MARCH 1990

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March 19, 1990

Ms. Debora A. Batta
Deputy Administrator
Accounting/Risk Management
Bureau of Workers' Compensation
246 N. High Street
Columbus, OH 43215

Re: **Adverse Selection in Group Rating**

Dear Debbie:

H.B. 222 provided for group merit rating. The Bureau intends to establish a group rating program effective with July 1, 1991 rates. Members of an organization, that exists for a purpose other than the purchase of insurance, may voluntarily agree to join a group for merit rating purposes. The group would emphasize loss prevention activities. The workers' compensation hazards must be similar for all employers within the group.

This letter presents some thoughts on the problem of adverse selection in group rating. As will be shown, allowing too much manipulation in the formation and revision of group memberships may have adverse consequences for employers not joining groups.

This letter first presents an overview of the merit rating process. It then discusses how manipulation can occur and what the consequences may be. Finally, it discusses actions that can reduce manipulation.

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General Concepts of Merit Rating

Merit rating is a means of reflecting an individual employers' past claims experience in its premium. Merit rated premiums are prospective. In Ohio, merit rating uses the oldest four of the last five years of the employers' calendar year payroll and claims experience. Given that the employer's past experience is (x), it is anticipated that its future experience will be somewhat different than the base rate. If the past experience has been better than the average, the employer will receive a rate lower than the base rate; if the past experience has been worse than the average, the employer will pay more than the base rate. The difference between the employer's rate and the base rate is determined by an "experience modification factor."

The past experience is adjusted by a credibility factor. This factor is a mathematical way of measuring how actuarially significant an individual employers' experience actually is. For example, most small employers (e.g., base-rated or in the lowest credibility group) will not have any claims in the four-year experience period. The fact that an individual employer did not have a claim is not particularly meaningful, because most similar employers also did not have a claim.

The amount of credit that can be given in the merit rate is related to the credibility of the employer's experience and the penalty that is applied to employers with poor claims experience. As a simplified example, assume that 90% of small employers have no lost-time claims in the four-year experience period. If these employers are given a 5% credit from the base rate, employers with lost-time claims must be surcharged 45% to balance premium income. In other words, one lost-time claim can cost an employer 50% more in premium. (If employers with claims are given a 10% credit, employers with claims must pay 90% more than the base rate.)

The significance of group rating is that group experience will receive more credibility. If the experience of the group is better than average, the group will get a bigger credit than its individual members would have received had they been rated on their own experience. Contrariwise, if the experience of the group is worse than the average, the group will pay more than they would have, had they been rated on their own.

There is a final step between merit rating and determination of the base rate. Individual employer credits and debits are not generally balanced. Larger employers tend to have better experience. Since larger employers receive higher credibility, there is an "off-balance" due to the merit rating system. That is, the base rate must be increased above the expected cost rate for the class, so that premium income will equal expected claims costs. (For some classes, there is a positive off-balance and the base rate is reduced.)

With group rating, the off-balance may increase. That is, if the employers who choose group rating have better experience than those who do not, they will receive lower rates. The base rate must then be increased to make up the difference.

Before turning to the next section, it is necessary to discuss how group rating will be done. The most feasible approach is to add the claims experience and expected losses for all of the members of the group for the given rating period. The credibility will be determined by the sum of the expected losses. A modification factor will be calculated from the combined experience of the group. For example, the experience modification factor for July 1, 1991 rates will be determined by the payroll/expected losses and actual claim experience for all participating group members for the calendar years 1986 through 1989.

It is not particularly feasible to base the modification factor on the experience of the group while the group is in existence. No modification factor could be developed for July 1, 1991 or 1992 rates, because 1991 experience would not be used in the experience modification calculation until July 1, 1993. The modification factor calculation would not be consistent with individual employer calculations until July 1, 1997. In addition, a new field, for the group, would need to be added to every payroll and claim record in the entire Actuarial Ratemaking and Reserving System. (Otherwise, a comprehensive table of which employer was in which group for which year must be referenced for processing every transaction during the ratemaking process).

In summary, the group rating process will basically involve adding up the claim experience of participating employers.

Potential for Manipulation

If there are no restrictions on group membership, the merit rating process and base rates may be subject to manipulation. For example, a group would receive the lowest possible rate if it excluded any employer with claims in the experience period. It could continue to manipulate its experience if it expelled employers that had claims.

By picking and choosing employers for the group, the premium for the group would be less than it should be. It would also be less than the premium the individual members would pay, if they were rated on their own experience (because the credibility of the group is higher). This would increase the off-balance and the base rates; consequently, those employers not in the group would pay more than they should.

Recommended Safeguards

There are several safeguards that the Bureau should adopt to improve the equity in the rating system and to protect those employers not joining groups. First, membership in the group should not be dependent upon actual claim experience. The dangers of this are explained above. Second, all members of the sponsoring organization should be given the opportunity to join the rating group. This will prevent the formation of groups whose claim experience is abnormally good. Third, members of the rating group should be compelled to keep the group's rating for at least three years. If the group is debit rated, most of the individual members will be better off to be rated on their own experience.

If these safeguards, or similar ones, are not followed, the rating system can be manipulated, resulting in less rate equity.

If we can be of any further assistance to you on this matter, please let us know.

Sincerely,

Robert J. Finger

Robert J. Finger

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Member, American Academy of Actuaries

RJF:pd

cc: Paul C. Whitacre, Jr.
Steven J. Johnston