

**Actuarial Committee
Agenda
January 24, 2008
Level 2, Room 1
12:00 pm – 2:00 pm**

Call to Order

Chuck Bryan, Chairman

Roll Call

Larry Rhodebeck, Scribe

Approve Minutes of December 19, 2007 meeting

Chuck Bryan

New Business/Action Items

1. Committee Calendar – Review activity throughout 2008

Discussion Items*

1. Committee Charter
2. MCO Costs and Allocation
3. Private Employer Ratemaking Procedures
 - a. Overall Change
 - b. Changes by Class
4. Discount Rate Selection Methodology
5. Chief Actuarial Officer Report
 - a. HB 100 Comprehensive Study RFP Status
 - b. Group Rating / NCCI Project
 - c. MIRA II Status
 - d. Staffing Update

* Not all discussion items may have materials included.

Next Meeting: February 28, 2008



BWC Committee Calendar

January	February
<ol style="list-style-type: none"> 1. Preview Committee calendar 2. Minutes 3. Committee Calendar 4. Committee Charter 5. MCO Payments and Premium Loading 6. PA Employer Ratemaking Procedures <ol style="list-style-type: none"> a. Overall Change b. Changes by Class 7. Discount Rate Selection 8. CAO Report <ol style="list-style-type: none"> a. HB 100 Comprehensive Study RFP Status b. Group Rating/NCCI Project c. MIRA II Status d. Staffing Update 	<ol style="list-style-type: none"> 1. Rate change education 2. PA education 3. H.B. 100 RFP update
March	April
<ol style="list-style-type: none"> 1. Public Employer Rate Indication 2. PA overall rate change 	<ol style="list-style-type: none"> 1. Rate rule education 2. Discount rate 3. Group NCCI rate making updates 4. PES Rate rule 4123-17-35 5. MIRA update 6. Self-Insured, Marine Fund, Coal Workers' Pneumoconiosis, DWRP and Administrative Cost education
May	June
<ol style="list-style-type: none"> 1. Private Employer Base Rate – Rule 4123-17-05 2. Private Employer Credibility, Limited Loss Ratio and Industry group tables – Rule 4123-17-06 3. Self-Insured Assessment Rate – Rule 4123-17-32 4. Coal Workers' Pneumoconiosis Fund Rate Rule 4123-17-29 5. Marine Fund Rate – Rule 4123-17-19 6. Disabled Workers' Relief Fund Assessments Rate – Rule 4123-17-29 7. One Claim Program Rule – Possible 8. Administrative Cost Assessment – Rule 4123-17-36 (Finance) 	<ol style="list-style-type: none"> 1. Private Employer Credibility table – Rule 4123-17-6 (possibly need to do early based upon changes to the group rating rules) 2. Discount rate for Reserve Audit as of 6-30-08 3. MIRA II update
July	August
<ol style="list-style-type: none"> 1. MIRA update 	<ol style="list-style-type: none"> 1. Reserve Audit update
September	October
<ol style="list-style-type: none"> 1. Public Employer Taxing Districts rate change 2. Annuity Table – Rule 4123-17 – possible based on discount rate 3. Reserve Audit - full 	<ol style="list-style-type: none"> 1. Actuarial Audit Reserves – Oliver Wyman, consulting actuaries 2. Reserve levels 3. NCCI/BWC State of the line report comparisons
November	December
<ol style="list-style-type: none"> 1. Public Employer Taxing Districts 2. Public Employer Taxing Districts 	<ol style="list-style-type: none"> 1. Public Employer State Agency Rule 4123 - Possible

**OBWC Board of Directors
Actuarial Committee Charter
January 24, 2008**

Purpose

The Actuarial Committee has been established to assist the Ohio Bureau of Workers' Compensation Committee Board of Directors in fulfilling their responsibilities through:

- monitoring the actuarial soundness and financial condition of the funds and reviewing rates, reserves and level of net assets
- oversight of the integrity of the actuarial audit process
- compliance with legal and regulatory requirements
- monitor the design and effectiveness of the actuarial studies
- confirm external actuarial consultants' qualifications and independence
- review performance of independent external actuarial work product

Membership

The Committee shall be composed of a minimum of five (5) members. One member shall be the appointed actuary member of the Board. The Board, by majority vote shall appoint four additional members. The Board may also appoint additional members who may or may not be on the Board. Members of the Actuarial Committee serve at the pleasure of the Board and the Board, by majority vote, may remove any member except the member of the committee who is the actuary member of the Board.

Each committee member will be independent from management. The Chair and Vice Chair is designated by the Board, based on the recommendation of the Board Chair. The Board Chair if not a member is an ex-officio member, shall not vote if his/her vote will create a tie vote when serving as ex-officio.

The Committee Chair will be responsible for scheduling all meetings of the Committee and providing the Committee with a written agenda for each meeting. The Committee will have a staff liaison designated to assist it in carrying out its duties.

Meetings

By majority vote the Committee will recommend to the Board of Directors their meeting schedule. There shall be not less than nine (9) meetings each year. Reports shall be made to the Board after each meeting. The Committee also has the authority to convene additional meetings, as circumstances require. The Committee will invite members of management, external actuarial firms, internal actuarial staff and/or others to attend meetings and provide pertinent information, as necessary. Subject to open meeting laws, the Committee will hold executive sessions and private meetings with actuaries and auditors, when required in the performance of their duties. A quorum will be a majority of the Committee members.

Duties and Responsibilities

The Actuarial Committee shall have responsibility for the following:

1. Recommend actuarial consultants for the Board to use for the funds specified in the Ohio Revised Code.
2. Review calculation on rate schedules and performance prepared by the actuarial consultants with whom the Board contracts.
3. Supervise for the Board's consideration the preparation of an annual report of the actuarial valuation of the assets, liabilities and funding requirements of the state insurance funds to be submitted to the Workers' Compensation Council and the Senate and House.
4. Coordinate with other Board Committees on issues of common interest.
5. At least once every five (5) years have actuarial investigation of experience of employers; mortality, service and injury rate of employees; payment of benefits in order to update the assumptions on the annual actuarial report.
6. Have actuarial analysis prepared of any legislation expected to have measurable financial impact on the system, within 60 days after introduction of legislation.
7. Consult in the appointment of and oversee the work of any actuarial firm engaged by Ohio Bureau of Workers' Compensation to complete actuarial studies.
8. Recommend retention and oversight of consultants, experts, independent counsel and actuaries to advise the Committee on any of its responsibilities or assist in the conduct of an investigation.
9. Seek any information it requires from employees – all of whom are directed to cooperate with the Committee's requests, or the request of internal or external parties working for the Committee. These parties include the internal actuaries, all external actuaries, consultants, investigators and any other specialties working for the Committee.
10. Make recommendations to the Board of Directors of the Ohio Bureau of Workers' Compensation for Board decisions.
11. At least annually, this charter must be reviewed by the Actuarial Committee and any proposed changes submitted to the Governance Committee and to the Board for approval

Actuarial Committee Charter.doc Draft 092607 Review & Approved 112107, Chuck Bryan, Chair Revised 012408

Allocation of MCO Fees to Employer Types for 2008

MCO Contract Parameters				
Total Maximum Fees = \$162,630,000				
	Active Employers	First Reports of Injury (FROIs)	Bills	Active Claims
2008 Weights	7%	14%	14%	65%

Allocation to Risk (Employer) Type											
Using Average for the 12 months: 12/01/06 to 11/30/07											
Risk Type	Active Employers		First Reports of Injury (FROIs)		Bills		Active Claims		Allocation by Risk Type*	Allocation of MCO Fees	
Private Employers	238,957	98.36%	11,527	82.10%	223,017	80.26%	254,530	80.59%	82.00%	133,355,446	
Public Employer Taxing Districts	3,850	1.58%	2,006	14.29%	41,627	14.98%	46,078	14.59%	13.69%	22,266,253	
Public Employer State Agencies, Universities & Univ. Hospitals	126	0.05%	503	3.58%	11,104	4.00%	12,012	3.80%	3.54%	5,752,179	
Self-Insured Employers Fund	1	0.00%	5	0.03%	2,104	0.76%	3,214	1.02%	0.77%	1,256,122	
		100.00%		100.00%		100.00%		100.00%		162,630,000	

* The allocation to risk type results from applying the 2008 Weights for each activity measure to each risk type's portion of the activity.
 E.g., for PES employers, (7% x 0.05%) + (14% x 3.58%) + (14% x 4.00%) + (65% x 3.80%) = 3.54%

Ohio Bureau of Worker's Compensation
Actuarial Committee

Private Employer Ratemaking

John R. Pedrick, FCAS, MAAA, Chief Actuarial Officer

Elizabeth Bravender, CPCU, Director of Actuarial

January 24, 2008

Overview of Discussion

- Ratemaking Requirements
 - ❑ Ohio Law
 - ❑ Actuarial Principles & Standards of Practice
- Influences and Assumptions
- Review of Process Using Last Year's Figures
 - ❑ Actuarial Indicated Rate Changes
 - ❑ Rate Level Decision
 - ❑ Class Rates

Authority and Requirements in Ohio Law

- **Ohio Revised Code (ORC)** (<http://codes.ohio.gov/orc>)
 - ORC §4123.29 – Duties of the Administrator
 - ORC §4123.34 – Fixing Rates of Premium
- **Ohio Administrative Code (OAC)** (<http://codes.ohio.gov/oac>)
 - OAC Chapter 4123-17 – General Rating for the State Insurance Fund
 - 4123-17-06 – Private Employer Contributions to the State Insurance Fund (premium rates by classification / \$100 payroll)

Duties of the Administrator

Rates and Classifications

- ORC § 4123.29(A) The administrator of workers' compensation, subject to the approval of the bureau of workers' compensation board of directors, shall do all of the following:
 - (1) Classify occupations or industries ... according to the categories of the national council on compensation insurance...
 - (2) Fix the rates of premium of the risks of the classes based upon the total payroll in each of the classes of occupation or industry sufficiently large to provide a fund for the compensation provided for in this chapter and to maintain a state insurance fund from year to year. The administrator shall set the rates at a level that assures the solvency of the fund.

Fixing Rates and Premium Rates and Classifications

➤ ORC § 4123.34

... The administrator ... shall fix and maintain, with the advice and consent of the board, for each class of occupation or industry, the lowest possible rates of premium consistent with the maintenance of a solvent state insurance fund and the creation and maintenance of a reasonable surplus, after the payment of legitimate claims for injury, occupational disease, and death...

Actuarially Sound Rates

- Are Estimates of future costs.
- Provide for all future costs of coverage.
- Provide for the costs associated with an individual risk transfer.

Factors & Trends Underlying Ratemaking

- Past Payroll and Claim Experience
- Investment Income (Discount Rate)
- Claim Frequency Trend
- Claim Severity Trend
- Demographics, Legislation, Court Decisions
- Economic Conditions
- Past Actuarial Analyses and Rate Changes

Ohio Bureau of Workers'
Compensation
Actuarial Committee

Rate Indication
and
NCCI Class Rating

January 24, 2008

Premium Rate Making

Each year, premium rates are calculated for each employer group.

Private Employer rates – process is Jan 1 through May 31

Public Employer Taxing Districts – process is July 1 through Nov 31

Premium Rate Making

1st step – project a range of the needed premiums for private employer at the fund level referred to as the rate indication (Feb/Mar)

2nd step – review the rate indication and consider other factors (March)

- Economy
- Workers' compensation market and trends
- Legislative changes
- Judicial changes
- Benefit Changes
- Frequency of claims
- Change in reserve discount rate

Premium Rate Making

- 3rd Step – Administrator and Chief Actuarial Officer will make an overall rate change recommendation to the Actuarial Committee to take to the Board for advice and consent (Mar/Apr)
- 4th Step – Board passes a resolution adopting the overall rate recommendation (Mar/Apr)
- 5th Step – Overall rate indication is included in the class rate making (April)

Premium Rate Making

- 6th Step – Calculate expected loss rates and base rates for each manual class. (Apr – May)
- 7th Step – Present the results in rule form to the Actuarial Committee for a recommendation to the Board (May)
- 8th Step – Board adopts the new rate rules and the rules become effective July 1 (May)

Rate Indication

The Rate indication is a percentage change in collectible premium over the previous years premium collections.

Example:

Policy year 7-1-2006 premium \$1.6 B or an average collectible premium rate of \$1.85 per \$100 reported payroll

Last Year, policy year 7-1-2007 assume a decrease of 3.9%, the premium need drops by \$62 M and the average collectible premium rate would be \$1.78 per \$100 of reported payroll

**Ohio Bureau of Workers' Compensation
Private Employers
Rate Level Analysis at 7/1/07**

Calendar/ Accident Year	Discounted Medical Pure <u>Premium</u>	Discounted Indemnity Pure <u>Premium</u>	Discounted Total Pure <u>Premium</u>
1997	\$0.71	\$0.70	\$1.41
1998	0.79	0.74	1.53
1999	0.81	0.77	1.58
2000	0.88	0.82	1.69
2001	0.89	0.78	1.67
2002	0.94	0.80	1.74
2003	0.94	0.76	1.69
2004	0.91	0.72	1.62
2005	0.85	0.66	1.51
2006	0.83	0.62	1.45
2007(estimated)	0.93	0.67	1.61
2008(estimated)	0.95	0.66	1.61
Fitted Annual % Change 2001 - 2005	-1.20%	-4.60%	-2.70%
Fitted Annual % Change 1997 - 2006	1.70%	-1.50%	0.20%
Fitted Annual % Change 1997 - 2005	2.60%	-0.70%	1.00%
Projected 7/1/2007 to 6/30/2008 using 01-05	\$0.86	\$0.60	\$1.45
Projected 7/1/2007 to 6/30/2008 using 97-06	\$0.94	\$0.67	\$1.61
Projected 7/1/2007 to 6/30/2008 using 97-05	\$1.10	\$0.78	\$1.66

Rate Change Scenarios

Private Employer Policy Year 7-1-2007

	<u>Baseline</u>	<u>Reasonable Expectation- Optimistic</u>	<u>Reasonable Expectation- Conservative</u>
1. Deviation from baseline due to claim cost and/or frequency changes	0.00%	-9.54%	3.12%
2. Selected Discounted Pure Premium (projected premium from trend * deviation percent in line 1)	\$1.61	\$1.45	\$1.66
3. Estimated Pure Premium for MCO Costs (8.94%*discounted pure premium)	\$0.14	\$0.13	\$0.15
4. Pure Premium with MCO costs	\$1.75	\$1.58	\$1.80
Additional Loadings:			
5. Premium Payment Security Fund (0.50% x pure premium with MCO costs)	\$0.010	\$0.010	\$0.010
6. Safety & Hygiene (1% x pure premium with MCO costs)	\$0.018	\$0.016	\$0.018
7. Contingency Margin (0% x pure premium with MCO costs)	\$0.000	\$0.000	\$0.000
8. Pure Premium including MCO Costs	\$1.78	\$1.61	\$1.83
9. Estimated Current Avg. Rate	\$1.85	\$1.85	\$1.85
10. Indicated Rate Change	-3.9%	-13.1%	0.9%

Notes:

- Pure premiums are based on the December 31, 2006 actuarial evaluation (discounted @ 5.25%).
- Pure premiums shown were rounded 2 decimal places. Actual calculations were performed using unrounded numbers.
- The evaluation date for the calendar - accident years is December 31 of each accident year.
- The MCO costs are determined in the actuarial audit as of June 30, 2006, appendix Q3 and adjusted for the change in the contract for 2007.
Adjustment amount to consider new contract rate: $\text{New contract rate}/\text{previous contract rate} = 7.25/8 = .90625$
Audit selected ratio from appendix Q3 x adjustment amount = $9.86 \times .90625 = 8.94$ rounded

Rate Change Scenarios

Private Employer Policy Year 7-1-2007

	<u>Baseline</u>
1. Deviation from baseline due to claim cost and/or frequency changes	0.00%
2. Selected Discounted Pure Premium (projected premium from trend * deviation percent in line 1)	\$1.61
3. Estimated Pure Premium for MCO Costs (8.94%*discounted pure premium)	\$0.14
4. Pure Premium with MCO costs	\$1.75
 Additional Loadings:	
5. Premium Payment Security Fund (0.50% x pure premium with MCO costs)	\$0.010
6. Safety & Hygiene (1% x pure premium with MCO costs)	\$0.018
7. Contingency Margin (0% x pure premium with MCO costs)	\$0.000
8. Pure Premium including MCO Costs	\$1.78
9. Estimated Current Avg. Rate	\$1.85
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Notes:

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Ohio Bureau of Workers' Compensation Managed Care Organization Reserve Reserve Evaluation as Of June 30, 2007 (Dollars in millions)

Fiscal Year 2007 MCO Payments:

PA	\$142.4
PEC	\$23.9
PES	\$6.0
SI	\$0.9
(1) Fiscal Year 2007 MCO Payments - all employer groups	\$173.1
(2) Fiscal Year-End 2007 SIF Benefit Payments - all employer groups	\$1,762.8
(3) Paid HPP to Paid Benefit Ratio [(1) / (2)]	9.8%
(4) Selected ratio	9.8%

MCO Cost Factor

To change the factor from the audit to adjust for the change in the new MCO contract

$$7.25\% \text{ (new)} / 8\% \text{ (old)} = .90625$$

$$9.8 \text{ (selected ratio from audit)} \times .90625 = 8.935$$

Class Rating Concepts

- Past experience is one of the best predictor of future costs
 - Incurred losses are medical and indemnity paid plus reserves
- Payroll is the measure used for WC exposure
- Premium for a policy year should cover all payments in future years on claims incurred during the policy year
- Manual classifications are job descriptions (ORC 4123.29 and OAC 4123-17-04)
 - Private Employers have 536 classes
 - Public Employer Taxing Districts have 14 classes
- Each manual classification has its own base rate and expected loss rate (OAC 4123-17-06)
- Manual classifications are grouped into 10 industry groups (OAC 4123-17-05)

Base Rate Calculation Definitions

- Experience Period – the oldest four of the last five calendar years preceding the effective date of rates. (ORC 4123.34)
 - For 7-1-2007 Policy year we used incurred losses and payroll from accident year/calendar year 2002, 2003, 2004, and 2005
- Cut-Off (Survey) Date – the last date at which payroll and loss data is collected by BWC for inclusion in the calculation of rates.
 - PA is December 31, 2006

**OHIO BUREAU OF WORKERS' COMPENSATION
MANUAL CLASSIFICATION BASE RATE FOR POLICY YEAR 2007**

AS OF 12/31/2006

EMPLOYER TYPE: PA

NCCI MANUAL: 8810, CLERICAL OFFICE EMPLOYEES NOC
RATE GROUP: 10, OFFICE WORK/MISCELLANEOUS

YEAR	PREMIUM AND PAYROLL		RAW LOSSES		DEVELOPED LOSSES		RATE LEVEL LOSSES	
	PREMIUM	PAYROLL	INDEMNITY	MEDICAL	INDEMNITY	MEDICAL	INDEMNITY	MEDICAL
2002	0	18,441,681,442	11,210,566	8,777,273	9,296,923	14,342,064	7,735,040	14,428,116
2003	0	19,187,002,978	12,548,271	8,919,853	10,730,026	16,382,203	9,474,613	16,496,878
2004	0	19,855,462,686	9,996,224	6,583,677	8,882,645	13,739,475	8,296,390	14,261,575
2005	0	20,951,410,533	8,628,664	5,025,336	8,542,378	12,349,762	8,713,226	13,646,487
Total		78,435,557,639	42,383,725	29,306,139	37,451,972	56,813,504	34,219,269	58,833,056
				71,689,864		94,265,476		93,052,325

LOSS DEVELOPMENT FACTORS

YEAR	INDEMNITY	MEDICAL
2002	0.8293	1.6340
2003	0.8551	1.8366
2004	0.8886	2.0869
2005	0.9900	2.4575

BASE RATE CALCULATION

1. CURRENT YEAR PURE PREMIUM	0.1186
2. PRIOR YEAR CREDIBILITY ADJUSTED PURE PREMIUM	0.1397
3. FUND ADJUSTED FOR PRIOR YEAR PURE PREMIUM	0.1237
4. MANUAL CREDIBILITY	1.0000
5. CURRENT YEAR PURE PREMIUM USED	0.1186
6. PRIOR YEAR PURE PREMIUM USED	0.0000
7. PURE PREMIUM ADJUSTED FOR CREDIBILITY	0.1186
8. PURE PREMIUM ADJUSTED FOR CATASTROPHE	0.1345
9. PURE PREMIUM ADJUSTED BY OFF-BALANCE	0.1942
10. PURE PREMIUM ADJUSTED BY RATE CHANGE	0.2548
11. PURE PREMIUM ADJUSTED BY PREMIUM PAYMENT SECURITY FACTOR	0.2561
12. PURE PREMIUM ADJUSTED BY SAFETY & HYGIENE	0.2587
13. UNLIMITED BASE RATE	0.2587
14. PRIOR YEAR'S BASE RATE	0.2900
BASE RATE UPPER LIMIT	0.3770
BASE RATE LOWER LIMIT	0.2030
15. BASE RATE LIMITED TO +30% OR -30% CHANGE	0.26

RATE LEVEL LOSS FACTORS

YEAR	INDEMNITY	MEDICAL
2002	0.8320	1.0060
2003	0.8830	1.0070
2004	0.9340	1.0380
2005	1.0200	1.1050

BASE RATE CALCULATION FACTORS

PRIOR YEAR PURE PREMIUM FACTOR	0.885400
CATASTROPHE FACTOR	1.133700
OFF-BALANCE FACTOR	1.443712
RATE CHANGE FACTOR	1.311800
PREMIUM PAYMENT SECURITY FUND FACTOR	1.005000
SAFETY & HYGIENE FACTOR	1.010000
EXPECTED LOSS RATE	0.0800
TOTAL SURPLUS	6,662,663

Base Rate Calculation Definitions

- Payroll – Total payroll for the experience period that has been reported by employers in that manual classification.
- Raw Losses – Incurred claim losses (claim medical and indemnity payments plus reserves), as of the cut-off date for all claims with dates of injury within the experience period. Losses are limited to \$250,000 per claim.

Expected Loss Rate

- [(Manual classification experience period total raw losses – manual classification experience period total surplus losses) / manual classification experience period total payroll] * 100

$$[(71,689,864 - 6,662,663) / 78,435,557,639] * 100 = 0.0800$$

- If a manual has no experience period payroll, use the rate group (industry) expected loss rate
- It is OK to have an expected loss rate of \$0.00 – there is reported payroll (exposure) and \$0 losses

Developed Losses Formula

- Calendar year raw losses * calendar year loss development factors

$$2002 \text{ indemnity developed losses} = 11,210,566 * 0.8293 = 9,296,923$$

- These development factors bring the known experience period losses to the total losses by including IBNR (incurred but not reported) claims, adjusting for medical only to lost time changeover claims and to adjust for under reserving.

Rate Level Losses Formula

- Calendar year developed losses * calendar year rate level factors

$$9,296,923 * 0.8320 = 7,735,040$$

- These losses bring the developed losses from accident year payment levels to the policy year payment levels.

#1 Current Year Pure Premium

– (Total experience period rate level losses / total experience period payroll) * 100

$$93,052,325 / 78,435,557,639 = 0.1186$$

#2 Prior Year Credibility Adjusted Pure Premium

- Previous policy year's Pure Premium Adjusted for Credibility, line #7 from last year's rate sheet
- It is only used when the manual losses are less than \$1M that the credibility is less than 1.0 or 100%

#3 Fund Adjusted for Prior Year Pure Premium

- Prior year credibility adjusted pure premium (#2 above) * prior year pure premium factor

$$0.1397 * 0.885400 = 0.1237$$

#4 Manual Credibility

- #4 Manual Credibility – based upon the manual classification total experience period raw losses. A measurement to separate random occurrences from true expectations.
 - The higher the manual total raw losses, the higher the credibility assigned
 - Total manual raw losses of \$1,000,000 necessary to be 100% credible

#5 Current Year Pure Premium Used

– Current Year Pure Premium (#1) * Manual
Credibility (#4)

$$0.1186 * 1.000 = 0.1186$$

#6 Prior Year Pure Premium Used

– Fund Adjusted for Prior Year Pure Premium (#3) * complement of Manual Credibility (#4).

- The complement of the manual credibility is determined by subtracting the manual credibility from 1.00
- In this example, this is null because the class is 100% credible

#7 Pure Premium Adjusted for Credibility

– Current Year Pure Premium Used (#5) + Prior Year Pure Premium Used (#6)

$$0.1186 + 0.000 = 0.1186$$

#8 Pure Premium Adjusted for Catastrophe

- Pure Premium Adjusted for Credibility (#7) * Catastrophe Factor
- The catastrophe factor is used to spread the costs of claims greater than \$250,000 per claim and catastrophe events over all manual classifications in an industry (rate group)

$$0.1186 * 1.1337 = 0.1345$$

#9 Pure Premium Adjusted for Off-Balance

- Pure Premium Adjusted for Catastrophe (#8) * Off-Balance Factor
- The off-balance factor is used to correct an off-balance condition created by experience rating, including group
- Rate for manual 8810 increased by 44.37% because of lower experience modifications (EM's) due to group rating

$$0.1345 * 1.443712 = 0.1942$$

#10 Pure Premium Adjusted by Rate Change

- Pure Premium Adjusted by Off-Balance (#9) * Rate Change Factor
- Rate Change factor is derived during the rate calculation process to arrive at the desired premium change from previous policy year, as approved to by the Workers' Compensation Board of Directors

$$0.1942 * 1.3118 = 0.2548$$

#11 Pure Premium Adjusted by Premium Payment Security Factor (PPSF)

- Pure Premium Adjusted by Rate Change Factor (#10)
* Premium Payment Security Fund Factor
- The premium payment security fund factor is used to cover the claim costs of those employers that go out of business and do not make their final payments.

$$0.2548 * 1.005 = 0.2561$$

#12 Pure Premium Adjusted by Safety & Hygiene

- Pure Premium Adjusted by Premium Payment Security Factor (#11) * Safety & Hygiene Factor
- The Safety & Hygiene Factor is used to fund the Division of Safety & Hygiene.

$$0.2561 * 1.010 = 0.2587$$

#13 Unlimited Base Rate

- This is the unlimited base rate and should be equal to #12.

#14 Prior Year's Base Rate

Although not law, it is a long standing BWC policy to not change a manual base rate more than 30% in a given year – promotes stability in rates – NCCI uses 25%

- Previous policy year's base rate filed with Secretary of State
- Base Rate Upper Limit is found by:
 - prior year's base rate * 1.3 (+30%)
- Base Rate Lower Limit is found by:
 - prior year's base rate * .70 (-30%)

$$0.29 * 1.3 = 0.3770$$

$$0.29 * 0.70 = 0.2030$$

#15 Base Rate Limited to +30% or -30% Change

- If the unlimited base rate (#13) –
 - exceeds the base rate upper limit, use the base rate upper limit
 - is lower than the base rate lower limit, use the base rate lower limit
 - is between the upper and lower limit, use the unlimited base rate (#13).
- Round the base rate to 2 decimal places

0.2587 rounds to 0.26 per \$100 of reported payroll

Next Steps

Present the changes to the:

- limited loss ratio table
- Industry group table
- base rates
- expected loss rates

to the Actuarial Committee in rules
4123-17-05 and 4123-17-06 in May

Payroll Reporting

Employers will use the new base rates to report payroll and pay premium in 6 month increments in February and August 2009.

Payroll report will show a blended rate that includes:

- Base or experience rate
- Administrative cost assessment
- Disabled Workers Relief fund assessment (pre 1986)
- Additional DWRF fund assessment (post 1986)

OHIO BUREAU OF WORKERS' COMPENSATION

POSITION PAPER

RESERVE FOR COMPENSATION

APPROPRIATENESS OF DISCOUNTING

AND

DISCOUNT RATE METHODOLOGY

The purpose of this paper is to document the appropriateness of discounting the reserve for compensation and the methodology used to determine the discount rate.

The importance of choosing an appropriate interest rate for stating reserves at present value cannot be understated. Therefore, BWC has chosen a conservative rate using a methodology supported by accounting literature. The discount rate was carefully selected recognizing that a 1% change in the interest rate assumption will impact BWC's reserves for compensation and net assets by over \$1 billion. The discount rate selected reflects the time value of money using a low-risk rate of return.

—

The reserve for compensation is the provision for the total of all estimated amounts that will be paid in future years on reported claims and claims incurred but not reported. Workers' compensation claims are generally paid over a period of several years and it is our practice to discount the reserve to reflect the time value of money (one dollar of future claims liability can be paid by setting aside less than one dollar today due to expected investment earnings).

If a public entity uses the discounting technique to measure claims liabilities, GASB recommends that such factors as the entity's settlement rate and its investment yield rate be considered in establishing a discount rate. The investment rate of return is an appropriate rate to use because net claims expense is partly a function of the earnings on assets obtained to pay for future claims. With this in mind, BWC currently uses a rolling five year average risk-free rate in selecting an appropriate discount rate. A five year average return avoids short-term market fluctuations, resulting in a rate that is less volatile than a one year rate. The reserve for compensation will be discounted using one selected rate.

The most conservative interest rate assumption would use a "model" portfolio consisting entirely of U. S. treasury securities. This would immediately increase the income received in the State Insurance Fund, but would eliminate the possibility of growth in the value of investments (i.e., current income would increase at the expense of greater long-term yields on equities and bonds).

The next most conservative step is the purchase of 100% U. S. agency securities. A slight premium return is received for the moral obligation of the U. S. government.

However, BWC has never had a portfolio consisting of 100% government securities nor is it anticipated that BWC will ever have such a portfolio. Long-term investments in corporate bonds, collateralized mortgage obligations, and equities provide a significantly better return over long-term government obligations.

There exists a 30 year treasury constant maturity index that tracks the yield of the active 30 year treasury bond. Using this index is conservative compared to the expected yield on BWC's total investment portfolio.

Prepared by: BWC Finance Division

Date: June, 2007

Page 1 of 3

OHIO BUREAU OF WORKERS' COMPENSATION

POSITION PAPER

RESERVE FOR COMPENSATION

APPROPRIATENESS OF DISCOUNTING

AND

DISCOUNT RATE METHODOLOGY

BWC's policy is to use the 30 year treasury constant maturity index yield less a yield reduction for the drain on investment income by the Disabled Workers' Relief Fund (DWRF I) (in accordance with Ohio Revised Code Section 4123.411). Currently there is no investment income drain caused by DWRF I.

BWC currently uses this policy because the duration of BWC's liabilities closely matches that of 30 year U.S. treasury bonds. BWC does not plan to adjust the discount rate to reflect short-term market fluctuations as such adjustments would negatively impact the credibility of the reserve estimates and BWC's earnings, and is contrary to generally accepted insurance industry practices.

Sources:

- GASB Statement 10 "Accounting and Financial Reporting for Risk Financing and Related Insurance Issues."
- FASB Present Value-Based Measurements in Accounting Discussion Memorandum 098-A.

OHIO BUREAU OF WORKERS' COMPENSATION

POSITION PAPER

RESERVE FOR COMPENSATION

APPROPRIATENESS OF DISCOUNTING

AND

DISCOUNT RATE METHODOLOGY

The following considerations are used to review the use, for Fiscal Year 2006, of a 5.25% reserve for compensation discount rate, based on the methodology outlined in BWC's *"Appropriateness and Methodology Position Paper,"* and to determine the appropriate rate for Fiscal Year 2007:

- The average duration of BWC's liabilities, approximately 10.32 years (Exhibit 1), closely matches the duration of U.S. treasury bonds with a maturity of approximately 17 years. (Exhibit 2) The yield of a 20 year bond is essentially the same as a 30 year bond (yield curve is basically flat after 20 years).
- The average 30 year treasury constant maturity index yield for the five year period ended June 30, 2007 was 4.859% (Exhibit 3).
- The annual returns on the State Insurance Fund for the past 5 calendar years has ranged from a high of 14.4% in 2003 to a low of negative 4.7% in 2002. The average for this 5 year period is 5.9% (Exhibit 4).
- In the June 30, 2007 actuarial audit it was estimated that there is no DWRP 1 subsidy impact at this time.
- The yield on the 30 year treasuries is a conservative measure compared to the average return on BWC's investment portfolio over the last 10 years. BWC does not adjust the discount rate to reflect short-term market fluctuations as such adjustments would negatively impact the credibility of the reserve estimates and BWC's earnings, and is contrary to generally accepted insurance industry practices. However, the average 5 year average yield for 30 year treasury constant maturity index yield has continued to decline over the last four years, from a five year average of 5.434% at June 30, 2004 to the current five year average of 4.859%. The downward trend in the five year average for the 30 year treasury constant maturity index is the primary factor in BWC's decision to decrease the discount rate from 5.25% to 5.0% for the fiscal year ended June 30, 2007.

Ohio Bureau of Workers' Compensation
Benefits Duration Analysis as of 6/30/07
 (\$000's)

(1) Cal Year	(2) Total Payment (\$)	(3) (%)	(4) Year	(5) Discounted	(6) Weighted	(1) Cal Year	(2) Total Payment (\$)	(3) (%)	(4) Year	(5) Discounted	(6) Weighted
2008	1,689,838	5.99%	0.5	0.0584	0.0292	2042	334,286	1.18%	34.5	0.0022	0.0759
2009	1,401,926	4.97%	1.5	0.0462	0.0692	2043	304,126	1.08%	35.5	0.0019	0.0677
2010	1,237,130	4.38%	2.5	0.0388	0.0970	2044	274,491	0.97%	36.5	0.0016	0.0598
2011	1,127,696	3.99%	3.5	0.0337	0.1179	2045	245,698	0.87%	37.5	0.0014	0.0524
2012	1,051,024	3.72%	4.5	0.0299	0.1345	2046	217,926	0.77%	38.5	0.0012	0.0454
2013	989,099	3.50%	5.5	0.0268	0.1474	2047	191,377	0.68%	39.5	0.0010	0.0390
2014	937,195	3.32%	6.5	0.0242	0.1572	2048	166,273	0.59%	40.5	0.0008	0.0331
2015	893,454	3.17%	7.5	0.0220	0.1646	2049	142,829	0.51%	41.5	0.0007	0.0277
2016	859,589	3.05%	8.5	0.0201	0.1710	2050	121,257	0.43%	42.5	0.0005	0.0230
2017	831,988	2.95%	9.5	0.0185	0.1761	2051	101,612	0.36%	43.5	0.0004	0.0188
2018	807,712	2.86%	10.5	0.0171	0.1800	2052	83,991	0.30%	44.5	0.0003	0.0151
2019	786,780	2.79%	11.5	0.0159	0.1829	2053	68,393	0.24%	45.5	0.0003	0.0120
2020	768,318	2.72%	12.5	0.0148	0.1849	2054	54,820	0.19%	46.5	0.0002	0.0093
2021	752,290	2.67%	13.5	0.0138	0.1862	2055	43,334	0.15%	47.5	0.0002	0.0072
2022	737,176	2.61%	14.5	0.0129	0.1866	2056	33,650	0.12%	48.5	0.0001	0.0054
2023	722,235	2.56%	15.5	0.0120	0.1862	2057	25,665	0.09%	49.5	0.0001	0.0040
2024	707,182	2.51%	16.5	0.0112	0.1848	2058	19,165	0.07%	50.5	0.0001	0.0029
2025	692,007	2.45%	17.5	0.0104	0.1827	2059	13,958	0.05%	51.5	0.0000	0.0021
2026	677,655	2.40%	18.5	0.0097	0.1801	2060	9,827	0.03%	52.5	0.0000	0.0014
2027	663,608	2.35%	19.5	0.0091	0.1770	2061	6,502	0.02%	53.5	0.0000	0.0009
2028	650,700	2.31%	20.5	0.0085	0.1738	2062	4,459	0.02%	54.5	0.0000	0.0006
2029	637,272	2.26%	21.5	0.0079	0.1700	2063	2,967	0.01%	55.5	0.0000	0.0004
2030	623,951	2.21%	22.5	0.0074	0.1659	2064	1,873	0.01%	56.5	0.0000	0.0002
2031	610,010	2.16%	23.5	0.0069	0.1614	2065	1,075	0.00%	57.5	0.0000	0.0001
2032	594,416	2.11%	24.5	0.0064	0.1561	2066	512	0.00%	58.5	0.0000	0.0001
2033	577,253	2.04%	25.5	0.0059	0.1503	2067	60	0.00%	59.5	0.0000	0.0000
2034	558,019	1.98%	26.5	0.0054	0.1438	2068	20	0.00%	60.5	0.0000	0.0000
2035	536,729	1.90%	27.5	0.0050	0.1367	2069	6	0.00%	61.5	0.0000	0.0000
2036	512,453	1.82%	28.5	0.0045	0.1288	2070	2	0.00%	62.5	0.0000	0.0000
2037	483,671	1.71%	29.5	0.0041	0.1198	2071	0	0.00%	63.5	0.0000	0.0000
2038	454,662	1.61%	30.5	0.0036	0.1109	2072	0	0.00%	64.5	0.0000	0.0000
2039	425,033	1.51%	31.5	0.0032	0.1020	2073	0	0.00%	65.5	0.0000	0.0000
2040	394,980	1.40%	32.5	0.0029	0.0931	2074	0	0.00%	66.5	0.0000	0.0000
2041	364,650	1.29%	33.5	0.0025	0.0844	2075	0	0.00%	67.5	0.0000	0.0000
Total by Column:		0.9125		0.5196	4.9926			0.0875		0.0131	0.5044
Total: 2008-2075		1.0000		0.5327	5.4970						
Duration in Years @ interest rate: 6.00%				9.5159							
Duration in Years @ interest rate: 5.00%				10.3191							
Duration in Years @ interest rate: 4.00%				11.2194							

- Note:**
- Excludes Accident Years 1977 & Prior and payments for 'Miscellaneous' Reserves.
 - Col(2) & Col(3) are calculated using data @ 6/30/07.
 - $Col(5) = Col(3)/(1+i)^{Col(4)}$
 - $Col(6) = Col(4) * Col(5)$
 - Duration = Total Col. (6) / Total Col. (5)
 - This exhibit shows calculation of duration for 5.00%.

<HELP> for explanation.

N193 Govt TVC

Enter 99<G0> for graph. * - yield and duration calculations are done to call

US Treasury Notes/Bonds: 15-30 YEARS Pg 8 of 8

	SECURITY	BID/ASK	YIELD	ADUR
1)	7 1/4	8/22 119-28+/29+	5.313	9.44
2)	7 5/8	11/22 124-01 /03	5.308	9.59
3)	7 1/8	2/23 118-28+/30+	5.320	9.67
4)	6 1/4	8/23 109-29+/31+	5.318	10.14
* 5)	7 1/2	<u>11/24</u> 124-18 /20	5.308	10.38
6)	7 5/8	2/25 126-03+/05+	5.315	10.28
7)	6 7/8	8/25 117-30+/00+	5.312	10.68
8)	6	2/26 108-01+/03+	5.308	11.18
9)	6 3/4	8/26 117-03 /05	5.309	11.07
10)	6 1/2	11/26 114-10+/12+	5.300	11.41
11)	6 5/8	2/27 115-29+/30+	5.305	11.28
12)	6 3/8	8/27 113-03+/05+	5.301	11.54
13)	6 1/8	11/27 110-08 /10	5.290	11.89
14)	5 1/2	8/28 102-19 /21	5.289	12.24
15)	5 1/4	11/28 99-17+/19+	5.280	12.61
16)	5 1/4	2/29 99-17+/19+	5.280	12.53
17)	6 1/8	8/29 110-28 /30	5.280	12.28
18)	6 1/4	5/30 112-30+/00+	5.263	12.62
19)	5 3/8	2/31 101-14 /16	5.263	13.07
20)	4 1/2	2/36 89-06+/08+	5.227	14.91
21)	4 3/4	2/37 92-28+/29+	5.222	14.96

SECURITY	BID/ASK	YIELD	ADUR
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Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 920410
 Hong Kong 852 2977 6000 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2007 Bloomberg L.P.
 6532-244-0 13-Jul-2007 11:10:59

2024
 2007

 17 years

Exhibit 2

9

N166 Govt **GPO**

US TREASURY N/B T 4 3/4 02/15/37 95-19+ / 95-20+ (5.04 /03) BGN @16:44

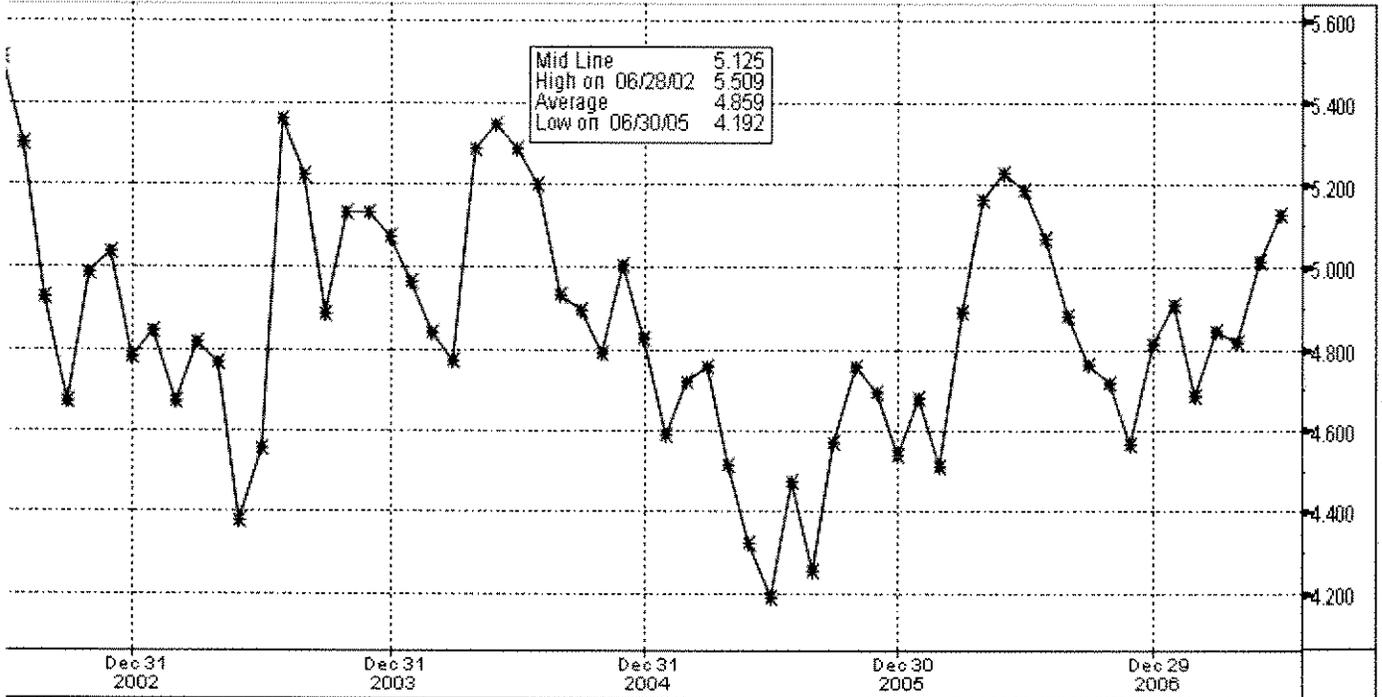
GT30 GOVT Hide

GP - Line Chart

Page 1/7

Range 06/28/02 - 06/29/07 Upper Mid Line Mov. Avgs Currency USD

Period Monthly Lower None Mov. Avg Source BGN



Australia 61 2 9777 8600 Brazil 5511 3048 4500 Europe 44 20 7330 7500 Germany 49 69 920410
 Hong Kong 852 2977 6000 Japan 81 3 3201 8900 Singapore 65 6212 1000 U.S. 1 212 318 2000 Copyright 2007 Bloomberg L.P.
 6532-244-1 24-Jul-2007 16:44:43

Exhibit 3

Ingram Barbara
From: Dunn C Bruce
Sent: Tuesday, July 17, 2007 6:24 PM
To: Ingram Barbara
Cc: Valentino Tracy
Subject: RE: Investment Returns / Discount Rate

Barb,

SIF annual returns for each of the five calendar years 2002-2006 are as follows:

2002	-4.7%
2003	14.4
2004	7.3
2005	6.4
2006	6.3

The average for these five annual returns is 5.9%.

Bruce Dunn
Chief Investment Officer
Ohio Bureau of Workers' Compensation
614.466.0088

From: Ingram Barbara
Sent: Tuesday, July 17, 2007 4:29 PM
To: Dunn C Bruce
Cc: Valentino Tracy
Subject: Investment Returns / Discount Rate
Importance: High

I am working to update the discount rate paper to support the selection of the discount rate. One of the factors that we consider is the rate of return earned by BWC on our investment portfolio. I would like to have the returns for the past 5 years and a 5 year average. I believe in the past you have provided information from the Ennis Knupp reports for the earlier part of the 5 year range. I would like to get a draft of the paper completed by the end of this week - so would it be possible to get this within the next couple of days?

Barbara Ingram
Financial Reporting Manager
614-466-6050

Exhibit 4

ACTUARIAL STANDARD OF PRACTICE NO. 20

**DISCOUNTING OF PROPERTY AND CASUALTY
LOSS AND LOSS ADJUSTMENT EXPENSE RESERVES**

PREAMBLE

Section 1. Purpose, Scope, and Effective Date

- 1.1 Purpose—The purpose of this standard of practice is to define the issues and considerations that an actuary should take into account in determining discounted property or casualty loss and/or loss adjustment expense reserves.
- 1.2 Scope—This standard applies to practices that relate to the *Statement of Principles Regarding Property and Casualty Loss and Loss Adjustment Expense Reserves*, as adopted by the Casualty Actuarial Society. The standard does not address the appropriateness of discounting reserves in specific contexts.
- 1.3 Effective Date—The effective date of this standard is August 15, 1992.

Section 2. Definitions

The following terms are used in this standard as defined below:

- 2.1 Asset Valuation Basis—The method used to determine the stated value of a particular asset.
- 2.2 Book Value—The value of an asset or assets, as included in a financial statement or other financial reporting contest.
- 2.3 Credit Risk—Risk associated with the possibility of a loss on an investment security, either in whole or in part.
- 2.4 Discounted Reserve—The present value, calculated at selected interest rate(s), of the payment of outstanding losses and/or loss adjustment expenses in the anticipated future settlement amounts.
- 2.5 Full-Value Reserve—An undiscounted provision for the payment of outstanding losses and/or loss adjustment expenses in the anticipated future settlement amounts.

- 2.6 Investment Risk—Uncertainty surrounding the realization of a specified investment income stream. Elements of investment risk include credit risk, market risk, reinvestment risk, and liquidity risk.
- 2.7 Market Interest Rates—Interest rates that are available on funds invested at a particular date.
- 2.8 Market Risk—Uncertainty regarding the future market value of an asset.
- 2.9 Market Value—The price for which an asset could be sold at a particular date.
- 2.10 Portfolio Interest Rate—Interest rate on an investment portfolio, calculated relative to current book values or on other asset valuation bases.
- 2.11 Present Value—The value at a point in time of cash flows at other points in time, calculated at selected interest rates.
- 2.12 Reinvestment Risk—Uncertainty regarding the yields that will be available on reinvestment of proceeds from current investments that are subject to reinvestment in the future.
- 2.13 Risk-Free Interest Rate—The interest rate that reflects only the time value of money. (It is understood that the time value of money includes inflation expectations.) The risk-free interest rate is lower than rates of investment return on asset portfolios subject to greater investment risk.
- 2.14 Risk Margin—An amount to make some provision for the uncertainty in a reserve estimate.
- 2.15 Rate of Investment Return—Investment income earned on funds held over time, generally expressed as an annualized percentage of the amount invested.

Section 3. Background and Historical Issues

The appropriateness of discounting loss and loss adjustment expense reserves in various financial reporting contexts is a controversial topic. Traditionally, casualty loss and loss adjustment expense reserves have not been discounted except in certain narrowly defined circumstances. However, the issue of discounting reserves has been discussed for many years. For example, the issue appeared in the 1927 *Proceedings of the Casualty Actuarial Society*, in an article by Benedict D. Flynn. In 1986, the U.S. Congress passed legislation prescribing discounting procedures for income-tax purposes. In the past, most state insurance departments prohibited discounting; some departments have permitted discounting for some lines of business. The National Association of Insurance Commissioners has consistently been opposed to discounting except in certain specific circumstances. The accounting profession is studying the issue as it relates to financial reporting.

Historically, the issue of reserve discounting has been closely related to the issue of risk margins. Full-value reserves are often considered to contain a needed implicit risk margin in the difference between full-value reserves and discounted reserves. If discounted reserves were incorporated into financial statements, many would argue that an explicit risk margin would become necessary. Suggestions for the treatment of that risk margin include treatment as a liability item, a segregated surplus item, or an off-balance-sheet item.

Reserve discounting and risk margins are both important elements in estimating the economic value of loss reserves, yet neither is explicitly included in most current financial reporting. Much of the rationale for reserve discounting is related to the issue of economic value; however, some believe that discounted reserves without risk margin may be a poorer estimate of economic value than undiscounted reserves.

Loss reserve discounting calculations are commonly performed in conjunction with valuations of insurance companies for purposes such as acquisition or merger, or with transfers of portfolios or reserves. In these instances and for other reasons, there are increasing numbers of circumstances where actuaries are asked to determine or evaluate discounted loss and loss adjustment expense reserves.

Section 4. Current Practices and Alternatives

Common approaches to loss and loss adjustment expense reserve discounting typically include these steps:

- a. Estimate full-value reserves
- b. Estimate future loss and loss adjustment expense payment patterns
- c. Apportion the full-value reserves to the future payment periods, using the estimated payment patterns
- d. Select the interest rate(s) for discounting
- e. Calculate the present value, as of the valuation date, of the projected payments for each future payment period, using the selected interest rate(s)
- f. Sum the present values for all future payment periods

There are many variations on this process. In fact, the initial calculation of a full-value reserve is not always necessary. Some approaches are based on an assumed difference between future claim cost trend and future interest rates without specification of the interest rates.

Selected interest rates vary with the business context. They may be based on market interest rates, portfolio interest rates, or a combination thereof, sometimes adjusted to reflect risk, and adjusted to reflect investment expenses and taxes as appropriate.

STANDARD OF PRACTICE

Section 5. Analysis of Issues and Recommended Practices

- 5.1 Appropriateness in Context—The actuary should be aware of the context in which the discounted reserves are to be used. The actuary should use assumptions and methodology in the discounting process that are appropriate for that context.
- 5.2 Determination of Full-Value Reserve—The determination of a full-value reserve is generally, though not necessarily, the first step in the determination of a discounted reserve.
- 5.2.1 Principles and Considerations—All principles and considerations that apply to the calculation of a full-value reserve as an end product should also apply to the calculation of a full-value reserve that will form the basis of a discounted reserve.
- 5.2.2 Specification by Components—The actuary should give special attention to the specification of the reserve provision by its components (e.g., line of business, accident year, etc.), to the extent such specification has a material effect on the amount of reserve discounting.
- 5.2.3 Consistency of Assumptions and Considerations—The actuary should be aware of the assumptions and considerations underlying the selection of the full-value reserve, in order to ensure that material assumptions and considerations are consistent throughout the process of calculating the discounted reserve.
- 5.2.4 Relative Materiality of Considerations—The actuary should be aware of the differences between full-value and discounted reserves in the relative materiality of various considerations. For example, a development factor at an advanced maturity (i.e., a “tail factor”) is less material to a discounted reserve than to a full-value reserve. Conversely, a change in the timing of loss payments may be more material to a discounted reserve. To the extent that the materiality of a reserve consideration determines the amount of analysis that an item receives, the evaluation of a discounted reserve may require a change in emphasis on the items analyzed.
- 5.3 Payment Timing for Discounting—In order to derive a discounted reserve, the actuary necessarily projects the timing of future payments. A range of payment-timing estimates may be reasonable.
- 5.3.1 Data Sources—The actuary should use the entity’s own historical payment data to project the timing of payments, to the extent that credible data are available. Any supplementary data that are used should reflect the payment-timing characteristics of the category of business under consideration, to the extent possible.

- 5.3.2 Reconciliation of Estimates—The actuary should reconcile payment-timing estimates with the estimates of ultimate amounts to be paid, even if the latter have not been derived by techniques based on paid losses and loss adjustment expenses.
- 5.3.3 Consistency of Assumptions and Considerations—When a full-value reserve has been estimated, the actuary should use assumptions and considerations in developing payment-timing estimates that are consistent with the assumptions and considerations used in developing the full-value reserve estimates.
- 5.3.4 Consistency with Expected Future Conditions—Payment-timing estimates should be consistent with internal and external conditions expected to prevail during the future payment period. If such conditions are expected to be different from those prevailing during the historical evaluation period, the actuary should make appropriate adjustments.
- 5.3.5 Data Organization—The actuary should determine whether better payment-timing estimates are obtained by treating various data components separately or in some combination. Examples are losses, allocated loss adjustment expenses, and unallocated loss adjustment expenses. This determination typically is influenced by the nature of the available data.
- 5.3.6 Effect of Reinsurance, Salvage, and Subrogation—In estimating discounted reserves net of ceded reinsurance, salvage, and subrogation, the actuary should consider the timing of the expected reinsurance, salvage, and subrogation recoveries.
- 5.4 Selected Interest Rates for Discounting—A discounted reserve may be used in a variety of contexts, and the appropriate selected interest rates are a function of the context. The selected interest rates may reflect the time value of money without reference to particular assets (see 5.4.1) or may be based on the rate of investment return from a particular portfolio (see 5.4.3).
 - 5.4.1 Time Value of Money Approach—The selected interest rate in this approach should approximate the risk-free interest rate. The risk-free interest rate can be approximated by rates of investment return available on assets having low investment risk. Such rates should reflect the market interest rates at the valuation date and may be adjusted to reflect those rates that are likely to prevail over the life of the cash flows. Such rates should be consistent with the inflation rates assumed in the reserve calculation.
 - 5.4.2 Consistency with Asset Valuation Basis—If the discounted reserve is used in a context which includes the reporting of assets, the actuary should be aware of the relationship between the selected interest rate and the basis used in valuing the assets. If assets are included at an overall value significantly different from

market value, the actuary should clearly disclose any inconsistency between the selected interest rate for discounting and the asset valuation basis.

- 5.4.3 Portfolio Interest Rate Approach—If portfolio interest rates are used, the actuary should consider the relationships between the book and market values of assets, between the portfolio interest rates and market interest rates, and between the maturities of the assets and the estimated timing of loss and loss adjustment expense payments. The actuary should adjust the portfolio rates, if necessary, to be consistent with assets having low investment risk. The portfolio rates should be net of investment expenses.
 - 5.4.4 Effect of Income Taxes—The actuary normally should use an interest rate or rates consistent with investment returns that are available before the payment of income taxes. The actuary may consider adjusting this rate if the amount of discount for tax purposes differs significantly from the amount of discount determined in accordance with this standard.
 - 5.4.5 Selected Interest Rates Supplied by Another—In certain contexts, the actuary may provide a discounted reserve estimate without providing an opinion on the appropriateness of the selected interest rates. In these cases, the actuary should clearly disclose the selected interest rates, the source of or basis for the selected interest rates, and the fact that the actuary is expressing no opinion on the appropriateness of the rates.
 - 5.4.6 Incorporating Risk Margin through Interest Rate Reduction—The actuary may reduce the selected interest rate as a means of incorporating a risk margin.
- 5.5 Risk Margins—The actuary should be aware of the historical relationship between reserve discounting and risk margins and include appropriate risk margins. Discounting a reserve diminishes the risk margin implicit in a full-value reserve by the difference between the full-value and the discounted reserve. The discounting process itself introduces additional uncertainties. The actuary should be aware that a discounted reserve is an inadequate estimate of economic value unless appropriate risk margins are included.

Considerations with regard to the inclusion of risk margins follow. It is not intended that this standard address the amount of risk margin necessary, nor the appropriate treatment of risk margin in a particular context.

- 5.5.1 Considerations in Determining the Amount of Risk Margin—In determining the amount of risk margin, the actuary should consider the increase in uncertainty associated with the discounting calculation, as well as the decrease in the margin implicit in the full-value reserve.
- 5.5.2 Implicit and Explicit Margins—Implicit margins may be introduced at one or more steps in the discounting process, including the estimation of the full-value reserve and the selection of the payment pattern from a range of reasonable

estimates. Explicit margins may be included as an absolute amount and/or through an explicit adjustment to the selected interest rate(s).

Section 6. Communications and Disclosures

- 6.1 Documentation and Disclosure Standard Applies—All documentation and disclosure requirements contained in Actuarial Standard of Practice No. 9, *Documentation and Disclosure in Property and Casualty Insurance Ratemaking, Loss Reserving, and Valuations*, apply to actuarial calculations and communications involving discounted reserves.
- 6.2 Disclosure of Assumptions as to Selected Interest Rates—The actuary should give emphasis to the disclosure of the assumptions as to selected interest rates, and the basis for those assumptions. In particular, the actuary should clearly identify those instances where the actuary expresses no opinion as to the appropriateness of the rates used.
- 6.3 Disclosure of Amount of Discount—Whenever the full-value reserve has been calculated, the actuary should disclose the amount of the difference between the full-value reserve and the discounted reserve.
- 6.4 Deviation from Standard—An actuary must be prepared to defend the use of any procedure that departs materially from this standard and must include, in any actuarial communication disclosing the result of the procedure, an appropriate and explicit statement with respect to the nature, rationale, and effect of such use.

To: BWC Board of Directors - Actuarial Committee
 From: John Pedrick, Chief Actuarial Officer
 Date: January 24, 2008
 Subject: CAO Report

There are several key initiatives for the BWC that rely heavily on actuarial resources. Three of these are projects that must be completed in 2008, while the remaining work is part of our ongoing development of rates and reserves. The following tables and comments show the key milestones and status for these efforts.

HOUSE BILL 100 ACTUARIAL STUDY SECTION 512.50

Task/Function	Timeline	Status
RFP written	November 2007	Completed
RFP issued	December 14, 2007	Completed
Question submission begins	December 22, 2007	Completed
Question submission ends	December 29, 2007	Completed
Answers posted on the web site	January 9, 2008	Completed
Mandatory Letter of Intent	January 16, 2008	Completed
Proposals due	January 24, 2008	
Scoring Meeting	January 28, 2008	
Evaluation of proposals and decision made	February 7, 2008	
Project begins	February 19, 2008	
Work with Consultant to provide data and answer questions	February 19, 2008 through December 31, 2008	
Project ends	December 31, 2008	

- We received 6 letters of intent from the following firms: Milliman, Inc.; Deloitte Consulting, LLP; PricewaterhouseCoopers, LLP; Towers Perrin; The Kilbourne Company with EMB America LLC; and AMI Risk Consultants, Inc.
- Comprehensive Study Team: Larry King, Team Leader; David Childress & Donna Ludwick, Actuarial.
- Executive Sponsor: John Pedrick, Chief Actuarial Officer

GROUP RATING

Task/Function	Timeline	Status
Develop Plan	December 2007 through January 2008	90%
Form Team	December 2007	Complete
Develop NCCI Split Experience Rating Plan		
Create Ohio NCCI parameters and run simulation (Oliver Wyman)	December 2007 through March 2008	25 % complete
Operational Impact of New Experience Rating Method	December 2007 through March 2008	25 % complete
Analyze Impacts to Group Program		
Run Simulations and impact analysis of all recommendations	January 2008 through April 2008	
Private Employer Max Credibility at 80%; 75%; 70%; 65% and 60%	October 2007 through January 2008	90% complete
Public Employer Max Credibility at 80%; 75%; 70%; 65% and 60%	December 2007 through February 2008	25 % complete
Group Rating Rule changes		
Continuity of group requirements	December 2007 through March 2008	
Other rules	December 2007 through March 2008	
Compile data and report for Board	March 2008 through June 2008	
Obtain feedback from Administrator and Senior Team	March 2008 through June 2008	
Present full plan to Board	June 2008	

- Group Rating/NCCI Team: Jeremy Jackson, Team Leader; Dave Childress & Terry Potts, Actuarial; Paul Flowers, Communications; Jean Krum, Legal; Joy Bush, Employer Services; Scott Longar & Kathy Sanker, IT; Bill Hansen, Oliver Wyman.
- Executive Sponsors: John Pedrick, Chief Actuarial Officer; Keary McCarthy, Chief Communications Officer; Tina Kielmeyer, Chief of Customer Services
- Opportunities for stakeholder input are being developed and will be incorporated in this table as details emerge.

MIRA II

Task/Function	Timeline	Status
Historical Data Extraction	Jan-Aug 07	Complete
Customer Workgroups		-----
<ul style="list-style-type: none"> Employer-Web Services Focus Group 	Nov 07	Complete
<ul style="list-style-type: none"> Claim Expert Workgroup 	Nov-Dec 07	75%
<ul style="list-style-type: none"> MIRA II-TPA Update Meetings 	December 11; March 4	In progress
MIRA II Injury Mapping Logic-Finalized and Approved	Jan 08	Complete
MIRA II-Development of Reserve Models (FIC)	Feb-May 08	In progress
Data Interface Testing	March-May 08	
MIRA II- Web Services Enhancement	Feb 08 - July 08	In progress
Testing/Review of Initial MIRA II Reserves	May-June 08	
Training/Education on MIRA II System	July-Nov 08	
MIRA II Reprediction (Adjustment) System		
<ul style="list-style-type: none"> Design, Develop, Test, Implement 	May 08-Jan 09	
Implement MIRA II	July 1, 2008	
Impact to Private Employer Rates	July 1, 2009	

- MIRA II Team: Rex Blateri, Team Leader; Kathy Sanker, IT Lead; Kelly Grawe, Actuarial; Richard Blake, Legal; Deby Pancoast, Claim Policy; Julie Phillips, Field Operations; Hans Neugebauer, Field Operations; Michael Glass, Employer Services; Matt Gill, Training; Kim Monder, Bob Loomis, Shane Blair, Communications; Sherif El-Bokhary, Enterprise Project Management Office.
- Executive Sponsors: John Pedrick, Chief Actuarial Officer; Leo Genders, Chief Information Officer; Keary McCarthy, Chief Communications Officer; Tina Kielmeyer, Chief of Customer Services

PRIVATE EMPLOYER (PA) RATES EFFECTIVE JULY 1, 2008

Task/Function	Timeline	Status
Private Employer Rates	January 2008 through June 2008	On Schedule
Summary Losses	January 17, 2008 through February 20, 2008	On Schedule
Summary Payroll	January 21, 2008 through February 20, 2008	On Schedule
Group Application Deadline	February 29, 2008	
Rate Calculations	February 21, 2008 though May 23, 2008	
Rate Change Recommendation to Board	March 27, 2008	
Final Rates and Rule to Board	May 29, 2008	
Mail Employer Rate Letters	June 30, 2008	

PUBLIC EMPLOYER STATE AGENCY (PES) RATES EFFECTIVE JULY 1, 2008

Task/Function	Timeline	Status
Public Employer State Agency Rates	January 2008 - April 2008	On Schedule
Run & verify payroll and premium	February 8-21, 2008	
Run & verify losses	February 28 – March 5, 2008	
Run & verify base rates	March 6-17, 2008	
Discuss rate change with administrator	March 6-10, 2008	
Rate Change Recommendation to Board	March 27, 2008	
Final Rates and Rule to Board	April 24-25	
Mail Employer Rate Letters	June 30, 2008	

OTHER RATES AND QUARTERLY LOSS SUMMARIES

Task/Function	Timeline	Status
Self Insured Assessments, Eff. 7/1/08	April 2008 through June 2008	
Disabled Workers' Relief Fund Rates, Eff. 7/1/08	April 2008 through June 2008	
Marine and Coal Industry Fund Rates, Eff. 7/1/08	April 2008 through June 2008	
Quarterly Reserve Analysis – 4 th quarter 2007	January 1, 2008 through January 17, 2008	On Schedule
Quarterly Reserve Analysis – 1 st quarter 2008	April 1, 2008 through April 17, 2008	
Quarterly Reserve Analysis – 2 nd quarter 2008	July 1, 2008 through July 17, 2008	

STAFFING

- Reviewing applications for one of our two open underwriter positions.
- Drafting a new actuarial classification series, based on the Insurance Actuarial Analyst classification series used by the Ohio Department of Insurance.