OLIVER WYMAN

ACTUARIAL PEER REVIEW

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

STATE OF FLORIDA
OFFICE OF INSURANCE REGULATION

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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]

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

1. Methodologies, thought processes, judgments and assumptions used to determine statewide rate level changes:
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.
4. Methodologies, thought processes, judgments and assumptions used to determine the impact of legislative changes, benefit-level adjustments, and legislative proposals.[2,3,4]

[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] Since implementation of SB 50A on October 1, 2003, there have been our material changes to case law due to court decisions and one material legislative change affecting workers compensation costs in Florida:
- Florida Supreme Court Decision, *Emma Murray v. Mariner Health and ACE USA,* October 23, 2008.
- HB 903, which reversed the legislative impact of the Murray Decision, effective July 1, 2009.
- Florida Supreme Court Decision, *Marvin Castellanos v.Next Door Company* April 28, 2016.
- Florida Supreme Court Decision, *Bradley Westphal v. City of St. Petersburg* June 9, 2016.

[3] Minor benefit level changes implemented in Florida periodically include adjustments to physician fee schedules, hospital fee schedules, and changes to the maximum weekly benefit.

[4] SB 662 became effective July 1, 2013. The primary intent of the legislation was to control the cost of repackaged or relabeled prescription medications when dispensed by physicians. NCCI estimated a 1% savings on medical benefits which translated into an overall savings of 0.7%.

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.[5] NCCI maps classifications into five industry groups.[6] 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 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.[7] The statewide change is based on a measurement of actual loss experience against the provision for loss experience underlying premium rates. To the extent that actual loss experience has been greater than (or less than) the provision for loss experience underlying premium rates, premium rates will be increased (or decreased). Additionally, provisions for expense and underwriting profit are recalculated based on current data. To the extent that there is a greater (or lower) need for expenses and underwriting profit, premium rates will be increased (or decreased).

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. In many respects, allocation of the statewide rate change to the five industry groups is an exercise in experience rating at the industry group level. Actual loss experience by industry group is measured against expected loss experience. If the measurement shows that for a

[5] 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 that 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 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.

[6] The five industry groups are:
Manufacturing, Contracting, Office and Clerical, Goods and Services, Miscellaneous

[7] NCCI collects, tabulates, checks, and edits combined statewide workers compensation experience 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.

specific industry group actual loss experience exceeded expected, that industry group is allocated a rate level change greater than the statewide average. Similarly, if the actual loss experience for a specific industry group is less than the expected loss experience, that industry group is allocated a rate level change less than the statewide average. For example, in NCCI's filing for revised workers compensation rates and rating values to be effective January 1, 2020 as revised to reflect the order of the FLOIR, NCCI calculated a 7.5% decrease to statewide rate level. The results of the distribution of the proposed statewide 7.5% decrease to each industry group is summarized below:

Manufacturing	8.4%	decrease
Contracting	9.4%	decrease
Office and Clerical	7.0%	decrease
Goods and Services	6.6%	decrease
Miscellaneous	6.0%	decrease

It is clear that Manufacturing and Contracting performed better than the statewide average because greater decreases than the statewide average 7.5% decrease were allocated to these two industry groups. Conversely, Office and Clerical, Goods and Services, and Miscellaneous all performed worse than the statewide average because smaller decreases than the statewide average 7.5% decrease were allocated to these three industry groups.

The weighted average of the rate changes for each of the five industry groups must equal the statewide rate change calculated in Step 1. The allocation to industry groups relies primarily on Workers Compensation Statistical Plan (WCSP) Data.[8]

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 as well. 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.[9] Rather, the starting point in the NCCI ratemaking process is current manual rates. The process described in steps

[8] 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.

[9] 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

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. Step 2 measures the relative change between industry groups, and step 3 measures the relative change between individual classifications within each industry group. 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 (or decrease) by amounts significantly greater than 0%.[10]

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 programs[11], and other programs that individual insureds may voluntarily elect to subscribe to.

and repair, stevedoring, etc. NCCI calculates rates for F-classes somewhat differently than for industrial classifications.

[10] There are limits as to how much the rate for an individual classification can change. 15% represents what is referred to as the swing limit. The swing limit is the maximum allowable change (up or down, relative to the industry group change) in any year to the rate for a single classification.

[11] 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.

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 documentation from the FLOIR.
2. Discuss questions and concerns with the FLOIR.[12]
3. Issue Draft Report to FLOIR.
4. Consider comments from FLOIR and NCCI.
5. Issue Final Report

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 with the goal of identifying 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.

[12] Oliver Wyman's contact during the course of this review was Mr. Greg Jaynes, ACAS, MAAA, Actuary, Florida Office of Insurance Regulation.

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Executive Summary

Principal Conclusions

1. **The NCCI ratemaking process (in Florida[13]) 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

   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. Additionally, while Oliver Wyman examined certain rating values 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.

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.

[13] This report addresses the 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.

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. 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.

4. NCCI selects annual trend factors that are greater than indicated by more recent historical data.

a. The behavior of indemnity loss ratios since 2010 indicates an average long-term trend of -4.1%. Declines in indemnity loss ratios over the past two years were -13.4% from PY2015 to PY2016, and -3.9% from PY2016 to PY2017. Yet NCCI increased the annual indemnity trend from -3.5% to -2.5% (an increase because the selected trend is less negative). This is not supported by the observed experience.

b. The behavior of medical loss ratios since 2010 indicates an average long-term trend of -4.0%. Declines in medical loss ratios over the past two years were -10.4% from PY2015 to PY2016, and -4.9% from PY2016 to PY2017. Yet NCCI continues to use an annual medical trend of -2%, significantly greater (less negative) than observed experience.

c. The behavior of total (medical and indemnity combined) loss ratios since 2010 indicates an average long-term trend of -4.0%. Declines in total loss ratios over the past two years were -11.4% from PY2015 to PY2016, and -4.4% from PY2016 to PY2017. Yet NCCI's individual selections for indemnity and medical loss ratio trends result in an annual total trend of -1.8%, significantly greater (less negative) than observed experience, described above.

d. Claim frequency, after many years of decline, was essentially unchanged from PY2016 to PY2017. There was no discussion of this observation in the documentation provided.

5. Trend measurements are likely distorted by the impact of Castellanos.

Recommendations

1. NCCI selected annual trends are greater than those indicated by the historical loss ratios. The largest concern is the long-term potential impact of the Castellanos decision on loss experience. The actual impact of Castellanos is a critically important value for the trend calculation. To the extent that the actual impact of Castellanos is greater than the estimated impact, PY loss ratios adjusted to reflect Castellanos will be understated and measured trend will be overstated. To the extent that the actual impact of Castellanos is less than the estimated impact, PY loss ratios adjusted to reflect Castellanos will be overstated and measured trend will be understated.

a. NCCI should conduct a robust study to measure the actual impact of Castellanos for the purpose of more accurate trend measurements.

b. Currently, NCCI views the impact of Castellanos as a single impact at a single point in time, that is, April 28, 2016. In fact, Castellanos will reach back and impact prior policy years, where PY2015 will be the most affected, PY2014 will be less affected, etc. Without adjustment, the impact of Castellanos on these older policy years will overstate the loss ratios for these older policy years and distort the trend measurement. The recommended study, in addition to estimating the full prospective impact of Castellanos based on available loss experience, should estimate the impact of Castellanos on prior policy years for the purpose of measuring trend. For example, the current approach adjusts for the full impact of Castellanos on PY2015 which we know to be incorrect. PY2015 is only partially affected by Castellanos. Adjusting PY2015 for the full impact of Castellanos will overstate the adjusted PY2015 loss ratios and distort the trend measurement.

2. Oliver Wyman's primary concern with the class ratemaking methodology implemented in 2010 is the substitution of theoretical excess loss ratios for actual data to provide for losses in excess of the $500,000 per claim limit. This concern has been addressed in past reports and will not be repeated here. However, an additional concern is the fixed $500,000 per claim limit. Over time, the impact of inflation will increase the volume of loss experience above the limit and decrease the volume of loss experience below the limit, effectively giving more weight to the excess ratios, and less weight to empirical data. Oliver Wyman recommends that NCCI report to the FLOIR, based on Florida data, what the impact of keeping the limit fixed over time has been on the portion of available data below the limit, as well as what the potential impact has been, if any, on the differentials between classification rates. If the impact is

measurable, consideration should be given to inflating the limit over time to reflect the impact of severity inflation.

3. **Embedded in the credits for small deductibles and coinsurance is a 0.95 safety factor. The purpose of the safety factor is to compensate insurers for the risk that employers who elect to participate in these programs do not reimburse insurers for the applicable deductible or coinsurance charges. The safety factor decreases the credits (and therefore increases the premium charged) for employers who elect to participate in these programs. Therefore, the lower the safety factor, the lower the credit, and the higher the premium charge. The safety factor is therefore a contingency provision in addition to what is already included in the underwriting profit and contingencies provision underlying rates. The filing provided no support or empirical data. Oliver Wyman recommends that NCCI provide support for this factor on an annual basis. Without this support, we recommend that the FLOIR eliminate the safety factor.**

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

NCCI uses policy year experience in the calculation of the statewide rate change.

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 2017 generate losses associated with policy year 2017 (PY2017). 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.[14] 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 PY2017 is the total premium associated with policies written during 2017. 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.[15] 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.[16]

Premium to Loss Experience Matching: Policy year experience maximizes the matching of losses to the premium insuring those losses. For PY2017, 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 PY2016 as an example, a policy written on January 1, 2016 will provide coverage for claims with dates of loss from January 1, 2016 through December 31, 2016. On the other hand, a policy written on December 31, 2016 will provide coverage for claims with dates of loss from December 31, 2016 through December 30, 2017. Therefore, approximately half the claims associated with PY2016 will have dates of loss in 2016. The other half will have dates of loss in 2017. The average date of loss is

[14] 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 the cost of medical benefits associated with a workers compensation injury are payable for the lifetime of the claimant and that permanent total disability income benefits are payable to age 75 in Florida (or for a maximum of five years from the determination of permanent total disability for claimants injured over the age of 70.

[15] 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).

[16] 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, a factor of 1.021 multiplied against policy year premium provides an estimate of the impact of future audit adjustments.

approximately December 31, 2016.[17]

Policy Year Data Available for the January 1, 2020 Application: The two most recent policy years available for use in the most recent rate application are PY2016 and PY2017, both with data valued as of December 31, 2018. December 31, 2018 is 12 months after the last possible date of loss (December 31, 2017) for a claim in PY2016. PY2016, valued as of December 31, 2018, is therefore said to be at a *second report*. Analogously, December 31, 2018 is the last possible date of loss for a claim in PY2017. PY2017, valued as of December 31, 2018, is therefore said to be at a *first report*.

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.

Currently, NCCI bases the rate level indication on an average of the paid loss plus case reserve experience approach and the paid loss approach. NCCI uses paid loss data to a 19th report, after which a calculated loss development factor for a 19th to ultimate value is applied. This is the same approach as used for paid loss plus case reserve data. NCCI's approach is consistent with prior applications and is reasonable.

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

[17] 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 this is not the case, the average date of loss is generally close to, but not exactly equal to, December 31. While a relatively minor concern, NCCI appropriately addresses this issue as applicable within the rate level calculation.

applications. NCCI has used an average of the three most recently available observations, which is reasonable. However, in the filing for rates effective January 1, 2020, NCCI changed the loss development selection method for paid loss data to reflect a more recent increase in observed paid loss development. A two-year average is actuarially reasonable, though it does represent a material change to methodology and acts to only slightly increase the rate level calculation. This raises the question as to whether the change was truly necessary. Nevertheless, given this change, it is important to maintain this two-year average. A material concern is that if observed paid loss development begins to decrease, bias would be introduced into the rate level calculation if NCCI immediately reverts back to the three-year average, prior to stabilization of loss development factors at the new lower level. That approach would create a situation where the measurement was changed to a two-year average to more quickly recognize the observed increase to paid loss development, but when paid loss development begins to decline, going back to the three-year average immediately would delay recognition of lower development. These comments illustrate the concern with changing selection methods.

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. The selected value is an all year average of available calculations.

Benefit Changes

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. There have been no material changes to benefit levels[18] since the Castellanos decision (April 28, 2016) and the Westphal decision (June 9, 2016). Oliver Wyman has reviewed[19] NCCI's calculation of the impact of these changes and found them to be reasonable at that time. However, the measured impact of the Castellanos decision is critically important to the proper measure of trend. With any law pricing, to the extent that the pricing is less than or greater than the actual impact, loss ratios subsequent to the law change will reflect the difference between the actual impact and the estimated impact. This will have a material impact on trend measurements, as the difference between the measured impact and the actual impact will affect the trend calculations. This is especially true with the Castellanos decision, where the impact will reach back to prior policy years.

[18] There have been changes to medical fee schedules in Florida, resulting in relatively small benefit level increases.

[19] Oliver Wyman reviewed these calculations on behalf of other clients with a vested interest in the cost of workers compensation claims in Florida. Oliver Wyman did not review these calculations during the course of this assignment.

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.

As respects workers compensation loss ratios, trend 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, and judgmentally selected annual trend factors of 0.975 for indemnity loss ratios and 0.980 for medical loss ratios. The primary concern is that the selected trend values are materially greater than the annual trends implied by empirical data. This is illustrated by the following chart, which shows historical loss ratios and calculated trends for indemnity, medical, and combined loss ratios. Calculated trends are based on various exponential trend models using the most recent 5 loss ratios, 6 loss ratios, etc., up to 15 years of data.

Policy Year	Indemnity Loss Ratio	Medical Loss Ratio	Combined Loss Ratio
2003	0.676	1.205	1.882
2004	0.574	1.064	1.637
2005	0.505	0.971	1.476
2006	0.428	0.817	1.245
2007	0.437	0.826	1.263
2008	0.444	0.835	1.279
2009	0.441	0.857	1.297
2010	0.451	0.891	1.342
2011	0.435	0.881	1.316
2012	0.392	0.833	1.225
2013	0.386	0.821	1.207
2014	0.391	0.819	1.210
2015	0.390	0.779	1.170
2016	0.338	0.698	1.036
2017	0.327	0.664	0.991
15 Year Model	-3.7%	-2.7%	-3.1%
14 Year Model	-3.1%	-2.3%	-2.6%
13 Year Model	-2.7%	-1.9%	-2.2%
12 Year Model	-2.5%	-1.7%	-2.0%
11 Year Model	-2.9%	-2.1%	-2.4%
10 Year Model	-3.4%	-2.6%	-2.9%
9 Year Model	-3.7%	-3.3%	-3.4%
8 Year Model	-4.1%	-4.0%	-4.0%
7 Year Model	-4.0%	-4.4%	-4.2%
6 Year Model	-3.6%	-4.7%	-4.3%
5 Year Model	-4.6%	-5.7%	-5.3%
NCCI SELECTED	-2.5%	-2.0%	-1.8%

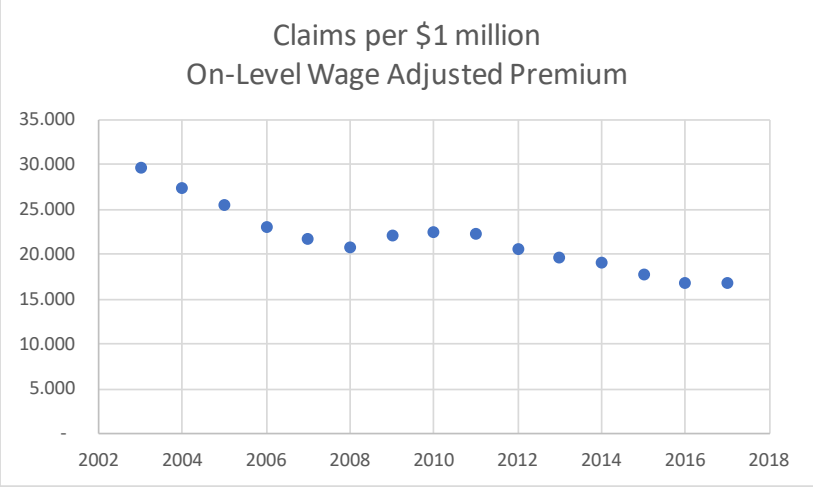
The following chart shows the year to year changes for the most recent five years:

Policy Year	Indemnity Loss Ratio	Year to Year Change	Medical Loss Ratio	Year to Year Change	Combined Loss Ratio	Year to Year Change
2012	0.392		0.833		1.225	
2013	0.386	-1.4%	0.821	-1.5%	1.207	-1.5%
2014	0.391	1.2%	0.819	-0.3%	1.210	0.2%
2015	0.390	-0.1%	0.779	-4.8%	1.170	-3.3%
2016	0.338	-13.4%	0.698	-10.4%	1.036	-11.4%
2017	0.327	-3.2%	0.664	-4.9%	0.991	-4.4%
NCCI SELECTED	-2.5%		-2.0%		-1.8%	

NCCI's prior trend selections (in the filing for rates effective January 1, 2019) were -3.5% for indemnity loss ratios and -2.0% for medical loss ratios. Policy year 2017 data, the "new" policy year data available since the prior filing, shows loss ratio declines greater than the prior selected trend values. This observation raises questions as to the justification for increasing the trend selection for indemnity loss ratios from -3.5% to -2.5%.

It is clear from the indemnity loss ratio data that the decline to the 2016 loss ratio was significant and is the primary driver of short term trend measurements for indemnity. This is why shorter term trend measurements (5 years, for example) could be understated. However, longer term trend measurements, up to 10 years, still show calculated annual trend values materially lower than NCCI's selections. Equally, if not more importantly, loss ratios for PY2017 show continued significant decline. To a lesser degree, the same comment applies to medical loss ratios.

NCCI correctly points out that claim frequency, the longer term decline of which has been a primary contributor to negative loss ratios trends, was almost unchanged from policy year 2016 to policy year 2017. This is illustrated in the following chart:



There was no discussion in the documentation provided regarding the underlying reason as to why the long term decline to claim frequency (uninterrupted since 2010) suddenly stopped.

The fundamental issue with the trend measurements is the impact of the Castellanos decision on new claims AND older claims. NCCI has documented the uncertainty regarding the long-term impact of the Castellanos decision and has reported on increasing loss development factors and other issues. The problem, however, is that Castellanos is likely distorting the trend measurements. If the initial estimated impact of Castellanos (which was reasonably calculated) is too low, then older policy years adjusted to reflect the impact of Castellanos will be understated (too low), and measured trend will be overstated (because older policy years will be at lower values than they should be, pushing the trend line down for older policy years, and therefore increasing the measured annual trend to loss ratios). If the initial estimated impact of Castellanos is too high, then older policy years adjusted to reflect the impact of Castellanos will be overstated (too high), and measured trend will be understated (because older policy years will be at higher values than they should be, pushing the trend line up for older policy years, and therefore decreasing the measured annual trend to loss ratios).

The measured impact of Castellanos is treated as a point impact, that is, on April 28, 2016, all claim costs increased by the estimated impact. This is not reality. NCCI has correctly stated that Castellanos will impact not only new claims, but old claims as well. Open claims with dates of loss closest to the decision date will be affected the most. As one moves back in time, the impact will decline because open claims from older policy years will be much further into their lifecycle, decreasing the impact of Castellanos. Additionally, for older policy years, there are not as many open claims. So the impact of Castellanos will be greatest for PY2016, less so for PY2015, etc. The impact of Castellanos on these older policy years will also affect and distort the trend measurement. Consider that the current adjustment procedure assumes that PY2015 will receive the full impact of Castellanos. However, we know that this is not the case because Castellanos did impact PY2015. By applying the full impact of Castellanos to PY2015, the loss ratio for PY2015 will be overstated, which will impact the trend measurement.

The best way to address this situation would be to conduct a robust study that measures the actual impact of Castellanos on PY2017 through PY 2013. These measured impacts could then be used to adjust historical data for the purpose of obtaining an undistorted trend measurement.

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). 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.

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 general processes used to determine this provision are generally economic in nature and therefore outside the scope of this review. However, the resulting provision is reasonable based on Oliver Wyman's experience.

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 is the case with this application.

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 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 and is reasonable and actuarially sound. With respect to the detailed calculation of pure premiums underlying the rates for individual classifications, NCCI implemented material changes approximately five years ago. Oliver Wyman has opined in past peer reviews that these changes represented a material improvement to class ratemaking. This opinion has not changed. The NCCI class ratemaking methodology is reasonable and actuarially sound.

Oliver Wyman has expressed concerns regarding the substitution of theoretical excess loss ratios for actual data to provide for losses in excess of the $500,000 per claim limit,

which is part of the changes to class ratemaking implemented by NCCI. While this approach is reasonable from an actuarial perspective, there is a concern regarding the $500,000 limit, which has been fixed since implementation of the changes and is not adjusted annually for inflation. Therefore, with the passage of time, a greater portion of class experience (due to inflation) will be above $500,000. The impact is that over time, the relative weight of excess ratios for costs above $500,000 in the calculation of class rates will increase, and the relative weight of empirical loss experience below the $500,000 limit will decrease.

Application of Swing Limits and Test Correction Factors

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 in the industry group 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. The TCF ensures that the impact of using swing limits is revenue neutral. Therefore, the implementation of swing limits by NCCI is actuarially sound. The precise value of the swing limit, or even the use of swing limits at all, 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.

Note that the calculation of excess loss factors was changed in a procedure termed the excess ratio curve refresh. Oliver Wyman examined this procedure on behalf of other jurisdictions and found it to be reasonable.

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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

Florida Workers Compensation Rate Application and related documents for rates effective January 1, 2020
- Filing Documents
- Hearing Documents
- Interrogatories and Correspondence

Florida Workers Compensation Rate Application and related documents for rates effective January 1, 2019
- Filing Documents
- Hearing Documents
- Interrogatories and Correspondence

Miscellaneous Other Sources

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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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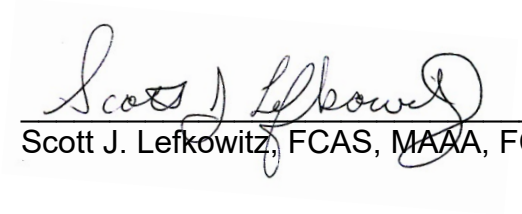
Acknowledgement

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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