Determining the Manitoba Public Insurance Rate Stabilization Reserve

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Rate Stabilization Reserve: Purpose

- Most recent Board Order 151/13 and earlier Orders:
- "The stated purpose of the Rate Stabilization Reserve (RSR) is to ***protect motorists from rate increases made necessary by unexpected events and losses arising from nonrecurring events or factors***"
- How do we establish and maintain a RSR that will achieve this objective?

Determination of the RSR to Date

- Percentage of Premium (PoP or Kopstein)
  - RSR should be a ***range*** of 10-20% of annual premiums
  - Indexes RSR to business growth but does not connect RSR to risks facing MPI
  - Simple, transparent and stable method that has survived several proposed alternatives: RA/VaR (2000), MCT (2005), DCAT (2010)
- This Rate Application (2015)
  - PoP ***range*** would be [$83M, $166M]
  - MPI proposes a RSR ***target*** of $194M based on 2014 DCAT Report

Issues in Determination of the RSR

1) a target RSR as opposed to a range
2) the manner in which the DCAT scenarios are constructed
   - base scenario
   - less averse scenarios
     - equity decline
     - high-loss ratio
   - more averse scenarios
     - interest rate decline
     - combined scenarios

Issue 1: RSR Target or Range?

- current PoP approach establishes a range for the RSR of [$83M, $166M]
  - RSR should be allowed to fluctuate within its range without action (rebates or surcharges to return RSR to range)
- DCAT report recommends a “target” or “target minimum” of $194M
  - accompanying report recommends a RSR “upper level” of $325M based on a 100% minimum capital test

Issue 1: RSR Target or Range?

- 3 simple examples of RSR strategies
  1) RSR target of $200M with rates adjusted to achieve this target each year
  2) RSR target of zero with rates adjusted to offset any losses or rebate any gains each year
  3) RSR range of [$100M, $300M] with rates only adjusted to keep the RSR within this range
- Which of these RSR strategies achieves the most rate stabilization?

Issue 1: RSR Target or Range?

- The first two RSR strategies lead to the same response to losses or gains arise from nonrecurring events or factors, i.e. rebates when favourable events lead to retained earnings above the RSR target and rate increases or surcharges when unfavourable events lead to earnings below target
- no more rate stability from a $200M RSR than no RSR at all
- difference is MPI has the $200M rather than motorists

Issue 1: RSR Target or Range?

- The third strategy of a RSR range of [$100M, $300M] leads to rate stabilization
  - no rate increases or surcharges in the range [$100M, $200M]
  - no rate decreases or rebates in the range [$200M, $300M]
- Examples point to a related issue, the speed of adjustment to deviations from the RSR target
  - but only a question of degree, i.e. 1% surcharge for each of 4 years less destabilizing that 4% in the first year, but still destabilizing relative to a range where no surcharges occur

Issue 1: RSR Target or Range?

- Application to current circumstances
  - losses in 2013/14 from a 1-in-20 event associated with the high-loss scenario (CAC (MPI) 1-161 (c))
  - retained earnings at $100M
  - PoP RSR range is [$81M, 162M], suggesting no action is necessary
  - a target of, say, the range midpoint of $122M would imply a shortfall of $22M, motivating an RSR rebuilding premium

Issue 1: RSR Target or Range?

- If the DCAT should produce a range, why not use the target as a minimum and the MCT at 100% as a maximum?
  - inconsistent, lacking a direct link between the criterion for the minimum and maximum
  - arbitrary, since 100% MCT is unsubstantiated by evidence or clear argument
  - is there an appropriate percentage (or range of percentages) for a monopoly crown corporation that has neither competitive pressures nor the risk of insolvency?

Issue 2: DCAT Scenarios

- Base scenario: realistic assumptions to forecast financial position, consistent with insurer's business plan
  - earnings fall from $100M to $71M in 14/15, as the premium increase (0.9%) falls short of inflation forecasts (1.5-1.7%)
  - earnings rise to only $85M in 15/16 despite the proposed rate increase of 3.4%, well above inflation forecasts (2%), i.e. a real increase of 1.4%
  - 5-year moving average methodology (PUB (MPI) 3-10) boosts claims growth forecast from 0.16% to 1.81% in 14-15?

DCAT Base Scenario

Year	Rate Inc	Earnings
2014/15	0.9%	$71M
2015/16	3.4%	$85M
2016/17	1.0%	$98M
2017/18	1.0%	$141M
2018/19	1.0%	$154M

- Earnings recover with 6.4% proposed increase for 2015-19, despite forecast inflation of 8%
- Why is 1% of the proposed increase each year a “RSR rebuilding fee”?
- Why is the rate increase “front loaded” to 15/16 vs. a stable increase of 1.6% in each year, i.e. to match the stable inflation forecast of 2%?

Issue 2: DCAT Scenarios (Less Adverse)

- Less Adverse Scenarios:
  - equity decline scenario
  - high-loss ratio scenario
  - PUB (PoP) RSR range sufficient to withstand these adverse event scenarios at 1-in-40 probability
- Equity Decline Scenario
  - less adverse now because pre-1956 equity returns, esp. Great Depression of 1930s, eliminated
  - questions remain about this scenario

Equity Decline Scenario

- the 4-year horizon used in previous DCAT reports has been replaced by 1 and 2 years
- ignores "rebound" in 3rd and 4th years after a stock market reversal
  - smaller equity declines over 4 years
  - suggest recovery of as much as 9% in year 3 and 21% in year 4 (1-in-40 event) is ignored in scenario
  - using base scenario assumptions for 3rd and 4th years understates recovery from equity decline in years 1 and 2

High-Loss Ratio Scenario

- 1-in-20 claims loss event of $31M in 2013/14
- rich data base available to estimate the distribution of claims outcomes to identify adverse outcomes at specified risk tolerances
- data analysis limited to period since 2001 without clear justification
- shorter data period reduces the reliability of fitted claims distributions

Issue 2: DCAT Scenarios (More Adverse)

- More Adverse Scenarios:
  - interest rate decline scenario
  - combined scenario: joint impact of equity decline, high-loss ratio and interest rate decline
  - PUB (PoP) RSR range insufficient to withstand these adverse event scenarios at 1-in-40 probability
  - foundation for recommended RSR target of $194M in DCAT report

Interest Rate Decline Scenario

- interest rates have remained historically low since the last recession to stimulate economy
- lower bound on interest rates reflects holding cash as an alternative to lending, leading to monetary policy ineffectiveness (liquidity trap)
- consensus forecast of rising interest rates to 2018/19 part of baseline scenario
- what is the risk to MPI if rising interest rates do not materialize and interest rates fall?

Interest Rate Decline Scenario

- DCAT analyzes long-term bond yields from 1956 to April, 2014 over 1 to 4 year horizons
- finds interest rate declines of 2.3% (1 yr), 3.2% (2 yrs), 3.7% (3 yrs), 4.2% (4 yrs) (1-in-40 prob)
- based on forecast rate of 3.1% in 14/15 Q4, this implies ***negative*** interest rates in years 2-4
- apply lower bound of 1.7% based on lowest ***monthly*** GoC 10 yr ond yield since 1989
- interest rates can only fall 1.4% (3.1%-1.7%)
- scenarios imply that interest rates will fall to 1.7% in the first year and stay there until 2018/19

Interest Rate Decline Scenario

- A Big Problem: ***All*** the interest rate declines for the adverse scenarios occur during one period of high interest rates (11.5%) between 1976 and 1985 (the Great Stagflation)
- Much like the issue of equity declines taken from the Great Depression, how valid is it to base interest rate declines in today's low inflation and interest rate environment (3.6% since 2006) on a high-inflation-high-unemployment era with high interest rates?
- Monetary policy has improved to avoid past mistakes, incl. the Great Stagflation
  - inflation targeting (1-3% band)


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2013-05
Long bond rate (%)

Interest Rate Decline Scenario

- Suppose we remove high interest rate periods to look at interest rate declines for 1-in-40 probability (PUB/CAC 1-4)
- Declines much less severe

2.5% Rate by Return Period and Time Period				
Return pe	1 yr	2 yrs	3 yrs	4 yrs
56-14	-2.30%	-3.24%	-3.65%	-4.23%
ex 76-85	-1.50%	-2.40%	-2.26%	-2.44%
ex 66-95	-0.93%	-1.32%	-1.45%	-1.62%
Source: CansimII series v122487				

Interest Rate Decline Scenario

- analysis skewed by inclusion of data from Great Stagflation and other high interest rate periods
- also, why base the ***annual*** interest rate floor on a single ***monthly*** GoC 10 yr bond yield for a ***4-year*** adverse scenario time horizon?
  - v122543 (Selected GoC benchmark bond yields: 10 yrs)
  - monthly minimum since 1989 is 1.6% for July2012
  - annual minimum is 1.85% for 2012
  - 4-year minimum is 2.53% for 2010-2013

Combined Scenario

- joint impact of the equity decline, high-loss ratio and interest rate decline scenarios
- adverse financial impacts based on one thousand simulations for each return period
- The “interest rate floor methodology” was used as in the interest rate decline scenario
- level and pattern of retained earnings from 2015/16 to 2018/19 similar to the interest rate decline scenario

Combined Scenario

- recommended RSR for interest rate decline and combined scenarios differs by only $4M
- interest rate decline scenario most adverse of individual scenarios and main driver of the results for the combined scenario
- interest rate decline scenario and combined scenario rest their credibility on interest rate declines from the Great Stagflation 40 years ago that bear no relationship to low inflation, low interest rate situation today

Recommendations

1) Appropriate RSR should be a range, not a target
2) Stable rate increases of 1.6% over the next 4 years would provide more stability than proposed RSR rebuilding fees of 1% over 4 years and a front loaded rate increase of 2.4% in 2015/16
3) The interest rate decline and combined scenarios should be discounted, as they rely on evidence from the Great Stagflation that does not apply to the current situation

Recommendations

4) Kopstein (10-20 Percent of Premiums) method should continue to be used to establish the RSR target range
   - adequate for equity loss and high-loss ratio scenarios
   - interest rate decline and combined scenarios not credible
5) DCAT should continue to be used to assess risks
   - MPI should consider how DCAT can be used to establish an appropriate RSR range rather than target
   - 100% MCT not justified to establish a maximum for the RSR range for a monopoly crown corp