Ohio Bureau of Workers' Compensation Board
Executive Summary: Comprehensive Study Group 2 Tasks
August 2008

This document briefly summarizes the results of our Comprehensive Study on Group 2 tasks. The tasks included in Group 2 include benefit comparisons, administrative cost calculation, net asset levels and excess/reinsurance needs, and actuarial audit reserves/payment projections.

Benefit Comparisons

Situation: Ohio's benefit structure appears to be competitive with many states in major benefit categories. For instance, for temporary total disability (TTD) benefits, the highest aggregate indemnity benefit cost, the maximum wage replacement rates in Ohio ($730) are just slightly higher than the average for all states ($709). The percentage applied to wages to determine wage replacement rates is higher in Ohio (72%) than in most other states with only seven states exceeding 70%. Fatality-related survivor benefits in Ohio are consistent with most other states, as are waiting periods for Temporary Total wage replacement, and the retroactive period requirement. Ohio is one of nineteen states with a dedicated fund for rehabilitation expenses.

Methodology: We inventoried Ohio's benefits, compensation rates, and schedules, compared to industry benchmarks, available studies, and various state websites.

Conclusions: Ohio has significantly more compensation benefit types (13) than most other states, including unusual components related to salary continuation, living maintenance and living maintenance wage loss, Disabled Workers' Relief Fund, and Lump Sum Advancement. In general, Ohio's benefit and compensation levels are fairly consistent with other states.

Administrative Cost Calculation

Situation: The revenue and expenses associated with administrative costs are recorded in the Administrative Cost Fund (ACF). BWC includes an administrative loading to cover the internal BWC and IC costs of administration, salaries, rent, and other operating costs. For private employers, the current administrative loading is 14.09% for BWC costs, and an additional 2.25% for the costs associated with the Industrial Commission. Currently, 82% of the expenses are allocated to LAE and the remaining 18% are allocated to general operating expenses. In the past five years the proportion of expenses allocated to LAE has averaged 76%, but has varied each year between 66% and 82%.

This fund operates on a pay-as-you-go basis. The primary liabilities recorded in the ACF are the estimated ultimate discounted LAE reserves, based on an analysis by Oliver Wyman. However, the ACF is not permitted to record an asset for "unbilled premiums receivable" from private employers and public entity taxing districts to pay the unpaid LAE costs. Consequently, there is substantial deficit shown for the ACF.

Methodology: We compared the LAE and other operating expense ratios of BWC to that of the industry as well as other state funds.

Conclusions: BWC's overall administrative cost loading appears to be comparable for similar functions performed within the industry and other state funds in relation to premium. The current proportion of operating expenses associated with LAE (82%) appears to be significantly higher than the industry average in recent years of approximately 75%. This suggests a potential need to re-evaluate the BWC's expenses, particularly in the allocation between LAE and other operating expenses.

Net Asset & Excess/Reinsurance Review

Situation: The level of BWC's net assets currently appears to be very weak and it has varied significantly over the years. The ratio of the net assets to the reserves for claims and adjustment expense (actuarial audit reserves) is quite low in comparison to peers and industry standards. The ratio would be significantly lower if the reserves were not discounted to reflect the time value of money. In addition, not all of BWC's assets produce investment income, but instead there are significant assets for unbilled premiums that reflect future premiums to be charged when existing unfunded liabilities are projected to pay out (pay-as-you-go funding). Therefore, current net assets provide little or no margin for various contingencies, such as for reserve risk or investment risk. For example, if the actuarial audit reserves are underestimated by 5%, then current net assets could be overstated by 45%; or if investment returns are 1% less than the discount rate, then net assets would be reduced by approximately 90%. BWC presently lacks a policy that addresses the financial strength of the BWC's funding, in terms of the net assets or other measures to ensure financial security for the Ohio workers' compensation system.

Methodology: Our approach to the study includes a comparison of BWC to its peers and analyses on the impact of specific scenarios and outcomes based on statistical analysis, with the objective of recommending methods of setting prudent net assets for BWC and for selecting an appropriate discount rate. There are some limitations in comparing BWC to other entities due to differences in organizational form, accounting standards, etc. We considered the major risks facing many insurance entities, including reserve risk, investment risk, extreme event risk, and pricing risk.

Conclusions: BWC has been less successful than its peers in maintaining stability in its operational results and has been weak in maintaining prudent levels of net assets. BWC is highly leveraged in its ratios of annual premium and loss reserves to net assets, indicating limited ability to maintain stability in pricing when adverse events occur and to weather adverse emergence in loss reserves. Also, there can be significant investment risk associated with using a discount rate which contemplates investment returns in excess of the risk-free rate unless there are prudent net assets to absorb the impact of adverse investment results. Our more detailed analyses of BWC's risks further support our conclusions from the peer comparison results. Our major recommendations are:

- **Adopt a Customized Policy to Maintain Funded Net Assets:** Deloitte recommends that BWC adopt a policy to maintain prudent funded net assets to support the financial strength of the State Insurance Fund and to help maintain stability in premium costs for its policyholders. Deloitte does not recommend that BWC adopt an insurance industry metric or a static measure, such as a certain amount of net assets. Rather, we believe that a more customized approach is needed that is more dynamic and self-adjusting. An example of this approach is to develop guidelines that are driven by a few key metrics; in particular, a range of funded net assets to liability ratios ("funding ratios") with appropriate recommended actions, depending on how recent current and projected funding ratios compare to that range. The range of funding ratios should be selected so as to be responsive to changes, and to maintain a degree of stability in BWC's operating results over time. The policy should incorporate appropriate options for premium credits or surcharges, if the funding ratios indicate excessive or inadequate financial reserves. The development of an appropriate funding ratio measure is provided in our detailed findings and recommendations.

- **Periodically Test the Reinsurance Market:** Regarding excess insurance/reinsurance, BWC has not historically purchased such coverage. Many insurance entities, including state workers' compensation funds, use reinsurance to different degrees, primarily as part of their enterprise risk management. A key component of whether reinsurance is needed for BWC is an evaluation of BWC's financial strength and the potential adverse impact of shock events that could be covered by reinsurance. While the cost of reinsurance is not normally prohibitive, the benefit is mainly in providing financial protection against the impact of very rare or unlikely events. While BWC has the ability to recover from the large costs of an extreme event, the purchase of reinsurance can provide relief in avoiding a cost recovery burden to employers if such an event does occur. A small reinsurance charge could be loaded into the annual premium rates for such protection. Deloitte recommends that BWC test the reinsurance market from time to time to determine if catastrophic reinsurance can be purchased at reasonable terms for a reasonable cost.

Actuarial Audit Reserves and Expected Payments Review

Situation: The actuarial audit reserves (estimated losses and loss adjustment expenses for unpaid claims) and the expected future payments of losses and loss adjustment expenses are estimated by Oliver Wyman. Our objective is to review these items and to assist the BWC in establishing objective quality management principles and methods to review these reserves. We did not review the reserves for purposes of recording an amount in the financial statement.

Methodology: We performed a detailed review of the June 30, 2007 Oliver Wyman Annual Actuarial Audit Report and the December 31, 2007 Oliver Wyman Quarterly Actuarial Audit Report for each the following Funds: State Insurance Fund ("SIF"), Disabled Workers' Relief Fund ("DWRF"), Coal-Workers Pneumoconiosis Fund ("CWPF"), Public Work-Relief Employees' Compensation Fund ("PWREF"), Marine

Industry Fund ("MIF"), Self-Insuring Employers Guaranty Fund ("SIEGF") and Administrative Cost Fund ("ACF").

For the SIF, we also determined our actuarial central estimate of losses for unpaid claims as of June 30, 2008 using claim data as of December 31, 2007. Our estimates were determined separately for medical only claims, medical on lost time claims and each compensation type as well as for Private Employers ("PA"), Public Employers – Taxing Districts ("PEC") and Public Employers – State Agencies ("PES"). We used multiple methods to incremental and cumulative accident year data on paid and incurred losses.

Conclusions: We note that additional documentation in Oliver Wyman's Audit Report would further assist a reviewing actuary to understand and evaluate their analysis. As their approach focuses on a single actuarial method by type of loss, we also noted that additional actuarial methods could provide greater insight on the dynamics affecting the reserves. Our major recommendations in this area are:

- **Create an internal focus on understanding the sources of uncertainty regarding reserves:** Deloitte recommends that as BWC builds its internal actuarial resources, a major focus should be on understanding the sources of uncertainty on reserves.

  For the SIF, our actuarial central estimate of the discounted losses for unpaid claims as of June 30, 2008, based on data as of December 31, 2007, is $1.9 billion, or 13%, lower than in Oliver Wyman's December 31, 2007 Quarterly Audit Report. The majority of the difference is associated with medical on lost time. Our estimate is 8% lower for PA, 29% lower for PEC, and 31% lower for PES. On an undiscounted basis, our actuarial central estimate is $5.4 billion, or 19% lower than that estimated in Oliver Wyman's December 31, 2007 Quarterly Audit Report. The percentage difference between the estimates is smaller on a discounted basis due to differences in estimated payment patterns.

  There are substantial uncertainties in estimating the loss and loss adjustment expenses for unpaid claims. Examples include inflation assumptions, the projected development for losses as they age beyond the observable development periods, the impact of the transition to MIRA II, the deviation of future investment yields from the discount rate, and the variability in losses We noted a favorable frequency trend which, if it mitigates or reverses, could introduce more uncertainty in the estimates.

- **Conduct further in-depth studies of the savings from lump sum settlements:** There has been a steady increase in Lump Sum Settlement ("LSS") activity and related loss payments in recent years. This activity could potentially lead to a significant reduction in estimated ultimate losses and cash flow projections for open claims. Our initial analyses of the impact of LSS are promising, but further in-depth study of the savings from these lump sum settlements is recommended.

- **Include a reserve risk margin and contingency provision:** Our estimate of SIF losses for unpaid claims does not include a risk provision or margin, nor is a contingency provision included for the risk that future investment yields are less than anticipated over time. Deloitte recommends that provisions in both areas be included in the "value of unpaid claims" used to compute a funding ratio for evaluation the financial strength of the "funded" obligations managed by the BWC. For example, based on our preliminary reserve risk analysis, a reserve risk provision at the 75th percentile of simulated results would indicate a 4.6% reserve risk provision ($630 million on a discounted basis). However, in order to provide a more appropriate level of financial security, Deloitte recommends a reserve risk provision based on the 95th to 99th percentile, estimated at 10.0% to 14.4% ($1.4 to $2.0 billion on a discounted basis). Deloitte also recommends a discount factor of 4% to discount reserves that reflect closer to a risk-free rate of return and therefore alleviate the need for a separate investment risk provision.

- **Conduct further analysis of the risk of inflation on the DWRF:** For the DWRF, we note that the benefits paid from this fund have been growing dramatically, and consequently there are very significant risks in the estimation of losses on unpaid claims from this fund. In particular, the fund is subject to significant risk and uncertainty in the impact of misestimates of future inflation. This fund pays benefits on PTD claims from annual cost of living adjustments (COLA) for claims below a certain threshold. However, the threshold is also subject to COLA, and therefore the number of claims eligible for COLA benefits from this fund can increase due to the annual adjustment to the threshold. Consequently, there is a highly leveraged effect of inflation on the obligations of this fund and on the future assessments needed to pay the benefits from this fund. Since future inflation can be subject to significant changes, Deloitte recommends further analysis of the risk of inflation on this fund.
- **Disclose significant risk provisions, margins, or discounts:** Deloitte recommends that BWC disclose any significant risk provisions, risk margins or discounts to the extent that they are reflected in the financial statements. In addition, Deloitte recommends that the evaluation of financial strength include these risk and discount elements, even if the financial statements do not.

We caution that the difference in estimates should not be interpreted as indicating that BWC's booked reserve needs to be adjusted at this time. Rather, Deloitte recommends that the considerations of reserve risk and the impact of discounting reserves at a risk-free discount rate should be included in evaluating financial strength, which then could be used to support the values to record in the financial statements. This Comprehensive Study will suggest a better financial and actuarial framework to support financial security for the Ohio workers' compensation system, and to promote stability of workers' compensation costs for BWC's policyholders.