

Proposed Changes to NAIC RBC Formula

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Outline

- Background
 - Current formula
 - Importance of square root rule
 - Drivers of RBC result
- Proposals
 - Components in flux
 - Individual proposals by component
- Overall Issues

Current Formula

Formula Risk Components:

R0 = Off-balance sheet + insurance subs

R1 = Fixed income (invested) asset risk

R2 = Equity (invested) asset risk

R3 = Misc. receivables + $\frac{1}{2}$ Ceded balances credit risk*

R4 = Loss reserve risk + $\frac{1}{2}$ Ceded balances credit risk*

R5 = Premium risk

These slides and the accompanying discussion are intended to illustrate the key concepts involved. Because certain simplifications have been made for this purpose, please see the *NAIC Property and Casualty Risk-Based Capital Report Including Overview and Instructions for Companies* for details of the calculations. The NAIC provides additional relevant materials on the current RBC requirements and some of the proposed or contemplated changes to these requirements. Any decisions and statements should be based on the applicable laws and regulations and information from the NAIC, insurance regulators, and other official sources.

Current Formula

Authorized Control Level = one half of

$$R0 + \sqrt{R1^2 + R2^2 + R3^2 + R4^2 + R5^2}$$

NOTE: This is a minimum capital standard.
Companies are expected to hold multiples of this.

Importance of Square Root Rule

| A | B | A + B | $\sqrt{A^2+B^2}$ | Marginal effect of adding B |
|----|-----|-------|------------------|-----------------------------|
| 10 | 0 | 10 | 10 | - |
| 10 | +1 | 11 | 10.05 | +0.05 |
| 10 | +10 | 20 | 14.14 | +4.14 |

- Biggest items drive the result
- Smaller items become less relevant

Primary Drivers of RBC Result

- Commercial lines R4 (reserve risk)
- Personal lines mix of R4 and R5 (premium risk)
- Start up R5 (premium risk)
- Fronting co. R3 (ceded balances credit risk)
- Shell RBC not material

Secondary Drivers

- Commercial lines R5 (premium risk)
- Big stock investor R2 (equity investment risk)
- High growth added R4, R5 charges

Observations

1. Asset risk generally minor for P&C
2. Cat risk missing from current formula

Current Formula – Possible Changes (in red)

Authorized Control Level = one half of

$$R0 + \sqrt{R1^2 + R2^2 + R3^2 + R4^2 + R5^2 + R6^2 + R7^2 + R8^2}$$

Everything is in play except the basic structure

R6, R7 (Cat Risk) Proposals

Current

- Not reflected, except for some implicit in R5 (prem)

Proposal

- Add charges for earthquake (R6) and hurricane (R7)
- Based on 1-in-100 annual aggregate
- Using approved 3rd party model
 - *(e.g., AIR, RMS, EQECAT)*
- As used for internal ERM (attestation)
- Reporting of hurricane, EQ experience by Sch. P line
 - *Part of confidential RBC filing*

R6, R7 (Cat Risk) Proposals

Status

- In testing
(report cat experience since 2012, PMLs since 2013)
- Implement for year-end 2015 or later

Outstanding issues

- How to remove double counting (R5 premium risk)
- List of approved models
- Data quality (for model input) – zone exam?
- Other hazards?

R4, R5 (Reserve, Premium Risk) Research

Current

- Charges based on:
 - 10 accident years of data
 - All insurers with non-zero data for a line
 - 87.5th percentile result

Research

- 23 accident years
- 10 year periods vs. full 23 years
- Indications by size of insurer
- “Minor lines” vs. “Major lines”

Published in CAS E-Forum

R4, R5 (Reserve, Premium Risk) Research

Status

- Need policy decisions on:
 - Minor vs. Major line
 - All insurers or certain size (Large? Median?)
 - Years
- One decisions made, indications can be produced

Outstanding issues

- TBD

Ceded Balances Credit Risk ($\frac{1}{2}$ R3, $\frac{1}{2}$ R4) Proposal

Current

- Flat 10% charge (excl. US affiliates, Mandatory pools)
- Applied to ceded balances (no collateral offset)

Proposal

- Submitted by Reinsurance Assn. of America (RAA)
- Charge varies by reinsurer credit rating
- Based on S&P's credit default study + 3% (Op Risk)
- Collateral offset allowed to extent charge over 5%

Ceded Balances Credit Risk ($\frac{1}{2}$ R3, $\frac{1}{2}$ R4) Proposal

Status

- Exposed for comment (deadline May 13)
- Will be discussed by NAIC P&C RBC Work Group

Outstanding issues

- TBD, based on comment letters
- Support?
- Op Risk reflection?

R1, R2 (Invested Asset Risk) Research

Current

- R1 (fixed income) largely based on life RBC
- Common stock factor 15% for P&C, 30% for life

Research

- Focus for now is life RBC
- Life common stock – support retaining 30%
- Life bonds – Academy modeling various classes

R1, R2 (Invested Asset Risk) Research

Status

- Debating if should have same factors for Life, P&C
- Academy close to bond risk factor proposals

Outstanding issues

- Should factors be same for life, P&C?
- Is research for P&C, health worth the effort?
- Time horizon, risk metric consistency
 - Across asset classes, risk components, Life/P&C/Health?

R0/R8? (Operational Risk) Proposal

Current

- Implicitly reflected in R0, R3, R4, R5 (and overall calibration)

Proposal

- Possibly add new charge (add to R0 or new R8?)
 - Based on larger of ? x NWP and ? x Net L&LAE Reserves and maybe growth charge based on gross WP,
 - OR capital add-on based on a risk factor, combined with growth risk charge,
 - OR capital add-on based on poor risk controls as determined by regulatory examination (one of the options in recent proposal by the industry trade associations)

R0/R8? (Operational Risk) Proposal

Status

- Starting data collection for year-end 2014
- Expected to evolve over next several years
- Being pushed by FSAP process

Outstanding issues

- Extent that Op Risk already in current factors
- FSAP feedback
- Quantifiable?

Overall Issues

Time horizon

Risk metric

FSAP (Financial Sector Assessment Program) timing

Coordinating all the changes

Testing

IAIS developments (BCR, ICS)

Appendix - Resources

NAIC RBC Proposals – Committee agendas:

- Overall RBC - www.naic.org/committees_e_capad.htm
- P&C RBC - www.naic.org/committees_e_capad_prbc.htm
- Cat risk - www.naic.org/committees_e_capad_cat_risk_sg.htm
- Op risk - www.naic.org/committees_e_capad_op_risk_sg.htm
- Asset risk - www.naic.org/committees_e_capad_investment_rbc_wg.htm

CAS RBC Dependency and Calibration Working Party research (R4, R5)

- CAS E-Forum (8 reports as of 2014 Spring, with first reports in the 2012 Winter issue)

American Academy of Actuaries P&C RBC Committee

- Committee comment letters:
 - <http://www.actuary.org/committees/dynamic/PCRBCCTE>