

Protecting Consumers Against Risk: How Far Should It Go?

Manitoba Public Insurance

2020/2021 GRA

Consumers' Association of Canada (Manitoba)

Submitted by the Public Interest Law Centre

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1. Introduction

The 2020 MPI Rate Application (hereafter GRA) applies to the Public Utilities Board for approval of premiums based on its proposed Capital Management Plan (CMP). The proposed CMP establishes “the means and pathway to achieve the 100% Minimum Capital Test (MCT) capital level for the Basic Rate Stabilization Reserve (RSR), as codified in the Reserves Regulation (M.R. 76/2019); and the assumed minimum regulatory target under the base scenario during the forecast period, used for determining satisfactory financial condition in the Dynamic Capital Adequacy Test (DCAT)” (GRA, Part I – Legal Application, 3-4).” The proposed rate setting procedure under the CMP with the 100% MCT capital target represents (i) a significant change in procedure regarding the target level or range of capital for Basic Insurance and the associated Rate Stabilization Reserve (RSR) and (ii) a significant increase in the level of risk against which MPI ratepayers will be protected without evidence of increasing downside risk to MPI and to rates. This report considers these two issues. The report is a collaborative effort between Wayne Simpson and Andrea Sherry.

2. The 100% MCT Standard is a Significant Change in Procedure

The Simpson-Sherry Report “The Role of the DCAT and Interest Rate Forecasting in the 2019 GRA” set out the chronology of methodological developments surrounding the establishment of RSR target levels, beginning with the 1988 Autopac Review Commission (Kopstein Report) which established an RSR range of 10% to 20% of premiums. This Report is provided as an Appendix to this report and only briefly summarized here to establish the context for the current MPI application.

Attempts to replace the Kopstein percentage of premiums (POP) methodology with one more directly linked to the actual risks facing MPI included the Operational and Investment Risk Analysis (RA/VaR), introduced in the 2000 GRA, followed by the Dynamic Capital Adequacy Test (DCAT), introduced in 2010. The RA/VaR approach analyzed the limited historical evidence on MPI's underwriting income to establish a 97.5% confidence interval corresponding to a one-in-forty-year chance that the RSR would be insufficient to offset underwriting losses, a standard for risk tolerance that was endorsed by Board Order 150/07. The DCAT approach, initially used to assess the future financial condition of Basic insurance operations, became MPI's justification for the RSR target level using the one-in-forty-year standard. The argument for relying on the DCAT methodology to substantiate the risks facing MPI using historical evidence was compelling, and a significant degree of consensus was achieved in subsequent GRA hearings and technical conferences. As the DCAT methodology gained greater acceptance among stakeholders, discussion of adverse scenarios sharpened the analysis of the risks to MPI's bottom line and encouraged greater reliance on the DCAT to establish an appropriate RSR range around the one-in-forty-year standard. The utility of the DCAT to set target capital levels for Basic Insurance was recognized by the Board in 2016 (Order 162/16, 60-61).

Although there had been a focus on the identification and statistical evaluation of risks facing MPI in the RA/VaR and DCAT approaches to establishing a target capital level or range, MPI also introduced the Minimum Capital Adequacy Test (MCT) in the 2005 GRA and, more specifically, in the 2007 GRA when it recommended an RSR target range of 50% to 100% MCT. While the MCT is recognized by the Office of the Superintendent of Financial Institutions (OSFI) for *private casualty insurers in a competitive insurance industry* to prevent insolvency, it was unclear, at least to stakeholders, how this applied to a *public crown corporation* with a

monopoly over Basic Insurance. The concerns regarding the applicability of the MCT included the difference between a private company and a public crown corporation and how to account for that difference in the risk profile and in the MCT percentage level flowing from that risk profile that a public crown corporation should maintain. Recommendations by MPI to base the RSR target range or at least its upper threshold on the MCT were explicitly rejected by the Board in favour of the DCAT scenario testing approach in Order 162/16 (pp. 60-61).

Nonetheless, the current rate application relies on a provincial Cabinet *Reserves Regulation* to use 100% MCT as the standard for establishing target capital levels, not a range, for Basic under the CMP. The natural progression from a POP methodology that was not directly linked to the identifiable risks facing MPI to the RA/VaR and then the DCAT methodologies that addressed this deficiency has been reversed: MPI is requesting reversion to a methodology that also has no direct link to specific risks rooted in historical experience of MPI. As CAC(MPI) 1-15 (a) and (d) make clear, the implementation of a 100% MCT standard implies elimination of the useful role of the DCAT in setting target capital levels and replacement of the one-in-forty-year risk tolerance standard with a much higher risk tolerance criterion. Indeed, the DCAT would retain no role in rate determination under MPI's proposal but would be retained "to assess satisfactory financial condition and support enterprise risk management" (GRA, RSR.7, 15). How the DCAT might accomplish these goals under the proposed CMP, given there is no clear link between the DCAT and the target capital levels, is not clear.

It is also concerning that the focus has returned to a target capital level rather than a target capital range. The original argument for a target range remains clear and sensible: If Basic capital falls within the range, no action is called for; if capital falls below the lower threshold of the range, a capital rebuild is called for; if capital exceeds the upper threshold of the range, a

premium remittance is called for. This approach has formed the basis for discussion and consensus since Kopstein's POP proposal, as our 2019 Report discusses in more detail.

Reverting to a target capital level invites rate instability as premiums are driven by the inevitable deviations from that level, deviations in one direction which may be offset by deviations in the other direction in succeeding years.

3. The 100% MCT Would Protect Ratepayers Against Much More Unlikely Risks, But Where's the Evidence?

The proposed CMP represents not only a significant change in the procedure to set aside funds for a "rainy day." It also represents a significant change in what would constitute a "rainy day" in which the RSR would be inadequate to cover operating losses. To be clear, the stipulated purpose of the RSR continues to be to "protect motorists from rate increases that would otherwise have been necessary due to unexpected variances from forecasted results and due to events and losses arising from non-recurring events or factors (GRA, RSR.3, 4)." Note that the intention is to *protect motorists*, not MPI's capital position, from unanticipated and nonrepeating events that would affect MPI's net income and result in a "rate shock" to motorists. The size of the RSR, and thus the target level(s) of capital for Basic, then becomes a question of the nature of the volatility in MPI net income and the extent to which motorists should be protected by funds retained by MPI rather than enduring some degree of rate volatility. Hence, the emphasis in earlier GRA hearings and conferences has been on understanding what downside risks MPI faced, how these could be quantified, and how that could be related to some reasonable degree of risk tolerance on the part of motorists. As we have indicated in the previous section, we believe that considerable progress had been made in all these areas using the DCAT methodology and a one-in-forty-year standard for risk tolerance.

Since the focus of the RSR is on a degree of protection for motorists, it is important to realize that there is a fundamental trade-off associated with this form of rate stability insurance. Motorists can have more insurance, in the form of a greater protection from rate instability or “rate shock,” by paying higher premiums and having MPI retain the surplus in the RSR. Absolute protection would be prohibitively expensive and unaffordable for most motorists, however, and would divert motorist disposable income into MPI coffers. Unless motorists value absolute protection more than other goods and services, this would be a misallocation of their resources and socially wasteful from a utilitarian perspective.¹ Thus, a proper allocation requires a determination of an appropriate motorist appetite for risk in terms of “rate shock,” or their risk tolerance.

Board Order 150/07 (p.45) endorsed the one-in-forty-year standard for risk tolerance in 2007:

“The RSR should be large enough to be able to withstand an unforeseen loss of a magnitude not anticipated to occur more than once in 40 years. In the event of a loss of such a magnitude depleting the RSR, possibly even driving it into a deficit, the Board would examine with the Corporation and interveners options to rebuild the RSR, which could include premium surcharges over a period of years. In the past, when the situation warranted it, the Board approved modest rate surcharges for a series of years, just as suggested above.”

The one-in-forty-year standard is a convention widely adopted in statistical analysis and testing, corresponding to a 2.5% chance of rejecting a true hypothesis: Statisticians typically accept that some degree of risk in rejecting a true hypothesis is inevitable, that reducing that risk comes at a

¹ Utilitarianism is widely used as a principle in economics and moral philosophy and advocates actions that maximize well-being for the majority of the population: <https://en.wikipedia.org/wiki/Utilitarianism>

cost (the cost of accepting a false hypothesis), and that a suitable balance is 2.5%.² From the standpoint of an evidence-based analysis of risk, such as the RA/VaR or DCAT analyses, this standard seems naturally appropriate.

As for motorists' own views on risk tolerance, the evidence we have is based on a Probe Research Inc (2015) study commissioned by the Consumers' Association of Canada (Manitoba). Probe Research conducted focus groups in Winnipeg among MPI registered vehicle owners with varying age, education and income. It would be very hard to argue from the following account that risk tolerance in the focus group exceeded the one-in-forty year standard:

“Participants were also asked to indicate the magnitude of event from which they wish to be protected by placing their name on a line with a 1-in-200 year event on the right hand side of the scale and a 1-in-1 year event on the left hand side of the scale. It was further explained that the premiums associated with coverage for adverse events that can be expected every year would be minimal, while there would be a much higher cost associated with premiums for an event occurring once in every 200 years.

- It was evident that several participants had difficulty comprehending this concept even after a detailed description of the financial implications of frequently occurring versus infrequently occurring events. Several participants in the female session, who had already displayed caution and a desire for minimum premium increases following a “bad year” for MPI, gravitated towards the left hand side of the scale. Responses ranged from a 1 in 1 year event (2 participants) to a 1 in 25 year event (1 participant). Most were comfortable having coverage sufficient to protect them against a 1 in 10 year event.

² This would correspond to a 5% probability of rejecting a true hypothesis in a two-tailed test but motorists concern with “rate shock” is one-tailed: They are concerned about rate increases (downside risk to MPI net income), not rate decreases (upside risk to net income)

- Men, generally provided responses ranging from 1 in 1, to 1 in 150 years, with most preferring coverage near 1 in 20 years. The 1 in 150 years outlier explained that he felt climate change would lead to events that are not adequately anticipated by the insurance industry. An older gentleman indicated that his satisfaction with 1 in 5 years protection was premised on his advanced age and the unlikelihood that he would live long enough to require more significant coverage.”

Indeed, it would appear that women were comfortable with a risk tolerance level of 1-in-10 and men were comfortable with a risk tolerance level of 1-in-20.

The 100% MCT target for Basic capital implies a much different tolerance for risk than the one-in-forty-year standard of previous GRA and technical conference discussions. In the 2016 GRA, MPI proposed a 100% MCT to justify an upper threshold of \$366 million for the RSR. MPI was unable to determine the risk tolerance associated with the 100% MCT target with management action for the most adverse (combined) scenario in the DCAT, however, since “none of our 5000 simulations resulted in a Total Equity balance of less than zero over the forecast period under these conditions” (2015 DCAT, 9). Since simulations using the 100% MCT criterion to set the target for the RSR could not produce a negative total equity balance with management action in 5000 runs, it implies that the criterion corresponded to a probability level of less than 1-in-5000 years or 0.0002% probability of occurrence, far in excess of any risk tolerance standard previously considered. In response to PUB(MPI)3-1, MPI found that even using a 65% MCT level implied a risk tolerance level of 1-in-715 or 0.14% probability of occurrence. The subsequent Board Order 162/16 (p.16) rendered the following judgment:

“For purposes of setting the upper threshold of the Basic target capital range, the Board withdraws its support of the use of the MCT and a threshold MCT ratio of 100%. The Board is concerned that the degree of conservatism implied by the

Corporation's proposal may be excessive based on the Corporation's scenario testing at the more extreme percentile levels of possible outcomes, potentially giving rise to a risk of moral hazard."

The excessively conservative nature of the 100% MCT criterion for rate setting continues to be apparent in the current application. Without consultation with stakeholders, MPI announced that "Going forward the chief actuary will select assumptions that more closely align with the risk appetite of the MPI BoD" including "a 1-in-100 year (99th percentile) outcome level" (GRA RSR7.2, 9 and 15). In CAC(MPI)1-15(a) MPI defended this change from a 1-in-40 to 1-in-100-year risk tolerance as a measure to more closely align it with the 100% MCT criterion for capital targeting, although the "alignment" would still be well short of the 1-in-5000-year tolerance implied by previous analysis in 2016. When asked to repeat their analysis using the established 1-in-40-year criterion, MPI dismissed the exercise as "unreasonable and unnecessary" (CAC(MPI)1-15(d)).

In this application, the "risk appetite" of motorists has been replaced with the risk appetite of the MPI Board of Directors at a much more conservative level that justifies higher premiums for motorists and a higher RSR. It remains unclear what risks MPI faces that are beyond those adverse scenarios discussed and quantified in various DCAT reports over the past decade. The application contains a full section on MPI's "Risk Management Framework," which lists the top risks to MPI as determined by the ERM in early 2019: Failure of Major Project, Unanticipated Sharp Growth in PIPP Claims Retention Experience, Redacted Entry, Massive Catastrophic Weather Event, Major Business Interruption, Unexpected Growth in Physical Damage Cost, Stock Market Crash, Redacted Entry#2, Redacted Entry#3, Privatization, and

Employee Engagement (GRA RMF.2, 4). When asked to explain the evidentiary basis for assessing these risks in CAC(MPI)1-18(a), MPI replied:

“Members of the Enterprise Risk Management (ERM) Committee in conjunction with the ERM specialist and the other assessment participants used the risk rating tool to assess the top risks for likelihood, financial severity and non-financial severity. For the qualitative risks, the risk scoring was agreed upon by the risk owner(s), ERM specialist and assessment participants. These scores were reviewed by the rest of the ERM Committee.

The 2018 Dynamic Capital Adequacy Test (DCAT) model was used to quantify the Massive Catastrophic Weather Event (1D) 1-in-100 year scenario and Stock Market Crash (2B) 1-in-20 year scenario.”

Aside from the vagueness of the process and its evidentiary content, what is clear is that only two of the 11 risks were assessed using the DCAT methodology, albeit neither at the established 1-in-40-year risk tolerance standard. There is simply very little evidence in this Risk Management Framework to apply the statistical principles of risk management that have been used in the DCAT and previous GRAs.

4. Conclusions and Recommendations

Conclusions:

- The proposed rate setting procedure under the CMP with the 100% MCT capital target level represents a significant change in the procedure to establish target capital for Basic

Insurance and the Rate Stabilization Reserve, since the procedure has relied on the POP and DCAT methodologies to set a target capital range up to now.

- The proposed rate setting procedure under the CMP with the 100% MCT capital target level represents a significant increase in the level of risk against which MPI ratepayers will be protected without new evidence of increasing downside risk to MPI and rates.
- Holding capital at the 100% MCT level has no basis in the DCAT modelling completed by the Corporation and would lead to excessive levels of capital held.

Recommendations:

- The CMP should continue to use the DCAT results with a 1-in-40 year adverse scenario as the benchmark (range midpoint) to determine a target range for the RSR.

References

2015 DCAT 2015 *Dynamic Capital Adequacy Testing Report Basic Compulsory Automobile Insurance*, MPI, September 9 [Subject to Approval by Board of Directors]

Probe Research Inc (2015) *MPI Rate Stabilization Reserve Public Perceptions Focus Groups* prepared for the Consumers' Association of Canada, October 2

Appendix A:

Statement of Qualification and Duties – Dr. Wayne Simpson

Qualifications

Dr. Wayne Simpson has a PhD from the London School of Economics (1977) and is a Full Professor in the Department of Economics at the University of Manitoba, where he has taught since 1979. His areas of academic expertise include labour economics, applied econometrics, applied microeconomics, quantitative methods, and economic and social policy analysis.³ He has authored or co-authored three books and more than sixty peer-reviewed articles on these and related topics, including two papers on the impact of risk on the behaviour of the firm. He is currently on the editorial board of *Canadian Public Policy*, Canada's foremost peer-reviewed academic journal for economic and social policy, and served on the executive council of the Canadian Economics Association. He was a 2014 recipient of the McCracken award for the development and analysis of economic statistics from the Canadian Economics Association.

Dr. Simpson's expertise in applied microeconomics and econometrics are especially relevant to this hearing on Manitoba Public Insurance ("MPI") rates. Applied microeconomics is the study of the behavior of individual agents (e.g., firms and households) in the market using modern theory and empirical methods. It seeks to apply the analysis to practical problems such as risk management and investment strategies. Applied econometrics uses specific statistical techniques, particularly regression methods, to analyze and predict economic behaviour and apply it to practical social problems.

In addition to his academic career, Dr. Simpson has worked at the Bank of Canada, the federal Department of Labour, and the Economic Council of Canada. He has also served as a consultant to the private sector and government, primarily in the areas of labour economics and policy evaluation. In recent years, he has served as an expert advisor to Prairie Research Associates (PRA) Inc. and Human Resources and Skill Development Canada as well as to CAC Manitoba through the Public Interest Law Centre.

Wayne Simpson has provided expert evidence at the Public Utilities Board including at the 2014 Needs for and Alternatives to Review of Manitoba Hydro's Preferred Development Plan, the 2007-2008 and 2016 hearings to determine maximum fees for payday loans and the 2007, 2010, 2013, 2014, 2016, 2017, and 2018 Manitoba Public Insurance Rate Applications on the Rate Stabilization Reserve and investment strategy. He also provided written evidence in the 2013 and 2016 payday loan reviews.

Wayne Simpson relies on his expertise in applied econometrics, applied microeconomics, and social policy application and analysis in this proceeding. Dr. Simpson's curriculum vitae was

³ His professional expertise in applied microeconomics and applied econometrics provides a foundation for the analysis of issues related to the management of risk by firms and to the assessment of risk using modern economic and statistical techniques. His expertise also provides a framework to assess the contributions of equities, bonds and interest rates to investment risk.

filed with the Manitoba Branch of the Consumers' Association of Canada's application to intervene in this proceeding.

Duties

The following duties were assigned to Dr. Simpson in the MPI General Rate Application. The Public Interest Law Centre retained Dr. Simpson's services to assist CAC Manitoba with its participation in the Public Utilities Board review of MPI's Application on issues related to ratemaking.

Dr. Simpson's duties include:

- Reviewing the Application;
- preparing first round of Information Requests;
- reviewing responses to first round Information Requests and preparing second round of Information Requests;
- preparing memos to client and legal counsel; and
- assisting with the preparation of independent evidence, relating to the probability and magnitude of risks faced by basic monopoly consumers, as well as to an understanding of the DCAT/MCT and historic approaches of the PUB to rate stabilization.

Dr. Simpson's retainer letter also includes that it is his duty to provide evidence that:

- is fair, objective and non-partisan;
- is related only to matters that are within his area of expertise; and
- to provide such additional assistance as the Public Utilities Board may reasonably require to determine an issue;

Dr. Simpson's retainer letter also specifies that his duty in providing assistance and giving evidence is to help the Public Utilities Board. This duty overrides any obligation to CAC Manitoba. By signing the letter of retainer, Dr. Simpson confirmed that he will comply with this duty.

Appendix B:

Statement of Qualification and Duties – Ms. Andrea Sherry

Qualifications

Andrea Sherry received her Bachelor of Commerce (Honours) in December 1990 from the University of Manitoba with a major in Actuarial mathematics. She became a Fellow of the Casualty Actuarial Society and Fellow of the Canadian Institute of Actuaries in 2000. She became a Fellow Chartered Insurance Professional and received her Canadian Risk Management designation in 2005. She became a Certified Management Accountant in 2008 and is now a Chartered Professional Accountant, Certified Management Accountant.

Ms Sherry is currently Vice President, Personal Insurance at The Wawanesa Mutual Insurance Company in Winnipeg. In her current role, she is responsible for the company's actuarial pricing, personal lines product development and maintenance, as well as head office personal lines underwriting. Prior roles include work in solvency and capital, enterprise risk management and investments. She has had appointed actuary and valuation actuary roles prior to joining Wawanesa. She has worked on Dynamic Capital Adequacy Testing and internal models to satisfy the regulatory requirements in the United Kingdom (where internal models to determine capital adequacy are used by larger companies). She has also been involved in the preparation of an Own Risk Solvency Assessment.

Ms Sherry has worked in the Property & Casualty insurance industry for over 25 years and will rely on all of the expertise she has gained, with particular emphasis on her expertise in actuarial work and investments.

Ms. Sherry's curriculum vitae was filed with the Manitoba Branch of the Consumers' Association of Canada's application to intervene in this proceeding.

Duties

The following duties were assigned to Ms. Sherry in the MPI General Rate Application. The Public Interest Law Centre retained Ms. Sherry's services to assist the Manitoba Branch of the Consumers' Association of Canada with its participation in the Public Utilities Board review of MPI's Application on issues related to actuarial ratemaking.

Ms. Sherry's duties include:

- Reviewing the actuarial materials on file (whether proposed rates are actuarially indicated and statistically sound); and
- assisting with the preparation of evidence, especially relating to objective evidence related to the probability and magnitude of risks faced by basic monopoly consumers, as well as to an understanding of the DCAT/MCT and historic approaches of the PUB to rate stabilization.

Ms Sherry's retainer letter also includes that it is her duty to provide evidence that:

- is fair, objective and non-partisan;
- is related only to matters that are within his area of expertise; and
- to provide such additional assistance as the Public Utilities Board may reasonably require to determine an issue.

Ms Sherry's retainer letter also specifies that her duty in providing assistance and giving evidence is to help the Public Utilities Board. This duty overrides any obligation to CAC Manitoba. By signing the letter of retainer, Ms Sherry confirmed that she will comply with this duty.