

RULES – INFORMATION

APRIL 22, 2019

COMMERCIAL MULTIPLE LINE

LI-ML-2019-012

NEVADA COMMERCIAL PACKAGE POLICY PACKAGE MODIFICATION FACTOR ANALYSIS FURNISHED FOR INFORMATION; EXCEL WORKBOOK NEWLY INCLUDED

KEY MESSAGE

This analysis is provided for your information. We are NOT revising the current package modification factors based on this analysis.

BACKGROUND

In circular [LI-ML-2019-004](#), we provided you with information about the package modification factor review.

ISO ACTION

We are:

- NOT making a submission to the Insurance Department based on this analysis.
- NOT implementing any changes, at this time, to the current package modification factors for this jurisdiction.

COMPANY ACTION

You may wish to evaluate your package modification factor needs. The methods described in the attached analysis are based on the judgments of Insurance Services Office, Inc. You should evaluate and substitute your own judgments and procedures where appropriate, and consider your own loss experience when determining your package modification factor needs.

If you decide to independently file a package modification factor revision, you must comply with the applicable regulatory filing requirements.

REFERENCE(S)

[LI-ML-2019-004](#) (04/03/2019) Commercial Package Policy Experience Reviewed By Staff

ATTACHMENT(S)

- Informational Analysis
- Excel Workbook

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 document 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.

CONTACT INFORMATION

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NEVADA

ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

EXECUTIVE SUMMARY

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.
-

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. & Liab. Total</u>
Motel/Hotel	0.0%	-4.3%	-3.6%
Apartment	0.0%	0.0%	0.0%
Office	0.0%	-3.1%	-2.8%
Mercantile	0.0%	-1.0%	-0.7%
Institutional	0.0%	-2.2%	-1.0%
Services	+1.0%	-4.0%	-2.6%
Indust./Proc.	-3.0%	-2.0%	-2.2%
Contractors	<u>0.0%</u>	<u>-2.3%</u>	<u>-2.2%</u>
Statewide	-0.2%	-1.7%	-1.3%

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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ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

EXECUTIVE SUMMARY

HISTORICAL SOURCE DATA

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

- Basic Group I: five fiscal accident years ending 12/31/17.
 - Basic Group II: ten fiscal accident years ending 12/31/17.
 - Special Causes of Loss: five fiscal accident years ending 12/31/17.
 - 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 03/31/18.
 - Manufacturers and Contractors: five fiscal accident years ending 03/31/18.
 - Products: three calendar accident years ending 12/31/17.
 - Local Products and Completed Operations: three calendar accident years ending 12/31/17.
-

PRIOR ISO REVISIONS

The latest revisions in this state are:

<u>Filing</u>	ML-17-RLA1	ML-09-RLA1	ML-07-RLA1
<u>Dates</u>			
Implemented	10/01/17	02/01/10	02/01/08
<u>Changes</u>			
Indicated	-2.3%	-0.7%	+2.6%
Filed	-2.3%	-0.7%	+0.6%
Implemented	-2.3%	-0.7%	+0.6%

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ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

EXECUTIVE SUMMARY

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.

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. Travelers Indemnity Company
 2. Liberty Mutual Insurance Company
 3. Tokio Marine Companies
 4. Continental Casualty Company
 5. Hartford Accident and Indemnity Company
 6. AMCO (Allied Group)
 7. Firemans Fund Insurance Company
 8. California Capital Insurance Company
 9. American International Group
 10. Zurich American 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). 54.7%.

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.

NEVADA
ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
COMMERCIAL PACKAGE POLICY

EXECUTIVE SUMMARY

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.

COMMERCIAL PACKAGE POLICY

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COMMERCIAL PACKAGE POLICY METHODOLOGY OVERVIEW

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.

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.

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)	0.98	0.98	0.0%	0.92	0.88	-4.3%	-3.6%
APARTMENT (32)	1.00	1.00	0.0%	1.00	1.00	0.0%	0.0%
OFFICE (33)	1.00	1.00	0.0%	0.97	0.94	-3.1%	-2.8%
MERCANTILE (34)	1.00	1.00	0.0%	0.98	0.97	-1.0%	-0.7%
INSTITUTION (35)	1.00	1.00	0.0%	0.91	0.89	-2.2%	-1.0%
SERVICES (36)	0.98	0.99	1.0%	1.00	0.96	-4.0%	-2.6%
IND/PROC (37)	1.00	0.97	-3.0%	1.00	0.98	-2.0%	-2.2%
CONTRACTORS (38)	1.00	1.00	0.0%	0.86	0.84	-2.3%	-2.2%
STATEWIDE			-0.2%			-1.7%	-1.3%

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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	153,859	1.030	-1.8%	1.011	1.011
BASIC GRP II	15,915	0.870	2.4	0.891	0.891
SP CAUSE/LOSS	32,348	0.883	-0.3	0.880	0.880
*CRIME	726	0.856	0.0	0.856	0.856
*INL. MAR.	2,832	0.910	0.0	0.910	0.910
*FIDELITY	1,080	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>206,760</u>	<u>0.98</u>	<u>-0.4%</u>	<u>0.976</u>	<u>0.98</u>
LIABILITY-					
OL&T	956,027	0.922	-5.0%	0.876	0.878
<u>TOTAL</u>	<u>956,027</u>	<u>0.92</u>	<u>-4.8%</u>	<u>0.876</u>	<u>0.88</u>
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PROP. & LIAB. TOTAL	1,162,787		-4.0%		

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	261,038	0.914	-0.6%	0.909	0.915
BASIC GRP II	65,085	0.828	1.5	0.840	0.847
SP CAUSE/LOSS	141,873	1.305	1.5	1.325	1.334
*CRIME	401	0.856	0.0	0.856	0.856
*INL. MAR.	451	0.910	0.0	0.910	0.910
*FIDELITY	38,315	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>507,163</u>	<u>1.00</u>	<u>-0.7%</u>	<u>0.993</u>	<u>1.00</u>
LIABILITY-					
OL&T	1,375,686	1.000	3.4%	1.034	1.000
<u>TOTAL</u>	<u>1,375,686</u>	<u>1.00</u>	<u>3.4%</u>	<u>1.034</u>	<u>1.00</u>
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PROP. & LIAB. TOTAL	1,882,849		2.3%		

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

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

OFFICE (33) *****	(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	108,066	1.004	-0.4%	1.000	1.000
BASIC GRP II	24,984	0.631	2.3	0.646	0.646
SP CAUSE/LOSS	115,892	1.138	0.4	1.143	1.143
*CRIME	3,308	0.856	0.0	0.856	0.856
*INL. MAR.	749	0.910	0.0	0.910	0.910
*FIDELITY	6,585	1.000	0.0	1.000	1.000
TOTAL	259,584	1.00	-0.1%	0.999	1.00
LIABILITY-					
OL&T	2,171,772	0.969	-2.6%	0.944	0.946
M&C	339,061	0.920	-1.0	0.911	0.913
TOTAL	2,510,833	0.97	-3.2%	0.939	0.94
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PROP. & LIAB. TOTAL	2,770,417		-2.9%		

MERCANTILE (34) *****	(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	1,197,878	0.977	-0.9%	0.968	0.968
BASIC GRP II	232,485	0.735	3.1	0.758	0.758
SP CAUSE/LOSS	910,529	1.156	-0.7	1.148	1.148
*CRIME	19,464	0.856	0.0	0.856	0.856
*INL. MAR.	76,034	0.910	0.0	0.910	0.910
*FIDELITY	87,669	1.000	0.0	1.000	1.000
TOTAL	2,524,059	1.00	-0.4%	0.996	1.00
LIABILITY-					
OL&T	3,899,531	0.926	-0.1%	0.925	0.927
M&C	551,614	1.325	-2.6	1.291	1.294
LOCAL PRODUCT	254,666	1.500	0.1	1.501	1.500
*MULTI PRODUCT	267,718	0.832	2.5	0.853	0.853
TOTAL	4,973,529	0.98	-1.1%	0.969	0.97
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PROP. & LIAB. TOTAL	7,497,588		-0.9%		

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

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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	398,055	1.051	2.3%	1.075	1.055
BASIC GRP II	133,558	0.761	5.2	0.801	0.785
SP CAUSE/LOSS	394,804	1.066	0.4	1.070	1.050
*CRIME	7,672	0.856	0.0	0.856	0.856
*INL. MAR.	628	0.910	0.0	0.910	0.910
*FIDELITY	37,552	1.000	0.0	1.000	1.000
TOTAL	972,269	1.00	1.9%	1.019	1.00
LIABILITY-					
OL&T	839,123	0.901	-5.5%	0.851	0.872
M&C	35,053	1.500	-1.8	1.473	1.500
TOTAL	874,176	0.91	-4.8%	0.867	0.89
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	1,846,445		-1.3%		

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	650,757	0.940	0.4%	0.944	0.944
BASIC GRP II	230,203	1.201	3.0	1.237	1.237
SP CAUSE/LOSS	501,208	0.978	-0.4	0.974	0.974
*CRIME	14,488	0.856	0.0	0.856	0.856
*INL. MAR.	31,225	0.910	0.0	0.910	0.910
*FIDELITY	74,803	1.000	0.0	1.000	1.000
TOTAL	1,502,684	0.98	1.2%	0.992	0.99
LIABILITY-					
OL&T	1,550,914	0.814	0.0%	0.814	0.816
M&C	1,794,650	1.084	-2.7	1.055	1.058
LOCAL PRODUCT	364,619	1.478	1.6	1.502	1.500
*MULTI PRODUCT	54,440	0.899	1.8	0.915	0.915
TOTAL	3,764,623	1.00	-3.8%	0.962	0.96
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	5,267,307		-2.3%		

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

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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	172,983	0.755	0.0%	0.755	0.755
BASIC GRP II	47,677	0.967	2.4	0.990	0.990
SP CAUSE/LOSS	192,480	1.333	-3.3	1.289	1.289
*CRIME	1,767	0.856	0.0	0.856	0.856
*INL. MAR.	507	0.910	0.0	0.910	0.910
*FIDELITY	15,865	1.000	0.0	1.000	1.000
TOTAL	431,279	1.00	-3.5%	0.965	0.97
LIABILITY-					
M&C	1,701,860	1.050	-4.4	1.004	1.006
LOCAL PRODUCT	112,041	1.345	2.1	1.373	1.376
*MULTI PRODUCT	604,941	0.884	-2.3	0.864	0.864
TOTAL	2,418,842	1.00	-2.3%	0.977	0.98
-----	-----	-----	-----	-----	-----
PROP. & LIAB. TOTAL	2,850,121		-2.5%		
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	64,600	0.843	0.1%	0.844	0.843
BASIC GRP II	17,469	0.839	2.3	0.858	0.858
SP CAUSE/LOSS	83,778	1.227	-0.4	1.222	1.221
*CRIME	760	0.856	0.0	0.856	0.856
*INL. MAR.	308	0.910	0.0	0.910	0.910
*FIDELITY	20,536	1.000	0.0	1.000	1.000
TOTAL	187,451	1.00	0.0%	1.000	1.00
LIABILITY-					
M&C	2,039,650	0.637	0.8	0.642	0.644
LOCAL PRODUCT	1,833,980	1.192	4.8	1.249	1.252
TOTAL	3,873,630	0.86	-2.4%	0.839	0.84
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PROP. & LIAB. TOTAL	4,061,081		-2.3%		

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

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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	3,007,236	0.956	-0.1%	0.955	0.953
BASIC GRP II	767,376	0.862	3.2	0.890	0.887
SP CAUSE/LOSS	2,372,912	1.114	-0.5	1.109	1.106
*CRIME	48,586	0.856	0.0	0.856	0.856
*INL. MAR.	112,734	0.910	0.0	0.910	0.910
*FIDELITY	282,405	1.000	0.0	1.000	1.000
<u>TOTAL</u>	<u>6,591,249</u>	<u>0.996</u>	<u>0.0%</u>	<u>0.996</u>	<u>0.994</u>
LIABILITY-					
OL&T	10,793,053	0.922	-1.0%	0.913	0.913
M&C	6,461,888	0.887	-1.9	0.870	0.872
LOCAL PRODUCT	2,565,306	1.259	3.8	1.306	1.308
*MULTI PRODUCT	927,099	0.869	-0.7	0.863	0.863
<u>TOTAL</u>	<u>20,747,346</u>	<u>0.949</u>	<u>-1.7%</u>	<u>0.933</u>	<u>0.933</u>
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PROP. & LIAB. TOTAL	27,338,595		-1.3%		

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

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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)	0.93	0.893	0.89
APARTMENT (32)	1.00	1.023	1.00
OFFICE (33)	0.97	0.945	0.95
MERCANTILE (34)	0.98	0.978	0.98
INSTITUTION (35)	0.96	0.943	0.94
SERVICES (36)	0.99	0.971	0.97
IND/PROC (37)	1.00	0.975	0.98
CONTRACTORS (38)	0.86	0.845	0.85

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">. Motels and Hotels (TOP 31). Apartments (TOP 32). Offices (TOP 33). Mercantile Operations (TOP 34). Institutions (TOP 35). Service Operations (TOP 36). Industrial and Processing Operations (TOP 37). Contractors (TOP 38)
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	0.837	0.020	0.996	1.001	
31	0.041	0.007	0.978	0.983	-1.8%
32	0.441	0.012	0.990	0.995	-0.6%
33	0.331	0.007	0.992	0.997	-0.4%
34	0.797	0.055	0.988	0.992	-0.9%
35	2.899	0.018	1.019	1.024	+2.3%
36	1.002	0.030	1.000	1.005	+0.4%
37	0.676	0.009	0.996	1.001	0.0%
38	0.462	0.004	0.997	1.002	+0.1%
RATING GROUP					
01	0.700	0.020	0.993	1.013	
02	1.238	0.014	1.003	1.023	
03	0.321	0.025	0.972	0.992	
04	0.735	0.120	0.964	0.983	
06	0.716	0.023	0.992	1.012	
07	0.137	0.007	0.986	1.006	
08	0.897	0.042	0.995	1.016	
09	0.210	0.024	0.963	0.983	
10	8.152	0.017	1.036	1.057	
13	0.678	0.032	0.988	1.008	
14	0.311	0.028	0.968	0.987	
15	0.792	0.014	0.997	1.017	
21	0.503	0.007	0.995	1.015	
22	0.494	0.020	0.986	1.006	

* 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	1.011	0.047	1.001	1.004	
31	0.539	0.004	0.998	1.001	-0.3%
32	2.207	0.019	1.015	1.019	+1.5%
33	1.249	0.021	1.005	1.008	+0.4%
34	0.940	0.104	0.994	0.997	-0.7%
35	1.096	0.045	1.004	1.008	+0.4%
36	0.947	0.058	0.997	1.000	-0.4%
37	0.346	0.031	0.968	0.971	-3.3%
38	0.776	0.014	0.996	1.000	-0.4%
CATEGORY					
01	1.011	0.324	1.004	1.005	
02	0.490	0.026	0.982	0.983	
03	0.779	0.038	0.991	0.992	
04	0.952	0.070	0.997	0.998	
05	0.889	0.056	0.993	0.995	
06	1.020	0.023	1.000	1.002	
07	2.313	0.004	1.003	1.005	
08	0.529	0.031	0.980	0.982	
09	0.797	0.045	0.990	0.991	
10	4.476	0.015	1.023	1.024	
11	1.005	0.039	1.000	1.002	
12	0.565	0.048	0.973	0.974	
13	2.101	0.032	1.024	1.026	
14	0.922	0.042	0.997	0.998	

* 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 loss cost level needs for Basic Group I;
- (2) determine monoline category loss cost level needs for Special Causes of Loss;
- (3) determine indicated changes to the eight property CPP Package Modification Factors (PMFs) 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 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 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:

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

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

SPECIAL CAUSES OF LOSS:

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

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

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

COLUMN (1)
(Cont'd)

- TOP_i is the relativity for the i th Type of Policy;
- RG_j is the relativity for the j th Rating Group;
- CAT_j is the relativity for the j th Category;
- W_{ij} is the aggregate loss costs for the i th Type of Policy, j th Rating Group or Category;
- R_{ij} is the experience ratio relativity for the i th Type of Policy, j th Rating Group or Category;
- m is the number of Types of Policy in the analysis;
- n is the number of Rating Groups or Categories 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 or Category 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 \$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.

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

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.

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:

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

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

MULTILINE
CONSIDERATIONS
(Cont'd)

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.

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NEVADA

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

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 12/31/17 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	9,629	87,665	1.716	1.476	1.800
	02 OTHER HABITATIONAL	19,605	108,418	1.081	1.264	1.541
	03 RESTAURANTS & BARS	11,512	70,669	0.000	0.944	1.151
	04 OTHER MERCANTILE RS	134,390	810,271	0.496	0.765	0.933
	06 CHURCHES	562	2,783	61.224	14.434	17.602
	07 SCHOOLS	7,202	27,164	0.673	1.187	1.448
	08 OFFICES AND BANKS	45,050	318,316	0.097	0.718	0.876
	09 REC. FACILITIES	24,642	99,459	0.000	0.900	1.098
	10 HOTELS AND MOTELS	3,666	15,214	32.881	8.805	10.738
	13 MOTOR VEHICLE RISKS	17,776	83,193	0.173	0.980	1.195
	14 OTHER NON-MANUF.	35,529	187,058	0.061	0.816	0.995
	15 STORAGE	8,972	86,076	16.472	6.255	7.628
	21 METAL MANUFACTURING	10,888	55,365	0.000	0.968	1.180
	22 OTHER MANUFACTURING	23,996	129,979	0.000	0.859	1.048
	TOTAL*	353,419	2,081,630	1.193	1.103	1.345
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	153,859	668,520	0.171	0.432	0.527
	TOTAL*	153,859	668,520	0.171	0.432	0.527
32 MULTILINE APARTMENT	01 APARTMENTS	175,180	724,651	0.131	0.394	0.480
	02 OTHER HABITATIONAL	85,858	476,452	0.589	0.714	0.871
	TOTAL*	261,038	1,201,103	0.282	0.499	0.609
33 MULTILINE OFFICE	08 OFFICES AND BANKS	108,066	731,055	0.115	0.383	0.467
	TOTAL*	108,066	731,055	0.115	0.383	0.467
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	104,053	844,524	0.058	0.323	0.394
	04 OTHER MERCANTILE RS	895,262	3,974,453	0.746	0.759	0.926
	08 OFFICES AND BANKS	28,533	144,680	0.346	0.688	0.839
	13 MOTOR VEHICLE RISKS	96,786	384,286	0.019	0.433	0.528
	14 OTHER NON-MANUF.	18,249	101,447	0.073	0.628	0.766
	15 STORAGE	54,995	346,894	0.704	0.788	0.961
	TOTAL*	1,197,878	5,796,284	0.606	0.692	0.844

Entire State (Nevada)

NEVADA

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 12/31/17 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	833	3,211	0.000	0.713	0.870
	06 CHURCHES	194,844	936,742	3.474	2.679	3.267
	07 SCHOOLS	55,143	260,722	0.050	0.509	0.621
	08 OFFICES AND BANKS	48,633	214,744	7.792	3.688	4.498
	09 REC. FACILITIES	39,049	172,079	0.145	0.601	0.733
	13 MOTOR VEHICLE RISKS	244	1,902	0.000	0.715	0.872
	14 OTHER NON-MANUF.	59,309	251,508	0.204	0.581	0.709
	TOTAL*	398,055	1,840,908	2.704	1.980	2.415
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	34,178	100,232	0.000	0.409	0.499
	04 OTHER MERCANTILE RS	51,726	286,495	0.000	0.354	0.432
	08 OFFICES AND BANKS	54,067	255,732	0.686	0.579	0.706
	09 REC. FACILITIES	129,110	707,529	0.059	0.301	0.367
	13 MOTOR VEHICLE RISKS	203,354	843,292	1.279	0.922	1.124
	14 OTHER NON-MANUF.	118,638	578,829	1.093	0.782	0.954
	15 STORAGE	21,935	149,617	0.028	0.400	0.488
	21 METAL MANUFACTURING	4,985	21,552	0.000	0.438	0.534
	22 OTHER MANUFACTURING	32,764	139,877	0.086	0.418	0.510
	TOTAL*	650,757	3,083,155	0.673	0.626	0.763
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	13,096	91,371	0.000	0.412	0.502
	08 OFFICES AND BANKS	2,382	10,029	0.000	0.442	0.539
	13 MOTOR VEHICLE RISKS	1	460	0.000	0.446	0.544
	14 OTHER NON-MANUF.	1,008	6,211	0.000	0.444	0.541
	15 STORAGE	1,117	4,420	0.000	0.444	0.541
	21 METAL MANUFACTURING	37,334	210,436	0.087	0.400	0.488
	22 OTHER MANUFACTURING	118,045	541,542	0.321	0.439	0.535
	TOTAL*	172,983	864,469	0.238	0.429	0.523
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	51,219	304,311	0.262	0.439	0.535
	08 OFFICES AND BANKS	8,918	62,315	0.157	0.454	0.554
	14 OTHER NON-MANUF.	4,463	29,501	2.557	0.894	1.090
	TOTAL*	64,600	396,127	0.406	0.472	0.576

Entire State (Nevada)

NEVADA

BASIC GROUP I RELATIVITY ANALYSIS

TABLE 5 - SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 12/31/17 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	184,809	812,316	0.214	0.451	0.549
	02 OTHER HABITATIONAL	106,296	588,081	0.675	0.815	0.994
	03 RESTAURANTS & BARS	149,743	1,015,425	0.040	0.390	0.476
	04 OTHER MERCANTILE RS	1,145,693	5,466,901	0.653	0.723	0.882
	06 CHURCHES	195,406	939,525	3.640	2.713	3.308
	07 SCHOOLS	62,345	287,886	0.122	0.587	0.716
	08 OFFICES AND BANKS	295,649	1,736,871	1.502	1.046	1.275
	09 REC. FACILITIES	192,801	979,067	0.069	0.438	0.535
	10 HOTELS AND MOTELS	157,525	683,734	0.932	0.627	0.764
	13 MOTOR VEHICLE RISKS	318,161	1,313,133	0.833	0.776	0.947
	14 OTHER NON-MANUF.	237,196	1,154,554	0.661	0.726	0.885
	15 STORAGE	87,019	587,007	2.150	1.250	1.524
	21 METAL MANUFACTURING	53,207	287,353	0.061	0.520	0.634
	22 OTHER MANUFACTURING	174,805	811,398	0.233	0.493	0.601
	TOTAL*	3,360,655	16,663,251	0.845	0.820	1.001

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

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

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 12/31/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
<hr/>					
10 MONOLINE	01 BUILDINGS	129,284	803,757	1.115	1.212
	02 RES. APTS. AND COND	6,055	29,877	0.027	0.029
	03 OFFICES	24,849	213,186	0.743	0.808
	04 MERCANTILE - HIGH	40,520	297,938	0.615	0.668
	05 MERCANTILE - MEDIUM	8,402	38,950	0.817	0.888
	06 MERCANTILE - LOW	11,226	64,921	0.881	0.958
	07 MOTELS AND HOTELS	1,069	4,990	0.000	0.000
	08 INSTITUTIONAL - HIG	10,542	41,285	0.224	0.243
	09 INSTITUTIONAL - LOW	15,360	70,704	0.019	0.021
	10 INDUST-PROC - HIGH	4,286	35,032	0.051	0.055
	11 INDUST-PROC - LOW	14,841	100,777	0.012	0.013
	12 SERVICE - HIGH	12,930	65,314	1.922	2.089
	13 SERVICE - LOW	10,512	76,471	1.129	1.227
	14 CONTRACTORS	13,974	110,431	0.888	0.965
	TOTAL*	303,850	1,953,633	0.845	0.918
31 MULTILINE MOTEL/HOTEL	01 BUILDINGS	19,426	104,886	0.517	0.562
	07 MOTELS AND HOTELS	12,922	57,468	1.283	1.395
	TOTAL*	32,348	162,354	0.823	0.895
32 MULTILINE APARTMENT	01 BUILDINGS	63,260	393,923	2.241	2.436
	02 RES. APTS. AND COND	78,613	377,293	1.088	1.183
	TOTAL*	141,873	771,216	1.602	1.741
33 MULTILINE OFFICE	01 BUILDINGS	67,223	456,578	1.266	1.376
	03 OFFICES	45,057	368,570	0.989	1.075
	08 INSTITUTIONAL - HIG	3,612	18,982	0.000	0.000
	12 SERVICE - HIGH	0	3,967	0.000	0.000
	TOTAL*	115,892	848,097	1.119	1.216
34 MULTILINE MERCANTILE	01 BUILDINGS	602,624	2,656,923	0.953	1.036
	03 OFFICES	962	3,354	5.323	5.786
	04 MERCANTILE - HIGH	109,745	797,777	0.952	1.035
	05 MERCANTILE - MEDIUM	125,065	844,354	0.840	0.913
	06 MERCANTILE - LOW	61,948	284,704	0.969	1.053
	08 INSTITUTIONAL - HIG	311	955	0.000	0.000
	11 INDUST-PROC - LOW	139	306	53.770	58.446
	12 SERVICE - HIGH	3,075	16,601	0.230	0.250
	13 SERVICE - LOW	2,783	20,795	0.000	0.000
	14 CONTRACTORS	3,877	18,601	0.000	0.000
	TOTAL*	910,529	4,644,370	0.941	1.023

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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 12/31/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
35 MULTILINE INSTITUTIONAL	01 BUILDINGS	166,642	905,985	1.102	1.198
	04 MERCANTILE - HIGH	25	25	0.000	0.000
	08 INSTITUTIONAL - HIG	69,906	387,659	0.595	0.647
	09 INSTITUTIONAL - LOW	154,008	569,923	0.896	0.974
	12 SERVICE - HIGH	191	454	0.000	0.000
	13 SERVICE - LOW	3,545	3,545	0.000	0.000
	14 CONTRACTORS	487	828	0.000	0.000
	TOTAL*	394,804	1,868,419	0.920	1.000
36 MULTILINE SERVICES	01 BUILDINGS	245,736	1,131,958	0.967	1.051
	03 OFFICES	1,197	3,163	0.000	0.000
	04 MERCANTILE - HIGH	4,430	16,772	0.000	0.000
	05 MERCANTILE - MEDIUM	107	834	0.000	0.000
	06 MERCANTILE - LOW	887	929	0.000	0.000
	08 INSTITUTIONAL - HIG	6,811	31,835	0.000	0.000
	09 INSTITUTIONAL - LOW	19,887	72,299	0.000	0.000
	11 INDUST-PROC - LOW	542	1,760	0.000	0.000
	12 SERVICE - HIGH	132,030	657,617	0.524	0.570
	13 SERVICE - LOW	71,586	400,679	2.032	2.209
	14 CONTRACTORS	17,995	147,479	0.000	0.000
	TOTAL*	501,208	2,465,325	0.902	0.980
37 MULTILINE INDUST/PROC	01 BUILDINGS	87,746	564,105	0.129	0.140
	03 OFFICES	168	592	0.000	0.000
	04 MERCANTILE - HIGH	664	6,512	0.000	0.000
	05 MERCANTILE - MEDIUM	10	249	0.000	0.000
	10 INDUST-PROC - HIGH	25,098	197,492	1.939	2.108
	11 INDUST-PROC - LOW	78,671	512,227	0.454	0.493
	12 SERVICE - HIGH	3	667	0.000	0.000
	13 SERVICE - LOW	0	1,379	0.000	0.000
	14 CONTRACTORS	120	338	0.000	0.000
	TOTAL*	192,480	1,283,561	0.497	0.540

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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 12/31/17 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) RELATIVITY
<hr/>					
38 MULTILINE	01 BUILDINGS	25,466	170,434	0.263	0.286
CONTRACTORS	03 OFFICES	723	6,485	0.000	0.000
	04 MERCANTILE - HIGH	1,098	5,572	0.000	0.000
	06 MERCANTILE - LOW	0	207	0.000	0.000
	08 INSTITUTIONAL - HIG	1,254	4,833	0.000	0.000
	12 SERVICE - HIGH	622	4,542	0.000	0.000
	13 SERVICE - LOW	0	998	0.000	0.000
	14 CONTRACTORS	54,615	385,661	0.845	0.918
	TOTAL*	83,778	578,732	0.631	0.686
<hr/>					
TOTAL ALL TOPS*	01 BUILDINGS	1,407,407	7,188,549	0.991	1.077
	02 RES. APTS. AND COND	84,668	407,170	1.012	1.100
	03 OFFICES	72,956	595,350	0.934	1.015
	04 MERCANTILE - HIGH	156,482	1,124,596	0.827	0.899
	05 MERCANTILE - MEDIUM	133,584	884,387	0.838	0.911
	06 MERCANTILE - LOW	74,061	350,761	0.944	1.026
	07 MOTELS AND HOTELS	13,991	62,458	1.185	1.288
	08 INSTITUTIONAL - HIG	92,436	485,549	0.476	0.517
	09 INSTITUTIONAL - LOW	189,255	712,926	0.731	0.795
	10 INDUST-PROC - HIGH	29,384	232,524	1.664	1.809
	11 INDUST-PROC - LOW	94,193	615,070	0.460	0.500
	12 SERVICE - HIGH	148,851	749,162	0.636	0.691
	13 SERVICE - LOW	88,426	503,867	1.779	1.934
	14 CONTRACTORS	91,068	663,338	0.643	0.699
	TOTAL*	2,676,762	14,575,707	0.920	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 12/31/17 AGGR. LOSS COSTS AT CURRENT IMPLICIT PMF	(2) ACCIDENT YEARS 2008-2017 EXPER. RATIO AT CURRENT PMF	(3) FORMULA RELATIVITY (2) / 1.030	(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	115,671	0.424	0.412	0.029	0.982	0.982	0.9733	
MULTILINE	767,376	1.121	1.088	0.152	1.013	1.013	1.0043	
COVERAGE	883,047	1.030	0.999			1.0089 B	1.0002	
MULTILINE TOP								
31 MOTEL/HOTEL	15,915	0.426	0.414	0.004	0.997	1.006	0.9971	+2.4%
32 APARTMENT	65,085	0.301	0.292	0.016	0.988	0.997	0.9882	+1.5%
33 OFFICE	24,984	0.643	0.624	0.009	0.996	1.005	0.9961	+2.3%
34 MERCANTILE	232,485	1.108	1.076	0.048	1.003	1.012	1.0031	+3.1%
35 INSTITUTIONAL	133,558	1.918	1.862	0.029	1.024	1.033	1.0239	+5.2%
36 SERVICES	230,203	1.099	1.067	0.047	1.002	1.011	1.0021	+3.0%
37 INDUST/PROCESS	47,677	0.882	0.856	0.015	0.997	1.006	0.9971	+2.4%
38 CONTRACTORS	17,469	0.500	0.485	0.006	0.996	1.005	0.9961	+2.3%
	767,376	1.121 B	1.088		1.004 B	1.013 B	1.0043	

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) + ((1.000 - (4)) * 0.999)

E - (6) = (5) * (1.013/1.004)

F - (7) = (6) / 1.0089

G - (8) = (NORMALIZED FORMULA RELATIVITY FOR TOP) / (NORMALIZED FORMULA MONOLINE (TOP 10) RELATIVITY) - 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	0.910	0.910	0.910
3X & 7X	1.000			

CLASSIFICATION

150	0.923
191	1.100
192	0.785
220	0.789
221	0.755
234	1.202
235	1.088
240	0.789
241	0.715
327	0.757
328	0.932
340	0.646
341	0.757
342	0.751
343	0.767
403	0.640
451	0.946
452	0.778
453	0.811
454	0.713
460	0.479
482	0.889
510	0.662
514	0.631
530	0.628
534	0.757

*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) <u>2016 AGGREGATE</u>	(2) <u>2012 - 2016</u>	(3) <u>FIVE-YEAR</u>	(4) <u>RELATIVITY</u>
<u>MONOLINE 10</u>	<u>GROUP</u>	<u>LOSS COSTS</u>	<u>AGGREGATE LOSS COSTS</u>	<u>EXP RATIO</u>	
	150	311,633	1,898,096	1.151	1.353
	191	5,446,492	15,816,054	1.032	1.213
	192	862,002	2,760,886	0.627	0.737
	220	5,112	87,903	5.716	6.717
	221	1,491	2,853	1.199	1.409
	234	5,224,155	20,144,072	0.600	0.705
	235	8,439,000	24,407,283	0.761	0.894
	240	928,183	3,685,254	0.656	0.771
	241	15,553	114,739	0.053	0.062
	327	18,917	91,546	0.000	0.000
	328	2,319,887	11,908,665	0.792	0.931
	340	40,688	87,993	0.000	0.000
	341	0	0	0.000	0.000
	342	19,188	65,375	0.555	0.652
	343	589	3,417	343.665	578.925
	403	1,600,852	5,771,545	0.345	0.405
	451	3,309,677	12,953,836	0.855	1.005
	452	34,702	137,467	1.628	1.913
	453	45,575	212,456	3.203	3.764
	454	164,836	745,300	0.734	0.863
	460	790,198	3,687,530	0.415	0.488
	482	839,364	2,841,134	0.986	1.159
	510	3,252	39,977	0.020	0.024
	514	446,469	1,612,361	0.339	0.398
	530	504,434	2,697,004	0.489	0.575
	534	0	0	0.000	0.000
	TOTAL#	31,372,249	111,772,746	0.785	0.922

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

		(1)	(2)	(3)	(4)
	RATING	2016 AGGREGATE	2012 - 2016	FIVE-YEAR	
TYPE OF POLICY	GROUP	LOSS COSTS	AGGREGATE LOSS COSTS	EXP RATIO	RELATIVITY
MULTILINE ##	150	720,095	3,333,227	0.795	0.934
3X & 7X	191	603,595	2,704,067	0.774	0.910
	192	202,803	783,492	0.826	0.971
	220	6,439	28,512	1.526	1.793
	221	5,606	27,010	0.258	0.303
	234	12,669,443	52,530,286	1.162	1.365
	235	478,171	2,380,353	2.879	3.383
	240	11,651	60,061	1.983	2.330
	241	5,028	15,371	0.019	0.022
	327	2,942	18,862	0.000	0.000
	328	396	2,751	168.726	198.268
	340	32,828	132,609	0.016	0.019
	341	0	0	0.000	0.000
	342	6,082	30,546	0.000	0.000
	343	2,369	7,996	0.000	0.000
	403	479,869	2,417,275	0.739	0.868
	451	95,342	438,635	0.360	0.423
	452	38,096	206,651	0.535	0.629
	453	34,375	104,958	0.147	0.173
	454	228,162	984,183	0.274	0.322
	460	3,613,811	15,118,089	0.318	0.374
	482	127,496	760,961	0.693	0.814
	510	23,290	121,842	0.000	0.000
	514	63,169	300,866	0.073	0.086
	530	1,129,574	4,779,992	0.414	0.486
	534	0	0	0.000	0.000
	TOTAL#	20,580,632	87,288,595	0.952	1.119

REFLECTS CURRENT IPMF OF 0.910.

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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>TOTAL ALL TOPS#</u>	<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>
	150	1,031,728	5,231,323	0.903	1.061
	191	6,050,087	18,520,121	1.006	1.182
	192	1,064,805	3,544,378	0.665	0.781
	220	11,551	116,415	3.380	3.972
	221	7,097	29,863	0.456	0.536
	234	17,893,598	72,674,358	0.998	1.173
	235	8,917,171	26,787,636	0.875	1.028
	240	939,834	3,745,315	0.672	0.790
	241	20,581	130,110	0.045	0.053
	327	21,859	110,408	0.000	0.000
	328	2,320,283	11,911,416	0.821	0.965
	340	73,516	220,602	0.007	0.008
	341	0	0	0.000	0.000
	342	25,270	95,921	0.421	0.495
	343	2,958	11,413	267.552	314.397
	403	2,080,721	8,188,820	0.436	0.512
	451	3,405,019	13,392,471	0.841	0.988
	452	72,798	344,118	1.056	1.241
	453	79,950	317,414	1.889	2.220
	454	392,998	1,729,483	0.467	0.549
	460	4,404,009	18,805,619	0.335	0.394
	482	966,860	3,602,095	0.947	1.113
	510	26,542	161,819	0.002	0.002
	514	509,638	1,913,227	0.306	0.360
	530	1,634,008	7,476,996	0.437	0.514
	534	0	0	0.000	0.000
	TOTAL#	51,952,881	199,061,341	0.851	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
NEVADA
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TOP	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
10	1.063	0.178	1.011	1.006	
31	0.546	0.066	0.961	0.956	-5.0%
32	1.662	0.087	1.045	1.040	+3.4%
33	0.850	0.091	0.985	0.980	-2.6%
34	1.074	0.143	1.010	1.005	-0.1%
35	0.540	0.073	0.956	0.951	-5.5%
36	1.096	0.121	1.011	1.006	0.0%
CLASS GROUP					
01	1.180	0.076	1.013	1.016	
02	0.723	0.095	0.970	0.973	
03	0.482	0.062	0.956	0.959	
04	0.341	0.012	0.987	0.991	
05	0.505	0.030	0.980	0.983	
06	0.464	0.046	0.965	0.969	
07	1.751	0.134	1.078	1.082	
08	1.033	0.016	1.001	1.004	
09	0.911	0.078	0.993	0.997	
10	1.272	0.074	1.018	1.022	
11	0.561	0.087	0.951	0.955	
12	0.988	0.176	0.998	1.002	
13	2.956	0.040	1.044	1.048	
16	0.000	0.000	1.000	1.004	

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

TABLE 11
NEVADA
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	1.146	0.129	1.018	1.011	
33	1.331	0.028	1.008	1.001	-1.0%
34	0.786	0.036	0.991	0.985	-2.6%
35	0.000	0.000	1.000	0.993	-1.8%
36	0.882	0.076	0.990	0.984	-2.7%
37	0.477	0.036	0.974	0.967	-4.4%
38	1.329	0.088	1.025	1.019	+0.8%
CLASS GROUP					
30	0.477	0.050	0.964	0.965	
31	1.379	0.072	1.023	1.025	
32	0.955	0.108	0.995	0.996	
33	0.457	0.034	0.974	0.975	
34	1.147	0.064	1.009	1.010	
35	1.805	0.010	1.006	1.007	
36	0.832	0.039	0.993	0.994	
37	0.060	0.016	0.956	0.957	
38	1.796	0.084	1.050	1.052	

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

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

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) FISCAL A.Y.E. 03/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2014 - 2018 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	01 FOOD&BEV. (RETAIL)	\$433,247	\$1,443,458	1.574	1.515	43	1.022
	02 RESTAURANTS	422,265	2,467,569	0.660	0.635	70	0.979
	03 STORES	103,258	480,759	0.499	0.481	20	0.965
	04 VENDING & RENTAL	8,542	28,090	0.174	0.167	0	0.997
	05 FOOD & BEV. DIST.	44,578	192,659	0.051	0.049	4	0.989
	06 NON-FOOD&BEV.DIST	95,489	636,833	0.283	0.272	15	0.974
	07 CLUBS, AMSMT&SPRTS	573,807	1,903,952	1.691	1.628	83	1.088
	08 HEALTH CARE FACIL	8,405	68,007	0.000	0.000	0	1.010
	09 HOTELS AND MOTELS	151,299	649,441	1.278	1.230	30	1.002
	10 SCHLS & CHURCHES	311,472	1,142,150	1.331	1.281	23	1.028
	11 APARTMENTS	1,130,211	3,436,290	0.693	0.667	61	0.960
	12 BUILDINGS&OFFICES	1,215,699	6,702,716	1.127	1.085	207	1.007
	13 MISC. PREMISES	69,133	409,939	3.176	3.057	20	1.054
	16 GOVT SUBDIVISIONS	16,008	82,079	0.000	0.000	0	1.009
	TOTAL *	\$4,583,413	\$19,643,942	1.090		576	
31 MULT MOTEL/HOTEL	09 HOTELS AND MOTELS	\$565,362	\$2,329,828	0.517	0.498	80	0.953
	TOTAL *	\$565,362	\$2,329,828	0.517		80	
32 MULT APARTMENT	11 APARTMENTS	\$604,565	\$3,075,488	0.832	0.801	77	0.993
	12 BUILDINGS&OFFICES	208,969	946,251	2.102	2.023	61	1.041
	TOTAL *	\$813,534	\$4,021,739	1.158		138	
33 MULT OFFICE	12 BUILDINGS&OFFICES	\$1,280,764	\$6,570,694	0.848	0.817	150	0.982
	13 MISC. PREMISES	3,548	16,140	11.329	10.905	1	1.028
	TOTAL *	\$1,284,312	\$6,586,834	0.877		151	
34 MULT MERCANTILE	01 FOOD&BEV. (RETAIL)	\$306,221	\$1,957,871	0.933	0.898	63	1.022
	02 RESTAURANTS	599,193	2,981,632	0.904	0.870	95	0.978
	03 STORES	398,981	1,783,577	0.575	0.553	50	0.964
	04 VENDING & RENTAL	3,905	103,817	0.008	0.008	1	0.996
	05 FOOD & BEV. DIST.	71,138	488,655	0.881	0.848	13	0.988
	06 NON-FOOD&BEV.DIST	196,377	851,615	0.629	0.606	24	0.974
	12 BUILDINGS&OFFICES	730,235	3,762,178	1.103	1.062	124	1.007
	TOTAL *	\$2,306,050	\$11,929,345	0.888		370	

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

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) FISCAL A.Y.E. 03/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2014 - 2018 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
35 MULT INSTITUT.	07 CLUBS, AMSMT&SPRTS	\$71,213	\$267,767	0.507	0.488	10	1.029
	08 HEALTH CARE FACIL	32,814	164,954	0.878	0.845	5	0.955
	10 SCHLS & CHURCHES	375,949	1,980,937	0.796	0.767	78	0.972
	12 BUILDINGS&OFFICES	16,253	31,211	0.115	0.110	3	0.953
	13 MISC. PREMISES	0	21,937	0.000	0.000	0	0.997
	TOTAL *	\$496,229	\$2,466,806	0.738		96	
36 MULT SERVICES	03 STORES	\$20,812	\$148,266	0.000	0.000	0	0.965
	04 VENDING & RENTAL	26,316	116,197	0.510	0.491	2	0.997
	07 CLUBS, AMSMT&SPRTS	619,083	2,338,659	2.273	2.187	235	1.088
	08 HEALTH CARE FACIL	163	163	0.000	0.000	0	1.010
	09 HOTELS AND MOTELS	44,850	250,395	0.123	0.118	2	1.002
	10 SCHLS & CHURCHES	5,664	12,274	0.000	0.000	0	1.028
	12 BUILDINGS&OFFICES	161,576	813,610	0.567	0.545	18	1.008
	13 MISC. PREMISES	38,694	160,799	2.725	2.623	8	1.054
	TOTAL *	\$917,158	\$3,840,363	1.769		265	
TOTAL ALL TOP	01 FOOD&BEV. (RETAIL)	\$739,468	\$3,401,329	1.308		106	
	02 RESTAURANTS	1,021,458	5,449,201	0.803		165	
	03 STORES	523,051	2,412,602	0.537		70	
	04 VENDING & RENTAL	38,763	248,104	0.385		3	
	05 FOOD & BEV. DIST.	115,716	681,314	0.561		17	
	06 NON-FOOD&BEV.DIST	291,866	1,488,448	0.516		39	
	07 CLUBS, AMSMT&SPRTS	1,264,103	4,510,378	1.909		328	
	08 HEALTH CARE FACIL	41,382	233,124	0.696		5	
	09 HOTELS AND MOTELS	761,511	3,229,664	0.645		112	
	10 SCHLS & CHURCHES	693,085	3,135,361	1.030		101	
	11 APARTMENTS	1,734,776	6,511,778	0.742		138	
	12 BUILDINGS&OFFICES	3,613,496	18,826,660	1.050		563	
	13 MISC. PREMISES	111,375	608,815	3.279		29	
	16 GOVT SUBDIVISIONS	16,008	82,079	0.000		0	
	TOTAL *	\$10,966,058	\$50,818,857	1.039		1,676	

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

TABLE 13
NEVADA
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. 03/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2014 - 2018 AGG LOSS COST CURRENT LEVEL	(3) FIVE YEAR EXPERIENCE RATIO	(4) RELATIV.	(5) NUMBER OF OCCURRENCES	(6) BAL CELL RELATIV.
10 MONOLINE	30 SERVICE	\$344,213	\$1,423,860	0.212	0.225	12	0.976
	31 LIGHT CONTRACTING	202,906	1,036,653	0.128	0.136	21	1.036
	32 MEDIUM CONTRCTING	1,319,108	7,522,501	1.185	1.259	160	1.007
	33 HEAVY CONTRACTING	454,355	2,161,769	0.589	0.626	7	0.986
	34 DEALER OR DISTRIB	148,287	629,015	0.863	0.917	16	1.021
	35 LGT. MANUFACTURER	32,011	165,255	0.000	0.000	0	1.018
	36 MED. MANUFACTURER	160,801	974,697	0.823	0.875	16	1.005
	37 HVY. MANUFACTURER	28,363	102,392	0.080	0.085	2	0.968
	38 MISC. OPERATION	226,739	1,205,352	3.079	3.273	66	1.063
	TOTAL *	\$2,916,783	\$15,221,494	0.991		300	
33 MULT OFFICE	31 LIGHT CONTRACTING	\$758	\$43,108	0.000	0.000	0	1.026
	32 MEDIUM CONTRCTING	1,106	5,668	0.000	0.000	0	0.998
	33 HEAVY CONTRACTING	88,998	335,306	1.012	1.076	2	0.976
	38 MISC. OPERATION	109,647	548,227	1.914	2.035	13	1.053
	TOTAL *	\$200,509	\$932,309	1.496		15	
34 MULT MERCANTILE	30 SERVICE	\$69,718	\$228,397	0.518	0.551	3	0.950
	32 MEDIUM CONTRCTING	29,435	136,188	0.147	0.156	1	0.981
	34 DEALER OR DISTRIB	220,719	1,034,554	0.907	0.964	19	0.995
	38 MISC. OPERATION	6,334	73,243	0.061	0.065	1	1.036
	TOTAL *	\$326,206	\$1,472,382	0.739		24	
35 MULT INSTITUT.	31 LIGHT CONTRACTING	\$1,664	\$22,883	0.000	0.000	0	1.018
	32 MEDIUM CONTRCTING	19,065	95,289	0.000	0.000	0	0.990
	TOTAL *	\$20,729	\$118,172	0.000		0	
36 MULT SERVICES	30 SERVICE	\$64,277	\$239,998	0.563	0.598	9	0.949
	31 LIGHT CONTRACTING	53,677	329,806	3.012	3.202	13	1.008
	32 MEDIUM CONTRCTING	38,336	224,940	1.489	1.582	2	0.980
	33 HEAVY CONTRACTING	20,591	103,547	0.086	0.091	2	0.959
	34 DEALER OR DISTRIB	396,535	1,486,569	1.071	1.139	36	0.994
	36 MED. MANUFACTURER	14,223	73,102	0.000	0.000	0	0.978
	38 MISC. OPERATION	473,656	2,089,390	1.132	1.204	43	1.035
	TOTAL *	\$1,061,295	\$4,547,352	1.147		105	

TABLE 13
NEVADA
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. 03/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) FISCAL A.Y.E. 2014 - 2018 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	\$1,289	\$3,284	0.000	0.000	0	0.991
	32 MEDIUM CONTRCTING	164,573	513,433	0.026	0.027	1	0.964
	33 HEAVY CONTRACTING	18,764	125,409	0.027	0.029	1	0.943
	34 DEALER OR DISTRIB	23,965	167,811	0.303	0.322	3	0.977
	35 LGT. MANUFACTURER	44,545	185,056	2.208	2.346	2	0.974
	36 MED. MANUFACTURER	534,619	2,656,797	0.414	0.440	12	0.962
	37 HVY. MANUFACTURER	194,753	958,063	0.025	0.026	3	0.926
	38 MISC. OPERATION	23,914	101,252	0.467	0.497	2	1.017
	TOTAL *	\$1,006,422	\$4,711,105	0.345		24	
38 MULT CONTRACTORS	30 SERVICE	\$271,593	\$1,464,665	0.896	0.953	22	0.983
	31 LIGHT CONTRACTING	291,691	1,282,817	2.332	2.479	60	1.044
	32 MEDIUM CONTRCTING	399,359	1,913,155	0.823	0.875	46	1.015
	33 HEAVY CONTRACTING	206,487	1,218,829	0.214	0.227	9	0.993
	38 MISC. OPERATION	37,050	206,610	1.242	1.320	3	1.071
	TOTAL *	\$1,206,180	\$6,086,076	1.113		140	
TOTAL ALL TOP	30 SERVICE	\$749,801	\$3,356,920	0.519		46	
	31 LIGHT CONTRACTING	551,985	2,718,551	1.572		94	
	32 MEDIUM CONTRCTING	1,970,982	10,411,174	0.993		210	
	33 HEAVY CONTRACTING	789,195	3,944,860	0.512		21	
	34 DEALER OR DISTRIB	789,506	3,317,949	0.963		74	
	35 LGT. MANUFACTURER	76,556	350,311	1.284		2	
	36 MED. MANUFACTURER	709,643	3,704,596	0.498		28	
	37 HVY. MANUFACTURER	223,116	1,060,455	0.032		5	
	38 MISC. OPERATION	877,340	4,224,074	1.712		128	
	TOTAL *	\$6,738,124	\$33,088,890	0.941		608	

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

TABLE 14
NEVADA
PRODUCTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TOP	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
10	0.988	0.372	0.995	0.996	
34	1.036	0.371	1.013	1.014	+ 1.8%
36	1.005	0.187	1.001	1.002	+ 0.6%
37	0.988	0.507	0.994	0.994	- 0.2%
CLASS GROUP					
3	0.924	0.500	0.961	0.965	
4	1.048	0.406	1.019	1.024	
5	1.107	0.132	1.014	1.018	
6	1.007	0.320	1.002	1.006	
7	1.006	0.182	1.001	1.005	

* 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: 1.007
 TOP 36: 1.012
 TOP 37: 0.979

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. 12/31/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR 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	03 MAN,DLR,DSTFD/DRG	\$18,227,491	\$79,500,211	0.856	0.869	1,461	0.961
	04 DLR,DST-NOTFD/DRG	9,616,743	42,155,667	1.119	1.136	640	1.019
	05 MAN.NTFD/DRG (LOW)	1,605,615	6,748,634	1.039	1.055	84	1.014
	06 MAN.NTFD/DRG (MED)	9,640,686	42,498,903	0.958	0.972	466	1.002
	07 MAN.NTFD/DRG (HGH)	2,568,561	11,286,663	1.018	1.033	129	1.001
	TOTAL *	\$41,659,096	\$182,190,078	0.957		2,780	
34 MULT MERCANTILE	03 MAN,DLR,DSTFD/DRG	\$5,166,155	\$25,851,441	1.131	1.148	791	0.979
	04 DLR,DST-NOTFD/DRG	29,011,611	140,165,685	1.037	1.052	1,972	1.038
	06 MAN.NTFD/DRG (MED)	7,625	57,567	0.000	0.000	0	1.020
	TOTAL *	\$34,185,391	\$166,074,693	1.051		2,763	
36 MULT SERVICES	04 DLR,DST-NOTFD/DRG	\$3,197,904	\$14,609,890	1.041	1.057	699	1.025
	06 MAN.NTFD/DRG (MED)	54,898	258,512	0.781	0.793	1	1.008
	TOTAL *	\$3,252,802	\$14,868,402	1.037		700	
37 MULT INDUST/PROC.	03 MAN,DLR,DSTFD/DRG	\$16,474,514	\$81,117,947	0.888	0.901	2,761	0.960
	05 MAN.NTFD/DRG (LOW)	4,070,679	20,897,437	1.092	1.108	269	1.012
	06 MAN.NTFD/DRG (MED)	28,248,516	131,744,418	0.987	1.002	1,582	1.001
	07 MAN.NTFD/DRG (HGH)	7,346,721	36,933,393	0.965	0.980	537	1.000
	TOTAL *	\$56,140,430	\$270,693,195	0.963		5,149	
TOTAL ALL TOP	03 MAN,DLR,DSTFD/DRG	\$39,868,160	\$186,469,599	0.905		5,013	
	04 DLR,DST-NOTFD/DRG	41,826,258	196,931,242	1.056		3,311	
	05 MAN.NTFD/DRG (LOW)	5,676,294	27,646,071	1.077		353	
	06 MAN.NTFD/DRG (MED)	37,951,725	174,559,400	0.979		2,049	
	07 MAN.NTFD/DRG (HGH)	9,915,282	48,220,056	0.979		666	
	TOTAL *	\$135,237,719	\$633,826,368	0.985		11,392	

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

TABLE 16
NEVADA
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

	(1) BAILEY FORMULA RELATIV.	(2) CREDIBILITY Z	(3) Z-WTD RELATIV.	(4) BALANCED RELATIV.	(5) INDICATED CHANGE *
TOP					
10	0.969	0.752	0.977	0.973	
34	0.959	0.541	0.978	0.974	+ 0.1%
36	0.986	0.516	0.993	0.989	+ 1.6%
37	0.972	0.138	0.996	0.993	+ 2.1%
38	1.025	0.962	1.024	1.020	+ 4.8%
CLASS GROUP					
1	0.918	0.550	0.954	0.948	
2	1.037	0.495	1.018	1.012	
11	1.095	0.352	1.032	1.026	
12	1.016	1.000	1.016	1.010	
13	0.785	0.266	0.938	0.932	

* 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)	(2)	(3)	(4)
	BAILEY FORMULA RELATIV	CREDIBILITY Z	Z-WTD RELATIV	BALANCED RELATIV.
	1.418	0.386	1.144	1.144
	1.202	0.623	1.122	1.121
	1.425	0.229	1.085	1.084
	1.144	0.427	1.059	1.059
	1.413	0.160	1.057	1.057
	1.437	0.153	1.057	1.057
	1.197	0.263	1.049	1.048
	1.096	0.505	1.048	1.047
	1.135	0.345	1.045	1.044
	1.122	0.368	1.043	1.043
	1.191	0.231	1.041	1.041
	1.128	0.326	1.040	1.040
	1.173	0.239	1.039	1.039
	1.148	0.224	1.031	1.031
	1.059	0.435	1.025	1.025
	1.052	0.453	1.023	1.023
	1.257	0.100	1.023	1.023
	1.083	0.227	1.018	1.018
	1.101	0.187	1.018	1.018
	1.090	0.192	1.017	1.016
	1.045	0.369	1.016	1.016
	1.037	0.307	1.011	1.011
	1.019	0.449	1.008	1.008
	1.027	0.143	1.004	1.003
	1.002	0.494	1.001	1.000
	1.002	0.131	1.000	1.000
	0.994	0.097	0.999	0.999
	0.992	0.402	0.997	0.997
	0.989	0.377	0.996	0.995
	0.975	0.190	0.995	0.995
	0.965	0.458	0.984	0.983
	0.924	0.241	0.981	0.981
	0.933	0.349	0.976	0.976
	0.895	0.260	0.972	0.971
	0.892	0.285	0.968	0.968
	0.788	0.160	0.963	0.962
	0.693	0.104	0.963	0.962
	0.889	0.364	0.958	0.958
Nevada	0.759	0.154	0.958	0.958
	0.843	0.288	0.952	0.952
	0.720	0.158	0.949	0.949
	0.765	0.195	0.949	0.949
	0.906	0.547	0.948	0.947
	0.793	0.238	0.946	0.946
	0.512	0.084	0.945	0.945
	0.639	0.136	0.941	0.941
	0.813	0.308	0.938	0.938
	0.889	0.581	0.934	0.933
	0.846	0.470	0.924	0.924
	0.756	0.321	0.914	0.914
	0.602	0.179	0.913	0.913
	0.804	0.575	0.882	0.882

* Sorted by balanced relative change.

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

SUMMARY OF EXPERIENCE USED IN RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1) CALENDAR A.Y.E. 12/31/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR 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	01 RET.STRS-FOOD/DRG	\$22,670	\$99,751	0.646	0.596	6	0.884
	02 RET.STRS-NTFD/DRG	14,587	38,562	0.146	0.135	1	0.944
	11 COMP. OPS. (LOW)	18,771	131,503	0.322	0.297	1	0.957
	12 COMP. OPS. (MED)	529,927	2,345,095	0.936	0.863	21	0.942
	13 COMP. OPS. (HGH)	27,684	111,604	0.000	0.000	0	0.869
	TOTAL *	\$613,639	\$2,726,515	0.845		29	
34 MULT MERCANTILE	01 RET.STRS-FOOD/DRG	\$65,406	\$371,638	0.533	0.492	11	0.886
	02 RET.STRS-NTFD/DRG	52,702	260,333	0.018	0.017	2	0.945
	12 COMP. OPS. (MED)	30,299	100,782	3.767	3.476	2	0.943
	TOTAL *	\$148,407	\$732,753	1.010		15	
36 MULT SERVICES	01 RET.STRS-FOOD/DRG	\$7,666	\$30,473	0.000	0.000	0	0.899
	02 RET.STRS-NTFD/DRG	125,150	481,671	0.645	0.595	18	0.959
	11 COMP. OPS. (LOW)	36,683	124,254	2.610	2.408	2	0.973
	12 COMP. OPS. (MED)	40,211	156,070	1.181	1.089	2	0.957
	13 COMP. OPS. (HGH)	2,772	54,415	0.373	0.344	1	0.883
	TOTAL *	\$212,482	\$846,883	1.059		23	
37 MULT INDUST/PROC.	11 COMP. OPS. (LOW)	\$1,711	\$6,560	0.000	0.000	0	0.976
	12 COMP. OPS. (MED)	63,183	216,521	0.328	0.303	2	0.961
	13 COMP. OPS. (HGH)	398	1,634	0.000	0.000	0	0.886
	TOTAL *	\$65,292	\$224,715	0.317		2	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$62,090	\$286,777	1.636	1.509	8	1.003
	12 COMP. OPS. (MED)	902,804	4,474,882	0.739	0.682	54	0.987
	13 COMP. OPS. (HGH)	103,859	533,778	0.525	0.484	1	0.911
	TOTAL *	\$1,068,753	\$5,295,437	0.770		63	
TOTAL ALL TOP	01 RET.STRS-FOOD/DRG	\$95,742	\$501,862	0.517		17	
	02 RET.STRS-NTFD/DRG	192,439	780,566	0.436		21	
	11 COMP. OPS. (LOW)	119,255	549,094	1.705		11	
	12 COMP. OPS. (MED)	1,566,424	7,293,350	0.859		81	
	13 COMP. OPS. (HGH)	134,713	701,431	0.412		2	
	TOTAL *	\$2,108,573	\$9,826,303	0.824		132	

* 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) CALENDAR A.Y.E. 12/31/2017 AGGREGATE LOSS COSTS AT CURRENT LEVEL	(2) CALENDAR 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	01 RET. STRS-FOOD/DRG	\$2,570,942	\$11,000,189	0.978		762	
	02 RET. STRS-NTFD/DRG	2,629,603	11,663,817	1.219		494	
	11 COMP. OPS. (LOW)	4,024,036	18,069,271	1.329		705	
	12 COMP. OPS. (MED)	82,107,926	364,826,722	1.080		6,242	
	13 COMP. OPS. (HGH)	7,801,373	39,341,081	0.703		282	
	TOTAL *	\$99,133,880	\$444,901,080	1.062		8,485	
34 MULT MERCANTILE	01 RET. STRS-FOOD/DRG	\$8,002,266	\$37,342,335	0.940		3,591	
	02 RET. STRS-NTFD/DRG	5,186,195	23,434,483	1.012		665	
	12 COMP. OPS. (MED)	2,043,786	10,139,349	1.186		140	
	TOTAL *	\$15,232,247	\$70,916,167	0.997		4,396	
36 MULT SERVICES	01 RET. STRS-FOOD/DRG	\$729,961	\$3,439,653	1.065		197	
	02 RET. STRS-NTFD/DRG	12,256,900	48,452,562	1.088		2,518	
	11 COMP. OPS. (LOW)	3,094,937	14,012,389	1.111		510	
	12 COMP. OPS. (MED)	4,447,208	21,021,492	0.941		694	
	13 COMP. OPS. (HGH)	989,332	5,061,195	1.199		87	
	TOTAL *	\$21,518,338	\$91,987,291	1.065		4,006	
37 MULT INDUST/PROC.	01 RET. STRS-FOOD/DRG	\$26,867	\$90,627	2.388		1	
	11 COMP. OPS. (LOW)	114,535	530,208	1.229		19	
	12 COMP. OPS. (MED)	3,550,014	17,334,430	1.039		268	
	13 COMP. OPS. (HGH)	40,532	307,938	0.580		0	
	TOTAL *	\$3,731,948	\$18,263,203	1.050		288	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$8,122,432	\$37,446,153	1.157		634	
	12 COMP. OPS. (MED)	143,209,202	677,397,379	1.125		12,565	
	13 COMP. OPS. (HGH)	14,631,915	67,788,410	0.919		693	
	TOTAL *	\$165,963,549	\$782,631,942	1.108		13,892	
TOTAL ALL TOP	01 RET. STRS-FOOD/DRG	\$11,330,036	\$51,872,804	0.960		4,551	
	02 RET. STRS-NTFD/DRG	20,072,698	83,550,862	1.086		3,677	
	11 COMP. OPS. (LOW)	15,355,940	70,058,021	1.193		1,868	
	12 COMP. OPS. (MED)	235,358,136	1,090,719,372	1.105		19,909	
	13 COMP. OPS. (HGH)	23,463,152	112,498,624	0.858		1,062	
	TOTAL *	\$305,579,962	\$1,408,699,683	1.084		31,067	

* 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 relativities will serve to derive the relationship of the various classifications 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:

Owners, Landlords and Tenants -	type of policy and class group
Manufacturers and Contractors -	type of policy 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:

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

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

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

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

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

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

and j^{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
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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^{th} type of policy;

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

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

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

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

and j^{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 into the second formula to get a class group relativity. The resultant class group relativities then produce a new set of type of policy relativities. 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

$$Z = \sqrt{P/18,000} \text{ for Owners, Landlords and Tenants, } Z = \sqrt{P/18,000} \text{ for}$$

$$\text{Manufacturers and Contractors and } Z = \sqrt{P/20,000} \text{ for Products, where P}$$

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

$$= \sqrt{P/15,000} \text{ for type of policy and class group, and } Z = \sqrt{P/5,500} \text{ for}$$

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, state or type of policy credibility;

R is the class group, 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, the class group and state relativities which result from the aforementioned procedures are then used to generate indicated monoline classification loss cost changes. The multiline relativities, the class group and state relativities which result from the aforementioned procedures are then 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.
