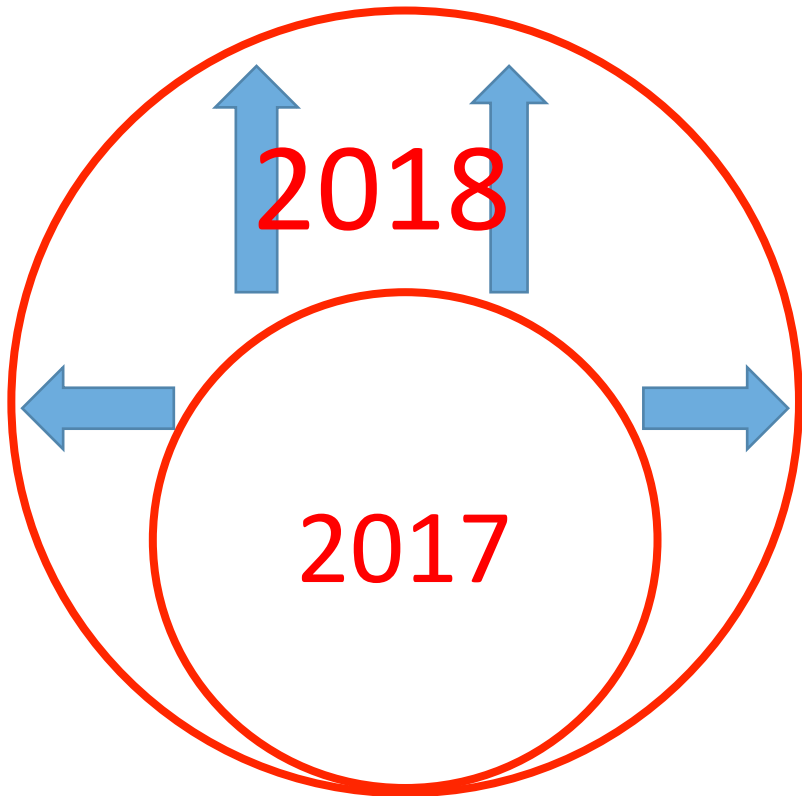


Does the RSR Need to be so **LARGE?**

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Why Would the RSR Range Go From [\$181M, \$404M] to [\$201M, \$438M]?



Thresholds increase [13.8%, 8.4%] over 2017 but
Inflation: 1.2% (rising to 2%?)
Rates: 2.7%? (requested)
What **risk factors** account for this?

The Purpose of the RSR

- PUB Order No. 162/16: “to protect motorists from rate increases that would otherwise have been necessary due to **unexpected** variances from forecasted results and due to events and losses arising from **non-recurring** events or factors.”
 - Protect motorists from rate shock due to “unexpected” and therefore “non-recurring” adverse events
 - Connects to the standard statistical concept of risk or uncertainty arising from a set of outcomes with assigned probabilities of occurrence, resulting in an expected outcome and a set of unexpected outcomes (favourable and unfavourable) with specified probabilities
 - Crucial foundation for risk assessment in the DCAT and determination of the RSR range

Using the DCAT to Determine the RSR

- Identify the risks of unexpected, non-recurring events
- Quantify their probabilities of occurrence from available historical data
- Achieve some degree of consensus among MPI, the PUB and stakeholders on methodological issues
 - technical conference (April 19) on using DCAT to establish RSR range
- Concerns with DCAT report and RSR thresholds:
 - 1) Use of the MCT to set the upper threshold
 - 2) Determination of the Base DCAT Scenario
 - 3) Formulation of the interest rate decline and combined scenarios

1) Use of the MCT to Set the Upper RSR Threshold

- MPI continues to argue for the 100% MCT criterion to set the upper threshold for the RSR
 - “standardized test used by the Property and Casualty Insurance industry and its regulators” (RSR 4.5.2.1, p.18) but MPI is a crown monopoly insurer
 - “risk-based approach that better reflects the riskiness of individual Property and Casual insurers (RSR 4.5.2.1, p.18)” but “better” than the DCAT?
- 100% MCT criterion rejected quite sensibly by the PUB last time:
 - “concerned that the degree of conservatism implied . . . may be excessive based on the Corporation’s scenario testing”

Use of the MCT to Set the Upper RSR Threshold

- Ernst & Young report for ICBC further supports this position
- “As a government-owned monopoly insurer of the Basic product, ICBC is not required to adhere to OSFI’s MCT guidelines. Reasons government-owned monopoly insurers would consider having lower capital target levels than would be required for private insurers include:
 - Capital surplus above target levels may be put to better use by the government for the broader benefit of the Province rather than being tied-up in investment assets of the insurer.
 - Whereas a sole private insurer would face bankruptcy in the event of insufficient capital, leaving policyholders and claimants at risk of not being fully indemnified for their losses, a government insurer is implicitly backed by the government, meaning this risk is minimal
 - Increased capital levels require higher premiums auto owners need to pay, and it can be argued that in light of the above two points there is no need to have higher premiums. . .

Consideration should also be given to whether the OSFI MCT ratio is the appropriate framework for setting capital for the Basic product.”

Use of the MCT to Set the Upper RSR Threshold: What is a Better Way?

- PUB Order#162/16,p.61: “*beyond what **percentile level** is it no longer reasonable and appropriate for the Corporation to hold funds against possible adverse circumstances, instead of rebating these excess funds back to the ratepayers.* The Board . . . directs that the next Application will include the appropriate scenarios in support of the proposed upper threshold for the Basic target capital range. This includes . . . **testing of at least 99th and 99.5th percentile outcomes**
- Sherry&Simpson(2016): illustrated how the DCAT could be used consistently to develop the appropriate RSR range
 - wide range: use percentile levels of risk tolerance of [1-in-10, 1-in-200]
 - Narrow range: use [1-in-20, 1-in-100] to span target of 1-in-40

Use of the MCT to Set the Upper RSR Threshold: What is a Better Way?

- CAC(MPI) 2-45:
 - wide range yields [\$152M, \$268M]
 - narrow range yields [\$185M, \$249M]
- quite reasonable results in comparison to the lower threshold of \$181M requested last time and the PUB order of \$159M
- But well below the MPI requests of \$438M based on the 100% MCT criterion!
- Argument for wider range could be satisfied by greater risk tolerance levels (e.g. 1-in-500?) but are these in the social interest?

2) Determination of the DCAT Base Scenario

- base scenario reflects “a realistic set of assumptions used to forecast the insurer’s financial position over the forecast period. Normally, the base scenario would be consistent with the insurer’s business plan.” (DCAT 4.3, 25)
- assumptions include: volume growth, vehicle upgrades, **inflation, interest rates** and investment returns, and changes in premium deficiency and write-down of deferred policy acquisition costs


2.1) Interest Rate Assumptions

- Reflects a revised methodology:
 - Standard Interest Rate Forecast (SIRF consensus forecast) of interest rates used for many years
 - “50-50” average of the SIRF and “naïve” (constant current) forecast last year because interest rates remained uncharacteristically low
 - Now strict reliance on the naïve forecast for 2018/19
 - Naive Government of Canada 10 year bond rate forecast is 1.64%, based on the rate as of February 28, 2017
- Collaborative process, including April technical conference reached no agreement on “50-50” or the naïve forecast going forward

2.1) Interest Rate Assumptions

- SIRF has continued to predict that interest rates would begin to rise and, hence, naïve forecast would be unrealistic
 - Bank of Canada announced increases in the overnight or policy interest rate to 0.75% on 7/12/2017 and 1% on 9/6/2017
 - followed immediately by interest rate increases at Canadian banks and in bond markets
 - GoC 10 year bond rate rose to 2.07% as of 9/14/2017 vs. 1.64% in the naïve forecast
- Good reason to believe now that interest rates will continue to rise as the BoC responds to growth and emerging inflationary pressures
 - GDP expanded 3.7% in first quarter and 4.5% in second quarter

2.1) Interest Rate Assumptions

- lower interest rates  lower total equity, all else the same
 - MPI argues that “forecasted interest rates did not materialize and resulted in \$163 million in premiums deficiencies” that presented “significant financial challenges” (OV.1.1, p.3)
- CAC(MPI)1-92(a): “If there is a change in interest rates that results in a material impact to the DCAT base scenario, the applied for rate indication, and indicated DCAT-based lower RSR target, then it would be appropriate for the Corporation to update the DCAT figure”
- Would even an up-to-date naïve forecast perform as well as the SIRF consensus of interest rate forecasting experts going forward as interest rates begin their upward climb?

2.2) Inflation Assumptions

- era of relatively stable inflation and inflationary expectations but no inflation factor built into rates
 - assumption of 2% in Base Scenario based on consensus forecast and consistent with longstanding BoC target and consumer/producer expectations
- CAC(MPI)1-89: why is it a “realistic assumption” to assume no rate increases in the Base Scenario beyond 2018/19?
 - MPI: “. . . If a 1% rate increase is assumed in 2019/20, then the indicated lower RSR target would fall from \$201 million to \$191 million”
 - implies 2% rate increase to reflect anticipated cost inflation would reduce the RSR lower threshold to about \$181M (MPI’s revised request in 2017 GRA)

DCAT Base Scenario: Implications of Interest Rate and Inflation Assumptions

- A combination of (1) rising interest rates and (2) premium rate increases in line with forecast inflation would produce significantly higher total equity for the Base Scenario in 2018/19 and beyond
- Higher total equity in the Base Scenario should significantly reduce the RSR lower and upper thresholds in the DCAT for the same level of risk tolerance

3) Determination of the Interest Rate and Combined Scenarios

- historically low interest rates have posed a forecasting challenge
- DCAT interest rate decline scenario has evolved to attempt to capture this risk but lacks basis in historical fact and probabilistic methodology and is “not credible . . . and its results should be heavily discounted” (Sherry&Simpson, 2015):
 - “produces virtually identical total equity results regardless of the specified risk. . . The probability level, which plays an important part in other scenarios and in the purported advantages of using the DCAT methodology, simply does not matter in the presence of the floor that is applied to interest rate declines”

Interest Rate/Combined Scenarios As Rates Rise

- interest rate decline/combined scenarios unchanged in DCAT
- CAC(MPI)1-92(b): “rising interest rates will improve the financial position of the Corporation as reflected in the base scenario and will affect the lower threshold calculation for the RSR”?
 - MPI: Not necessarily because the “lower RSR target would increase as interest rates rise. . . [I]nterest rate risk is capped by the assumption of an interest rate floor . . . If interest rates increased significantly, there would be increased risk of a decline in interest rates, creating the need for additional RSR.”
 - only makes sense when the interest rate decline scenario is driven by an *ad hoc* interest rate floor arbitrarily anchored to the lowest monthly GoC 10-year bond yield from 1989 to the present and that lacks any probabilistic assessment of adverse events

Combined Scenario Also Introduces Corporate Bond Default Risk

- A new risk outside the top 3 (equity decline, interest rate decline, high loss ratio)
- CAC(MPI)1-90: “allocation to corporate bonds is a material change in the risk profile of the Corporation’s asset portfolio . . . and therefore should be modeled in this scenario”
- Introduction of a 4th risk to the combined scenario has not even been discussed with stakeholders
- not clear how such investment risk should be independently introduced into the scenario

Recommendations (1)

- 1) The DCAT analysis, as the best vehicle to assess the risks facing MPI, be used consistently and collaboratively to determine the lower and upper thresholds for the RSR.
- 2) The use of the MCT criterion to set the upper threshold for the RSR be again rejected
- 3) The appropriate methodology for setting the upper RSR threshold resides in the use of the DCAT in a comparable fashion to the methodology used to establish the lower threshold for the RSR, involving testing of at least 99th/99.5th percentile outcomes
- 4) The strict use of the naïve forecast in the DCAT be replaced with at least the 50-50 forecast used previously

Recommendations (2)

- 5) MPI undertake to assess 50-50 forecast in light of rising interest rates
- 6) The DCAT Base Scenario assume 2% rate increases in 2019/20/21/22 as expected future cost and price inflation
- 7) Results for the interest rate decline/combined scenarios in the DCAT should be discounted because of the *ad hoc* nature of the interest rate decline scenario
- 8) MPI consider revising the interest rate decline scenario in future DCAT reports to reflect rising interest rates
- 9) Inclusion of the risk of corporate bond default risk in the combined scenario be reviewed