OLIVER WYMAN

EXAMINATION OF PROPOSED WORKERS COMPENSATION ADVISORY LOSS COSTS

COLORADO DIVISION OF INSURANCE

PROPOSED EFFECTIVE DATE: JANUARY 1, 2013

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Acknowledgment of Qualification

I, Scott J. Lefkowitz, am a Partner of 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.

Scott J Lefkowitz

Scott J. Lefkowitz, FCAS, MAAA, FCA

I, Steven G. McKinnon, am a Senior Consultant of 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.

Steve McKinnon

Steven G. McKinnon, FCAS, MAAA, FCA

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Background

Scope of Assignment

The Department of Regulatory Services, Division of Insurance, State of Colorado (the Division), is the insurance regulatory authority for the State of Colorado. The Division is seeking fair workers compensation rates and benefits for the citizens of Colorado by maintaining a vigorous and competitive workers compensation insurance market. The Division has engaged Oliver Wyman Actuarial Consulting, Inc. (Oliver Wyman) to assist in a review of the application for revised Colorado workers compensation loss costs and rating values effective January 1, 2013, submitted by the National Council on Compensation Insurance, Inc. (NCCI). Specifically, Oliver Wyman has been requested to:

1. To determine whether the rates and rating values meet the requirements of Part 4 of Article 4 of Title 10, C.R.S.

2. To conduct whatever discussions, with NCCI, Oliver Wyman finds necessary to fully understand the data, procedures, methodologies, and conclusions proposed by NCCI.

3. To participate in any conference call(s) coordinated by the DOI regarding this filing.

4. To examine and opine on the appropriateness of the data, procedures, methodologies, and conclusions proposed by NCCI.

5. To provide alternative recommendations where Oliver Wyman does not agree with NCCI’s proposed data, methodologies or conclusions.

6. To provide a written report summarizing the results of Oliver Wyman’s analysis and recommendations.

7. To provide written and oral testimony regarding our analyses at the public hearing that will afford interested parties the opportunity to comment on NCCI's filing.

8. To identify and evaluate any material change in methodology proposed by NCCI.

NCCI Ratemaking Process

The final result of the NCCI ratemaking process is a revised loss cost[1] for each of over 500 individual workers compensation employer classifications. Each classification is mapped into one of five industry groups[2] as well as into one of seven hazard groups.[3] A loss cost is calculated for each individual classification based on 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. Additionally, the loss cost of each classification is impacted by the hazard group to which it belongs.[4]

Individual classification experience includes the most recently available Colorado specific loss experience as well as countrywide loss experience. To the extent that Colorado loss experience for an individual classification is not of sufficient volume to credibly determine the loss cost for that classification, it is supplemented with countrywide loss experience.[5]

The NCCI methodology employed in Colorado (as well as in most, if not all, other states in which NCCI operates) is composed of four general steps:

Step 1: Calculation of the Statewide Average Change to Loss Costs

Statewide data for all workers compensation classifications combined is used to determine the statewide change. This step relies primarily on what is known as Aggregate Financial Call data.[6] Contributing elements to the statewide change include:

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[1] *In Colorado, the loss cost provides for the cost of workers compensation benefits and claim adjustment expenses. Loss costs do not provide for the cost of insurance company expenses and profit. Individual insurance companies factor in company specific provisions for expenses (other than claim adjustment), profit, contingencies (a charge that compensates insurance companies for the risk that actual loss experience will be greater than what is expected), as well as a credit for investment income earned on premium until losses and expenses are actually paid. Companies file the combined values as rates with the Division of Insurance. In this respect, the term "ratemaking" in Colorado, as respects the NCCI process, refers to the process by which NCCI calculates loss costs for the individual workers compensation classifications.*

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

[3] *The seven hazard groups are labeled A through G. Relative hazard increases from hazard group A, the lowest, to hazard group G, the highest. Hazard refers to the likelihood of a large claim. A classification is assigned to a specific hazard group based on the classification's relative hazard, or likelihood of a large claim. For example, classification 8810, office and clerical workers, represents moderate to low hazard and is assigned to hazard group C. Classification 1005, surface coal mining, represents a high hazard classification and is assigned to hazard group G.*

[4] *Individual claims that are compiled to produce the experience for each individual classification are limited to a $500,000 maximum contribution. To account for losses above the $500,000 limit, additional factors are applied during the development of loss costs. The factors are lower for low hazard classifications and higher for higher hazard classifications.*

[5] *More precisely, the final loss cost is based on a weighted average of three values. The first value is based entirely on the most recently available Colorado loss experience for the individual classification. The second is based on the current loss cost in effect and the third is based on countrywide experience. If the most recently available Colorado experience is of sufficient volume, then the first value receives 100% weight and is said to be fully credible. This is the case for 20 to 25 classifications (the precise number will vary from year to year). In most cases, each of the three values receives some weight in the calculation of the final loss cost.*

[6] *NCCI collects, tabulates, checks, and edits statewide workers compensation experience from all insurers doing business in Colorado. Data is collected in a manner such that an actuarial analysis can be conducted to determine, on an average statewide basis, whether loss costs need to be increased or decreased. The **Reporting Guidebook for the Annual Calls for Experience**, published by NCCI, includes a detailed description of the various data requests as well as instructions for completing these 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 provided for in current loss costs?

Trend:[7] Are workers compensation costs changing at a rate greater than or less than wage inflation?

Benefit Changes: Have there been any changes in workers compensation benefits not provided for in current loss costs?

Claim Adjustment Expense (LAE)[8]: Is the expected cost of LAE greater than or less than what is provided for in current loss costs?

Insurance company expenses (other than LAE) and profit are not included in loss costs. Colorado is a competitive rating state, meaning it is up to individual insurance companies to add provisions for other expenses and profit. For the purpose of this report, the term loss cost refers to the cost of workers compensation benefits and LAE, as published by NCCI. The term premium rate refers to, in general, a loss cost loaded for insurance company expenses (other than LAE) and profit.

Additionally, for the purpose of this report the phrase “statewide change” refers to the statewide average change to loss costs.

Step 2: Distribution of Statewide Change to Industry Groups

The statewide change is distributed to each of the five industry groups based on the relative loss experience of each individual industry group.[9] The weighted average of the change to loss costs for each of the five industry groups must equal the statewide change calculated in Step 1. The distribution of the statewide change to the industry groups relies primarily on what is known as Workers Compensation Statistical Plan (WCSP) Data.[10] For the purpose of this report, the term “industry group change” refers to the average change to loss costs for the specified industry group.

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[7] *Loss costs are almost exclusively measured relative to payroll (in units of $100). There is an a priori assumption in loss costs that the cost of benefits will increase at the rate of wage inflation. Therefore, loss costs will generally decrease if an actuarial analysis shows that the cost of benefits is increasing at a rate less than wage inflation, all else being equal. Similarly, loss costs will generally increase if an actuarial analysis shows that the cost of benefits is increasing at a rate greater than wage inflation, all else being equal. Trends to loss costs are impacted by changes to the average cost per claim (claim severity) and changes to the number of claims relative to premium paid (claim frequency) over time. Another important consideration is the trend assumption that had been used to determine loss costs currently in effect in the state.*

[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.*

[9] *For example, if the average statewide 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% increase, while the other four industry groups might be allocated a 2% increase. The weighted average for all five industry groups must equal the statewide increase of 5.0%.*

[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.*

Step 3: Distribution of Industry Group Changes to Individual Classifications

The industry group change is distributed to each individual classification within each industry group. The distribution is based on the actual Colorado loss experience of each individual classification supplemented by the current loss cost as well as countrywide data if the most recent Colorado loss experience for an individual classification is not of sufficient volume, as discussed earlier. The weighted average of the loss cost changes for all classifications in an individual industry group must equal the industry group change calculated in Step 2.

The distribution of industry group changes to individual classifications, commonly referred to as the class ratemaking methodology, determines the differences, or relative cost, between the loss costs for individual classifications. The class ratemaking methodology does not, however, impact the statewide average loss cost level. The statewide average loss cost level for industrial classifications is determined in step 1. This is the calculation that generates the recommended statewide average change to loss costs (NCCI recommends +6.1% while Oliver Wyman recommends +1.7%). The class ratemaking methodology is used to calculate the relative difference from the statewide average loss cost level for each individual classification. In this respect, the class ratemaking methodology is a class relativity system.

This process may be viewed in a very simple manner: Step 1 above is equivalent to determining a statewide average voluntary loss cost. The class ratemaking methodology is used to determine the relative difference between the statewide average loss cost and the loss cost for each individual classification.

Step 4: Calculation of Experience Rating Values

Each employer is subject to the experience rating program, where, depending on employer size, the employer's premium rate is adjusted for the employer's actual loss experience. The employer's premium rate is adjusted upward or downward depending on whether the employer's actual loss experience is greater than or less than the average experience of its classification.[11] The adjustment factor is referred to as the experience modification. An experience modification greater than 1.000 is generally termed a debit mod, and occurs when an employer's own loss experience is greater than the average for its classification. An experience modification less than 1.000 is generally termed a credit mod, and occurs when an employer's own loss experience is less than the average for its classification.

Step 5: Calculation of Miscellaneous Rating Values

Numerous other miscellaneous rating values are reviewed and updated annually. These rating values are required to properly price small and large deductible policies, retrospectively rated policies, policies with unique risk exposures (such as coal mining employers), policies that might pay benefits under various federal workers compensation acts, as opposed to the Colorado State Act, etc.

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[11] *Employers must meet a minimum size threshold to be experience rated. Employers below that threshold are not experience rated due to their small size. For employers that meet the minimum size criteria, the weight, or credibility, assigned to actual experience depends on their size. For smaller employers, actual experience plays a smaller role because of the low credibility assigned to actual experience. For the largest employers, credibility is so high that these large employers pay premium rates based essentially on their own experience. To the extent that individual employer experience is not credible and receives a low weight, the balance of the weight is applied to an a priori assumption of an experience modification of 1.000, that is, the employer is presumed to have loss experience equal to the average for the employer's classification.*

Organization and Approach of this Report

Key elements of the application include:

- The statewide indicated change to loss costs
- Distribution to industry groups
- Adjustment for off-balance
- Class ratemaking
- Certain parameters used for experience rating
- Coal mine classifications

A summary of NCCI's proposals and Oliver Wyman's recommendations, as well as a comparison, is provided in the next section. A discussion of individual issues follows.

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Recommendations and Comparison with NCCI

Statewide Indication

Table 1: Comparison of Indications

		NCCI Proposal		Oliver Wyman Recommendation	
1.	Indicated Change to Advisory Loss Costs Due to Experience, Trend, Benefits, & LAE Prior to Off-Balance Adjustment:	+4.6%	(1.046)	+3.2%	(1.032)
2.	Impact of Item B-1425	+0.9%	(1.009)	+0.9%	(1.009)
3.	Impact of Off-Balance Adjustment on Advisory Loss Costs:	+0.6%	(1.006)	-2.4%	(0.976)
4.	Indicated Change to Advisory Loss Costs After Off-Balance Adjustment: (1) x (2) x (3)	+6.1%	(1.061)	+1.7%	(1.017)
5.	Expected Impact of Off-Balance Adjustment on Standard Premium:	-0.6%	(0.994)	+2.4%	(1.024)
6.	Indicated Premium Level Change: (4) x (5)	+5.4%	(1.054)	+4.1%	(1.041)

A brief discussion of each element in Table 1 follows.

1. Indicated Change to Advisory Loss Costs Due to Experience, Trend, Benefits, & LAE - Prior to Off-Balance Adjustment

This represents the change due to experience, trend, benefit levels, and loss adjustment expense. However, this is prior to consideration of adjustments due to Item B-1425 and off-balance (see following discussions for items 2 and 3).

In this application, NCCI has utilized the methodology initially recommended by Oliver Wyman in prior proceedings, and adopted by NCCI during the 2009 proceedings. Specifically, NCCI has adopted Oliver Wyman's approach of segmenting the market and examining data from Pinnacol Assurance[12] (Pinnacol) and private carriers separately. Additionally, NCCI uses paid loss plus case reserve data, as recommended by Oliver Wyman in prior proceedings. Differences between recommendations are due to:

- Differences in the method by which loss development factors are averaged for loss development between a 1st report and a nineteenth report.

- Selection of 19th to Ultimate Loss Development Tail Factors

	Indemnity	Medical
NCCI:	1.008	1.033
Oliver Wyman:	1.008	1.032

- Annual Loss Ratio Trends

	Indemnity	Medical
NCCI:	-5.0%	-1.0%
Oliver Wyman:	-5.3%	-0.6%

As mentioned above, this is the change to advisory loss costs prior to consideration of the impact of Item B-1425 and the off-balance adjustment, discussed below. In the absence of any off-balance adjustment, the indicated change to advisory loss costs including consideration for the impact of Item B-1425 but prior to consideration of off-balance will equal the indicated premium level change.

[12] *Pinnacol Assurance is a state sanctioned insurance company in Colorado, and is the market of last resort for employers unable to secure workers compensation insurance from private carriers. Pinnacol Assurance also actively competes with private carriers for desired business. Pinnacol Assurance, as well as similar organizations in other states, is commonly referred to as a state fund.*

2. Impact of Item B-1425

Item B-1425 was recently approved in Colorado effective January 1, 2013. As a result of this filing, employers' liability increased limits percentages will be reduced effective January 1, 2013. Employers' liability increased limits premiums and losses are reported in the financial call data used to estimate the overall loss cost level indication, so this will result in a reduction to the reported statewide financial call standard earned premium beginning January 1, 2013. Since the losses and premiums used to determine the proposed loss costs in the current loss cost application are from policy years 2009 and 2010, a 1% increase to the proposed loss costs effective January 1, 2013 is included to offset the impact of Item B-1425. Oliver Wyman did not conduct an independent review of Item B-1425.

3. Impact of Off-Balance Adjustment on Advisory Loss Costs

The off-balance is the average experience modification in Colorado. The off-balance should be reasonably close to 1.000. However, there has been a tendency of experience modifications to drift to values less than 1.000. As such, annual adjustments have been required to increase the off-balance in the experience rating plan. Adjustments that increase the off-balance will increase the average experience modification in Colorado, and will therefore increase premium collected through the experience rating plan. As such, in order to ensure that any adjustment to off-balance is revenue neutral as respects premium collection, loss costs are reduced by a percentage that is designed to exactly offset the additional premium expected to be generated by the off-balance adjustment. The adjustment to loss costs is referred to as the "impact" of the off-balance adjustment. The impact is in the opposite direction of the off-balance adjustment itself. That is, if the off-balance adjustment increases experience modifications, additional premium will be generated and the impact is to decrease loss costs by an offsetting amount, and vice versa. Item 3 is the required decrease/increase to advisory loss costs. The difference between NCCI's proposal and Oliver Wyman's recommendation is due to differences in the selected target off-balance and approach. This is discussed in detail later in the report.

4. Indicated Change to Advisory Loss Costs after Off-Balance Adjustment

The change to advisory loss costs is the combined impact of the changes due to experience, trend, etc. (1), the impact of Item B-1425 (2), and the impact of the off-balance adjustment (3). Published advisory loss costs reflect this combined impact.

5. Expected Impact of Off-Balance Adjustment on Standard Premium

This is the estimated impact on premium due to the off-balance adjustment, as discussed above. Therefore, (5) is equal to, but opposite of, the impact in (3).[13]

6. Indicated Premium Level Change

The indicated premium level change is the product of the change to advisory loss costs (4) and the impact of the off-balance adjustment on standard premium (5). The indicated premium level change is equal to the indicated change to advisory loss costs (including the impact of Impact of Item B-1425) prior to the off-balance adjustment ((1) x (2)). As discussed earlier, if there is no off-balance adjustment, then the following quantities are all equal:

- (1) x (2) (Indicated Change to Advisory Loss Costs Due to Experience, Trend, Benefits, & LAE - Prior to Off-Balance Adjustment) x (Impact of Item B-1425)
- (4) Indicated Change to Advisory Loss Costs after Off-Balance Adjustment
- (6) Indicated Premium Level Change

In this event, the change to advisory loss costs equals the premium level change, as illustrated in the footnote below.

[13] *As stated, the off-balance adjustment is designed to be revenue neutral. The first adjustment (discussed in line 3) will increase premium paid by policyholders by increasing advisory loss costs. The first adjustment is offset by a corresponding decrease to premium collected through the experience rating plan. This is the second adjustment, discussed in line 5. With no off-balance adjustment, line 3 will equal zero, line 5 will equal zero, and the indicated change to advisory loss costs (line 4) will exactly equal the indicated premium level change (line 6). This is illustrated below:*

		NCCI Proposal		Oliver Wyman Recommendation	
1.	Indicated Change to Advisory Loss Costs Due to Experience, Trend, Benefits, & LAE Prior to Off-Balance Adjustment:	+4.6%	(1.046)	+3.2%	(1.032)
2.	Impact of Item B-1425	+0.9%	(1.009)	+0.9%	(1.009)
3.	Impact of Off-Balance Adjustment on Advisory Loss Costs:	0.0%	(1.000)	0.0%	(1.000)
4.	Indicated Change to Advisory Loss Costs After Off-Balance Adjustment: (1) x (2) x (3)	+5.4%	(1.054)	+4.1%	(1.041)
5.	Expected Impact of Off-Balance Adjustment on Standard Premium:	0.0%	(1.000)	0.0%	(1.000)
6.	Indicated Premium Level Change: (4) x (5)	+5.4%	(1.054)	+4.1%	(1.041)

Distribution to Industry Groups

The statewide rate change is distributed to each of the five industry groups based on the relative loss experience of each individual industry group. Classifications are grouped by industry association, not hazard. This is an important consideration when examining NCCI's proposed changes to class ratemaking. The procedure used to distribute the statewide change to each industry group essentially relies on a measurement, for each industry group, of actual losses to expected losses, as well as a statewide measurement of the same. The result of the procedure is a series of industry group differentials that, on a statewide basis, must average to 1.000. A differential less than one means the industry group performed better than the statewide average and will receive a lower average change to loss costs than the statewide average. Conversely, a differential greater than one means the industry group performed worse than the statewide average and will receive a higher average change to loss costs than the statewide average.[14] The product of the industry group differential and the statewide change is the industry group change.

The following are NCCI's and Oliver Wyman's proposed distributions of the statewide change to the individual industry groups:

NCCI

Statewide Change	Industry Group	Differential	Industry Group Change
1.061	Manufacturing	1.003	1.064
1.061	Contracting	0.986	1.046
1.061	Office and Clerical	0.992	1.053
1.061	Goods and Services	1.020	1.082
1.061	Miscellaneous	0.980	1.040

Oliver Wyman

Statewide Change	Industry Group	Differential	Industry Group Change
1.017	Manufacturing	1.003	1.020
1.017	Contracting	0.986	1.003
1.017	Office and Clerical	0.992	1.009
1.017	Goods and Services	1.020	1.037
1.017	Miscellaneous	0.980	0.997

In the above charts, Oliver Wyman uses the industry group differentials proposed by NCCI. It is not clear what impact Oliver Wyman's recommendations will have on NCCI's proposed differentials, if any, should the Division adopt Oliver Wyman's recommendations.

[14] *In the simplest sense, the industry group differentials may be viewed as an experience modification for the industry group, relative to statewide combined average experience.*

Class Ratemaking Methodology

Each industry group change is distributed to the component classifications. During the 2009 proceedings, NCCI proposed material changes to the methodology used to distribute the industry group change to component classifications. The changes were material and were discussed in detail in our prior reports from prior proceedings.

During the 2009 and 2010 proceedings, the Division adopted Oliver Wyman's recommendation as respects loss limitations in class ratemaking. During the 2011 proceedings, the Division reversed its decision and adopted NCCI's original proposal for limiting claims in class ratemaking, as initially filed in 2009. Oliver Wyman accepts and respects the Division's decision to adopt NCCI's proposal in its entirety, however we continue to recommend that the Division request NCCI to implement procedures to adjust the $500,000 limit for inflation over time.

Experience Rating Parameters

Experience rating is the final step in the process of determining premium charges for individual employers. Experience rating recognizes that the loss cost for a specific classification represents the average loss cost for employers in that classification. Experience rating is the process by which the loss cost (or premium rate) for a specific employer is adjusted to reflect that employer's experience relative to the class average. In its simplest form, experience rating is a measurement of an employer's actual loss experience to that employer's expected loss experience. Expected loss experience is based on the average experience for the employer's classification. Actual loss experience is the employer's actual reported losses during the time period in which experience is being measured. Expected losses are equal to the product of the expected loss rate (ELR) and payroll (in units of $100) during the time period of measurement.

The experience rating process is actually somewhat more complex than the basic measurement of actual loss experience to expected loss experience. Loss experience is partitioned into two segments, primary loss experience and excess loss experience. Primary loss experience is the cost of individual claims limited to $10,000[15] per claim and a maximum of $20,000 per occurrence (for an incident involving multiple employees and therefore multiple claims). Excess loss experience is the remainder. Actual primary and excess losses are the employer's actual reported losses partitioned using the stated rules. Expected primary losses are equal to expected losses multiplied by the D Ratio. The D Ratio is therefore the portion of total expected losses expected to fall in the primary layer. Expected excess losses are the remainder, or, expected losses multiplied by (1 – D Ratio).

In the 2009 proceedings, NCCI implemented material changes to the methodology used to calculate ELRs and D Ratios. The changes to the calculation of the ELRs were precipitated by the changes to class ratemaking. The changes to the calculation of the D Ratios were precipitated by the changes to class ratemaking[16] as well as concerns by NCCI suggesting that experience modifications for more hazardous employers were lower than they should be, and for

[15] *This value is referred to as the "primary limit" or the "split point" and has been revised from its prior value of $5,000 as a result of a previous filing approved by the Division. The revision to this value will be discussed later in this report.*

[16] *This is discussed in detail below.*

less hazardous employers, higher than they should be. Each parameter is discussed individually below.

ELRs

The calculation of ELRs is directly impacted by the manner in which claims are limited in the class ratemaking process. Therefore, the same principle regarding the indexing of the $500,000 limit for inflation applies here as well, and we continue to recommend that the Division request NCCI to implement procedures to adjust the $500,000 limit for inflation over time.

D Ratios

During the 2009 proceedings, Oliver Wyman agreed with NCCI's proposed changes to the calculation of D Ratios. The proposed changes were material, and resulted in large shifts in the values of D Ratios. As such, Oliver Wyman recommended, and the Division agreed, that the absolute change to D Ratios be capped at +/-.02, rather than the +/-.03 proposed by NCCI.

During the 2010 proceedings, the elimination of MED ERA[17] resulted in additional, material changes to D Ratios. These changes to the D Ratios were not a result of the introduction of a new methodology; rather, they represented necessary adjustments to the experience rating plan to reflect that MED ERA was no longer in effect. NCCI recognized the need for substantial technical adjustments, and raised the cap on absolute changes to the D Ratios to +/-.05. However, Oliver Wyman proposed that the cap be raised to +/- .10 for one year, and the Division ordered NCCI to use a cap of +/- .10.

For the 2011 proceedings, NCCI proposed, and the Division approved, a cap of +/-.03.

In the current application, material changes to D Ratios are required as a result of the revision to the primary limit (discussed below) used in experience rating. Based on our review of the D Ratios proposed in this application, it appears that NCCI has not capped the change in D Ratios, and we find this approach to be appropriate.

Primary Limit

For the purpose of experience rating, an individual employer's loss experience is partitioned in primary and excess layers. The primary layer is made up of claim costs below the primary limit (aka the "split point"), while the excess layer is made up of claim costs above the primary limit up to the state per-claim limit (a limit that is adjusted for inflation annually). The primary limit has been fixed at $5,000 for the past 20+ years. Because the primary limit has remained constant and the state per-claim limit and other experience rating parameters have been adjusted for inflation over time, the contribution of the primary layer has decreased while the contribution from the excess layer has increased in the experience modification calculation, all else being equal. The implication is that the experience rating process has increasingly become a measure of an employer's frequency, as opposed to severity, as the value of the primary layer has eroded due to claim inflation over time.

In a separate application, NCCI filed, and the Division approved, to revise the primary limit from $5,000 to $15,000 as follows: $10,000 effective January 1, 2013; $13,500 effective January 1, 2014; and $15,000 effective January 1, 2015. Oliver Wyman did not review this application on behalf of the Division prior to the Division's approval of this application. However, we note that

[17] *MED ERA is an experience rating program by which small, medical only claims are included in the experience rating calculation. This program went into effect in Colorado on January 1, 2008. The program was ended, via legislation, effected January 1, 2011.*

the change in the primary limit is a revenue neutral change, meaning that the amount of statewide premium will not be impacted by this change.

Coal Mine Classifications

Advisory loss costs for coal mine classifications are equal to the sum of a traumatic component and an occupational disease component. Traumatic claims, such as fractures and strains, are compensable under the Colorado Act governing workers compensation benefits. Occupational disease (OD) claims for pneumoconiosis (also known as black lung disease) may be filed under the Colorado State Act or under the Federal Coal Mine Health and Safety Act of 1969 (the Federal Act). The traumatic component and the OD component are calculated individually and then summed to determine the advisory loss cost. The traumatic component is calculated in the same manner as any other workers compensation classification. Oliver Wyman agrees with NCCI's methodology used to determine the traumatic component of advisory loss costs for coal mine classifications, notwithstanding differences between NCCI's proposal and Oliver Wyman's recommendations as respects underlying parameters and assumptions, discussed in the prior section.

As respects the OD component, effective 1/1/08 and prior, the OD component had been grossly overstated. Effective 1/1/09, Oliver Wyman recommended significant interim reductions, agreed to by the Division. As a result of the 2009 proceedings, the OD components were reduced by over 90% based on recommendations by Oliver Wyman. NCCI currently recommends no change to these loss costs. Oliver Wyman agrees with NCCI's proposal.

Miscellaneous Items

F Classifications

There is little or no payroll for F classifications in Colorado. We recommend that the national pure premiums be adopted as the basis for loss costs. This is somewhat different from NCCI's recommendation, which relies on the standard approach used for F classifications.

Swing Limits on Individual Classifications

Swing limits provide for a maximum and minimum change to advisory loss costs for individual classes from current values. The current swing limits are +/-15% from the average change to the industry group of classes to which a specific class belongs. NCCI proposes that these swing limits be increased to +/-20%. Oliver Wyman recommends that the swings remain at +/-15%.

Other Items

Values for the following items were reviewed for reasonableness as respects changes. Based on this review, Oliver Wyman concludes that that proposed changes are reasonable. However, Oliver Wyman did not conduct a detailed review of the calculations of these items.

- Impact of Changes to Medical Fee Schedule
- Basis of Premium for Code 7370 – Taxicab Co.
- Premium Determination for Partners and Sole Proprietors

4

Industrial Classifications

Experience Period

NCCI bases the change due to experience, trend, and benefits on an unweighted average of the results from the two most recent policy years for which data is available. For the purpose of this application, these are PY2009 and PY2010, using data valued as of December 31, 2011.[18] This approach is consistent with past NCCI practice in Colorado, and is an acceptable approach in the specific circumstances of this application.

Database and Market Segmentation

<u>Introduction</u>

The database selected to calculate the change due to experience, trend, and benefits determines the forecast of expected future development[19] of losses (i.e., loss development factors) as well as the base to which loss development factors are applied (i.e., paid loss versus paid loss plus case reserve data).

NCCI has several types of loss data that may be used to calculate the change due to experience, trend, and benefits. The choices are based on the loss data available from NCCI's financial calls. While different combinations of data elements are available, there are two combinations that NCCI has historically relied on in ratemaking in Colorado:

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, the most recent estimates by claims professionals of the outstanding costs on open reported cases. The use of paid loss data, as opposed to paid loss

[18] *Policy year 2010 includes premium and claims associated with policies incepting during calendar year 2010. Therefore, policy year 2010 includes claims with dates of loss extending from January 1, 2010 through December 31, 2011. This is because experience associated with a policy incepting on December 31, 2010 will include claims with dates of loss through December 31, 2011. Therefore, a policy year includes claims experience across a 24 month period. Policy year 2011, as of December 31, 2011, is said to be only half earned, in that only one half the claims experience will have occurred, given that policy year 2011 will include claims with dates of loss extending across the 24 month period beginning January 1, 2011 and ending December 31, 2012.*

[19] *Workers compensation losses "develop" over time until all claims are reported, paid and closed. The reason for paid development is obvious – as payments accumulate paid loss data grows. However, paid loss plus case reserve data develops as well, the reason being that claims professionals can base their estimates of future costs (case reserves) for individual claims only on information available at the time the case reserve is established. Inevitably, for cases that remain open, costs grow as additional information becomes available. Loss development factors are used to estimate the value that losses will develop to, or grow to, when all claims are reported, paid, and closed. For workers compensation claims, this can take 50 or more years.*

plus case reserve data, excludes the most recently available information on expected future costs, embedded in case reserves, as estimated by claims management professionals. 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, which is based on significantly older and less current historical data.

Comparisons of paid loss development data and paid loss plus case reserve development data indicate a change in underlying conditions that began in 1999. This is illustrated by graphs of observed calendar year loss development (cumulative product of observed loss development factors for the most recent 16 policy years observed during a specific calendar year) on the following pages.

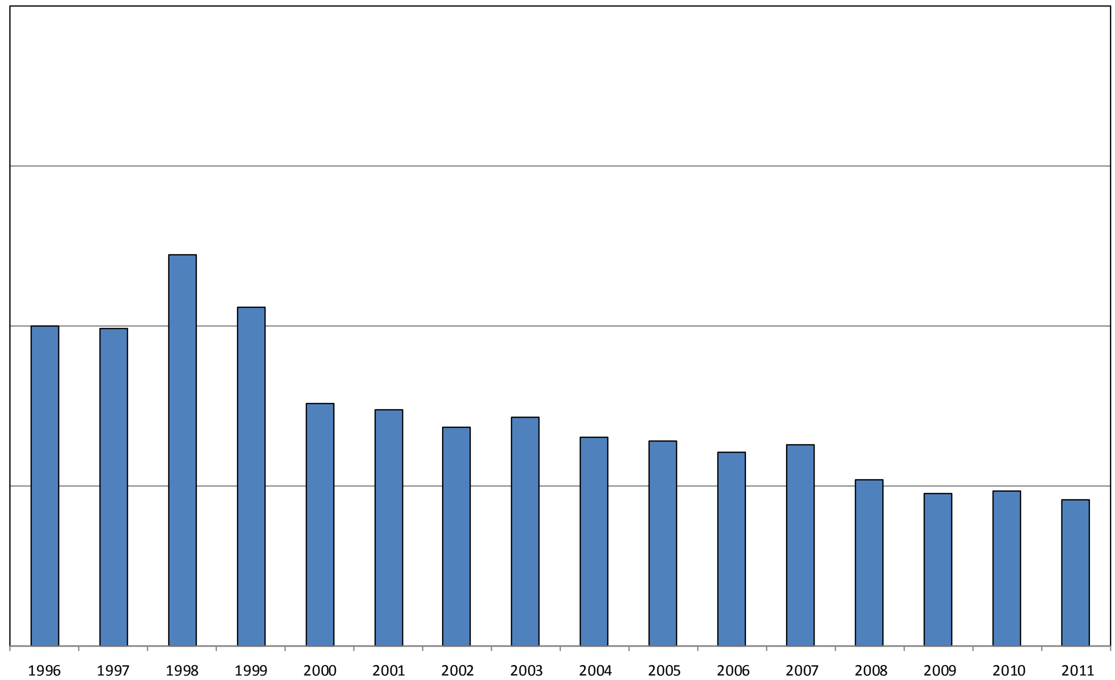
To keep the actual observed loss development factors confidential, the scale of these graphs has been adjusted so that calendar year 1996 value lies in the center of the graph, and all other years are expressed relative to 1996. Comparisons of paid loss development and paid loss plus case reserve development are presented for:

- Statewide Indemnity Development
- Pinnacol Indemnity Development
- Private Carrier Indemnity Development

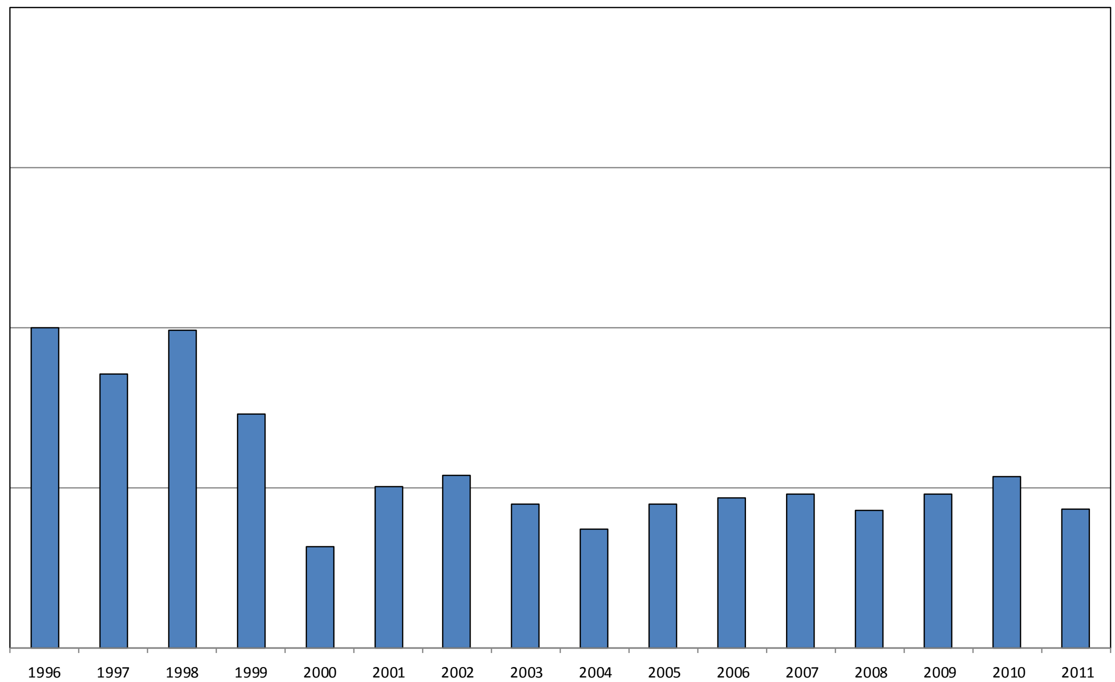
- Statewide Medical Development
- Pinnacol Medical Development
- Private Carrier Medical Development

A discussion follows the presentation of the graphs.

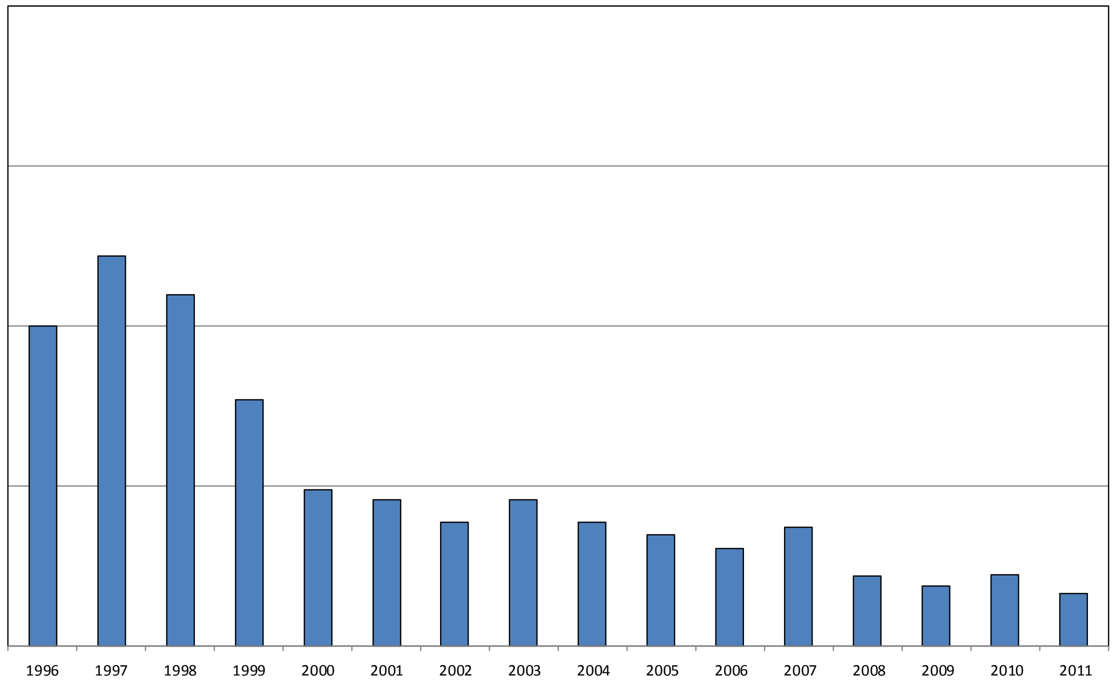
Statewide
Calendar Year Paid Development
Indemnity Losses



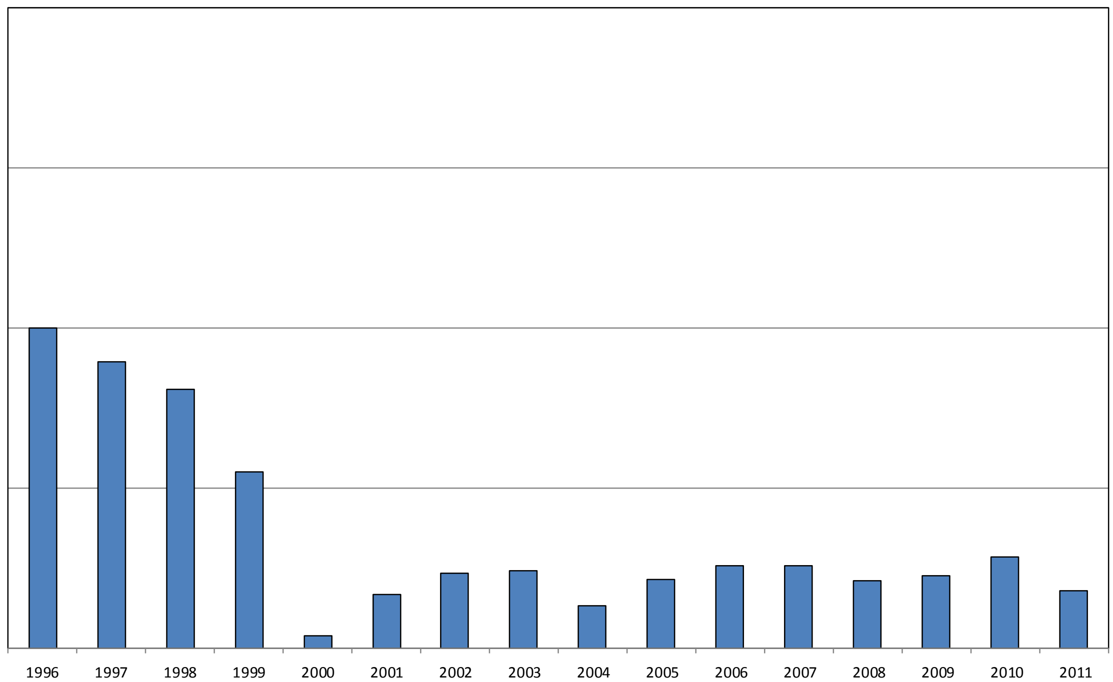
Statewide
Calendar Year Paid Plus Case Reserve Development
Indemnity Losses



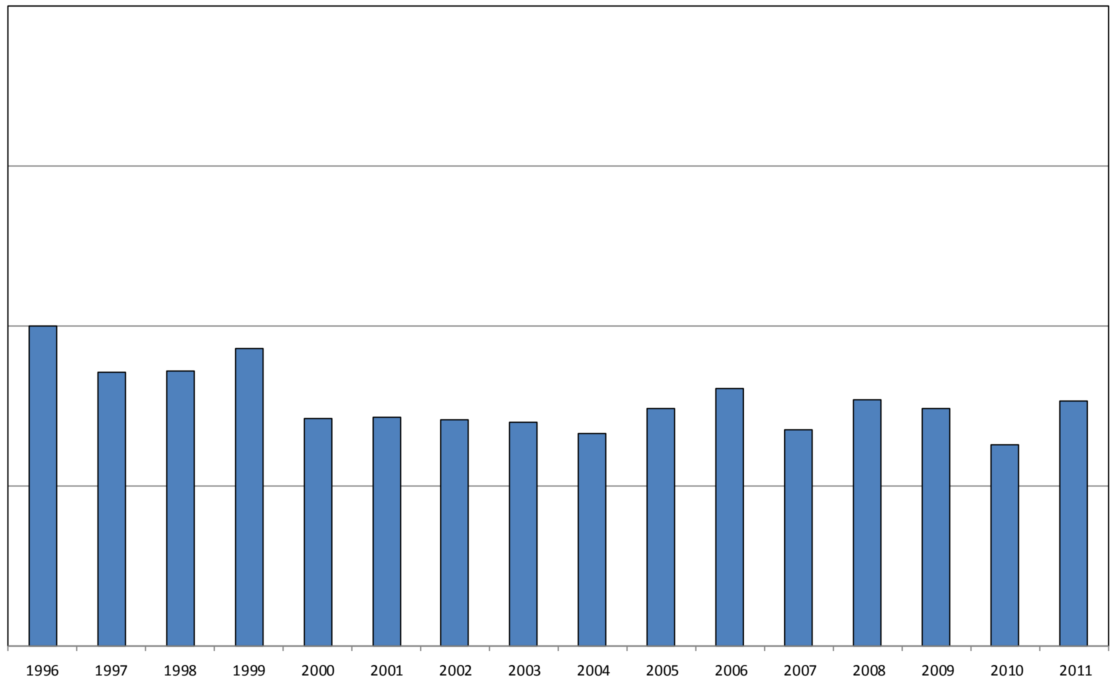
Pinnacol
Calendar Year Paid Development
Indemnity Losses



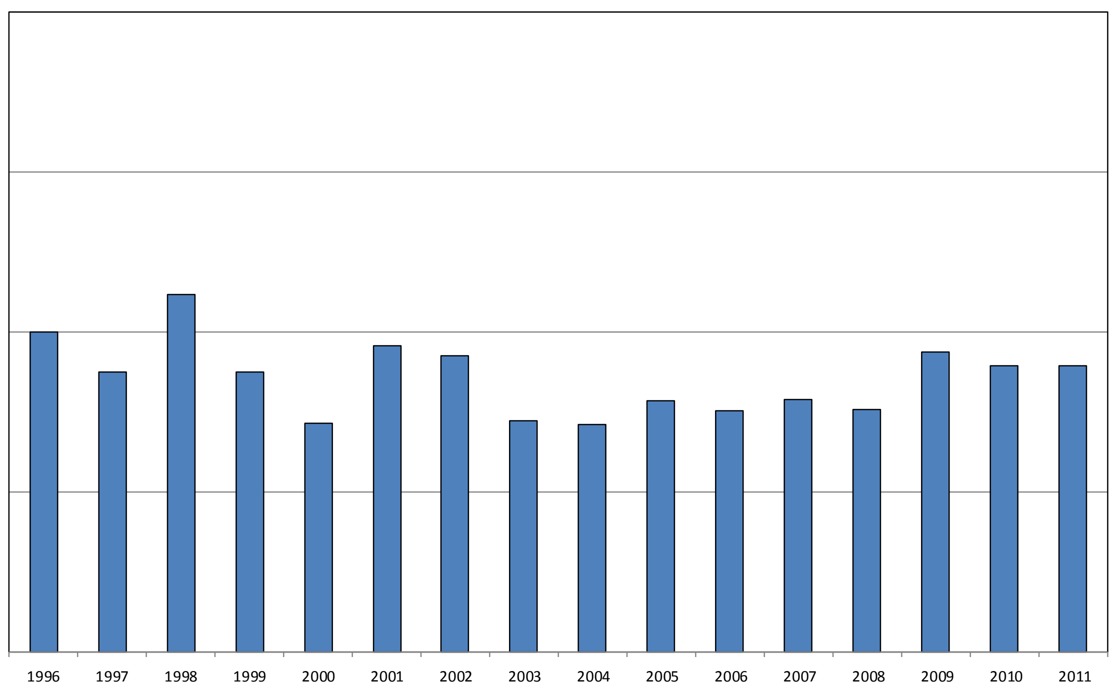
Pinnacol
Calendar Year Paid Plus Case Reserve Development
Indemnity Losses



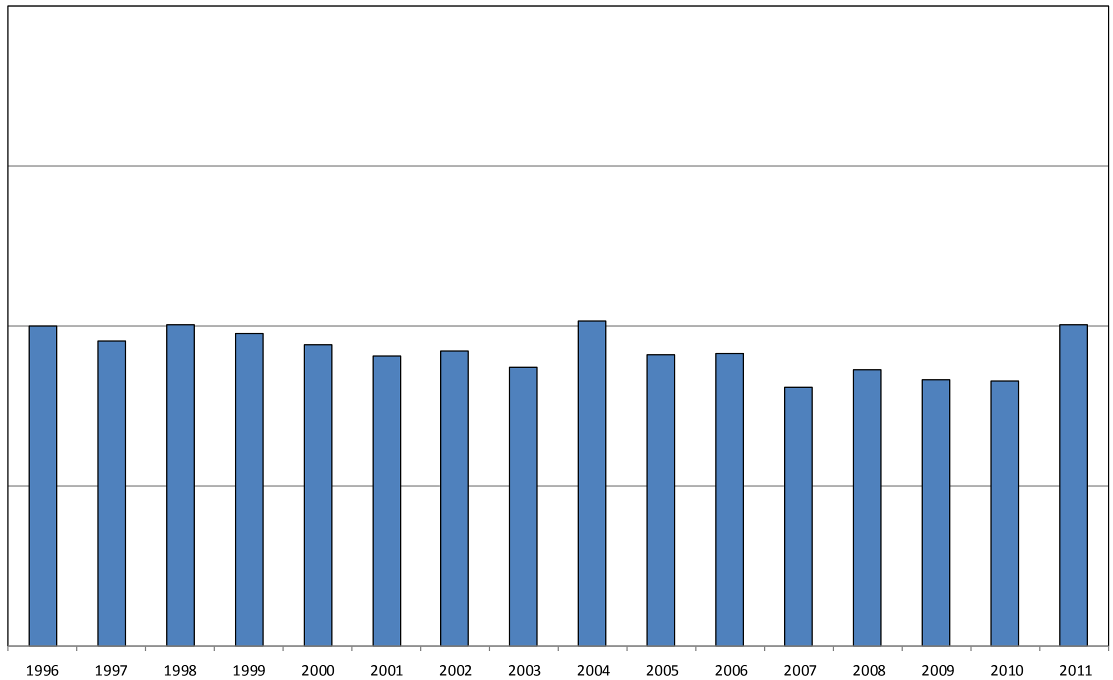
Private Carriers
Calendar Year Paid Development
Indemnity Losses



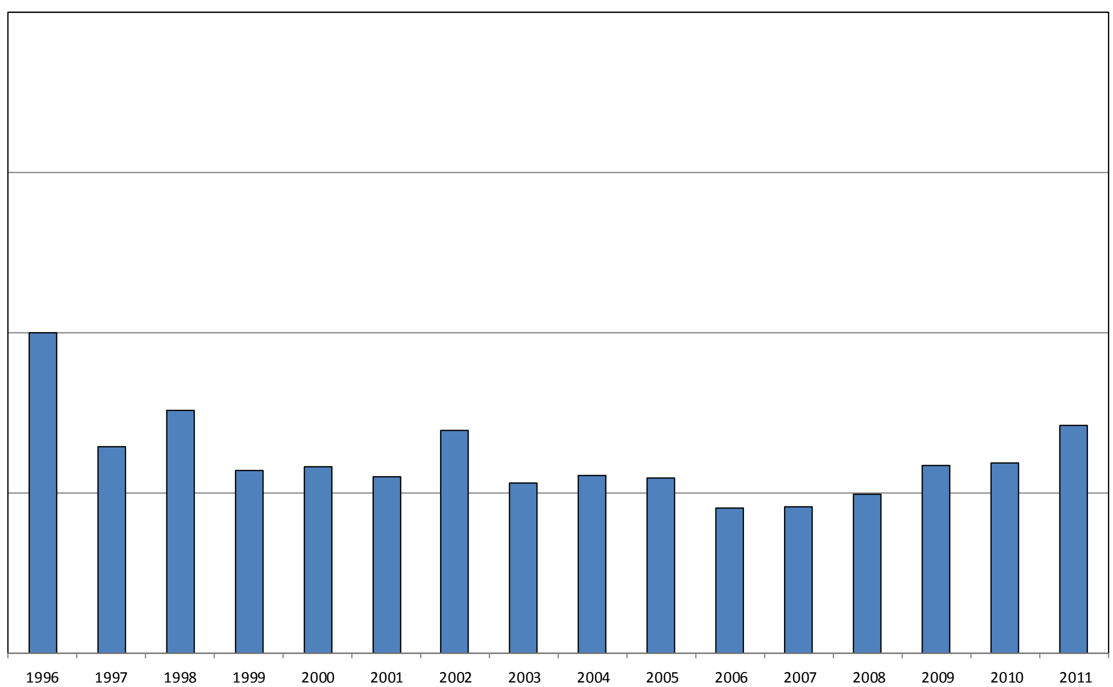
Private Carriers
Calendar Year Paid Plus Case Reserve Development
Indemnity Losses



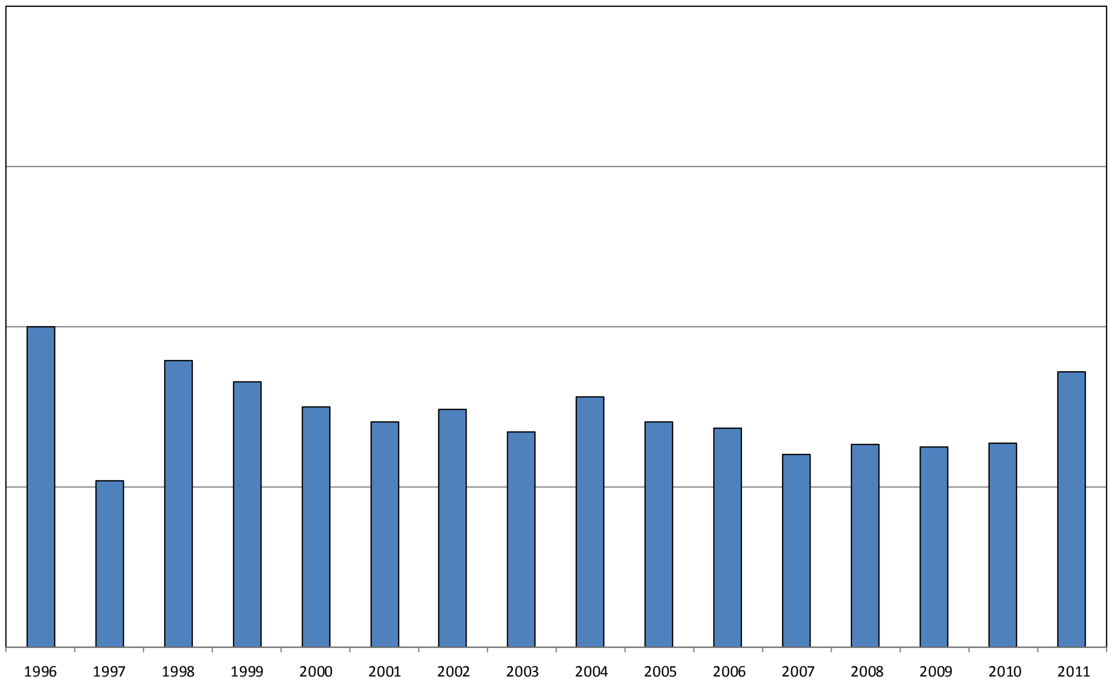
Statewide
Calendar Year Paid Development
Medical Losses



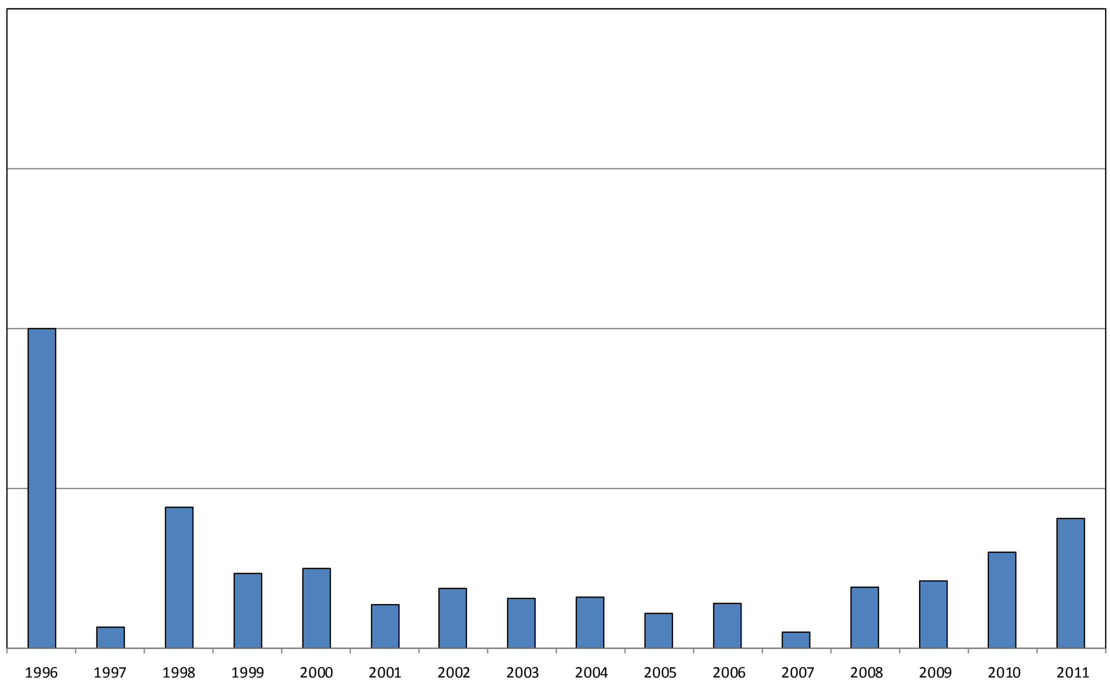
Statewide
Calendar Year Paid Plus Case Reserve Development
Medical Losses



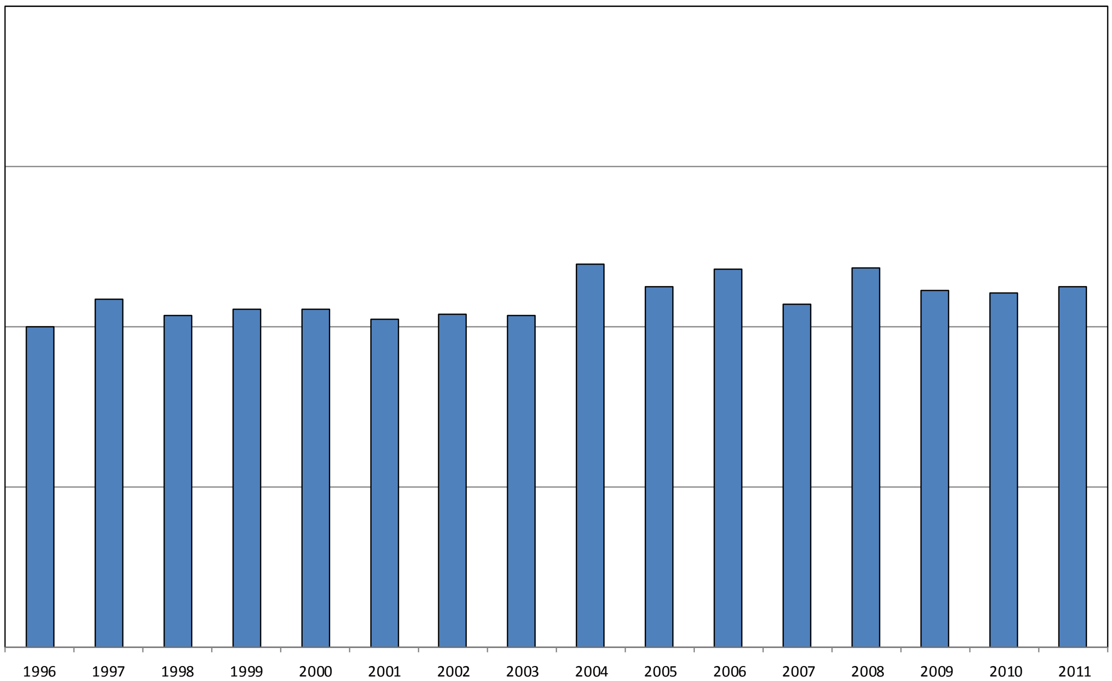
Pinnacol
Calendar Year Paid Development
Medical Losses



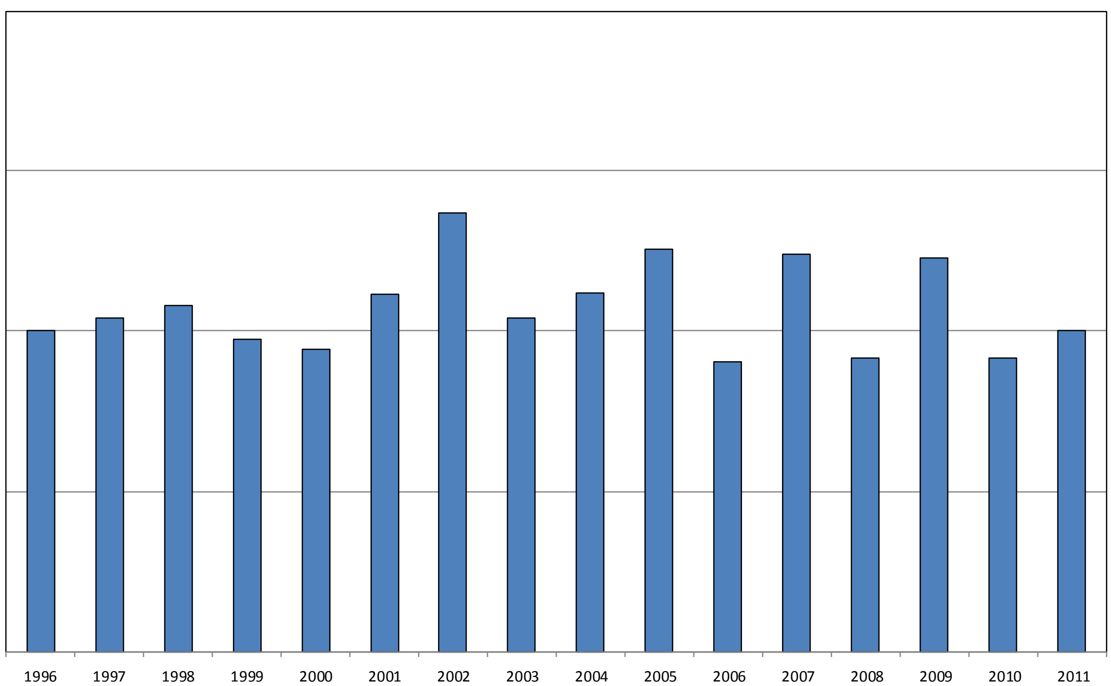
Pinnacol
Calendar Year Paid Plus Case Reserve Development
Medical Losses



Private Carriers
Calendar Year Paid Development
Medical Losses



Private Carriers
Calendar Year Paid Plus Case Reserve Development
Medical Losses



The graphs of statewide indemnity loss development demonstrate a decrease to loss development patterns since the late 1990s for both paid data and paid plus case data. Examination of indemnity loss development data separately by market segment, Pinnacol versus private carriers, shows that the largest decrease occurred at Pinnacol for both paid data and paid plus case data. Smaller changes occurred at private carriers.

The graphs of statewide medical loss development demonstrate a smaller (than indemnity) decrease to loss development patterns subsequent to 1999, with the decrease to paid plus case data somewhat greater than that observed for paid data. Examination of medical loss development separately by market segment shows that the observed changes in statewide data are entirely due to changes at Pinnacol. For private carriers, it appears that there has been a very small increase to medical loss development for paid data, with no discernible change for paid plus case data.

Oliver Wyman investigated the directional change (decrease) to indemnity loss development patterns at Pinnacol and at private carriers in prior proceedings through calls to the Division, the Colorado Division of Workers Compensation, and senior claims personnel at Pinnacol Assurance. Information from these calls indicated that the change (decrease) to indemnity loss development patterns at Pinnacol and at private carriers in the 1999-2000 periods was due to a series of law changes implemented in 1998 and 1999 in Colorado. The timing of the implementation of the law changes and the change to indemnity loss development patterns is almost exact. These law changes have been discussed in detail in Oliver Wyman's prior reports to the Division.

<u>Changes at Pinnacol Assurance</u>

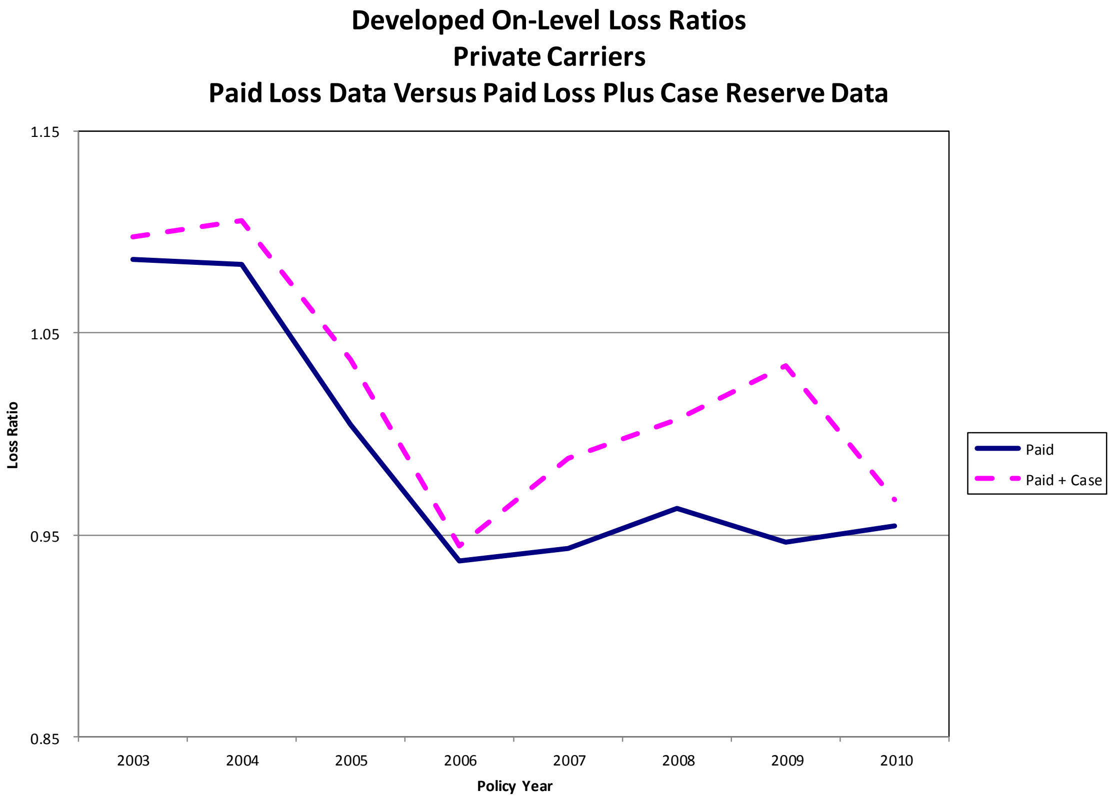
As noted earlier, while indemnity loss development patterns decreased for both Pinnacol and private carriers, the decrease to indemnity loss development patterns was significantly more pronounced for Pinnacol. Additionally, medical loss development patterns decreased only for Pinnacol, but not for private carriers. The following information was provided by personnel at Pinnacol during past discussions:

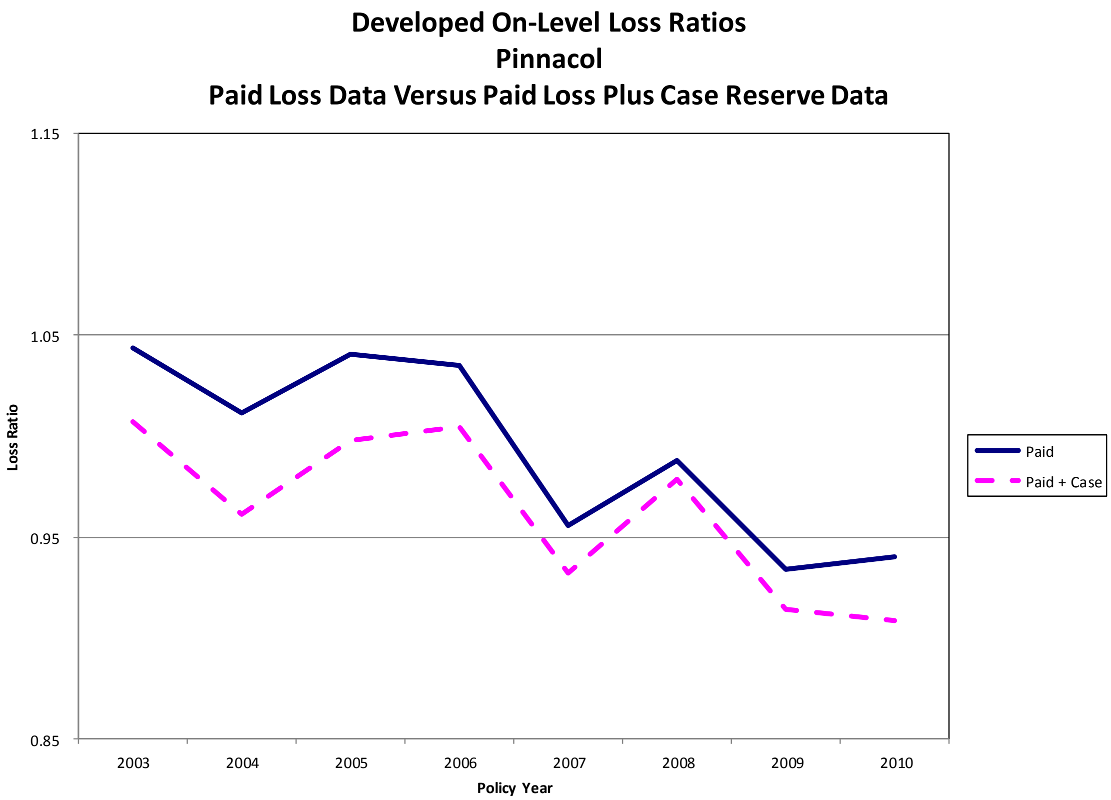
- Beginning in 2000-2001, Pinnacol began to more adequately reserve claims.
- Beginning in 2000-2001, Pinnacol began to aggressively settle claims. Since that time, there have been successive initiatives to induce claim settlements.
- In 2004, Pinnacol began utilizing the "Settlement Day" concept, where claimants' attorneys are invited to the company to discuss claim settlement in a festive environment.
- In 2004, a Strategic Nurse Case Manager position was created to aid in the management of medical costs for the most severe claims.
- Increased efforts in subrogation through staff expansions.

Our understanding is that these programs continue today.

The materially greater changes to indemnity loss development patterns at Pinnacol than observed at private carriers, as well as the changes to medical loss development patterns that were limited to Pinnacol, are explained by the changes listed above.

The following graphs illustrate the impact of the significantly different loss development patterns between Pinnacol and private carriers.


Developed On-Level Loss Ratios
Private Carriers
Paid Loss Data Versus Paid Loss Plus Case Reserve Data
1.15
1.05
0.95
0.85
Loss Ratio
2003
2004
2005
2006
2007
2008
2009
2010
Policy Year
Paid
Paid + Case


Developed On-Level Loss Ratios
Pinnacol
Paid Loss Data Versus Paid Loss Plus Case Reserve Data
1.15
1.05
0.95
0.85
Loss Ratio
2003
2004
2005
2006
2007
2008
2009
2010
Policy Year
Paid
Paid + Case

Conclusion and Recommendation

Database

All else being equal, the paid loss development method will tend to overstate results due to the impact of the change in settlement patterns at Pinnacol. Paid plus case data, however, relies on benefit payments and case reserves. Case reserves are the most recent estimates by claims professionals of the outstanding costs on open reported cases, and will therefore better reflect the impact of current claim settlement patterns. NCCI based the results of its analysis on paid plus case reserve data only, with no reliance on the results of paid data. This is consistent with Oliver Wyman's recommendations in prior proceedings, and NCCI's recommendation in this proceeding. Oliver Wyman concurs with NCCI's use of paid plus case reserve data.

Market Segmentation

Given the material differences between loss development patterns from Pinnacol and private carriers, Oliver Wyman concludes that losses for Pinnacol and private carriers should be developed separately and then combined to determine overall statewide experience. This is consistent with Oliver Wyman's recommendations in prior proceedings, and NCCI's recommendation in this proceeding. Oliver Wyman concurs with NCCI's use of segmented market data.

Loss Development

Introduction

Loss development measures the growth, or increase in value, of losses for a specific group of claims over time. Claims are grouped by exposure period. In this application, the key exposure periods are claims associated with policies effective during 2009 (PY2009) and 2010 (PY2010). As of December 31, 2011, the valuation date of data in this application, PY2009 is 36 months of age, the time distance from the start of PY2009 to the valuation date of the study, 1/1/2009 to 12/31/2011. Likewise, PY2010 is 24 months of age (1/1/2010 to 12/31/2011). The nature of workers compensation claims is such that it may be several years before a claim is actually reported to the insurer, more years before a reasonable estimate of the total cost of the claim can be made, and decades for the claim to be fully paid out and closed (in the case of lifetime disability awards). As such, measurements of losses will grow over time. Even after decades, there may still be significant growth to claim costs. This growth over time is termed loss development. Loss development is measured by tracking growth in older policy years, and using these historical growth measurements to forecast future growth for the policy years under examination.

Loss Development through a 19^{th} Report

Historical policy year loss development data is available through 20 years (19^{th} report – the first report is a valuation of policy year data at 2 years, or 24 months). For this historical data, NCCI uses an unweighted average of the five most recent observations for indemnity and medical losses for private carriers and an unweighted average of the four most recent observations for indemnity and medical losses for Pinnacol. In prior proceedings, NCCI had used an unweighted average of the five most recent observations for indemnity and medical losses for Pinnacol.

NCCI does not provide a reason for the proposed change in methodology. There is no written documentation in NCCI's application on this item.

Oliver Wyman, subsequent to discussions with the Division and Pinnacol, became aware of Pinnacol's implementation of a new procedure for coding certain types of settlements into Pinnacol's claim system. More specifically, these changes impact how these costs are partitioned into indemnity losses and medical losses. Prior to 2011, the entire cost of a structured settlement was coded as indemnity loss. During 2011, Pinnacol initiated a process by which the cost of structured settlements is partitioned to reflect the actual portion of the settlement intended to provide for medical costs, and the actual portion of the settlement intended to provide for indemnity costs. Given this change, the expected impact on loss development data would be a decrease to indemnity development and an increase to medical development during calendar year 2011. This is precisely what occurred, as illustrated by the previously displayed graphs. Additionally, Oliver Wyman discussed these observations with Pinnacol, and Pinnacol confirmed that observed changes to development patterns during 2011 were due to the change in coding of structured settlements.

It is important to note that the change in the coding of structured settlements during 2011 simply involves the shifting of claim dollars from one bucket to another. It does not represent a change in loss experience. The Pinnacol loss development data for 2011 is distorted because of this coding change and, rather than increasing the weight given to 2011 development for Pinnacol by shifting from a 5 year average to a 4 year average as NCCI did, we believe that 2011 loss development data should be discounted. Our recommended approach, a five year unweighted average excluding the highest and lowest values, accomplishes this. The impact of substituting Oliver Wyman's methodology is to decrease the indicated change to loss costs by approximately 1.8%.

Calculation of 19th to Ultimate Loss Development Factors

Loss development data is not available beyond the 19th report. As such, NCCI uses an approach based on combined data for policy years that began more than 20 years ago. The approach is somewhat arbitrary, but not unreasonable, and is used in numerous, if not all NCCI states. As with loss development through a 19th report, at least five measurements are available. NCCI uses a five year average, determined individually for Pinnacol and private carriers. Oliver Wyman used an unweighted five year average excluding the highest and lowest values, based on statewide combined data.

The impact on the indicated change to advisory loss costs of using Oliver Wyman's selection method is to decrease the indicated change to loss costs by approximately 0.1%.

Of more importance are adjustments made by NCCI to account for the impact of the Major Medical Insurance Fund (MMIF) which caps medical losses at $20,000 per claim for claims with dates of loss prior to July 1, 1981. NCCI has argued that the existence of this fund biased the data used to determine the medical 19th to ultimate LDF therefore resulting in medical 19th to ultimate loss development factors that are understated. As such, NCCI incorporates an adjustment that increases the medical 19th to ultimate LDF. The overall impact of this adjustment is to increase the indicated change to loss costs by approximately 1.0%.

If loss development data by policy year extending back past 20 years were available, the impact of the MMIF could be precisely accounted for. However, this data is not available. NCCI uses a standard (NCCI) methodology to estimate loss development beyond a 19th report. 19th to ultimate factors calculated using NCCI's methodology will be understated because of the impact of the MMIF. As such, the adjustments implemented by NCCI to offset this effect are reasonable, and consistent in approach and impact with prior filings.

Trend

Introduction

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

We note that the results of trend calculations will depend on the database used (paid losses versus paid losses plus case reserves). Calculations indicate that overall trends are lower when calculated using loss ratios based on paid loss plus case reserve data.

The charts included as part of this report provide graphs of historical experience in Colorado. Loss ratio trends based on paid loss plus case reserve data are examined. An examination of historical experience in Colorado indicates the following:

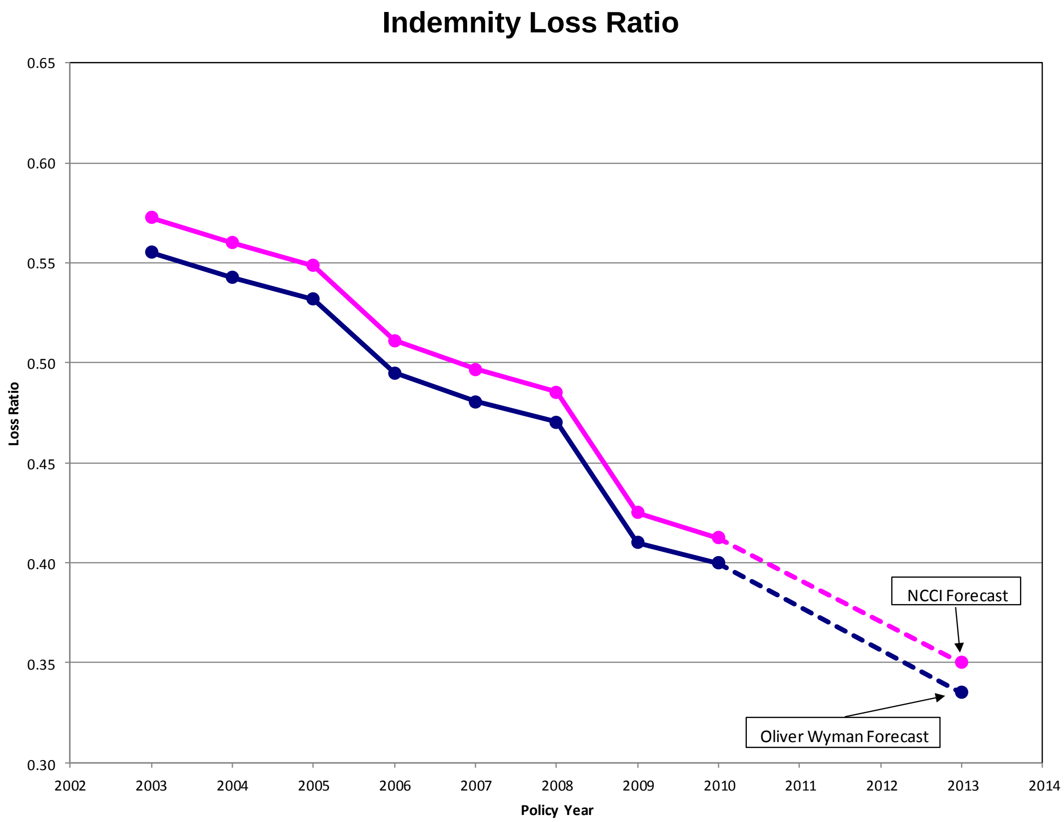
1. Indemnity loss ratios continue to decrease. The average annual rate of decrease over the past five years has been approximately 5.7%. This trend is marginally greater (a higher rate of decrease) than the five year average annual rate of decrease measured in last year's proceedings, 5.5%.

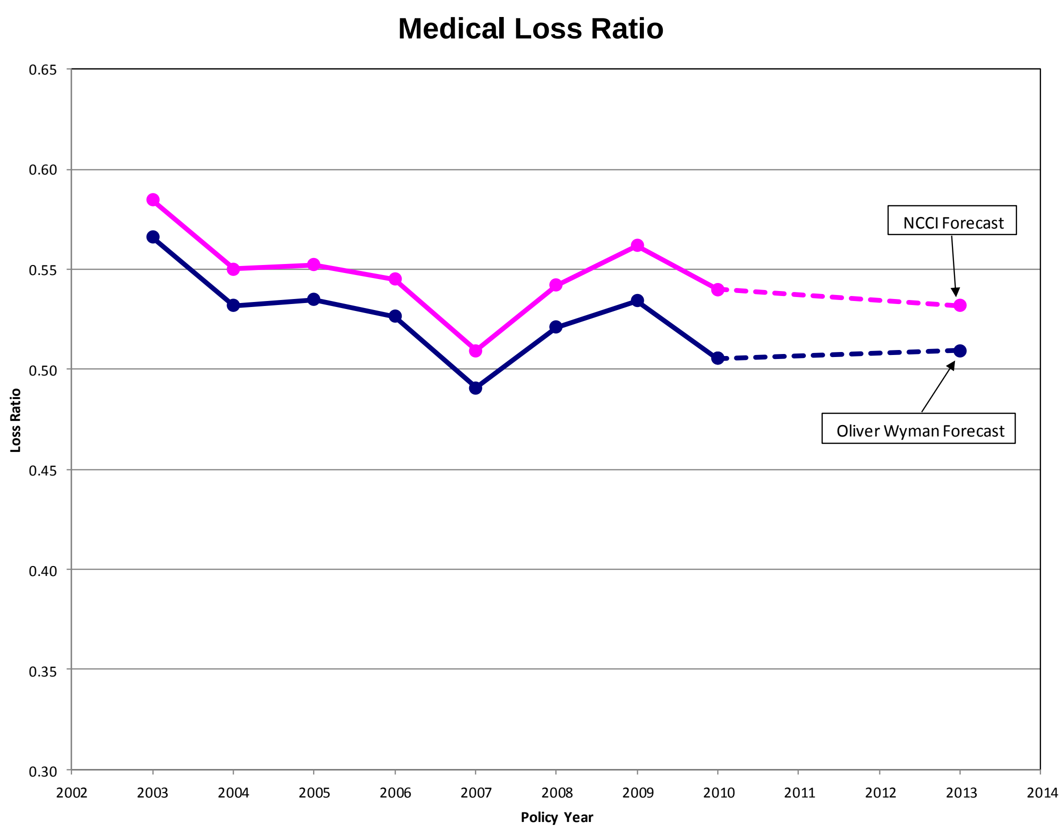
2. Medical loss ratios appear to have leveled off after several years of decrease.

3. Combined (indemnity plus medical) loss ratios continue to decrease. The average annual rate of decrease over the past five years has been approximately 2.7%. This trend is smaller (a lower rate of decrease) than the five year average annual rate of decrease measured in last year's proceedings, 3.5%.

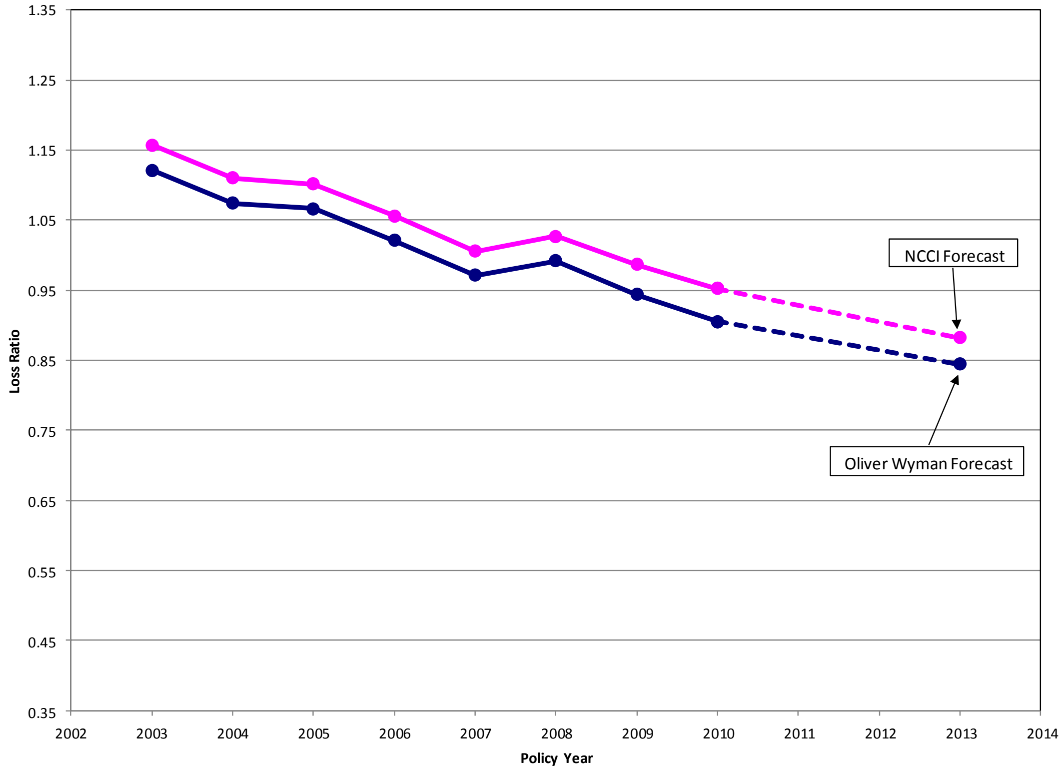
4. Claim frequency trend has been distorted by the economic disruption that began in 2008. The extraordinary decrease to claim frequency in 2008 was not limited to Colorado. Anecdotal discussions with Oliver Wyman clients and other insurance industry professionals indicate that employees avoided filing claims out of employment concerns at that time, and in 2009. Claim frequency has increased in 2010, but only to levels that would have been expected based on prerecession trends.

The graphs on the following pages illustrate these observations.

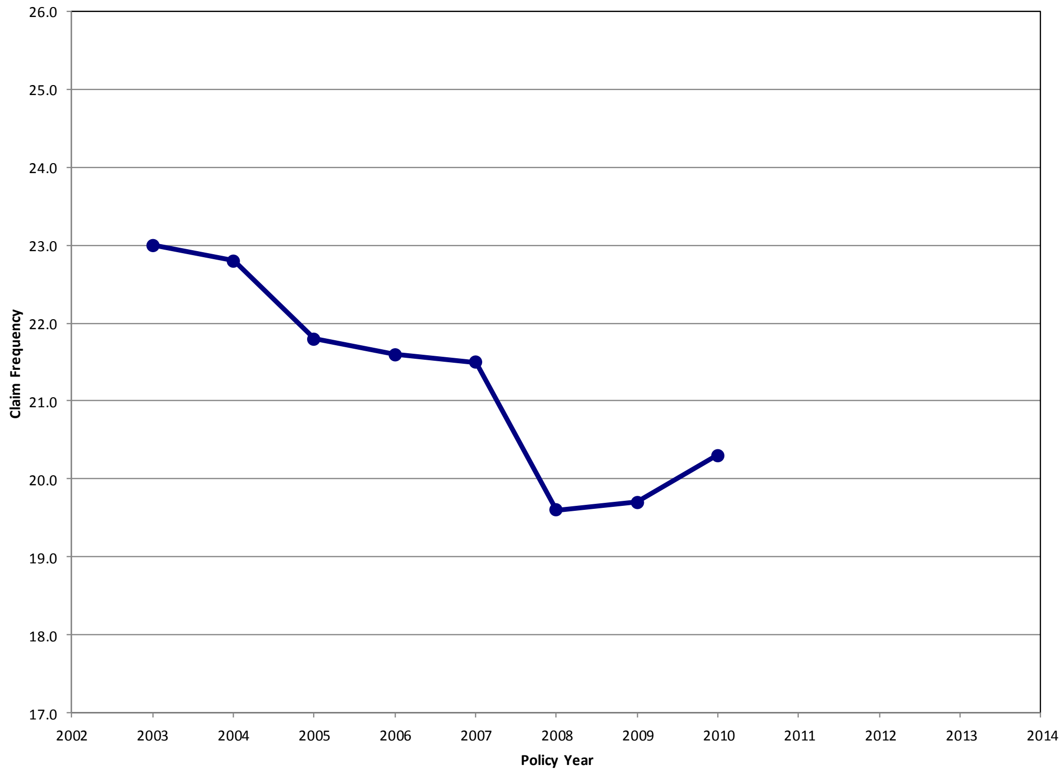

Indemnity Loss Ratio
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
Loss Ratio
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Policy Year
NCCI Forecast
Oliver Wyman Forecast


Medical Loss Ratio
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
Loss Ratio
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
Policy Year
NCCI Forecast
Oliver Wyman Forecast

Combined (Medical plus Indemnity) Loss Ratio



Claim Frequency



Comparison of Trend Recommendations

	NCCI	Oliver Wyman
Indemnity Loss Ratio	-5.0%	-5.3%
Medical Loss Ratio	-1.0%	-0.6%

Oliver Wyman's medical trend recommendation is lower (a smaller rate of decrease) than our recommendation in last year's proceedings, where our medical loss ratio trend was -2.0%. However, our indemnity trend recommendation is somewhat greater (a larger rate of decrease) than it was in last year's proceedings, -4.8% on indemnity loss ratios. NCCI's medical loss ratio trend recommendation is also somewhat lower than their recommendation in last year's proceedings, -2.0% on medical loss ratios. NCCI's indemnity loss ratio trend is unchanged from last year's proceedings.

Discussion and Recommendations

Indemnity

Oliver Wyman recommends an average annual indemnity loss ratio trend of -5.3%. This compares to NCCI's proposal of -5.0%. Oliver Wyman's recommendation is based on a credibility weighted method. The credibility method used calculates the average annual change to indemnity loss ratios individually over the past five years, six years, seven years, and eight years using an exponential model for each group. The selected trend is a weighted average of the trends from each of the four models. The weights are based on the calculated credibility of the resulting trend from each model. Credibility is a measure of how well each model fits the underlying empirical data. This approach is consistent with Oliver Wyman's recommendations from the prior three proceedings. NCCI's trend is judgmentally selected based on an examination of various trend models.

Medical

Oliver Wyman recommends an average annual medical loss ratio trend of -0.6%. Oliver Wyman's recommendation is based on a credibility weighted method, as described above. NCCI's trend is judgmentally selected based on an examination of various trend models.

Benefit, Law, and Other Miscellaneous Changes

Impact of Changes to Medical Fee Schedule

In the subject application, NCCI estimated the impact of changes in the medical fee schedule on statewide loss costs to be an increase of approximately 0.3%. NCCI's proposal is reasonable, when compared to estimated impacts of prior changes to medical fee schedules in Colorado. The methodology used by NCCI to estimate these impacts is similar to the methodology used in prior proceedings.

Our understanding is that this estimate was based on information available at the time NCCI filed its application with the Division. However, since the time the application was made, additional information regarding the medical fee schedule has been made available to NCCI. Our understanding is that NCCI intends to file a separate application with the Division to further increase loss costs as a result of this additional medical fee schedule information.

Miscellaneous Values

We have reviewed select changes to Advisory Miscellaneous Values in the filing. A summary of the values proposed in the current filing, as well as the three prior values, follows:

	1/1/2010	1/1/2011	1/1/2012	1/1/2013*
Basis of Premium for 7370 - Taxicab Co				
Employee Operated Vehicle	$66,686	$66,528	$71,000	$72,800
Leased or Rented Vehicle	$44,457	$44,352	$47,300	$48,500
Premium Determination for Partners				
Sole Proprietors, Executive Officers	$53,300	$47,500	$47,300	$48,500

***Proposed**

The changes to both of the above values appear reasonable when compared to the change in the average weekly wage in Colorado over the past year. Additionally, when measured as a ratio to the average annual wage, the above values are consistent with those of surrounding states.

Loss Adjustment Expense

NCCI proposes to marginally increase the currently approved provision for loss adjustment expenses (LAE) from 18.7% of losses to 18.9%. We find NCCI's proposal reasonable for the purpose of this application based on our review of historical data.

Experience Rating Off-Balance

Introduction

Experience rating is the final step in the ratemaking process. 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 actual loss experience for others will be lower. The purpose of the experience rating plan is to forecast how each individual employer will perform relative to the average. The forecast is based on what 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, 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.

Off-Balance

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 program. The term off-balance is used because in theory the statewide average experience modification should balance to 1.000.[20] 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.

Employers can be partitioned into three general groups:

- Intra-state employers:
  Employers with payroll exposure in Colorado only.
  The average experience modification for intra-state employers is referred to as "intra-state off-balance".
- Inter-state employers:
  Employers with payroll exposure in Colorado AND other states.
  The average experience modification for inter-state employers is referred to as "inter-state off-balance".
- Non-rated employers:
  Employers too small to be experience rated.
  These employers are assigned a default experience modification of 1.000.

[20] *In reality, the statewide average experience modification, or off-balance, should fluctuate within a range very close to, but somewhat less than, 1.000 (.980 to 1.000). This is due to the greater influence on the off-balance calculation of very large employers that generally have better than expected loss experience.*

The statewide off-balance is equal to the weighted average (using expected losses as weights) of the intra-state off-balance, the inter-state off-balance, and 1.000, the value assigned to non-rated employers.[21]

Reasons for Off-Balance

Off-balance will 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 current average for the employer's classification. However, ideally, there is an expectation that the off-balance will remain within a range between 0.980 and 1.000.

It is possible for a material and consistent off-balance (either materially and consistently greater than 1.000, or materially and consistently less than 1.000) to develop over time. One reason this might occur is when loss costs are either too low or too high over extended periods of time:[22]

- Experience modifications are based on the ratio of actual loss experience to expected loss experience. Expected loss experience is based on loss costs. If loss costs are too low over extended periods of time, then actual loss experience will be greater than expected loss experience for extended periods of time. Experience modifications will, on average, increase, leading to a statewide off-balance greater than 1.000.[23]

- Similarly, if loss costs are too high over extended periods of time, then actual loss experience will be less than expected loss experience for extended periods of time. Experience modifications will, on average, decrease, leading to a statewide off-balance less than 1.000.[24]

The statements above illustrate how the experience rating program will reflexively act to adjust for loss costs that have been chronically too low or too high over extended periods of time.

[21] *Employers are partitioned into these three groups to assist in the analysis of off-balance. The off-balance could also be calculated directly by averaging across all employers without first partitioning them into groups.*

[22] *Historical data seems to indicate that the off-balance that developed in Colorado during the mid to late 1990's was due to overstated loss costs. There are likely other reasons why an off-balance could develop over time, however, rate inadequacy and rate redundancy provide the clearest examples.*

[23] *Or greater than the high end of the preferred 0.980 to 1.000 range.*

[24] *Or less than the low end of the preferred 0.980 to 1.000 range.*

Adjustments to Off-Balance

If a material off-balance develops in a state, then a manual adjustment is required to bring the off-balance closer to the ideal range of 0.980 to 1.000.[25] Such an adjustment is implemented by changing experience rating plan parameters used to calculate experience modifications.

The process of implementing such an adjustment is straightforward. Put very simply, if the off-balance in a state is too low (less than the desired range of 0.980 to 1.000), then:

- Parameters used in the experience rating plan to determine expected losses are decreased.
- Expected losses used to determine experience modifications are therefore decreased.
- The ratio of actual losses to expected losses will therefore increase because expected losses (in the denominator of the ratio) have been decreased.
- Experience modifications, all else being equal, will therefore increase, raising the statewide off-balance.[26]

The adjustment to increase experience modifications will generate additional premium. If experience modifications increase, collected premium will increase all else being equal. Therefore, an additional adjustment to offset the expected premium increase is required to ensure that the overall impact of the process is revenue neutral. The additional adjustment is to decrease manual loss costs by an amount that will decrease premium so as to exactly offset the premium increase generated by the increases to experience modifications. The complete process is as follows:

- Parameters used in the experience rating plan to determine expected losses are decreased.
- Expected losses used to determine experience modifications are therefore decreased.
- Experience modifications, all else being equal, will therefore increase, raising the statewide off-balance.
- Increasing experience modifications will increase collected premium.
- Manual loss costs are decreased so as to decrease collected premium by an amount that will exactly offset the increase to collected premium generated by the increasing experience modifications.
- In this manner, the entire adjustment process is expected to be revenue neutral.

An off-balance adjustment is made by selecting a target average experience modification (the target off-balance) for the prospective rating period and adjusting experience rating parameters accordingly to ensure that the target is achieved. Manual loss costs are decreased to ensure that the overall premium level effect is revenue neutral, as discussed.

If the off-balance is too high, then a comparable procedure is used, but parameters are adjusted in directions opposite to those discussed in the example above. The complete process is as follows:

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[25] *For example, if loss costs have been too high over an extended period of time, an off-balance less than the low end of the preferred 0.980 to 1.000 range will develop. Even if loss costs were to subsequently stabilize at the appropriate level, the off-balance that developed during the period of overstated loss costs will remain. A manual adjustment is required to move the off-balance back to the preferred range.*

[26] *The experience modification is the ratio of actual loss experience to expected loss experience. If expected loss experience is decreased, then experience modifications will increase, all else being equal.*

- Parameters used in the experience rating plan to determine expected losses are ***increased.***
- Expected losses used to determine experience modifications are therefore ***increased.***
- Experience modifications, all else being equal, will therefore ***decrease***, raising the statewide off-balance.
- ***Decreasing*** experience modifications will ***decrease*** collected premium.
- Manual loss costs are ***increased*** so as to ***increase*** collected premium by an amount that will exactly offset the ***decrease*** to collected premium caused by the ***decreasing*** experience modifications.
- In this manner, the entire adjustment process is expected to be revenue neutral.

Measurement of Off-Balance

As mentioned earlier in this report, there are two primary, independent sources of data used in the NCCI application, Financial Call data and Workers Compensation Statistical Plan data. Aggregate Financial Call data is the data that underlies the calculation of the statewide indicated change to loss costs. Workers Compensation Statistical Plan (WCSP) data is used to distribute the statewide change to the five industry groups, and to each classification within each industry group. Actual measurements of off-balance are based entirely on WCSP data. Adjustments to loss costs and measurements of statewide premium level changes are based on Financial Call data. Put simply, the adjustment for off-balance is calculated using measurements of off-balance based on WCSP plan data. However, the adjustment for off-balance is applied to Financial Call data used to determine the statewide average change to loss costs. This process would be fine if there was assurance that measurements of off-balance using WCSP data would be the same as measurements of off-balance using Financial Call data. Up until several years ago, NCCI used WCSP data, which includes data generated by all insured employers in Colorado, including employers with large deductible policies, to measure off-balance. Financial Call data excludes large deductible experience[27]. The result is that the off-balance, or average experience modification generated by WCSP data, is expected to be materially lower than the off-balance underlying Financial Call data, the reason being that large deductible employers generally have materially better loss experience than their smaller employer counterparts.

Two years ago, NCCI began to use WCSP data that excludes the experience of large deductible employers for the purpose of measuring off-balance. The same approach has also been used in the current application.

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[27] *The reason for excluding large deductible data from Financial Call data and therefore the calculation of the statewide indicated change to loss costs is that employers with large deductible policies are generally very large employers who are essentially self-rated, that is, their workers compensation costs are based almost exclusively on their own experience. These employers rely only minimally on published loss costs, whereas premium charges for other employers are generally almost exclusively based on published loss costs. Therefore, excluding large deductible data from Financial Call data creates a better match between resulting loss costs (based on Financial Call data) and the group of employers whose premium charges are based primarily on published loss costs.*

On the other hand, data from large deductible policies are included in WCSP data because WCSP data is used to determine the relative differences between loss costs for individual classifications. It is important to note that the NCCI methodology does NOT directly calculate loss costs for individual classifications. Rather, the NCCI methodology is equivalent to calculating a statewide average loss cost determined by Financial Call data, which is then modified based on WCSP data to determine loss costs for individual classifications. Given that data volume is greatly reduced once it is measured on an individual classification basis, all possible information that helps determine the relative differences between individual classifications should be used. Therefore, experience from employers with large deductible policies is included in this process, and therefore with WCSP data.

Recommended Target Off-Balance

NCCI recommends a target off-balance equal to 0.971. This target is calculated as follows, using WCSP data excluding large deductible data.

Component	Weight	Target
Intra-state	61.4%	0.970
Inter-state	28.7%	0.963
Unrated	9.9%	1.000
Target	100.0%	0.971

Relative to a target off-balance of 1.000 (Oliver Wyman's recommendation), NCCI's proposal will require an increase to manual loss costs of 2.9% to offset the reduction to collected premium caused by an off-balance of 0.971. Put simply, NCCI is requesting that smaller employers fund, through increased premium charges (due to higher manual loss costs) the benefit to larger employers of reduced experience modifications (due to NCCI's suggested target off-balance of 0.971).

The basis for NCCI's proposal are internal NCCI studies that support the assertion that employers with less than $10,000 in premium tend to have higher loss ratios than employers of larger premium sizes.

From a technical viewpoint, experience rating plans are designed to be balanced. In general, experience rating off-balance is expected to fall within a range of 0.980 to 1.000. The basis for this range is the common expectation that the largest employers will generally have credit experience modifications (experience modifications less than 1.000). These employers, because of their size, have a large impact on the statewide off-balance. Oliver Wyman has recommended, in past proceedings, a target off-balance of unity, that is, a balanced plan. This is Oliver Wyman's recommendation this year as well. The basis for this recommendation is as follows:

> The NCCI analysis of loss ratio differentials includes all employers, specifically large deductible employers. Experience rating off-balance is measured excluding large deductibles, as discussed earlier. Therefore, the measurements in NCCI's analysis are likely exaggerated.
>
> There is an underlying issue specific to Colorado as respects experience rating. Experience rating modifications in Colorado are calculated net (without) deductible losses on small deductible policies. However, manual loss costs and experience rating parameters are calculated gross (including) deductible losses on small deductible policies. Therefore, this artificially depresses the average experience modification down in Colorado. The impact is that all else being equal, manual loss costs are somewhat greater in order to fund the decrease to experience modifications caused by measuring actual experience net of deductibles, but utilizing experience rating parameters calculated with gross of deductible loss experience.
>
> The primary limit for losses used in the experience rating plan has been increased. The impact is to greatly increase the experience that receives the greatest weight in the

experience rating calculation. Given NCCI's assertion that smaller employers have materially higher loss ratios than larger employers under the current experience rating plan, the expectation is that increasing the primary limit will increase the experience modifications for these employers and decrease the experience modifications for larger employers, with an overall impact of bringing the loss ratios for these two groups of employers much closer together. Until the program is implemented, it is not clear at this time what the impact will be. We note that in documentation provided by NCCI in support of increasing the primary limit clearly states that the impact ***does not vary by size of risk***. This leads to the question as to how different the loss experience for smaller employers in Colorado might be from larger employers.

The appropriateness of addressing what appear to be flaws in the experience rating plan through adjustments to overall rate level is questionable.

Given these observations, Oliver Wyman recommends a target off-balance of unity.

Indicated Change to Advisory Loss Costs

Based on the preceding discussion, Oliver Wyman makes the following recommendations. A comparison with NCCI's recommendations is included.

Comparison of Indications

		NCCI Proposal		Oliver Wyman Recommendation	
1.	Indicated Change to Advisory Loss Costs Due to Experience, Trend, Benefits, & LAE Prior to Off-Balance Adjustment:	+4.6%	(1.046)	+3.2%	(1.032)
2.	Impact of Item B-1425	+0.9%	(1.009)	+0.9%	(1.009)
3.	Impact of Off-Balance Adjustment on Advisory Loss Costs:	+0.6%	(1.006)	-2.4%	(0.976)
4.	Indicated Change to Advisory Loss Costs After Off-Balance Adjustment: (1) x (2) x (3)	+6.1%	(1.061)	+1.7%	(1.017)
5.	Expected Impact of Off-Balance Adjustment on Standard Premium:	-0.6%	(0.994)	+2.4%	(1.024)
6.	Indicated Premium Level Change: (4) x (5)	+5.4%	(1.054)	+4.1%	(1.041)

5

Coal Mine Classifications

Advisory loss costs for coal mine classifications are equal to the sum of a traumatic component and an occupational disease component. Traumatic claims, such as fractures and strains, are compensable under the Colorado Act governing workers compensation benefits. Occupational disease (OD) claims for pneumoconiosis (also known as black lung disease) may be filed under the Colorado State Workers Compensation Law (the State Act) or under the Federal Coal Mine Health and Safety Act of 1969 (the Federal Act). The traumatic component and the OD component are calculated individually and then summed to determine the advisory loss cost. The traumatic component is calculated in the same manner as any other workers compensation classification. Oliver Wyman agrees with NCCI's methodology used to determine the traumatic component of advisory loss costs for coal mine classifications, notwithstanding differences between NCCI's proposal and Oliver Wyman's recommendations as respects underlying parameters and assumptions, discussed earlier.

As respects the occupational disease component, the occupational disease component had been grossly overstated. A comparison of NCCI's 1/1/11 proposal and Oliver Wyman's 1/1/11 recommendations, as well as a history of the OD component underlying loss costs at recent effective dates, is presented below. The Division approved Oliver Wyman's recommendations during the 2010 proceedings. Since that time, in both the 2011 proceedings and in the current proposal, NCCI has proposed no changes to the 1/1/2011 approved occupational disease component of loss costs.

Classification	Effective 1/1/08	Effective 1/1/09	Effective 1/1/10	NCCI Proposed Effective 1/1/11	Oliver Wyman Proposed Effective 1/1/11
1005	3.14	1.37	0.09	0.55	0.09
1016	12.56	3.57	0.28	1.17	0.29

The large decrease from 1/1/08 to 1/1/09 was the result of recommendations made by Oliver Wyman during those proceedings. The principal issue at that time was NCCI's assumption regarding claim frequency. NCCI's frequency assumption presumed that, for the ten most recent unit statistical plan policy years, there would be in excess of 220 entitled[28] occupational disease claims. At that time, there were 2 reported entitled claims with total incurred costs less than $200,000. This data, which was supplied by NCCI, was verified by examination of data provided by the United States Department of Labor, valued as of December 31, 2007.

[28] *An entitled claim is one that has been awarded black lung benefits. A low percentage of all filed claims are ultimately found to be entitled to black lung benefits.*

6

Experience Rating Parameters

Expected Loss Rates

Expected loss rates (ELRs) serve as the basis for experience rating. ELRs are used to calculate an individual employer's expected loss experience, against which the employer's actual loss experience is compared. To the extent that actual loss experience is less than expected, the employer's experience modification is less than one. To the extent that actual loss experience is greater than expected, the employer's experience modification is greater than one. Proposed advisory loss costs serve as the starting point for the calculation of ELRs, so that, in theory, a 10% decrease to the loss cost for a specific class should translate into a similar decrease to the ELR. In practice, this does not occur, primarily due to complexity of the ELR calculation. Another contributing factor is any adjustment to reflect changes to the target experience rating off-balance.

The calculation of the ELRs was changed due to the changes to class ratemaking in the prior proceedings. NCCI is not proposing to change the overall methodology used to determine the ELRs.

D Ratios

Introduction

The experience modification is actually a weighted average of three components values. The general calculation is illustrated below:

$$W_1 \times \frac{\text{Actual Primary Losses}}{\text{Expected Primary losses}} + W_2 \times \frac{\text{Actual Excess Losses}}{\text{Expected Excess Losses}} + (1 - W_1 - W_2) \times 1.000$$

Primary losses are losses limited to \$10,000 per claim (\$20,000 per occurrence). This limit is known as the "primary limit" or the "split point". In a separate application, NCCI filed, and the Division approved, to revise the primary limit from \$5,000 to \$15,000 as follows: \$10,000 effective January 1, 2013; \$13,500 effective January 1, 2014; and \$15,000 effective January 1. 2015. Excess losses are losses above these limits, up to the maximum limit for experience rating, currently \$188,000 in Colorado. To the extent that the weights applied do not sum to 1.000, the remaining weight is applied to 1.000. In general, the weight applied to primary losses, W_1 is significantly greater than the weight applied to excess losses, W_2. Therefore, the primary component has the greatest weight in determining the experience modification.[29]

D Ratios are the percentage of expected losses that are primary. (1-D Ratio) is the percentage of expected losses that are excess.

Calculation of D Ratios

The methodology used to determine D Ratios prior to changes implemented during the 2009 proceedings essentially determined an expected D Ratio based on statewide empirical data, which was then modified based on individual classification data. As a result, the D Ratios for all classifications tended to fall within a fairly small range of values about the statewide average. The principal change implemented two years ago relates to the use of a starting point based on hazard group specific data. With that change, there were seven separate starting points, one for each hazard group (A through G), based on statewide data by hazard group. The result was a material redistribution of D Ratios, especially for classifications in the lowest hazard groups and classifications in the highest hazard groups. Given that the changes to the D Ratios were due to a material change in methodology the Division ordered NCCI to cap the changes to D Ratios at +/-.02.

Effective January 1, 2011, the MED ERA program ended in Colorado. MED ERA is a program by which lower cost medical only claims are not included in the calculation of experience modifications. With MED ERA in effect, D Ratios are lower than they otherwise would be, because lower cost claims are not included in the experience modification calculation, and therefore, the percentage of expected losses that will be below the primary limit will be smaller. With elimination of MED ERA, the D Ratios were increased, to reflect that lower cost medical only claims will now be included in the experience rating calculation. As such, the Division ordered NCCI to use a onetime cap of +/-.10 during the 2010 proceedings.

For the 2011 proceedings, NCCI proposed, and the Division approved, a cap of +/-.03.

Due to the changes in the primary limit, large increases in D Ratios are expected this year. In this year’s application, it appears that NCCI has not capped the changes to D Ratios. Oliver Wyman agrees withy this approach, given that the change to the primary limit is expected to materially impact D Ratios.

[29] *Notwithstanding the weight applied to 1.000. For larger employers with significant credibility, the combined weights applied to primary and excess losses is generally greater than 50%, and therefore greater than the weight applied to 1.000. For smaller employers, the weight applied to primary losses will be greater than the weight applied to excess losses, but the combined weights could be less than 50%.*

7

Swing Limits

Swing limits provide for a maximum change to advisory loss costs for individual classes from current values. To the extent that application of swing limits reduces (or increases) expected premium, advisory loss costs for uncapped classifications are increased (or decreased) to ensure that the effect of swing limits is revenue neutral. This is referred to as the redistribution of capped premium, and is an exercise performed individually by industry group.

The current swing limits are +/-15% from the average change to the industry group of classes to which a specific class belongs. The actual change to the advisory loss cost of a specific class could be materially greater than or less than 15%, depending on the industry group to which the class belongs. The following table provides the maximum and minimum changes to advisory loss costs for individual classes, by industry group, based on NCCI's recommended 6.1% increase to advisory loss costs:

15% Swing Limit
Maximum and Minimum Changes to Advisory Loss Costs*
for Individual Classes

Industry Group	Indicated Change to Advisory Loss Costs	Industry Group Differential	Indicated Change to Advisory Loss Costs by Industry Group	Maximum Permissible Change to Individual Class Loss Costs	Maximum Permissible Change to Individual Class Loss Costs
Manufacturing	1.061	1.003	6.4%	21%	-9%
Contracting	1.061	0.986	4.6%	20%	-10%
Office & Clerical	1.061	0.992	5.3%	20%	-10%
Goods & Services	1.061	1.020	8.2%	23%	-7%
Misc.	1.061	0.980	4.0%	19%	-11%

*Based on NCCI's Recommended 6.1% increase to Advisory Loss Costs

NCCI proposes to change the swing limits to +/-20%. This would increase the maximum change to advisory loss costs for individual classes to +/-20% as seen on the following page:

20% Swing Limit
Maximum and Minimum Changes to Advisory Loss Costs*
for Individual Classes

Industry Group	Indicated Change to Advisory Loss Costs	Industry Group Differential	Indicated Change to Advisory Loss Costs by Industry Group	Maximum Permissible Change to Individual Class Loss Costs	Maximum Permissible Change to Individual Class Loss Costs
Manufacturing	1.061	1.003	6.4%	26%	-14%
Contracting	1.061	0.986	4.6%	25%	-15%
Office & Clerical	1.061	0.992	5.3%	25%	-15%
Goods & Services	1.061	1.020	8.2%	28%	-12%
Misc.	1.061	0.980	4.0%	24%	-16%

*Based on NCCI's Recommended 6.1% increase to Advisory Loss Costs

Oliver Wyman sees no compelling reason to deviate from the +/-15% swing limit approved by the Division during last year's proceedings, and we recommend that the Division reject NCCI's proposal to increase the swing limits to +/-20%.

8

Distribution and Use

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- Avoiding Tax Penalty - The actuarial findings contained in this document are not intended to be used, and cannot be used, by the taxpayer for the purpose of avoiding tax penalties that may be imposed on the taxpayer.

9

Caveats, Limitations and Assumptions

1. Data Verification (Claim and Exposure) – For our analysis, we relied on data and information provided by NCCI without independent audit. Though we have reviewed the data for reasonableness and consistency, we have not audited or otherwise verified this data. It should also be noted that our review of data may not always reveal imperfections. 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.
2. 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.
3. Underlying Assumptions – In addition to the assumptions stated in the report, numerous other assumptions underlie the calculations and results presented herein.
4. Unanticipated Changes – Our conclusions are based on an analysis of historical 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.
5. Internal / External Changes – The sources of uncertainty affecting our estimates are numerous and include factors internal and external to the Colorado workers compensation system. The factors include, but are not limited to, items such as changes in claim reserving or settlement practices, changes in the legal, social, or regulatory environment surrounding the claims process. Uncontrollable factors such as general economic conditions also contribute to the variability.
6. 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.
7. Purpose of Document – The opinions set forth in this document are for purposes of discussion of Oliver Wyman's findings with the Division. Oliver Wyman reserves the right to revise its recommendations should additional analysis performed in the future, or additional data and information that emerge in the future, indicate the need to do so.

8. Effective Date – Our numerical conclusions, including our trend calculations, are based on the effective date of January 1, 2013, and may not be directly applicable to rates to be effective on another date.

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Supporting Exhibits

Schedule SJL-1
Summary

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Summary of Recommended Changes to Loss Costs and Premium Level
Industrial Classes

	Oliver Wyman		NCCI	
	Factor	Percent	Factor	Percent
(1) Indicated Change to Premium Level	1.041	4.1%	1.054	5.4%
(2) Offset to Advisory Loss Costs due to Off Balance Adjustment	1.024	2.4%	0.994	-0.6%
(3) Indicated Change to Advisory Loss Costs	1.017	1.7%	1.061	6.1%

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Indicated Changes to Loss Costs
Industrial Classes

	Oliver Wyman		NCCI	
	Factor	Percent	Factor	Percent
(1) Indicated Change Based on Experience, Trend & Benefits	1.006	0.6%	1.050	5.0%
(2) Effect of Change in Loss Adjustment Expense	1.002	0.2%	1.002	0.2%
(3) Offset Due to Changes in Employers Liability Increased Limit Percentages	1.009	0.9%	1.009	0.9%
(4) Indicated Change to Advisory Loss Costs	1.017	1.7%	1.061	6.1%
(5) Additional Premium due to Off-Balance Adjustment	1.024	2.4%	0.994	-0.6%
(6) Indicated Premium Level Change	1.041	4.1%	1.054	5.4%

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Summary of Recommended Changes To Loss Costs
Industrial Classes

	Oliver Wyman	
(1)	Indicated Change Based on Experience, Trend & Benefits	Schedule SJL 2, Page 1
(2)	Effect of Change in Loss Adjustment Expense	Selected indicated.
(3)	Offset Due to Changes in Employers Liability Increased Limit Percentages	From NCCI loss cost application
(4)	Indicated Change to Advisory Loss Costs	[(1) x (2) x (3)]
(5)	Impact of Experience Rating Off-Balance	Based on data provided by NCCI.
(6)	Indicated Change to Advisory Loss Costs	[(4) x (5)]
	NCCI	
(1)	Indicated Change Based on Experience, Trend & Benefits	From NCCI loss cost application
(2)	Effect of Change in Loss Adjustment Expense	From NCCI loss cost application
(3)	Offset Due to Changes in Employers Liability Increased Limit Percentages	From NCCI loss cost application
(4)	Indicated Change to Advisory Loss Costs	[(1) x (2) x (3)]
(5)	Impact of Experience Rating Off-Balance	From NCCI loss cost application
(6)	Indicated Change to Advisory Loss Costs	[(4) x (5)]

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Indicated Change Based on Experience, Trend and Benefits
Industrial Classes

(1)	Indicated Change Based on Policy Year 2010 Paid Loss Experience, Trend, and Benefits	0.996
(2)	Indicated Change Based on Policy Year 2009 Paid Loss Experience, Trend, and Benefits	1.015
(3)	Indicated Change due to Experience, Trend, and Benefits	1.006

Notes
(3) Average of Rows (1) and (2)

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Summary of Policy Year Paid + Case Development Factors

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Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Derivation of Annual Trend Factors
Statewide

Policy Year 2009		Indemnity	Medical
(1)	Trend Period:	4.001	4.001
(2)	Annual Trend	0.947	0.994
(3)	Trend Factor (2) ^ (1)	0.806	0.977

Policy Year 2010		Indemnity	Medical
(1)	Trend Period:	3.001	3.001
(2)	Annual Trend	0.947	0.994
(3)	Trend Factor (2) ^ (1)	0.850	0.982

Notes:
(1) From NCCI rate application
(2) Schedule SJL-5 Page 1 for Indemnity; Schedule SJL-5 Page 2 for Medical

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Calculation of Annual Loss Ratio Trends - Indemnity
Exponential Model Results

Exponential Trend Model	Annual Trend	Credibility	Trend Weight
5 Point Model	0.943	0.653	0.190
6 Point Model	0.944	0.874	0.254
7 Point Model	0.948	0.957	0.278
8 Point Model	0.952	0.960	0.279
		Selected Annual Trend:	0.947

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Calculation of Annual Loss Ratio Trends - Medical
Exponential Model Results

Exponential Trend Model	Annual Trend	Credibility	Trend Weight
5 Point Model	1.000	0.586	0.190
6 Point Model	0.995	0.732	0.238
7 Point Model	0.994	0.891	0.289
8 Point Model	0.989	0.874	0.283
		Selected Annual Trend:	0.994

Schedule SJL-6

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Premium On Level Factor
with Adjustment for Off Balance

Effective Date	Premium Changes	Cumulative Premium Changes	Policy Year	Premium On-level	Total Average Mod	Off-Balance Adjustment	Premium On-level with Off-Balance Adj.
Base		1.000					
1/1/2002	0.926	0.926					
12/1/2002	0.895	0.829					
1/1/2003	1.000	0.829	2003	0.640	0.990	1.010	0.646
1/1/2004	0.939	0.778	2004	0.681	0.979	1.021	0.696
1/1/2005	0.935	0.728	2005	0.729	0.982	1.018	0.742
1/1/2006	0.982	0.715	2006	0.742	0.976	1.025	0.760
1/1/2007	1.000	0.715	2007	0.742	0.971	1.030	0.764
1/1/2008	0.912	0.652	2008	0.814	0.992	1.008	0.820
1/1/2009	0.841	0.548	2009	0.967	0.981	1.019	0.986
1/1/2010	0.903	0.495	2010	1.071	0.988	1.012	1.084
1/1/2011	1.033	0.511					
1/1/2012	1.037	0.530			Target:	1.000	

Notes

Data provided by NCCI.

Mod and Off-Balance data excludes Large Deductible risks

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date of 1/1/13

Coal Mine Traumatic and Occupational Disease

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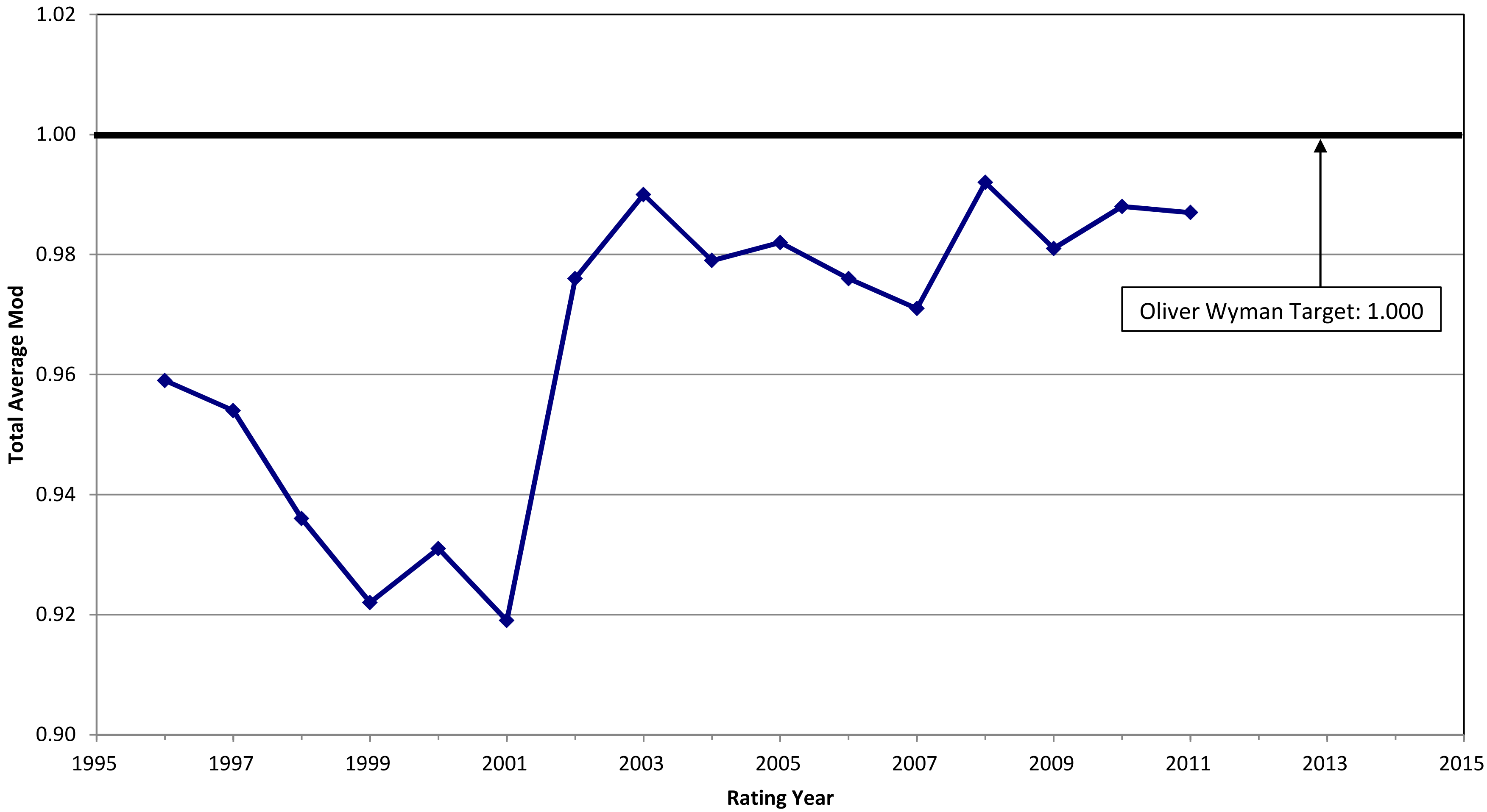
Schedule SJL-8

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date 1/1/2013

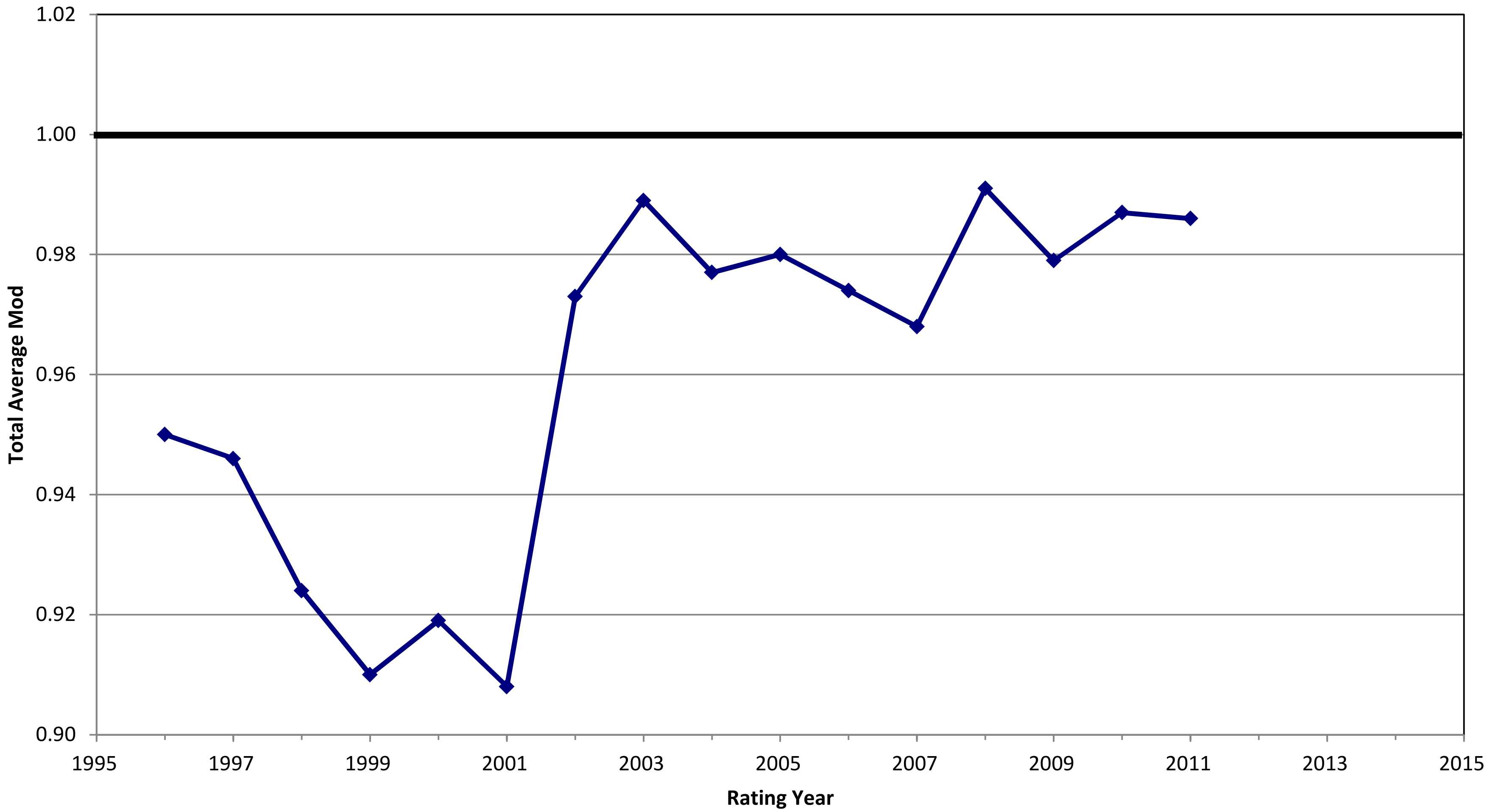
Average Experience Modification in Colorado: All Risks
Excluding Large Deductible Policies



Schedule SJL-9

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date 1/1/2013

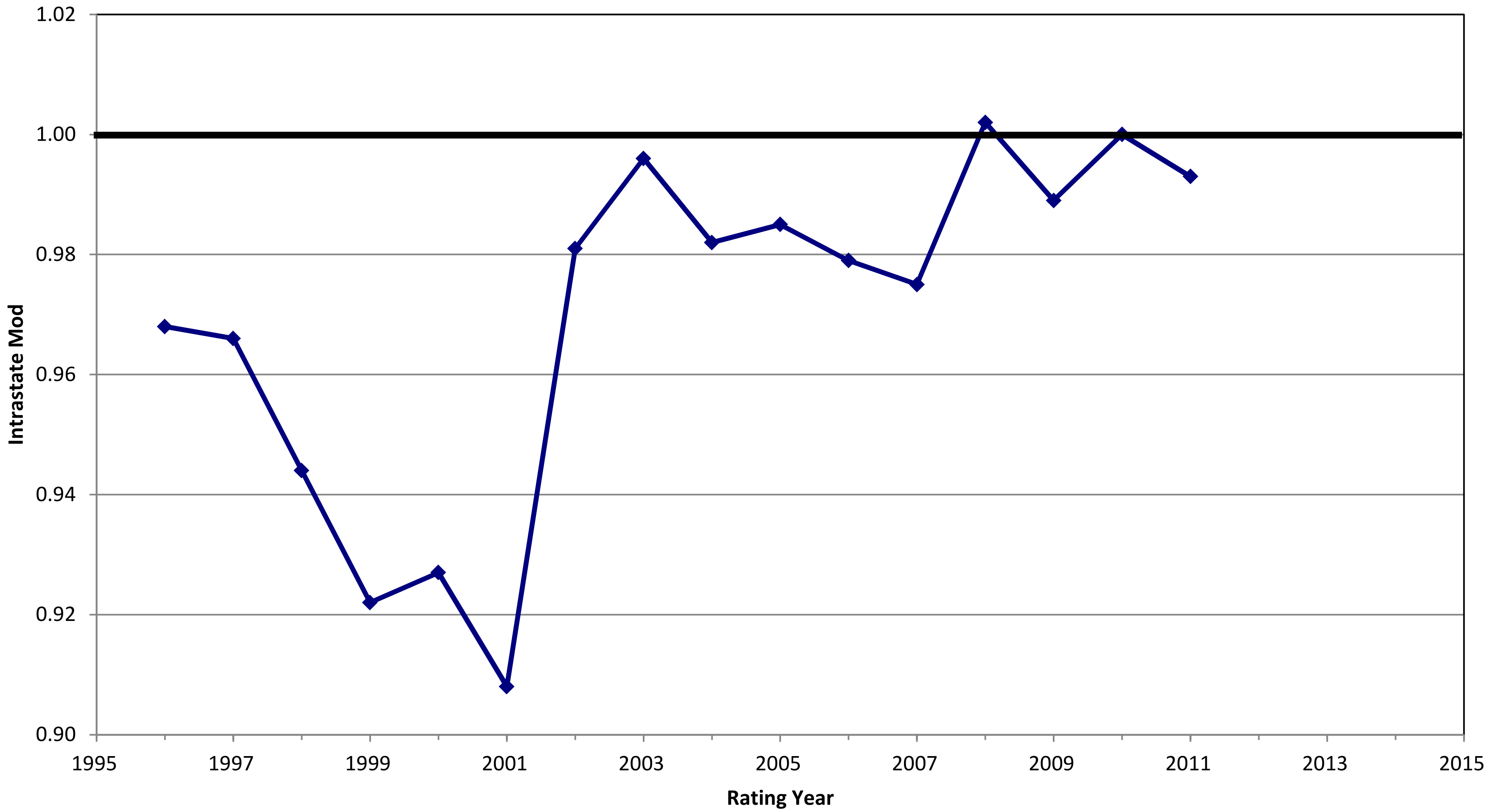
Average Experience Modification in Colorado: Rated Risks Only
Excluding Large Deductible Policies



Schedule SJL-10

Review of NCCI Filing
Colorado Division of Insurance
Proposed Effective Date 1/1/2013

Intrastate Experience Modification in Colorado: Rated Risks Only
Excluding Large Deductible Policies



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