

August 9, 1994

Mr. James A. Loffree
Chief Actuarial Officer
Ohio Bureau of Workers' Compensation
30 West Spring Street
Columbus, Ohio 43266-0581

RE: Group Rating Experience

Dear Jim:

You have requested that we provide an actuarial evaluation of the most recent data available for group experience rating. You also requested that we respond to the suggestions made in Arthur Andersen's review of our first report issued last fall, and you recommended that we review the available non-group experience rating data to determine whether an alternative approach such as the NCCI plan may be useful in Ohio.

We provided an analysis of the group experience last fall, using premium and loss information for the rating periods 7/1/91 - 6/30/92 and 7/1/92 - 12/31/92, evaluated as of March 31, 1993. This report updates the rating years included in last year's report using loss experience evaluated as of March 31, 1994, and also includes the rating periods 1/1/93 to 6/30/93 and 7/1/93 to 12/31/93. We have responded to Arthur Andersen's suggestions and have provided preliminary conclusions from our analysis of the experience rating data for non-group employers.

One of the recommendations in the Arthur Andersen report is that we measure the degree of "self-correction" in the group rating procedure. Our analysis indicates there are measurable differences in loss ratios which are dependent on the number of years a group has participated in group rating. We have provided additional details regarding this analysis in a separate section of our report. Our projection of the indicated modification (maximum credibility) factors for the rating year effective 7/1/95 are as follow:

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Groups formed in 1995	60%
Groups formed in 1994	65%
Groups formed in 1993	70%
Groups formed in 1992	75%
Groups formed in 1991	85%

The factors shown above do not consider the additional premiums which would be realized if the experience for members switching groups were not "double counted". We reviewed BWC's actuarial department's study and have concluded that the above indications could be reduced by approximately 3% to 5% if a rule change were adopted to eliminate the additional credits caused by employers switching groups and having their experience counted in more than one group.

It appears that groups with manual premiums (or equivalent expected losses) less than \$1.5 million should receive lower credibilities than those shown above. Our report provides a test of one possible formula to calculate reduced credibilities for these groups.

Although we have only recently begun our review of the non-group data, it appears that the credits for the larger non-group employers should also be reduced. About four years ago, NCCI analyzed the credibilities being assigned to larger employers and concluded that reductions similar to those indicated above were required to provide equity in the NCCI experience rating procedure. Based on a preliminary review of the NCCI plan, it appears that adoption of the NCCI credibility standard would provide significant improvement in Ohio's experience rating program.

It has been argued, and the Andersen report suggests, that the available data is still too immature to form firm conclusions. There are a number of factors which lead to uncertainty regarding our conclusions. While we recognize the need to consider the expected improvements in group results, we believe some changes in the experience rating methodology are necessary for all employers.

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We estimate that under the current approach non-group employers have subsidized group employers by approximately \$128 million for the period of time covered by our analysis, and we expect that similar subsidies will be produced for subsequent rating periods if the current experience rating approach is continued.

As you know, your MIS Division provided us with tapes containing premium and loss data by individual employer for each rating period. The tapes were reconciled and checked for accuracy by your MIS and Actuarial Divisions, and we have also reconciled the data and checked for reasonableness. We appreciate your assistance as well as the support and cooperation of BWC's MIS and Actuarial Divisions in obtaining the information for our analysis.

We appreciate the opportunity to work with the BWC on this important assignment. If you have any questions or comments on our study, please let us know. We will be available to discuss our analysis at your request.

Cordially,



James G. Inkrott, FCAS, MAAA, CPCU, CLU
Principal



Jeffery J. Scott, ACAS, MAAA
Consultant

JGI/JJS/stc

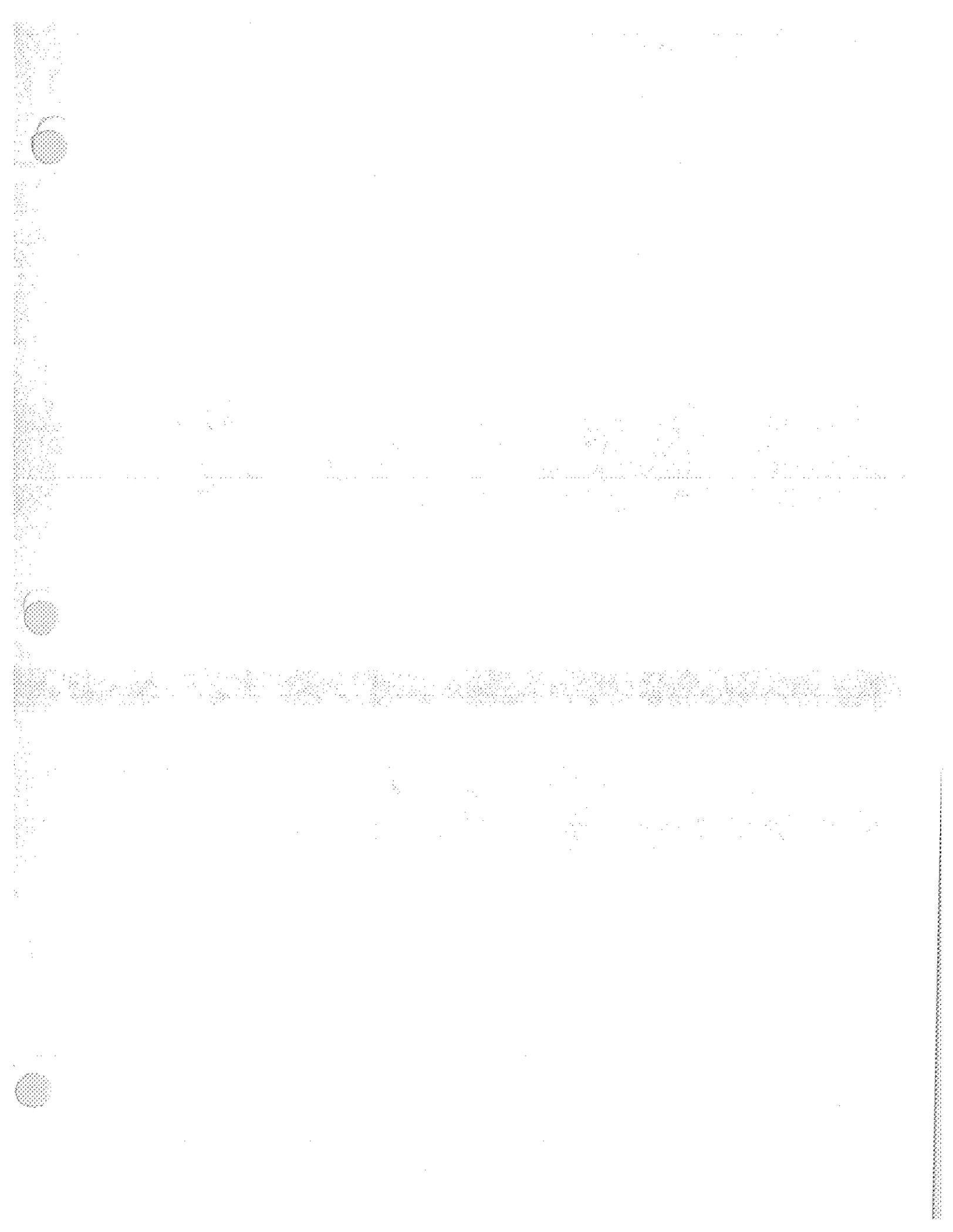
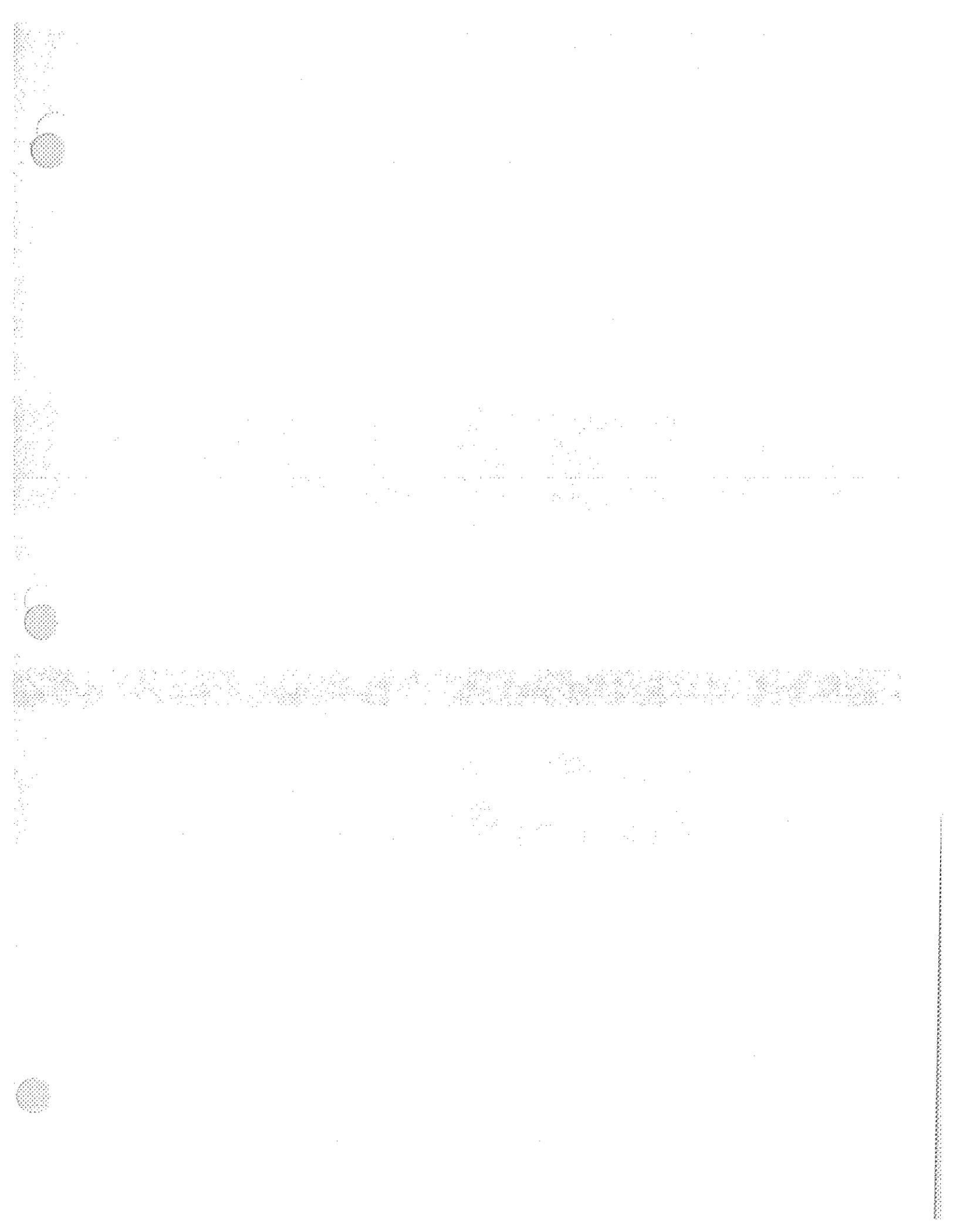


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BACKGROUND

Group experience rating allows employers that are substantially similar to group together to potentially achieve lower premium rates than they could otherwise achieve as individual employers.

The criteria for group experience rating include:

- membership in an organization which has been in existence for at least two years prior to the group application deadline.
- The organization must have been formed for a purpose other than group experience rating.
- The group must be "homogeneous" -- i.e., the employers' main operating manuals are assigned to the same or similar industry group.
- The group must consist of at least 100 members or the aggregate workers' compensation premiums of the members must be expected to exceed \$150,000 during the rating year.
- The formation and the operation of the group program must substantially improve accident prevention and claims handling for the employers in the group.

The group rating plan is an annual plan for the rating of a policy year, and groups must reapply each year for group rating. The procedure for group experience rating essentially adds together the experience of the individual members of the group, using the same experience period as would have been used for the individual employers. The basic difference in group vs. individual employer experience rating is that credibility is assigned based on the combined expected losses of all of the members of the group. Most groups are assigned the maximum credibility factor of 1.00, and in most cases the result is a much higher credibility factor and a larger average credit (TM%) than would be produced using the lower credibility factors assigned to the individual employers' experience (if the members of the group had been individually rated).

Group experience rating was first used for the policy year effective 7-1-91. There were 94 groups and 5,424 employers rated under group experience rating for this policy period; the average TM% was -59%. For the policy year effective 7-1-92, there were 264 groups and 19,854 employers covered under group rating; the average TM% was -56%. For the policy year effective 7-1-93, there were 357 groups, 32,560 employers; the average TM% was -54%.

DATA COMPILATION

BWC provided premium and loss information for group-rated employers as of March 31, 1994 for the policy years effective 7-1-91 and 7-1-92; data was also supplied for the first half of the policy year effective 7-1-93. Also provided were the total premiums and losses for the same periods for those employers that were not group-rated. The applicable TM% for each group was available for each policy year, as was the number of employers included in each group.

The "losses" provided include medical and compensation payments, the estimated present value of total payments for death and PTD claims, and the "code" reserves that are generated for experience rating by BWC's reserving system. This system generates a reserve for each lost time claim by multiplying the compensation payments by a factor, where the factor is determined by the "code" assigned to the claim, based on the benefit type and the last date of compensation payment.

The actual experience-rated "pure" premiums (these premiums exclude administrative cost fund and DWRP loadings), ultimate losses, ultimate loss ratios and indicated rate changes are shown in Exhibit 1. The rate changes on this exhibit are the changes required to produce an overall (pure) loss ratio of 100%. Ultimate loss ratios were obtained by multiplying the loss ratios derived from the tapes supplied by BWC for each semester by loss development factors obtained by comparing the actual reported loss ratios for the group plus non-group totals to the ultimate (discounted) loss ratios projected in our 1993 actuarial audit.

We compared the reported losses and reported loss ratios derived from the data supplied as of 3/31/93 to those obtained using data as of 3/31/94, and noted the following:

**Reported Loss Development Factors (Loss Ratios and Losses
as of 3/31/94 Divided by Loss Ratios and Losses as of 3/31/93)**

	<u>Rating Year 1991</u>		<u>Rating Period 7/1/92-12/31/92</u>	
	<u>Loss Ratio</u>	<u>Losses</u>	<u>Loss Ratio</u>	<u>Losses</u>
Group	1.19	1.18	.92	.94
Non Group	1.19	1.18	1.02	1.02

The results for the 1991 rating year evaluated as of 3/31/94 are very similar to those obtained using data as of 3/31/93, indicating the loss projection procedure used in last year's study was appropriate. For the 1992 rating year, the additional year of information has resulted in an improvement in the group experience compared to the results using data as of 3/31/93. We note, however, that we only had available the first half of this rating year when we performed our analysis as of 3/31/93.

BWC has requested that we continue to analyze the available loss development data separately for group and non-group employers to determine whether there are differences in the development patterns. If there are discernible differences, these differences will be reflected in future studies.

CONCLUSIONS

The available data indicate that the credits being given under group experience rating should be reduced significantly and premiums for group-rated employers should be increased, while base rates and premiums for non-group rated employers should be reduced in order to restore equity in the experience rating process.

The statistics are summarized below:

GROUP RATING LOSS EXPERIENCE

	<u>7/1/91</u>	<u>7/1/92</u>	<u>7/1/93*</u>
Group Premium (\$000's)	44,504	166,668	153,408
Non Group Premium (\$000's)	1,376,708	1,316,282	651,637
Projected Loss Ratio Relativities			
Group	1.48	1.32	1.36
Non Group	0.98	0.96	0.92
Total	1.00	1.00	1.00
Req'd Adj to Group Prem to Restore Equity	47.6%	31.8%	35.6%
Req'd Adj to Non Group Premiums	-1.5%	-4.0%	-8.4%
Indicated Group Modification Factor	66.5%	74.9%	69.6%
Adjusted Group Modification Factor	64.9%	70.5%	59.0%

* (Half year only)

The indicated modification (credibility) factor is the factor to be applied to group credits, assuming no change in the base rates used for group rating. This factor was calculated in last year's report, and we show this factor again since we believe it is the easiest indicator for a group member to understand and apply. The factor can be directly applied to a group's current credit to determine an indicated equivalent credit. For instance, for the 1991 rating year, the average group credit was -59%, and the indicated average credit is .665 times -59% = -39%. If base rates were not changed and the indicated modification (credibility) factor were applied, the average group premium would increase from a level of 41% of manual premium to 61% of manual premium, which is a premium increase of approximately 48%.

However, if the base rates to which the credits apply are reduced (since the non-group premiums should be reduced in order to provide an equitable premium for non-group employers), then the group modification (credibility) factor will need to be adjusted (reduced) in order to provide the appropriate premium for group-rated employers.

The adjusted modification (credibility) factor to be applied to group credits if base rates were reduced by the indicated non-group rate change is calculated to achieve the indicated premium level for groups and non-groups. Since base rates are reduced to accomplish the indicated reduction in non-group premiums, the credits for group employers need to be further adjusted (reduced) to obtain the indicated premium level.

ORGANIZATION OF EXHIBITS PERTAINING TO REMAINDER OF REPORT

The indicated and adjusted group modification (credibility) factors are calculated in Exhibits 2a, 3, and 4. Exhibits 2b, 2c, and 2d show results for the 1993 rating year separated by the original year of group formation (e.g., Exhibit 2d shows the 1993 rating year experience for the groups originally formed in 1991). Exhibits 2, 3, and 4 provide statistics separately by TM% ranges for rating years 1993, 1992, and 1991, respectively, while Exhibits 5, 6, and 7 show similar statistics by size of manual premiums.

Exhibits 8 and 9 provide the results of a modified credibility approach, where the group credibility factor equals 63.5% for groups with greater than \$750,000 in manual premiums (for the half-year included in the Exhibit) and a lower credibility factor is assigned for groups with less than \$750,000 in manual premiums.

Exhibit 10 provides the same information as Exhibit 2a, with the TM% groupings shown by ranges of 10%, whereas the ranges in the other Exhibits were grouped into approximate quartiles.

Exhibit 11 documents our assumptions/observations regarding indicated and adjusted modification factors by age of group.

Exhibits 12 through 15 display the experience by industry group, separately for group-rated employers, non-group rated employers, and for all employers.

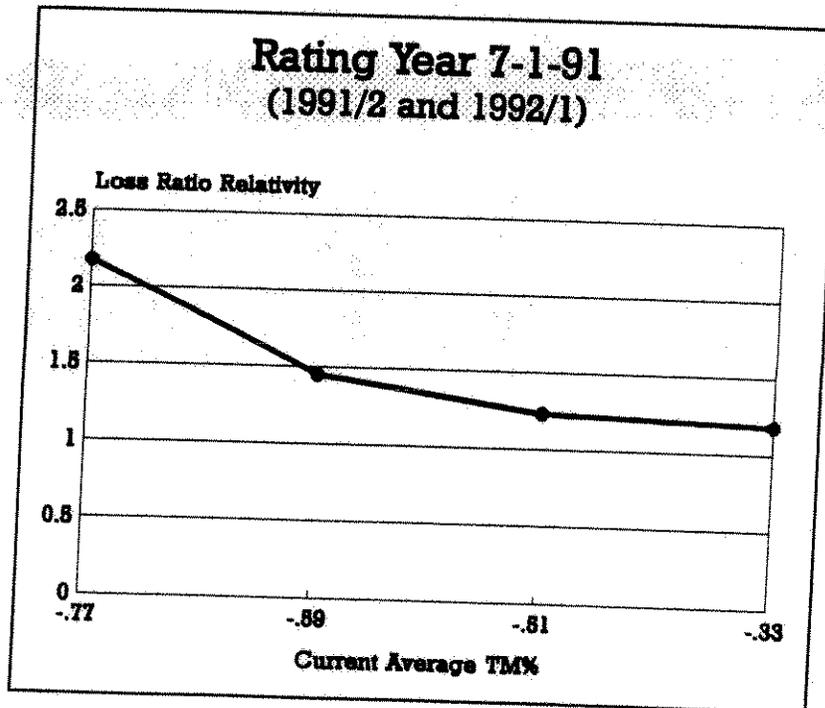
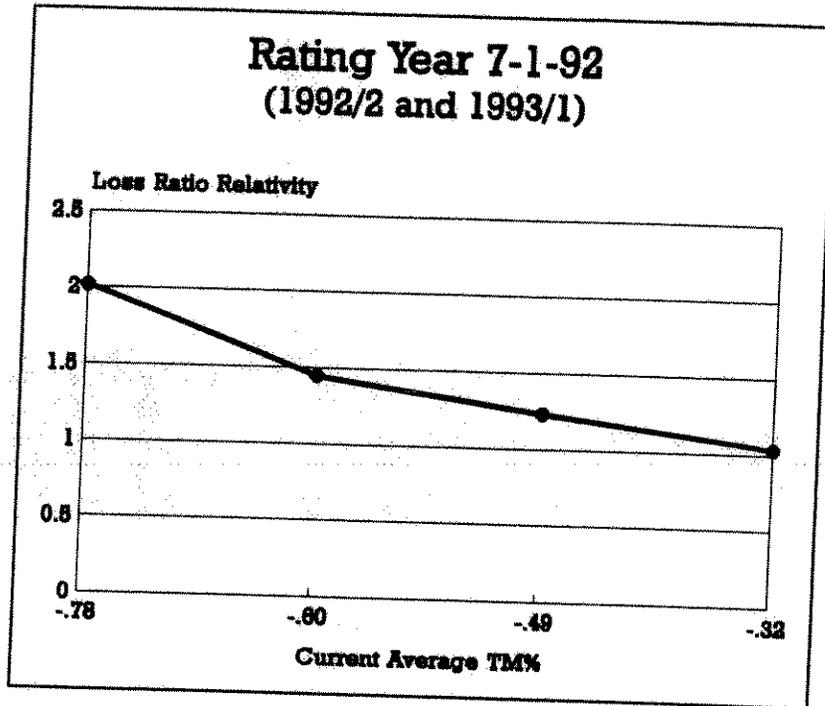
METHODOLOGY

The objective of our study was to analyze the equity of the current experience rating method being used for group rating. The goal of our analysis was to provide indicated premiums such that group and non-group employers would be expected to have the same loss ratios, and that no over-all change in premiums would be produced.

To calculate indicated changes in premiums, loss ratios (losses divided by premiums) were calculated for each group, and these loss ratios were divided by the total group plus non-group loss ratio. These calculations produced "relative loss ratios" for each rating group as well as overall relative loss ratios for the total group-rated and non-group-rated employers. These "relative" loss ratios provide the indicated "relative" changes in premiums which are required to produce equitable premiums and therefore equal loss ratios between group and non-group employers. For example, on Exhibit 2, the relative loss ratio for the group employers for the rating year effective 7-1-93 is 1.356 -- indicating that group premiums should increase by approximately 36% to bring the group loss ratio to the average loss ratio. On the other hand, non-group premiums should be reduced by 8.4% to offset the increase in group-rating premiums.

We reviewed the relative loss ratio statistics by industry group, size of TM%, and manual premium size. Our study indicates that there is a very significant correlation between the size of the credits being given under group rating and the indicated relative loss ratios. The graphs on the following page illustrate these relationships.

Group Rating Statistics



* Loss Ratios and Average TM% are from Exhibits 3 and 4, columns (6) and (7), respectively.

Groups receiving the largest credits consistently had the highest relative loss ratios for all three rating years. (Note, for instance the relative loss ratio of 2.014 in Col. (6) of Exhibit 3.)

Based on our analysis, a simple method to restore equity is to apply a "group rating modification factor" to reduce the credits produced by the group experience rating method. For the rating year effective 7-1-93, the group TM%'s should have been multiplied by a factor of .696 to provide an equitable premium; for 7-1-92 the indicated group modification factor is .749, and for the 1991 rating year the indicated modification factor is .665. These indicated factors are shown at the bottom of column (8) in Exhibits 2a, 3, and 4, respectively. The required modifications in premiums could be produced by simply assigning the group modification factor as a credibility factor and multiplying the current TM% by the indicated group modification (credibility) factor. These indicated average TM%'s are shown in column (8) in the Exhibits, and the revised relative loss ratios are shown in column (9), assuming no change in base rates for groups, but assuming that non-group premiums are reduced (e.g., -8.4% for 1993, Exhibit 2a) in consideration of the increase in premiums resulting from the reductions in group credits.

We have also calculated in column (10) of the Exhibits an "adjusted" modification factor and adjusted TM%'s. These adjusted percentages assume that the base rates for groups would be reduced by the same percentages used for non-groups.

The proposed method of multiplying the TM% by a modification (credibility) factor produces revised relative loss ratios which are fairly consistent across the TM% and premium size ranges for all three rating periods. (Note, for instance that relative test loss ratios in Col. (11) of the exhibits are much closer to 1.00 than those in Col. (6).

An improvement could be obtained from the "simple" approach outlined above by reducing the credits further for groups with annualized manual premiums less than \$1.5 million -- note that the loss ratios in Exhibits 5 and 6 are highest for the lowest premium size groups. We show in Exhibits 8 and 9 the results for the 1993 rating year of applying lower credibilities to groups with less than \$750,000 manual premiums for the half-year (\$1.5 million expected for the full

year). Note that the resulting loss ratio relativities by manual premium size in column (5) are closer to 1.00 in Exhibit 9 than the loss ratios in column (11) in Exhibit 5. If this approach is adopted, the modification factor could be increased for larger groups, and the resulting credits would be higher for larger groups than under the "simpler" approach of applying one modification factor to all groups.

RESPONSES TO COMMENTS CONCERNING METHODOLOGY

There have been questions and some misunderstandings regarding the methodology used to analyze results by TM% ranges. It is a standard practice to perform analyses of experience rating results by ranges of credits. The objective is to determine whether loss ratios are correlated with the size of credits (or debits). We followed a procedure commonly used, which is to group the ranges into subsets of approximately the same size (in actual losses) so as to provide statistical reliability in the results. We used quartiles; NCCI's last review of their experience rating plan used quintiles. Whether quartiles, quintiles, deciles, or other separations are used, the actual results of Ohio's group rating procedure come out the same -- the groups with high credits consistently (as a subset) have produced high loss ratios, which implies that premiums should be increased relatively more for groups with the highest credits.

It has been suggested that aggregating the data in the above fashion can lead to distortions ... "since groups with very large TM%'s (-50 to -95) pay very small premiums relative to the manual premium, their actual loss ratios are very sensitive to individual large claims". This is not really a problem or a valid criticism of the methodology; a large claim has approximately the same effect on \$22.5 million of actual premiums for the subset with the largest credits as it does for the subset with \$28 million. We do not believe that the effect of large claims is a major reason that the loss ratios are higher for the groups with higher credits.

We researched whether additional improvement could be accomplished by using a higher credibility standard (i.e. reducing the credits less for the larger premium size groups). The available data do not indicate this would be an improvement from the recommended approach (note that the revised loss ratios for the higher premium size groups are approximately average in Exhibits 5, 6, and 7). We suggest this approach be studied again with additional data for possible implementation for the rating year effective 7-1-96.

Our selections of adjusted maximum modification (credibility) factors assume lower credibilities will apply for groups with less than \$1.5 million in manual premiums (or equivalent expected losses).

IS THE GROUP RATING INEQUITY SELF CORRECTING?

We have noted some amount of gradual "self correction" and improvement in the experience as groups mature. Exhibits 2b, 2c, and 2d compare the 1993 results for groups formed in 1993, 1992, and 1991. The groups formed in 1991 show an indicated modification factor of .734, while the groups formed in 1992 have an indicated modification factor of .702 and the indicated factor is .615 for groups formed in 1993. For comparison purposes, the indicated factors for the 1992 rating year were .764 for groups formed in 1991 and .731 for groups formed in 1992.

Our determination of indicated modification factors gives consideration to this expected continuing correction as the actual group experience becomes a larger factor in the calculation of the TM%'s. We expect the TM%'s to be gradually reduced as the actual group experience is used in the calculations of the TM%'s. On the other hand, there will be additional groups and additional members included in the renewing groups, which will have unknown effects. We note that the groups which commenced coverage effective 7-1-91 and 7-1-92 had significant growths in the numbers of members included for the policy year effective 7-1-93. BWC has requested that we research the loss ratio differences of the new members of the group, which we plan to do in the near future.

The following maximum adjusted credibilities and maximum credits are indicated -- these assume that the same base rates would be used for group and non-group employers, and that base rates would be reduced to offset the additional revenue generated by the reductions in group credits:

Groups formed in 1995	60 %
Groups formed in 1994	65 %
Groups formed in 1993	70 %
Groups formed in 1992	75 %
Groups formed in 1991	85 %

Based on the credibility tests in Exhibits 8 and 9, an improvement could be obtained by assigning lower credibilities to groups with manual premiums (or equivalent expected losses) less than \$1.5 million.

The above factors were developed based on our analysis of the observed differences in loss ratios by age of group and the following assumptions/observations (see Exhibit 11):

- The indicated modification factor for a group in its second year is assumed to be .72, the adjusted modification factor (adjusted for reduction in group and non-group base rates) is assumed to be approximately .61, and the additional premiums collected as a result of reduced credibilities for groups with less than \$1.5 million in manual premium allow the maximum credibility to be increased to .65;
- The adjusted maximum modification factor is assumed to increase in proportion to the number of years of group experience included in the TM % calculation, with the expected factor equal to 1.00 when the group begins its seventh year of coverage. For instance, for groups formed in 1993, the expected 1995 modification factor (when one-half year of group experience will be used) is $.65 + (.5/4 * .35) = .6938$, which we rounded to .70. For groups formed in 1991, the expected 1995 factor is $.65 + (2.5/4 * .35) = .8688$, which we rounded to .85.

ADDITIONAL ISSUES

One objection to changing the credits for group-rated employers is that many groups have had very good or acceptable loss experience, and therefore it is not "fair" to take away their credits. Andersen's review of last year's report stated that our conclusions are erroneous since, in the subset of those groups receiving the highest credits ... "approximately 1/3 of the groups had loss ratios lower than the overall loss ratio. This is true for the other ranges, where the proportion of groups with loss ratios lower than the overall loss ratio is approximately 1/3 for Range 2, 1/2 for Range 3 and 2/3 for Range 4."

The above statement is a common objection whenever one examines loss ratio results for small and medium size insureds (whether it be workers' compensation, homeowners, or auto insurance). We expect considerable random variation in an individual group's experience from year to year and it is not correct to infer from the observed, random, differences in loss ratios in a particular year that the groups should be expected to have the same differences in future rating periods. If the observed loss ratios were accepted as fully credible, we would infer that we should charge very little to certain groups who were fortunate enough to have no major losses, and we should increase the premiums by a factor of 5 or 10 times the current premiums for the groups that had randomly poor experience.

Another general observation is that our report concentrates on group-rated employers and ignores non-group and public employers and that the high loss ratio groups "may have other variables in common, such as the same manual classification, the same credibility level, etc." The results by industry group in Exhibits 11 to 14 indicate that the group loss ratios are consistently higher than the non-group for almost all industry groups and it does not appear that the reason for the group rating inequity lies in the procedure used to establish manual classifications and rates.

We will be addressing the non-group experience rating results and public employer experience in separate reports. Based on a preliminary review of the non-group (private employers) experience, significant reductions in credits are also indicated for fully-credible non-group employers. It appears that the application of credibility levels similar to the standard used in the current NCCI

plan would provide significant improvement compared to the current credibility formula used in Ohio.

SUMMARY

There are a number of factors which lead to uncertainty regarding our conclusions. While we recognize the need to consider the expected improvements in group results, we believe some changes in the experience rating methodology are necessary to recognize a continuing subsidy of the group rating program by non-group employers. We estimate that non-group employers have subsidized group employers by approximately \$128 million for the period of time covered by our analysis, and we expect that similar subsidies will be produced for subsequent rating periods if the current experience rating approach is continued.

It is important to understand that our analysis does not indicate that group rating should be discontinued. Rather, our analysis provides the indicated premium changes that are required to provide equity in premiums between employers who are group-rated and those who are not group-rated.

Ohio Bureau of Workers' Compensation
Group and Non Group Experience
Projections of Ultimate Loss Ratios and Rate Indications

(1)	(2)	(3)	(4)	(5)
	<u>Premiums</u>	<u>Projected Ultimate Losses</u>	<u>Projected Ultimate Loss Ratio</u>	<u>Indicated Rate Change</u>
<u>91/2</u>				
Group	23,088,160	33,779,908	1.463	46.3%
Non Group	704,539,715	737,505,640	1.047	4.7%
Total	727,627,875	771,285,548	1.060	6.0%
<u>92/1</u>				
Group	21,415,819	36,680,573	1.713	71.3%
Non Group	663,168,611	702,670,611	1.060	6.0%
Total	684,584,430	739,351,184	1.080	8.0%
<u>92/2</u>				
Group	87,528,577	125,240,790	1.431	43.1%
Non Group	695,897,822	740,445,381	1.064	6.4%
Total	783,426,399	865,686,171	1.105	10.5%
<u>93/1</u>				
Group	79,139,084	120,476,261	1.522	52.2%
Non Group	620,384,308	669,985,172	1.080	8.0%
Total	699,523,392	790,461,433	1.130	13.0%
<u>93/2</u>				
Group	153,408,166	242,276,082	1.579	57.9%
Non Group	651,637,428	695,602,035	1.067	6.7%
Total	805,045,594	937,878,117	1.165	16.5%
<u>Totals</u>				
Group	364,579,806	558,453,614	1.532	53.2%
Non Group	3,335,627,884	3,546,208,839	1.063	6.3%
Total	3,700,207,690	4,104,662,453	1.109	10.9%

Notes by Column:

- (2) From BWC reports
(3) Col. (2) * Col. (4).
(4) Based on Exhibit 5, Page 1 of 1993 actuarial audit and relationships of reported loss ratios for group and non-group to total loss ratios.
(5) Col. (4) - 1.00

**Ohio Bureau of Workers' Compensation
Group Rating -- Indicate
By TM% Range Groups
Rating Year July 1, 1993 (7/1/93 ~ 6/30/94)**

(1) TM% Range	(2) Number Of Risks	(3) Payroll	(4) Experience- Rated Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM% Factor = 0.696	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM% Factor = 0.590	(11) Adjusted Loss Ratio Relativity
(-65) - (-95)	13,087	\$2,962,946,677	\$22,553,954	\$95,131,969	2.316	-76%	-53%	1.170	-45.0%	1.089
(-55) - (-64)	5,743	\$1,465,097,490	\$25,589,942	\$63,163,208	1.519	-59%	-41%	1.030	-35.1%	1.035
(-45) - (-54)	6,230	\$1,720,195,381	\$28,343,539	\$57,577,714	1.192	-51%	-35%	0.907	-30.0%	0.914
(-44) +	7,138	\$2,604,109,344	\$76,920,731	\$116,890,559	1.080	-34%	-24%	0.933	-20.2%	0.972
Total	32,198	\$8,752,348,892	\$153,408,166	\$332,763,451	1.356	-54%	-38%	1.000	-31.8%	1.000
93/2		\$8,752,348,866	\$153,408,166							
94/1										
Total Group		\$8,752,348,866	\$153,408,166	\$332,763,451	1.356					
93/2		\$19,649,372,869	\$651,637,428							
94/1										
Total Non Group		\$19,649,372,869	\$651,637,428	\$651,637,428	0.916					
Total		\$28,401,721,735	\$805,045,594	\$805,045,594	1.000					

- Indicated rate changes to achieve equity between non-group & group-rated employers:
Group-rated Employers: 35.6%

Non-Group Rated Employers: -8.4%

Indicated Group Modification Factor (Credibility) Factor
Adjusted Group Modification Factor (Credibility) Factor

Notes by Column:

- (1)-(7) From experience provided by BWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates.
- (9) Indicated loss ratio relativity with indicated TM% applied to current base rates for group-rated premiums:
Non-group premiums assumed to be modified by indicated non-group rate change.
Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (8)).
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change:
Col. (7) times adjusted group modification (credibility) factor.
- (11) Adjusted loss ratio relativity with adjusted TM% applied to base rates modified by non-group indicated rate change:
Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (10))) divided by total non-group Col. (6).

69.6%

59.0%

OHIO Bureau of Workers' Compensation
Group Rating Indicated TM%
Rating Year July 1, 1993 (7/1/93 - 6/30/94)
Groups Formed in 1993

(1) TM% Range	(2) Number Of Risks	(3) Payroll	(4) Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM%	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM%	(11) Adjusted Loss Ratio Relativity
(-65) - (-95)	3,160	796,048,340	6,680,416	32,030,873	2.619	-79%	Factor = 0.615 -49%	1.065	-42.2%	1.031
(-55) - (-64)	635	278,190,408	5,869,188	14,732,948	1.768	-60%	-37%	1.118	-32.1%	1.131
(-45) - (-54)	1,302	206,255,069	3,543,464	7,049,310	0.763	-50%	-31%	0.553	-26.5%	0.570
(-44)+	575	125,965,069	4,084,598	5,364,382	1.127	-24%	-15%	1.006	-12.7%	1.073
Total	5,672	\$1,406,458,886	\$20,177,666	\$59,177,514	1.744	-66%	-41%	1.000	-35.1%	1.000
93/2		\$8,752,348,866	\$153,408,166							
94/1			n.a.							
Total Group		\$8,752,348,866	\$153,408,166		1.356					
93/2		\$19,649,372,869	\$651,637,428							
94/1			n.a.							
Total Non Group		\$19,649,372,869	\$651,637,428		0.916					
Totals		\$28,401,721,735	\$805,045,594		1.000					

53.3%

61.5%

- Indicated rate changes to achieve equity between non-group & group-rated employers:
Group-rated Employers: 35.6%
Non-Group Rated Employers: -8.4%

Indicated Group Modification Factor (Credibility) Factor
Adjusted Group Modification Factor (Credibility) Factor

Notes by Column:

- (1)-(7) From experience provided by BWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates.
- Col. (7) times indicated group modification (credibility) factor.
- (9) Indicated loss ratio relativity with indicated TM% applied to current base rates for group-rated premiums.
- Non-group premiums assumed to be modified by indicated non-group rate change.
- Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (8)).
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change.
- Col. (7) times adjusted group modification (credibility) factor.
- (11) Adjusted loss ratio relativity with adjusted TM% applied to base rates modified by non-group indicated rate change.
- Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (10)) divided by total non-group Col. (6).

Ohio Bureau of Workers' Compensation
Group Rating Indicated TM%
Rating Year July 1, 1993 (7/1/93 - 6/30/94)
Groups Formed in 1992

(1) TM% Range	(2) Number Of Risks	(3) Payroll	(4) Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM% Factor = 0.702	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM% Factor = 0.594	(11) Adjusted Loss Ratio Relativity
(-65) - (-95)	7,878	1,507,933,566	7,303,742	33,486,165	2.380	-78%	-55%	1.151	-46.5%	1.058
(-55) - (-64)	2,168	585,671,819	10,813,758	25,976,479	1.655	-58%	-41%	1.167	-34.7%	1.151
(-45) - (-54)	3,369	972,852,286	13,557,208	27,417,716	1.196	-51%	-35%	0.917	-30.1%	0.923
(-44)±	2,921	1,036,168,405	29,910,687	44,689,136	1.034	-33%	-23%	0.902	-19.7%	0.940
Total	16,336	\$4,102,626,076	\$61,585,395	\$131,569,495	1.339	-53%	-37%	1.000	-31.6%	1.000
93/2		\$8,752,348,866	\$153,408,166							
94/1		n.a.	n.a.							
Total Group		\$8,752,348,866	\$153,408,166		1.356					
93/2		\$19,649,372,869	\$651,637,428							
94/1		n.a.	n.a.							
Total Non Group		\$19,649,372,869	\$651,637,428		0.916					
Totals		\$28,401,721,735	\$805,045,594		1.000					

- Indicated rate changes to achieve equity between non-group & group-rated employers:
Group-rated Employers: 35.6%
Non-Group Rated Employers: -8.4%

Indicated Group Modification Factor (Credibility) Factor
Adjusted Group Modification Factor (Credibility) Factor

Notes by Column:

- (1)-(7) From experience provided by BWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates.
- Col. (7) times indicated group modification (credibility) factor.
- (9) Indicated loss ratio relativity with indicated TM% applied to current base rates for group-rated premiums.
- Non-group premiums assumed to be modified by indicated non-group rate change.
- Col. (6) times (1.00 + Col. (7)) divided by (1.00 + Col. (8)).
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change.
- Col. (7) times adjusted group modification (credibility) factor.
- (11) Adjusted loss ratio relativity with adjusted TM% applied to base rates modified by non-group indicated rate change.
- Col. (6) times (1.00 + Col. (7)) divided by (1.00 + Col. (10)) divided by total non-group Col. (6).

70.2%

59.4%

Ohio Bureau of Workers' Compensation
 Group Rating Indicated TM%
 Rating Year July 1, 1993 (7/1/93 - 6/30/94)
 Groups Formed in 1991

(1) TM% Range	(2) Number Of Risks	(3) Payroll	(4) Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM% Factor	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM% Factor	(11) Adjusted Loss Ratio Relativity
(-65) - (-95)	2,049	658,964,771	8,569,796	29,614,932	2.024	-71%	-0.734	1.225	-43.8%	1.138
(-55) - (-64)	2,940	601,235,263	8,906,996	22,453,781	1.190	-60%	-52%	0.847	-37.2%	0.821
(-45) - (-54)	1,539	541,088,026	11,242,866	23,110,687	1.322	-51%	-44%	1.033	-31.7%	1.028
(-44)±	3,642	1,441,975,870	42,925,447	66,837,041	1.107	-36%	-38%	0.965	-22.1%	0.996
Total	10,190	\$3,243,263,930	\$71,645,105	\$142,016,442	1.261	-50%	-36%	1.000	-30.6%	1.000
93/2										
94/1										
Total Group										
93/2										
94/1										
Total Non Group										
Totals										

73.4%

61.7%

- Indicated rate changes to achieve equity between non-group & group-rated employers:
 Group-rated Employers: 35.6%
 Non-Group Rated Employers: -8.4%

Indicated Group Modification Factor (Credibility) Factor
 Adjusted Group Modification Factor (Credibility) Factor

Notes by Column:

- (1)-(7) From experience provided by EWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates.
- (9) Indicated loss ratio relativity with indicated TM% applied to current base rates for group-rated premiums.
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change.
- (11) Adjusted loss ratio relativity with adjusted TM% applied to base rates modified by non-group indicated rate change.

Ohio Bureau of Workers' Compensation
 Group Rating -- Indicate % By TM% Range Groups
 Rating Year July 1, 1992 (7/1/92 - 6/30/93)

(1) TM% Range	(2) Number Of Risks	(3) Payroll	(4) Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg. TM% Factor = 0.749	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM% Factor = 0.705	(11) Adjusted Loss Ratio Relativity
(-65) - (-95)	8,959	\$4,301,302,729	\$25,065,371	\$111,766,432	2.014	-78%	-58%	1.078	-54.7%	1.039
(-55) - (-64)	3,611	\$1,807,972,802	\$30,721,869	\$76,846,819	1.445	-60%	-45%	1.049	-42.3%	1.044
(-45) - (-54)	3,271	\$2,497,116,465	\$51,526,970	\$101,882,823	1.232	-49%	-37%	0.989	-34.8%	0.997
(-44)±	3,473	\$2,523,784,336	\$59,353,451	\$87,351,540	1.034	-32%	-24%	0.924	-22.6%	0.946
Total	19,314	\$11,130,376,332	\$166,667,661	\$377,847,615	1.318	-56%	-42%	1.000	-39.4%	1.000
92/2		\$5,760,908,254	\$87,528,577							
93/1		\$5,369,468,074	\$79,139,084							
Total Group		\$11,130,376,328	\$166,667,661		1.318					
92/2		\$22,817,145,793	\$695,897,822							
93/1		\$20,540,794,100	\$620,384,308							
Total Non Group		\$43,357,939,893	\$1,316,282,130		0.960					
Totals		\$54,488,316,221	\$1,482,949,791		1.000					

- Indicated rate changes to achieve equity between non-group & group-rated employers:
 Group-rated Employers: 31.8%
 Non-Group Rated Employers: -4.0%

Indicated Group Modification Factor (Credibility) Factor
 Adjusted Group Modification Factor (Credibility) Factor

70.5%

74.9%

Notes by Column:

- (1)-(7) From experience provided by BWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates.
- (9) Col. (7) times indicated group modification (credibility) factor.
- Non-group premiums assumed to be modified by indicated TM% applied to current base rates for group-rated premiums.
- (10) Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (8)).
- (11) Adjusted TM% applied to base rates modified by non-group indicated rate change.
- Col. (7) times adjusted group modification (credibility) factor.
- (11) Adjusted loss ratio relatively with adjusted TM% applied to base rates modified by non-group indicated rate change.
- Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (10))) divided by total non-group Col. (6).

Ohio Bureau of Workers' Compensation
Group Rating -- Indicate By TM% Range Groups
Rating Year July 1, 1991 (7/1/91 ~ 6/30/92)

(1) TM% Range	(2) Number Of Risks	(3) Payroll	(4) Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM% Factor = 0.665	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM% Factor = 0.649	(11) Adjusted Loss Ratio Relativity
(-65) - (-95)	2,796	\$1,538,171,825	\$10,205,623	\$44,042,364	2.173	-77%	-51%	1.030	-49.9%	1.020
(-55) - (-64)	1,082	\$655,373,970	\$9,967,354	\$24,566,765	1.448	-59%	-40%	0.972	-38.6%	0.971
(-45) - (-54)	616	\$405,822,217	\$5,457,311	\$11,127,765	1.232	-51%	-34%	0.914	-33.1%	0.917
(-44)+	822	\$808,636,505	\$18,873,691	\$28,040,794	1.184	-33%	-22%	1.018	-21.2%	1.027
Total	5,316	\$3,408,004,517	\$44,503,978	\$107,777,688	1.476	-59%	-39%	1.000	-38.1%	1.000
91/2		\$1,735,918,199	\$23,088,160							
92/1		\$1,672,086,319	\$21,415,819							
Total Group		\$3,408,004,517	\$44,503,978		1.476					
91/2		\$24,368,538,125	\$704,539,715							
92/1		\$24,492,510,970	\$663,168,611							
Total Non - Group		\$48,861,069,095	\$1,367,708,326		0.985					
Totals		\$52,269,073,612	\$1,412,212,304		1.000					

- Indicated rate changes to achieve equity between non-group & group-rated employers:
Group-rated Employers: 47.6%
Non-Group Rated Employers: -1.5%

Indicated Group Modification Factor (Credibility) Factor
Adjusted Group Modification Factor (Credibility) Factor

64.9%

66.5%

- (1)-(7) From experience provided by BWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates:
Col. (7) times indicated group modification (credibility) factor.
- (9) Indicated loss ratio relativity with indicated TM% applied to current base rates for group-rated premiums:
Col. (6) times (1.00 + Col. (7)) divided by indicated non-group rate change.
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change:
Col. (7) times adjusted group modification (credibility) factor.
- (11) Adjusted loss ratio relativity with adjusted TM% applied to base rates modified by non-group indicated rate change:
Col. (6) times (1.00 + Col. (7)) divided by (1.00 + Col. (10)) divided by total non-group Col. (6).

Ohio Bureau of Workers' Compensation
 Group Rating -- Indicated TM Manual Premium Size Groups
 Rating Year July 1, 1993 (7/1/93 ~ 6/30/94)

(1) Manual Prem Range (\$Mill)	(2) Number Of Risks	(3) Payroll	(4) Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM%	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM%	(11) Adjusted Loss Ratio Relativity
\$12.05 - \$4.88	4,682	\$1,530,997,007	\$39,700,109	\$84,219,465	1.306	-53%	Factor = 0.696 -37%	0.974	Factor = 0.590 -31.2%	0.977
\$4.87 - \$2.06	5,176	\$1,686,201,854	\$38,270,284	\$71,855,744	1.262	-47%	-33%	0.996	-27.6%	1.013
\$2.05 - \$0.74	8,168	\$2,105,985,910	\$38,427,645	\$85,183,766	1.258	-55%	-38%	0.919	-32.4%	0.916
\$0.74 - \$0.07	14,172	\$3,429,564,121	\$37,010,129	\$91,504,476	1.606	-60%	-41%	1.109	-35.1%	1.093
Total	32,198	\$8,752,348,892	\$153,408,166	\$332,763,451	1.356	-54%	-38%	1.000	-31.8%	1.000
93/2		\$8,752,348,866	\$153,408,166							
94/1		<u>N.A.</u>	<u>N.A.</u>							
Total Group		\$8,752,348,866	\$153,408,166		1.356					
93/2		\$19,649,372,869	\$651,637,428							
94/1		<u>N.A.</u>	<u>N.A.</u>							
Total Non Group		\$19,649,372,869	\$651,637,428		0.916					
Totals		\$28,401,721,735	\$805,045,594		1.000					

59.0%

69.6%

- Indicated rate changes to achieve equity between non-group & group-rated employers:
 Group-rated Employers:

Non-Group Rated Employers:
 -8.4%

Indicated Group Modification Factor (Credibility) Factor
 Adjusted Group Modification Factor (Credibility) Factor

Notes by Columns:

- (1)-(7) From experience provided by BWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates:
 Col. (7) times indicated group modification (credibility) factor.
- (9) Indicated loss ratio relativity with indicated TM% applied to current base rates for group-rated premiums:
 Non-group premiums assumed to be modified by indicated non-group rate change.
 Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (8)).
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change:
 Col. (7) times adjusted group modification (credibility) factor.
- (11) Adjusted loss ratio relativity with adjusted TM% applied to base rates modified by non-group indicated rate change:
 Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (10))) divided by total non-group Col. (6).

**Ohio Bureau of Workers' Compensation
Group Rating -- Indicated TM
Rating Year July 1, 1992 (7/1/92 ~ 6/30/93)**

(1) Manual Prem Range (\$Mil)	(2) Number Of Risks	(3) Payroll	(4) Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM%	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM%	(11) Adjusted Loss Ratio Relativity
\$14.31 - \$6.98	2,550	\$1,766,875,402	\$40,065,262	96,553,348	1.301	-59%	Factor = 0.749 -44%	0.961	Factor = 0.705 -41.2%	0.957
\$6.97 - \$2.74	2,828	\$2,235,228,466	\$42,172,342	88,448,491	1.277	-52%	-39%	1.001	-36.9%	1.006
\$2.73 - \$1.15	4,064	\$2,380,396,811	\$42,158,871	89,231,069	1.228	-53%	-39%	0.959	-37.2%	0.963
\$1.14 - \$0.03	9,872	\$4,747,875,653	\$42,271,186	103,614,707	1.466	-59%	-44%	1.074	-41.7%	1.069
Total	19,314	\$11,130,376,332	\$166,667,661	377,847,615	1.318	-56%	-42%	1.000	-39.4%	1.000
92/2		\$5,760,908,254	\$87,528,577							
93/1		\$5,369,468,074	\$79,139,084							
Total Group		\$11,130,376,328	\$166,667,661	1,318						
92/2		\$22,817,145,793	\$695,897,822							
93/1		\$20,540,794,100	\$620,384,308							
Total Non Group		\$43,357,939,893	\$1,316,282,130	0.960						
Totals		\$54,488,316,221	\$1,482,949,791	1,000						

- Indicated rate changes to achieve equity between non-group & group-rated employers:
Group-rated Employers: 31.8%

Non-Group Rated Employers: -4.0%

Indicated Group Modification Factor (Credibility) Factor
Adjusted Group Modification Factor (Credibility) Factor

Notes by Column:

- (1)-(7) From experience provided by BWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates.
- (9) Indicated loss ratio modification (credibility) factor.
- Non-group premiums assumed to be modified by indicated non-group rate change.
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change.
- (11) Adjusted loss ratio modification (credibility) factor.
- Col. (6) times (1.00 + Col. (7)) divided by (1.00 + Col. (8)).
- Col. (7) times adjusted group modification (credibility) factor.
- Col. (6) times (1.00 + Col. (7)) divided by (1.00 + Col. (10)) divided by total non-group Col. (6).

70.5%

74.9%

Ohio Bureau of Workers' Compensation
 Group Rating -- Indicated TM Manual Premium Size Groups
 Rating Year July 1, 1991 (7/1/91 - 6/30/92)

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Manual Prem Range (\$Mill)	Number Of Risks	Payroll	Premiums	Manual Premiums	Loss Ratio Relativity	Current Average TM%	Indicated Avg TM% Factor -0.665	Revised Loss Ratio Relativity	Adjusted Avg. TM% Factor -0.649	Adjusted Loss Ratio Relativity
\$7.63 - \$4.95	1,074	\$874,107,124	\$10,766,578	\$32,297,765	1.966	-67%	-44%	1.178	-43.3%	1.173
\$4.94 - \$2.01	688	\$728,300,565	\$11,053,245	\$24,751,049	1.527	-55%	-37%	1.080	-35.9%	1.081
\$2.00 - \$0.77	1,280	\$595,660,560	\$11,152,822	\$26,981,514	1.253	-59%	-39%	0.849	-38.1%	0.849
\$0.76 - \$0.06	2,274	\$1,209,936,268	\$11,531,334	\$23,747,359	1.185	-51%	-34%	0.875	-33.4%	0.877
Total	5,316	\$3,408,004,517	\$44,503,978	\$107,777,688	1.476	-59%	-39%	1.000	-38.1%	1.000
93/2		\$1,735,918,199	\$23,088,160							
94/1		\$1,672,086,319	\$21,415,819							
Total Group		\$3,408,004,517	\$44,503,978		1.476					
93/2		\$24,368,558,125	\$704,539,715							
94/1		\$24,492,510,970	\$663,168,611							
Total Non Group		\$48,861,069,095	\$1,367,708,326		0.985					
Totals		\$52,269,073,612	\$1,412,212,304		1.000					

66.5%

64.9%

- Indicated rate changes to achieve equity between non-group & group-rated employers:
 Group-rated Employers: 47.6%
 Non-Group Rated Employers: -1.5%

Indicated Group Modification Factor (Credibility) Factor
 Adjusted Group Modification Factor (Credibility) Factor

Notes by Column:

- (1)-(7) From experience provided by RWC on tapes and summarized by group.
- (8) Indicated TM% to be applied to current base rates:
 Col. (7) times indicated group modification (credibility) factor.
- (9) Indicated loss ratio relativity with indicated TM% applied to current base rates for group-rated premiums:
 Non-group premiums assumed to be modified by indicated non-group rate change.
 Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (8)).
- (10) Adjusted TM% applied to base rates modified by non-group indicated rate change:
 Col. (7) times adjusted group modification (credibility) factor.
- (11) Adjusted loss ratio relativity with adjusted TM% applied to base rates modified by non-group indicated rate change:
 Col. (6) times (1.00 + Col. (7) divided by (1.00 + Col. (10))) divided by total non-group Col. (6).

Ohio Bureau of Workers' Compensation
 Group Rating -- Indicated TM% By TM% Size Groups
 Rating Year July 1, 1993 (7/1/93 ~ 6/30/94)
 Credibility Test

Bases Rate & Manual Premiums Modified by Non-Group Indicated Rate Change of -8.4%

(1)	(2)	(3)	(4)	(5)	(6)
TM% Range	Number Of Risks	Premium *	Manual Premium *	Modified Adjusted Loss Ratio	Modified Adjusted TM%
(-65) - (-95)	13,087	49,180,658	87,167,659	1.062	-43.6%
(-55) - (-64)	5,743	36,981,933	57,875,277	1.051	-36.1%
(-45) - (-54)	6,230	36,800,525	52,757,391	0.918	-30.2%
(-44) +	7,138	84,534,086	107,104,652	0.983	-21.1%
<u>Total</u>	<u>32,198</u>	<u>207,497,202</u>	<u>304,904,979</u>	<u>1.002</u>	<u>-31.9%</u>

* Premiums adjusted by 8.4% reduction in base rates.
 TM% = current TM% * maximum credibility factor of .635.
 Credibility for groups with less than \$750,000 manual premiums = (manual premiums * .635 * .635 / \$750,000)^{1/2}

Ohio Bureau of Workers' Compensation
 Group Rating -- Indicated TM by Manual Premium Size Groups
 Rating Year July 1, 1993 (7/1/93 - 6/30/94)
 Credibility Test

Bases Rate and Manual Premiums Modified by Non-Group Indicated Rate Change of -8.4%

(1) Manual Prem Range (\$Mill)	(2) Number Of Risks	(3) Premium *	(4) Manual Premium *	(5) Modified Adjusted Loss Ratio	(6) Modified Adjusted TM%
\$12.05 - \$4.89	4,307	48,266,127	72,690,499	1.037	-33.6%
\$3.91 - \$2.06	5,551	49,298,286	70,318,321	1.016	-29.9%
\$2.02 - \$0.74	8,180	51,236,500	78,731,492	0.951	-34.9%
\$0.74 - \$0.07	14,160	58,696,289	83,164,668	1.006	-29.4%
Total	32,198	207,497,202	304,904,979	1.002	-31.9%

* Premiums adjusted by 8.4% reduction in base rates.
 TM% = current TM% * maximum credibility factor of .635.
 Credibility for groups with less than \$750,000 manual premiums = (manual premiums * .635 * .635 / 750,000) %

Ohio Bureau of Workers' Compensation
Group Rating Indicated TM%
Rating Year July 1, 1993 (7/1/93 - 6/30/94)

(1) TM% Range	(2) Number Of Risks	(3) Payroll	(4) Experience - Rated Premiums	(5) Manual Premiums	(6) Loss Ratio Relativity	(7) Current Average TM%	(8) Indicated Avg TM% Factor = 0.696	(9) Revised Loss Ratio Relativity	(10) Adjusted Avg. TM% Factor = 0.590	(11) Adjusted Loss Ratio Relativity
(-86) - (-95)	6,450	1,031,767,588	1,719,516	16,379,721	3.446	-90%	-62%	0.959	-52.8%	0.836
(-76) - (-85)	3,343	887,927,570	6,037,439	29,693,433	2.962	-80%	-55%	1.351	-47.0%	1.240
(-66) - (-75)	3,036	994,253,418	13,958,771	46,663,880	1.883	-70%	-49%	1.100	-41.3%	1.048
(-56) - (-65)	5,971	1,508,277,803	26,220,994	65,097,753	1.558	-60%	-42%	1.074	-35.2%	1.057
(-46) - (-55)	6,114	1,678,370,580	27,254,534	55,681,412	1.191	-51%	-36%	0.904	-30.1%	0.911
(-36) - (-45)	4,783	1,769,092,498	47,417,289	79,317,162	1.137	-40%	-28%	0.944	-23.7%	0.973
(-26) - (-35)	1,326	479,347,448	13,577,718	19,906,923	1.050	-32%	-22%	0.919	-18.8%	0.962
(-16) - (-25)	652	251,124,453	10,306,098	13,187,476	0.791	-20%	-14%	0.734	-12.0%	0.782
(-6) - (-15)	119	55,549,775	2,079,383	2,364,512	1.345	-12%	-8%	1.291	-7.1%	1.389
(-5) ±	384	96,637,759	4,636,424	4,471,180	1.134	4%	3%	1.146	2.2%	1.256
Total	32,198	8,752,348,892	153,408,166	332,763,451	1.356	-54%	-38%	1.000	-31.8%	1.000
93/2		8,752,348,866	153,408,166							
94/1					1.356					
Total Group		8,752,348,866	153,408,166		1.356					
93/2		19,649,372,869	651,637,428		0.916					
94/1					1.000					
Total Non Group		19,649,372,869	651,637,428		0.916					
Totals		28,401,721,735	805,045,594		1.000					

- Indicated rate changes to achieve equity between non-group & group-rated employers:
Group-rated Employers: 35.6%

Non-Group Rated Employers: -8.4%

Indicated Group Modification Factor (Credibility) Factor
Adjusted Group Modification Factor (Credibility) Factor

69.6%

59.0%

Ohio Bureau of Workers' Compensation
Group Rating Study
Projection of Adjusted Modification Factors for 7 Years

(1) No. of Years Since Formation	(2) No. of Years of Group Exper. Used in TM% Calc.	(3) Indicated Modification Factor By Rating Year	(4)	(5)	(6) Selected "Indicated"	(7) Selected "Adjusted"	(8) Modified Adjusted	(9) Projected Modified Adjusted	(10) Selected Modification Factor
1	0.0	91 0.665	92	93 0.615	0.68	0.57	0.62	0.69	0.60
2	0.0		0.731	0.702	0.72	0.61	0.65	0.78	0.65
3	0.5		0.764	0.734	0.75	0.63	0.68	0.87	0.75
4	1.5							0.96	0.85
5	2.5							1.00	0.95
6	3.5								
7	4.0								

Notes by Column:

- (1) Age of group since inception.
- (2) Years of group experience used in calculating TM%.
- (3)-(5) Indicated group modification factor by group formation year (i.e. .615 for rating year 1993 for groups formed in 1993; .702 for rating year 1993 for groups formed in 1992; and .734 for rating year 1993 for groups formed in 1991).
- (6) Selected factors based on yearly observations (Cols. (3) through (5)) with base rate changes not considered.
- (7) Selected factors based on indicated factors with base rate changes considered.
- (8) Factors modified to consider affects of reduced credibility for groups with less than \$1.5 million in manual premiums. For years 3+ = .65 + Col. (2)/4.00 * 0.35.
- (9) Projected modified factors for groups through 7 years of history.
- (10) Selected projected modified factors for groups through 7 years of history.

Ohio Bureau of Workers' Compensation

Group Rating Study

Summary of Losses, Premiums & Payroll by Industry

Rating Year Effective July 1, 1993 (7/1/93 ~ 6/30/94)

Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	1,511	62,495,349	1,845,419	1,101,355	0.597
2	475	79,384,490	3,652,963	3,289,916	0.901
3	5,563	1,489,343,675	37,575,955	39,247,086	1.044
4	4,811	895,791,539	37,595,710	38,580,876	1.026
5	655	118,274,162	6,723,343	6,883,176	1.024
6	43	15,535,202	265,161	5,276	0.020
7	6,501	1,119,527,934	19,913,675	16,503,754	0.829
8	7,558	1,300,449,768	33,276,674	18,847,885	0.566
9	5,961	735,162,008	8,250,493	9,379,030	1.137
10	30,449	2,936,384,739	4,308,774	5,021,811	1.165
Total	63,527	\$8,752,348,866	\$153,408,166	\$138,860,165	0.905

Non Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	9,066	84,678,700	8,497,179	4,739,910	0.558
2	1,432	155,216,966	13,512,596	9,097,009	0.673
3	18,637	3,611,718,246	184,636,928	132,360,338	0.717
4	25,246	1,588,082,207	129,843,494	85,511,544	0.659
5	3,638	286,175,953	33,152,938	22,428,442	0.677
6	405	97,494,781	5,077,342	4,370,791	0.861
7	28,378	2,213,855,492	87,089,401	54,754,443	0.629
8	54,531	2,587,560,884	122,815,734	52,430,116	0.427
9	22,165	1,276,141,342	36,450,665	18,299,889	0.502
10	108,742	7,748,448,298	30,561,152	14,690,758	0.481
Total	272,240	\$19,649,372,869	\$651,637,428	\$398,683,240	0.612

All Employers (Group & Non-Group)					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	10,577	147,174,049	10,342,597	5,841,265	0.565
2	1,907	234,601,456	17,165,559	12,386,925	0.722
3	24,200	5,101,061,921	222,212,884	171,607,424	0.772
4	30,057	2,483,873,746	167,439,204	124,092,420	0.741
5	4,293	404,450,115	39,876,281	29,311,618	0.735
6	448	113,029,983	5,342,502	4,376,067	0.819
7	34,879	3,333,383,426	107,003,076	71,258,197	0.666
8	62,089	3,888,010,652	156,092,407	71,278,001	0.457
9	28,126	2,011,303,350	44,701,158	27,678,919	0.619
10	139,191	10,684,833,037	34,869,926	19,712,569	0.565
Total	335,767	\$28,401,721,735	\$805,045,594	\$537,543,405	0.668

Ohio Bureau of Workers' Compensation

Group Rating Study

Summary of Losses, Premiums & Payroll by Industry

Rating Year Effective July 1, 1992 (7/1/92 ~ 6/30/93)

Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	919	82,997,430	2,250,552	1,948,044	0.866
2	293	81,598,172	3,729,001	2,304,047	0.618
3	3,362	1,729,409,593	39,068,132	38,294,119	0.980
4	2,495	1,063,517,753	40,577,815	34,666,172	0.854
5	325	127,330,976	7,144,554	6,711,598	0.939
6	24	22,498,941	464,352	106,712	0.230
7	3,821	1,423,988,597	20,973,449	21,838,485	1.041
8	3,611	1,663,793,811	36,809,012	26,474,466	0.719
9	4,343	1,081,181,100	10,490,271	11,717,306	1.117
10	19,274	3,854,059,955	5,079,524	5,501,583	1.083
Total	38,467	\$11,130,376,328	\$166,586,662	\$149,562,532	0.898

Non Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	9,193	187,771,154	16,407,951	12,980,126	0.791
2	1,608	344,809,165	28,157,905	18,973,407	0.674
3	20,993	8,190,138,820	384,338,505	265,153,612	0.690
4	27,065	3,295,457,616	249,104,705	165,714,850	0.665
5	4,000	639,006,032	75,404,889	49,590,950	0.658
6	434	173,565,899	8,200,311	5,746,416	0.701
7	31,196	4,842,468,024	172,568,429	115,036,150	0.667
8	58,806	5,705,424,324	251,233,426	141,064,410	0.561
9	23,806	2,616,871,391	68,203,298	42,316,160	0.620
10	117,501	17,362,427,468	62,662,710	43,273,574	0.691
Total	294,602	\$43,357,939,893	\$1,316,282,130	\$859,849,655	0.653

All Employers (Group & Non-Group)					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	10,112	270,768,584	18,658,503	14,928,170	0.800
2	1,901	426,407,337	31,886,907	21,277,454	0.667
3	24,355	9,919,548,413	423,406,638	303,447,731	0.717
4	29,560	4,358,975,369	289,682,519	200,381,022	0.692
5	4,325	766,337,008	82,549,442	56,302,548	0.682
6	458	196,064,840	8,664,664	5,853,128	0.676
7	35,017	6,266,456,621	193,541,878	136,874,635	0.707
8	62,417	7,369,218,135	288,042,438	167,538,876	0.582
9	28,149	3,698,052,491	78,693,569	54,033,466	0.687
10	136,775	21,216,487,423	67,742,234	48,775,157	0.720
Total	333,069	\$54,488,316,221	\$1,482,868,791	\$1,009,412,187	0.681

Ohio Bureau of Workers' Compensation

Group Rating Study

Summary of Losses, Premiums & Payroll by Industry

Rating Year Effective July 1, 1991 (7/1/91 ~ 6/30/92)

Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	403	34,638,013	585,317	847,486	1.448
2	48	7,929,323	413,789	913,991	2.209
3	1,212	571,634,958	8,816,311	13,745,303	1.559
4	608	271,204,673	10,183,399	12,552,198	1.233
5	95	31,188,989	1,757,435	1,840,192	1.047
6	15	18,915,359	240,217	246,875	1.028
7	1,501	690,692,139	8,740,939	10,599,892	1.213
8	675	505,977,867	9,406,098	10,819,372	1.150
9	975	243,258,549	3,185,615	4,474,875	1.405
10	5,408	1,032,564,648	1,174,859	1,384,789	1.179
Total	10,940	\$3,408,004,518	\$44,503,979	\$57,424,973	1.290

Non Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	14,987	234,025,120	16,003,484	15,549,517	0.972
2	2,133	424,868,805	30,022,266	30,322,041	1.010
3	24,448	8,897,903,519	385,196,829	338,531,555	0.879
4	31,819	3,926,516,751	281,670,072	241,295,518	0.857
5	4,819	664,106,097	76,674,997	68,246,914	0.890
6	482	177,107,563	7,752,610	7,665,747	0.989
7	34,914	5,442,654,255	176,991,069	161,183,186	0.911
8	66,503	6,709,782,131	260,644,520	203,041,088	0.779
9	27,574	3,353,898,944	74,765,098	64,300,574	0.860
10	129,474	19,030,205,910	57,987,381	47,222,173	0.814
Total	337,153	\$48,861,069,095	\$1,367,708,325	\$1,177,358,313	0.861

All Employers (Group & Non-Group)					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	15,390	268,663,133	16,588,802	16,397,003	0.988
2	2,181	432,798,128	30,436,054	31,236,032	1.026
3	25,660	9,469,538,477	394,013,140	352,276,858	0.894
4	32,427	4,197,721,424	291,853,471	253,847,716	0.870
5	4,914	695,295,086	78,432,431	70,087,106	0.894
6	497	196,022,922	7,992,828	7,912,622	0.990
7	36,415	6,133,346,394	185,732,007	171,783,078	0.925
8	67,178	7,215,759,998	270,050,618	213,860,460	0.792
9	28,549	3,597,157,493	77,950,715	68,775,449	0.882
10	134,882	20,062,770,558	59,162,240	48,606,962	0.822
Total	348,093	\$52,269,073,613	\$1,412,212,305	\$1,234,783,286	0.874

Ohio Bureau of Workers' Compensation

Group Rating Study

Summary of Losses, Premiums & Payroll by Industry

Rating Year 1991, 1992 & 1993 Combined

Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	2,833	180,130,792	4,681,288	3,896,885	0.832
2	816	168,911,985	7,795,753	6,507,954	0.835
3	10,137	3,790,388,226	85,460,399	91,286,508	1.068
4	7,914	2,230,513,965	88,356,924	85,799,246	0.971
5	1,075	276,794,127	15,625,331	15,434,966	0.988
6	82	56,949,502	969,730	358,863	0.370
7	11,823	3,234,208,670	49,628,062	48,942,131	0.986
8	11,844	3,470,221,446	79,491,784	56,141,723	0.706
9	11,279	2,059,601,657	21,926,379	25,571,211	1.166
10	55,131	7,823,009,342	10,563,156	11,908,183	1.127
Total	112,934	\$23,290,729,712	\$364,498,807	\$345,847,670	0.949

Non Group-Rated Employers					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	33,246	506,474,974	40,908,614	33,269,553	0.813
2	5,173	924,894,936	71,692,767	58,392,457	0.814
3	64,078	20,699,760,585	954,172,262	736,045,505	0.771
4	84,130	8,810,056,574	660,618,270	492,521,912	0.746
5	12,457	1,589,288,082	185,232,823	140,266,306	0.757
6	1,321	448,168,243	21,030,263	17,782,954	0.846
7	94,488	12,498,977,771	436,648,899	330,973,779	0.758
8	179,840	15,002,767,339	634,693,679	396,535,614	0.625
9	73,545	7,246,911,677	179,419,061	124,916,623	0.696
10	355,717	44,141,081,676	151,211,244	105,186,505	0.696
Total	903,995	\$111,868,381,857	\$3,335,627,884	\$2,435,891,208	0.730

All Employers (Group & Non-Group)					
Industry	No. of Risks	Payroll	Premiums	Losses	Loss Ratio
1	36,079	686,605,766	45,589,902	37,166,438	0.815
2	5,989	1,093,806,921	79,488,520	64,900,411	0.816
3	74,215	24,490,148,811	1,039,632,661	827,332,013	0.796
4	92,044	11,040,570,539	748,975,194	578,321,158	0.772
5	13,532	1,866,082,209	200,858,154	155,701,272	0.775
6	1,403	505,117,745	21,999,994	18,141,817	0.825
7	106,311	15,733,186,441	486,276,961	379,915,910	0.781
8	191,684	18,472,988,785	714,185,463	452,677,337	0.634
9	84,824	9,306,513,334	201,345,440	150,487,834	0.747
10	410,848	51,964,091,018	161,774,400	117,094,688	0.724
Total	1,016,929	\$135,159,111,569	\$3,700,126,691	\$2,781,738,878	0.752