

**A Note on Ratemaking in Accordance with Accepted Actuarial Practice in Canada and
Impact of Investment (Discount) Rates**

**Manitoba Public Insurance
2017/18 GRA**

**CAC Manitoba
Submitted by the Public Interest Law Centre
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Terms of Retainer

The Consumers' Association of Canada, Manitoba Inc. (CAC Manitoba), through the Public Interest Law Centre has retained my services to provide evidence regarding the Manitoba Public Insurance (MPI) 2017 Rate Application. In particular, I have been asked to provide expert analysis on issues associated with ratemaking and accepted actuarial practice in Canada.

The evidence was prepared by me and I am responsible for the analysis and conclusions.

Declaration of Impartiality

As stated in my terms of retainer, it is my duty to provide evidence that:

- is fair, objective and non-partisan;
- is related only to matters that are within my area of expertise; and
- provides such additional assistance as the Public Utilities Board (“PUB”) may reasonably require to determine an issue.

I understand that my duty in providing assistance and giving evidence is to help the PUB. This duty overrides any obligation to CAC Manitoba.

Qualifications of Andrea Sherry

Andrea Sherry is a Fellow of the Casualty Actuarial Society, a Fellow of the Canadian Institute of Actuaries, a Certified Management Accountant and a Fellow Chartered Insurance Professional. She is currently the Vice President, Insurance Solutions at The Wawanesa Mutual Insurance Company. She has worked there since January of 2011. Prior to that she worked for Aviva Canada Inc. in the areas of Capital and Solvency. She was also the Appointed Actuary for one of the Aviva companies, and before that was the Assistant Vice-President and Corporate Actuary at Saskatchewan Government Insurance until 2008. She has worked in Property & Casualty insurance since 1990 when she started work for MPI.

Ms. Sherry has served as a consultant to CAC Manitoba through the Public Interest Law Centre for the last five years. She has participated in informal processes of the Public Utilities Board relating to the RSR and DCAT and collaborated with Dr. Wayne Simpson on his past evidence relating to the RSR.

Ms. Sherry's curriculum vitae is filed separately.

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In the determination of an actuarial rate indication following accepted actuarial practice in Canada the financial statements of a company are not relied upon. Financial statements are completed with a calendar (fiscal) year view. Therefore, they include adjustments made to case reserves and actuarial IBNR for prior accident years. The purpose of actuarial ratemaking is to project what the ultimate losses will be per vehicle (pure premium or loss cost), adding in expenses, for the accident year in question. That is, for the policies in place during a year, the goal is to determine what the expected ultimate loss cost is for the accidents occurring in that year. Historical accident year ultimate loss costs are used for this purpose to project the future. Please see Appendix A for definitions of calendar (fiscal) year and accident year.

From the Casualty Actuarial Society (CAS) “Statement of Principles Regarding Property and Casualty Insurance Ratemaking”:

Ratemaking is prospective because the property and casualty insurance rate must be developed prior to the transfer of risk.

Principle 1: A rate is an estimate of the expected value of future costs.

The calculation of the Underwriting Profit Margin is where the interest rate or discount rate has an impact on the indication. The Underwriting Profit Margin is how much underwriting profit is required that, when combined with investment income, will result in a certain return on equity for a book of business. Longer tailed lines of business are those that have claims open for longer periods of time, therefore having open reserves for longer periods of time resulting in more investment income on those reserves.

From the CAS publication “Basic Ratemaking”, page 138:

The combination of the underwriting profit and investment income represents the total profit for the company. Typically, the actuary determines the underwriting profit needed to achieve the target total rate of return after consideration of investment income. For some long-tailed lines, the investment income may be large enough that companies can accept an underwriting loss and still achieve the target total rate of return. For short-tailed lines, the investment income potential is lower and the underwriting profit is a larger portion of the total return.

The interest rate that many actuaries choose is the discount rate used in the most recent Appointed Actuary's report. Throughout the MPI/PUB proceedings this is commonly referred to as the "Actuary's Report". According to the Office of the Superintendent of Financial Institutions the Appointed Actuary of all federally regulated Property & Casualty insurance companies is required to value the actuarial and other policy liabilities as at the end of a financial year. It is often the case that the Appointed Actuary's value is the figure used in the financial reports as the outstanding losses of the company. The logic for using the Appointed Actuary's chosen rate is that the Appointed Actuary chooses the discount rate that they have opined is best to discount the policyholder liabilities to present value. The Appointed Actuary makes this choice based on what they expect to earn as new investments are made throughout the time that the reserves are run off. Therefore it can make sense to use the same discount rate or interest rate in the determination of what the required rate change is as ratemaking does require the projection of policyholder liabilities. This is, of course, dependent on the circumstances within each individual company.

From Section 2620.15 of the Canadian Institute of Actuaries Standards of Practice:

The investment return rate for calculating the present value of cash flows would reflect the expected investment income to be earned on assets that might be acquired with the net cash flows resulting from the revenue at the indicated rate.

The present value of cash flows is used to determine what Underwriting Profit Margin is required to make a certain return on equity in the private world and could certainly be used to determine the breakeven point.

The current methodology used by MPI does not follow accepted actuarial practice.

From PUB(MPI) 1-4 MPI "uses estimated "per vehicle" revenue and cost components of the required premium, with the underlying cash flows discounted to a common point in time (the end of the proposed rating year). The aggregate of these components is compared to the latest historical fiscal (or calendar) year average rate inflated by an appropriate duration drift factor (premium trend) to derive the overall required rate indication. Many of the components of the required premium (other than claims and claims expenses) rely on the GRA forecast of fiscal year component amounts and fiscal year written premium."

The goal of the ratemaking process at MPI is to ensure that the net income over two fiscal (calendar) year periods is 0 or breakeven results. Investment income is forecast in the pro forma financial statements and included in the breakeven position goal.

MPI's current process does not follow accepted actuarial practice. This may add unnecessary volatility to the rate indication through the inclusion of investment income on a calendar year basis through the pro forma financial statements. It is recommended that MPI use accepted actuarial ratemaking practices going forward.

Appendix A

Source: <http://sharepoint.icrb.net/>

Accident year data is based on accidents that occur within a twelve month period. Thus, accident year 2010 is based on those accidents that occurred between 1/1/10 and 12/31/10.

AS comment: Accident year is the preferred approach to actuarial rate making. It looks at all of the accidents caused by policyholders in a 12 month period. So if we want to determine a rate for January 1, 2016 to December 31, 2016 we want to project the cost of accidents that will occur in that period and charge policyholders with policies in that period the correct amount.

Calendar year information in contrast, is more from an accounting perspective and contains information about each policy year. For example, policy years 1990-2010 could all have transactions going on in calendar year 2010, and that is what calendar year information is showing - many policy years with activity within one calendar year. Note: Calendar year combined ratios may be lower than accident year if they include reserve releases from prior years. Accident year data reflect incurred losses (paid and reserved) for claims that occurred in that specific year, and are generally viewed as more reflective of the industry's current financial condition.

AS comment: Calendar year is referred to as Fiscal year throughout the MPI/PUB proceedings.