

Undertaking # 24

MPI to provide the model of the impact on investment returns and net income based on a perfect match scenario.

RESPONSE:

The April GRA Interest Rate Scenario, and the September Adjusted Standard Interest rate forecast¹ (PUB Pre-Ask 2 (b) were run assuming that the corporate claims and fixed income duration were matched by the end of Q4 2013/14 and for the remaining four years of the forecast. Please see the attachment for a summary of the scenarios.

Change in Assumptions relative to Base Forecast

- For 2013/14, actual YTD Q2 results were integrated within the model, combined with the remaining 6 month forecast, thus producing a reforecast for 2013/14.
- The Corporation's fixed income assets are assumed to be duration matched to corporate claims liabilities from Q4 2013/14 to Q4 2017/18. Basic claims liabilities have a longer duration than Corporate claims liabilities. Therefore, there will continue to be some minor asset and liability mismatch in Basic even with perfect corporate duration matching.
- To increase the marketable bond duration, cash was reduced to 1.0% (\$23 million) in Q4 2013/14, with the assumption that higher duration bonds would be purchased.
- Marketable bond term increased to between 12.9 years and 13.7 years from 9.9 years, in order to increase the fixed income duration to match the corporate claims duration by Q4 2013/14.
- The marketable bond yield spread over the Government of Canada 10 year bond rate was increased from 75 bps (base) as a result of the higher term/duration.
- The table below provides a summary of the investment assumptions changed in the scenarios.

¹ Pre-Ask 2 (b) which used the September 2013 forecast, where all forecasts were adjusted to average of period, and the highest forecast was removed.

Duration Matching Assumptions

	Base	April GRA With Duration Matching	September Adjusted Standard with Duration Matching
Interest Rates Scenario	April GRA Forecast	April GRA Forecast	September Adjusted Standard
Marketable Bond			
Duration	8.35 Years	10.76 Years	10.21 Years
MUSH Duration	6.39 Years	6.39 Years	6.39 Years
Cash Duration	0.01 Years	0.01 Years	0.01 Years
Total Portfolio Duration	7.15 Years	8.94 Years	8.58 Years
Claims Duration	8.95 Years	8.94 Years	8.58 Years
Duration Spread	-1.80 Years	0 Years	0 Years
Required Term	9.9 Years	13.7 years	12.9 Years
GoC 10 Spread	75 bps	96 bps	87 bps
Cash	\$86 million	\$23 million	\$23 million

The table below shows the interest rates used in the April GRA and the September Adjusted Standard interest rate forecasts.

Date	April GRA Forecast		
	(Base and with Duration Matching)	September Adjusted Standard Forecast	Difference
Q1 2013/14	1.87%	1.87%	0.00%
Q2 2013/14	1.90%	2.50%	0.61%
Q3 2013/14	1.92%	2.52%	0.60%
Q4 2013/14	2.00%	2.70%	0.70%
Q1 2014/15	2.08%	2.80%	0.73%
Q2 2014/15	2.15%	2.89%	0.74%
Q3 2014/15	2.22%	3.05%	0.83%
Q4 2014/15	2.32%	3.18%	0.85%
Q1 2015/16	2.43%	3.08%	0.66%
Q2 2015/16	2.52%	3.19%	0.67%
Q3 2015/16	2.62%	3.28%	0.66%
Q4 2015/16	2.67%	3.44%	0.77%
Q1 2016/17	2.74%	3.63%	0.89%
Q2 2016/17	2.93%	3.76%	0.83%
Q3 2016/17	3.06%	3.90%	0.84%
Q4 2016/17	3.21%	4.05%	0.84%
Q1 2017/18	3.39%	4.29%	0.90%
Q2 2017/18	3.53%	4.49%	0.96%
Q3 2017/18	3.68%	4.62%	0.94%
Q4 2017/18	3.86%	4.62%	0.76%

Conclusions

- As indicated, moving to duration matching in an increasing interest rate environment reduces forecasted income. Over the entire four year projection 2014/15 to 2017/18 net income is reduced by \$30.4 million under the GRA interest rate forecast and \$41.0 million under the September adjusted interest rate forecast.

- This reduction in net income reduces retained earnings relative to the unmatched duration scenarios which to varying degrees based on the interest rate scenario used delays reaching the RSR target.
- Duration matching reduces net income in the rating years by more than \$8 million (April GRA - \$8.6 million, September Adjusted - \$11.4 million). This would indicate based on the April forecast duration matched 0.5% additional increase or 2.3%. Based on the September adjusted interest rate forecast, duration matching essentially eliminates any reduction to the 1.8% rate increase that the higher interest rate forecast would otherwise have indicated.
- Unequivocally, with or without duration matching a 1.8% premium rate increase is required.

October 10, 2013

Undertaking #24 Attachment

Interest Rate Scenario Summary

All Scenarios Assume 1.8% Premium Rate Increase

Name	Descriptive	Rate impact	2013/14P	2014/15P	2015/16P	2016/17P	2017/2018P	Average Over Rating Years
Base - GRA Interest Rate Apr 2013	With 1.8% Prem. Rate Increase	Basic Net Income	5,472	(7,494)	2,178	20,500	24,240	(2,658)
		Retained Earnings	146,941	139,448	141,626	162,126	186,366	

April GRA Interest Rate Forecasts

			2013/14P	2014/15P	2015/16P	2016/17P	2017/2018P	
GRA Interest Rate with FQ2 Actuals	April 2013 Rates	Basic Net Income	(3,325)	(7,494)	2,178	20,500	24,240	(2,658)
	FQ2 Actuals in Forecast	Retained Earnings	138,144	130,650	132,828	153,328	177,568	
GRA Interest Rate with FQ2 Actuals With Duration Matching	April 2013 Rates	Basic Net Income	(4,708)	(11,185)	(2,750)	12,367	10,535	(6,967)
	QUARTER 2 FORECAST	Retained Earnings	136,761	125,576	122,826	135,193	145,728	
	DIFFERENCE TO GRA Interest with FQ2	Basic Net Income	(1,383)	(3,691)	(4,928)	(8,133)	(13,705)	
		Retained Earnings	(1,383)	(5,074)	(10,002)	(18,135)	(31,840)	

September Adjusted Standard Interest Rate Forecasts

			2013/14P	2014/15P	2015/16P	2016/17P	2017/2018P	
Adjusted Std Rates with Q2 Actuals From PUB Pre-Ask 2(b)	Using Sept 2013 Rates	Basic Net Income	30,310	1,568	6,696	34,084	35,313	4,132
	FQ2 Actuals in Forecast	Retained Earnings	171,779	173,347	180,043	214,127	249,440	
	Average of Period/Highest Removed							
Adjusted Std Rates with Q2 Actuals with Duration Matching	Using Sept 2013 Rates	Basic Net Income	21,036	(1,425)	(1,728)	21,766	18,078	(1,577)
	FQ2 Actuals in Forecast	Retained Earnings	162,506	161,081	159,353	181,119	199,197	
	Average of Period/Highest Removed							
	DIFFERENCE TO Adjusted Std Rates with	Basic Net Income	(9,273)	(2,993)	(8,424)	(12,318)	(17,235)	
		Retained Earnings	(9,273)	(12,266)	(20,690)	(33,008)	(50,243)	