

Actuarial Research Working Group

Meeting Summary

To: Participants of the Actuarial Research Working Group
From: Ward Brooks
Date: June 7, 2018

RE: Summary of May 24, 2018 Meeting

Insurer Meeting Participants Were Reminded of the Antitrust Notice

As members of the Workers' Compensation Insurance Rating Bureau of California, you are bound, when involved in meetings or other activities of the WCIRB California, to limit your actions (and discussions other than social ones) to matters relating to the business of the WCIRB California. Matters that do not relate directly to WCIRB California business should be avoided. Members should particularly avoid discussions or conduct that could be construed as intended to affect competition (or access to markets). Thus, as members, you should not discuss or pursue the business interests of individual insurers or others, including, in particular, the plans of individual members involving, or the possibility or desirability of (a) raising, lowering, or stabilizing prices (premiums or commissions); (b) doing business or refusing to do business with particular, or classes of, insurers, reinsurers, agents, brokers, or insureds, or in particular locales; or (c) potential actions that would affect the availability of products or service either generally or in specific markets or locales.

Discussion Topics

At the meeting, the following topics were discussed.

1. Transactional Indemnity

The Working Group was informed that the WCIRB had begun to collect transactional indemnity data from a number of insurers who volunteered to participate. The Working Group was informed that the transactional indemnity data that the WCIRB receives is a subset of the data submitted to the Division of Workers' Compensation under the Workers' Compensation Information System's (WCIS) Electronic Data Interchange. Staff reviewed the data elements available in the transactional indemnity data. The Working Group was informed that a First Report of Injury (FROI) report was generated for all injuries and includes a variety of demographic information and that Subsequent Report of Injury (SROI) reports contain detailed information on the claim's status, benefit payments and other information. Staff noted that the WCIRB was now receiving SROI data for claims for which the FROI was reported before the WCIRB began to collect transactional indemnity data. That is, the WCIRB has received SROI data for which it does not expect to receive the matching FROI data. The Working Group was informed that, over time, this informational gap will shrink and the ability to make use of the combined FROI and SROI information will grow.

Staff discussed the flow of data, from first receipts in a "user acceptance testing" test phase before entering production and noted that some insurers had provided additional data in one-off submissions in addition to the data submitted on a going forward basis. The Working Group was informed that, depending on the use case, staff may make use of all available data, including data in test or submitted one-off, or only production data. Staff noted that apart from the one-off submissions of additional data that the WCIRB was collecting data only on a going forward basis.

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Staff reviewed for the Working Group a variety of use cases, several of which had been requested by WCIRB committee or working group members. The Working Group was informed that due to the active on-boarding phase of the program, the volumes of data were changing rapidly and subsets for use cases varied depending on the requirements of the use case. Because of this, the number of claims used in the various use cases varied widely. Staff noted that the volumes of data involved in use cases requiring linkage to other WCIRB data sets also affected the volume of data available for the use case.

The Working Group was informed that staff had reconciled the claim volumes received in the transactional indemnity program with claim volumes reported in aggregate financial calls and that the reconciliation was good.

The Working Group provided feedback on the use cases and made suggestions for additional use cases.

The Working Group was informed that staff was working on developing appropriate denominators—exposures or expected claim counts—for the mix of classifications captured in the data and the timing of those exposures. The Group was informed that staff was building on the prior work on seasonality for indemnity claim frequency modeling for these efforts and was working on developing pre-Unit Statistical Report (USR) estimates of exposures and expected claim counts from a combination of policy data, prior USR data, and Hoover's Dun & Bradstreet data.

2. Retrospective Rating Tables of Insurance Charges—Policy Year 2019 Update

The Working Group was reminded that staff had worked on the development of an updated retro database. At the October 19, 2016 meeting, the Working Group reviewed the updated methodology and the loss elimination ratios developed using the updated database. At the February 17, 2017 meeting, the Working Group reviewed proposed enhancements to the major simulation modules used to develop the Advisory Retrospective Rating Plan database and in 2017, staff updated the hazard group assignment methodology and developed updated loss elimination ratios using the updated hazard group assignments. At the February 28, 2018 meeting, staff reviewed changes to the smoothing algorithm for the last set of rating values—the tables of insurance charges.

Staff reviewed for the Working Group the development of the tables of insurance charges. Staff noted that the updated tables of insurance charges are derived from the most recent update to the simulation model, which used claims from policy year 2009 at fifth report level, 2010 at fourth report level, and 2011 at third report level.

The Working Group was informed that the updated insurance charges were generally lower than the previous values. Staff noted that the changes in insurance charges were due to both changes in the underlying data and, particularly for small employers, to changes to the methodology. The Group was informed that, for medium and larger employers, most of the change was due to improved experience. For small employers, approximately \$100,000 of expected losses, some of the change was also due to the discontinuation of binning employers in developing the tables of insurance charges. Each employer's exact loss ratio was now used to calculate the charge at a given entry ratio rather than the mid-point of a bin.

3. Retrospective Rating Supplementary Information—Parametric Excess Loss Curves

The Working Group was reminded that staff had investigated fitting the simulated losses of the retro database in order to provide parametric excess loss curves, which are published for other jurisdictions, using a weighted mixture of lognormal distributions. Staff noted that a methodological adjustment to group claims by open/closed status, rather than likely/not likely

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groupings used in other jurisdictions, was done to be consistent with the manner in which the claim simulations are conducted.

The Working Group was informed that staff also examined modeling permanent partial and temporary total claims both together and separately. The impetus for separately modeling them was that differences in their size of loss distributions were evident in the retro starting database and manifest themselves in simulated ultimate values.

Staff noted that separate modeling of permanent partial and temporary total claims more closely replicated promulgated values, but both methods resulted in much higher elimination ratios at very high limits. The Working Group was informed that staff had also developed a lognormal-Pareto hybrid parameterization that used the lognormal results up to a \$2,000,000 limit, and then used the same Pareto smoothing as used for the promulgated values. The hybrid model also sets the share of total claims excess \$2,000,000 to the share underlying the promulgated values. This adjustment brought the parametric curves much more in line with the promulgated results, though significant differences remain.

The Working Group discussed staff's findings, including the relative merits of the different approaches. A Group member suggested that there would be value in publishing all of the information and practitioners could select the information most appropriate for their use case. Staff agreed to publish the results with the supplemental information accompanying the 2019 updates of the retrospective rating plan on the WCIRB's website.