

RULES – IMPLEMENTATION

JUNE 12, 2020

COMMERCIAL MULTIPLE LINE

LI-ML-2020-023

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

KEY MESSAGE

Revised Commercial Package Policy package modification factors for an overall statewide change of -2.5% to be implemented.

BACKGROUND

In circular [LI-ML-2020-017](#), we provided you with information about the Commercial Package Policy modification factor experience review.

CONSIDERATION OF COVID-19

ISO has considered whether any adjustments need to be made to prospective loss costs or rating factors, which are based on historical experience (pre-COVID-19), to reflect the conditions in which these loss costs or rating factors will be effective (post-COVID-19). Commercial Package Policy Modification Factors are applied to separate underlying coverages that are then combined to create a package policy. Any adjustment that is made to the underlying coverage loss costs to reflect the potential impact of COVID-19 will therefore also be reflected in commercial package policy rating. While there will almost certainly be long-term behavioral, social and economic changes as a result of COVID-19, we expect, based on the information currently available, that those changes will have negligible effects on Commercial Package Policy Modification Factors. Therefore, ISO is not making any explicit adjustment to those factors due to COVID-19.

ISO ACTION

We are implementing ML-2020-RLA1, which presents a review of Commercial Package Policy modification factors experience. Refer to the attachment(s) for complete details.

IMPORTANT NOTE

Change in Format

This circular offers several enhancements for customers. In addition to the PDF version, exhibits and loss cost tables are now available in user-friendly Excel format rather than Word. Where possible, exhibits are linked together formulaically to clarify how calculations flow through the entire ratemaking process and to enable customers to test the effects of different assumptions on the results.

To facilitate this change, the filing has been restructured. All explanatory text, for all sections of the filing, appears first; all exhibits and tables are grouped together and appear thereafter. Exhibits have been relabeled (Exhibit A1, Exhibit A2, etc.).

We invite customers to share feedback on this revised format and suggestions for further enhancements by contacting the individuals listed in the Contact Information block.

EFFECTIVE DATE

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

These changes are applicable to all policies written on or after December 1, 2020.

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.

WE WILL SUBMIT THIS REVISION TO THE INSURANCE DEPARTMENT ON NOVEMBER 11, 2020. IF STATE FILING REQUIREMENTS DICTATE THAT YOU MAKE A SUBMISSION WITH THE INSURANCE DEPARTMENT, DO NOT SUBMIT IT PRIOR TO THIS DATE.

In all correspondence with the Insurance Department on this revision, you should refer to ISO Filing Designation Number ML-2020-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.

RATING SOFTWARE IMPACT

No new attributes are being introduced with this revision.

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-2019-057](#) 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.

REVISION DISTRIBUTION

We will issue a Notice to Manualholders with an edition date of 12-20 (or the earliest possible subsequent date), along with any new and/or revised manual pages.

REFERENCE(S)

- [LI-ML-2020-017](#) (04/01/2020) Commercial Package Policy Experience Reviewed By Staff
- [LI-CL-2019-057](#) (12/10/2019) Revised Lead Time Requirements Listing

ATTACHMENT(S)

- Filing [ML-2020-RLA1](#)
- 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 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.

CONTACT INFORMATION

If you have any questions concerning:

- The actuarial content of this circular, please contact:
Rachel DeLuco
Actuarial Operations
201-469-3883
Rachel.DeLuco@verisk.com
propertyactuarial@verisk.com
- The non-actuarial content of this circular, please contact:
Lakeisha Hunt
Production Operations, Compliance and Product Services
201-469-2899
productionoperations@verisk.com
- Other issues for this circular, please contact Customer Support:
E-mail: info@verisk.com
Phone: 800-888-4476

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MISSOURI
 ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
 COMMERCIAL PACKAGE POLICY
 ML-2020-RLA1
 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.

CONSIDERATION OF COVID-19

ISO has considered whether any adjustments need to be made to prospective loss costs or rating factors, which are based on historical experience (pre-COVID-19), to reflect the conditions in which these loss costs or rating factors will be effective (post-COVID-19). Commercial Package Policy Modification Factors are applied to separate underlying coverages that are then combined to create a package policy. Any adjustment that is made to the underlying coverage loss costs to reflect the potential impact of COVID-19 will therefore also be reflected in commercial package policy rating. While there will almost certainly be long-term behavioral, social and economic changes as a result of COVID-19, we expect, based on the information currently available, that those changes will have negligible effects on Commercial Package Policy Modification Factors. Therefore, ISO is not making any explicit adjustment to those factors due to COVID-19.

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%	2.1%	0.9%
Apartment	-4.8%	-2.0%	-4.4%
Office	-4.0%	-1.2%	-2.3%
Mercantile	-6.3%	0.0%	-3.9%
Institutional	-8.7%	-1.1%	-7.3%
Services	-3.4%	-1.1%	-2.5%
Indust./Proc.	0.0%	4.2%	1.7%
Contractors	<u>2.2%</u>	<u>5.3%</u>	<u>4.7%</u>
Statewide	-5.1%	1.4%	-2.5%

MISSOURI

ADVISORY PACKAGE MODIFICATION FACTOR REVIEW

COMMERCIAL PACKAGE POLICY

ML-2020-RLA1

EXECUTIVE SUMMARY

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.

HISTORICAL SOURCE DATA

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

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

PRIOR ISO REVISIONS

The latest revisions in this state are:

<u>Filing</u>	ML-19-RLA1	ML-18-RLA1	ML-14-RLA1
<u>Dates</u>			
Implemented	11/1/2019	10/1/2018	11/1/2014
<u>Changes</u>			
Indicated	-0.7%	3.2%	3.8%
Filed	-0.7%	3.2%	3.8%
Implemented	-0.7%	3.2%	3.8%

MISSOURI
ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
COMMERCIAL PACKAGE POLICY
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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.

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 12/31/18 for the Annual Statement Line of Business (ASLOB) indicated.

COMMERCIAL MULTI PERIL (ASLOB 51 & 52)

1. Travelers Indemnity Company
 2. Cincinnati Insurance Company
 3. Tokio Marine Companies
 4. Liberty Mutual Insurance Company
 5. Hartford Accident & Indemnity Company
 6. Columbia Insurance Group
 7. Continental Casualty Company
 8. Star Insurance Company (Meadowbrook Insurance Group)
 9. Nationwide Mutual Insurance Company
 10. American International Group
-

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 12/31/18 is:

Commercial Multi Peril (ASLOB 51 & 52). 48.9%.

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.

MISSOURI
ADVISORY PACKAGE MODIFICATION FACTOR REVIEW
COMMERCIAL PACKAGE POLICY
ML-2020-RLA1
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.

EXPLANATORY NOTES TO EXHIBIT A2

CALCULATION OF REVISED PACKAGE MODIFICATION FACTORS

OBJECTIVE 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.

The types of insured which can be written under a CPP are generally categorized into the following Types of Policy:

- . 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 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.

CPP PMF REVIEW PROCEDURE 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).

A detailed explanation of the calculation of the revised PMFs follows.

EXPLANATORY NOTES TO EXHIBIT A2 (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 EXHIBIT A2 (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).

EXPLANATORY NOTES TO EXHIBITS B1 AND B2

BASIC GROUP I AND SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

OBJECTIVE

The explanations which follow clarify Exhibits B1 and B2, 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 EXHIBITS B1 AND B2 (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 Exhibit B3 for Basic Group I and Exhibit B4 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 EXHIBITS B1 AND B2 (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_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;
- TER_k is the relativity for the k th Territory;
- W_{ijk} is the loss cost volume at current level for the i th Type of Policy, j th Rating Group or Category and k th Territory;
- R_{ijk} is the experience ratio relativity for the i th Type of Policy, j th Rating Group or Category and k th Territory;
- R_{ij} is the experience ratio relativity for the i th Type of Policy, j th Rating Group or Category;

EXPLANATORY NOTES TO EXHIBITS B1 AND B2 (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 EXHIBITS B1 AND B2 (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 Exhibits B1 and B2.

Loss cost changes for each TOP are calculated as described on Exhibits B1 and B2.

EXPLANATORY NOTES TO EXHIBITS B3 AND B4

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 Exhibits B3 and B4 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 EXHIBITS B3 AND B4 (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.

EXPLANATORY NOTES TO EXHIBIT B5

BASIC GROUP II RELATIVITY ANALYSIS

OBJECTIVE The explanations which follow clarify Exhibit B5, 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 EXHIBIT B5 (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 EXHIBIT B5 (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.

EXHIBITS B6 AND B7

Exhibits B6 and B7 are not applicable this year. Commercial Inland Marine relativities are not being reviewed in 2019.

EXPLANATORY NOTES TO GENERAL LIABILITY

RELATIVITY ANALYSIS - EXHIBITS B8 THROUGH B17.

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. ALCCL 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 - EXHIBITS B8 THROUGH B17.

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 - EXHIBITS B8 THROUGH B17.

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 - EXHIBITS B8 THROUGH B17.

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 - EXHIBITS B8 THROUGH B17.

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 - EXHIBITS B8 THROUGH B17.

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.

INSURANCE SERVICES OFFICE, INC.

MISSOURI

COMMERCIAL PACKAGE POLICY
SUMMARY OF THIS REVIEW

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	0.98	2.1%	0.9%
APARTMENT (32)	0.83	0.79	-4.8%	1.00	0.98	-2.0%	-4.4%
OFFICE (33)	0.75	0.72	-4.0%	0.84	0.83	-1.2%	-2.3%
MERCANTILE (34)	0.80	0.75	-6.3%	0.90	0.90	0.0%	-3.9%
INSTITUTION(35)	0.92	0.84	-8.7%	0.95	0.94	-1.1%	-7.3%
SERVICES (36)	0.88	0.85	-3.4%	0.95	0.94	-1.1%	-2.5%
IND/PROC (37)	0.80	0.80	0.0%	0.96	1.00	4.2%	1.7%
CONTRACTORS(38)	0.91	0.93	2.2%	0.95	1.00	5.3%	4.7%
STATEWIDE			-5.1%			1.4%	-2.5%

INSURANCE SERVICES OFFICE, INC.

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

MOTEL/HOTEL(31) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	832,496	0.882	1.5%	0.895	0.882
BASIC GRP II	597,759	1.445	3.8%	1.500	1.477
SP CAUSE/LOSS	220,789	0.764	-6.3%	0.716	0.705
* CRIME	886	0.911	0.0%	0.911	0.911
* INL. MAR.	4,291	0.968	0.0%	0.968	0.968
* FIDELITY	3,843	1.000	0.0%	1.000	1.000
<u>TOTAL</u>	<u>1,660,064</u>	<u>1.000</u>	<u>1.5%</u>	<u>1.015</u>	<u>1.000</u>
LIABILITY-					
OL&T	1,339,498	0.958	0.2%	0.960	0.978
<u>TOTAL</u>	<u>1,339,498</u>	<u>0.960</u>	<u>0.0%</u>	<u>0.960</u>	<u>0.980</u>

PROP. & LIAB. TOTAL	2,999,562		0.9%		0.9%

APARTMENT (32) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	2,888,038	0.648	1.2%	0.656	0.656
BASIC GRP II	2,961,002	1.197	-11.2%	1.063	1.063
SP CAUSE/LOSS	1,081,827	0.764	-7.1%	0.710	0.710
* CRIME	516	0.911	0.0%	0.911	0.911
* INL. MAR.	1,608	0.968	0.0%	0.968	0.968
* FIDELITY	8,747	1.000	0.0%	1.000	1.000
<u>TOTAL</u>	<u>6,941,738</u>	<u>0.830</u>	<u>-5.3%</u>	<u>0.786</u>	<u>0.790</u>
LIABILITY-					
OL&T	1,211,075	1.000	-2.5%	0.975	0.975
<u>TOTAL</u>	<u>1,211,075</u>	<u>1.000</u>	<u>-2.5%</u>	<u>0.975</u>	<u>0.980</u>

PROP. & LIAB. TOTAL	8,152,813		-4.9%		-4.4%

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

INSURANCE SERVICES OFFICE, INC.

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

OFFICE (33) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	1,233,226	0.983	1.8%	1.001	1.001
BASIC GRP II	1,055,028	0.636	-9.8%	0.574	0.574
SP CAUSE/LOSS	645,161	0.639	-6.2%	0.599	0.599
* CRIME	2,836	0.911	0.0%	0.911	0.911
* INL. MAR.	37,164	0.968	0.0%	0.968	0.968
* FIDELITY	20,164	1.000	0.0%	1.000	1.000
TOTAL	2,993,579	0.750	-3.9%	0.721	0.720
LIABILITY-					
OL&T	4,364,762	0.842	-1.6%	0.829	0.829
M&C	269,653	0.876	3.3%	0.905	0.905
TOTAL	4,634,414	0.840	-0.9%	0.833	0.830

PROP. & LIAB. TOTAL	7,627,993		-2.0%		-2.3%

MERCANTILE (34) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	4,328,559	0.622	-2.7%	0.605	0.605
BASIC GRP II	6,641,017	1.007	-8.3%	0.923	0.923
SP CAUSE/LOSS	3,037,862	0.716	-8.4%	0.656	0.656
* CRIME	26,696	0.911	0.0%	0.911	0.911
* INL. MAR.	637,403	0.968	0.0%	0.968	0.968
* FIDELITY	258,796	1.000	0.0%	1.000	1.000
TOTAL	14,930,333	0.800	-6.6%	0.747	0.750
LIABILITY-					
OL&T	6,053,739	0.901	-1.4%	0.888	0.888
M&C	1,514,060	0.999	2.7%	1.026	1.026
LOCAL PRODUCT	177,851	0.608	-0.8%	0.603	0.603
* MULTI PRODUCT	964,969	0.853	2.0%	0.870	0.870
TOTAL	8,710,619	0.900	-0.1%	0.899	0.900

PROP. & LIAB. TOTAL	23,640,952		-4.2%		-3.9%

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

INSURANCE SERVICES OFFICE, INC.

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

INSTITUTION(35) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	5,088,920	0.907	-2.9%	0.881	0.881
BASIC GRP II	8,000,140	1.011	-15.8%	0.851	0.851
SP CAUSE/LOSS	3,427,580	0.777	-4.4%	0.743	0.743
* CRIME	18,890	0.911	0.0%	0.911	0.911
* INL. MAR.	42,200	0.968	0.0%	0.968	0.968
* FIDELITY	138,298	1.000	0.0%	1.000	1.000
<u>TOTAL</u>	<u>16,716,028</u>	<u>0.920</u>	<u>-9.2%</u>	<u>0.835</u>	<u>0.840</u>
LIABILITY-					
OL&T	3,338,364	0.971	-3.8%	0.934	0.934
M&C	332,092	0.806	19.5%	0.963	0.963
<u>TOTAL</u>	<u>3,670,456</u>	<u>0.950</u>	<u>-1.3%</u>	<u>0.937</u>	<u>0.940</u>

PROP. & LIAB. TOTAL	20,386,484		-7.8%		-7.3%

SERVICES (36) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	3,548,907	0.907	3.7%	0.941	0.941
BASIC GRP II	3,699,364	0.978	-10.4%	0.876	0.876
SP CAUSE/LOSS	1,580,002	0.679	-8.0%	0.625	0.625
* CRIME	12,118	0.911	0.0%	0.911	0.911
* INL. MAR.	72,610	0.968	0.0%	0.968	0.968
* FIDELITY	103,776	1.000	0.0%	1.000	1.000
<u>TOTAL</u>	<u>9,016,777</u>	<u>0.880</u>	<u>-3.9%</u>	<u>0.846</u>	<u>0.850</u>
LIABILITY-					
OL&T	2,968,515	0.937	-6.7%	0.874	0.874
M&C	2,283,184	0.993	4.6%	1.039	1.039
LOCAL PRODUCT	386,862	0.852	-1.1%	0.843	0.843
* MULTI PRODUCT	54,231	0.916	3.8%	0.950	0.950
<u>TOTAL</u>	<u>5,692,792</u>	<u>0.950</u>	<u>-1.5%</u>	<u>0.936</u>	<u>0.940</u>

PROP. & LIAB. TOTAL	14,709,569		-3.0%		-2.5%

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

INSURANCE SERVICES OFFICE, INC.

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

IND/PROC (37) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	2,476,645	0.924	8.5%	1.003	1.017
BASIC GRP II	1,669,120	0.723	-8.5%	0.662	0.671
SP CAUSE/LOSS	1,034,423	0.671	-10.8%	0.599	0.607
* CRIME	3,918	0.911	0.0%	0.911	0.911
* INL. MAR.	4,118	0.968	0.0%	0.968	0.968
* FIDELITY	72,482	1.000	0.0%	1.000	1.000
TOTAL	5,260,706	0.800	-1.4%	0.789	0.800
LIABILITY-					
M&C	2,279,031	1.039	4.9%	1.090	1.057
LOCAL PRODUCT	55,289	0.571	2.9%	0.588	0.570
* MULTI PRODUCT	1,153,999	0.863	8.6%	0.937	0.937
TOTAL	3,488,319	0.960	6.3%	1.020	1.000

PROP. & LIAB.	8,749,025		1.7%		1.7%
TOTAL					

CONTRACTORS(38) *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	871,621	0.936	0.7%	0.943	1.030
BASIC GRP II	940,301	0.941	-12.3%	0.825	0.902
SP CAUSE/LOSS	642,739	0.828	-8.3%	0.759	0.830
* CRIME	1,088	0.911	0.0%	0.911	0.911
* INL. MAR.	5,311	0.968	0.0%	0.968	0.968
* FIDELITY	56,353	1.000	0.0%	1.000	1.000
TOTAL	2,517,413	0.910	-6.6%	0.850	0.930
LIABILITY-					
M&C	7,953,802	0.993	9.6%	1.088	1.070
LOCAL PRODUCT	3,882,753	0.859	3.7%	0.891	0.876
TOTAL	11,836,555	0.950	7.1%	1.017	1.000

PROP. & LIAB.	14,353,968		4.7%		4.7%
TOTAL					

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

INSURANCE SERVICES OFFICE, INC.

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

STATEWIDE *****	(1) AGGREGATE LOSS COSTS	(2) CURRENT IMPLICIT PMF	(3) NET INDICATION	(4) INDIC. PMF	(5) CAPPED PMF
COVERAGE					
PROPERTY-					
BASIC GRP I	21,268,412	0.795	0.7%	0.801	0.805
BASIC GRP II	25,563,731	0.978	-11.2%	0.868	0.871
SP CAUSE/LOSS	11,670,383	0.729	-7.1%	0.677	0.681
* CRIME	66,948	0.911	0.0%	0.911	0.911
* INL. MAR.	804,705	0.968	0.0%	0.968	0.968
* FIDELITY	662,459	1.000	0.0%	1.000	1.000
<u>TOTAL</u>	<u>60,036,638</u>	<u>0.849</u>	<u>-5.6%</u>	<u>0.802</u>	<u>0.805</u>
LIABILITY-					
OL&T	19,275,953	0.913	-2.6%	0.889	0.890
M&C	14,631,822	0.993	7.5%	1.067	1.052
LOCAL PRODUCT	4,502,755	0.840	3.1%	0.866	0.853
* MULTI PRODUCT	2,173,199	0.860	5.5%	0.907	0.907
<u>TOTAL</u>	<u>40,583,730</u>	<u>0.928</u>	<u>2.1%</u>	<u>0.947</u>	<u>0.941</u>

PROP. & LIAB.	100,620,368		-2.5%		-2.5%
TOTAL					

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

INSURANCE SERVICES OFFICE, INC.

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

COMBINED PMFs

TYPE OF POLICY	CURRENT COMBINED	INDICATED COMBINED	CAPPED COMBINED
MOTEL/HOTEL(31)	0.980	0.990	0.990
APARTMENT (32)	0.850	0.810	0.810
OFFICE (33)	0.810	0.786	0.790
MERCANTILE (34)	0.840	0.799	0.800
INSTITUTION(35)	0.930	0.853	0.850
SERVICES (36)	0.910	0.879	0.880
IND/PROC (37)	0.860	0.871	0.870
CONTRACTORS(38)	0.940	0.987	0.990

NOTE: Combined PMFs are provided for informational purposes only.

INSURANCE SERVICES OFFICE, INC.

MISSOURI
BASIC GROUP I RELATIVITY ANALYSIS

TYPE OF POLICY	(1)	(2)	(3)	(4)	(5)
	LEAST SQUARES FORMULA RELATIVITY	CREDIBILITY CREDIBILITY	WEIGHTED RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE
10	0.907	0.141	0.986	0.994	
31	1.030	0.029	1.001	1.009	1.5%
32	0.989	0.125	0.999	1.006	1.2%
33	1.068	0.058	1.004	1.012	1.8%
34	0.784	0.171	0.959	0.967	-2.7%
35	0.795	0.189	0.958	0.965	-2.9%
36	1.161	0.149	1.022	1.031	3.7%
37	1.689	0.128	1.069	1.078	8.5%
38	0.853	0.044	0.993	1.001	0.7%
RATING GROUP					
1	0.818	0.166	0.967	0.969	
2	0.956	0.170	0.992	0.994	
3	1.093	0.083	1.007	1.009	
4	1.263	0.355	1.086	1.088	
5	1.434	0.038	1.014	1.015	
6	0.979	0.221	0.995	0.997	
7	0.905	0.092	0.991	0.992	
8	0.749	0.279	0.923	0.924	
9	1.466	0.160	1.063	1.065	
10	0.953	0.080	0.996	0.998	
11	1.348	0.063	1.019	1.020	
13	1.290	0.137	1.036	1.037	
14	0.825	0.162	0.969	0.971	
15	0.937	0.075	0.995	0.997	
17	0.467	0.034	0.974	0.976	
18	0.622	0.034	0.984	0.985	
19	0.542	0.018	0.989	0.990	
20	0.525	0.014	0.991	0.992	
21	0.420	0.158	0.872	0.873	
22	0.756	0.086	0.976	0.978	
TERRITORY					
Kansas City	1.042	0.140	1.006	0.990	
Saint Louis City	0.515	0.164	0.897	0.883	
Balance of State	1.045	0.647	1.029	1.013	

INSURANCE SERVICES OFFICE, INC.

MISSOURI

SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS

TYPE OF POLICY	(1)	(2)	(3)	(4)	(5)
	LEAST SQUARES FORMULA RELATIVITY	CREDIBILITY	CREDIBILITY WEIGHTED RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE
10	1.409	0.192	1.068	1.066	
31	1.044	0.020	1.001	0.999	-6.3%
32	0.935	0.118	0.992	0.990	-7.1%
33	1.019	0.074	1.001	1.000	-6.2%
34	0.915	0.251	0.978	0.976	-8.4%
35	1.075	0.286	1.021	1.019	-4.4%
36	0.903	0.167	0.983	0.981	-8.0%
37	0.672	0.123	0.952	0.951	-10.8%
38	0.760	0.078	0.979	0.977	-8.3%
CATEGORY					
1	1.021	0.754	1.016	1.008	
2	1.024	0.067	1.002	0.994	
3	0.716	0.076	0.975	0.967	
4	0.893	0.119	0.987	0.979	
5	0.983	0.068	0.999	0.991	
6	1.187	0.053	1.009	1.001	
7	1.210	0.017	1.003	0.995	
8	0.835	0.132	0.976	0.969	
9	0.824	0.137	0.974	0.966	
10	2.830	0.028	1.030	1.022	
11	0.996	0.141	0.999	0.992	
12	0.742	0.141	0.959	0.951	
13	0.969	0.066	0.998	0.990	
14	0.961	0.106	0.996	0.988	

INSURANCE SERVICES OFFICE, INC.

MISSOURI
BASIC GROUP I RELATIVITY ANALYSIS
SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

ENTIRE STATE		(1) ACCIDENT YEAR ENDING 12/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) CREDIBILITY WEIGHTED EXPERIENCE RATIO	(5) CREDIBILITY WEIGHTED RELATIVITY
TYPE OF POLICY	CATEGORY					
10 MONOLINE	01 APARTMENTS	80,004	590,422	1.071	1.093	1.088
	02 OTHER HABITATIONAL	157,630	1,092,463	0.609	0.835	0.831
	03 RESTAURANTS & BARS	39,671	247,165	0.038	0.639	0.636
	04 OTHER MERCANTILE RS	560,759	3,275,773	1.302	1.183	1.178
	05 PUBLIC BUILDINGS	53,546	178,399	0.443	0.903	0.898
	06 CHURCHES	20,077	134,518	13.107	3.428	3.411
	07 SCHOOLS	19,195	235,562	0.172	0.662	0.658
	08 OFFICES AND BANKS	385,952	2,195,942	1.021	0.919	0.915
	09 REC. FACILITIES	218,258	1,133,742	0.279	0.679	0.675
	10 HOTELS AND MOTELS	81,081	460,350	0.739	0.910	0.905
	11 HOSPITALS/NURS HOME	121,429	608,859	1.482	1.147	1.141
	13 MOTOR VEHICLE RISKS	201,310	1,052,727	1.778	1.341	1.335
	14 OTHER NON-MANUF.	288,322	2,527,743	0.253	0.533	0.530
	15 STORAGE	145,941	754,619	0.042	0.580	0.577
	17 FOOD MANUFACTURING	4,540	88,738	0.000	0.846	0.842
	18 WOOD MANUFACTURING	39,898	268,887	3.967	1.712	1.703
	19 WEARING APPAREL	14,388	63,365	0.000	0.844	0.840
	20 CHEM. MANUFACTURING	13,346	53,237	0.000	0.856	0.852
	21 METAL MANUFACTURING	161,871	1,083,806	0.780	0.859	0.855
	22 OTHER MANUFACTURING	41,802	319,368	0.000	0.757	0.753
	TOTAL*	2,649,020	16,365,685	0.989	0.954	0.950
31 MULTILINE MOTEL/HOTEL	10 HOTELS AND MOTELS	832,496	3,016,364	1.515	1.059	1.054
	TOTAL*	832,496	3,016,364	1.515	1.059	1.054
32 MULTILINE APARTMENT	01 APARTMENTS	1,657,659	7,387,702	0.527	0.829	0.826
	02 OTHER HABITATIONAL	1,230,379	6,881,744	1.255	0.987	0.982
	TOTAL*	2,888,038	14,269,446	0.837	0.896	0.892
33 MULTILINE OFFICE	08 OFFICES AND BANKS	1,233,226	6,174,950	0.617	0.867	0.863
	TOTAL*	1,233,226	6,174,950	0.617	0.867	0.863
34 MULTILINE MERCANTILE	03 RESTAURANTS & BARS	659,453	2,784,787	0.947	0.923	0.918
	04 OTHER MERCANTILE RS	2,422,638	13,019,535	1.353	1.048	1.043
	08 OFFICES AND BANKS	196,868	863,619	0.334	0.840	0.836
	13 MOTOR VEHICLE RISKS	566,761	1,743,653	1.623	1.061	1.055
	14 OTHER NON-MANUF.	113,891	593,709	0.587	0.882	0.878
	15 STORAGE	368,948	1,634,673	0.840	0.909	0.904
	TOTAL*	4,328,559	20,639,976	1.216	1.005	1.000

INSURANCE SERVICES OFFICE, INC.

MISSOURI
 BASIC GROUP I RELATIVITY ANALYSIS
 SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

ENTIRE STATE		(1) ACCIDENT YEAR ENDING 12/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) CREDIBILITY WEIGHTED EXPERIENCE RATIO	(5) CREDIBILITY WEIGHTED RELATIVITY
TYPE OF POLICY	CATEGORY					
35 MULTILINE INSTITUTIONAL	02 OTHER HABITATIONAL	56,294	199,235	1.881	1.004	0.999
	05 PUBLIC BUILDINGS	528,128	1,395,775	2.620	1.234	1.227
	06 CHURCHES	2,159,279	11,181,477	0.508	0.834	0.829
	07 SCHOOLS	723,135	3,815,478	0.061	0.775	0.770
	08 OFFICES AND BANKS	436,249	2,117,475	0.596	0.876	0.872
	09 REC. FACILITIES	267,885	1,181,478	0.117	0.806	0.802
	11 HOSPITALS/NURS HOME	371,889	2,089,246	2.229	1.163	1.157
	13 MOTOR VEHICLE RISKS	3,533	22,249	10.635	2.477	2.465
	14 OTHER NON-MANUF.	542,528	1,294,075	0.126	0.813	0.809
	TOTAL*	5,088,920	23,296,488	0.758	0.894	0.889
36 MULTILINE SERVICES	03 RESTAURANTS & BARS	122,299	569,904	0.048	0.869	0.864
	04 OTHER MERCANTILE RS	237,372	1,388,761	1.549	1.294	1.287
	08 OFFICES AND BANKS	459,588	2,713,572	0.099	0.652	0.649
	09 REC. FACILITIES	1,207,332	5,278,404	2.081	1.707	1.698
	13 MOTOR VEHICLE RISKS	756,427	3,529,410	1.869	1.477	1.469
	14 OTHER NON-MANUF.	492,131	2,585,230	0.679	0.905	0.900
	15 STORAGE	174,719	855,598	0.876	1.056	1.051
	21 METAL MANUFACTURING	20,954	123,243	0.107	1.027	1.022
	22 OTHER MANUFACTURING	78,085	510,384	0.135	0.914	0.910
	TOTAL*	3,548,907	17,554,506	1.365	1.300	1.293
37 MULTILINE INDUST/PROCESS	04 OTHER MERCANTILE RS	193,556	1,153,168	4.393	2.186	2.175
	08 OFFICES AND BANKS	46,423	231,923	0.050	0.906	0.902
	13 MOTOR VEHICLE RISKS	4,839	19,154	0.000	0.714	0.710
	14 OTHER NON-MANUF.	66,475	431,299	0.441	0.981	0.977
	15 STORAGE	710	20,553	0.000	1.054	1.049
	17 FOOD MANUFACTURING	245,232	1,307,826	0.007	0.680	0.676
	18 WOOD MANUFACTURING	170,968	1,149,291	0.725	1.001	0.996
	19 WEARING APPAREL	108,116	672,698	2.377	1.894	1.885
	20 CHEM. MANUFACTURING	48,563	512,924	0.053	0.882	0.877
	21 METAL MANUFACTURING	1,091,239	6,301,228	0.509	0.722	0.718
	22 OTHER MANUFACTURING	500,524	2,919,538	1.452	1.283	1.277
	TOTAL*	2,476,645	14,719,602	1.029	1.030	1.024
38 MULTILINE CONTRACTORS	04 OTHER MERCANTILE RS	599,905	3,222,027	0.945	1.048	1.043
	08 OFFICES AND BANKS	205,397	1,154,343	0.692	0.989	0.984
	14 OTHER NON-MANUF.	66,319	273,096	0.175	0.968	0.964
		TOTAL*	871,621	4,649,466	0.827	1.028

INSURANCE SERVICES OFFICE, INC.

MISSOURI
BASIC GROUP I RELATIVITY ANALYSIS
SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

ENTIRE STATE		(1)	(2)	(3)	(4)	(5)
		ACCIDENT YEAR	5 - YEAR	5 - YEAR	CREDIBILITY	CREDIBILITY
		ENDING 12/31/18	AGGREGATE	EXPERIENCE	WEIGHTED	WEIGHTED
TYPE OF POLICY	CATEGORY	AGGREGATE LOSS	LOSS COSTS	RATIO	EXPERIENCE	RELATIVITY
-----	-----	-----	-----	-----	-----	-----
TOTAL ALL TOPS*	01 APARTMENTS	1,737,663	7,978,124	0.552	0.842	0.838
	02 OTHER HABITATIONAL	1,444,303	8,173,442	1.209	0.971	0.966
	03 RESTAURANTS & BARS	821,423	3,601,856	0.769	0.901	0.897
	04 OTHER MERCANTILE RS	4,014,230	22,059,264	1.443	1.137	1.131
	05 PUBLIC BUILDINGS	581,674	1,574,174	2.419	1.203	1.197
	06 CHURCHES	2,179,356	11,315,995	0.625	0.858	0.853
	07 SCHOOLS	742,330	4,051,040	0.064	0.772	0.767
	08 OFFICES AND BANKS	2,963,703	15,451,824	0.564	0.849	0.845
	09 REC. FACILITIES	1,693,475	7,593,624	1.538	1.432	1.425
	10 HOTELS AND MOTELS	913,577	3,476,714	1.446	1.046	1.040
	11 HOSPITALS/NURS HOME	493,318	2,698,105	2.045	1.159	1.153
	13 MOTOR VEHICLE RISKS	1,532,870	6,367,193	1.780	1.305	1.298
	14 OTHER NON-MANUF.	1,569,666	7,705,152	0.371	0.809	0.805
	15 STORAGE	690,318	3,265,443	0.679	0.877	0.872
	17 FOOD MANUFACTURING	249,772	1,396,564	0.007	0.683	0.679
	18 WOOD MANUFACTURING	210,866	1,418,178	1.338	1.135	1.130
	19 WEARING APPAREL	122,504	736,063	2.098	1.771	1.762
	20 CHEM. MANUFACTURING	61,909	566,161	0.042	0.876	0.872
	21 METAL MANUFACTURING	1,274,064	7,508,277	0.536	0.744	0.740
	22 OTHER MANUFACTURING	620,411	3,749,290	1.188	1.201	1.195
	TOTAL*	23,917,432	120,686,483	1.016	1.005	1.000

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

INSURANCE SERVICES OFFICE, INC.

MISSOURI
SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS:
SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 12/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) CREDIBILITY WEIGHTED EXPERIENCE RATIO	(5) CREDIBILITY WEIGHTED RELATIVITY
10 MONOLINE	01 BUILDINGS	1,128,571	6,190,663	1.519	1.493	1.461
	02 RES. APTS. AND COND	11,476	140,985	0.092	0.923	0.903
	03 OFFICES	102,622	621,449	0.503	0.892	0.873
	04 MERCANTILE - HIGH	139,548	729,679	0.230	0.722	0.706
	05 MERCANTILE - MEDIUM	19,529	102,643	0.374	1.031	1.009
	06 MERCANTILE - LOW	21,169	122,984	0.118	0.944	0.924
	07 MOTELS AND HOTELS	16,706	92,882	9.122	3.472	3.397
	08 INSTITUTIONAL - HIC	19,727	134,296	0.786	1.138	1.114
	09 INSTITUTIONAL - LOW	44,075	220,726	0.709	1.087	1.064
	10 INDUST-PROC - HIGH	6,079	53,259	0.446	1.079	1.056
	11 INDUST-PROC - LOW	68,019	382,846	0.149	0.807	0.790
	12 SERVICE - HIGH	50,804	312,059	0.362	0.925	0.905
	13 SERVICE - LOW	49,506	305,886	3.149	2.020	1.977
	14 CONTRACTORS	20,977	102,133	0.773	1.145	1.120
	TOTAL*	1,698,808	9,512,490	1.302	1.347	1.318
31 MULTILINE MOTEL/HOTEL	01 BUILDINGS	177,173	656,986	1.634	1.122	1.098
	07 MOTELS AND HOTELS	43,616	162,770	0.486	0.961	0.940
	TOTAL*	220,789	819,756	1.407	1.090	1.067
32 MULTILINE APARTMENT	01 BUILDINGS	877,761	4,428,077	0.916	0.983	0.962
	02 RES. APTS. AND COND	204,066	937,556	0.828	0.989	0.968
	TOTAL*	1,081,827	5,365,633	0.899	0.984	0.963
33 MULTILINE OFFICE	01 BUILDINGS	552,607	2,640,815	1.170	1.067	1.044
	03 OFFICES	91,660	550,498	0.920	1.009	0.987
	04 MERCANTILE - HIGH	237	1,310	0.000	0.919	0.899
	08 INSTITUTIONAL - HIC	635	6,037	0.000	0.918	0.898
	11 INDUST-PROC - LOW	22	206	0.000	0.919	0.899
	12 SERVICE - HIGH	-	782	0.000	1.000	1.000
	14 CONTRACTORS	-	54	0.000	1.000	1.000
	TOTAL*	645,161	3,199,702	1.133	1.059	1.036

INSURANCE SERVICES OFFICE, INC.

MISSOURI
SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS:
SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 12/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) CREDIBILITY WEIGHTED EXPERIENCE RATIO	(5) CREDIBILITY WEIGHTED RELATIVITY	
-----	-----	-----	-----	-----	-----	-----	
34 MULTILINE MERCANTILE	01 BUILDINGS	2,417,860	10,345,980	0.909	0.960	0.939	
	03 OFFICES	3,833	9,354	0.000	0.918	0.898	
	04 MERCANTILE - HIGH	240,376	1,276,000	1.591	1.141	1.116	
	05 MERCANTILE - MEDIUM	180,495	962,133	0.531	0.934	0.914	
	06 MERCANTILE - LOW	170,421	715,297	1.713	1.138	1.114	
	08 INSTITUTIONAL - HIC	196	1,290	0.000	0.919	0.899	
	11 INDUST-PROC - LOW	1,670	5,291	0.000	0.918	0.898	
	12 SERVICE - HIGH	4,062	19,254	0.000	0.917	0.897	
	13 SERVICE - LOW	3,527	22,373	0.000	0.917	0.897	
	14 CONTRACTORS	15,422	52,208	2.921	1.230	1.204	
	TOTAL*	3,037,862	13,409,180	0.992	0.984	0.963	
	35 MULTILINE INSTITUTIONAL	01 BUILDINGS	2,584,315	11,835,007	1.204	1.131	1.107
		03 OFFICES	1,865	2,462	0.000	0.918	0.898
		08 INSTITUTIONAL - HIC	412,048	2,064,909	0.643	0.926	0.906
09 INSTITUTIONAL - LOW		427,814	2,096,745	0.605	0.915	0.895	
11 INDUST-PROC - LOW		-	16	0.000	1.000	1.000	
12 SERVICE - HIGH		120	755	0.000	0.919	0.899	
13 SERVICE - LOW		2	2	0.000	0.919	0.899	
14 CONTRACTORS		1,416	8,183	0.000	0.918	0.898	
TOTAL*		3,427,580	16,008,079	1.061	1.079	1.056	
36 MULTILINE SERVICES		01 BUILDINGS	1,037,435	4,932,743	0.999	0.951	0.931
		03 OFFICES	3,587	12,556	0.000	0.761	0.745
	04 MERCANTILE - HIGH	3,432	14,312	0.000	0.760	0.744	
	05 MERCANTILE - MEDIUM	5,453	21,298	4.384	1.227	1.201	
	06 MERCANTILE - LOW	444	1,596	0.000	0.764	0.748	
	08 INSTITUTIONAL - HIC	10,487	63,044	0.000	0.747	0.731	
	09 INSTITUTIONAL - LOW	13,332	55,289	0.000	0.749	0.733	
	10 INDUST-PROC - HIGH	118	260	0.000	0.764	0.748	
	11 INDUST-PROC - LOW	119	704	0.000	0.764	0.748	
	12 SERVICE - HIGH	350,803	2,130,726	0.538	0.695	0.680	
	13 SERVICE - LOW	142,373	725,390	0.631	0.786	0.769	
	14 CONTRACTORS	12,419	50,954	0.000	0.750	0.734	
	TOTAL*	1,580,002	8,008,872	0.847	0.875	0.856	

INSURANCE SERVICES OFFICE, INC.

MISSOURI
SPECIAL CAUSES OF LOSS RELATIVITY ANALYSIS:
SUMMARY OF EXPERIENCE USED IN SIMULTANEOUS REVIEW

TYPE OF POLICY	CATEGORY	(1) ACCIDENT YEAR ENDING 12/31/18 AGGREGATE LOSS COSTS	(2) 5 - YEAR AGGREGATE LOSS COSTS	(3) 5 - YEAR EXPERIENCE RATIO	(4) CREDIBILITY WEIGHTED EXPERIENCE RATIO	(5) CREDIBILITY WEIGHTED RELATIVITY	
-----	-----	-----	-----	-----	-----	-----	
37 MULTILINE INDUST/PROC	01 BUILDINGS	569,809	3,116,591	0.569	0.686	0.671	
	03 OFFICES	184	4,070	5.989	1.367	1.338	
	04 MERCANTILE - HIGH	2,331	3,727	0.000	0.763	0.747	
	05 MERCANTILE - MEDIUM	81	266	0.000	0.764	0.748	
	06 MERCANTILE - LOW	95	489	0.000	0.764	0.748	
	10 INDUST-PROC - HIGH	68,189	385,016	6.332	2.010	1.967	
	11 INDUST-PROC - LOW	391,214	2,077,460	0.606	0.730	0.714	
	12 SERVICE - HIGH	794	2,443	0.000	0.764	0.748	
	13 SERVICE - LOW	352	884	0.000	0.764	0.748	
	14 CONTRACTORS	1,374	4,659	0.000	0.763	0.747	
	TOTAL*	1,034,423	5,595,605	0.961	0.791	0.773	
38 MULTILINE CONTRACTORS	01 BUILDINGS	346,506	1,782,617	0.737	0.798	0.781	
	03 OFFICES	6,119	26,002	0.411	0.802	0.785	
	04 MERCANTILE - HIGH	553	4,650	0.306	0.794	0.777	
	08 INSTITUTIONAL - HIC	623	2,165	0.000	0.764	0.748	
	11 INDUST-PROC - LOW	1,547	4,114	0.000	0.763	0.747	
	12 SERVICE - HIGH	1,307	5,346	0.000	0.763	0.747	
	13 SERVICE - LOW	176	1,030	0.000	0.764	0.748	
	14 CONTRACTORS	285,908	1,560,451	0.628	0.754	0.738	
		TOTAL*	642,739	3,386,375	0.681	0.778	0.762
	TOTAL ALL TOPS*	01 BUILDINGS	9,692,037	45,929,479	1.071	1.056	1.033
02 RES. APTS. AND COND		215,542	1,078,541	0.789	0.985	0.964	
03 OFFICES		209,870	1,226,391	0.665	0.939	0.919	
04 MERCANTILE - HIGH		386,477	2,029,678	1.073	0.984	0.962	
05 MERCANTILE - MEDIUM		205,558	1,086,340	0.618	0.951	0.930	
06 MERCANTILE - LOW		192,129	840,366	1.532	1.115	1.092	
07 MOTELS AND HOTELS		60,322	255,652	2.877	1.656	1.621	
08 INSTITUTIONAL - HIC		443,716	2,271,741	0.632	0.931	0.911	
09 INSTITUTIONAL - LOW		485,221	2,372,760	0.598	0.926	0.906	
10 INDUST-PROC - HIGH		74,386	438,535	5.841	1.932	1.890	
11 INDUST-PROC - LOW		462,591	2,470,637	0.534	0.742	0.726	
12 SERVICE - HIGH		407,890	2,471,365	0.508	0.726	0.711	
13 SERVICE - LOW		195,936	1,055,565	1.254	1.100	1.076	
14 CONTRACTORS		337,516	1,778,642	0.713	0.801	0.783	
		TOTAL*	13,369,191	65,305,692	1.021	1.022	1.000

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

INSURANCE SERVICES OFFICE, INC.

MISSOURI

BASIC GROUP II RELATIVITY ANALYSIS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ACCIDENT YEAR ENDING 12/31/18 AGGR. LOSS COSTS AT CURRENT IMPLICIT PMF	ACCIDENT YEARS 2009 - 2018 EXPER. RATIO AT CURRENT PMF	FORMULA RELATIVITY (2)/ 1.178	CREDIBILITY C	CREDIBILITY WEIGHTED RELATIVITY	BALANCED FORMULA RELATIVITY	NORMALIZED FORMULA RELATIVITY	INDICATED CHANGE
	-----	-----	-----	-----	-----	-----	-----	-----
MONOLINE	2,596,667	1.4420	1.2240	0.4590	1.103	1.1030	1.1137	
MULTILINE	25,563,731	1.1440	0.9710	0.8470	0.975	0.9790	0.9889	
	-----	-----	-----	-----	-----	-----	-----	
COVERAGE	28,160,398	1.1780	1.0000			0.9904	1.0004	
MULTILINE TOP								
31 MOTEL/HOTEL	597,759	*****	*****	*****	*****	1.1450	1.1561	3.8%
32 APARTMENT	2,961,002	1.1390	0.9670	0.4090	0.987	0.9800	0.9895	-11.2%
33 OFFICE	1,055,028	1.1910	1.0110	0.1760	1.002	0.9950	1.0046	-9.8%
34 MERCANTILE	6,641,017	1.2180	1.0340	0.5610	1.019	1.0120	1.0218	-8.3%
35 INSTITUTIONAL	8,000,140	1.0610	0.9010	0.6490	0.936	0.9290	0.9380	-15.8%
36 SERVICES	3,699,364	1.1650	0.9890	0.4570	0.995	0.9880	0.9976	-10.4%
37 INDUST/PROCESS	1,669,120	1.2430	1.0550	0.2910	1.016	1.0090	1.0188	-8.5%
38 CONTRACTORS	940,301	1.0240	0.8690	0.1970	0.974	0.9670	0.9764	-12.3%
	-----	-----	-----	-----	-----	-----	-----	
	25,563,731	1.1440	0.9710		0.9820	0.9790	0.9889	

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

INSURANCE SERVICES OFFICE, INC.

MISSOURI
OWNERS, LANDLORDS AND TENANTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	(1)	(2)	(3)	(4)	(5)
	BAILEY FORMULA RELATIVITY	CREDIBILITY CREDIBILITY	CREDIBILITY WEIGHTED RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE
10	1.080	0.276	1.021	1.021	
31	1.218	0.119	1.024	1.023	0.2%
32	0.959	0.093	0.996	0.995	-2.5%
33	1.036	0.175	1.006	1.005	-1.6%
34	1.033	0.236	1.008	1.007	-1.4%
35	0.913	0.186	0.983	0.982	-3.8%
36	0.711	0.137	0.954	0.953	-6.7%
CLASS GROUP					
1	0.963	0.117	0.996	1.000	
2	0.845	0.174	0.971	0.976	
3	0.938	0.123	0.992	0.997	
4	1.127	0.017	1.002	1.007	
5	0.984	0.031	1.000	1.004	
6	1.542	0.059	1.026	1.030	
7	1.109	0.128	1.013	1.018	
8	1.584	0.052	1.024	1.029	
9	0.717	0.164	0.947	0.951	
10	1.073	0.166	1.012	1.016	
11	1.003	0.100	1.000	1.005	
12	0.959	0.277	0.988	0.993	
13	1.596	0.092	1.044	1.049	
16	1.310	0.076	1.021	1.025	
TERRITORY					
501	1.110	0.193	1.020	1.022	
502	0.966	0.272	0.991	0.992	
503	0.992	0.357	0.997	0.999	

INSURANCE SERVICES OFFICE, INC.

MISSOURI

MANUFACTURERS AND CONTRACTORS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	(1)	(2)	(3)	(4)	(5)
	BAILEY FORMULA RELATIVITY	CREDIBILITY CREDIBILITY	CREDIBILITY WEIGHTED RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE
10	0.807	0.213	0.955	0.959	
33	0.647	0.031	0.987	0.991	3.3%
34	0.775	0.077	0.981	0.985	2.7%
35	3.748	0.101	1.143	1.146	19.5%
36	0.993	0.121	0.999	1.003	4.6%
37	1.028	0.078	1.002	1.006	4.9%
38	1.209	0.241	1.047	1.051	9.6%
CLASS GROUP					
30	1.035	0.111	1.004	1.004	
31	0.981	0.145	0.997	0.997	
32	1.058	0.252	1.014	1.014	
33	0.934	0.113	0.992	0.992	
34	0.758	0.120	0.967	0.967	
35	2.230	0.027	1.022	1.021	
36	0.848	0.065	0.989	0.989	
37	0.946	0.043	0.998	0.997	
38	1.174	0.100	1.016	1.016	

INSURANCE SERVICES OFFICE, INC.

MISSOURI
OWNERS, LANDLORDS, AND TENANTS
SUMMARY OF EXPERIENCE USED IN BASIC LIMIT RELATIVE CHANGE ANALYSIS

TERRITORY ALL		(1)	(2)	(3)	(4)	(5)	(6)
TYPE OF POLICY	CLASS GROUP	CALENDAR A.Y.E. 12/31/18 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2014-2018 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIVITY	NUMBER OF OCCURRENCES	BAL CELL RELATIVITY
10 MONOLINE	01 FOOD&BEV.(RETAIL)	\$338,365	\$1,287,591	0.831		66	
	02 RESTAURANTS	\$255,949	\$2,713,588	1.202		134	
	03 STORES	\$174,404	\$623,025	1.819		41	
	04 VENDING & RENTAL	\$13,012	\$62,288	0		0	
	05 FOOD & BEV. DIST.	\$56,583	\$175,022	1.046		5	
	06 NON-FOOD&BEV.DIST	\$109,325	\$594,907	2.493		25	
	07 CLUBS,AMSMT&SPRTS	\$487,869	\$2,148,952	1.79		152	
	08 HEALTH CARE FACIL	\$22,878	\$82,412	2.686		8	
	09 HOTELS AND MOTELS	\$699,586	\$4,613,253	0.832		229	
	10 SCHLS & CHURCHES	\$269,944	\$1,377,205	1.16		76	
	11 APARTMENTS	\$641,688	\$2,689,508	1.284		77	
	12 BUILDINGS&OFFICES	\$2,290,618	\$12,173,072	0.97		496	
	13 MISC. PREMISES	\$186,616	\$913,613	1.443		59	
	16 GOVT SUBDIVISIONS	\$9,138	\$49,870	1.536		4	
	TOTAL *	\$5,555,975	\$29,504,306	1.152		1,372	
31 MULT MOTEL/HOTEL	09 HOTELS AND MOTELS	\$811,817	\$3,548,685	0.957		255	
	TOTAL *	\$811,817	\$3,548,685	0.957		255	
32 MULT APARTMENT	11 APARTMENTS	\$587,271	\$2,524,674	0.921		102	
	12 BUILDINGS&OFFICES	\$146,714	\$607,959	1.457		55	
	TOTAL *	\$733,985	\$3,132,633	1.028		157	
33 MULT OFFICE	12 BUILDINGS&OFFICES	\$2,608,615	\$12,555,177	1.072		544	
	13 MISC. PREMISES	\$36,695	\$193,959	2.548		5	
	TOTAL *	\$2,645,310	\$12,749,136	1.092		549	
34 MULT MERCANTILE	01 FOOD&BEV.(RETAIL)	\$504,438	\$2,602,581	1.273		181	
	02 RESTAURANTS	\$1,575,827	\$6,923,917	0.915		414	
	03 STORES	\$661,132	\$2,740,583	0.895		209	
	04 VENDING & RENTAL	\$3,626	\$29,772	1.308		1	
	05 FOOD & BEV. DIST.	\$98,466	\$478,610	1.146		12	
	06 NON-FOOD&BEV.DIST	\$264,080	\$1,322,531	1.424		37	
	12 BUILDINGS&OFFICES	\$561,364	\$3,031,781	1.307		152	
	TOTAL *	\$3,668,933	\$17,129,775	1.064		1,006	
35 MULT INSTITUT.	07 CLUBS,AMSMT&SPRTS	\$96,050	\$319,000	0.534		16	
	08 HEALTH CARE FACIL	\$272,046	\$1,199,043	1.592		41	
	10 SCHLS & CHURCHES	\$1,197,548	\$6,145,692	1.09		417	
	12 BUILDINGS&OFFICES	\$45,010	\$235,953	1.31		41	
	13 MISC. PREMISES	\$35,306	\$184,604	1.662		7	
	16 GOVT SUBDIVISIONS	\$377,291	\$1,499,176	1.288		99	
	TOTAL *	\$2,023,251	\$9,583,468	1.183		621	

INSURANCE SERVICES OFFICE, INC.

MISSOURI
OWNERS, LANDLORDS, AND TENANTS
SUMMARY OF EXPERIENCE USED IN BASIC LIMIT RELATIVE CHANGE ANALYSIS

TERRITORY ALL		(1)	(2)	(3)	(4)	(5)	(6)
TYPE OF POLICY	CLASS GROUP	CALENDAR A.Y.E. 12/31/18 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2014-2018 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIVITY	NUMBER OF OCCURRENCES	BAL CELL RELATIVITY
36 MULT SERVICES	03 STORES	\$99,808	\$426,807	0.508		23	
	04 VENDING & RENTAL	\$34,864	\$154,841	1.36		4	
	07 CLUBS,AMSMT&SPRTS	\$1,050,333	\$4,724,199	0.663		129	
	08 HEALTH CARE FACIL	\$19,609	\$45,779	0		0	
	09 HOTELS AND MOTELS	\$29,265	\$237,095	0.558		3	
	10 SCHLS & CHURCHES	\$2,509	\$12,555	0.681		1	
	12 BUILDINGS&OFFICES	\$293,653	\$1,615,636	1.33		96	
	13 MISC. PREMISES	\$269,059	\$1,197,624	1.425		83	
	TOTAL *	\$1,799,100	\$8,414,536	0.882		339	
TOTAL ALL TOP	01 FOOD&BEV.(RETAIL)	\$842,803	\$3,890,172	1.095		247	
	02 RESTAURANTS	\$1,831,776	\$9,637,505	0.955		548	
	03 STORES	\$935,344	\$3,790,415	1.026		273	
	04 VENDING & RENTAL	\$51,502	\$246,901	1.013		5	
	05 FOOD & BEV. DIST.	\$155,049	\$653,632	1.11		17	
	06 NON-FOOD&BEV.DIST	\$373,405	\$1,917,438	1.737		62	
	07 CLUBS,AMSMT&SPRTS	\$1,634,252	\$7,192,151	0.992		297	
	08 HEALTH CARE FACIL	\$314,533	\$1,327,234	1.573		49	
	09 HOTELS AND MOTELS	\$1,540,668	\$8,399,033	0.893		487	
	10 SCHLS & CHURCHES	\$1,470,001	\$7,535,452	1.103		494	
	11 APARTMENTS	\$1,228,959	\$5,214,182	1.111		179	
	12 BUILDINGS&OFFICES	\$5,945,974	\$30,219,578	1.079		1,384	
	13 MISC. PREMISES	\$527,676	\$2,489,800	1.525		154	
	16 GOVT SUBDIVISIONS	\$386,429	\$1,549,046	1.294		103	
TOTAL *	\$17,238,371	\$84,062,539	1.085		4,299		

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

INSURANCE SERVICES OFFICE, INC.

MISSOURI
 MANUFACTURERS AND CONTRACTORS
 SUMMARY OF EXPERIENCE USED IN BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/18 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2014-2018 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIVITY	NUMBER OF OCCURRENCES	BAL CELL RELATIVITY
10 MONOLINE	30 SERVICE	\$837,219	\$2,788,701	0.707	0.744	47	0.963
	31 LIGHT CONTRACTING	\$408,918	\$1,995,968	0.461	0.485	71	0.957
	32 MEDIUM CONTRACTING	\$2,823,483	\$13,322,582	0.824	0.868	450	0.973
	33 HEAVY CONTRACTING	\$1,047,759	\$5,529,608	0.74	0.78	70	0.952
	34 DEALER OR DISTRIB	\$632,365	\$2,808,139	0.672	0.707	63	0.928
	35 LGT. MANUFACTURER	\$87,177	\$513,393	1.997	2.103	8	0.979
	36 MED. MANUFACTURER	\$330,765	\$1,687,147	0.91	0.959	28	0.949
	37 HVY. MANUFACTURER	\$174,797	\$921,185	0.845	0.89	8	0.957
	38 MISC. OPERATION	\$379,076	\$1,851,997	0.729	0.768	70	0.975
	TOTAL *	\$6,721,559	\$31,418,720	0.775		815	
33 MULT OFFICE	31 LIGHT CONTRACTING	\$690	\$3,932	0	0	0	0.988
	32 MEDIUM CONTRACTING	\$8,176	\$29,961	0	0	0	1.005
	33 HEAVY CONTRACTING	\$61,664	\$315,452	0.534	0.562	4	0.983
	38 MISC. OPERATION	\$92,896	\$393,433	0.809	0.852	13	1.007
	TOTAL *	\$163,426	\$742,778	0.661		17	
34 MULT MERCANTILE	30 SERVICE	\$22,189	\$83,180	0.107	0.113	1	0.988
	32 MEDIUM CONTRACTING	\$119,980	\$372,015	0.094	0.099	7	0.999
	34 DEALER OR DISTRIB	\$711,226	\$3,312,687	0.558	0.588	76	0.952
	36 MED. MANUFACTURER	\$2,931	\$15,975	0	0	0	0.974
	38 MISC. OPERATION	\$61,286	\$186,302	2.472	2.603	22	1.001
	TOTAL *	\$917,612	\$3,970,159	0.612		106	
35 MULT INSTITUT.	31 LIGHT CONTRACTING	\$7,328	\$41,471	0.622	0.655	2	1.143
	32 MEDIUM CONTRACTING	\$193,940	\$951,958	3.872	4.079	180	1.162
	TOTAL *	\$201,268	\$993,429	3.754		182	
36 MULT SERVICES	30 SERVICE	\$52,214	\$231,157	0.776	0.817	19	1.007
	31 LIGHT CONTRACTING	\$50,449	\$477,962	0.671	0.706	19	1
	32 MEDIUM CONTRACTING	\$82,185	\$433,021	1.221	1.286	19	1.017
	33 HEAVY CONTRACTING	\$33,724	\$220,886	1.491	1.57	14	0.995
	34 DEALER OR DISTRIB	\$793,863	\$3,498,622	0.66	0.695	119	0.97
	36 MED. MANUFACTURER	\$5,852	\$24,045	1.838	1.936	1	0.992
	38 MISC. OPERATION	\$365,461	\$1,662,608	1.164	1.226	72	1.019
	TOTAL *	\$1,383,748	\$6,548,301	0.857		263	

INSURANCE SERVICES OFFICE, INC.

MISSOURI
MANUFACTURERS AND CONTRACTORS
SUMMARY OF EXPERIENCE USED IN BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/18 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2014-2018 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIVITY	NUMBER OF OCCURRENCES	BAL CELL RELATIVITY
37 MULT INDUST/PROC	31 LIGHT CONTRACTING	\$242	\$2,561	0	0	0	1.003
	32 MEDIUM CONTRACTING	\$162,825	\$870,654	2.16	2.275	20	1.02
	33 HEAVY CONTRACTING	\$47,270	\$217,992	0.103	0.109	6	0.998
	34 DEALER OR DISTRIB	\$22,626	\$77,175	0.097	0.102	2	0.973
	35 LGT. MANUFACTURER	\$100,008	\$427,805	1.925	2.028	5	1.027
	36 MED. MANUFACTURER	\$611,626	\$2,889,251	0.68	0.716	48	0.995
	37 HVY. MANUFACTURER	\$415,767	\$2,103,076	0.873	0.92	25	1.004
	38 MISC. OPERATION	\$20,867	\$95,061	1.433	1.509	3	1.022
	TOTAL *	\$1,381,231	\$6,683,575	0.985		109	
38 MULT CONTRACTORS	30 SERVICE	\$671,950	\$3,283,558	1.332	1.403	156	1.055
	31 LIGHT CONTRACTING	\$987,507	\$4,293,538	1.282	1.35	284	1.048
	32 MEDIUM CONTRACTING	\$2,176,454	\$10,369,452	1.134	1.194	469	1.066
	33 HEAVY CONTRACTING	\$929,656	\$4,182,738	1.066	1.122	136	1.043
	38 MISC. OPERATION	\$54,919	\$149,226	0.086	0.09	1	1.068
	TOTAL *	\$4,820,486	\$22,278,512	1.167		1,046	
TOTAL ALL TOP	30 SERVICE	\$1,583,572	\$6,386,596	0.966		223	
	31 LIGHT CONTRACTING	\$1,455,134	\$6,815,432	1.026		376	
	32 MEDIUM CONTRACTING	\$5,567,043	\$26,349,643	1.079		1,145	
	33 HEAVY CONTRACTING	\$2,120,073	\$10,466,676	0.875		230	
	34 DEALER OR DISTRIB	\$2,160,080	\$9,696,623	0.624		260	
	35 LGT. MANUFACTURER	\$187,185	\$941,198	1.958		13	
	36 MED. MANUFACTURER	\$951,174	\$4,616,418	0.765		77	
	37 HVY. MANUFACTURER	\$590,564	\$3,024,261	0.865		33	
	38 MISC. OPERATION	\$974,505	\$4,338,627	0.988		181	
TOTAL *	\$15,589,330	\$72,635,474	0.949		2,538		

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

INSURANCE SERVICES OFFICE, INC.

MISSOURI
PRODUCTS
BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	(1) BAILEY FORMULA RELATIVITY	(2) CREDIBILITY CREDIBILITY	(3) CREDIBILITY WEIGHTED RELATIVITY	(4) BALANCED RELATIVITY	(5) INDICATED CHANGE
10	0.881	0.317	0.961	0.956	
34	0.979	0.343	0.993	0.987	3.2%
36	1.029	0.185	1.005	1.000	4.6%
37	1.086	0.477	1.040	1.035	8.3%
CLASS GROUP					
3	0.867	0.000	1.000	0.942	
4	1.109	0.447	1.047	1.044	
5	1.079	0.384	1.030	1.014	
6	0.977	0.130	0.997	0.996	
7	0.998	0.310	0.999	1.003	

NOTE: THE INDICATED CHANGES BY TOP WERE FURTHER ADJUSTED BY THE FOLLOWING
DIFFERENTIALS: TOP 34: 0.988
TOP 36: 0.992
TOP 37: 1.003

INSURANCE SERVICES OFFICE, INC.

MULTISTATE
PRODUCTS
SUMMARY OF EXPERIENCE USED IN BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2014 - 2018 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIVITY	NUMBER OF OCCURRENCES	BAL CELL RELATIVITY
10 MONOLINE	03 MAN,DLR,DSTFD/DRG	8,093,332	39,443,822	0.784	0.712	920	0.900
	04 DLR,DST-NOTFD/DRG	7,050,350	31,300,283	1.139	1.034	465	0.998
	05 MAN.NTFD/DRG(LOW)	1,674,016	6,525,174	0.980	0.890	84	0.969
	06 MAN.NTFD/DRG(MED)	8,719,673	39,390,154	1.006	0.914	462	0.952
	07 MAN.NTFD/DRG(HGH)	2,487,754	10,123,703	0.821	0.745	82	0.959
	TOTAL *	28,025,125	126,783,136	0.957		2,013	
34 MULT MERCANTILE	03 MAN,DLR,DSTFD/DRG	4,331,883	21,396,487	1.047	0.951	564	0.930
	04 DLR,DST-NOTFD/DRG	25,139,034	121,279,202	1.176	1.068	1,794	1.031
	06 MAN.NTFD/DRG(MED)	3,108	19,331	0.000	0.000	-	0.984
	TOTAL *	29,474,025	142,695,020	1.157		2,358	
36 MULT SERVICES	04 DLR,DST-NOTFD/DRG	2,760,971	12,384,922	1.274	1.157	688	1.044
	06 MAN.NTFD/DRG(MED)	42,893	205,196	0.000	0.000	-	0.996
	TOTAL *	2,803,864	12,590,118	1.254		688	
37 MULT INDUST/PROC.	03 MAN,DLR,DSTFD/DRG	13,380,685	63,881,777	1.035	0.940	2,512	0.974
	05 MAN.NTFD/DRG(LOW)	3,488,504	18,393,950	1.322	1.200	254	1.048
	06 MAN.NTFD/DRG(MED)	24,557,849	115,549,330	1.149	1.043	1,462	1.031
	07 MAN.NTFD/DRG(HGH)	5,784,533	29,451,053	1.257	1.141	329	1.038
	TOTAL *	47,211,571	227,276,110	1.143		4,557	
TOTAL ALL TOP	03 MAN,DLR,DSTFD/DRG	25,805,900	124,722,086	0.959		3,996	
	04 DLR,DST-NOTFD/DRG	34,950,355	164,964,407	1.176		2,947	
	05 MAN.NTFD/DRG(LOW)	5,162,520	24,919,124	1.211		338	
	06 MAN.NTFD/DRG(MED)	33,323,523	155,164,011	1.110		1,924	
	07 MAN.NTFD/DRG(HGH)	8,272,287	39,574,756	1.126		411	
	TOTAL *	107,514,585	509,344,384	1.101		9,616	

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

INSURANCE SERVICES OFFICE, INC.

MISSOURI

LOCAL PRODUCTS/COMPLETED OPERATIONS

BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	(1)	(2)	(3)	(4)	(5)
	BAILEY FORMULA RELATIVITY	CREDIBILITY CREDIBILITY	CREDIBILITY WEIGHTED RELATIVITY	BALANCED RELATIVITY	INDICATED CHANGE
10	0.978	0.722	0.984	0.982	
34	0.954	0.510	0.976	0.974	-0.8%
36	0.950	0.521	0.974	0.971	-1.1%
37	1.093	0.137	1.012	1.010	2.9%
38	1.021	0.965	1.020	1.018	3.7%
CLASS GROUP					
1	0.925	0.511	0.961	0.958	
2	1.076	0.497	1.037	1.034	
11	1.085	0.347	1.029	1.025	
12	1.008	1.000	1.008	1.004	
13	0.835	0.264	0.954	0.950	

MULTISTATE
LOCAL PRODUCTS/COMPLETED OPERATIONS
BASIC LIMIT RELATIVE CHANGE ANALYSIS *

	(1)	(2)	(3)	(4)
	BAILEY		CREDIBILITY	
	FORMULA		WEIGHTED	BALANCED
STATE	RELATIVITY	CREDIBILITY	RELATIVITY	RELATIVITY
	2.002	0.233	1.176	1.177
	1.227	0.389	1.083	1.084
	1.165	0.453	1.071	1.072
	1.172	0.356	1.058	1.059
	1.202	0.253	1.048	1.049
	1.070	0.618	1.043	1.044
	1.204	0.212	1.040	1.041
	1.108	0.366	1.038	1.039
	1.350	0.112	1.034	1.035
	1.265	0.136	1.033	1.034
	1.211	0.158	1.031	1.032
	1.172	0.187	1.030	1.031
	1.085	0.361	1.030	1.031
	1.131	0.234	1.029	1.030
	1.115	0.256	1.028	1.029
	1.065	0.429	1.028	1.029
MISSOURI	1.140	0.182	1.024	1.025
	1.104	0.243	1.024	1.025
	1.190	0.130	1.023	1.024
	1.024	0.365	1.009	1.010
	1.030	0.310	1.009	1.010
	1.057	0.148	1.008	1.009
	1.014	0.557	1.008	1.009
	1.020	0.391	1.008	1.009
	1.015	0.251	1.004	1.005
	0.996	0.453	0.998	0.999
	0.899	0.095	0.990	0.991
	0.980	0.489	0.990	0.991
	0.976	0.455	0.989	0.990
	0.930	0.183	0.987	0.988
	0.958	0.334	0.986	0.987
	0.886	0.134	0.984	0.985
	0.907	0.222	0.979	0.980
	0.955	0.471	0.979	0.980
	0.921	0.285	0.977	0.978
	0.926	0.299	0.977	0.978
	0.929	0.313	0.977	0.978
	0.839	0.164	0.972	0.973
	0.833	0.156	0.972	0.973
	0.921	0.378	0.969	0.970
	0.538	0.066	0.960	0.961
	0.793	0.215	0.951	0.952
	0.891	0.451	0.949	0.950
	0.902	0.570	0.943	0.944
	0.852	0.416	0.936	0.937
	0.464	0.087	0.935	0.936
	0.683	0.179	0.934	0.935
	0.776	0.288	0.930	0.930
	0.619	0.154	0.929	0.930
	0.773	0.304	0.925	0.925
	0.843	0.553	0.910	0.911
	0.558	0.170	0.906	0.907

* Sorted by balanced relative change

INSURANCE SERVICES OFFICE, INC.

MISSOURI
LOCAL PRODUCTS/COMPLETED OPERATIONS
SUMMARY OF EXPERIENCE USED IN BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/18 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2014-2018 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
10 MONOLINE	01 RET.STRS-FOOD/DRG	\$10,657	\$91,979	1.506	1.311	11	0.92
	02 RET.STRS-NTFD/DRG	\$26,273	\$82,402	0.493	0.429	1	0.993
	11 COMP. OPS. (LOW)	\$52,288	\$209,011	0.054	0.047	3	0.985
	12 COMP. OPS. (MED)	\$1,337,767	\$6,790,769	0.582	0.506	82	0.965
	13 COMP. OPS. (HGH)	\$126,641	\$688,592	0.815	0.709	5	0.913
	TOTAL *	\$1,553,626	\$7,862,753	0.588		102	
34 MULT MERCANTILE	01 RET.STRS-FOOD/DRG	\$61,546	\$286,032	1.762	1.533	52	0.913
	02 RET.STRS-NTFD/DRG	\$34,595	\$165,049	1.657	1.442	18	0.985
	12 COMP. OPS. (MED)	\$9,912	\$38,452	0.578	0.503	1	0.957
	TOTAL *	\$106,053	\$489,533	1.617		71	
36 MULT SERVICES	01 RET.STRS-FOOD/DRG	\$10,870	\$45,312	3.061	2.664	4	0.91
	02 RET.STRS-NTFD/DRG	\$133,918	\$564,807	2.101	1.829	49	0.982
	11 COMP. OPS. (LOW)	\$13,549	\$63,529	1.342	1.168	8	0.975
	12 COMP. OPS. (MED)	\$62,753	\$322,296	2.232	1.942	9	0.955
	13 COMP. OPS. (HGH)	\$9,597	\$48,614	0	0	0	0.903
	TOTAL *	\$230,687	\$1,044,558	2.05		70	
37 MULT INDUST/PROC	01 RET.STRS-FOOD/DI	\$943	\$3,364	0	0	0	0.946
	11 COMP. OPS. (LOW)	\$237	\$1,364	6.284	5.468	1	1.013
	12 COMP. OPS. (MED)	\$31,788	\$149,973	3.969	3.453	4	0.992
	13 COMP. OPS. (HGH)	\$1	\$2	0	0	0	0.939
	TOTAL *	\$32,969	\$154,703	3.872		5	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	\$135,238	\$615,590	0.86	0.749	9	1.021
	12 COMP. OPS. (MED)	\$1,952,797	\$9,111,017	1.119	0.973	219	1
	13 COMP. OPS. (HGH)	\$227,262	\$956,079	2.281	1.985	18	0.947
	TOTAL *	\$2,315,297	\$10,682,686	1.218		246	
TOTAL ALL TOP	01 RET.STRS-FOOD/DRG	\$84,016	\$426,687	1.878		67	
	02 RET.STRS-NTFD/DRG	\$194,786	\$812,258	1.806		68	
	11 COMP. OPS. (LOW)	\$201,312	\$889,494	0.69		21	
	12 COMP. OPS. (MED)	\$3,395,017	\$16,412,507	0.953		315	
	13 COMP. OPS. (HGH)	\$363,501	\$1,693,287	1.71		23	
	TOTAL *	\$4,238,632	\$20,234,233	1.063		494	

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

INSURANCE SERVICES OFFICE, INC.

MULTISTATE
LOCAL PRODUCTS/COMPLETED OPERATIONS
SUMMARY OF EXPERIENCE USED IN BASIC LIMIT RELATIVE CHANGE ANALYSIS

TYPE OF POLICY	CLASS GROUP	(1)	(2)	(3)	(4)	(5)	(6)
		CALENDAR A.Y.E. 12/31/2018 AGGREGATE LOSS COSTS AT CURRENT LEVEL	CALENDAR A.Y.E. 2014 - 2018 AGG LOSS COST CURRENT LEVEL	FIVE YEAR EXPERIENCE RATIO	RELATIV.	NUMBER OF OCCURRENCES	BAL CELL RELATIV.
10 MONOLINE	01 RET.STRS-FOOD/DRG	2,151,747	9,207,997	0.954		570	
	02 RET.STRS-NTFD/DRG	2,295,068	11,448,808	1.305		473	
	11 COMP. OPS. (LOW)	3,892,639	18,163,511	1.628		651	
	12 COMP. OPS. (MED)	83,135,280	371,618,514	1.130		5,859	
	13 COMP. OPS. (HGH)	7,417,394	33,727,804	0.856		270	
	TOTAL *	98,892,128	444,166,634	1.129		7,823	
34 MULT MERCANTILE	01 RET.STRS-FOOD/DRG	7,352,885	34,702,053	1.022		3,165	
	02 RET.STRS-NTFD/DRG	4,646,377	21,875,704	1.065		619	
	12 COMP. OPS. (MED)	2,019,660	9,688,586	1.284		128	
	TOTAL *	14,018,922	66,266,343	1.074		3,912	
36 MULT SERVICES	01 RET.STRS-FOOD/DRG	731,049	3,411,977	1.191		192	
	02 RET.STRS-NTFD/DRG	11,441,919	45,533,065	1.209		2,628	
	11 COMP. OPS. (LOW)	3,036,648	13,947,197	1.001		463	
	12 COMP. OPS. (MED)	3,960,968	19,706,711	1.159		722	
	13 COMP. OPS. (HGH)	1,087,876	5,580,338	0.595		73	
	TOTAL *	20,258,460	88,179,288	1.134		4,078	
37 MULT INDUST/PROC.	01 RET.STRS-FOOD/DRG	9,799	70,370	0.699		1	
	11 COMP. OPS. (LOW)	114,111	543,328	0.930		18	
	12 COMP. OPS. (MED)	3,276,550	16,096,832	1.264		263	
	13 COMP. OPS. (HGH)	46,427	271,366	0.786		0	
	TOTAL *	3,446,887	16,981,896	1.245		282	
38 MULT CONTRACTORS	11 COMP. OPS. (LOW)	8,262,574	39,057,672	1.157		683	
	12 COMP. OPS. (MED)	143,843,747	687,120,222	1.178		12,596	
	13 COMP. OPS. (HGH)	13,690,731	64,062,049	1.058		709	
	TOTAL *	165,797,052	790,239,943	1.167		13,988	
TOTAL ALL TOP	01 RET.STRS-FOOD/DRG	10,245,480	47,392,397	1.020		3,928	
	02 RET.STRS-NTFD/DRG	18,383,364	78,857,577	1.185		3,720	
	11 COMP. OPS. (LOW)	15,305,972	71,711,708	1.244		1,815	
	12 COMP. OPS. (MED)	236,236,205	1,104,230,865	1.163		19,568	
	13 COMP. OPS. (HGH)	22,242,428	103,641,557	0.967		1,052	
	TOTAL *	302,413,449	1,405,834,104	1.149		30,083	

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

COMMERCIAL PACKAGE POLICY

TABLE OF CONTENTS

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**

MISSOURI (24)

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	.79	.98	1.00
Contractors	.90	.93	1.00	1.00
Industrial & Processing	.90	.80	1.00	1.00
Institutional	.90	.84	.94	1.00
Mercantile	.90	.75	.90	1.00
Motel/Hotel	.90	1.00	.98	1.00
Office	.90	.72	.83	1.00
Service	.90	.85	.94	1.00

Table 1. Package Modification Factors