



ACTUARIAL PEER REVIEW

WORKERS COMPENSATION RATEMAKING PROCESSES OF THE NATIONAL COUNCIL ON COMPENSATION INSURANCE, INC.

STATE OF FLORIDA
OFFICE OF INSURANCE REGULATION

JANUARY 2014



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Introduction

Scope

Oliver Wyman Actuarial Consulting, Inc. (Oliver Wyman) has been engaged by the Office of Insurance Regulation, State of Florida, (the FLOIR) to conduct an independent actuarial peer review of the ratemaking processes of the National Council on Compensation Insurance, Inc. (NCCI), in Florida, as required by Section 627.285, Florida Statutes.^{1,2}

Specifically, Oliver Wyman has been engaged to review the following:

1. Methodologies, thought processes, judgments and assumptions used to determine statewide rate level changes, including, but not limited to:
 - database (paid loss versus paid loss plus case reserve or other)
 - loss development methodology and selections
 - experience periods
 - trend calculations
 - premium development calculations
 - premium adjustments
 - benefit on-level adjustments
 - expense provisions
 - profit and contingencies provisions
 - impact of experience rating off-balance
2. Methodologies, thought processes, judgments and assumptions used to distribute statewide rate level changes to industry groups.
3. Methodologies, thought processes, judgments and assumptions used to determine individual workers compensation classification rates.

¹ Section 627.285 states that: “..... at least once every other year contract for an independent actuarial peer review and analysis of the ratemaking processes of any licensed rating organization that makes rate filings for workers compensation insurance, and the rating organization shall fully cooperate in the peer review. The contract shall require submission of a final report to the commission, the President of the Senate, and the Speaker of the House of Representatives by February 1.”

² NCCI is the licensed agency responsible for collecting statistical information submitting applications for revised workers compensation rates and rating values on behalf of NCCI’s member or affiliated insurance companies.

4. Methodologies, thought processes, judgments and assumptions used to determine the impact of legislative changes, benefit-level adjustments, and legislative proposals.³

Overview of the NCCI Ratemaking Methodology

The result of the workers compensation ratemaking process is a revised manual premium rate for each of over 500 individual workers compensation employer classifications. The final premium rate for an individual employer is the published manual workers compensation rate multiplied by the specific employer's experience modification.⁴ NCCI maps classifications into five industry groups.⁵ The premium rate for each classification incorporates the combined impact of statewide average experience, the experience of the industry group to which it belongs, and the experience of the individual classification itself. The NCCI ratemaking methodology employed in Florida is composed of four general steps:

Step 1: Calculation of Statewide Rate Change

The statewide rate change is the average rate change for all classifications combined. This step relies primarily on Aggregate Financial Call data.⁶ Contributing elements to the statewide rate change include, but are not necessarily limited to:

³ Since implementation of SB 50A on October 1, 2003, there have been no material law changes affecting workers compensation costs in Florida with the exception of the Florida Supreme Court Decision, *Emma Murray v. Mariner Health and ACE USA*, and HB 903, which reversed the legislative impact of this court decision. The Murray decision effectively reversed a portion of SB 50A, resulting in an estimated (by NCCI) 6.4% expected increase to overall benefit costs in Florida effective October 23, 2008. NCCI estimated the impact of HB 903 to be a 6% decrease to overall benefit costs in Florida, effective July 1, 2009, effectively offsetting the cost impact of Murray.

⁴ Experience rating is the final step in the process of determining premium charges for individual employers. Experience rating recognizes that the premium rate for a specific classification represents the average premium rate for all employers in that classification. Experience rating is the process by which the premium rate, for a specific employer, is adjusted to reflect the employer's own loss experience relative to the average loss experience in the employer's classification. In its simplest form, experience rating is a measurement of an employer's actual loss experience to the employer's expected loss experience. Expected loss experience is based on the average premium rate, and therefore the average loss experience, of all employers in a classification. The result of the experience rating process is the experience modification. An experience modification greater than unity, or 1.000, is commonly referred to as a "debit mod" and means the specific employer has loss experience greater than the classification average. Conversely, an experience modification less than unity is commonly referred to as a "credit mod" and means the specific employer has loss experience less than the classification average.

⁵ The five industry groups are:
Manufacturing, Contracting, Office and Clerical, Goods and Services, Miscellaneous

⁶ NCCI collects, tabulates, checks, and edits combined statewide workers compensation experience. NCCI collects data for use in an actuarial analysis to determine, on an average, statewide basis, whether rates need to be increased, or decreased. NCCI publishes detailed instructions as to how insurance carriers should respond to the various data requests.

Loss Experience: Is the actuarial forecast of the final cost of benefits for a group of claims greater than or less than what is expected in current premium rates?

Trend:⁷ Are workers compensation benefits increasing at a rate greater than or less than wages?

Benefit Changes: Have there been any changes to workers compensation benefits since the prior rate examination?

Claim Adjustment Expense (LAE)⁸ Is the expected cost of LAE greater than or less than the provision in current premium rates?

Other Insurance Company Expenses: Is the expected cost of insurance company overhead and commission greater than or less than provisions in current premium rates?

Taxes and Assessments: Is the expected cost of taxes and assessments greater than or less than the provisions in current premium rates?

Profit and Contingencies: Is the economic/actuarial forecast of reasonable insurance company profit greater than or less than the provision in current premium rates?

Step 2: Distribution of Statewide Rate Change to Industry Groups

NCCI distributes the statewide rate change to each of the five industry groups based on the relative loss experience of each individual industry group.⁹ The weighted average of the rate changes for each of the five industry groups must equal the

⁷ Premium rates are almost exclusively measured relative to payroll (in units of \$100). There is an a priori assumption in premium rates that benefit costs (meaning the combined impact of changes to the number of claims, or frequency, and the cost per claim, or severity) will increase at the rate of wage inflation. Therefore, if actuarial analysis shows that benefit costs are increasing at a rate less than wage inflation, the indicated trend will be negative, or less than zero. Similarly, if actuarial analysis shows that benefit costs are increasing at a rate greater than wage inflation, the indicated trend will be positive, or greater than zero. If benefit costs are increasing at exactly the same rate as wage inflation, the indicated trend will be exactly zero.

⁸ Claim adjustment expense is commonly referred to as loss adjustment expense (LAE). LAE is the total cost of adjusting claims, including (in general) overhead costs of maintaining a claims adjustment staff and claim defense costs. Claim defense costs generally include, but are not limited to, legal fees, court fees, and the cost of investigations. Currently, NCCI partitions the provision for LAE into Defense and Cost Containment Expenses (DCCE) and All Other Expenses (AOE). DCCE is roughly comparable to expenses previously categorized as Allocated Loss Adjustment Expense (ALAE). AOE is roughly comparable to expenses previously referred to as ULAE.

⁹ For example, if the average statewide rate change is a 5.0% increase, and the manufacturing industry group has much greater loss experience than expected, while the other four industry groups have lower loss experience than expected, the manufacturing industry group might be allocated a 10% rate increase, while the other four industry groups might be allocated a 2% rate increase. The weighted average for all five industry groups must equal the statewide 5.0% increase.

statewide rate change calculated in Step 1. The allocation to industry groups relies primarily on Workers Compensation Statistical Plan (WCSP) Data.¹⁰

Step 3: Distribution of Industry Group Rate Changes to Classifications

NCCI distributes the industry group change to each individual classification within the specific industry group. NCCI bases the distribution on the actual loss experience of each individual classification, and relies on WCSP data. The weighted average of the rate changes for all classifications in an individual industry group must equal the industry group rate change calculated in Step 2.

Note that NCCI does not directly calculate classification rates.¹¹ Rather, the starting point in the NCCI ratemaking process is current manual rates. The process described in steps 1, 2, and 3 above represents a rate relativity system. An overall statewide rate need is determined by examining statewide combined data, which generates an indicated statewide rate level change in step 1. If not for consideration of rate relativities, the process would stop here, and NCCI would apply the same calculated rate change to the current rate for each classification. Steps 2 and 3, however, consider how the *relative* actual loss experience for each individual classification has changed since the prior rate application. In the simplest sense, if the most recently available data indicated that every classification, relative to each other, behaved exactly as expected, then the rate for every classification would be increased by the exact same amount, the calculated statewide rate change. This, of course, does not reflect reality, and illustrates the need for step 2 and step 3. These steps measure how the loss experience for each individual class changed relative to each other. This is why, even with very small or zero percent statewide rate change, some classifications might increase by 15%, and other classifications might decrease by 15%.¹²

¹⁰ WCSP data is a database of individual claim experience and policy specific information collected, tabulated, checked, and edited by NCCI. Information is collected in sufficient detail such that workers compensation experience can be allocated to individual classifications, and therefore, to the five industry groups. WCSP data is the basis for allocating the statewide rate level change to the five industry groups as well as to all individual classifications.

¹¹ This statement applies to industrial classifications, which comprise the bulk of the workers compensation classifications. This is not the case for Federal classifications (F-Classes). F-classes represent classifications where claims may be filed under the United States Longshoreman and Harbor Workers Act. This is a federal jurisdiction administered by Office of Workers Compensation Programs, United States Department of Labor. Workers injured on or near coastal or inland waterways have the option to file claims under either the Federal act or the Florida state act. Occupations include ship manufacturing and repair, stevedoring, etc. NCCI calculates rates for F-classes somewhat differently than for industrial classifications. Unlike industrial classifications, premium rates for F-classes are calculated directly from Workers Compensation Statistical Plan data.

¹² 15% represents what are referred to as swing limits, the maximum allowable change (up or down, relative to the industry group change) in any year to the rate for a single classification. Swing limits are discussed later in this report.

Step 4: Calculation of Rating Values

The final step of the ratemaking process is the calculation of the required rating values for the experience rating program, retrospective rating programs¹³, and other programs that individual insureds may voluntarily elect to subscribe to.

General Approach to this Review

The general approach to this review was as follows:

1. Identification of data and methodology used
2. Assessment of appropriateness of data and methodology used
 - Is the methodology a commonly applied actuarial technique?
 - Is it appropriate in the circumstances of its use by NCCI?
 - Does it meet Actuarial Standards of Practice?
 - Is data appropriate for methodologies employed?
 - What additional methodologies were available?
3. Assessment of consistency of methodologies used
 - What changes to methodology were made in the past, and why?
 - Were any changes to methodology justified with clear and unbiased communication to all parties?
 - What was the impact of the change in the methodology?
4. Is there evidence of bias in the ratemaking process?

The review process was as follows:

1. Review initial documentation provided by NCCI.
2. Issue requests for additional information from NCCI.
3. Discuss questions and concerns with the Florida Office of Insurance Regulation.¹⁴
4. Issue Draft Report to Florida Office of Insurance Regulation.
5. Consider comments from Florida Office of Insurance Regulation and NCCI.
6. Issue Final Report

¹³ Retrospective rating represents a type of insurance program where a specific employer's premium is based on actual loss experience under the program, subject to certain maximum and minimum premiums and limits on the cost of individual claims. Retrospective premiums are periodically recalculated for years after the actual insurance policy expired. The recalculation reflects the most recently available actual loss experience under the program.

¹⁴ Oliver Wyman's contact during the course of this review was Mr. James Watford, ACAS, Actuary, Florida Office of Insurance Regulation.

This assignment was not used as a vehicle to substitute Oliver Wyman's professional opinions for those of NCCI. Oliver Wyman conducted an objective review and identified those areas where, in Oliver Wyman's opinion, NCCI's documentation was incomplete or where inappropriate actuarial judgments were made, or where additional investigation by NCCI into specific issues was warranted. Oliver Wyman's findings that specific processes, judgments, or assumptions are reasonable, or Oliver Wyman's lack of issue with the same, do not necessarily mean that Oliver Wyman endorses them or would take the same approach if Oliver Wyman were to conduct its own independent analysis of rate needs in the state of Florida.

Oliver Wyman's report to the FLOIR consists of the text and charts in this document.

A complete list of documents and data provided is attached at the end of this report. Applicable Considerations and Limitations are attached as well.

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Executive Summary

Principal Conclusions

1. The NCCI ratemaking process (in Florida¹⁵) is based on commonly applied actuarial methodologies that are supported in actuarial literature as well as by frequency of usage by credentialed actuaries.

- a. The NCCI ratemaking process draws from a group of actuarial methodologies employed by NCCI and other ratemaking organizations in other states.
- b. Actuarial methodologies used by NCCI are appropriate within the context of their use in the NCCI ratemaking process in Florida.
- c. Oliver Wyman considers the Standards of Practice established by the Casualty Actuarial Society as the governing body of documentation used to determine whether the NCCI ratemaking process in Florida is compliant with applicable actuarial standards of practice. Actuarial methodologies used by NCCI are consistent with:
 - The Statement of Principles Regarding Property and Casualty Insurance Ratemaking, as published by the Casualty Actuarial Society
 - The Statement of Principles Regarding Risk Classification, as published by the Casualty Actuarial Society
 - The Code of Professional Conduct, as published by the Casualty Actuarial Society

Elements of the NCCI ratemaking methodology are included in the current Syllabus of Examinations, including publications authored by NCCI actuaries.

Oliver Wyman reviewed the key elements and selected specific details of the NCCI ratemaking process. Oliver Wyman based its conclusion on this review. Oliver Wyman did not conduct an exhaustive examination of every method and calculation employed by NCCI. Some of these methods and calculations might potentially benefit from review or updating. Additionally, while Oliver Wyman tested the behavior of certain rating values over time for reasonableness, Oliver Wyman did not examine the detailed calculations of all of these elements during this review. These issues are not material as respects the conclusion above.

¹⁵ This report addresses NCCI ratemaking processes and methodologies in the state of Florida, only. Unless otherwise stated, any references to the NCCI ratemaking process or ratemaking methodologies are specific to the state of Florida.

2. The NCCI ratemaking process is based on data that is appropriate as respects the actuarial methodologies used in the ratemaking process.

- a. The financial call data collected by NCCI is appropriate for the actuarial methodologies used by NCCI to calculate the statewide rate change.
- b. The WCSP data collected by NCCI is appropriate for the actuarial methodologies used by NCCI to distribute the statewide change to the five industry groups and the individual classifications in each industry group.

The financial call data and WCSP data are the primary data sets used by NCCI in the ratemaking process. Each set of data has advantages and limitations. The ratemaking processes employed by the NCCI tend to maximize the advantages of each set of data, and tend to minimize the impact of limitations of each set of data.

3. The general NCCI ratemaking process is consistent over time. However, judgments and assumptions as respects specific decisions on methodology and the selection of actuarial parameters may vary between rate applications.

- a. The general ratemaking process employed by NCCI and the specific algorithms used in the NCCI rate application have generally been consistent over time, with the following notable exceptions.
 - In 2010, NCCI implemented a material change to the method by which NCCI distributes the statewide rate change to individual classifications. This change was made in most (if not all) states where NCCI provides advisory ratemaking and statistical services, and has been generally referred to as the changes to class ratemaking. Oliver Wyman has reviewed these changes in detail on behalf of regulators in other jurisdictions and opined that generally, these changes represented a material improvement over past practice. Of note is that one element of the change, a large reduction to the maximum value that a specific claim or occurrence could contribute to the experience of any single classification, was one of Oliver Wyman recommendations during a prior peer review project. Nevertheless, there are elements of concern regarding the new methodologies. The concerns do not relate to the method itself, which as noted earlier, is actuarially sound and a material improvement to the prior approach. Rather, the concerns relate to testing certain parts of the calculation to ensure that they reasonably reflect empirical data in Florida. Oliver Wyman discusses these concerns later in this report, and addresses them in the section on recommendations.
 - For rates and rating values effective January 1, 2012, NCCI changed a key element of the methodology used to determine the statewide rate indication. Specifically, the experience period used were changed from the most recent two calendar-accident years to the most recent two policy years. There are a number of concerns regarding the underlying reasons provided by NCCI to justify this change. In Oliver Wyman's opinion, documentation provided by

NCCI did not justify this change. Oliver Wyman discusses this concern later in this report, and addresses it in the section on recommendations.

- b. Certain specific judgments and assumptions vary between rate applications. In general, specific judgments and assumptions are a matter of professional actuarial opinion. There is a concern that relying on varying judgments and assumptions regarding key actuarial parameters (the most important of which is trend) rather than a consistent selection methodology over time increases the potential for generating rate level indications based on predetermined notions, rather than objective statistical measurements. Conversely, there are arguments that fixing all aspects of the ratemaking methodology may lead to illogical results when changes occur to the workers compensation system. This author, as respects statewide ratemaking, has generally recommended that methodologies and selection criteria for key actuarial parameters such as trend be fixed over time unless there is a compelling reason to change. Nevertheless, this is Oliver Wyman's professional opinion. Oliver Wyman finds nothing inherently improper with NCCI's *general approach* to ratemaking as respects this issue. Additionally, NCCI's trend selections for the most recent three rate applications (rates and rating values effective 1/1/12, 1/1/13, and 1/1/14) are reasonable.

Recommendations

1. **The change from a calendar/accident year based methodology to a policy year based methodology was not justified by support and documentation provided by NCCI.**
 - **The basis for the change to a policy year method was NCCI's assertion that the impact of audit premium corrections during the recessionary period (circa 2008-2010) would amplify the imprecise match between calendar year earned premium and the accident year losses utilized in the calendar/accident year method, distorting the rate level calculation. Examination of specific metrics in documentation underlying the most recent three rate applications demonstrates that the impact of audit premium corrections could have been addressed through simple, temporary adjustments to calendar year earned premium within the calendar/accident year method, rather than changing to a policy year method.**
 - **The policy year methodology introduces the need for an actuarial parameter not required by the calendar/accident year methodology, called premium development factors. NCCI consistently underestimated these factors in applications for revised rates effective January 1, 2012 and January 1, 2013 (based on a comparison of forecasts made in the rate application and actual data available the following year). Additionally, the pattern of data behavior shows that NCCI likely underestimated these factors in the most recent rate application as well. The pattern of consistently underestimating a set of parameters creates a perception that this pattern is intentional. Note that this pattern acted to marginally increase rate level using the policy year based methodology.**
 - **The reason for the audit premium issue was the economic disruption during the recessionary period, which was temporary and short-term in the context of workers compensation ratemaking. Additionally, the nature of the economic disruption during this period was unique in that it was relatively sudden and large.**
 - **The impact of the audit premium issue affected primarily large deductible employers. The impact on smaller employers (standard policies) was less, based on data provided by NCCI. Standard experience receives the bulk of the weight in the rate level application.**
 - **At the time that the change to methodology was implemented (for rates effective January 1, 2012), NCCI had sufficient data (termed Early Warning Exhibits) from which to gauge the potential impact of the audit premium issue and adjust, if necessary, calendar/accident year data. This would have been the preferred approach rather than changing methodology.**
 - **Oliver Wyman notes that for the period of time under question, the policy year methodology produced an overall rate level indication less than the accident year methodology. This does not justify a change from a methodology that had been used successfully in Florida for decades. An argument that a change to methodology is supported because the specific result of the**

proposed method is more palatable to a specific party is precisely the type of bias that the ratemaking process must avoid.

Given that:

- **the audit premium issue was temporary as to duration;**
- **the impact of the audit premium issue, as measured by premium development factors, was relatively small;**
- **the impact of the audit premium issue was larger for large deductible employers, which receive relatively low weight in the rate calculation;**
- **the policy year based methodology increases the reliance on trend values and decreases reliance on actual loss data;**
- **the policy year based methodology requires an additional actuarial parameter that must be forecast, premium development factors; and**
- **NCCI has consistently underestimated premium development for the policy year based methodology in a manner that marginally increased the rate level indication generated by the policy year based methodology.**

Oliver Wyman recommends that the calendar/accident year based methodology be reinstated at a point in time when the difference between results using policy year data and calendar/accident year data is not material.

Oliver Wyman's understanding is that concerns regarding the impact of audit premium on calendar/accident year experience periods were expressed in a prior actuarial peer review.¹⁶ Oliver Wyman reviewed this report, and notes the following comment:

"Policy year premium is not subject to such distortion since the audit premium adjustments are recorded in the same year the policy was written."¹⁷

This statement is incomplete. Policy year premium is free of distortion due to changes in audit premium only if the selection of premium development factors exactly anticipates the impact of audit premium. The prior peer review did not address the potential impact of changes to audit premium on policy year premium development.

¹⁶ American Actuarial Consulting Group, January 21, 2010

¹⁷ The complete passage is taken from page 17 of the report and is as follows:

"The NCCI currently relies on calendar-accident year data to estimate its overall rate change indication. Under this approach, the premium used is on a calendar year basis while the losses are on an accident year basis. The calendar year premium is subject to distortions caused by changes in audit premium adjustments since the adjustments recorded in a specific year are generally from policies which were written in the prior year. To the extent that the level of audit premium adjustments fluctuates from year to year, a distortion is introduced in the ratemaking formula. Policy year premium is not subject to such distortion since the audit premium adjustments are recorded in the same year the policy was written. Based on information provided by the NCCI, such distortion may be present in the calendar year premium for 2008. According to the NCCI, the economic downturn has caused the payroll in Florida to drop, resulting in lower audit premium adjustments which in turn results in lower calendar year earned premium. AACG believes that the varying levels of audit premium adjustments could cause the overall rate change indications to be distorted. AACG recommends that the NCCI monitor the difference in overall rate change indications between the calendar-accident year approach and the policy year approach in future rate filings."

- 2. NCCI should consider an actuarial methodology that quantitatively provides a trend selection based on observed empirical trends. Numerous approaches exist that provide reasonable results over time. Such approaches have been used by NCCI in the past. If such an approach were included in future rate applications, judgmental departures from that approach could be justified by NCCI if there were compelling reasons to do so.**

- 3. Oliver Wyman recommends that NCCI continue to report to the FLOIR detailed information on off-balance. The selection of a target off-balance is as much a policy issue as an actuarial issue. NCCI selects a target off-balance in Florida equal to 0.959. From an actuarial perspective, literature suggests that theoretically, a target off-balance closer to 1.000 is more appropriate. A target off-balance of 0.99 would have the impact of increasing the average experience modification in Florida from 0.959 to 0.990, and result in a manual rate decrease of approximately 3.1%, all else being equal. However, there are potential ramifications of such a change on employers with experience modifications close to, but less than, 1.000. These employers potentially could see experience modifications increase to slightly above 1.000. Additionally, NCCI's assertions (based on discussions with NCCI regarding off-balance in other jurisdictions) that loss ratio results for smaller employers tend to be the highest and that raising the target off-balance would reduce premium collections from these employers is a legitimate concern.**

- 4. Oliver Wyman's primary concern with the revised class ratemaking methodology implemented in 2010 is the substitution of theoretical excess loss ratios for actual data to provide for losses excess the \$500,000 per claim limit. In the past, excess loss ratios and hazard grouping were parameters affecting primarily retrospectively rated and large deductible policies. Oliver Wyman's specific concerns are as follows:**
 - *Are hazard groupings designed for retrospective rating appropriate for class ratemaking and supported by empirical data?***
 - *Are the excess loss ratios by hazard group supported by empirical data?***
 - *Are the occurrence of extraordinarily large claims (for example, claims in excess of \$2 million) predictable by hazard group, or should excess cost of these claims be socialized across all classifications?***

Florida is a very large state with a substantial volume of credible loss experience. Oliver Wyman recommends that the FLOIR request NCCI to provide a detailed robust analysis of empirical experience in Florida that addresses the questions posed above.

3

Discussion

Statewide Rate Indication

Introduction

Contributing elements to the statewide rate change include

- Loss Experience*
- Benefit Changes*
- Trend*
- Loss Adjustment Expense*
- Other Insurance Company Expenses*
- Taxes and Assessments*
- Profit and Contingencies*

Each is discussed individually.

Loss Experience

The analysis of loss experience generates a forecast of the final expected cost of claims with dates of loss during the specified experience periods. Key considerations in this process are the selection of experience periods, database, and methods used to forecast the expected cost of claims.

Experience Period

There are generally two types of experience periods available for analysis, policy year and calendar/accident year. Each experience period has two key components: losses and premium. The definition of each component varies with the experience period under consideration. Each component, as well as other information specific to each experience period, is provided below:

Policy Year Experience

Losses: Loss experience mapped to a specific policy year is due to claims covered by policies written during that year. Policy year periods in NCCI applications are calendar years. Therefore, claims covered by policies written during 2011 generate losses associated with policy year 2011 (PY2011). Losses

must be developed, or adjusted, to a final cost basis. Loss development adjustments are required because the final cost of the group of claims associated with a specific policy year will not be known until after all claims are reported, paid, and closed. This will not occur until 50 or more years after the end of the policy year.¹⁸ Loss development is a standard part of all NCCI applications and is discussed later in this section.

Premium: Premium mapped to a specific policy year is premium associated with policies written during the specified policy year period. Therefore, premium associated with PY2011 is the total premium associated with policies written during 2011. Policy year premium must be developed, or adjusted, to reflect the anticipated impact of premium adjustments over time. Premium adjustments are primarily due to the anticipated impact of premium audits, which generally occur within 12 months after a typical policy has expired.¹⁹ Therefore, policy year premium used to determine the experience indication is an estimate equal to premium reported to NCCI by the insurance carriers multiplied by a premium development factor.²⁰

Premium to Loss Experience Matching: Policy year experience maximizes the matching of losses to the premium insuring those losses. For PY2011, for example, a common group of insurance policies generates the loss experience and premium reported to NCCI.

Maturity of Experience: Policy year experience extends over a 24 month period because only policies written on January 1 will have claims with dates of loss exclusively in the year of writing. Using PY2011 as an example, a policy written

¹⁸ Loss development is a standard actuarial approach and is required for the analysis of numerous types of casualty exposures besides workers compensation, such as general liability, medical professional liability, automobile liability, etc. However, loss development for workers compensation claims generally has the longest durations of all casualty exposures given that permanent total disability income benefits, the most expensive but least frequent of workers compensation claims, are payable to age 75 in Florida. In other states, benefits are for the lifetime of the claimant.

¹⁹ Audits are typically within six months after policy expiration. An audit generally is a reassessment of payroll to determine actual payroll during the policy period. Insurers use estimated payroll to determine the initial premium payment prior to policy inception. Premium is recalculated using actual payroll. The difference between premium based on audited payroll and premium based on estimated payroll is the reason why policy year premium changes over time. NCCI uses premium development factors to incorporate the estimate of audit adjustments on policy year premium reported to NCCI by insurance carriers (see the following footnote).

²⁰ As noted in the preceding footnote, the auditing process requires a recalculation of policy year premium using audited (actual) payroll, causing policy year premium to change from amounts initially reported to NCCI by the insurance carriers. Premium development factors reflect the impact of the auditing process and measure the change to reported policy year premium over time. In a simple example, NCCI multiplies reported policy year 2011 deductible premium by a premium development factor of 0.970 to reflect the expected impact of future audit adjustments. The value of 0.970 is based on historical premium development data presented in Appendix A-II of the application for revised rates and rating values effective January 1, 2014.

on January 1, 2011 will provide coverage for claims with dates of loss from January 1, 2011 through December 31, 2011. On the other hand, a policy written on December 31, 2011 will provide coverage for claims with dates of loss from December 31, 2011 through December 30, 2012. Therefore, approximately half the claims associated with PY2011 will have dates of loss in 2011. The other half will have dates of loss in 2012. The average date of loss is approximately December 31, 2011.²¹

Policy Year Data Available for the January 1, 2014 Application: The two most recent policy years available for use in the most recent rate application are PY2010 and PY2011. Therefore, the average date of loss of claims data associated with a policy year approach would be June 30, 2011.²² This benchmark is important for a comparison with the calendar/accident year approach.

Calendar/Accident Year Experience

Losses: Loss experience mapped to a specific accident year is due to claims with dates of loss in a specific calendar year. Therefore, claims associated with accident year 2012 (AY2012) have dates of loss in 2012. Losses must be developed, or adjusted, to a final cost basis, as is the case with policy year experience.

Premium: Premium mapped to a specific accident year is calendar year earned premium.²³ This basis of calendar/accident year assumes that premium earned during a specific period provides for the cost of insuring claims with dates of loss during that same period. However, the initial calculation of earned premium is *not* adjusted for the impact of premium audits on underlying policies. Rather, premium adjustments due to audit are considered earned in the year the premium adjustments are made, rather than recalculating premium earned by the underlying policies with the audit adjustments. Therefore, once calculated,

²¹ This would be the case if policies are written and incepted evenly over the year, and if claims occur evenly over the policy periods. As these are usually not the case, the average date of loss is generally close to, but not exactly equal to, December 31.

²² The average date of loss of claims associated with PY2010 is December 31, 2010. The average date of loss of claims associated with PY2011 is December 31, 2011. The average of these two dates is June 30, 2011.

²³ Earned premium during a specific calendar year for an individual policy is equal to the total written premium for that policy multiplied by a ratio representing the portion of the policy term in the specific calendar year relative to the total policy term. An example is a policy written on October 1, 2011 for \$100,000. \$25,000 (25%) of the premium was earned in 2011, and \$75,000 was earned in 2012. In the simplest sense, total calendar year 2011 earned premium that could be used in the rate application is an extension of this calculation for all policies that had any portion of their policy term in 2011.

calendar year earned premium is fixed, prior to consideration of data quality edits that may be made by NCCI at future dates. This leads to an imprecise match between earned premium and underlying loss data in calendar/accident year experience.

Premium to Loss Experience Matching: The imprecision in the match between earned premium and underlying loss data in calendar/accident year experience is relatively minor if the impact of audit adjustments is relatively constant over time. In this case, the impact on measured loss ratios is immaterial.

Maturity of Experience: Calendar/accident year experience extends over a 12 month period because calendar year earned premium is matched to losses generated by claims with dates of loss in the specified calendar year. Using calendar/accident year 2011 (AY2011) as an example, the average date of loss is approximately June 30, 2011.²⁴

Calendar/Accident Year Data Available for the January 1, 2014 Application: The two most recent calendar/accident years available for use in the most recent rate application are AY2011 and AY2012. Therefore, the average date of loss of claims data associated with a calendar/accident year approach would be December 31, 2011.²⁵ Therefore, calendar/accident year data is roughly 6 months more recent than available policy year data.

Comparison and Discussion

There are advantages and disadvantages to the use of either experience period. Calendar/Accident year experience represents the most recent experience available for analysis and is therefore a better indicator of current conditions.²⁶ Equally important, calendar/accident year experience reduces the reliance on trend by approximately six months. This latter issue is important in situations such as Florida

²⁴ This is the case if premium is earned and if claims occur evenly over the calendar year. As this is usually not the case, the average date of loss is generally close but not exactly equal to, June 30.

²⁵ The average dates of loss of claims associated with AY2011 and AY2012 are June 30, 2011, and June 30, 2012. The average of these two dates is December 31, 2011.

²⁶ From a statistical viewpoint, arguments have been made that the advantage of using the more recent calendar/accident year data is somewhat offset by greater volatility because this data is six months less mature than policy year data. Oliver Wyman's experience has been that this is not an issue when examining potential variability of the indicated statewide change due to experience, trend, and benefits. The averaging process used to select loss development factors as well as the inherent variation of underlying loss experience tends to overwhelm any additional variability due to loss experience that is six months more recent and therefore six months less mature. Additionally, consistent use of a specific methodology over time, as had been done in Florida for decades (before NCCI precipitated a change to policy year experience) will eliminate the impact of statistical fluctuation, no matter how small.

where trend is a selected value, rather than a calculated value using a standard methodology.

A disadvantage of calendar/accident year experience is the concern regarding the imprecise match of premium to losses. This is usually not a material issue if the impact of audit adjustments is relatively constant over time.²⁷ Another mitigating factor is the requirement of premium development factors for policy year data. To the extent that policy year premium develops at rates greater than or less than anticipated by premium development factors, policy year premium data will essentially be mismatched as well. This would be because the anticipated impact of audit adjustments embedded in the premium development factors will have been misestimated.

Calendar/accident year experience had been the basis for rate applications in Florida since the early 1990s.²⁸ For rates and rating values effective January 1, 2012, NCCI changed the experience period and utilized the most recent two policy years. The underlying argument for the basis of this change was unexpectedly large and negative audit adjustments embedded in the calendar/accident year experience that was available for that application, AY2009 and AY2010.

Oliver Wyman's opinion is that this change to methodology was not warranted because the unexpectedly negative audit adjustments that NCCI asserts was not contemplated by calendar/accident year data also distorted policy year data through selected policy year premium development factors that were either too low, or possibly too high, depending on the rate application. Of note is that the audit adjustments appear to have had the largest impact on large deductible policies only. This is illustrated by the following policy year premium development history tabulated from recent NCCI applications in Florida:

²⁷ NCCI states the same in its response dated August 21, 2013, to questions posed by Mr. James Watford: "A given calendar year would include the audit premiums from the previous year's exposure, roughly offsetting the missing audit premiums for the current year's exposures (which would be included in the subsequent calendar year). However, when audit premiums change significantly from one year to the next, the mismatch of premiums and losses can result in a distortion to the calendar-accident year results."

²⁸ This statement is based on documentation reviewed by Oliver Wyman in the proceedings for rates effective January 1, 2014 and rates effective January 2013. Oliver Wyman did not check the methodology used in every application going back to the 1990s.

Standard Coverage Premium Development by Policy Year

	1 to 2	2 to 3	3 to 4	4 to 5
PY2004				1.000
PY2005			0.997	1.000
PY2006		0.999	1.000	1.000
PY2007	0.994	0.999	0.999	1.000
PY2008	0.989	1.000	0.999	
PY2009	0.999	0.999		
PY2010	1.002			

“1 to 2” refers development from the first report of policy year data to the second. For example, for PY2010, 1.002 means reported policy year 2010 premium increased by 0.2% from 12/31/11 (the first report of PY2010 premium data) to 12/31/12 (the second report of PY2010 data). It is obvious that for standard coverage, the impact of adjustments over time on premium has been relatively consistent and minimal. Additionally, it is clear that for PY2008, there was a small change to premium development. The implication is that the impact of audits on calendar/accident year premium for standard coverage has been minimal as well.

Large Deductible Coverage Premium Development by Policy Year

	1 to 2	2 to 3	3 to 4	4 to 5
PY2004				0.999
PY2005			1.002	0.999
PY2006		0.998	1.000	1.000
PY2007	0.986	0.998	1.000	0.998
PY2008	0.943	0.995	1.003	
PY2009	0.971	0.999		
PY2010	1.003			

Clearly there was a material shift in premium development within the first to second development period for large deductible policies. Note that the distortion to premium development is greatest for PY2008, the same as for standard policies.

Policy year based methods require a forecast of premium development. NCCI has consistently underestimated premium development. This is illustrated in the following tables:

STANDARD COVERAGE

Application for Rates Effective	First Report Policy Year	Selected 1 to 2 Premium Development	Actual 1 to 2 Premium Development
January 1, 2012	2009	0.992	0.999
January 1, 2013	2010	0.994	1.002
January 1, 2014	2011	0.997	?

LARGE DEDUCTIBLE

Application for Rates Effective	First Report Policy Year	Selected 1 to 2 Premium Development	Actual 1 to 2 Premium Development
January 1, 2012	2009	0.965	0.971
January 1, 2013	2010	0.967	1.003
January 1, 2014	2011	0.972	?

The tables above demonstrate that the very same distortion to premium measurement NCCI asserts that is embedded in earned premium used for calendar/accident year experience manifests itself in policy year premium through volatility of premium development factors and mis-estimates of expected future policy year premium development by NCCI. Note that the pattern of NCCI's selection of policy year premium development factors is one where the selected factors are consistently too low.

Finally, the data necessary to gauge the impact of the audit premium issue on calendar/accident year earned premium was available at the time the change in methodology was implemented through what are generally referred to as Early Warning Exhibits. This data provides objective measurements of policy year premium development from what is presented in the rate application a first report (24 months after the start of a policy year) to a second report (36 months after the start of a policy year) as well as from a "1/2" report (12 months after the start of a policy year) to a first report. The time and effort NCCI expended justifying a change from a method used successfully in Florida for decades due to an issue that was temporary with a relatively small impact could just as well have been expended utilizing data available to NCCI to adjust calendar year earned premium.

Oliver Wyman's conclusion is that the change in methodologies from using calendar/accident year experience to policy year experience was not justified. The overall impact was the substitution of one potential source of distortion for another as well as the placement of greater reliance on trend, rather than objective claims data. Oliver Wyman recommends that calendar/accident experience be used in future rate applications only because calendar/accident experience had been the basis of rate applications in Florida for 20 or more years, and NCCI has not, in Oliver Wyman's opinion, demonstrated a compelling reason to change. Any change back to the calendar/accident year methodology should be done at a point in time when the difference between the results of these methods are minimal.

Database

NCCI has several types of loss data (available from NCCI's financial calls) that may be used to forecast the final cost of claims. NCCI has historically relied on the following:

- Paid Loss data
- Paid Loss plus Case Reserve data

Paid loss data relies exclusively on benefit payments. Paid loss plus case reserve data relies on benefit payments and case reserves. Case reserves are the most recent estimates by claims professionals of the unpaid costs on open reported cases. Therefore, the use of paid loss data, as opposed to paid loss plus case reserve data, excludes the most recently available information on expected future costs embedded in case reserves. Paid loss data relies much more heavily on loss development factors for forecasting purposes, whereas paid loss plus case reserve data essentially substitutes case reserves, the most recently available information on the expected future costs of individual claims, for a substantial portion of paid loss development. Paid loss data is distorted by changes in claim payment (settlement) patterns while paid loss plus case reserve data is also distorted by changes to case reserve levels.

Documentation provided to Oliver Wyman indicates that NCCI has considered the impact of the changes in Florida's workers compensation environment on data used to determine statewide rate level indication, and the process, judgments, and assumptions are reasonable from an actuarial perspective.

Currently, NCCI bases the rate level indication on paid loss plus case reserve experience and a modified paid loss approach where paid loss data is used through a specific reporting period, at which point paid loss plus case reserve data, is incorporated into the analysis. NCCI terms this latter approach the "adjusted" paid loss method.

Loss Development

Loss development factors (LDFs) measure the growth in losses associated with a group of claims over time. Claims are generally grouped by experience period, either policy year or calendar/accident year. LDFs are selected using some type of average of the most recent observations available. Such averages could include the most recent five observations, or the most recent five observations excluding the highest and lowest values, or the most recent three or two observations, etc. All of these averaging techniques are appropriate and reasonable in the context of the current and recent applications. NCCI has used an average of the three most recently available observations in the last three applications. This approach is reasonable.

Oliver Wyman also examined the method and calculation of what are termed the 19th to ultimate report LDFs. These factors estimate growth beyond a 19th report, the last report for which NCCI collects loss development data. The calculation and results are similar to NCCI practice in other states and are reasonable. However, it is not clear if the selected 19th to ultimate report LDFs are based on an average or simply selected. A preferred approach is to utilize an averaging mechanism of the available data points and use the same mechanism every year.

Premium Adjustment

For accident year analysis, calendar year earned premium is matched with loss experience. A number of adjustments to earned premium data are required to bring premium to current cost levels. These include an adjustment to remove premium generated by the expense constant, an adjustment to factor in historical rate changes, and an adjustment to remove the impact on premium of variations in the effect of the experience rating program. The adjustment procedure is a standard NCCI calculation in Florida and other states, and is reasonable.

Of note is what is termed off-balance. There is very little discussion of off-balance in the documentation provided to Oliver Wyman. The impact of the off-balance is material, and is discussed in the following section.

Off-Balance

Experience rating is the final step in determining the premium rate for a specific employer. Experience rating recognizes that the manual loss cost for a specific workers compensation classification is actually the average for all employers with payroll in that classification. Relative to the manual loss cost, the actual loss experience of some employers will be greater while for others actual loss experience will be lower. The purpose of the experience rating plan is to forecast how each individual employer will perform relative to the average for that employer's classification. The forecast is, conceptually, a very simple measurement. Each employer's recent actual loss experience is measured against what would have been expected based on the average for the employer's classification. The result of this measurement is the employer's experience modification. If an individual employer has greater than average loss experience for its classification, that employer is assigned an experience modification greater than 1.000 (also known as a debit modification). If an individual employer has lower than average loss experience, that employer is assigned an experience modification less than 1.000 (also known as a credit modification). If an individual employer is too small to be experience rated, that employer is assigned an experience modification of 1.000.

The statewide average experience modification is the average experience modification across all employers in a state. The statewide average experience modification is also known as the "off-balance" to the experience rating plan. The term off-balance is used because in theory, the statewide average experience modification should balance to 1.000. In practice, this means that total debits (additional premium) for greater than average loss experience from employers with debit (greater than 1.000) experience modifications would be equal to total credits (reduced premium) for less than average loss experience from employers with credit (less than 1.000) experience modifications. To the extent that the statewide experience modification does not average to 1.000, an "off-balance" is said to exist.

Off-balance must fluctuate over time, if only because of statistical variance, as the experience modification for each employer is a forecast based on each employer's historical experience and the historical experience of all employers in a specific classification. NCCI, as part of the ratemaking process, adjusts experience rating plan parameters to ensure that the off-balance in Florida is reasonably close to a selected target. The process of implementing such an adjustment is straightforward. NCCI will adjust underlying experience rating parameters to ensure that the selected target off-balance is achieved based on test calculations by NCCI.

To the extent that the measured off-balance in a specific experience period (policy year or calendar/accident year) differs from the target, an adjustment to the experience period premium is required. Consider a simple example using a fictitious policy year. Assume PY2010 has a measured off-balance of 0.920. NCCI selects a target off-balance of 0.960. This means that all else being equal, had the off-balance in PY2010 been measured at 0.960, there would have been 4.3% more premium collected in PY2010 because the average experience rating modification would have been 4.3% greater ($0.960/0.920 = 1.043$, or 4.3%). Conceptually, this example illustrates that off-balance adjustments are revenue neutral, meaning that to the extent an off-balance adjustment increases premium expected to be collected through the experience rating plan, manual rates are decreased by the same amount. The impact of the off-balance adjustment in the example above is to decrease the PY2010 loss ratio by 4.3%. If there had been an identical impact on PY2011, then all else being equal, the statewide rate level indication would have been 4.3% lower than the indication without the off-balance adjustment.

The selection of an off-balance target is as much a policy/political issue as it is an actuarial issue. Actuarial literature suggests that an experience rating plan should be balanced. NCCI uses an average off-balance target of 0.959. Had NCCI selected a target off-balance of 0.990, indicated rates would be approximately 3.2 % lower. The reason is very simple – increasing the target off-balance from 0.959 to 0.990 will increase, through the experience rating process, premium by 3.2%. Therefore, manual rates would have to be decreased by 3.2% to ensure that there is no net impact on revenue.

NCCI has argued in other jurisdictions that a lower target is necessary due to the poor performance of small employers. A lower target elevates manual rates and therefore premium charged to smaller employers, who generally will not benefit due to experience rating. Additionally, a potential issue for regulators is that increasing the target average off-balance from the current 0.959, even modestly, could create situations where some employers will swing from a credit mod (viewed favorably) to a debit mod (viewed unfavorably). This is especially important for the construction industry, where contracts possibly may not be awarded if a specific employer has an experience modification greater than some published benchmark, often 1.000.

Counter arguments would be that the smallest employers receive the least service from insurance carriers, and are therefore at a disadvantage. The impact of several percentage points on rate level potentially could have greater meaning to the smallest

employers as opposed to others. Additionally, from an actuarial perspective, it is questionable as to whether an employer's experience modification should be used for the purpose of awarding contracts. There are numerous variables underlying an employer's experience modification. Most notably is the published manual rate for a specific classification is, by definition, an average, and the fact that a specific employer in a specific classification has experience greater than the average does not mean that employer has an unsafe workplace.

Large Deductible and Standard Experience

NCCI analyzes loss experience generated by large deductible policies and loss experience generated by standard policies separately. The results from each analysis are combined to produce a statewide rate level indication. This approach is reasonable.

Benefit Changes

Adjustment of Losses to Current and Expected Future Benefit Levels

Historical losses, for the purpose of the experience indication and the calculation of trend, must be adjusted to reflect changes in benefit levels at the time the losses were incurred to the period during which the prospective rates will be in effect. The NCCI calculation is a standard actuarial procedure.

Trend

Trend forecasts the anticipated annual percentage change in loss ratios. Loss ratio trends represent the combined effect of changes in the incidence of claims over time, or frequency, as well as the change in the average cost per claim, or severity, over time.

Trend, as respects workers compensation loss ratios, measures the change in loss experience relative to wage inflation. That is, a 0% loss ratio trend does not imply that workers compensation costs are not increasing. Rather, a 0% loss ratio trend implies that workers compensation costs are increasing at the same rate as wages. A loss ratio trend greater (less) than 0 implies workers compensation costs are increasing at a rate greater (less) than wage inflation.

NCCI conducted a detailed analysis of trend factors separately for medical and indemnity loss experience. Concerns regarding the judgmental selection of trend were discussed earlier in this report. As noted earlier, NCCI trend selections for the most recent applications were reasonable.

Loss Adjustment Expense

LAE is calculated as a ratio to loss, and is the sum of two components, all other expense (AOE) and defense and cost containment expense (DCCE). Countrywide ratios of AOE and DCCE to loss are calculated. The countrywide ratio of AOE is assumed to apply in Florida. The countrywide ratio of DCCE to loss is adjusted by a relativity of Florida experience to countrywide experience. The relativity is based on a comparison of the ratio of paid DCCE to paid loss in Florida to the same calculated using countrywide data. The approach in Florida is reasonable.

Other Insurance Company Expenses

Other insurance company expenses include the provisions for production expense and general expense. The provision for production expense includes commission and brokerage costs, and other acquisition costs. The methodology used by NCCI is reasonable. The resulting provisions generally do not vary by significant amounts over time.

An important consideration in determining the production and general expense provisions is factoring back in the impact of the premium discount program. The data underlying the calculation of these provisions generates production and general expense provisions *after* the impact of premium discount. The premium discount program essentially gives a volume discount to large insureds. However, the starting point must be undiscounted premium and therefore the production and general expense provisions *before* application of premium discount are required. NCCI calculates the impact of the premium discount program and adds these components to the provisions calculated above. The calculation and approach is reasonable.

Taxes and Assessments

Taxes and assessments are based on actual charges in Florida. The only exception is the miscellaneous tax provision of 0.30%. The miscellaneous tax provision is a catch all provision for taxes, licenses and fees not specifically provided for. It is common ratemaking practice to include this provision, and the value of 0.30% is not unreasonable.

Profit and Contingencies Provision

The profit and contingencies provision provides the insurance company the required return on equity, after taking into account the investment income earned on premium payments until losses and expenses are actually paid. The approach and model used by NCCI is a commonly applied approach. While Oliver Wyman may disagree with certain judgments and assumptions in the modeling procedure, these are issues of either policy or professional judgment, not of actuarial reasonableness.

Distribution to Industry Groups

NCCI distributes the statewide rate change to each of the five industry groups based on the relative loss experience of each individual industry group. The distribution is such that the weighted average final change to each industry group is equal to the statewide rate change. The industry groups are Manufacturing, Contracting, Office and Clerical, Goods and Services, and Miscellaneous. The distribution relies on a measurement, for each industry group, of actual losses to expected losses for each individual industry group. The process results in industry group differentials. The differentials are equivalent to “experience modifications” for each industry group, measuring the loss experience of each industry group relative to expectations. If each industry group performed exactly as expected, then the industry group differentials will all be 1.000, and each industry group will receive a rate change equal to the statewide average.

NCCI calculates the industry group differentials by adjusting actual losses for trend, development, experience rating, etc. Additionally, NCCI uses a credibility procedure to limit the impact of the procedure on a specific industry group with relatively low loss volume. In Florida, however, all industry groups are fully credible. The procedure is identical to procedures used in other NCCI states that Oliver Wyman has examined, and is reasonable.

Industry group differentials are not expected to vary materially from 1.000, especially for larger states such as Florida. This was the case for applications for rates effective January 1, 2012 and January 1, 2013. However, in the most recent application, for rates effective January 1, 2014, the industry group differential for manufacturing was 0.958, meaning actual experience was 4.2% less than expected experience. This value is unusually low. Additionally, the industry group differential for contracting was 1.025, meaning actual experience was 2.5% greater than expected. This value is somewhat higher than usual. For comparison purposes, the industry group differentials for office and clerical, goods and services, and miscellaneous industry groups were 0.993, 1.001, and 0.999, respectively. These values are what would typically be expected, and are what were observed for all five industry groups in prior applications.

It is entirely possible that the outlying values for the manufacturing group and contracting group are one-time occurrences and the result of statistical fluctuation, or possibly due to unexpected experience in a single or small number of individual classifications. However, the unusual values could also be due to a calculation or data error (both unlikely) or an unexpected result of the new class ratemaking procedure. Regardless as to the reason, NCCI did not note or comment on the unusual values in the industry group differentials. If outlying values emerge in future applications, it would be prudent for NCCI to examine the issue in detail to ensure the integrity of the class ratemaking calculations.

Distribution to Individual Classifications

Introduction

The final step in the ratemaking process is the distribution of the industry group changes to the individual workers compensation classifications comprising each industry group. NCCI bases the distribution on the loss experience of each individual classification. As noted earlier, the approach for industrial classifications is a rate relativity system. NCCI's application gives the appearance of a direct calculation of rates for individual classifications, but this is not precisely the case. Rather, the relative behavior of the loss experience of an individual classification (to the loss experience of all classifications in a specific industry group) is the primary determinant of the final rate for that classification.

Rates for individual classifications are calculated in a four step process:

Calculation of the pure premium

The pure premium is the expected cost of indemnity and medical benefits per \$100 payroll during the period when rates will be in effect.

Conversion of the pure premium to a manual rate

The provisions for expense and profit (and contingencies) are added to the pure premiums to produce a manual premium rate.

Application of swing limits and correction factors

Rate changes to individual classifications are limited to a range of +15% to -15% around the industry group change. A final adjustment using what is termed the test correction factor is ensures that the average rate change to all classifications in an industry group equals the product of the statewide rate change and the calculated industry group differential.

Disease Loadings

Loadings for diseases unique to specific classifications are applied.

Class Ratemaking

The overall process described above is the same general process NCCI has used for many years. The process is reasonable and actuarially sound.

However, there have been material changes to the calculation of the pure premiums for individual classifications. Oliver Wyman has reviewed these changes in detail for regulators in other jurisdictions. Oliver Wyman has opined that the changes implemented by NCCI represent a material improvement to class ratemaking. This opinion has not changed. The process NCCI uses to determine rates for individual

classifications is reasonable, actuarially sound, and a material improvement over the prior methodology.

Nevertheless, Oliver Wyman has expressed concerns regarding certain aspects of the class ratemaking methodology NCCI currently uses in Florida. The current NCCI process is as follows:

1. Individual claims are limited to \$500,000
2. Limited losses (reflecting the \$500,000 limit) are developed to an ultimate (final) cost basis using **limited development factors** calculated separately for each group, likely to develop and not likely to develop
3. Limited ultimate losses are adjusted to an unlimited basis using a theoretical ratio of unlimited losses to limited losses based on size of loss distributions underlying the excess loss factors (factors included in the application) based on the *hazard group* to which the individual classification belongs

Oliver Wyman's primary concern is the substitution of theoretical excess loss ratios for actual data to provide for losses excess the \$500,000 per claim limit. This substitution is part of the overall change to class ratemaking and represents a material departure from past practice. Past practice was to use undeveloped empirical ratios of limited losses to unlimited losses for this adjustment. The incorporation of excess loss ratios and hazard grouping into the class ratemaking process is a material departure from past practice as respects the utilization excess loss ratios and hazard grouping. In the past, excess loss ratios and hazard grouping were parameters affecting primarily retrospectively rated and large deductible policies. Oliver Wyman's specific concerns relate to the following:

Are the hazard groupings appropriate for class ratemaking?

The hazard grouping system was originally designed for the purpose of retrospective rating. Currently there is a seven hazard group system in place, A through G. It is possible that excess loss experience supports only four clearly defined hazard groups for class ratemaking.

Are the excess loss ratios by hazard group supported by empirical data?

Actual empirical data should be examined to test the excess ratios based on theoretical loss distributions by hazard group.

Is the occurrence of extraordinarily large claims (for example, claims in excess of \$2 million) predictable by hazard group?

This is a material issue. Claims in excess of \$2 million are rare. Claims in excess of \$5 million are extraordinarily rare. The question is whether the occurrence of these claims is predictable by hazard grouping. This is another item that may be tested with empirical data. If empirical data does not support the predictability of extraordinarily large claims, then the costs of these claims should be socialized across all classifications.

Florida is a very large state with a substantial volume of credible loss experience. Oliver Wyman recommends that the FLOIR request NCCI to provide a detailed robust analysis of empirical experience in Florida that supports:

- the hazard groupings currently used for class ratemaking;
- the excess ratios used for class ratemaking; and
- the predictability of extraordinarily large claims by hazard group to determine whether costs above a specific limit should be socialized across all classifications.

Note that this suggestion to empirically test these elements of the new class ratemaking methodology are not mean to imply that there are any actuarial issues with the approach. Rather, the empirical test will either confirm all elements of the approach, or generate information that could be used to adjust the approach to reflect actual empirical data.

Application of Swing Limits and Test Correction Factors

Currently in Florida, the rate change to an individual classification is limited to a range within 15% of the change to the industry group to which the classification belongs. For example, if a specific industry group has a 12% rate increase, the rate change for each classification in that industry group can be no greater than 27% ($= 12\% + 15\%$) or less than -3% ($= 12\% - 15\%$). Because of the limiting procedure, as well as other processes within the ratemaking calculation, the resulting average rate change for all classifications in an industry group may not precisely equal the required industry group change. This is addressed by calculation of a test correction factor (TCF) that is applied to each individual classification rate to ensure that the required industry group change is achieved. The calculation of the TCF is an iterative procedure, because no individual classification rate is permitted to violate the swing limit test.

Given that the impact of implementing swing limits is offset by a test correction factor (discussed earlier), the utilization and implementation of the swing limits by NCCI is actuarially sound. The precise value of the swing limit is primarily a matter of policy with the regulator, and is dependent on the size of the range of swing in class rates that will be accepted in a specific jurisdiction.

Disease Loadings

The last step is addition of specific disease loadings for individual classifications to which disease loading apply.

Rating Values

Oliver Wyman's examination was limited to the examination of certain rating values. The calculation of these factors was not examined in detail. Rather, the factors were examined for reasonableness:

Expected Loss Rates D Ratios Excess Loss Factors

The values of these factors appear to be reasonable, notwithstanding concerns regarding the use of excess loss ratios (which are the basis for the excess loss factors) for class ratemaking.

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Documentation and Information

The following is list of documents utilized for the purpose of this report. In addition to documents listed below, Oliver Wyman may have relied on internal data sources, insurance industry data sources, or other information not specifically listed below.

NCCI Annual Statistical Bulletins published in 2013, 2012, 2010, 2005, 2004, and 2003.

Florida Workers Compensation Rate Application and related documents for rates effective January 1, 2014

- Filing Documents
- Hearing Documents
- Interrogatories and Correspondence

Florida Workers Compensation Rate Application and related documents for rates effective January 1, 2013

- Filing Documents
- Hearing Documents
- Interrogatories and Correspondence

Florida Workers Compensation Rate Application and related documents for rates effective January 1, 2012

- Filing Documents

Prior Peer Review Report published January 21, 2010
American Actuarial Consulting Group

Miscellaneous Other Documents

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Distribution and Use

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Considerations and Limitations

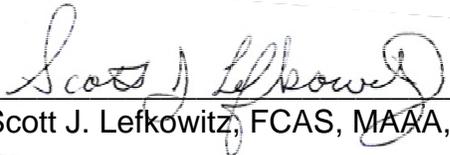
- **Data Verification (Claim and Exposure)** – For our analysis, we relied on data and information provided by NCCI without independent audit. We have assumed that the data provided is both accurate and complete. The results of our analysis are dependent on this assumption. If this data or information is inaccurate or incomplete, our findings and conclusions may need to be revised.
- **Rounding and Accuracy** – Our models may retain more digits than those displayed. In addition, the results of certain calculations may be presented in the exhibits with more or less digits than would be considered significant. As a result, it should be recognized that (i) there may be rounding differences between the results of calculations presented in the exhibits and replications of those calculations based on displayed underlying amounts, and (ii) calculation results may not have been adjusted to reflect the precision of the calculation.
- **Unanticipated Changes** – Our conclusions are based on an analysis of the data and on the estimation of the outcome of many contingent events. Future costs were developed from the historical claim experience and covered exposure, with adjustments for anticipated changes. Our estimates make no provision for extraordinary future emergence of new classes of losses or types of losses not sufficiently represented in historical databases or which are not yet quantifiable.
- **Uncertainty Inherent in Projections** – While this analysis complies with applicable Actuarial Standards of Practice and Statements of Principles, users of this analysis should recognize that our projections involve estimates of future events, and are subject to economic and statistical variations from expected values. We have not anticipated any extraordinary changes to the legal, social, or economic environment that might affect the frequency or severity of claims. For these reasons, no assurance can be given that the emergence of actual losses will correspond to the projections in this analysis.
- **Other Issues** – Any issues not specifically addressed in this report should not be construed as acceptance by Oliver Wyman of the methodologies and judgments associated with those issues.

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Acknowledgement

I, Scott J. Lefkowitz, am a Partner for Oliver Wyman Actuarial Consulting Inc. I am a member of the American Academy of Actuaries, a Fellow of the Casualty Actuarial Society, and a Fellow of the Conference of Consulting Actuaries.

I meet the Qualification Standards of the American Academy of Actuaries to render the actuarial opinion contained herein.



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