

MPI 2013 General Rate Application

Excerpts from the record

October 2, 2012



Public Interest Law Centre
of Legal Aid Manitoba
3rd floor – 287 Broadway
Winnipeg, MB R3C 0R9

August 3, 2012

CAC (MPI) 1-56 Attachment

Ins Year	Actual	Original Projected	Revised Forecast	Statistical Measures: Original Projected					Statistical Measures: Revised Forecast				
				Square Prediction Error (\$Bil)	Absolute Percentage Prediction Error	Percentage Prediction Error	Prediction Error (\$000)	Prediction Variance (\$Bil)	Square Prediction Error (\$Bil)	Absolute Percentage Prediction Error	Percentage Prediction Error	Prediction Error (\$000)	Prediction Variance (\$Bil)
2001/02	433,873	388,495	433,214	2059.163	11.680	11.680	45,378	24759.909	0.434	0.152	0.152	659	11968.062
2002/03	467,715	440,836	446,043	772.481	6.097	6.097	26,879	11027.482	469.676	4.859	4.859	21,672	9325.695
2003/04	513,548	468,320	494,107	2045.572	9.657	9.657	45,228	6010.563	377,952	3.935	3.935	19,441	2352.797
2004/05	457,222	513,305	513,305	3145.303	10.926	-10.926	-56,083	1059.035	3145.303	10.926	-10.926	-56,083	858.938
2005/06	520,962	539,534	531,397	344.919	3.442	-3.442	-18,572	39.864	108.889	1.964	-1.964	-10,435	125.790
2006/07	534,860	555,985	557,462	446.266	3.800	-3.800	-21,125	102.762	510.850	4.054	-4.054	-22,602	220.504
2007/08	525,287	582,419	589,463	3264.065	9.809	-9.809	-57,132	1337.451	4118.559	10.887	-10.887	-64,176	2194.957
2008/09	519,541	615,877	603,431	9280.625	15.642	-15.642	-96,336	4904.086	7037.532	13.902	-13.902	-83,890	3698.873
2009/10	515,787	624,873	595,705	11889.755	17.457	-17.457	-109,086	6244.979	6386.887	13.416	-13.416	-79,918	2818.799
2010/11	333,071	627,293	619,176	86566.585	46.903	-46.903	-294,222	6633.318	81856.071	46.207	-46.207	-286,105	5861.949
2011/12	612,037	647,389	585,436	1249.764	5.461	-5.461	-35,352	10310.612	707.613	4.544	4.544	26,601	1853.840
Average	493,991	545,848	542,613	Root Mean Square Error (RMSE, \$000)	Mean Absolute Percentage Error (MAPE)	Mean Percentage Error (MPE)	Bias Frequency Ratio (BFR)	Standard Deviation (SD, \$000)	Root Mean Square Error (RMSE, \$000)	Mean Absolute Percentage Error (MAPE)	Mean Percentage Error (MPE)	Bias Frequency Ratio (BFR)	Standard Deviation (SD, \$000)
Standard Deviation (SD)	67,672	81,145	61,245	104,892	12.807	-7.819	0.375	81,145	97,570	10.441	-7.988	0.571	61,245

Bias frequency ratio (BFR) is calculated using the number of years with positive projection errors divided by the number of years with negative projection errors.

1 Would that be fair?

2 MR. JIM CHRISTIE: In terms of the formal
3 letter? Yes, because typically that dialogue would have
4 taken place long before that, first of all, to resolve
5 differences in -- in knowledge. And, secondly, if we
6 continue to have a difference this is going to create --
7 ~~at least in my firm is going to create an issue around~~
8 the audit, and so we have to resolve that difference
9 before I send my letter to the audit partner.

10 I mean, it's possible it not -- might not
11 get resolved, but this is not a position anybody wants to
12 be in.

13 MR. BYRON WILLIAMS: And writing that the
14 estimates or the selected claims liabilities with respect
15 to a certain line of business are above the range of
16 reasonableness -- putting that in writing is not
17 something that you or any other actuary would do lightly,
18 fair enough?

19 MR. JIM CHRISTIE: Be careful. We often
20 have a disagreement about a line of business being
21 materially different or un -- unreason -- like not within
22 our range of reasonableness. We are opining in the audit
23 firm on the overall num -- single number on the balance
24 sheet, not on individual line of business.

25 And so if there are two (2) offsetting

1 errors the aggregate amount might very well be reasonable
 2 even though two (2) -- two (2) lines of business within
 3 fifteen (15) or sixteen (16) individually were not within
 4 our range or reasonableness. But we are opining on the
 5 number on the balance sheet, not on how the number on the
 6 balance sheet was calculated.

7 MR. BYRON WILLIAMS: And I appreciate
 8 that distinction. That's helpful. Let's back up then
 9 just for a second, sir. In terms of moving away from the
 10 balance sheet --

11 MR. JIM CHRISTIE: Yes?

12 MR. BYRON WILLIAMS: -- to whether the
 13 suggestion that an es -- a certain line -- estimate of
 14 liabilities was above our range -- or above a range of
 15 reasonableness or beyond a range of reasonableness, is it
 16 your evidence that that is a fairly common occurrence?

17 MR. JIM CHRISTIE: An individual line?
 18 Yes. And, in fact, it is our practice in our -- in Ernst
 19 & Young that if the individual differences offset each
 20 other we're not going to make this a per -- an issue in
 21 the audit because the audit is opining only on the
 22 aggregate number, not on the individual component parts.

23 If there are separate reports issued for
 24 auto physical damage and auto liability and there are
 25 audit opinions on the separate reports we would worry

1 about that. But when you're only opining on universal
2 comprehensive insurance, the only issue is is the number
3 on the balance sheet reasonable.

4 MR. BYRON WILLIAMS: And in terms of the
5 type of letter that one might write to an auditor if you
6 were per -- performing that peer review task, would it be
7 incumbent upon you to identify differences in terms of
8 selected claims liabilities beyond a range of
9 reasonableness, sir?

10 MR. JIM CHRISTIE: That's a issue for
11 individual accounting firms or audit firms to determine.
12 My personal practice in writing to the audit partner
13 would be to -- to describe the differences by line,
14 indicate verbally or in text what the differences were,
15 explain why the -- why -- why it seemed to have caused
16 the difference or speculate what caused the difference.
17 Wouldn't always know because we might not have talked to
18 the other actuary.

19 And then -- but heading off the thing and
20 -- and the conclusion would be the results are reasonable
21 or the results are not. And even when the results are
22 unreasonable, if I could use that word, typically there
23 would be a lot of dialogue before that letter was
24 actually written.

25 In the most recent circumstances I can

1 recall where we've had unreasonable differences has been
 2 because there hasn't been support for a statement and we
 3 have, as the audit firm, demanded additional support,
 4 which was sometimes slow in coming. And they were
 5 holding over the company's head was we're going -- the
 6 actuary won't sign an -- that the results are
 7 unreasonable without evidence to support this assertion.

8 MR. BYRON WILLIAMS: And, sir, just -- I
 9 want to make sure I understand your -- your final point.
 10 You're pronouncing an opinion on the -- the balance
 11 sheets as -- as a whole?

12 MR. JIM CHRISTIE: Not the balance sheet
 13 as a whole, the unpaid claim liabilities which are a
 14 single item on the balance sheet.

15 MR. BYRON WILLIAMS: Yeah. And my
 16 question was imprecise, so I thank you for that. In
 17 terms of those claims liabilities, to the extent that
 18 there were two (2) estimates beyond a range of
 19 reasonableness, from your perspective, but they were
 20 offsetting, that would not -- you wouldn't feel necessary
 21 to opine upon that in a -- in a -- in a opinion letter.

22 MR. JIM CHRISTIE: Specifically not.
 23 Because the opinion is on the number on the balance
 24 sheet. To be extreme about it, if the company was using
 25 a Ouija board but they got an answer that was reasonable,

1 that's what our opinion would be, it was reasonable.
 2 That's not what we're -- typically is done, but the
 3 opinion is on the reasonableness of the final result, not
 4 on the reasonableness of the approach to get there.

5 MR. BYRON WILLIAMS: And -- and I would
 6 assume that the Ouija board methodology is relatively
 7 rare, sir?

8 MR. JIM CHRISTIE: I've never seen it in
 9 practice.

10 MR. BYRON WILLIAMS: That's reassuring.
 11 In terms of -- I don't think you need to turn there, sir,
 12 but if -- if you -- if you wish to, in terms of your
 13 February, 2011, report, the appointed actuary's report is
 14 at October 31st, 2010, which is AI --

15 MR. JIM CHRISTIE: Yes, I have it.

16 MR. BYRON WILLIAMS: You have it? Your
 17 AI-13(a). Page -- it's specifically at page 12 of your -
 18 - your evidence, or your -- your report. I want to
 19 direct your attention to the -- the top paragraph, sir.
 20 So that's AI-13(a), page 12 of your actuary's report.

21 MR. JIM CHRISTIE: I have it in front of
 22 me.

23 MR. BYRON WILLIAMS: And we'll just --
 24 and we'll just give people a -- a moment to turn there,
 25 Mr. Christie.

1.3 Inflation

Manitoba's inflation, as measured by year-over-year change in the Consumer Price Index (CPI), was 3.0% percent in 2011, the fifth lowest among the provinces. Manitoba's CPI was similar to Canada's 2011 CPI of 2.9%. Manitoba's 2011 CPI was higher than expected, which can be explained by two sectors - energy prices increased by 10.1%, and food prices increased by 3.6%. Manitoba's CPI excluding food and energy was 1.8%.

Consumer price inflation is one of the indexing factors used to adjust the Corporation's annual PIPP benefits. It is also an important cost feature in the determination of physical damage claims costs. For PIPP benefits, statutory indexation requires that current benefits must be indexed based on the previous calendar year's actual CPI. For the entire forecast period, Manitoba's CPI is forecasted to be 2.0%.

The Manitoba Consumer Price Inflation rate is forecasted at 2.0% for the entire forecast period.

1.4 Population and Eligible-to-Drive Population Growth in Manitoba

As of October 1, 2011, Manitoba's population was 1,254,658, which was an increase of 15,694 persons over the previous year. This increase was the second largest increase in the last 40 years. The Provincial Nominee Program has been a major factor in driving population growth in Manitoba. For the year ending October 2011, immigration into the province increased by 15,770 persons. 9,965 more people moved into the province than left, and the natural population increase was 5,729.

The province's population grew by 1.3% in 2011 (calendar year). Last year's estimate for population growth in 2010 was 0.9%, which was 0.4% lower than actual. Global Insight forecasts that Manitoba's population will increase by 1.2% in both 2012 and 2013.

Manitoba's source population (persons aged 15 or older) grew by 1.3% in 2011, which is a close proxy to the driving-age population (16 and older). Global Insight

SECTION 5: INVESTMENTS

5.1 Introduction

For fiscal 2011/12, the budget for Corporate investment income was \$89.6 million. Actual investment income was \$119.0 million, which was \$29.4 million higher than budgeted. Total fiscal year investment income was up from the previous fiscal year by \$18.2 million. During 2011/12, the S&P/TSX Total Return Index returned -8.1% while the Corporation's Canadian equity portfolio returned -7.2%. The Corporation's U.S. passive equity exposure to the Russell 1000 Value and Russell 2000 Value indices returned 3.1% in CAD. The Corporation's marketable bond portfolio returned 11.9% over the 2011/12 fiscal year. Over the same period, the DEX Universe total return bond index returned 10.0%, and the DEX Long Term total return bond index returned 18.9%.

The majority of investment income over the fiscal year came from the fixed income asset class (\$118.7 million). Real estate and infrastructure produced \$17.1 and \$1.1 million respectively in investment income. After year-end write-downs, Canadian and U.S. equities lost \$1.3 million in income.

As an insurance company, Manitoba Public Insurance holds a conservative portfolio. The asset allocation on a market value basis at the end of February 2012 consisted of 63.0% (71.5% as of February 2011) fixed income, 16.4% (16.5%) Canadian equity, 5.9% (5.4%) U.S. equity, 4.7% (2.0%) cash and money market instruments, 9.1% (4.2%) real estate, 0.5% (0%) infrastructure and 0.3% (0.3%) private equity.

5.2 Interest Rate Forecast

There are two key rates that are used by the Corporation's Budgeting and Planning Department to estimate future investment income for fixed income holdings. These rates are the forecasted yield on the 91 day Government of Canada Treasury bill, and the forecasted yield on the Government of Canada 10 year bond.

The following tables show the estimates of the economics departments of several major Canadian banks and Global Insight. The date of publication and type of forecast by forecasting firm is shown in the table below.

Forecasting Firm	Date of Publication	Type of Forecast
BMO NB	March 16, 2012	Average Period
CIBC	February 28, 2012	End of Period
RBC Economics	March 1, 2012	End of Period
Scotia Economics	March 6, 2012	End of Period
TD Bank	February 24, 2012	End of Period
Global Insight	March 15, 2012	Average Period

Interest Rate Forecasts for Government of Canada 10-Year Bonds

Calendar Year Quarter	Scoti	CIBC	RBC	TD	BMO-NB	Global	Average	Median
12:1	1.95%		2.00%	2.10%	2.01%	2.13%	2.04%	2.01%
12:2	1.95%	2.30%	2.10%	2.25%	2.01%	2.34%	2.16%	2.18%
12:3	1.95%	2.70%	2.20%	2.55%	2.12%	2.46%	2.33%	2.33%
12:4	2.05%	2.75%	2.40%	2.85%	2.29%	2.55%	2.48%	2.48%
13:1	2.15%	2.65%	2.45%	2.95%	2.52%	2.70%	2.57%	2.59%
13:2	2.35%	2.45%	2.60%	3.10%	2.77%	2.82%	2.68%	2.69%
13:3	2.60%	2.50%	2.80%	3.35%	3.02%	2.90%	2.86%	2.85%
13:4	2.95%		2.95%	3.40%	3.27%	2.94%	3.10%	2.95%

Interest Rate Forecasts for Canadian Treasury Bills

Calendar Year Quarter	Scoti	CIBC	RBC	TD	BMO-NB	Global	Average	Median
11:1	0.85%		0.90%	0.95%	0.89%	0.92%	0.90%	0.90%
11:2	0.85%	0.90%	0.95%	0.95%	0.92%	0.93%	0.92%	0.93%
11:3	0.85%	0.95%	1.05%	0.95%	0.92%	0.92%	0.94%	0.94%
11:4	0.95%	0.95%	1.30%	1.00%	0.92%	0.94%	1.01%	0.95%
12:1	1.05%	0.95%	1.60%	1.10%	0.92%	0.96%	1.10%	1.01%
12:2	1.10%	0.95%	1.80%	1.45%	0.92%	0.96%	1.20%	1.03%
12:3	1.25%	0.95%	2.05%	1.90%	0.92%	1.15%	1.37%	1.20%
12:4	1.55%		2.10%	2.05%	1.17%	1.29%	1.63%	1.55%

The Corporation selected the median interest rates shown in the above tables for calendar years 2012 and 2013. The median rate is a neutral rate, as half the forecasts are above and half are below this number. Also, use of the median gives all forecasts equal credence and does not favour any one forecaster. For forecasts

beyond the end of fiscal 2012/13, the long-term Global Insight interest rates were used. Based on this analysis, the following table shows the selected interest rates for the 2012/13 to 2016/17 Corporate fiscal years.

Canadian Interest Rate Forecast for Insurance Years 2012/13 to 2016/17

Fiscal Year/ Quarter	CDN 91 Day T- Bill Rate	GOO 10- year Bond Rate
2012/13:1	0.90%	2.01%
2012/13:2	0.93%	2.18%
2012/13:3	0.94%	2.33%
2012/13:4	0.95%	2.48%
2013/14:1	1.01%	2.59%
2013/14:2	1.03%	2.69%
2013/14:3	1.20%	2.85%
2013/14:4	1.55%	2.95%
2014/15:1	1.47%	2.98%
2014/15:2	1.77%	3.01%
2014/15:3	2.01%	3.05%
2014/15:4	2.52%	3.19%
2015/16:1	2.75%	3.43%
2015/16:2	3.00%	3.55%
2015/16:3	3.25%	3.78%
2015/16:4	3.50%	4.01%
2016/17:1	3.75%	4.28%
2016/17:2	4.00%	4.62%
2016/17:3	4.25%	4.94%
2016/17:4	4.50%	5.03%



CAC (MPI) 2-74**Reference: CAC (MPI) 1 – 173 (d)**

Preamble: The response to CAC (MPI) 1 – 173 (d) indicates that at February 29, 2012 the Unpaid Claims were valued at \$1,485 million and the fixed income portfolio was valued at \$1,532 million.

Please elaborate whether this mismatch of \$47 million is reasonable and not material as it relates to the financial condition and resources of the Corporation.

RESPONSE:

The difference in the value of the Corporation's assets and liabilities is only one factor in the Corporation's asset liability management strategy. The goal of the Corporation's asset liability management strategy is to reduce the volatility of the surplus (i.e. changes in the value of assets and liabilities) due to interest rate changes.

A 100 basis point decrease in the market yield on the Corporation's marketable bond portfolio would result in an increase in the present value of the bond portfolio of \$77.7 million and an increase in the present value the liabilities of \$58 million. Therefore, the Corporation's surplus would increase by approximately \$19.7 million. This difference represents 1.3% of unpaid claims which is reasonable and not material to the financial condition and resources of the Corporation.



PUB (MPI) 2-10**Reference:****PUB/MPI 1-17**

- a) Further to your response to 17(b), please provide supporting rationale and documentation beyond that provided in TI.18 Section 1.3 for the selection of the assumed inflation rate for indexed benefits used in the valuation.
- b) Please discuss the impact on fiscal year 2011/12 financial statements (balance sheet and income statement) arising from there being a difference between the indexation adjustment of 1.0080 applied at 1 March 2011 versus the assumed inflation rate of 2.0% in the valuation as at 28 February 2011, with respect to inflation-indexed lines of business.
- c) Further to your response to 17(e), AI.10A Page 48 indicates that the increase in investment return rate margin for adverse deviations is *"to account for observed higher inflation rate coupled with lower trending interest rates"*. Please expand on the rationale for why the coupling of these two changes (higher inflation rate, lower trending interest rates) justifies an increase in this margin. Does either of these two changes on its own justify a change in this margin?
- d) Further to your response to 17(f), considering the discount rate of interest selected for inflation-indexed lines of business is affected by the assumed future inflation rate (which does not affect the non-indexed lines of business), why isn't there a greater level of uncertainty (and therefore a greater margin for adverse deviations) associated with the selected discount rate of interest used for inflation-indexed lines of business?

RESPONSE:

- a) The Corporation has no other justification for the assumed inflation rate except that already provided in the response to PUB (MPI) 1-17(b).
- b) Refer to the table below which provides an approximation of the impact as of February 29, 2012.

Estimated Discounted Unpaid Claims for Indexed Benefits:	(\$'000)
• Accident Benefits – Weekly Indemnity (Exhibit 8, Sheet 5)	509,297
• Accident Benefits – Other Indexed (Exhibit 8, Sheet 6)	448,898
• PIPP Enhancement (PE Exhibit 2, Sheet 6)	80,487
• Section 138 Enhancement (Appendix J, Sheet 2)	28,424
• Total	1,067,106
Approximate Impact $[(1,067,106 / 1.008 * 1.020) - 1,067,106]$	12,703

The approximate impact of \$12,703,000 would have been recorded in the income statement as an increase in claims incurred for fiscal year 2011/12, therefore reducing net income for the year by a corresponding amount. On the balance sheet, the provision for unpaid claims would be increased by \$12,703,000, with a corresponding decrease in retained earnings.

- c) Per AI.10A, Page 48, the interest rate margin for adverse deviation (MFAD) is "to provide for possible adverse experience in yield rates, reinvestment, and/or asset defaults." In light of the economic environment at the time of the valuation, i.e. "higher inflation rate coupled with lower trending interest rate", it is the opinion of the Appointed Actuary that there is increased uncertainty in regards to the yield rates used in the valuation, in particular the real yield rates which affect the discounting of indexed benefits. Consequently, the Appointed Actuary opined that the interest rate MFAD should be increased by 25 basis points.

On its own, these two changes might or might not justify a change in the margin. Examples of when a change in the margin might be justified include significant decreases in the yield rates year over year, or significantly large fluctuations in the year-to-year inflation rates (which affects the real yield rates).

- d) The Corporation agrees that the use of different interest rate MFAD for different coverages is a possibility, and will consider such for future valuations. However, the impact of such a change is minimal. For example, if the interest rate MFAD for non-indexed coverages were left unchanged from that used in previous valuations (i.e. 100

basis points instead of 125 basis points), the unpaid claim liabilities will decrease by less than \$0.5 million.



485

1 something that perhaps isn't -- isn't within my control
2 is the PFAD provision, for example. I did not go to
3 our new appointed actuary and ask for an increase in
4 the provision for the interest rate margin. Our
5 appointed actuary, however, made a -- I thought, a
6 fairly compelling case for why that margin should be
7 increased, and he asked that we increase it. And I
8 thought that was reasonable. That was the 33 mill --
9 million dollar change, and that's from a 0.25 percent
10 change in the assumed interest rate.

11 So that's a very significant change for
12 something that sounds like not that big of an
13 assumption, but I can't guarantee that, for example,
14 the -- the appointed actuary may decide that they no
15 longer need that PFAD that -- that they added last
16 year. That would be a significant change that could
17 happen that -- that -- it would largely be out of my
18 control.

19 MS. CANDACE GRAMMOND: Thank you. Just
20 shifting gears a little bit but still with respect to
21 claims liabilities, Ms. McLaren, when we were here on
22 Tuesday you had made a statement relative to the fact
23 that PIPP has been in place, or no fault has been in
24 place since 1994, that it'll probably take another
25 thirty (30) years or so until a steady state is

1 quality of the assets that are backing the liabilities.
2 And MPI is generally backing the liabilities with
3 government bonds. There's some -- there's some
4 corporate bonds there but not -- not any significant
5 amount.

6 So the -- the risk of asset default is -
7 - is fairly low. So MPI would -- in MPI's case, that
8 would justify moving towards a lower margin. The --
9 another consideration is, of course, the -- the
10 variability of the -- the claim payment pattern.

11 And, as you've seen, there is -- there
12 is definitely some variability in the PIPP program,
13 especially in the early stages and the -- the unknown
14 stages where we have no -- no experience yet of how
15 claimants are going to -- how claims are going to close
16 in the tail period.

17 Finally, another -- another
18 consideration would be current economic conditions. If
19 -- if you are in the middle of a recession or a very
20 uncertain economic period, that may justify a higher
21 margin, the opposite for a fairly strong economy or
22 economic period.

23 So those are -- there's a whole list of
24 considerations that -- that are -- are used. In the
25 past, I've -- I've always found the selected -- our

1 selected margin, which was -- has been 1 percent up
2 until this time, to be in the middle of the minimum and
3 maximum provision. And I found that reasonable,
4 because we -- as I've stated, we have a very long,
5 risky cashflow stream from PIPP. However, we do have
6 fairly strong asset base supporting those liabilities,
7 with a fairly low risk of default.

8 If I could turn to -- let me just find
9 the reference, please.

10

11 (BRIEF PAUSE)

12

13 MR. LUKE JOHNSTON: Sorry, it's right
14 in front of me, actually. In the same Tab 17, page 48,
15 if you could turn there, please.

16 As I mentioned yesterday, we pre -- the
17 internal actuarial department prepares the valuation
18 internally first, and then the -- the initial results
19 are presented to our appointed actuary. And then we go
20 through various discussions on whether the assumptions
21 are appropriate, et cetera.

22 In regards to the interest rate
23 provision, our appointed actuary was concerned with the
24 -- the combination of significantly declining yield on
25 our fixed income portfolio, combined with higher

1 would be possibly a little bit larger but in the same
2 magnitude of the first quarter point.

3 So if you -- if you -- if it was a \$34
4 million impact for the -- for a quarter point, another
5 quarter point, I -- it won't be identical, but I would
6 assume probably in the 30, \$40 million range.

7 MS. CANDACE GRAMMOND: So you would
8 agree then that it would be a material change if it
9 would be roughly in the same order of magnitude as the
10 -- the change from a hundred to one twenty-five (125)?

11 MR. LUKE JOHNSTON: Absolutely the --
12 the -- a change in the interest provision is material.
13 Thirty-four (34) million dollars is -- is very
14 material. And we've -- we've noted in the report why
15 the appointed actuary felt that that change was
16 necessary.

17 If we come back in October, we review
18 the information again, it's possible that our appointed
19 actuary may decide that the provision that was added
20 last year is -- is no longer required. I'm not going
21 to say that that's what he's going to do. But, of
22 course, I know I'm going to expect our appointed
23 actuary to provide evidence for why the margin needs to
24 remain at 1.25 percent. And -- so that -- that's all -
25 - that's all I can really say.

1 I don't know -- I've talked earlier in -
2 - in -- in my remarks about why I thought 1 percent was
3 reasonable and I -- I do think it's reasonable for such
4 a long-tailed business as MPI's. But again it -- it is
5 -- it is judgmental, I -- I agree to that.

6
7 (BRIEF PAUSE)

8
9 MS. CANDACE GRAMMOND: Okay, Mr.
10 Johnston, based on your evidence we're satisfied with
11 respect to the undertaking that was requested, in terms
12 of the -- the sensitivity piece. So you don't need to
13 provide that detailed information. But we do
14 appreciate the evidence that you gave with respect to
15 considering a different approach and having that
16 discussion with the external actuary.

17 MR. LUKE JOHNSTON: Yes, and I thank
18 you for though -- those comments. We'll definitely
19 consider it at the October review.

20 MS. CANDACE GRAMMOND: Okay. Now with
21 respect to the indexed coverages, can you tell us the
22 authority for the assumed future inflation assumption
23 of 2 percent?

24
25 (BRIEF PAUSE)

Another significant change to this year's revenue forecast relates to Driver Premium. The 2011/12 year was the Corporation's first opportunity to observe the movement of drivers under the Driver Safety Rating (DSR) system. As discussed above, drivers recorded more infractions than expected in last year's forecast. There was also a large (3%) increase in the number of earned drivers in 2011/12. The increase in driver units is believed to be due to a combination of (i) new drivers, (ii) the tendency of drivers to keep their license active under DSR in order to receive merit points, and (iii) a reduction in late renewals due to the Streamlined Renewal process. The actual and projected increase in infractions and unit counts lead to an increase in the driver premium forecast of approximately \$9 million per year over the forecast period.

Turning to investment income, the Corporation has proposed a change to the methodology used to forecast equity returns. In last year's forecast, equity returns were forecasted at 6.1% per year based on the average yield of Government of Canada 10 year bonds plus an equity risk premium of 1.50%. As of February 29, 2012, this methodology produced an equity return forecast of only 4.8% per year. The Corporation believes that such a forecast is inappropriate given that the average annual return on the Toronto Stock Exchange (TSX) over any rolling 20-year (i.e. long term) period has never been below 5.2%. As a result, the Corporation has proposed adding a 'minimum equity return' of 6.1% per year to the current methodology. The proposed minimum is based on the 5th percentile of annual returns on the TSX over all rolling 20 year periods. An annual equity return assumption of 6.1%, instead of 4.8%, results in additional investment income of approximately \$6 million per year.

Moving now to rate making, as discussed in SM.1 and SM.4, the results of the claims, revenue and expense forecasts are used to create the pro forma financial statements. The pro formas indicate that an approximately 0.2% rate decrease is required in 2013/14 to produce break even net income over the rating period. The Corporation is applying for an overall rate change of 0% based on these results.



5.3 Expected Investment Income by Asset Class

5.3.1 Fixed Income

To estimate the investment income for the fixed income portfolio, the forecasted rates for the Canadian 10 year bond are used for the Corporation's marketable nominal bonds, and the forecasted interest rates on the 91 day Canadian Treasury bill are used for the Corporation's cash holdings. The yield on Manitoba issued municipal, school division and health facility (MUSH) bond holdings have a higher yield than the Government of Canada 10 year bond. Therefore, a spread was added to the Government of Canada 10 year bond to adjust for the higher expected yield on new MUSH purchases.

The historical spread between issued MUSH bonds and Government of Canada 10 year bonds is analyzed on an annual basis. For the five year period ending February 29, 2012, the average historical spread between these two bonds was 1.75%. As a result, a spread of 1.75% was added to the Canada 10 year bond in order to budget for the yield on new purchases of MUSH bonds.

5.3.2 Public Equities

For the last two rate applications, the expected return for public equities over the 5 year forecast period was calculated using the average long-term bond forecast for Canada and the U.S. plus an equity risk premium of 1.5%. Over the last two rate applications, the expected equity return for Canada and the U.S. was 6.1%. For this year's rate application, the calculated expected equity return was significantly lower at 4.8%.

To determine if a 4.8% expected equity return was reasonable, the Corporation analyzed the rolling 20 year returns of the S&P/TSX Composite Total Return Index (TRI) from 1956 to February 29, 2012. The table below shows that 95% of the time (or 19 times out of 20), Canadian equity returns were higher than 6.1%. The lowest 20 year annualized return since 1956 was 5.2%, which is higher than the 4.8% calculated rate.

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S&P/TSX Composite TRI from 1956 to Present

Percentile	20 Year Annualized
Minimum	5.2%
99%	5.5%
95%	6.1%
90%	6.9%
80%	7.6%
75%	7.8%
50%	8.6%
Maximum	12.5%

January 31, 1956 to February 28, 2012, monthly returns

Since a 4.8% expected equity return is lower than any annualized return observation over the last 20 years, and 6.1% was the expected equity return used in the last two GRAs, this year's five year forecasted equity return was budgeted to remain at 6.1%. The table below provides the annual expected equity return for each equity asset class to be used over the entire 5 year forecast.

Fiscal Year	Canadian Equities	U.S. Equities
2012/13 to 2016/17	6.10	6.10

5.3.3 Alternative Asset Classes

Investment income for real estate and Infrastructure are forecasted using the five year forecast for Canadian CPI plus an appropriate spread, which are as follows:

Asset Class	Proxy
Real Estate	Five Year Forecast of Canadian CPI +4%
Infrastructure	Five Year Forecast of Canadian CPI +5%

Canadian CPI is forecasted to be 2% over the entire five year forecast. The table below provides the investment income rate forecast for the alternative asset classes.

Decline in Equity Markets

Scenario Description

The Corporation's equity assets decline by 40% in 2013/14 and remain at that level for the entire forecast period. The losses are realized as follows: 67% in 2013/14 and 33% in 2014/15.

Ripple Effects

None identified.

Scenario Justification

A historical analysis was conducted of the cumulative four year returns on the TSX from 1919 to present. The 5th percentile event, or alternatively the observation that was worse than 95 percent of the observations, was -43.2%. We selected a 40% decline in equities for modeling purposes.

The realization of losses assumes that 33% of losses are recognized in 2013/14 due to the regular turnover rate of the equity portfolio and another 33% of losses are recognized in 2013/14 due to impairment write downs. The remaining 33% of losses are recognized in 2014/15.

Results – Assuming 0% Rate Decrease and No Rebate in 2013/14

Decline in Equity Markets Scenario (in millions)

	2012/13	2013/14	2014/15	2015/16	2016/17
Earned Revenues	\$779	\$793	\$833	\$874	\$916
Total Claims Costs	\$740	\$767	\$794	\$824	\$852
Expenses	\$124	\$120	\$126	\$130	\$135
Investment Income	\$80	(\$36)	\$19	\$73	\$74
Net Income	(\$5)	(\$130)	(\$68)	(\$7)	\$3
Retained Earnings	\$205	\$76	\$8	\$1	\$4

Decline in Equity Markets Scenario - Difference from Base Forecast (in millions)

	2012/13	2013/14	2014/15	2015/16	2016/17
Earned Revenues	\$0	\$0	\$0	\$0	\$0
Total Claims Costs	\$0	\$0	\$0	\$0	\$0
Expenses	\$0	\$0	\$0	\$0	\$0
Investment Income	\$0	(\$124)	(\$76)	(\$29)	(\$31)
Net Income	\$0	(\$124)	(\$76)	(\$29)	(\$31)
Retained Earnings	\$0	(\$124)	(\$200)	(\$229)	(\$260)
PUB RSR Range	\$77-\$153	\$81-\$162	\$85-\$170	\$89-\$178	\$93-\$187

From 1919 to the present (March 2012), the 95th percentile of the four-year returns for the S&P/TSX returns was -42.75%. That means that there was a 5% chance that the four-year returns of the index would be lower than that percentage.

The source of the data was Bloomberg. The S&P/TSX index is an index of equity prices for the largest companies listed in the Toronto Stock Exchange as measured by market capitalization.

e) The same model was used for the stochastic modeling of claims in the DCAT and TI.17.

Driver Safety Rating

DSR Level	Earned Driver Units				
	2011/12 Actual	2012/13	2013/14	2014/15	2015/16
15	183,270	184,917	184,987	185,454	222,782
14	5,842	11,522	11,887	52,136	67,003
13	6,308	12,942	57,791	74,352	38,316
12	5,010	61,801	80,341	39,242	38,014
11	63,872	91,881	43,929	42,001	39,288
10	130,569	49,216	46,425	42,707	30,762
9	46,607	42,764	37,635	24,910	32,784
8	46,914	39,513	25,870	34,289	33,337
7	42,626	27,172	36,449	34,444	26,360
6	26,734	36,964	33,521	26,087	30,297
5	38,261	31,863	26,032	31,507	30,393
4	26,487	23,892	30,925	29,565	27,847
3	24,131	33,727	32,093	31,139	34,856
2	35,108	33,138	33,484	37,715	36,290
1	34,760	36,720	41,255	39,223	39,523
0	49,325	59,826	56,260	57,958	61,357

RESPONSE:

- a) In general the Corporation's internal modeling has resulted in reductions to the impacts from the adverse scenarios compared to the results that were modeled externally.
- b) Confirmed. The Corporation will utilize historical information to the extent that it is available and relevant. Examples where historical data may not be relevant: (i) theft data that does not reflect the full extent of the auto theft initiatives, (ii) PIPP loss development experience prior to the changes in reserving guidelines made in 2005, (iii) hail experience from 10-20 years ago.
- c) See the table below. Note: The top three adverse events in the DCAT all had retained earnings impacts in excess of \$80 million. If an adverse scenario was assessed as having an impact below \$80 million at the 1 in 100 year probability level, it may not have been modeled.

Adverse Scenario	Basis for Estimating Risk	Indicated Probability 'M' = 'Millions'
Decline in Equity Markets	Historical Evidence / Judgment	1/20
Combined: Incurred/Equities	Historical Evidence / Judgment	1/100
High Loss Ratio	Historical Evidence / Judgment	1/100
Large Hail Storm	Historical Evidence, Stress Testing, Judgment	1/100
Policy Liabilities	Historical Evidence, Stress Testing, Judgment	1/100 year event assessed at < \$80M
Government Action	Judgment	1/100 year event assessed at < \$80M
Inflation	Historical Evidence, Stress Testing, Judgment	1/100 year event assessed at < \$80M
Reinsurance	Stress Testing, Judgment	1/100 year event assessed at < \$80M
Interest Rates	Historical Evidence, Stress Testing, Judgment	1/100 year event assessed at < \$80M
Alternate Assets	Stress Testing, Judgment	1/100 year event assessed at < \$80M
IFRS	Stress Testing, Judgment	1/100 year event assessed at < \$80M

- d) As per page 9 of the Canadian Institute of Actuaries Educational Note on Dynamic Capital Adequacy Testing.

"An alternative approach for selecting adverse scenarios is stress testing. This involves, first, determining how far the risk factor(s) in question has to be changed in order to drive the insurer's surplus negative during the forecast period, and then evaluating whether that degree of change is plausible. Likewise, the actuary may adjust the level of the risk factor to get a scenario result that is in the 95th to 99th percentile range. Depending on the insurer's circumstances, the Board or Chief Agent and management may also be interested in scenarios that cross other break points, in which case further stress testing may be beneficial."

CAC (MPI) 1-3

Reference: Volume 1, Matters Arising from PUB Hearings and Correspondence – SM.5, p. 13

Subject: DCAT methodology and the RSR

Preamble: The Report states that: "The DCAT report was brought in-house several years ago in order to improve the transparency of the models, which in previous reports were proprietary, and to create more realistic modeling assumptions. (For example, the 2008 DCAT report recommended a minimum RSR of over \$300 million.) The models and assumptions used in the internal DCAT report are clearly defined and are supported by historical evidence, where available. If sufficient evidence is not available, this information is clearly stated in the report. A stochastic model is only as good as the assumptions used to create it."

- a) Please indicate whether "more realistic modeling assumptions" account for a lower recommended RSR in 2012 (\$190M vs. \$300M in 2008).
- b) Please indicate whether it is now the policy recommendation of MPI that adverse scenarios for the DCAT should be "clearly defined and ... supported by historical evidence, where available" and, when historical evidence is not available, that "this information should be clearly stated in the report" used to assess the level of the RSR.
- c) Please indicate whether historical evidence, where available, is to be used to predict the probability of occurrence of the adverse event and to attach that probability to the outcome derived from the DCAT scenario.
- d) Please indicate what process will be used to attach a probability of occurrence to the adverse event when historical evidence is not available.

CAC (MPI) 2-28**Reference:****Rate Stabilization Reserve
Part 1 – AI.11 (Amended)**

Preamble: On page 7 it states that a 'con' relating to the Operational and Investment Risk Analysis methodology in setting the RSR target is that "Using Value-at-Risk may not be appropriate for a time horizon of 2.5 years".

Please prepare and file an updated Operational and Investment Risk Analysis report using a time horizon of 1 year and indicate the required RSR target based on this analysis.

RESPONSE:

As per AI.11.I, the Corporation recommends that the Board discontinue monitoring the results obtained through the Risk Analysis/VaR calculations, based on the shortcomings identified in AI.11.

As per AI.11 RSR Part 4 – Risk Analysis, Appendix B, pages 6 and 8 the one-year Value-at-Risk (VaR) is \$159.46 million at 95% confidence and \$228.63 million at 97.5% confidence. The Corporation has attached an updated Appendix C based on the revised VaR figures. The required RSR based on the revised analysis is \$170 million to \$232 million.



One Year VaR Calculation Appendix C - Combined Operational and Investment Risk

Exhibit I

(Dollars in Thousands)

Including Operating Expenses

95.0% Confidence, 1.0 Year VaR with 25% Equities

(1)	Operational Risk at 95.0% Confidence:	122,400
(2)	Operational Standard Deviation:	74,414
(3)	2.5 Year VaR at 95.0% Confidence:	159,457
(4)	Investment Standard Deviation:	96,943
(5)	Observed Correlation:	-0.295
(6)	Combined Standard Deviation	103,340
(7)	Combined Risk at 95.0% Confidence	169,979

97.5% Confidence, 1.0 Year VaR with 25% Equities

	Operational Risk at 97.5% Confidence:	145,849
	Operational Standard Deviation:	74,414
	2.5 Year VaR at 97.5% Confidence:	228,628
	Investment Standard Deviation:	116,649
	Observed Correlation:	-0.295
	Combined Standard Deviation	118,419
	Combined Risk at 97.5% Confidence	232,097

Excluding Operating Expenses

95.0% Confidence, 1.0 Year VaR with 25% Equities

(8)	Operational Risk at 95.0% Confidence:	123,302
(9)	Operational Standard Deviation:	74,962
(10)	2.5 Year VaR at 95.0% Confidence:	159,457
(11)	Investment Standard Deviation:	96,943
(12)	Observed Correlation:	-0.295
(13)	Combined Standard Deviation	103,584
(14)	Combined Risk at 95.0% Confidence	170,381

97.5% Confidence, 1.0 Year VaR with 25% Equities

	Operational Risk at 97.5% Confidence:	146,923
	Operational Standard Deviation:	74,962
	2.5 Year VaR at 97.5% Confidence:	228,628
	Investment Standard Deviation:	116,649
	Observed Correlation:	-0.295
	Combined Standard Deviation	118,605
	Combined Risk at 97.5% Confidence	232,462

z - Statistic at 95.0% = 1.645

z - Statistic at 97.5% = 1.960

Notes:

- (1) Appendix A, Exhibit 4
- (2) = (1) / [z-Statistic]
- (3) Appendix B, Exhibit C
- (4) = (3) / [z-Statistic]
- (5) Calculated by MPI
- (6) = $\text{Stddev}(\text{Operational})^2 + \text{Stddev}(\text{Investments})^2 + 2 * \text{Correlation}(\text{Operational, Investments}) * \text{Stddev}(\text{Operational}) * \text{Stddev}(\text{Investments})$
- (7) = (5) * [z-Statistic]
- (8) to (14) Same as (1) to (7)

Manitoba Public Insurance
 Automobile Insurance Division
 Summary of Policy Claim Liabilities
 As of October 31, 2011
 Basic
 (\$000)

A. Claim Liabilities

	Direct & Agency	Ceded	Net	MPI Carried Before Review
1. Incurred But Not Reported Claims & External Adjustment Expenses [a]				
Bodily Injury	7,147	-	7,147	
Property Damage	3,899	-	3,899	
Collision	6,208	-	6,208	
Comprehensive	3,291	(1,160)	4,451	
Accident Benefits - Weekly Indemnity	70,437	-	70,437	
Accident Benefits - Other (Indexed)	39,500	-	39,500	
Accident Benefits - Other (Non-Indexed)	9,363	-	9,363	
Total	139,844	(1,160)	141,004	
Ultimate Gross Internal Adjustment Expense Provision [b]	117,687	-	117,687	
Total Including Internal Adjustment Expenses	257,531	(1,160)	258,691	
2. CIA Rules Adjustments [c]				
i. Discount Amount - Excl. Internal Adjustment Expense	(166,962)	(24)	(166,937)	
ii. Discount Amount - Internal Adjustment Expense	(18,964)	-	(18,964)	
iii. Provision for Adverse Deviation - Excl. Internal Adjustment Expense	242,709	3,759	238,950	
iv. Provision for Adverse Deviation - Internal Adjustment Expense	27,568	-	27,568	
	84,351	3,734	80,617	
3. Adjusted IBNR & External Adjustment Expense (1+2i+2iii)	215,592	2,574	213,017	255,922
4. Adjusted Gross Internal Adjustment Expense (1+2ii+2iv)	126,290	-	126,290	120,285
5. Adjusted IBNR - PIPP Enhancement [d]	41,121	-	41,121	51,626
6. Adjusted IBNR - Section 138 Enhancement [e]	27,463	-	27,463	23,139
7. Total Actuarial Liabilities (3+4+5+6)	410,466	2,574	407,892	450,972
8. Case Reserve Outstanding				
Hail Catastrophe	3,529	3,529	-	
PIPP Enhancement [f]	36,770	-	36,770	
Other than Hail & PIPP Enh	893,648	36,322	857,326	
Intercompany Recovery [h]	-	(3,752)	3,752	
Total [g]	933,947	36,099	897,848	897,849
9. Total - Claim Liabilities (6+7)	1,344,413	38,673	1,305,740	1,348,821

Notes:

- [a] From Exhibit 2, Column 6
- [b] From Exhibit 5, Row 12
- [c] From Exhibit 7, Sheet 1 for "Direct and Agency" and Sheet 11 for "Net"
- [d] PE Exhibit 2, Sheet 6, Column 12
- [e] Appendix J, Sheet 1
- [f] PE Exhibit 1, Sheet 6, Column 4
- [g] From MPI - Difference from Actuarial Database (Exh 2, Sheet 10 + PE Exh 1, Sheet 6):
- [h] From MPI

Manitoba Public Insurance
 Summary of Direct & Agency Ultimate IBNR Estimates
 (Including External Adjustment Expenses)
 As of October 31, 2011
 (\$000)

Exhibit 4
 Sheet 6

Insurance Year Ending 28-Feb (1)	Incurred Dev Method [a] (2)	Incurred Born/Ferg Method [a] (3)	Paid Dev Method [a] (4)	Paid Born/Ferg Method [a] (5)	Selected Ultimate IBNR (6)
Accident Benefits - Other (Indexed)					
94 & Prior					
1995	2,334	2,334	757	1,167	2,334
1996	2,835	2,835	(4,221)	(2,299)	2,835
1997	2,089	2,089	4,583	3,873	2,089
1998	2,195	2,195	3,036	2,786	2,195
1999	2,098	2,098	5,780	4,640	2,098
2000	1,676	1,676	6,208	4,749	1,676
2001	1,262	1,268	5,478	4,133	1,268
2002	1,473	1,476	4,146	3,243	1,476
2003	1,301	1,268	(1,764)	(1,019)	1,268
2004	1,397	1,409	5,200	3,905	1,409
2005	1,447	1,419	(3,566)	(1,912)	1,419
2006	1,700	1,791	563	1,922	1,791
2007	2,743	2,341	(5,973)	(5,520)	2,341
2008	2,624	2,600	(45)	1,019	2,600
2009	2,532	2,866	4,433	5,839	2,866
2010	2,607	3,087	3,730	5,806	5,806
2011	(275)	519	6,353	5,595	5,595
2012	(1,012)	(1,566)	350	(2,411)	(1,566)
Total	31,026	31,705	35,049	35,516	39,500

Notes: [a] Appendix F; Columns 2 & 3 reduced by the reserves for Expenses per Appendix F, Page 7 & Excess per Appendix F, Page 8
 [b] 2010-2012: Maximum(Column 3, Column 5); Others: Column 3