1) Role of the DCAT and 2) Interest Rate Forecasting in the 2019 GRA

Consumers' Association of Canada (Manitoba)

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The Role of the DCAT and Interest Rate Forecasting in the 2019 GRA

- two significant features in 2019 MPI GRA:
  1) renewed emphasis on attaching Minimum Capital Test (MCT) to the determination of the Rate Stabilization Reserve (RSR)
  2) continued application of a naïve approach to interest rate forecasting to establish a breakeven rate indication and conduct the Dynamic Capital Adequacy Testing (DCAT) to inform the RSR target range.

How Should the RSR be Set? A Chronology of Proposals

1) 1988 Autopac Review Commission (Kopstein Report)

- recommended retained surplus target of about 15% of premiums around the breakeven net income (percentage of premiums of POP approach)
- if surplus falls below 10% or exceeds 20% of premiums, MPI “should and would be expected to take remedial action” (recommendation 7.11)
- foundation for the Rate Stabilization Reserve (RSR) range of **10% to 20% of annual premiums** to protect motorists from rate increases associated with unexpected events and losses arising from non-recurring events or factors
- simple and transparent mechanism indexed to operational size but not directly linked to actual risks facing MPI, which could well be increasing or decreasing through time

How Should the RSR be Set? A Chronology of Proposals

2) 2000 Risk Analysis Approach (RAA), subsequently Operational and Investment Risk Analysis (RA/VaR)

- statistical analysis of the historical experience of the volatility of underwriting income to retrieve the 95% or 97.5% confidence intervals
- redirected risk analysis to a more scientific approach, specifying a risk tolerance level corresponding to the confidence level used in the RA/VaR statistical analysis of 97.5%
- 97.5% CI corresponds to an event with a 2.5% annual chance of occurring, or a **one-in-forty year event**, a standard endorsed by Board Order 150/07: 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”
- MPI introduced the RA/VaR but raised concerns that the series was too short and might not reflect current operations and risks

How Should the RSR be Set? A Chronology of Proposals

3) 2005 Minimum Capital Adequacy Test (MCT)

- MPI recommended RSR range of 50% to 100% MCT (2007 GRA)
- recognized by OSFI to assess the capital required for a **private** company in a **competitive** industry to forestall insolvency
- Concerns expressed that private insurers in competitive markets have different risk profiles and insolvency concerns than crown corporation monopolies
- MCT does not address the specific risks facing MPI
- Board Order 157/08: indicated a desire for "a consensus on a RSR target range that can be accepted by all parties."

How Should the RSR be Set? A Chronology of Proposals
4) 2010 Dynamic Capital Adequacy Test (DCAT)

- Initially commissioned to assess future financial condition of Basic but now to substantiate MPI's proposed RSR target
- Reservations about the choice of adverse scenarios
  - Plausible but improbable catastrophe scenarios not grounded in historical evidence vs.
  - Plausible scenarios based on evidence and established risk tolerance levels
- Henceforth "in house" and "closely integrated with risk identification process"
- Consensus built on a methodology that would be transparent and consistent with established risk tolerance preferences (1-in-40 year standard)
- Direct connection of specific and justifiable risks, posed as adverse events grounded in historical evidence, to future financial condition

How Should the RSR Range be Set?

- RSR range could be produced by setting low and high risk tolerance levels for the specified adverse scenarios e.g. [1/10,1/200] or [1/20,1/100]
- MPI proposed hybrid approach using DCAT to produce lower threshold and MCT of 100% to set upper threshold
- Order 162/16: "Board continues to favour the use of scenario testing adapted from the annual Basic DCAT investigation for the purposes of setting Basic target capital levels, expressed in terms of Basic total equity. . . For purposes of setting the upper threshold of the Basic target capital range, the Board withdraws its support for the use of the MCT and a MCT threshold ratio of 100%."

How Should the RSR be Set? What Does the MCT Offer?

- MCT assesses capital required for a **private** company in a **competitive** industry, not a monopoly crown insurer, to forestall insolvency
- Difficult to attach an meaning to specific MCT levels (50%? 100%? 34%% 85%] in terms of specific risks and associated tolerance levels, except as a product of the DCAT
- DCAT captures specific financial risks as they evolve according to evidence and established risk assessment practices, while the MCT approach cannot
- Adopting yet another approach to set the RSR range would invalidate the considerable time devoted this decade to a transparent and collaborative DCAT process for risk assessment to inform RSR range

How Should the RSR be Set? What is the Process Now?

<u>PUB (CAC) 1-2</u>

- **Preamble to IR (If Any):** ". . . POP and DCAT methodologies should continue to inform the setting of the RSR range."
- **Question:** Please explain why Dr. Simpson and Ms. Sherry believe the POP methodology is currently informing the setting of the RSR range.
- **Rationale for Question:** To understand the assertion that POP is currently used for setting the RSR range.
- **RESPONSE:** We are not aware of any PUB decision that explicitly asserts that the POP would no longer be used to set the RSR range with or without the use of other information, although we would acknowledge that recent emphasis and discussion has concentrated on the use of the DCAT to inform, if not set, the RSR range.

Recommendation #1

Current POP and DCAT methodologies, not MCT levels, should continue to inform the setting of the RSR range

- Lower RSR threshold in the 2019 DCAT is $120M, indicating declining risk which the MCT cannot detect or evaluate
  - Lower POP threshold is $108M based on net premiums written of $1.08B (PF.1, p.4, Statement of Operations)
- Upper threshold using PUB approved methodology is $251M
  - Upper POP threshold is $215M

2) Interest Rate Forecasting in the 2019 DCAT Report

- Collaborative DCAT has produced tangible results, including general agreement on appropriate adverse scenarios and their assessment
- Recent DCATs conducted in an unusual period of low interest rates
  - interest rate decline scenario necessarily lacks historical evidence and continues to be based on *ad hoc* assumptions, as discussed in previous GRAs
  - challenging period for interest rate forecasting to establish the DCAT base scenario and set the breakeven rate indication
    - **SIRF** has been too optimistic about economic recovery and rising interest rates since 2008
    - MPI advocates **naïve** interest rate forecast or constant GoC 10-year rate from February 28, 2018 (2.24%) until 2022 Q4
    - Order 130/17: **50/50** forecast to be used for rate setting and target capital

Interest Rate Forecasting (2019): Is the Naïve Forecast Now Superior?

- standard forecast error slightly smaller for naïve forecast (0.15) than 50-50 forecast (0.16) and SIRF (0.18)
- SIRF has clearly outperformed naïve forecast in 2017 and 2018 as economy recovers
  - Figure INV-11:

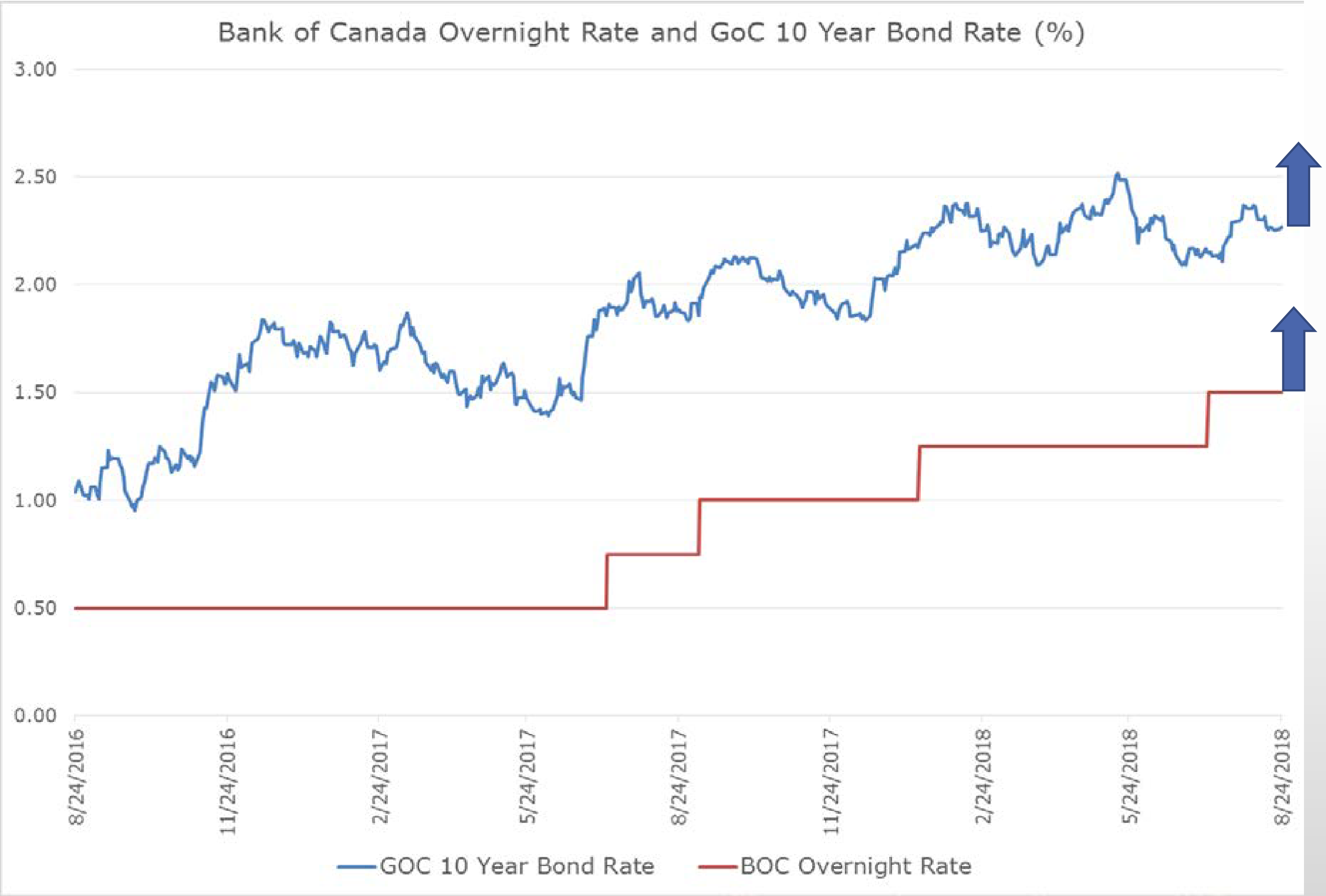
	SIRF	Actual	Diff	Naïve	Actual	Diff
2017 GRA	1.76%	1.64%	0.12%	1.19%	1.64%	-0.45%
2018 GRA	2.10%	2.24%	-0.14%	1.64%	2.24%	-0.60%

  - SIRF also pays attention to other economic signs of recovery and domestic monetary policy response by the Bank of Canada

What Monetary Policy Response and Why Consider It?

- "The Bank carries out monetary policy through changes in the target for the overnight rate of interest. These changes are transmitted to the economy through their influence on market interest rates . . ." (*Bank of Canada Monetary Policy Reports)*
- Bank of Canada has already raised the overnight lending rate three times this year (Jan17,Jul11,Oct22) following two increases last year (Jul12,Sep6); the policy rate as of Wed. stands at 1.75%
- "Recent data reinforce Governing Council's assessment that higher interest rates will be warranted to achieve the inflation target" (Bank of Canada Press Release, Sep 5, 2018); more increases on the way?
- CAC (MPI) 1-6: Bank of Canada's policy rate "not material" but GoC 10 year rate tracking upward movement of BoC policy rate closely, i.e. policy rate is "material" and naïve forecast will be biased downward

Fig 1: BOC Overnight Rate and GoC 10 Yr Bond Rate over the last 2 years (Source: PUB (MPI) 2-39



Does the interest rate forecast matter? Yes and No

- Yes (Figure INV-12): breakeven rate indication is 0.1% under naïve forecast but -0.5% under the 50/50 forecast and -1.0% under the SIRF
- No (CAC (MPI) 1-18): Total Equity is higher under 50/50 than naïve forecast, suggesting satisfactory financial condition for Basic (DCAT.1, p.4) will not be adversely affected by adoption of 50/50 or SIRF

Recommendations

1) **Current POP and DCAT methodologies, not MCT levels, should continue to inform the setting of the RSR range.**
2) **50/50 interest rate forecast should be used for the breakeven rate indication and the DCAT analysis**
   - naïve forecast inferior to 50/50 and SIRF forecasts recently
   - naïve forecast ignores recent monetary policy and economic events that indicate rising interest rates as forecast by the SIRF