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Group 7: Analyzing Solvency : Challenges and Strategies in the RBC Framework

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About our guide: Rochak Garg

Rochak is Vice President (Actuarial) at Bajaj Allianz General Insurance. He is a fellow from Institute of Actuaries of India (IAI) and Institute of Faculty of Actuaries (IFoA). He has over 15 years of experience across General insurance. Prior to this role he was Senior Consultant at Willis Towers Watson (WTW) where he has worked on various strategic projects.

Agenda

- Case Study Overview
- High Level Overview of RBC Framework
- Comparison :: RBC vs Current Regime
- Challenges in proposed RBC Framework
- Reasons for drop in Solvency Margin
- Key risks to Company
- Implications on Company Strategy
- Possible next steps
- Questions?

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Case Study Overview

- **Company:**
  - Medium-sized insurer
  - Aggressive future growth in order to capture higher market share
  - Line of Business – Motor, Health and Crop

- **Regulatory environment:**
  - Current – Formula based solvency margin calculation
  - Proposed change – Calculation of required capital specific to each risks
  - Quantitative impact study (QIS1) has been carried out

- **Activities carried out by the Reserving Team:**
  - Comparison of changes from the existing regulation
  - Computation of solvency margin under RBC regime
  - Detailed study for the reasons of drop in margin

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High level overview of RBC Framework

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- Calculation of capital requirement specific to each risks
- Total Balance Sheet Approach
- Computation of Risk Margin

Capital requirement specific to each risks

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Insurance Risk

Capital requirement specific to each risks

- **Insurance risk**
  - Premium risk capital requirement depends upon:
    - Line of Business
    - Volume Measure :: Present value of Future earnings from current and next 1 year's business
  - Reserve risk capital requirement depends upon:
    - Line of Business
    - Volume Measure :: Case estimates, best estimate IBNR, ULAE and Risk Margin reserves
    - Expected Payment pattern of reserves, which will be useful for calculating present value

Capital requirement specific to each risks

- **Insurance risk**
  - Catastrophe risk capital requirement depends upon:
    - Line of Business
    - Reinstatement premium payment
    - Expected default on reinsurance recoveries due to CAT events

- **Market risk**
  - Interest rate risk capital requirement depends upon:
    - Adverse Change in Net Asset Value due to movement in interest rates
  - Equity risk capital requirement depends upon:
    - Investments in Listed and Non-Listed Equities

Capital requirement specific to each risks

- **Market risk**
  - Spread risk capital requirement depends upon:
    - Investments in State Government or Corporate Bonds, their ratings and their Modified-Duration
  - Property risk capital requirement depends upon:
    - Purpose – Self occupancy or other than self occupancy
    - Change in Net Asset Value due to drop in Fair market value of the property

Capital requirement specific to each risks

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- **Counterparty default risk (CPD)**
  - CPD risk capital requirement for Reinsurance depends upon:
    - Reinsurers Financial Strength Rating
    - Reinsurers Domicile – Indian Insurers, FRBs, IIOs and CBRs
    - Reinsurance Recoverables to include RI share of outstanding losses, IBNR and URR.
    - Reinsurance Receivables to include RI share of paid losses which is yet to be received.
  - Other CPD risk capital requirement for depends upon :
    - Receivables from agents, intermediaries, co-insurers, deferred tax assets, unutilized credit of tax
    - Outstanding premiums
    - Loans

Capital requirement specific to each risks

- **Operational risk**
  - Specified percentage of higher of GWP or Gross Best Estimate Liabilities
  - Also depends upon future growth
- **Diversification benefit**
  - Diversification benefits within risks and amongst risks are computed based on correlation matrix.
  - Capping of diversification benefit at entity level.
- Overall capital is calculated at 99.5% VaR i.e. 1 in 200 years event

Total Balance Sheet Approach

Total Balance Sheet Approach

- RBC is based on Total balance sheet approach principle.
- This principle recognizes the interdependencies between assets, liabilities, assessment of risks and solvency capital requirements.

Valuation of Assets

- Valuation of Assets at Market prices is relatively straightforward, except Property Valuation due to infrequent trades.

Valuation of Liabilities using Market Consistent Methods

- RBC framework proposes to value liabilities at Market Value
- Insurance Liabilities are not usually traded in the market and hence market prices are not available
- Expected payment pattern and yield curves are used to compute present value of Liabilities

Computation of Risk Margin

Cost of Capital Approach

- Considering the current business as run-off, Capital requirement is calculated for each of the future years till run-off.
- Appropriate drivers are used to calculate capital for each of the risk and for each of the future years.
- Risk margin is computed on each of the future years capital requirement based on required return on capital rate which is in excess of the risk-free rate.
- Sum of the present value of the risk margin constitutes the total risk margin required at present.

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Comparison :: RBC vs Current Regime

Available Capital

Particulars	ASM	RBC	Impact to Company
<u>**Assets**</u>			
Investments	Debt – Book Value	Debt – Market Value	Mark to market gain and losses recognized Increase or decrease depending on the direction of Market Value to Book value
Fixed Assets	Intangibles - Value post depreciation	Intangibles- Nil Value	Decrease in Available Capital

Comparison :: RBC vs Current Regime

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Available Capital

Particulars	ASM	RBC	Impact to Company
Assets			
Cash and Bank	Nominal Value	Nominal Value	No change, hence, no impact
Other assets	Nominal Value	Nominal Value	No change, hence, no impact

Comparison :: RBC vs Current Regime

Available Capital

Particulars	ASM	RBC	Impact on Company
Policyholder Liabilities			
Risk Margin	RM for Reserving risk	RM for all risks	Decrease in Available Capital
Net Claims	Discounting not allowed	Benefit of discounting	Increase in Available Capital
Net UPR/URR (Not BBNI)	UPR booked at nominal value. PDR calculated at company level.	Expected loss, expenses and future non-prop RI cost considered. Benefit for discounting. UPR Flooring at LOB Level.	Decrease in Available Capital if expected liabilities from UPR under RBC is more than Nominal UPR plus PDR under ASM.

Comparison :: RBC vs Current Regime

Available Capital

Particulars	ASM	RBC	Impact on Company
Policyholder Liabilities			
BBNI (Advance Premium)	Advance Premium booked at nominal value	Advance premium plus the Expected Losses allowing expense and for future non prop RI cost on advance premium business.	Decrease in Available Capital
BBNI (Contract Boundary Business)	No Concept of Contract Boundary	Expected Losses on Contract boundary business - in line with IndAS 117	Decrease in available capital

Comparison :: RBC vs Current Regime

Available Capital

Particulars	ASM	RBC	Impact to Company
Other Liabilities			
Current Liabilities	Other than policyholder liabilities	Other than policyholder liabilities	No change, hence, no impact
Contingent Liabilities	Not included in Liabilities (included in the notes to accounts)	Included in Liabilities based on a Probable amount	Decrease in Available Capital
Disallowances	Several disallowances such as Fair Value change, Depreciation, GST, Ageing, Unclaimed amount of Policyholders	No Separate disallowances under RBC	Increase in Available capital

Comparison :: RBC vs Current Regime

Required Capital

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Element	Current Regime	RBC	Impact on Company
Required Capital	• Formula based. • Calculated for Insurance risk • Only considers past experience	• Principle based calculation • Specifically for each risk • Considers future growth and past experience	• Capital charge in Solvency is only for Insurance risk • Increased capital requirement in RBC regime

Comparison :: RBC vs Current Regime

Required Capital

Particulars	RSM	RBC	Impact on Company
<u>**Insurance Risk**</u>			
Premium risk[A1]	Past premiums	Future Premiums. Risk charge varying by LOB	Required capital sensitive to the class of business and growth of the firm.
Reserve risk [A2]	Incurred Claims including Risk margin	Outstanding Claims allowed for Discounting. Risk charge varying by LOB	Likely to reduce required capital due to disc. benefit and no allowance for paid claims
Prem and Res risk [A=A1+A2]	Maximum of Premium or Reserve risk by LOB	Summation of both. Diversification benefit allowed.	Depends upon quantum of diversification benefit
Catastrophe risk	NA	CAT risk charge for all LOBs.	Increases the Required Capital

Comparison :: RBC vs Current Regime

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Required Capital

Particulars	RSM	RBC	Impact on Company
CPD Risk			
RI CPD risks	NA	RI Current and Future Liabilities	Increases the Required Capital
Other CPD Exposures	NA	Depending upon Ageing of receivables. Outstanding Premiums, Loans.	Increases the Required Capital

Comparison :: RBC vs Current Regime

Required Capital

Particulars	RSM	RBC	Impact on Company
Market Risk			
Interest rate risk	NA	Allows for a change in interest rate	Adverse effect on NAV due to interest rate change
Spread risk	NA	Allows for a change in spread depending on MD and ratings.	Adverse impact of change in spreads
Equity risk	NA	Capital charge on listed and unlisted equities	Increase in Required Capital
Property risk	NA	Capital charge if FMV less than Book value.	Increase in Required Capital

Comparison :: RBC vs Current Regime

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Required Capital

Particulars	RSM	RBC	Impact on Company
Diversification Benefit	No additional diversification benefit	Provided within risks and amongst risks. Capping at company level	Decreases the required capital
Operation Risk	NA	Percentage of Max of GWP or Gross Liabilities. Mark up of future growth.	Increases the required capital

Comparison :: RBC vs Current Regime

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Element	Current Regime	RBC	Impact on Company
Presentation	Net figures presented in Financial statements	Gross and Reinsurance figures presented separately - In line with IndAS 117	Additional Disclosure at Gross and Reinsurance side.

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Challenges in proposed RBC Framework

- **Data requirement**
  - At a granular LOB level.
  - Under RBC, additional disclosures on Gross and reinsurance level will be required.

- **Frequency at which it is required**
  - Currently solvency is monitored at monthly level in GI companies
  - The solvency submission is required quarterly by the regulator
  - In RBC, the method to calculate solvency is much more extensive
  - Robust processes will need to be set in place involving multiple teams to calculate RBC in more efficient and timely manner

Challenges in proposed RBC Framework

- **Calculation for capital risk charge for some new risks**
  - CAT risks may be required to be computed for each LOB under RBC. Currently Company may be modelling CAT risk for static risks – Property and Engineering. Company may need to compute CAT risks for Motor, Health, Crop and other LOBs also.
  - Computation of spread risk at regular intervals
  - Tracking of market prices of their properties

- **Allocation of Accident Year IBNR to Underwriting Year IBNR**
  - Companies may be computing Gross and Net IBNR on Accident Year basis considering the reporting requirement.
  - For the purpose of Reinsurance asset and reinsurance recoverables calculation, RI IBNR on underwriting year basis would be needed.
  - Either allocation methods would be set as process or calculation of Underwriting year IBNR from first principles.

Challenges in proposed RBC Framework

- **Time and resources**
  - Additionally skilled manpower, software and time will be required for computation under RBC.

- The various risk charges and associated higher capital requirement under RBC may limit innovation in the short term and the Company may restrict the aggressive growth targets in the near future.

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Reasons for drop in Solvency Margin

Required capital

- High *premium risk* due to projected future aggressive growth
- High *reserving risk* charge associated with Motor LOB
- High *counterparty default risk* due to higher reinsurance associated with Crop LOB
- High *Catastrophe risk* due to future expected pandemics in Health LOB and accumulation risk in Crop LOB.
- Higher proportion of investments in equity for better gains will lead to high *equity risk*.
- *Spread risk* due to investments in state and corporate bonds.
- Assets and Liabilities cashflows not matched for higher investment income. This will affect *interest rate risk charge*.
- High *operation risk* charge due to higher GWP and aggressive growth
- Risk charges other than insurance risk could lead to an overall increase in required capital.

Reasons for drop in Solvency Margin

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Available capital

- Newly launched health products will not be able to reprice till 3 years (at the time of QIS I). Company may have thinly priced it for growth. Expected renewal may be loss making due to anti-selection and will need to be included due to contract boundary concept.
- Losses from bounded but not yet incepted (BBNI)/Advance Premium business to be booked upfront as Liabilities in RBC.
- Reinsurance commission reversal projection depending upon sliding scale leading to decrease in reinsurance assets.
- Intangible assets being valued at zero in RBC.
- Debt Investments market value being lower than its book value.
- Higher risk margin in RBC

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Key risks to the Company

- **Premium risk**
  - High premium risk due to projected aggressive growth
- **Reserve risk**
  - Expected to be high due to Motor Third Party Line of Business
- **CAT risk**
  - This may be affected due to future expected pandemics in Health LOB and accumulation risk in Crop LOB.
- **CPD risk**
  - Reinsurance arrangements on Crop LOB with multiple CBRs leading to higher risk charge
- **Market risk**
  - Investments in equity to match long term liabilities of motor TP or for capital gains leading to higher equity risk.
  - Spread risk due to investment in State and Corporate bonds.

Key risks to the Company

- **Operational risk**
  - Higher operation risk due to higher GWP/Gross Liabilities and higher projected future growth.
- **Other risks**
  - Transition to the risk-based regime can cause temporary discrepancies between actual risk exposure and calculated capital requirements due to:
    - Errors in data collection owing to increased data requirements and lack of efficient data systems or processes
    - Other operational challenges and lack of expertise
    - Possible prudence in judgements in future projections
  - Capital infusion - Availability and cost of raising additional capital
  - Lack of stakeholder confidence from drop in solvency margin
  - Limit aggressive growth

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Implications on Company Strategy

- **Alteration in business strategy**
  - Focus on profit-making business for growth which may not lower premium risk charge but will lower PDR creation.
  - Diversify amongst more LOBs to get benefit of diversification benefits.
  - More granular portfolio monitoring to understand which business/channels are loss making or where rate increase is required. Company will need to align this with IRDAI Rural, Social Sector and Motor Third Party Obligations 2024 which governs the minimum Motor TP business.
  - Lower cross-subsidization as far as possible so that PDR at LOB level is not being created.

Implications on Company Strategy

- **Alteration in business strategy**
  - Aim to diversify crop business amongst many states so that CAT risk and accumulation risk will be lower. Company may plan co-insurance arrangements or reciprocal reinsurance arrangements with other insurance companies so that there is diversification.
  - Aim for growth in LOB which has lower capital charge.
  - More of Surplus sharing model business in crop LOBs as to restrict losses and lower non-proportional reinsurance requirement.
  - Reprice Health products where there is evidence of anti-selection. The new Health regulation allows repricing within 3 years.

Implications on Company Strategy

- **Change in investments allocation and matching**
  - Decision on asset liabilities matching will need to consider the balance between investment return and capital risk charges.
  - Investments to be made in high quality assets.
  - Calculate risk adjusted return ratios/ return per unit of risk for each investment category and invest accordingly.

- **Careful planning of reinsurance structure**
  - Enter into reinsurance structures with high rated securities
  - Enter into reinsurance structures with are within domicile which have lower CPD risk charge
  - Increase usage of collateralized transactions such as premium withheld treaties and letter of credits especially with CBRs so as to lower credit risk.

Implications on Company Strategy

- **Others**
  - More scientific exercise on claims handling expense so that appropriate ULAE reserve can be established
  - More detailed study for CAT exposure especially non-static risks
  - Views of the Peer reviewer and other General insurance companies.

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Possible next steps

- **Points to be discussed with the regulator**
  - Tentative year when RBC will be live
  - Borrowings raised is allowed in ASM in current regulatory solvency until the last 5 years in which 20% haircut per annum is to be taken. To understand whether same provision will be applicable in RBC. This will provide clarity in raising capital.
  - Any major alterations or relaxations to be provided in future QIS and final RBC as compared to QIS-I
  - Providing suggestions/feedback to the regulator on QIS1 through an industry representative body GI Council - Differential capital charge for Equity Business, Flooring of UPR in calculation of premium liabilities, diversification benefit in CAT risk charge.

Possible next steps

- **Apprising Board**
  - Preparing an executive summary for the Board
  - Awaiting further QIS and directors from the regulator
  - Broad steps that the Management is planning for transition to RBC
  - Cost implications and quantum of required Capital infusion, if any based on QIS-I
  - Market intelligence report if any
  - Incorporate Feedback and directions from the Board

Possible next steps

- **Investing in resources and tools**
  - Hiring skilled employees across functions and increase manpower
  - Invest in training for existing employees
  - Invest in proprietary tools for ease of calculation

- **Data Management**
  - Understand what additional data is required
  - What needs to be automated and how it can be automated
  - While going through this exercise, company needs to also think through about data requirement for monitoring of Add-ons and IndAS 117
  - Cost implications
  - There will be change in format of returns in which solvency is submitted and Company needs to prepare for it.

Possible next steps

- **Financing**
  - Understand how much more capital will be required
  - Means of raising the same

- **Changes in current risk margin**
  - To understand by what quantum is current risk margin lower than what is required in RBC
  - Gradually increasing the risk margin to avoid knee-jerk reactions at the time of transition to RBC

- **Regular monitoring of RBC QIS-I**
  - As a matter of practice, Company may run RBC QIS-I parallelly at quarterly intervals. This will assist in developing procedures and formats and also give insights into better strategies.

Thank You!

Questions?