EXTERNAL REVIEW REPORT OF THE DCAT REPORT

ON

BASIC COMPULSORY AUTOMOBILE INSURANCE

OF THE

MANITOBA PUBLIC INSURANCE CORPORATION

AS OF FEBRUARY 28, 2014

Prepared by: Joe S. Cheng, F.C.I.A.

Date of Opinion: September 26, 2014

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Purpose of the Report

Manitoba Public Insurance Corporation (hereafter referred to as "MPI" or "the Corporation") is a Crown Corporation. MPI provides basic compulsory automobile insurance to Manitoba motorists. The purpose of this engagement is to conduct an external actuarial review of its Chief Actuary's Dynamic Capital Adequacy Testing ("DCAT") report for Basic Compulsory Automobile Insurance ("Basic") for the fiscal year ending February 28, 2014 in accordance with standards published by the Actuarial Standards Board ("ASB") in Canada.

J. S. Cheng & Partners Inc. ("JSCP") was engaged by the Corporation to conduct the aforementioned external actuarial review. Mr. Joe S. Cheng, a Fellow of the Canadian Institute of Actuaries ("CIA") is the appointed reviewer for this External Review Report.

This document constitutes the External Review Report. Any questions regarding this report should be directed to:

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Scope of the Report

The scope of this External Review Report includes a review of the Chief Actuary's DCAT Report for Basic Compulsory Automobile Insurance of the Corporation prepared by Mr. Luke Johnston, for the fiscal year ending February 28, 2014. The scope of this report is to:

1. Ascertain that the work of the Chief Actuary is within the range of accepted actuarial practice in Canada, as established by the ASB.

2. Review the appropriateness of the assumptions made and the methods employed.

3. Determine whether the DCAT Report accurately describes the assumptions and methodology employed by the Chief Actuary.

4. Review the adequacy of procedures, systems and the work of others relied on by the Chief Actuary. This includes checks on data integrity and checks on procedures and methodologies used to validate the calculations and results.

Findings And Recommendations

The DCAT report is very comprehensive containing many supporting exhibits. It is easy to follow and many of the assumptions are documented. All findings were reported to Mr. Luke Johnston in correspondence dated September 26, 2014. My major findings and recommendations are:

1. The definition of a satisfactory financial condition is very important in this report. Therefore, we recommend the inclusion of the minimum and maximum rate stabilization reserve (RSR) in the base scenario of the executive summary. This supports the rationale for actuarial opinion clearly.

2. Where an unsatisfactory financial condition is opined, sensitivity tests around each assumption should be conducted. This is particularly important if an unsatisfactory financial condition is dependent on one adverse scenario and only by an immaterial amount. The sensitivity tests may not alter the actuarial opinion, but the reader is armed with solid information and would appreciate the rationale for actuarial opinion better.

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Opinion

I have reviewed the 2013 DCAT Report for Basic Compulsory Automobile Insurance on Manitoba Public Insurance Corporation as prepared by the Chief Actuary, Mr. Luke Johnston, in accordance with accepted actuarial standards of practice in Canada.

In my opinion:

1. The work of the Chief Actuary is within the range of accepted actuarial standards of practice in Canada.

2. The assumptions and methods employed are appropriate.

3. The DCAT Report accurately describes the assumptions and methodology employed by the Chief Actuary.

4. The procedures and systems relied on by the Chief Actuary are adequate and sufficient to ensure an appropriate level of data integrity and the accuracy of calculations and results.

____

Joe S. Cheng, F.C.I.A.

September 26, 2014

Date of Report

Data and Reliance

In the preparation of this report, I worked with Mr. Raul Martin, FCIA in our office.

In the preparation of this report, we have used the Corporation's annual financial statement and the DCAT Report for the fiscal year ending February 28, 2014 without an independent audit or verification.

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Distribution and Use

This report is intended for the Management of the Corporation and its Regulator. Its sole purpose is to provide an external review of the work of the Chief Actuary's DCAT Report for Basic Compulsory Automobile Insurance as at February 28, 2014. This report should be read in conjunction with the aforementioned DCAT Report.

This report may be distributed to any regulator in a jurisdiction where the Corporation operates or intends to obtain a license. Furthermore, the Corporation may distribute this report to its external auditor. Anyone else should be considered as a third party.

This report is neither intended nor necessarily suitable for any other use. Distribution beyond the parties mentioned in paragraph two is permitted provided that prior written consent is given by the Corporation.

Any use which a third party makes of this report, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. JSCP accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Third party agrees to keep this report confidential.

Limitations

In evaluating whether the future financial condition of an insurance enterprise is satisfactory, it is necessary to project future losses, operating expenses and investment income. It is certain that actual future losses, expenses and investment income will not develop exactly as projected and may, in fact, vary significantly from the projections.

Since actuarial estimates are subject to uncertainty with respect to future events, actual results may vary from the amount projected in the Statement of Financial Position. No warranty is expressed or implied that such variance will not occur.

It should be noted that forecasts deal with the inherent uncertainty of future contingent events. While I believe the actuarial projections made by the Chief Actuary represent a reasonable forecast based on the appropriate application of actuarial techniques to the available data, there can be no guarantee that the actual future results will not differ from the forecast stated in the DCAT Report.

My report was limited to a review of assumptions and methodologies underlying the DCAT Report of the Corporation as of February 28, 2014 including any tests of the calculations, as I considered necessary. I did not analyze the validity of any assets used to derive investment income on the income statement.

Materiality

The standard of materiality is discussed in the DCAT Report. The Chief Actuary has selected a standard of materiality of $10 million based on 2.5 times the Basic Appointed Actuary's Report materiality and the greater uncertainty associated with the DCAT projections. I believe this is a reasonable selection.

Definition of Satisfactory Future Financial Condition

The Public Utilities Board (PUB) in Manitoba sets the minimum and maximum levels of Basic retained earnings for the Corporation. The Basic retained earnings, net of any special appropriations are defined as the Rate Stabilization Reserve (RSR).

The Corporation has a satisfactory future financial condition if:

1. Under the base scenario, the insurer meets the Manitoba Public Utilities Board's minimum Rate Stabilization Reserve (RSR) target.
2. Under the base scenario and all plausible adverse scenarios, the statement value of the insurer's assets is greater than the statement value of its liabilities.

Base Scenario

The base scenario assumptions are documented in supporting exhibits that are part of the DCAT Report. The Corporation's base scenario is consistent with its experience and is reasonable.

Adverse Scenarios

The DCAT Report identifies five scenarios posing the greatest risk to satisfactory financial condition. The one- to four-year cumulative impacts were reviewed for each of the 99^{th}, 97.5^{th} and 95^{th} percentile events before selecting the four-year 97.5^{th} percentile event as the testing event. In addition, the report indicates that there are no other scenarios that would cause the Corporation to fall below the minimum regulatory capital requirement. The five scenarios identified as posing the greatest risk to satisfactory financial condition are:

1. **Decline in Equity Markets (2)**

   This scenario was tested as both a one-year and a two-year 1-in-40 probability level event. Both scenarios cause total Equity to fall below zero before management action and therefore both are included as top adverse scenarios. It is assumed that 20% of the unrealized losses are realized each year (unchanged assumption from last year). It is assumed for the U.S. equity portfolio that 0% of the unrealized gains/losses are realized as the portfolio is passively managed (same as base). This scenario is reasonable.

2. **Combined Scenario (Interest Rate, Equity Decline and High Loss Ratio)**

   This scenario assumes a declining interest rate environment will continue throughout the forecast period and the Corporation experiences adverse equity and claims experience. This year's simulation incorporates the correlation between equity returns and interest rate changes. Undiscounted claim costs are assumed to be independent of interest rates and equity returns. The selected four-year scenario at a 1-in-40 year probability level recognizes the correlation among some of the risk factors. The reduction of interest rates increases claim reserves estimates through a reduction in discount rate and an increase in discounted claim reserves. This scenario is reasonable.

3. **High Loss Ratio Scenario**

This scenario assumes a four-year scenario at the 1-in-40 year probability level resulting in an increase of $69 million to the base incurred losses in 2015/16 (includes all actuarial adjustments, claims provisions and cost allocation changes). The $69 million reduction in retained earnings in the first year grows to $125 million by 2018/19 (before management and regulatory action). Claim frequencies and claim severities were simulated with actual correlations between coverages recognized in the simulation. The estimated impact of premium deficiency/DPAC write-down was included in the simulated results. This scenario is reasonable.

4. **Interest Rate Decline Scenario**

This year's base forecast incorporates increasing interest rates. This scenario assumes a sustained decline in interest rates by modeling historical changes in interest rates over 1,2,3 and 4 years. A floor is applied to ensure interest rates do not fall below historical minimums. The reduction of interest rates increases claim reserves estimates through a reduction in discount rate and an increase in discounted claim reserves. This scenario is reasonable.

The methodology and assumptions employed by the Chief Actuary are appropriate.

Description Of Assumptions And Methodology

The DCAT Report accurately describes the assumptions and methodology employed by the Chief Actuary.

DCAT Model

The DCAT Report relies on a model to do the required DCAT investigation. The model is very detailed. The scope of my work excludes a detailed validation of the financial model. However, I did some testing of the model and believe the model is producing reasonable results.

Adequacy Of Procedures, Systems And The Work Of Others Relied On By The Chief Actuary

I have detected no material issues to be reported on.

Conclusion

The report is prepared in accordance with accepted actuarial standards of practice in Canada, as established by the ASB.