CAUSE/LOSS	5,006,628	0.805	-7.4	0.746	0.752
*CRIME	60,116	0.908	0.0	0.908	0.908
*INL. MAR.	322,107	0.850	7.1	0.910	0.910
*FIDELITY	623,187	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>18,659,446</u>	<u>0.983</u>	<u>-4.0%</u>	<u>0.944</u>	<u>0.951</u>
LIABILITY-					
OL&T	12,220,964	0.840	4.4%	0.878	0.865
M&C	12,374,191	0.867	4.0	0.902	0.904
LOCAL PRODUCT	11,160,409	0.963	-1.0	0.953	0.955
*MULTI PRODUCT	3,179,157	0.842	2.4	0.863	0.863
<u>TOTAL</u>	<u>38,934,721</u>	<u>0.888</u>	<u>1.8%</u>	<u>0.904</u>	<u>0.901</u>
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	57,594,167		-0.1%		

\* indicates coverage for which reviews are on a MULTISTATE basis.



OREGON

TABLE 2

COMMERCIAL PACKAGE POLICY

COMBINED PMFs

<u>TYPE OF POLICY</u>	<u>CURRENT COMBINED</u>	<u>INDICATED COMBINED</u>	<u>CAPPED COMBINED</u>
MOTEL/HOTEL (31)	0.98	1.012	1.00
APARTMENT (32)	1.00	1.008	1.00
OFFICE (33)	0.89	0.903	0.90
MERCANTILE (34)	0.89	0.874	0.88
INSTITUTION (35)	1.00	1.007	1.00
SERVICES (36)	0.98	0.982	0.98
IND/PROC (37)	0.87	0.865	0.87
CONTRACTORS (38)	0.90	0.903	0.91

NOTE: Combined PMFs are provided for informational purposes only.

## EXPLANATORY NOTES TO TABLE 2

### CALCULATION OF REVISED PACKAGE MODIFICATION FACTORS

OBJECTIVE	<p>Commercial package policies were introduced in the 1960's as a convenient tool for both insurer and insured to have the many types of insurance needed by commercial risks packaged under one cover. Thus fire, extended coverage, crime, liability insurance, etc. could be written using a single policy instead of several. Today, virtually any type of monoline coverage can also be purchased as part of a package policy such as the CPP.</p> <p>The types of insured which can be written under a CPP are generally categorized into the following Types of Policy:</p> <ul style="list-style-type: none"><li>. Motels and Hotels (TOP 31)</li><li>. Apartments (TOP 32)</li><li>. Offices (TOP 33)</li><li>. Mercantile Operations (TOP 34)</li><li>. Institutions (TOP 35)</li><li>. Service Operations (TOP 36)</li><li>. Industrial and Processing Operations (TOP 37)</li><li>. Contractors (TOP 38)</li></ul>
PRICING OF POLICIES	<p>Since a CPP is essentially a combination of monoline coverages, CPP pricing employs monoline loss costs modified by PMFs (Package Modification Factors). These factors vary by the categories shown above and are reviewed annually.</p>
CPP PMF REVIEW PROCEDURE	<p>The CPP review of Package Modification Factors, which appears in Table 2 of this document, determines the appropriate PMF loss cost level for each of the eight CPP categories. This is done by combining the indications of the simultaneous reviews of monoline and multiline experience for the various lines (or coverages).</p> <p>A detailed explanation of the calculation of the revised PMFs follows.</p>

## EXPLANATORY NOTES TO TABLE 2 (Cont'd)

### LINES OF INSURANCE (COVERAGES) INCLUDED

The CPP review reflects the contribution from each significant coverage which can be written on a CPP. Included are:

#### Property Coverages

- . Basic Group I (BGI) - the predominant property coverage included.
- . Basic Group II (BGII) - both Basic Group I and Basic Group II must be purchased under a CPP contract.
- . Special Causes of Loss (SCL) - typically a type of insurance which is purchased in addition to Basic Group I and Basic Group II in order to provide "all risk" property coverage for the insured.
- . Crime (CRIME) - Crime insurance is a commonly purchased CPP coverage.
- . Inland Marine (INL. MAR.) - A highly specialized line of property insurance, Inland Marine coverages can be purchased as part of a package policy.
- . Fidelity (FIDELITY) - Certain forms of fidelity insurance can be part of the CPP package. Various forms of employee dishonesty coverage are available.

#### Liability Coverages

- . Owners, Landlords and Tenants (OL&T) Liability - this is the prevalent type of Premises/Operations liability for CPP insureds.
- . Manufacturers and Contractors Liability (M&C) - this is the type of Premises/Operations liability insurance for risks whose liability exposure is more heavily off-premises than on.
- . Products/Completed Operations Liability (PROD) - this type of insurance protects against claims for damages arising from products/completed operations in conjunction with an insured's business. For review purposes, this line of insurance is split into the following two categories:
  - Products: experience for this category is reviewed on a multistate basis.
  - Local Products/ Completed Operations: experience for this category reflects an exposure to loss which is local in nature; therefore, individual state experience is used.

## EXPLANATORY NOTES TO TABLE 2 (Cont'd)

### THE IMPLICIT PACKAGE MODIFICATION FACTOR

For each applicable coverage listed under each of the eight (8) CPP categories, a "current implicit PMF" is shown in column (2). The definition of this factor follows:

For a given CPP category (e.g., apartments) the published Package Modification Factor (PMF) represents the loss cost for a CPP relative to that for monoline policies providing the same coverages. Thus a property (liability) PMF of .80 represents a 20% lower aggregate loss cost for a CPP than for the comparable monoline policies. This PMF, however, represents the CPP "loss cost" for all property (liability) coverages combined. Based on CPP experience, it has been determined that this CPP "loss cost" can differ significantly if it is determined for each property (liability) coverage individually. The IPMF represents what the PMF would be for that CPP risk if only a single coverage were written. The use of the IPMF in monoline/multiline ratemaking and in the determination of revised CPP Package Modification Factors is significant in that it appropriately identifies how different the component parts of the multiline "loss cost" are.

### THE MULTILINE INDICATION

Under the CPP ratemaking procedures, monoline and multiline experience are combined for each coverage. The results of these coverage analyses are indicated changes to monoline loss costs and also indicated CPP aggregate loss cost level changes. The CPP indications by coverage are then incorporated in the CPP PMF review. These indications (shown in column (3)) represent the needed adjustments to the IPMFs (shown in column (2)) described above.

The development of these indications is detailed in Section B.

### THE INDICATED PMF

For each CPP category (and for property vs. liability), the indicated PMF is calculated as follows:

Each of the current IPMFs in column (2) is multiplied by the indicated percent change shown in column (3). A weighted average of the indicated IPMFs, using weights based on latest year aggregate loss costs at current ISO loss cost level (column (1) divided by column (2)), yields the indicated PMF at the bottom of column (4).

### THE CAPPED PMF

The indicated PMF for each category (and for property vs. liability) shown at the bottom of column (4) is limited to a maximum of 1.00 in arriving at the proposed PMF (bottom of column (5)). All indicated PMFs which are below 1.00 are rounded to the nearest .01 in determining the proposed PMF. To the extent that any indicated PMFs are capped at 1.00, indicated PMFs below this value are adjusted in order to minimize any revenue changes which would result from capping.

In addition to the adjustments just described, the IPMFs (for property and liability) shown in column (4) are subject to minimum and maximum values and adjusted in column (5) so that they average to the proposed PMF shown at the bottom of column (5).

## COMMERCIAL PACKAGE POLICY

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TABLE 3 - BASIC GROUP I RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)
	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE *
TOP					
10	1.736	0.052	1.029	1.034	
31	0.815	0.020	0.996	1.000	-3.3%
32	0.813	0.065	0.987	0.991	-4.2%
33	0.989	0.017	1.000	1.004	-2.9%
34	0.926	0.123	0.991	0.995	-3.8%
35	0.846	0.075	0.988	0.992	-4.1%
36	1.218	0.085	1.017	1.021	-1.3%
37	0.743	0.087	0.974	0.979	-5.3%
38	1.244	0.016	1.003	1.008	-2.5%
RATING GROUP					
01	1.389	0.108	1.036	1.041	
02	1.026	0.067	1.002	1.006	
03	0.825	0.051	0.990	0.994	
04	0.927	0.273	0.980	0.984	
06	0.819	0.098	0.981	0.985	
07	1.205	0.028	1.005	1.009	
08	0.836	0.112	0.980	0.984	
09	1.223	0.097	1.020	1.024	
10	0.919	0.051	0.996	1.000	
11	0.921	0.015	0.999	1.003	
13	0.884	0.062	0.992	0.997	
14	1.070	0.062	1.004	1.008	
15	0.853	0.054	0.991	0.996	
17	1.067	0.039	1.003	1.007	
18	0.982	0.045	0.999	1.003	
19	1.161	0.008	1.001	1.005	
21	1.060	0.060	1.004	1.008	
22	1.152	0.054	1.008	1.012	
TERRITORY					
Portland	1.114	0.105	1.011	1.017	
Balance of State	0.985	0.488	0.993	0.998	

\* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP) / (MONOLINE RELATIVITY (TOP 10)) - 1

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TABLE 4 - SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)
	\$ LST SQ FORMULA RELATIVITY	CREDIBILITY Z	Z-WTD. RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE *
TOP					
10	1.616	0.099	1.049	1.067	
31	2.255	0.024	1.020	1.037	-2.8%
32	1.175	0.083	1.013	1.031	-3.4%
33	0.895	0.043	0.995	1.012	-5.2%
34	0.623	0.134	0.939	0.955	-10.5%
35	1.291	0.076	1.020	1.037	-2.8%
36	1.191	0.081	1.014	1.032	-3.3%
37	0.308	0.097	0.892	0.907	-15.0%
38	0.553	0.048	0.972	0.989	-7.3%
CATEGORY					
01	1.121	0.538	1.063	1.033	
02	0.480	0.065	0.953	0.926	
03	0.359	0.064	0.937	0.910	
04	0.495	0.091	0.938	0.911	
05	1.372	0.058	1.019	0.989	
06	1.019	0.031	1.001	0.972	
07	0.792	0.019	0.996	0.967	
08	0.909	0.056	0.995	0.966	
09	0.882	0.072	0.991	0.963	
10	1.425	0.048	1.017	0.988	
11	0.799	0.107	0.976	0.948	
12	0.807	0.057	0.988	0.959	
13	0.804	0.044	0.990	0.962	
14	0.900	0.071	0.993	0.964	

\* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP) / (MONOLINE RELATIVITY (TOP 10)) - 1

## EXPLANATORY NOTES TO TABLES 3 AND 4

### BASIC GROUP I AND SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

#### OBJECTIVE

The explanations which follow clarify Tables 3 and 4, the Basic Group I Relativity Analysis and the Special Causes of Loss Relativity Analysis, respectively. The purpose of these analyses is to:

- (1) determine monoline classification and territorial loss cost level needs for Basic Group I;
- (2) determine monoline category loss cost level need for Special Causes of Loss;
- (3) determine indicated changes to the eight property CPP Package Modification Factors based on Basic Group I/Special Causes of Loss experience.

#### COLUMN (1)

#### LEAST SQUARES FORMULA RELATIVITIES

The Least Squares Formula Relativities are the marginal relativities which result from the application of the simultaneous review procedure to the raw experience (where marginal refers to the relativities for a given rating variable, e.g. type of policy, across all subsets of any other rating variables, i.e. rating group and territory for Basic Group I, and category for Special Causes of Loss).

The purpose of such a simultaneous review procedure is to arrive at a set of type of policy relativities (which will serve to price CPP policies relative to monoline policies via the PMF); a set of rating group/territory relativities for Basic Group I; and a set of category relativities for Special Causes of Loss that best represent the experience. This procedure is in contrast to a review of each rating variable's experience separately. Such one-way types of review do not take into account differing percentages of monoline and multiline experience in each rating variable, or differing percentages of a particular rating variable's experience in the monoline and multiline types of policy. The simultaneous relativity procedure accounts for these different distributions in generating relativities for the various rating variables.



EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (1)  
(Cont'd)

The procedure uses an iterative technique to determine a set of marginal relativities by rating variable that is a best fit to the individual cell relativities, with each cell being defined as the cross-section of specific values of each rating variable. The process uses the relativity of the five year experience ratios by rating cell to the overall statewide experience ratio and the latest year aggregate loss costs for each rating cell. (This experience is shown in Table 5 for Basic Group I and Table 6 for Special Causes of Loss). Specifically, the iteration procedure uses the following formulas:

BASIC GROUP I:

$$TOP_i = \frac{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 R_{ijk} RG_j TER_k}{\sum_{j=1}^n \sum_{k=1}^t W_{ijk}^2 RG_j^2 TER_k^2}, \text{ where } 1 \leq i \leq m;$$

$$RG_j = \frac{\sum_{k=1}^t \sum_{i=1}^m W_{ijk}^2 R_{ijk} TOP_i TER_k}{\sum_{k=1}^t \sum_{i=1}^m W_{ijk}^2 TOP_i^2 TER_k^2}, \text{ where } 1 \leq j \leq n$$

$$TER_k = \frac{\sum_{j=1}^n \sum_{i=1}^m W_{ijk}^2 R_{ijk} TOP_i RG_j}{\sum_{j=1}^n \sum_{i=1}^m W_{ijk}^2 TOP_i^2 RG_j^2}, \text{ where } 1 \leq k \leq t$$

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (1)  
(Cont'd)

SPECIAL CAUSES OF LOSS:

$$TOP_i = \frac{\sum_{j=1}^n W_{ij}^2 R_{ij} CAT_j}{\sum_{j=1}^n W_{ij}^2 CAT_j^2}, \text{ where } 1 \leq i \leq m;$$

$$CAT_j = \frac{\sum_{i=1}^m W_{ij}^2 R_{ij} TOP_i}{\sum_{i=1}^m W_{ij}^2 TOP_i^2}, \text{ where } 1 \leq j \leq n$$

- TOP<sub>i</sub> is the relativity for the ith Type of Policy;
- RG<sub>j</sub> is the relativity for the jth Rating Group;
- CAT<sub>j</sub> is the relativity for the jth Category;
- TER<sub>k</sub> is the relativity for the kth Territory;
- W<sub>ijk</sub> is the loss cost volume at current level for the ith Type of Policy, jth Rating Group or Category and kth Territory;
- R<sub>ijk</sub> is the experience ratio relativity for the ith Type of Policy, jth Rating Group or Category and kth Territory;
- R<sub>ij</sub> is the experience ratio relativity for the ith Type of Policy, jth Rating Group or Category;

## EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

### COLUMN (1) (Cont'd)

- m is the number of Types of Policy in the analysis;
- n is the number of Rating Groups or Categories in the analysis;
- t is the number of Territories in the analysis.

The procedure determines m Type of Policy relativities using the above formulas. Then, using those results, a set of n Rating Group and t Territory relativities are determined. These steps form an iterative process which continues until there is no appreciable difference in results from one iteration to the next.

### COLUMN (2)

#### CREDIBILITY

The credibility of the experience for each rating variable is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the 5-year adjusted aggregate loss costs for a given rating variable, and K is a constant value. For Basic Group I, K equals an aggregate loss cost volume of \$55,000,000 for territory, \$40,000,000 for rating group, and \$100,000,000 for type of policy. For Special Causes of Loss, K equals an aggregate loss cost volume of \$15,000,000.

### COLUMN (3)

#### CREDIBILITY-WEIGHTED RELATIVITIES

Credibility-weighted relativities are calculated based on the formula

$$W = R^Z$$

where Z is the credibility, R is the least squares formula relativity and W is the credibility-weighted relativity for a given rating variable.

This formula implicitly assigns the complement of credibility to a relativity of unity.

EXPLANATORY NOTES TO TABLES 3 AND 4 (Cont'd)

COLUMN (4)

BALANCED RELATIVITIES

The credibility-weighted relativities are balanced to assure that the average relativity across all rating variables remains at unity.

MULTILINE  
CONSIDERATIONS

The type of policy (TOP) relativities are used to generate multiline indications which apply to the current Implicit Package Modification Factors (IPMFs). The indicated IPMFs are calculated as follows:

$$\text{TOP y indicated IPMF} = \frac{(\text{TOP y current IPMF}) \times (\text{TOP y relativity})}{\text{monoline relativity}}$$

For each CPP Type of Policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that Type of Policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account. If an IPMF has been capped it is so noted at the bottom of Table 3 and Table 4.

Loss cost changes for each TOP are calculated as described on Tables 3 and 4.

ENTIRE STATE

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BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
10 MONOLINE	01 APARTMENTS	118,615	484,224	4.500	2.662	2.462
	02 OTHER HABITATIONAL	30,548	173,235	2.337	2.086	1.930
	03 RESTAURANTS & BARS	24,048	98,554	0.012	1.742	1.611
	04 OTHER MERCANTILE RS	296,735	1,739,438	0.849	1.837	1.699
	06 CHURCHES	16,587	72,760	0.362	2.027	1.875
	07 SCHOOLS	20,730	86,640	1.406	2.465	2.280
	08 OFFICES AND BANKS	104,743	560,614	1.355	1.996	1.847
	09 REC. FACILITIES	96,568	517,757	0.606	1.908	1.765
	10 HOTELS AND MOTELS	38,430	122,231	1.014	1.703	1.576
	11 HOSPITALS/NURS HOME	13,464	62,069	0.000	1.689	1.562
	13 MOTOR VEHICLE RISKS	28,069	175,474	13.933	4.205	3.890
	14 OTHER NON-MANUF.	58,462	340,168	5.597	2.807	2.596
	15 STORAGE	56,876	198,842	0.034	1.597	1.478
	17 FOOD MANUFACTURING	80,911	186,268	5.551	2.442	2.259
	18 WOOD MANUFACTURING	21,920	170,602	0.041	1.552	1.436
	19 WEARING APPAREL	207	757	0.000	1.527	1.412
	21 METAL MANUFACTURING	52,394	289,781	0.384	1.834	1.697
	22 OTHER MANUFACTURING	39,507	209,612	1.079	1.695	1.568
	TOTAL*	1,098,814	5,489,026	2.152	2.094	1.937
31 MULTILINE	10 HOTELS AND MOTELS	351,044	2,033,814	1.000	1.036	0.958
MOTEL/HOTEL	TOTAL*	351,044	2,033,814	1.000	1.036	0.958
32 MULTILINE	01 APARTMENTS	830,156	4,371,689	2.033	1.241	1.148
APARTMENT	02 OTHER HABITATIONAL	552,903	2,617,675	1.124	1.067	0.988
	TOTAL*	1,383,059	6,989,364	1.670	1.172	1.084
33 MULTILINE	08 OFFICES AND BANKS	322,391	1,746,508	0.759	0.845	0.782
OFFICE	TOTAL*	322,391	1,746,508	0.759	0.845	0.782
34 MULTILINE	03 RESTAURANTS & BARS	339,140	1,911,381	0.612	0.900	0.833
MERCANTILE	04 OTHER MERCANTILE RS	1,935,824	9,732,326	0.907	0.870	0.805
	08 OFFICES AND BANKS	72,255	374,552	0.188	0.819	0.758
	13 MOTOR VEHICLE RISKS	120,497	409,618	0.109	0.794	0.735
	14 OTHER NON-MANUF.	56,966	222,221	0.018	0.804	0.744
	15 STORAGE	279,287	1,334,499	0.401	0.800	0.740
	TOTAL*	2,803,969	13,984,597	0.750	0.861	0.796

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BASIC GROUP I RELATIVITY ANALYSIS  
TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	19,609	62,671	0.000	0.763	0.706
	06 CHURCHES	827,967	4,268,291	0.244	0.712	0.659
	07 SCHOOLS	260,918	1,085,851	2.063	1.272	1.177
	08 OFFICES AND BANKS	244,702	945,022	0.229	0.811	0.750
	09 REC. FACILITIES	126,149	646,061	2.176	1.139	1.054
	11 HOSPITALS/NURS HOME	164,403	562,815	0.446	0.829	0.767
	13 MOTOR VEHICLE RISKS	262	1,965	0.000	0.767	0.709
	14 OTHER NON-MANUF.	117,193	521,944	0.432	0.830	0.767
	TOTAL*	1,761,203	8,094,620	0.678	0.859	0.794
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	25,610	158,369	0.000	0.860	0.796
	04 OTHER MERCANTILE RS	167,916	986,998	0.698	0.953	0.881
	08 OFFICES AND BANKS	173,819	866,431	0.492	0.912	0.844
	09 REC. FACILITIES	605,275	3,150,153	2.242	1.523	1.409
	13 MOTOR VEHICLE RISKS	449,455	2,065,458	1.227	1.102	1.019
	14 OTHER NON-MANUF.	191,085	1,011,531	2.409	1.369	1.267
	15 STORAGE	138,961	731,701	1.680	1.172	1.084
	21 METAL MANUFACTURING	12,950	96,003	2.091	1.164	1.077
	22 OTHER MANUFACTURING	26,637	169,150	0.014	0.865	0.800
	TOTAL*	1,791,708	9,235,794	1.581	1.239	1.146
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	232,266	1,253,983	0.127	0.791	0.732
	08 OFFICES AND BANKS	59,582	267,485	0.311	0.908	0.840
	13 MOTOR VEHICLE RISKS	296	6,121	0.147	0.909	0.841
	14 OTHER NON-MANUF.	64,609	448,088	0.000	0.833	0.771
	15 STORAGE	1,979	21,781	0.000	0.856	0.792
	17 FOOD MANUFACTURING	333,105	1,452,544	0.000	0.753	0.696
	18 WOOD MANUFACTURING	323,039	1,692,412	0.201	0.780	0.721
	19 WEARING APPAREL	49,623	330,323	0.281	0.898	0.831
	21 METAL MANUFACTURING	399,003	2,182,984	0.417	0.838	0.775
	22 OTHER MANUFACTURING	365,963	1,912,368	1.193	0.983	0.909
	TOTAL*	1,829,465	9,568,089	0.399	0.839	0.776
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	243,811	1,272,380	1.643	1.199	1.110
	08 OFFICES AND BANKS	58,546	288,716	0.270	0.897	0.830
	14 OTHER NON-MANUF.	17,522	80,405	3.995	1.460	1.350
	TOTAL*	319,879	1,641,501	1.521	1.158	1.072

ENTIRE STATE

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OREGON

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) Z-WEIGHTED EXPERIENCE RATIO	(5) Z-WEIGHTED RELATIVITY
TOTAL ALL TOPS*	01 APARTMENTS	948,771	4,855,913	2.342	1.418	1.312
	02 OTHER HABITATIONAL	603,060	2,853,581	1.149	1.109	1.026
	03 RESTAURANTS & BARS	388,798	2,168,304	0.535	0.950	0.879
	04 OTHER MERCANTILE RS	2,876,552	14,985,125	0.888	0.996	0.921
	06 CHURCHES	844,554	4,341,051	0.246	0.738	0.683
	07 SCHOOLS	281,648	1,172,491	2.015	1.360	1.258
	08 OFFICES AND BANKS	1,036,038	5,049,328	0.556	0.969	0.897
	09 REC. FACILITIES	827,992	4,313,971	2.041	1.509	1.396
	10 HOTELS AND MOTELS	389,474	2,156,045	1.002	1.102	1.019
	11 HOSPITALS/NURS HOME	177,867	624,884	0.412	0.894	0.827
	13 MOTOR VEHICLE RISKS	598,579	2,658,636	1.596	1.185	1.096
	14 OTHER NON-MANUF.	505,837	2,624,357	1.797	1.281	1.185
	15 STORAGE	477,103	2,286,823	0.728	1.003	0.928
	17 FOOD MANUFACTURING	414,016	1,638,812	1.085	1.083	1.002
	18 WOOD MANUFACTURING	344,959	1,863,014	0.191	0.829	0.766
	19 WEARING APPAREL	49,830	331,080	0.280	0.901	0.833
	21 METAL MANUFACTURING	464,347	2,568,768	0.460	0.959	0.888
	22 OTHER MANUFACTURING	432,107	2,291,130	1.110	1.041	0.963
	TOTAL*	11,661,532	58,783,313	1.082	1.081	1.000

\* TOTALS IN COLUMNS (3), (4) & (5) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

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SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS  
TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
10 MONOLINE	01 BUILDINGS	521,506	2,400,597	2.214	1.868
	02 RES. APTS. AND COND	8,985	46,752	0.328	0.277
	03 OFFICES	63,129	346,086	1.002	0.846
	04 MERCANTILE - HIGH	77,368	479,760	0.800	0.675
	05 MERCANTILE - MEDIUM	22,711	115,258	0.232	0.196
	06 MERCANTILE - LOW	16,976	74,061	0.655	0.553
	07 MOTELS AND HOTELS	7,871	36,072	0.000	0.000
	08 INSTITUTIONAL - HIG	20,938	99,575	0.375	0.316
	09 INSTITUTIONAL - LOW	28,698	116,287	0.172	0.145
	10 INDUST-PROC - HIGH	17,117	76,042	0.774	0.653
	11 INDUST-PROC - LOW	52,480	282,170	0.293	0.247
	12 SERVICE - HIGH	20,294	88,802	7.598	6.412
	13 SERVICE - LOW	30,237	183,245	1.255	1.059
	14 CONTRACTORS	10,380	48,473	3.489	2.944
	TOTAL*	898,690	4,393,180	1.746	1.473
31 MULTILINE MOTEL/HOTEL	01 BUILDINGS	140,385	724,089	3.061	2.583
	07 MOTELS AND HOTELS	48,688	257,664	2.194	1.851
	TOTAL*	189,073	981,753	2.838	2.395
32 MULTILINE APARTMENT	01 BUILDINGS	517,812	2,651,856	1.596	1.347
	02 RES. APTS. AND COND	189,577	988,429	0.685	0.578
	TOTAL*	707,389	3,640,285	1.352	1.141
33 MULTILINE OFFICE	01 BUILDINGS	186,203	1,092,919	1.236	1.043
	03 OFFICES	110,574	653,053	0.214	0.181
	04 MERCANTILE - HIGH	1,412	12,640	0.000	0.000
	08 INSTITUTIONAL - HIG	987	3,472	0.000	0.000
	11 INDUST-PROC - LOW	0	8,506	0.000	0.000
	12 SERVICE - HIGH	1,062	5,193	2.231	1.883
	14 CONTRACTORS	1,077	3,689	0.932	0.786
	TOTAL*	301,315	1,779,472	0.854	0.721



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SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS  
TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
34 MULTILINE MERCANTILE	01 BUILDINGS	806,953	3,902,943	0.836	0.705
	03 OFFICES	412	1,699	0.000	0.000
	04 MERCANTILE - HIGH	165,182	955,956	0.474	0.400
	05 MERCANTILE - MEDIUM	161,958	813,623	1.161	0.980
	06 MERCANTILE - LOW	81,716	396,584	0.919	0.776
	08 INSTITUTIONAL - HIG	2	188	0.000	0.000
	11 INDUST-PROC - LOW	607	2,562	0.000	0.000
	12 SERVICE - HIGH	10,931	44,801	0.000	0.000
	13 SERVICE - LOW	9,819	43,064	2.968	2.505
	14 CONTRACTORS	3,142	13,637	0.000	0.000
	TOTAL*	1,240,722	6,175,057	0.842	0.711
35 MULTILINE INSTITUTIONAL	01 BUILDINGS	350,259	1,590,738	1.735	1.464
	03 OFFICES	0	87	0.000	0.000
	04 MERCANTILE - HIGH	824	3,944	0.000	0.000
	08 INSTITUTIONAL - HIG	135,792	721,519	1.476	1.246
	09 INSTITUTIONAL - LOW	195,279	957,617	1.431	1.208
	12 SERVICE - HIGH	1,105	4,294	0.000	0.000
	13 SERVICE - LOW	2,268	6,946	0.000	0.000
	14 CONTRACTORS	1,472	7,183	0.000	0.000
	TOTAL*	686,999	3,292,328	1.583	1.336
36 MULTILINE SERVICES	01 BUILDINGS	390,063	2,073,779	1.636	1.381
	03 OFFICES	1,230	4,383	0.000	0.000
	04 MERCANTILE - HIGH	9,186	42,343	0.047	0.040
	05 MERCANTILE - MEDIUM	241	477	0.000	0.000
	06 MERCANTILE - LOW	739	2,596	0.232	0.196
	08 INSTITUTIONAL - HIG	13,297	66,951	0.000	0.000
	09 INSTITUTIONAL - LOW	16,398	86,775	0.000	0.000
	10 INDUST-PROC - HIGH	638	7,575	0.000	0.000
	11 INDUST-PROC - LOW	505	3,506	0.000	0.000
	12 SERVICE - HIGH	152,363	752,386	1.022	0.862
	13 SERVICE - LOW	85,965	447,117	1.200	1.013
	14 CONTRACTORS	6,584	30,008	0.000	0.000
	TOTAL*	677,209	3,517,896	1.325	1.118

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SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS  
TABLE 6 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 06/30/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
37 MULTILINE INDUST/PROC	01 BUILDINGS	447,721	2,131,859	0.334	0.282
	03 OFFICES	257	909	0.000	0.000
	04 MERCANTILE - HIGH	339	1,476	0.000	0.000
	10 INDUST-PROC - HIGH	125,713	680,764	0.729	0.615
	11 INDUST-PROC - LOW	270,344	1,482,248	0.550	0.464
	12 SERVICE - HIGH	370	2,025	0.000	0.000
	13 SERVICE - LOW	0	98	0.000	0.000
	14 CONTRACTORS	359	1,834	0.000	0.000
	TOTAL*	845,103	4,301,213	0.461	0.389
38 MULTILINE CONTRACTORS	01 BUILDINGS	136,040	927,598	0.768	0.648
	03 OFFICES	5,032	27,864	0.920	0.776
	04 MERCANTILE - HIGH	432	1,329	27.179	22.936
	05 MERCANTILE - MEDIUM	121	224	0.000	0.000
	08 INSTITUTIONAL - HIG	496	1,024	7.756	6.545
	11 INDUST-PROC - LOW	1,837	9,823	0.000	0.000
	12 SERVICE - HIGH	1,128	4,406	7.348	6.201
	13 SERVICE - LOW	417	1,969	2.721	2.296
	14 CONTRACTORS	213,315	1,046,279	0.594	0.501
	TOTAL*	358,818	2,020,516	0.727	0.614
TOTAL ALL TOPS*	01 BUILDINGS	3,496,942	17,496,378	1.377	1.162
	02 RES. APTS. AND COND	198,562	1,035,181	0.669	0.565
	03 OFFICES	180,634	1,034,081	0.507	0.428
	04 MERCANTILE - HIGH	254,743	1,497,448	0.598	0.505
	05 MERCANTILE - MEDIUM	185,031	929,582	1.045	0.882
	06 MERCANTILE - LOW	99,431	473,241	0.869	0.733
	07 MOTELS AND HOTELS	56,559	293,736	1.889	1.594
	08 INSTITUTIONAL - HIG	171,512	892,729	1.237	1.044
	09 INSTITUTIONAL - LOW	240,375	1,160,679	1.183	0.998
	10 INDUST-PROC - HIGH	143,468	764,381	0.731	0.617
	11 INDUST-PROC - LOW	325,773	1,788,815	0.504	0.425
	12 SERVICE - HIGH	187,253	901,907	1.712	1.445
	13 SERVICE - LOW	128,706	682,439	1.332	1.124
	14 CONTRACTORS	236,329	1,151,103	0.694	0.586
	TOTAL*	5,905,318	30,101,700	1.185	1.000

\* TOTALS IN COLUMNS (3) & (4) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

## EXPLANATORY NOTES TO TABLES 5 AND 6

### BASIC GROUP I/SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

**INTRODUCTION**      The experience used in the relativity analysis and displayed in Tables 5 and 6 is the latest five years of accident year data as reported under the Commercial Statistical Plan. As in the overall review, loss costs have been adjusted to current ISO loss cost and prospective amount of insurance levels (with multiline aggregate loss costs adjusted additionally by the current implicit package modification factors). Incurred losses are adjusted to prospective cost levels, and are further adjusted by the Basic Group I large loss procedure and the Special Causes of Loss excess procedure. Losses have also been developed to their ultimate settlement value by application of loss development factors.

**COLUMN (1)**      AGGREGATE LOSS COSTS

The latest year adjusted aggregate loss costs (adjusted as described above) are used as weights both in the calculation of any totals shown in this table and in the iterative formulae used in the simultaneous review procedure.

**COLUMN (2)**      5 - YEAR AGGREGATE LOSS COSTS

The combined five-year adjusted aggregate loss costs (adjusted as described above) are used to calculate the experience ratios in column (3).

**COLUMN (3)**      FIVE-YEAR EXPERIENCE RATIOS

These are the ratio of the combined five-year adjusted incurred losses (adjusted as described above) to the combined five-year adjusted aggregate loss costs as shown in Column (2). Any totals which are shown are weighted averages using the adjusted aggregate loss costs in Column (1).

**COLUMN (4)**      CREDIBILITY (Z) WEIGHTED EXPERIENCE RATIO

A credibility procedure is applied to the initial experience ratios in column (3) on a cell-by-cell basis prior to the simultaneous review procedure. The credibility values are calculated using an empirical Bayesian credibility procedure. In the following discussion, cell refers to an individual combination of TOP, rating group or category, and territory (where applicable).

EXPLANATORY NOTES TO TABLES 5 AND 6 (Cont'd)

COLUMN (4)  
(Cont'd)

The important concept underlying empirical Bayesian credibility is that the credibility should depend both on the overall variation of the group of which the cell is a member, in addition to the variation of the yearly experience ratios for each cell. Therefore, if a cell's data is itself very stable then we would assign a relatively high credibility value, and vice versa.

The empirical Bayesian credibility formula for individual cell credibility is  $Z = ((C-3)/C) (P/(P+K)) + (3/C)$ . P equals the cell's five-year adjusted aggregate loss costs and C equals the number of unique combinations of rating variables (Territory, TOP and Rating Group/Category) within a class group. The K value is estimated from the underlying data using the empirical Bayes method and varies by TOP group and by territory where applicable. The three TOP groups used in this analysis are: Monoline (TOP 10), Premises (TOP's 31-35), and Operations (TOP's 36-38). The 3/C term corrects for the statistical bias associated with the credibility process. The minimum credibility that is possible is 3/C.

The calculated credibility (Z) is then applied to the five-year experience ratio with the complement of credibility applied to the credibility-weighted average of the individual experience ratios of the group, where group refers to the specified TOP/territory group. In a non-territory state, K values would be determined for the three TOP groups on an entire state basis.

COLUMN (5)

WEIGHTED RELATIVITIES

The relativities are the ratios of the five-year credibility-weighted experience ratios shown in column (4) to the average five-year credibility-weighted experience ratio for all TOP's, rating groups and territories (where applicable) combined. These relativities represent how much better or worse than average the experience for a given cell is. They are used along with the aggregate loss costs in column (1) as input for the simultaneous review procedure.

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TABLE 7 - BASIC GROUP II RELATIVITY ANALYSIS

	(1) ACCIDENT YEAR ENDING 06/30/17 AGGR. LOSS COSTS AT CURRENT IMPLICIT PMF	(2) ACCIDENT YEARS 2008-2017 EXPER. RATIO AT CURRENT PMF	(3) FORMULA RELATIVITY (2) / 1.207	(4) CREDI- BILITY Z C	(5) Z WEIGHTED RELA- TIVITY D	(6) BALANCED FORMULA RELA- TIVITY E	(7) NORMALIZED FORMULA RELA- TIVITY F	(8) INDICATED CHANGE G
MONOLINE	364,352	0.535	0.443	0.065	0.965	0.965	0.9434	
MULTILINE	2,084,690	1.325	1.098	0.315	1.032	1.033	1.0095	
COVERAGE	2,449,042	1.207	1.001			1.0229	B	0.9997
MULTILINE TOP								
31 MOTEL/HOTEL	108,173	3.034	2.514	0.027	1.042	1.068	1.0441	+10.7%
32 APARTMENT	287,247	1.198	0.993	0.063	1.000	1.025	1.0021	+6.2%
33 OFFICE	94,195	0.694	0.575	0.023	0.991	1.016	0.9933	+5.3%
34 MERCANTILE	535,012	1.228	1.017	0.100	1.003	1.028	1.0050	+6.5%
35 INSTITUTIONAL	378,395	1.167	0.967	0.075	0.998	1.023	1.0001	+6.0%
36 SERVICES	386,711	1.681	1.393	0.081	1.033	1.059	1.0353	+9.7%
37 INDUST/PROCESS	199,774	0.892	0.739	0.040	0.991	1.016	0.9933	+5.3%
38 CONTRACTORS	95,183	1.017	0.843	0.020	0.998	1.023	1.0001	+6.0%
	2,084,690	1.325 B	1.098		1.007 B	1.033 B	1.0095 B	

B - AVERAGE WEIGHTED BY COLUMN (1)

C - CREDIBILITY =  $P / (P + K)$  WHERE P REPRESENTS THE TOTAL 10 YEAR ADJUSTED LOSS COSTS AND K = 45,000,000

D -  $(5) = (3) * (4) + (1.001 - (4))$

E - FOR UNCAPPED MULTILINE TOPS:  $(6) = (5) * (1.032 / 1.007)$

FOR CAPPED MULTILINE TOPS:  $(6) = (9) * (0.965) / (8)$

F -  $(7) = (6) / 1.0229$

G -  $(8) = (\text{NORMALIZED RELATIVITY FOR TOP}) / (\text{NORMALIZED MONOLINE RELATIVITY (TOP 10)}) - 1$

## EXPLANATORY NOTES TO TABLE 7

### BASIC GROUP II RELATIVITY ANALYSIS

#### OBJECTIVE

The explanations which follow clarify Table 7, the Basic Group II (BG II) relativity analysis. The purpose of this analysis is to:

- (1) determine the monoline loss cost level need;
- (2) determine indicated changes to the eight property Commercial Package Policy (CPP) Package Modification Factors (PMFs) based on Basic Group II experience.

#### COLUMN (1)

##### AGGREGATE LOSS COSTS

The latest accident year adjusted aggregate loss costs (adjusted in the same manner as in the overall review, i.e. to current manual loss cost and prospective amount of insurance levels, with multiline aggregate loss costs further adjusted to current IPMF level) are used as weights in the calculation of any totals shown in this table.

#### COLUMN (2)

##### 10 - YEAR EXPERIENCE RATIO

These experience ratios are the ratio of the combined ten year CSP adjusted incurred losses (adjusted to current deductible and prospective cost levels including loss development, and also adjusted to reflect the BGII excess loss procedure) to the combined ten year CSP adjusted aggregate loss costs. Any totals which are shown are weighted averages using the aggregate loss costs in Column (1). When a dash is displayed in the column, it indicates that the indicated IPMF which resulted from this procedure was capped. The procedure which follows when capping occurs is described below.

#### COLUMN (3)

##### FORMULA RELATIVITY

The formula relativities are the ratios of the ten year experience ratios for the type of policy (either monoline vs. multiline or individual multiline programs) to the average ten year experience ratio for monoline and multiline combined. These relativities represent how much better or worse than average the experience for a given type of policy is. Again, any totals which are shown are weighted averages and the display of a dash indicates that the resulting IPMF was capped.

EXPLANATORY NOTES TO TABLE 7 (Cont'd)

COLUMN (3)  
(Cont'd)

Unlike the BGI and SCL relativity analyses, the BGII analysis does not employ a simultaneous review procedure since a one way review is involved. That is, the overall loss cost change is only distributed across type of policy; no other rating variables are considered.

COLUMN (4)

CREDIBILITY

The credibility of the experience for each type of policy is determined from the formula:

$$Z = \frac{P}{P + K}$$

where P is the ten year adjusted aggregate loss costs for a given type of policy, and K is a constant loss cost volume of \$45,000,000.

COLUMN (5)

Z - WEIGHTED RELATIVITY

The weighted relativity is a weighted average of the individual TOP formula relativity and the overall (coverage) formula relativity using credibility and its complement as the respective weights. Therefore, to the extent that the indication for a type of policy is not fully credible, the complement of credibility is assigned to the statewide coverage level change.

COLUMN (6)

BALANCED FORMULA RELATIVITY

The individual multiline weighted relativities are balanced to the multiline weighted relativity level by applying a factor equal to the overall multiline relativity (i.e. the weighted relativity for all multiline combined which is shown on the top of the exhibit directly under the corresponding monoline relativity) divided by the average multiline relativity (i.e. the weighted average of the individual multiline weighted relativities which is shown on the bottom of the exhibit). When the indicated IPMF for a type of policy is capped, the balanced relativity is set equal to the product of the capped IPMF and the monoline balanced formula relativity, divided by the current IPMF.

EXPLANATORY NOTES TO TABLE 7 (Cont'd)

COLUMN (7)

NORMALIZED FORMULA RELATIVITY

The normalized relativity is equal to the balanced formula relativity divided by the average monoline/multiline combined relativity. This balances the average monoline/multiline relativity to unity.

COLUMN (8)

INDICATED LOSS COST CHANGES

The indicated multiline (by TOP) changes are calculated by taking the ratio of the TOP relativity (Column 7) to the monoline relativity.

For each type of policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that type of policy are adjusted to the capped IPMF level, and the entire relativity review as described above is redone to take this into account. If an IPMF has been capped it is so noted in footnote A.



## CRIME AND FIDELITY

The reviews for Burglary and Theft and for Fidelity are done on a multistate basis, combining both multiline and monoline experience. However, unlike other coverages included in a Commercial Package Policy, there is no simultaneous review procedure for either Burglary and Theft or for Fidelity in which separate loss cost level changes can be determined for multiline and monoline experience. In the absence of a simultaneous review procedure, we are unable to determine Type of Policy relativities with which to price CPP policies relative to monoline policies and therefore have assumed a multiline change of 0.0% and thus no change to the historic Crime or Fidelity IPMFs.

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TABLE 8

COMMERCIAL I.M. RELATIVITY ANALYSIS

(1)	(2)	(3)	(4)	(5)
<u>TOP</u>	<u>BALANCED</u>	<u>CURRENT</u>	<u>INDICATED</u>	<u>SELECTED</u>
<u>10</u>	<u>RELATIVITY</u>	<u>IPMF</u>	<u>IPMF*</u>	<u>IPMF</u>
10	1.000	0.850	0.910	0.910
3X & 7X	1.071			

CLASSIFICATION

150	0.922
191	1.085
192	0.770
220	0.771
221	0.736
234	1.226
235	1.069
240	0.770
241	0.695
327	0.738
328	0.913
340	0.629
341	0.738
342	0.733
343	0.748
403	0.630
451	0.928
452	0.761
453	0.794
454	0.700
460	0.485
482	0.876
510	0.646
514	0.612
530	0.627
534	0.738

\*COLUMN (4) = COLUMN (3) \* (TOP 3X & 7X COLUMN (2) / TOP 10 COLUMN (2) )

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COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS  
TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

<u>TYPE OF POLICY</u>	<u>RATING</u>	(1)	(2)	(3)	(4)
	<u>GROUP</u>	2016 AGGREGATE <u>LOSS COSTS</u>	2012 - 2016 <u>AGGREGATE LOSS COSTS</u>	<u>FIVE-YEAR</u> <u>EXP RATIO</u>	<u>RELATIVITY</u>
MONOLINE 10	150	311,633	1,898,096	1.151	1.317
	191	5,446,492	15,816,054	1.032	1.181
	192	862,002	2,760,886	0.627	0.717
	220	5,112	87,903	5.716	6.540
	221	1,491	2,853	1.199	1.372
	234	5,224,155	20,144,072	0.600	0.686
	235	8,439,000	24,407,283	0.761	0.871
	240	928,183	3,685,254	0.656	0.751
	241	15,553	114,739	0.053	0.061
	327	18,917	91,546	0.000	0.000
	328	2,319,887	11,908,665	0.792	0.906
	340	40,688	87,993	0.000	0.000
	341	0	0	0.000	0.000
	342	19,188	65,375	0.555	0.635
	343	589	3,417	343.665	537.374
	403	1,600,852	5,771,545	0.345	0.395
	451	3,309,677	12,953,836	0.855	0.978
	452	34,702	137,467	1.628	1.863
	453	45,575	212,456	3.203	3.665
	454	164,836	745,300	0.734	0.840
	460	790,198	3,687,530	0.415	0.475
	482	839,364	2,841,134	0.986	1.128
	510	3,252	39,977	0.020	0.023
	514	446,469	1,612,361	0.339	0.388
	530	504,434	2,697,004	0.489	0.559
	534	0	0	0.000	0.000
	TOTAL#	31,372,249	111,772,746	0.785	0.898

OREGON

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS  
TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

<u>TYPE OF POLICY</u>	<u>RATING</u>	(1)	(2)	(3)	(4)
	<u>GROUP</u>	<u>2016 AGGREGATE LOSS COSTS</u>	<u>2012 - 2016 AGGREGATE LOSS COSTS</u>	<u>FIVE-YEAR EXP RATIO</u>	<u>RELATIVITY</u>
MULTILINE ## 3X & 7X	150	672,616	3,113,454	0.851	0.974
	191	563,797	2,525,777	0.829	0.949
	192	189,431	731,833	0.885	1.013
	220	6,015	26,632	1.634	1.870
	221	5,236	25,229	0.276	0.316
	234	11,834,095	49,066,751	1.244	1.423
	235	446,644	2,223,407	3.082	3.526
	240	10,883	56,101	2.123	2.429
	241	4,696	14,357	0.021	0.024
	327	2,748	17,618	0.000	0.000
	328	370	2,570	180.609	206.646
	340	30,664	123,865	0.017	0.019
	341	0	0	0.000	0.000
	342	5,681	28,532	0.000	0.000
	343	2,213	7,469	0.000	0.000
	403	448,230	2,257,894	0.791	0.905
	451	89,055	409,714	0.386	0.442
	452	35,584	193,026	0.573	0.656
	453	32,109	98,037	0.158	0.181
	454	213,119	919,292	0.293	0.335
	460	3,375,538	14,121,292	0.340	0.389
	482	119,090	710,788	0.742	0.849
	510	21,754	113,808	0.000	0.000
	514	59,004	281,029	0.078	0.089
	530	1,055,097	4,464,828	0.443	0.507
	534	0	0	0.000	0.000
	TOTAL#	19,223,669	81,533,303	1.019	1.166

## REFLECTS CURRENT IPMF OF 0.850.

OREGON

COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS  
TABLE 9 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

<u>TYPE OF POLICY</u>	<u>RATING</u> <u>GROUP</u>	(1)	(2)	(3)	(4)
		2016 AGGREGATE <u>LOSS COSTS</u>	2012 - 2016 <u>AGGREGATE LOSS COSTS</u>	FIVE-YEAR <u>EXP RATIO</u>	<u>RELATIVITY</u>
TOTAL ALL TOPS#	150	984,249	5,011,550	0.946	1.082
	191	6,010,289	18,341,831	1.013	1.159
	192	1,051,433	3,492,719	0.673	0.770
	220	11,127	114,535	3.509	4.015
	221	6,727	28,082	0.481	0.550
	234	17,058,250	69,210,823	1.047	1.198
	235	8,885,644	26,630,690	0.878	1.005
	240	939,066	3,741,355	0.673	0.770
	241	20,249	129,096	0.046	0.053
	327	21,665	109,164	0.000	0.000
	328	2,320,257	11,911,235	0.821	0.939
	340	71,352	211,858	0.007	0.008
	341	0	0	0.000	0.000
	342	24,869	93,907	0.428	0.490
	343	2,802	10,886	282.448	323.167
	403	2,049,082	8,029,439	0.443	0.507
	451	3,398,732	13,363,550	0.843	0.965
	452	70,286	330,493	1.094	1.252
	453	77,684	310,493	1.944	2.224
	454	377,955	1,664,592	0.485	0.555
	460	4,165,736	17,808,822	0.354	0.405
	482	958,454	3,551,922	0.956	1.094
	510	25,006	153,785	0.003	0.003
	514	505,473	1,893,390	0.309	0.354
	530	1,559,531	7,161,832	0.458	0.524
	534	0	0	0.000	0.000
	TOTAL#	50,595,918	193,306,049	0.874	1.000

# TOTAL IN COLUMN (3) IS AN AVERAGE USING COLUMN (1) AS WEIGHTS.

## EXPLANATORY NOTES TO TABLES 8 AND 9

### COMMERCIAL INLAND MARINE RELATIVITY ANALYSIS

#### EXPERIENCE BASE

The Commercial Inland Marine IPMF review presented in the attached exhibits is based on a review of the latest available five years of monoline and multiline experience through accident year 2016 for all companies reporting data to Insurance Services Office under the Inland Marine Module of the Commercial Statistical Plan (CSP) and the Intermediate Level of the Commercial Minimum Statistical Plan (CMSP).

#### ADJUSTMENT OF DATA

Aggregate loss costs for each year in the review period have been adjusted to the levels which would have been earned had the current loss costs applied throughout the experience period. Reported premiums are adjusted to current level on an individual policy basis by applying a factor equal to all loss cost level changes that have been implemented subsequent to the policy being written. These adjusted premiums are then converted to a loss cost at current level. In order to eliminate the impact of company deviations from the manual level and individual risk modifications which were in effect at the time the policy was written, aggregate loss costs are further adjusted based on reported Rate Modification and Rate Departure Factors/Loss Cost Multipliers. Multiline aggregate loss costs are further adjusted to the level of the current Implicit Package Modification Factor (IPMF). Incurred losses are loaded for all loss adjustment expenses by applying a factor of 1.105.

#### RELATIVITY ANALYSIS

For Inland Marine coverage, a multistate IPMF level is determined via a two-way relativity analysis similar to the analysis used in Basic Group I. The experience for all reviewed classes is used to form class group relativities. These relativities for monoline and multiline (all programs combined) are determined through an iterative procedure. The ratio of the multiline relativity to the monoline relativity is multiplied by the current IPMF to yield the indicated IPMF. The indicated IPMF is subject to a minimum value of 0.500 and a maximum value of 1.500. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the premiums for that Type of Policy (i.e., TOP 10 versus TOP 3X) are adjusted to the capped IPMF level, and the entire relativity review is performed again to take this into account.

TABLE 10  
OREGON  
OWNERS, LANDLORDS AND TENANTS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS  
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TOP	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
10	0.786	0.170	0.960	0.964	
31	1.088	0.122	1.010	1.014	+5.2%
32	1.894	0.096	1.063	1.067	+10.7%
33	0.923	0.150	0.988	0.992	+2.9%
34	0.932	0.197	0.986	0.990	+2.7%
35	1.405	0.139	1.048	1.052	+9.1%
36	1.043	0.113	1.005	1.009	+4.7%
CLASS GROUP					
01	0.558	0.076	0.957	0.956	
02	1.147	0.148	1.020	1.019	
03	0.883	0.090	0.989	0.988	
04	1.386	0.028	1.009	1.008	
05	0.708	0.034	0.988	0.987	
06	1.024	0.078	1.002	1.001	
07	1.114	0.102	1.011	1.010	
08	0.761	0.039	0.989	0.988	
09	0.947	0.136	0.993	0.992	
10	0.880	0.136	0.983	0.982	
11	0.838	0.098	0.983	0.982	
12	1.073	0.201	1.014	1.013	
13	1.961	0.055	1.038	1.037	
16	0.092	0.010	0.976	0.975	
TERRITORY					
1	0.860	0.205	0.970	0.967	
2	1.078	0.323	1.025	1.022	

\* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP) / (MONOLINE RELATIVITY (TOP 10)) - 1

TABLE 11  
OREGON  
MANUFACTURERS AND CONTRACTORS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS  
-----

	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	0.869	0.194	0.973	0.975	
33	1.758	0.042	1.024	1.026	+5.2%
34	1.426	0.076	1.027	1.029	+5.5%
35	0.614	0.018	0.991	0.993	+1.8%
36	0.837	0.119	0.979	0.981	+0.6%
37	1.302	0.108	1.029	1.031	+5.7%
38	1.050	0.208	1.010	1.012	+3.8%
CLASS GROUP					
30	1.648	0.089	1.045	1.041	
31	1.283	0.156	1.040	1.035	
32	1.133	0.214	1.027	1.022	
33	0.850	0.075	0.988	0.983	
34	0.776	0.112	0.972	0.967	
35	0.239	0.042	0.942	0.937	
36	0.559	0.074	0.958	0.953	
37	0.217	0.047	0.931	0.926	
38	1.121	0.096	1.011	1.006	

\* INDICATED CHANGE = (BALANCED RELATIVITY FOR TOP) / (MONOLINE RELATIVITY (TOP 10)) - 1



TABLE 12  
OREGON  
OWNERS, LANDLORDS AND TENANTS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS

-----  
SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TERRITORY	ALL	(1)	(2)	(3)	(4)	(5)	(6)
		FISCAL A.Y.E. 06/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
TYPE OF POLICY	CLASS GROUP						
10 MONOLINE	01 FOOD&BEV. (RETAIL)	\$55,139	\$320,786	0.398		16	
	02 RESTAURANTS	143,406	404,313	0.807		28	
	03 STORES	57,165	259,913	1.501		30	
	04 VENDING & RENTAL	16,522	64,763	0.746		5	
	05 FOOD & BEV. DIST.	23,224	72,107	0.578		3	
	06 NON-FOOD&BEV.DIST	75,904	386,514	1.223		76	
	07 CLUBS, AMSMT&SPRTS	241,667	1,137,350	1.174		74	
	08 HEALTH CARE FACIL	13,005	43,526	0.128		1	
	09 HOTELS AND MOTELS	253,382	832,816	0.427		28	
	10 SCHLS & CHURCHES	145,707	696,011	0.822		48	
	11 APARTMENTS	424,929	1,334,741	0.502		35	
	12 BUILDINGS&OFFICES	948,025	3,904,712	0.862		170	
	13 MISC. PREMISES	22,193	176,549	0.582		8	
	TOTAL *	\$2,420,268	\$9,634,101	0.785		522	
31 MULT MOTEL/HOTEL	09 HOTELS AND MOTELS	\$900,085	\$4,298,392	1.077		268	
	TOTAL *	\$900,085	\$4,298,392	1.077		268	
32 MULT APARTMENT	11 APARTMENTS	\$475,156	\$2,494,159	1.710		140	
	12 BUILDINGS&OFFICES	114,047	462,277	1.415		29	
	TOTAL *	\$589,203	\$2,956,436	1.653		169	
33 MULT OFFICE	12 BUILDINGS&OFFICES	\$1,806,233	\$8,408,738	1.000		406	
	13 MISC. PREMISES	15,994	68,600	0.131		1	
	TOTAL *	\$1,822,227	\$8,477,338	0.992		407	
34 MULT MERCANTILE	01 FOOD&BEV. (RETAIL)	\$457,347	\$2,039,485	0.556		89	
	02 RESTAURANTS	1,211,930	5,347,660	1.084		368	
	03 STORES	397,894	1,788,603	0.890		102	
	04 VENDING & RENTAL	6,504	27,071	0.000		0	
	05 FOOD & BEV. DIST.	78,674	411,102	0.652		19	
	06 NON-FOOD&BEV.DIST	190,713	869,446	0.794		36	
	12 BUILDINGS&OFFICES	295,472	1,584,137	1.014		90	
	13 MISC. PREMISES	36	232	0.000		0	
	TOTAL *	\$2,638,570	\$12,067,736	0.919		704	

TABLE 12  
OREGON  
OWNERS, LANDLORDS AND TENANTS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS

-----  
SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TERRITORY	ALL	(1)	(2)	(3)	(4)	(5)	(6)
		FISCAL A.Y.E. 06/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
TYPE OF POLICY	CLASS GROUP						
35 MULT INSTITUT.	07 CLUBS, AMSMT&SPRTS	\$135,017	\$610,999	1.792		29	
	08 HEALTH CARE FACIL	88,256	461,823	1.192		27	
	10 SCHLS & CHURCHES	329,853	1,615,032	1.223		287	
	12 BUILDINGS&OFFICES	5,155	24,818	0.662		4	
	16 GOVT SUBDIVISIONS	47,456	265,463	0.112		2	
	TOTAL *	\$605,737	\$2,978,135	1.254		349	
36 MULT SERVICES	03 STORES	\$85,432	\$412,851	0.222		16	
	04 VENDING & RENTAL	20,751	106,452	2.104		10	
	07 CLUBS, AMSMT&SPRTS	356,600	1,492,953	1.012		87	
	08 HEALTH CARE FACIL	548	2,553	0.000		0	
	09 HOTELS AND MOTELS	280,915	729,810	1.354		40	
	10 SCHLS & CHURCHES	6,145	17,438	0.000		0	
	12 BUILDINGS&OFFICES	92,248	431,087	1.067		32	
	13 MISC. PREMISES	136,042	601,387	2.430		47	
	TOTAL *	\$978,681	\$3,794,531	1.260		232	
TOTAL ALL TOP	01 FOOD&BEV. (RETAIL)	\$512,486	\$2,360,271	0.539		105	
	02 RESTAURANTS	1,355,336	5,751,973	1.055		396	
	03 STORES	540,491	2,461,367	0.849		148	
	04 VENDING & RENTAL	43,777	198,286	1.279		15	
	05 FOOD & BEV. DIST.	101,898	483,209	0.635		22	
	06 NON-FOOD&BEV.DIST	266,617	1,255,960	0.916		112	
	07 CLUBS, AMSMT&SPRTS	733,284	3,241,302	1.209		190	
	08 HEALTH CARE FACIL	101,809	507,902	1.050		28	
	09 HOTELS AND MOTELS	1,434,382	5,861,018	1.016		336	
	10 SCHLS & CHURCHES	481,705	2,328,481	1.086		335	
	11 APARTMENTS	900,085	3,828,900	1.140		175	
	12 BUILDINGS&OFFICES	3,261,180	14,815,769	0.977		731	
	13 MISC. PREMISES	174,265	846,768	1.983		56	
	16 GOVT SUBDIVISIONS	47,456	265,463	0.112		2	
	TOTAL *	\$9,954,771	\$44,206,669	1.011		2,651	

\* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 13  
OREGON  
MANUFACTURERS AND CONTRACTORS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS  
-----

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) FISCAL A.Y.E. 06/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	30 SERVICE	\$187,057	\$665,513	1.922	2.108	27	1.015
	31 LIGHT CONTRACTING	702,242	3,282,513	0.646	0.708	159	1.009
	32 MEDIUM CONTRCTING	1,958,048	9,175,869	0.937	1.027	343	0.997
	33 HEAVY CONTRACTING	313,792	1,342,610	0.547	0.600	29	0.959
	34 DEALER OR DISTRIB	205,549	855,822	1.440	1.579	46	0.943
	35 LGT. MANUFACTURER	163,227	571,656	0.038	0.041	8	0.914
	36 MED. MANUFACTURER	170,235	1,033,762	0.382	0.418	10	0.930
	37 HVY. MANUFACTURER	415,103	1,358,300	0.164	0.180	9	0.903
	38 MISC. OPERATION	326,399	1,495,444	0.825	0.904	49	0.981
	TOTAL *	\$4,441,652	\$19,781,489	0.793		680	
33 MULT OFFICE	31 LIGHT CONTRACTING	\$21,606	\$91,580	0.000	0.000	0	1.062
	32 MEDIUM CONTRCTING	1,784	8,781	0.000	0.000	0	1.049
	33 HEAVY CONTRACTING	62,751	296,172	1.237	1.356	15	1.009
	38 MISC. OPERATION	108,023	364,815	2.314	2.536	17	1.033
	TOTAL *	\$194,164	\$761,348	1.687		32	
34 MULT MERCANTILE	30 SERVICE	\$26,707	\$137,063	5.475	6.002	7	1.071
	32 MEDIUM CONTRCTING	30,006	117,035	0.559	0.613	10	1.052
	34 DEALER OR DISTRIB	458,960	2,433,191	0.877	0.961	78	0.996
	36 MED. MANUFACTURER	17,930	91,530	0.000	0.000	0	0.981
	38 MISC. OPERATION	43,985	178,734	1.745	1.913	11	1.036
	TOTAL *	\$577,588	\$2,957,553	1.112		106	
35 MULT INSTITUT.	31 LIGHT CONTRACTING	\$1,288	\$6,988	10.268	11.257	2	1.028
	32 MEDIUM CONTRCTING	32,288	192,565	0.254	0.278	4	1.015
	TOTAL *	\$33,576	\$199,553	0.638		6	
36 MULT SERVICES	30 SERVICE	\$20,549	\$120,966	1.360	1.491	18	1.021
	31 LIGHT CONTRACTING	130,926	670,563	1.617	1.773	47	1.015
	32 MEDIUM CONTRCTING	61,873	340,479	0.641	0.703	8	1.003
	33 HEAVY CONTRACTING	11,833	184,346	0.829	0.908	2	0.965
	34 DEALER OR DISTRIB	569,251	2,068,368	0.462	0.506	95	0.949
	36 MED. MANUFACTURER	23,940	113,737	0.109	0.119	1	0.935
	38 MISC. OPERATION	257,297	992,008	0.887	0.972	88	0.987
	TOTAL *	\$1,075,669	\$4,490,467	0.728		259	

TABLE 13  
OREGON  
MANUFACTURERS AND CONTRACTORS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS

-----  
SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) FISCAL A.Y.E. 06/30/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2013 - 2017 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
37 MULT INDUST/PROC.	31 LIGHT CONTRACTING	\$520	\$2,171	0.000	0.000	0	1.067
	32 MEDIUM CONTRCTING	589,147	2,921,279	1.152	1.263	52	1.054
	33 HEAVY CONTRACTING	28,293	110,049	4.528	4.964	6	1.014
	34 DEALER OR DISTRIB	44,615	247,370	0.162	0.177	7	0.998
	35 LGT. MANUFACTURER	226,333	962,237	0.393	0.431	25	0.966
	36 MED. MANUFACTURER	690,382	3,039,969	0.710	0.778	89	0.983
	37 HVY. MANUFACTURER	488,080	2,894,260	0.265	0.290	32	0.955
	38 MISC. OPERATION	8,148	40,801	0.147	0.161	2	1.038
	TOTAL *	\$2,075,518	\$10,218,136	0.734		213	
38 MULT CONTRACTORS	30 SERVICE	\$491,626	\$2,193,503	1.159	1.271	92	1.053
	31 LIGHT CONTRACTING	651,360	2,813,949	1.551	1.700	234	1.047
	32 MEDIUM CONTRCTING	1,996,947	9,357,349	1.133	1.242	408	1.035
	33 HEAVY CONTRACTING	486,745	2,276,915	0.703	0.771	51	0.995
	38 MISC. OPERATION	45,778	167,231	0.078	0.085	1	1.019
	TOTAL *	\$3,672,456	\$16,808,947	1.141		786	
TOTAL ALL TOP	30 SERVICE	\$725,939	\$3,117,045	1.520		144	
	31 LIGHT CONTRACTING	1,507,942	6,867,764	1.120		442	
	32 MEDIUM CONTRCTING	4,670,093	22,113,357	1.037		825	
	33 HEAVY CONTRACTING	903,414	4,210,092	0.808		103	
	34 DEALER OR DISTRIB	1,278,375	5,604,751	0.757		226	
	35 LGT. MANUFACTURER	389,560	1,533,893	0.244		33	
	36 MED. MANUFACTURER	902,487	4,278,998	0.618		100	
	37 HVY. MANUFACTURER	903,183	4,252,560	0.219		41	
	38 MISC. OPERATION	789,630	3,239,033	1.050		168	
	TOTAL *	\$12,070,623	\$55,217,493	0.912		2,082	

\* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 14  
OREGON  
PRODUCTS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS  
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	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	0.908	0.385	0.964	0.961	
34	1.062	0.394	1.024	1.021	+ 6.2%
36	0.945	0.198	0.989	0.986	+ 2.6%
37	1.036	0.541	1.019	1.017	+ 5.8%
CLASS GROUP					
3	0.939	0.535	0.967	0.971	
4	1.062	0.425	1.026	1.029	
5	1.158	0.132	1.020	1.023	
6	0.984	0.341	0.995	0.998	
7	0.957	0.186	0.992	0.995	

\* INDICATED CHANGE =  
(BALANCED RELATIVITY FOR TOP) / (BALANCED MONOLINE (TOP 10) RELATIVITY) - 1

NOTE: THE INDICATED CHANGES BY TOP WERE FURTHER ADJUSTED BY THE FOLLOWING  
DIFFERENTIALS: TOP 34: 0.977  
TOP 36: 0.948  
TOP 37: 0.966

TABLE 15  
MULTISTATE  
PRODUCTS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS

-----  
SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) CALENDAR A.Y.E. 12/31/2016 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR A.Y.E. 2012 - 2016 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	03 MAN,DLR,DSTFD/DRG	\$21,602,530	\$83,447,793	0.852	0.787	1,581	0.933
	04 DLR,DST-NOTFD/DRG	9,679,270	41,811,675	1.278	1.182	666	0.990
	05 MAN.NTFD/DRG (LOW)	1,692,267	7,299,063	0.767	0.709	64	0.984
	06 MAN.NTFD/DRG (MED)	10,333,678	44,740,395	0.937	0.867	509	0.960
	07 MAN.NTFD/DRG (HGH)	2,805,495	12,365,722	1.011	0.935	148	0.957
	TOTAL *	\$46,113,240	\$189,664,648	0.967		2,968	
34 MULT MERCANTILE	03 MAN,DLR,DSTFD/DRG	\$5,884,889	\$28,782,063	1.470	1.359	936	0.991
	04 DLR,DST-NOTFD/DRG	32,124,091	153,045,789	1.148	1.061	2,174	1.051
	06 MAN.NTFD/DRG (MED)	15,743	64,180	0.000	0.000	0	1.019
	TOTAL *	\$38,024,723	\$181,892,032	1.197		3,110	
36 MULT SERVICES	04 DLR,DST-NOTFD/DRG	\$3,789,140	\$17,974,549	1.089	1.007	780	1.016
	06 MAN.NTFD/DRG (MED)	60,544	302,132	0.755	0.698	8	0.985
	TOTAL *	\$3,849,684	\$18,276,681	1.084		788	
37 MULT INDUST/PROC.	03 MAN,DLR,DSTFD/DRG	\$18,758,762	\$92,830,487	1.011	0.935	3,210	0.987
	05 MAN.NTFD/DRG (LOW)	3,999,375	22,161,197	1.454	1.345	287	1.040
	06 MAN.NTFD/DRG (MED)	30,062,799	137,041,119	1.114	1.030	1,814	1.015
	07 MAN.NTFD/DRG (HGH)	8,087,615	39,304,471	1.047	0.968	549	1.012
	TOTAL *	\$60,908,551	\$291,337,274	1.096		5,860	
TOTAL ALL TOP	03 MAN,DLR,DSTFD/DRG	\$46,246,181	\$205,060,343	0.995		5,727	
	04 DLR,DST-NOTFD/DRG	45,592,501	212,832,013	1.171		3,620	
	05 MAN.NTFD/DRG (LOW)	5,691,642	29,460,260	1.250		351	
	06 MAN.NTFD/DRG (MED)	40,472,764	182,147,826	1.068		2,331	
	07 MAN.NTFD/DRG (HGH)	10,893,110	51,670,193	1.038		697	
	TOTAL *	\$148,896,198	\$681,170,635	1.082		12,726	

\* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 16  
OREGON  
LOCAL PRODUCTS/COMPLETED OPERATIONS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS  
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TOP	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
10	1.007	0.764	1.005	1.004	
34	1.052	0.588	1.030	1.029	+2.5%
36	1.019	0.533	1.010	1.009	+0.5%
37	0.934	0.146	0.990	0.989	-1.5%
38	0.991	1.000	0.991	0.990	-1.4%
CLASS GROUP					
1	0.852	0.596	0.909	0.903	
2	1.029	0.508	1.015	1.008	
11	1.067	0.341	1.022	1.015	
12	1.022	1.000	1.022	1.015	
13	0.802	0.282	0.940	0.933	

\* INDICATED CHANGE =  
(BALANCED RELATIVITY FOR TOP) / (BALANCED MONOLINE (TOP 10) RELATIVITY) - 1

TABLE 16C  
MULTISTATE  
LOCAL PRODUCTS/COMPLETED OPERATIONS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS \*

STATE	(1) BAILEY FORMULA RELATIV	(2) CREDIBILITY Z	(3) Z-WTD RELATIV	(4) BALANCED RELATIV.
	1.324	0.399	1.119	1.116
	1.182	0.648	1.114	1.111
	1.139	0.606	1.082	1.079
	1.138	0.577	1.078	1.075
	1.449	0.200	1.077	1.074
	1.178	0.429	1.073	1.070
	1.279	0.243	1.062	1.059
	1.106	0.442	1.045	1.043
	1.134	0.344	1.044	1.041
	1.097	0.371	1.035	1.032
	1.093	0.381	1.034	1.032
	1.132	0.256	1.032	1.029
	1.211	0.162	1.031	1.029
	1.122	0.206	1.024	1.021
	1.042	0.508	1.021	1.018
	1.131	0.166	1.021	1.018
	1.046	0.224	1.010	1.007
	1.036	0.251	1.009	1.006
	1.009	0.291	1.003	1.000
	1.009	0.228	1.002	0.999
	1.001	0.274	1.000	0.998
	0.971	0.150	0.996	0.993
	0.983	0.474	0.992	0.989
	0.962	0.229	0.991	0.988
	0.975	0.363	0.991	0.988
	0.970	0.333	0.990	0.987
	0.957	0.247	0.989	0.987
	0.890	0.104	0.988	0.985
	0.966	0.347	0.988	0.985
	0.971	0.428	0.988	0.985
	0.955	0.336	0.985	0.982
	0.943	0.307	0.982	0.980
	0.951	0.462	0.977	0.975
	0.775	0.097	0.976	0.973
	0.841	0.161	0.973	0.970
	0.926	0.385	0.971	0.968
	0.938	0.512	0.968	0.965
	0.882	0.281	0.965	0.963
	0.904	0.382	0.962	0.960
	0.835	0.230	0.959	0.957
	0.749	0.166	0.953	0.951
	0.527	0.076	0.952	0.950
	0.760	0.206	0.945	0.943
	0.841	0.337	0.943	0.941
	0.702	0.168	0.942	0.940
	0.682	0.164	0.939	0.937
	0.475	0.085	0.939	0.936
	0.853	0.407	0.937	0.935
	0.708	0.188	0.937	0.935
Oregon	0.812	0.350	0.930	0.927
	0.791	0.594	0.870	0.868
	0.714	0.502	0.844	0.842

\* Sorted by balanced relative change.



TABLE 17  
OREGON  
LOCAL PRODUCTS/COMPLETED OPERATIONS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS

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SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) CALENDAR A.Y.E. 12/31/2016 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR A.Y.E. 2012 - 2016 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	01 RET.STRS-FOOD/DRG	\$19,565	\$58,967	1.563	1.628	5	0.841
	02 RET.STRS-NTFD/DRG	24,294	126,868	0.485	0.505	18	0.939
	11 COMP. OPS. (LOW)	141,337	489,062	0.333	0.347	6	0.946
	12 COMP. OPS. (MED)	2,654,270	10,405,200	0.820	0.854	151	0.945
	13 COMP. OPS. (HGH)	168,937	805,808	0.175	0.183	1	0.869
	TOTAL *	\$3,008,403	\$11,885,905	0.763		181	
34 MULT MERCANTILE	01 RET.STRS-FOOD/DRG	\$225,761	\$1,005,539	0.896	0.933	42	0.861
	02 RET.STRS-NTFD/DRG	132,973	554,251	2.287	2.382	19	0.962
	12 COMP. OPS. (MED)	44,894	211,109	2.910	3.031	5	0.969
	TOTAL *	\$403,628	\$1,770,899	1.578		66	
36 MULT SERVICES	01 RET.STRS-FOOD/DRG	\$19,308	\$101,202	0.395	0.411	4	0.844
	02 RET.STRS-NTFD/DRG	311,023	1,083,177	1.011	1.053	49	0.943
	11 COMP. OPS. (LOW)	42,109	241,315	0.159	0.166	1	0.950
	12 COMP. OPS. (MED)	132,554	505,718	0.331	0.345	6	0.950
	13 COMP. OPS. (HGH)	30,292	160,904	0.245	0.255	2	0.873
	TOTAL *	\$535,286	\$2,092,316	0.710		62	
37 MULT INDUST/PROC.	01 RET.STRS-FOOD/DRG	\$543	\$2,514	0.000	0.000	0	0.828
	11 COMP. OPS. (LOW)	1,969	10,616	0.000	0.000	0	0.931
	12 COMP. OPS. (MED)	97,938	461,581	2.211	2.302	7	0.931
	TOTAL *	\$100,450	\$474,711	2.155		7	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$230,366	\$1,179,812	0.609	0.634	22	0.932
	12 COMP. OPS. (MED)	4,869,832	21,900,155	0.767	0.799	332	0.932
	13 COMP. OPS. (HGH)	390,812	1,696,622	0.191	0.199	7	0.856
	TOTAL *	\$5,491,010	\$24,776,589	0.719		361	
TOTAL ALL TOP	01 RET.STRS-FOOD/DRG	\$265,177	\$1,168,222	0.907		51	
	02 RET.STRS-NTFD/DRG	468,290	1,764,296	1.346		86	
	11 COMP. OPS. (LOW)	415,781	1,920,805	0.467		29	
	12 COMP. OPS. (MED)	7,799,488	33,483,763	0.808		501	
	13 COMP. OPS. (HGH)	590,041	2,663,334	0.189		10	
	TOTAL *	\$9,538,777	\$41,000,420	0.784		677	

\* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

TABLE 18  
MULTISTATE  
LOCAL PRODUCTS/COMPLETED OPERATIONS  
BASIC LIMIT RELATIVE CHANGE ANALYSIS

-----  
SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/2016 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2012 - 2016 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
10 MONOLINE	01 RET.STRS-FOOD/DRG	\$3,182,470	\$12,836,961	0.802		767	
	02 RET.STRS-NTFD/DRG	2,924,031	13,338,270	1.084		529	
	11 COMP. OPS. (LOW)	4,590,082	20,152,490	1.003		479	
	12 COMP. OPS. (MED)	89,807,887	402,728,315	1.020		6,697	
	13 COMP. OPS. (HGH)	9,315,286	47,098,800	0.569		288	
	TOTAL *	\$109,819,756	\$496,154,836	0.977		8,760	
34 MULT MERCANTILE	01 RET.STRS-FOOD/DRG	\$11,237,823	\$48,248,320	0.852		4,326	
	02 RET.STRS-NTFD/DRG	6,276,333	28,286,473	0.989		731	
	12 COMP. OPS. (MED)	2,175,660	11,035,192	1.187		135	
	TOTAL *	\$19,689,816	\$87,569,985	0.932		5,192	
36 MULT SERVICES	01 RET.STRS-FOOD/DRG	\$987,041	\$4,702,276	0.977		241	
	02 RET.STRS-NTFD/DRG	12,282,390	51,445,436	0.994		2,617	
	11 COMP. OPS. (LOW)	3,800,013	17,251,395	1.019		578	
	12 COMP. OPS. (MED)	4,607,097	22,619,676	0.874		739	
	13 COMP. OPS. (HGH)	1,134,525	6,178,738	1.015		99	
	TOTAL *	\$22,811,066	\$102,197,521	0.974		4,274	
37 MULT INDUST/PROC.	01 RET.STRS-FOOD/DRG	\$21,424	\$92,620	4.539		1	
	11 COMP. OPS. (LOW)	149,163	688,925	0.443		17	
	12 COMP. OPS. (MED)	4,495,367	21,801,280	0.926		305	
	13 COMP. OPS. (HGH)	51,766	453,230	0.413		1	
	TOTAL *	\$4,717,720	\$23,036,055	0.921		324	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$9,456,335	\$43,962,865	1.026		677	
	12 COMP. OPS. (MED)	171,965,665	815,820,275	0.958		13,853	
	13 COMP. OPS. (HGH)	17,646,239	82,295,884	0.866		809	
	TOTAL *	\$199,068,239	\$942,079,024	0.953		15,339	
TOTAL ALL TOP	01 RET.STRS-FOOD/DRG	\$15,428,758	\$65,880,177	0.854		5,335	
	02 RET.STRS-NTFD/DRG	21,482,754	93,070,179	1.005		3,877	
	11 COMP. OPS. (LOW)	17,995,593	82,055,675	1.014		1,751	
	12 COMP. OPS. (MED)	273,051,676	1,274,004,738	0.978		21,729	
	13 COMP. OPS. (HGH)	28,147,816	136,026,652	0.773		1,197	
	TOTAL *	\$356,106,597	\$1,651,037,421	0.960		33,889	

\* TOTALS IN COLUMN (3) ARE AVERAGES USING COLUMN (1) AS WEIGHTS.

EXPLANATORY NOTES TO GENERAL LIABILITY  
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

OBJECTIVES

The objectives of this procedure are to:

- 1) determine monoline loss cost level needs for the appropriate rating variables;
- 2) determine indicated changes to the eight liability Commercial Package Policy (CPP) Package Modification Factors (PMFs) based on Premises/Operations and Products/Completed Operations data.

EXPERIENCE  
BASE

The experience used in this relativity analysis is the latest five (5) years of accident year data, as reported under the Commercial Statistical Plan with aggregate loss costs adjusted to current loss cost level (multiline aggregate loss costs adjusted additionally by the current Implicit Package Modification Factors). Losses have been trended and developed in the Relativity Analysis. ALCCCL have been trended.

SIMULTANEOUS  
DETERMINATION  
OF RATING  
VARIABLE  
RELATIVITIES

Once the aggregate loss costs at current level and incurred losses used in the analysis have been appropriately adjusted, the 5-year experience ratios are calculated for each combination of the appropriate rating variables. From these ratios, relativities to the statewide 5-year experience ratio are calculated. These relativities are then used in a minimum bias iterative review procedure, which simultaneously determines the relativities for each rating variable.

The purpose of a simultaneous review procedure is to arrive at a set of relativities for each rating variable that best represent the experience. For example, the type of policy relativities will serve to derive the relationship of CPP policies relative to monoline policies, via the PMF, while the class group and territory (if applicable) relativities will serve to derive the relationship of the various classification and territories relative to one another. An iterative technique is used to derive relativities for each rating variable. This procedure is in contrast to a one-way type of review, wherein relativities for each rating variable would each be reviewed separately.

Such one-way types of review do not take into account differing percentages of experience of each rating variable within the other rating variables. The simultaneous review procedure accounts for these different distributions in generating relativities for each rating variable.

RATING  
VARIABLES  
USED

For Premises/Operations and Products/Completed Operations, the rating variables used in the relativity analysis are as follows:

Manufacturers and Contractors -	type of policy and class group
Owners, Landlords and Tenants -	type of policy, territory and class group
Products -	type of policy and class group
Local Products/Completed Operations-	type of policy, state and class group

EXPLANATORY NOTES TO GENERAL LIABILITY  
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

ITERATIVE  
PROCEDURE

The iterative technique referred to in the previous paragraph solves for a set of relativities for each rating variable based on the experience for the cells; that is, based on the experience ratio and latest year adjusted aggregate loss cost volume for each combination of rating variables relative to the experience ratio and adjusted aggregate loss cost volume for all combinations of rating variables combined. Specifically, the iterative procedure uses the following formulas:

For Owners, Landlords and Tenants:

$$TOP_i = \frac{\sum_j \sum_k W_{ijk} r_{ijk}}{\sum_j \sum_k W_{ijk} CG_j TER_k} \quad \text{where } 1 \leq i \leq m$$

$$CG_j = \frac{\sum_i \sum_k W_{ijk} r_{ijk}}{\sum_i \sum_k W_{ijk} TOP_i TER_k} \quad \text{where } 1 \leq j \leq n$$

$$TER_k = \frac{\sum_i \sum_j W_{ijk} r_{ijk}}{\sum_i \sum_j W_{ijk} TOP_i CG_j} \quad \text{where } 1 \leq k \leq p$$

$TOP_i$  is the relative change for the  $i^{th}$  type of policy;

$CG_j$  is the relative change for the  $j^{th}$  class group;

$TER_k$  is the relative change for the  $k^{th}$  territory;

$W_{ijk}$  is the aggregate loss costs at current level for the  $i^{th}$

type of policy,  $j^{th}$  class group and  $k^{th}$  territory;

$r_{ijk}$  is the relative change for the  $i^{th}$  type of policy,

$j^{th}$  class group and  $k^{th}$  territory;

$m$  is the number of types of policy in the analysis;

$n$  is the number of class groups in the analysis;

$p$  is the number of territories in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY  
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

For Manufacturers and Contractors, and Products:

$$TOP_i = \frac{\sum_j W_{ij} r_{ij}}{\sum_j W_{ij} CG_j} \quad \text{where } 1 \leq i \leq m$$
$$CG_j = \frac{\sum_i W_{ij} r_{ij}}{\sum_i W_{ij} TOP_i} \quad \text{where } 1 \leq j \leq n$$

$TOP_i$  is the relative change for the  $i^{\text{th}}$  type of policy;

$CG_j$  is the relative change for the  $j^{\text{th}}$  class group;

$W_{ij}$  is the aggregate loss costs at current level for the  $i^{\text{th}}$

type of policy and  $j^{\text{th}}$  class group;

$r_{ij}$  is the relative change for the  $i^{\text{th}}$  type of policy

and  $j^{\text{th}}$  class group;

$m$  is the number of types of policy in the analysis;

$n$  is the number of class groups in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY  
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

For Local Products/Completed Operations:

$$TOP_i = \frac{\sum_j \sum_k W_{ijk} r_{ijk}}{\sum_j \sum_k W_{ijk} CG_j ST_k} \quad \text{where } 1 \leq i \leq m$$

$$CG_j = \frac{\sum_i \sum_k W_{ijk} r_{ijk}}{\sum_i \sum_k W_{ijk} TOP_i ST_k} \quad \text{where } 1 \leq j \leq n$$

$$ST_k = \frac{\sum_i \sum_j W_{ijk} r_{ijk}}{\sum_i \sum_j W_{ijk} TOP_i CG_j} \quad \text{where } 1 \leq k \leq p$$

$TOP_i$  is the relative change for the  $i^{th}$  type of policy;

$CG_j$  is the relative change for the  $j^{th}$  class group;

$ST_k$  is the relative change for the  $k^{th}$  state;

$W_{ijk}$  is the aggregate loss costs at current level for the  $i^{th}$

type of policy,  $j^{th}$  class group and  $k^{th}$  state;

$r_{ijk}$  is the relative change for the  $i^{th}$  type of policy,

$j^{th}$  class group and  $k^{th}$  state;

$m$  is the number of types of policy in the analysis;

$n$  is the number of class groups in the analysis;

$p$  is the number of states in the analysis;

EXPLANATORY NOTES TO GENERAL LIABILITY  
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

ITERATIVE  
PROCEDURE  
(Cont'd)

For example, for Owners, Landlords and Tenants, the procedure starts by inserting the actual relativities for type of policy and class group into the third formula to get a territory relativity. This result is then used with the class group relativity in the first formula to get a new type of policy relativity, which in turn is substituted along with the territory relativity into the second formula to get a new class group relativity. The process continues on in that fashion until there is no appreciable difference from one iteration to the next.

APPLICATION OF  
CREDIBILITY

Consideration is then given to the credibility of the experience for each rating variable. The credibility of each of these categories is based on the formula  $Z = \sqrt{P/18,000}$  for Owners, Landlords and Tenants,  $Z = \sqrt{P/18,000}$  for Manufacturers and Contractors and  $Z = \sqrt{P/20,000}$  for Products, where P is the 5 year occurrence total for a given class group, territory or type of policy. For Local Products/Completed Operations, separate formulas are used to calculate the credibility of the experience for each type of policy and class group versus the credibility of the experience for each state, namely  $Z = \sqrt{P/15,000}$  for type of policy and class group, and  $Z = \sqrt{P/5,500}$  for state (in this case, P is the 5 year occurrence total for a given state). Credibility-weighted relativities are then calculated as follows:

$$W = R^Z \quad \text{where:}$$

Z is the class group, territory, state or type of policy credibility;

R is the class group, territory, state or type of policy relativity;

W is the credibility-weighted relativity.

The resulting credibility-weighted relativities are then balanced to assure that the average relativity remains at unity.

EXPLANATORY NOTES TO GENERAL LIABILITY  
RELATIVITY ANALYSIS - TABLES 10 THROUGH 18.

MULTILINE  
CONSIDERATIONS

The monoline relativities and the class group, territory (if applicable) and state relativities which result from the aforementioned procedures are then used to generate indicated monoline classification loss cost changes. The multiline relativities are used to generate multiline indications that apply to the current Implicit Package Modification Factors. The indicated IPMFs are calculated as follows:

$$\text{TOP y indicated IPMF} = \frac{(\text{TOP y current IPMF}) \times (\text{TOP y relativity})}{(\text{monoline relativity})}$$

For each CPP Type of Policy the indicated IPMF is subject to a minimum value of 0.50 and a maximum value of 1.50. If an indicated IPMF falls outside one of those limits, it is capped at that amount, the aggregate loss costs for that Type of Policy are adjusted to the capped IPMF level, and the entire relativity review as described above is re-performed to take this into account.

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COMMERCIAL PACKAGE POLICY

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SECTION C - REVISED CLM DIVISION NINE

Commercial Package Policy Package Modification Factors (Revised MLCP-PMF-1) ..... C-2

COMMERCIAL LINES MANUAL  
DIVISION NINE – MULTIPLE LINE  
COMMERCIAL PACKAGE POLICY  
PACKAGE MODIFICATION FACTORS

OREGON (36)

**PACKAGE MODIFICATION FACTORS**

Package Modification Assignment (PMA)	Premium From CLM Division			
	Two	Three, Four, Five, Eight Property	Four, Six Liability	All Other Divisions
Apartment House	.90	1.00	1.00	1.00
Contractors	.90	.96	.90	1.00
Industrial & Processing	.90	.84	.88	1.00
Institutional	.90	1.00	1.00	1.00
Mercantile	.90	.94	.83	1.00
Motel/Hotel	.90	1.00	1.00	1.00
Office	.90	.97	.89	1.00
Service	.90	.98	.98	1.00

**Table 1. Package Modification Factors**