



March 19, 2009

Analysis of Section 3 of Oliver Wyman’s March 6, 2009 Report, “Rate Recommendations for Private Employers – Ohio Bureau of Workers’ Compensation”*

SHOENFELT CONSULTING

James S. Shoenfelt, ACAS, MAAA

Actuary, Shoenfelt Consulting, Inc.

* Including Exhibits 10.1 and replacement Exhibits 10.2 – 10.4

Background

An Ohio employer's workers' compensation premium is a function of the employer's "experience modification percentage". The experience modification percentage depends on a ratio – (actual adjusted losses less expected adjusted losses) divided by expected adjusted losses – where these losses correspond to either 1) the employer or 2) the employer's group. The experience modification percentage equals this ratio multiplied by a "credibility percentage". The credibility percentage is such that it increases with the dollar amount of the expected losses. Since employer groups tend to have more dollars of expected losses than single employers, the credibility percentage tends to be larger for employer groups. Thus employer groups with low ratios tend to enjoy lower experience modification percentages than single employers with similar low ratios. So, if an employer has low ratio and is a member of a group, it may enjoy a small experience modification percentage. If the same employer's ratio increases such that it loses membership in the group, the employer may be subject to a very large rate increase.

Proposed Changes

- **Overall Rate Decrease.** Apply a -12.0% Rate Decrease, applicable to groups and non-groups
- **Credibility Table Change.** Move from the 85% Maximum Credibility table to the 77% Maximum credibility table
- **Experience Modification Off-balance Change in Calculation Procedure:** The experience modification off-balance factors currently vary by class. The average off-balance factor is 1.49. An experience modification off-balance factor of 1.23 is proposed for all classes.
- **Experience Modification Factor Cap.** Introduce a cap such that an employer's experience modification factor may increase no more than 130%.
- **Group Factor.** Introduce a group factor of 1.311.

Definition

Segment: Grouped Employers or Non Grouped Employers.

Scope

This review is limited to a review of Section 3 and Exhibit 10.1 of Oliver-Wyman's report dated March 6, 2009 and the replacement Exhibits 10.2 – 10.4 emailed from John.P.17@bwc.state.oh.us to jim@shoenfeltconsulting.com on Mon 3/16/2009 5:25 PM.

Reliance

I have relied on the following:

- All premium and loss figures in this report are correct.
- The current 2008 Experience Modification and Current 2008 Off-balance for Non Group and Group (Columns 3 & 4 of Exhibit 10.2) is correct.
- The following calculations of Oliver Wyman are correct:
 - Average 2008 Experience Modification Factor and Off-balance Experience Modification Factor (Exhibit 10.2, Table 1, Columns 3 and 4), and the average off-balance after the application of the 77% Maximum Credibility Table (Exhibit 10.3, Table 3, Col. 6)
 - 2008 Projected Premium (Exhibit 10.2, Table 2, Column 1)
 - The percentage impact on 2008 projected premium of adopting the 77% Credibility Adoption (Exhibit 10.3, Table 3, Column 2)
 - Impact of the capping the experience mod changes at 130% (Exhibit 10.4, Table 5, Column 3)
- Dollar impact of the capping experience Mod Changes to 130% (Exhibit 10.4, col, 3)

Judgment and Sensitivity Analysis. Oliver Wyman’s conclusions are based in part on judgment. In addition to any judgment which may be implicit in the figures listed in the “Reliance” section above, I have identified two additional items relying on judgment: 1) the implemented segment relativities, 2) the projected 2008 premiums. The premium impact of the proposed changes including Oliver Wyman’s judgment on these two items is a 9.6% increase for groups. (See Table 2, Column 3). The sensitivity of this figure to changes in judgment and the rationale for such are shown below.

Implemented Segment Relativities

Judgment

The “selected” segment relativities in Exhibit 10.1 are within the range of the historical relativities calculated for policy years 2003 – 2007. The “selected” relativity for non-group is a little higher than the 5-year average historical paid relativity. The “selected” relativity for group is a little higher than both the 5-year average historical paid relativity and the 5-year average historical incurred relativity. However, these “selected” relativities are not implemented. The *implemented* group relativity (Table 1, Column 2) is lower. (This represents an intention to limit the group premium increase to that which would result from the adoption of the 77% Maximum Credibility table alone.)

Sensitivity

Implementing the indicated group segment relativity

Exhibit 10.1 indicates that the “selected” non-group and group relativities are 1.30 and 0.80, respectively. The premium impact of the proposed changes when implementing these relativities in lieu of the relativities shown in Oliver Wyman’s report on Table 1, column 2 is a 16.8% increase for groups.

Implementing the average of the 5-year average paid relativity and the 5-year average incurred relativities

The average of the 5-year average paid relativity and the 5-year average incurred relativities for non-group and group respectively are 1.29 and 0.775. The premium impact of the proposed changes and implementing these relativities in lieu of the relativities shown in Oliver Wyman's report on Table 1, column 2 is a 15.4% increase for groups.

Conclusion

It may be actuarially appropriate to implement segment relativities that are closer to the "selected" segment relativities or perhaps to select segment relativities that are closer to the 5-year average indicated relativities. However, such selections result in even greater percentage premium increases to group policies. Implementing segment relativities of 1.30 and 0.706 for non-groups and groups, respectively, have the effect of limiting the premium increase to groups than would otherwise be generated by the two other reasonable sets of segment relativities described in the "sensitivity" section above.

2008 projected premium.

Judgment

Oliver-Wyman projects 2008 premium as \$1,270K for non-groups and \$780K for groups. These projections rely on some judgment. The calculations underlying Oliver-Wyman's 2008 premium calculations are complex and recognize other rating factors in the plan. One simple but somewhat reasonable method to project 2008 premium by segment is as follows: projected 2008 segment premium equals 2007 segment base premium before experience modification (from Exhibit 10.1) multiplied by the current 2008 segment average experience modification factor (from Table 1, column 3) and the corresponding segment off-balances (from Table 1, Column 4). This method yields 2008 premium as \$1,203K for non-groups and \$670K for groups.

Sensitivity

The premium impact of implementing the proposed changes and implementing these 2008 projected segment premiums in lieu of the 2008 projected segment premiums shown in Oliver Wyman's report on Table 2, column 1 while holding all else constant (i.e. still limiting group premium increases to those resulting from the adoption of the 77% Maximum Credibility Table alone) is a 10.0% increase for groups.

Conclusion

The implementation of the alternative 2008 projected premiums (all else the held constant, i.e. group premiums capped at that resulting from the 77% Maximum Credibility Table adoption) results in a slightly higher percentage increase for groups.

Other notes

Suitability of basing segment relativities on undeveloped losses

Oliver-Wyman bases relativities on undeveloped losses, rather than developed losses. I expect to see no significant differences as the relativities based on undeveloped losses are reasonably similar between policy years (of varying levels of loss development). See Exhibit 10.1.

Suitability of basing segment relativities on premiums “before Experience Modification”

If other rating factors applied after the experience modification in the premium algorithm impact group premium differently than non-group premium, then the proposed group and non-group relativities could be an inaccurate starting point for the computation of the “segment indicated change”. To that concern, Oliver-Wyman provided the following explanation:

There are other rating steps after the experience mod which could impact the premium between group and non group; however none are significant enough to move the relativities in a material way. Here is a brief summary of those rating factors:

Premium Discount Program (PDP): The PDP program is a discount that is primarily for the non group insureds with higher mods, and while older studies have supported the credit, more recent reports have been conflicting. A major consideration in evaluating the soundness of the credit is the impact of changing the experience rating credibility tables each year, as that will affect the PDP results. Since the PDP program is set to be discontinued in policy year 2009, my premise has been that we can ignore it for this analysis. If PDP continues in a form that favors non group, additional analysis may be required.

Drug Free Work Place: This program offers credits at levels that are currently being questioned, however the issue here is whether or not the participation levels strongly favors group or non group. From the "slippage" data we have seen I do not believe the participation levels differ enough between group and non group to have a material impact on the loss ratio relativities.

Salary continuation and 15k Medical programs: These options allow employers to assume costs in a deductible fashion, especially those who are motivated to stay in Group and/or keep their experience mod low. As this incentive may dissipate over time, it is possible the system may see less participation in these programs. Offsetting this would be an increase in experience mods as more losses flow into the experience rating history. A majority of participants in these programs are in Group. Note that this is not a rating factor in the plan; however it is a dynamic that could change.

Another program not mentioned is the “one claim” program, which is a plan designed for employers that have been kicked out of group. This rating factor was treated as part of the experience mod for non group, and therefore has been incorporated already.

I have relied that this information is correct.

CAS Statement of Principles Regarding Property and Casualty Ratemaking and Rate Capping

The May 1988 Casualty Actuarial Society's Statement of Principles Regarding Property and Casualty Ratemaking's Principle #4 explains that "A rate is reasonable and not excessive, inadequate, or unfairly discriminatory if it is an actuarially sound estimate of the expected value of all future costs associated with an individual risk transfer." The proposed rates limit the selected group relativity to .706 although indicated relativities are in the 0.74 – 0.82 range. The proposed rates include a cap on experience modification factor changes, too. These rate caps represent an effort to strike a balance between rates that are stable (i.e. avoiding large rate swings for employers whose underlying risk characteristics have been stable) and having rates represent an actuarially sound estimate of all future costs associated with an individual risk transfer. Additionally, Ohio Bureau of Workers Compensation has used rating caps in the past:

- The BWC limited the amount of penalty or debit TM (total modifier, which has since been replaced by the EM or experience modifier) that could be applied to the base rate.
- When BWC adopted the NCCI classification system

Conclusion

I have reviewed section 3 and Exhibit 10.1 of Oliver-Wyman's March 6, 2009 report and the replacement Exhibits 10.2 – 10.4 emailed from John Pedrick to me on 3/16/2009 5:25 PM. Subject to the caveats in the "Reliance" section above, it is my opinion that:

- The selected segment relativities are reasonably supported by the data and calculations in Exhibit 10.1.
- The implemented segment relativities correctly reflect an effort to limit rate increases for groups.
- Tables 1 and 2 demonstrate that the premium impact of applying a 12% base rate decrease and the implemented segment relativities of 1.30 (for non-groups) and 0.706 (for groups) is -25.3% for non-groups and 9.6% for groups.
- Tables 3 through 6 demonstrate that the impact of all proposed changes also results in a premium change of -25.3% for non-groups and 9.6% for groups.

In addition to any judgment that may be implicit in the items listed in the "Reliance" section above, I have identified two sources of judgment in Oliver Wyman's exhibits. For these two sources of judgment, I have provided alternative judgments and my rationale for such above. These alternative judgments have the effect of increasing the premium impact of the proposed changes for groups.

The proposal includes rate capping. While it is not clear whether rate capping *may* be consistent with Ratemaking Principles #4, it clearly represents an effort to minimize premium swings for policyholders whose underlying rate characteristics have been relatively stable. There is precedence in capping rates as Ohio BWC has used rate capping in the past.