Ohio Bureau of Workers' Compensation Oversight Commission

RFP # B07016

Presentation of Results

June 14, 2007

Services Requested

Task A - Provide an analysis of the BWC underwriting profit for the past five years and identify underlying drivers

Task B - Evaluate the current BWC surplus adequacy and premium ratemaking methodologies

Task C - Evaluate the BWC's current practices relative to industry standards in the areas of ratemaking and reserving

Presentation of Results

I. BWC Profitability (Task A) – Mark Brissman

II. BWC Surplus Adequacy (Task B) – Matt South

III. BWC Ratemaking Methodologies – Joe Kilroy

   i. Current Practices (Task B)

   ii. Comparison to Industry (Task C)

IV. BWC Reserving Methodologies (Task C) – Joe Kilroy

I. BWC Profitability

Approach

We Evaluated Five-Year BWC Historical Results by:

- Reviewing historical financial and actuarial documents
- Conducting personal interviews of the BWC staff
- Testing the financial performance by restating results based on underlying drivers (including loss reserve discounting and a hindsight review of ultimate losses)
- Reviewing individual fund performance after cost allocation of the Administrative Cost Fund
- Comparing key performance metrics to those of two current and two former state monopolistic funds

Insurance Results

Insurance Results Stable

- Exposures insured, premiums collected, and losses paid
- Underlying factors of overall performance

Fiscal Year	PA+PEC Payroll	PA+PEC Premiums	Paid Losses
2002	97,272	1,601	1,965
2003	99,388	1,627	2,080
2004	101,731	1,700	2,027
2005	104,021	1,762	2,150
2006	106,376	1,830	2,106
2002-2006 Change	9%	14%	7%
Average Change	2%	3%	2%

Financial Aspects

Financial Aspects More Variable

- Carried loss reserves, shifting levels of premium discounts and refunds, fluctuations in investment returns

Fiscal Year	Premium Discounts and Rebates	Loss Reserve Movements	Accounting Return on Investments
2002	1,474	969	-2.22%
2003	641	1,281	3.15%
2004	416	542	6.79%
2005	233	767	5.35%
2006	(8)	(173)	4.71%

- 2005: Significant accounting change for the assessment funds with a restatement of the opening balance sheet:
  - Overall reduction of $1.8 billion in net assets
    - increased liabilities by $2.5 billion
    - increased assets by $0.7 billion

Group Rating

Group Rating: Inequitable, but Neutral Overall Financial Effect

- Significant adverse effect on pricing equity [Task B report]
  - Prices for various groups are not reflective of underlying costs
  - Substantial cross-subsidization
  - Focus of Task A is not pricing inequities, but rather effect on overall financial results of the BWC
- From an overall financial perspective alone, not a material effect:
  - On the overall premiums collected (revenue neutral)
  - Losses incurred by the BWC
- The expenses of administering the group rating plan have a slightly negative, but immaterial, effect

Peer Comparisons

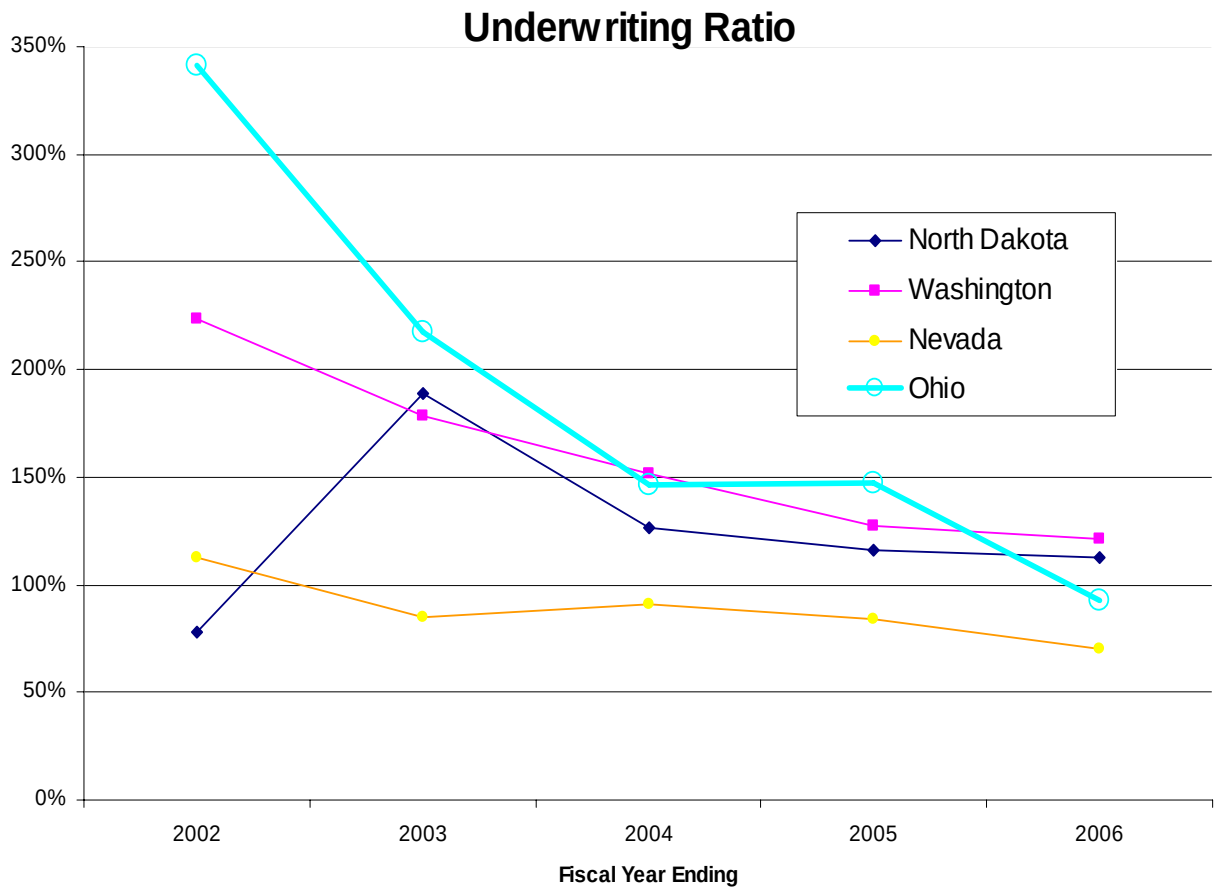
Currently monopolistic state funds – North Dakota, Washington

Previously monopolistic state funds:

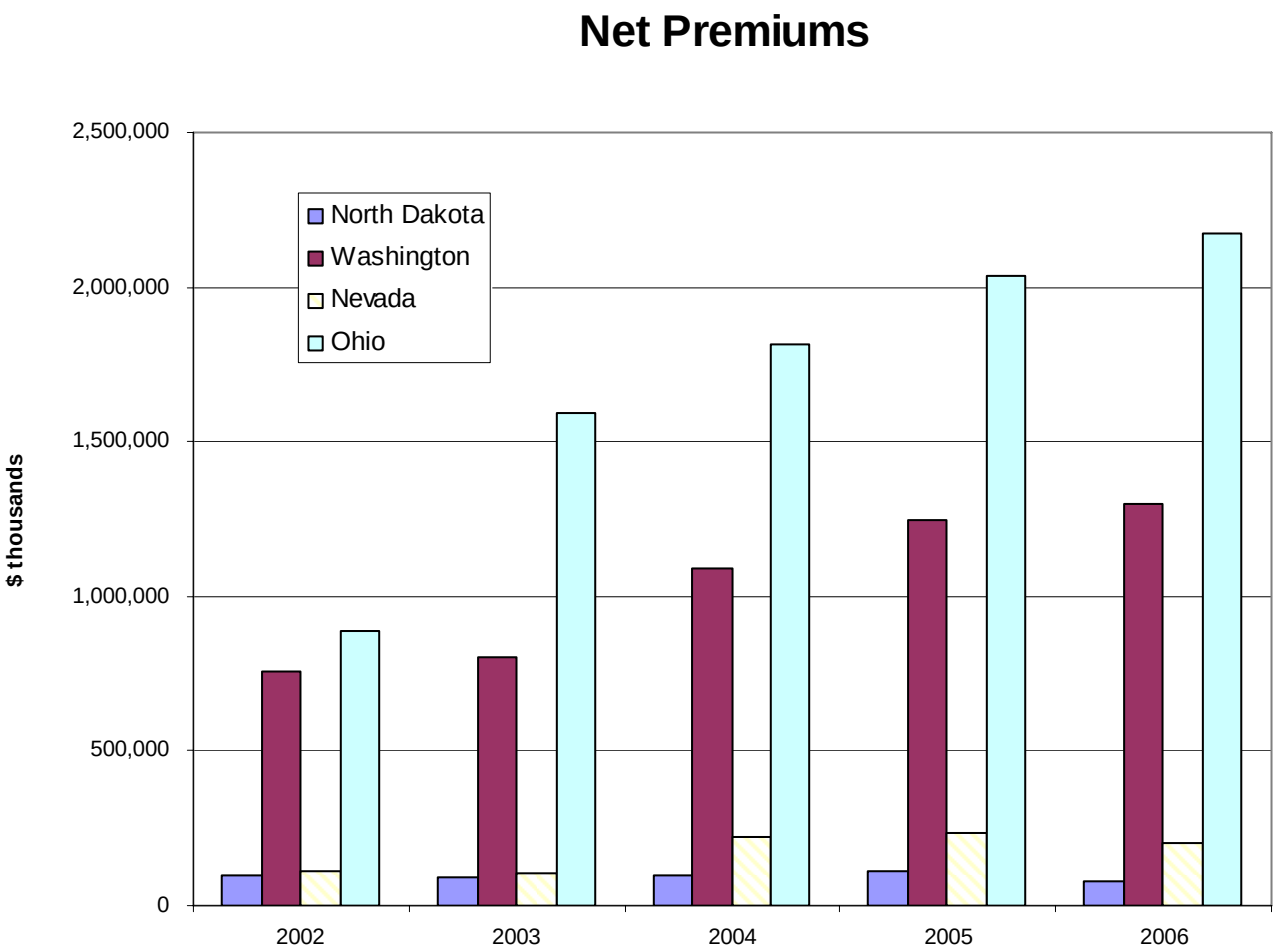
- Nevada
  - Privatized in 1999, taking on the prior liabilities and reinsuring them at a cost of $775 million
- West Virginia
  - Privatized in 2005, did not assume the prior liabilities, and received $400 million from the state (of which $200 million is a “surplus note” bearing interest at 1.5%)

From an insurance operations viewpoint, as measured by the “underwriting ratio”, Ohio’s recent results are in line with its peer group

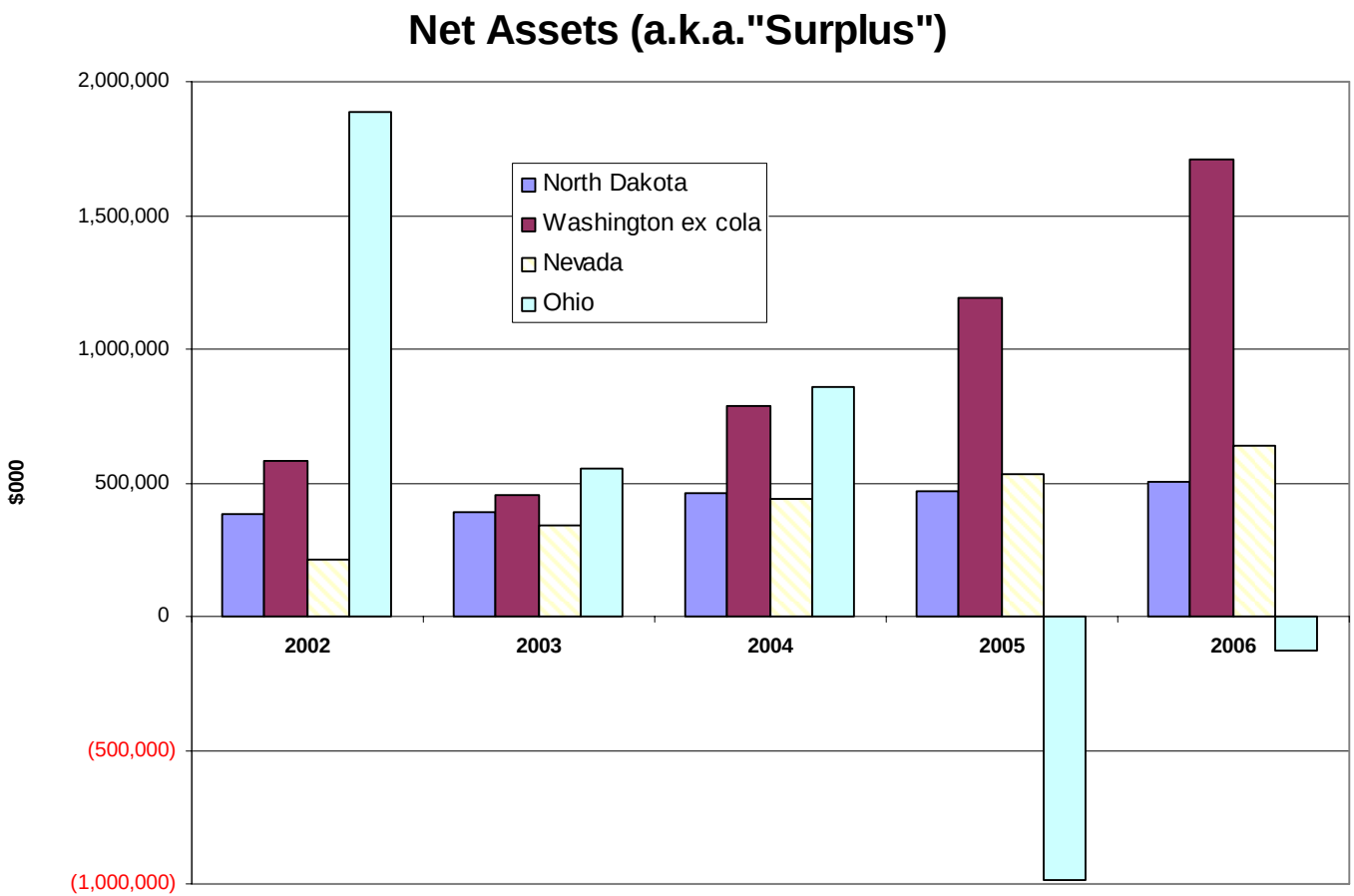
Peer Comparisons



Peer Comparisons



Peer Comparisons



Peer Comparisons

2006 Peer Comparison

	Premiums	Exp	Loss	Exp Ratio	Loss Ratio	Total Ratio
North Dakota	94	12	88	13%	93%	106%
Washington	1,758	267	1,998	15%	114%	129%
Nevada	208	67	79	32%	38%	70%
West Virginia	761	26	703	3%	92%	96%
Ohio	2,174	86	1,933	4%	89%	93%

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Peer Comparisons

2006 Peer Comparison

	Net Premiums	Loss Reserves	Net Assets	Premium Leverage	Reserve Leverage
North Dakota	94	687	501	19%	137%
Washington (ex cola)	1,340	8,329	1,709	79%	487%
Nevada	208	641	641	32%	100%
West Virginia	761	561	268	284%	209%
Ohio	2,174	18,928	-126	#N/A	#N/A

Individual BWC Funds

Individual BWC Funds Have Differing Results

- Administrative Cost Fund allocated to others for analysis
- Largest is the State Insurance Fund
  - Driver of overall results
  - Negative operating return on assets and historical ROE

Fund	Assets ($M)	Return on Assets
* State Insurance	17,115	-3%
* Public Work-Relief Employees	21	5%
* Self-Insuring Employers Guaranty	661	0%
* Administrative Cost	428	
Disabled Workers' Relief	1,234	2%
Coal-Workers Pneumoconiosis	223	-2%
Marine Industry	15	9%

Contingency Funding

Limited Contingency Funding

- Measured by “Net Assets” in government accounting
  - Similar to “net worth” in private insurance companies
- Not an historical focus
- BWC resembles a social insurance mechanism rather than a private sector insurer due to different goals and risk tolerances
- In the past this has not caused any difficulty
- Several risks going forward including:
  - Could adversely affect the credit rating of the State of Ohio
  - Sudden adverse change in environment that creates a need for large market-disruptive price increases
  - Privatization would require an infusion of capital from the state
- A BWC policy to build up level of net assets would mitigate these risks

Summary: Historical Financial Results

No Red Flags

BWC operates as a social insurance mechanism: low net assets, large returned premiums, premium collected in arrears

Understandable differences with private insurers' financials

Variability driven by financial/accounting changes, not insurance operations

Extremely low cost of operation

II. BWC Surplus Adequacy

BWC Surplus Position

Surplus is the Reserve of Last Resort = Assets - Liabilities

BWC's Surplus Position at June 30, 2006:

- BWC had **negative** surplus of $(126,000,000)

How Did We Get Here?

- Roughly **$10 Billion** of surplus returned to employers as dividends over the past decade

Consequence: Negative surplus implies no capacity to absorb additional financial shocks without additional funds

Surplus: Options

Increase Investment Income Above Discount Rate in Reserves

- But this involves riskier assets and may result in less surplus

Assess Future Premium to Make Up Shortfall

- But this may discourage employers from locating in Ohio and will be unpopular/unfair

Reduce Benefits

Design and Implement a Dividend Policy Targeting Positive Surplus

- Building a reasonable surplus will allow the BWC to withstand negative financial events with its ability to meet commitments to injured workers intact
- Recent changes in surplus have been positive and should be retained

Target Surplus

Examined Several Target Surplus Methods: NAIC, S&P, AM Best etc.

Short-term Recommended Benchmark: NAIC Risk Based Capital

- June 2006 Required RBC = **$2.65 Billion**
- Additional funds needed to reach this goal depend on view of BWC
  - State agency subject to GAS. A modified NAIC approach suggests at least an additional **$2.8 Billion**
  - Commercial insurer subject to SAP. NAIC would insist on at least an additional **$13.6 Billion**

Long-term Recommendation: Consider a Probabilistic Model

- Insurance industry trend is towards these types of models
- Projects likely future cash-flows based on current asset / liability mix
- Provides a range of surplus requirements and likelihoods of each
- BWC's own loss development variability can be incorporated

NAIC RBC Dynamic

NAIC Surplus Requirement: Not a Fixed Target

- The largest component of the RBC surplus requirement is R4 – Reserves
- Changing invested asset mix impacts the RBC requirement:
  - Moving $3.0 Billion from US Bonds to Equities only has $38 Million impact on RBC due to independence of the risk categories
  - Moving $14.9 Billion from Bonds to Equities has $812 Million impact on RBC

Example: NAIC RBC Calculation in (000)

Risk Based Capital Category	(1) As at Jun-06	(2) Assume $3B Equity	(3) (2) - (1) Change
R0	0	0	0
R1 Fixed Income	211,770	211,770	0
R2 Equity	521	450,521	450,000
R3 Credit	0	0	0
R4 U/W Risk: Reserves	2,528,410	2,528,410	0
R5 U/W Risk: Premium	768,053	768,053	0
Total Required RBC After Covariance	**2,650,963**	**2,688,973**	**38,010**

III. BWC Ratemaking Methodologies

Current Process Overview (PA)

Oliver Wyman Generates Statewide Rate Indications

- 3 scenarios: baseline, optimistic, conservative
- Based on ultimate loss estimates for the last ten calendar/accident years
  - From the Reserve Analysis
- Includes discounting to recognize investment income

Once Rate Change is Approved, BWC Produces Rates by Classification

- Starts with adjusted pure premium based on latest 4 years of experience
- Includes credibility weighting with prior year pure premium
- Credibility-weighted pure premium adjusted for:
  - Approved rate change
  - Catastrophe loading
  - Premium Payment Security Fund factor
  - Safety & Hygiene factor
  - Off-balance for impact of Experience and Group rating

Comments on Current Process

Ratemaking Methods Employed by Oliver Wyman and BWC are Reasonable and Appropriate

Transparency Issues with the Rate Recommendation Report

- More linkage to the underlying Reserve Study
- More support for the deviations among the baseline, optimistic and conservative rate indications
- Reconciliation with prior indications
- Impact of other changes on the indication
  - Benefit level changes
  - Changes in expense provisions

Comparison with Industry

Data Used to Develop Statewide Indication

- Industry uses more recent experience
- Industry includes policy year data

Components of Indication

- Industry breaks the indication into separate impacts of experience, trend, benefit changes and expense changes

Loss Development

- Industry examines both incurred and paid development patterns
  - Oliver Wyman uses only paid development

Classification Rates

- Ohio Group Rating Program results in much larger off-balance than industry
  - Base rates are high

Group Rating

Reviewed Prior Studies By Oliver Wyman and Pinnacle

- Group rated employers consistently produce loss ratios much higher than Non-Group rated employers
- Current Group Rating Program results in rates that are not actuarially sound
- Non-Group rated employers are subsidizing Group rated employers

From an Actuarial Perspective, Group Rating Program should not continue in its current form

IV. BWC Reserving Methodologies

Current Process Overview (SIF)

Separate Analyses Performed for PA, PEC and PES Groups

- Used for ratemaking

Within Each Employer Group, Reserves Developed for the Following Benefit Types:

- Medical (lost time and medical only)
  - For lost time claims, reserves are developed by provider group
- Temporary Total
- Permanent Total
- Death
- Other Compensation Benefits

Two General Approaches Used

- “Persistency” method
- “Weeks of benefits method”

Analyses Rely Mainly on Paid Loss Data

- Incurred development history under the MIRA system not yet sufficient

Comments on Current Process

Reserving Methods Employed by Oliver Wyman are Reasonable and Appropriate

Issues with the Reserve Analyses

- Constant persistency rate selections for certain development ages
  - Data would seem to support individual selections
- Certain factors used in the analyses can not be derived from the report
  - Medical persistency rate beyond 29th development period
  - Permanent Total tail factor
- Should look to consider methods that rely on incurred development in the future

An Alternative Method

ICRFS-PLUS Actuarial Software

- Aggregate reserving software (not case estimates)
- User builds probabilistic models around paid loss development triangles
- Describes four components of the underlying data
  - Development year trend (horizontal)
  - Accident year trend (vertical)
  - Calendar year trend (diagonal)
  - Random fluctuation about the trends

Output Produced by ICRFS-PLUS

- Distribution of aggregate reserve by business segment
- Correlations in reserve distribution among business segments
- Capital allocation by business segment
- Distribution of aggregate reserve for all business segments combined

Application of ICRFS to BWC Data

Results of Independent ICRFS Analysis on PA, PEC and PES Segments

- ICRFS point estimate reserve higher than Oliver Wyman for PA
- ICRFS point estimate reserve lower than Oliver Wyman for PEC and PES
- For the three segments combined, the ICRFS point estimate was slightly lower than Oliver Wyman
- ICRFS analysis confirms that the individual benefit types should continue to be analyzed separately as they exhibit different trend structures
- There is significant positive correlation among the reserve distributions of the three segments
- The latest Oliver Wyman reserve estimate for all segments combined is at the high end of the reserve distribution

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