Milliman

# Survey of Hong Kong life and general insurers: Embedding RBC, Target Capital and ERM

## Introduction

Two key components of the modernisation of the regulatory regime being carried out by the Hong Kong Insurance Authority (IA) are the introduction of a risk-based capital (RBC) solvency framework and greater focus on enterprise risk management (ERM). As the regime continues to mature, it is expected that the IA will pay increasing attention to how effectively insurers have embedded those components within business operations. Focus is likely to fall on the use of Target Capital as a tool for setting risk appetite and for ongoing risk monitoring. In addition, the existing Dynamic Solvency Testing (DST) exercise is expected to disappear under RBC. In its place the regulator is likely to focus on whether each insurer's Own Risk and Solvency Assessment (ORSA) has sufficient stress and scenario testing (SST) to demonstrate a deep understanding of its risks and the tools available for managing its capital.

In March 2023, Milliman conducted a survey of Hong Kong life and general insurers to assess how insurers are implementing these two key components. The questions were divided into the following themes:

- Target Capital
- RBC stress testing
- RBC production
- Embedding RBC
- Embedding ERM

We received responses from 15 life insurance companies and 10 general insurance companies. With our survey participants representing a material proportion of the life insurance and general insurance market in Hong Kong, the survey has enabled us to identify areas of convergence and divergence among the participants on a number of topics. We are grateful to all those who took the time to participate in the survey. This e-Alert presents a summary of our findings.

## Setting Target Capital

The IA's Guideline 21 (GL21) on enterprise risk management (ERM) requires each insurer to maintain enough capital, known as Target Capital, to meet its capital needs, factoring in the full range of risks to which it is exposed.

Although RBC is yet to be fully implemented in Hong Kong, all responding insurers already set Target Capital at a level above 100% of the RBC Prescribed Capital Requirement (PCR), the expected regulatory minimum. Around three-quarters of them set Target Capital in the 100%-150% range (percentage of PCR). General insurers tend to set their Target Capital at a slightly higher level than life insurers.

**Calibration of Target Capital:** Three-quarters of responding life insurers and half of responding general insurers set their Target Capital using a defined buffer above the RBC PCR. Of them, the most common option used by life insurers is to set the buffer using a one-year Value-at-Risk (VaR) approach based on a 1-in-10 event above PCR. Several life and general insurers set the buffer based on a 1-in-20 event above PCR. No responding insurers use their own economic capital models for setting Target Capital, but two companies adjust the RBC metric to allow for risks that are specific to the insurer.

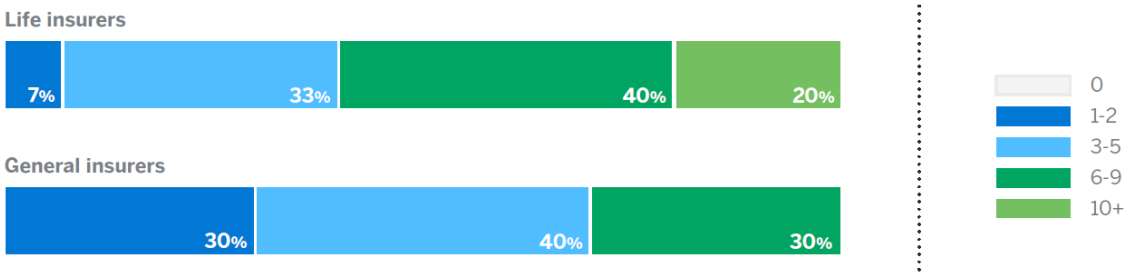
Going forward we anticipate that more companies may choose to set Target Capital using a risk-based buffer, because it helps insurers balance the competing risks of insolvency versus inefficient use of capital and helps risk committees better assess the overall level of embedded buffer.

## RBC stress testing

### FREQUENCY OF STRESS TESTING

Nearly all responding insurers perform stress testing on an annual basis only. However, given the extreme levels of market volatility in recent years, it may be appropriate to perform stress testing of key market variables (and others) more frequently.

**FIGURE 1: NUMBER AND RANGE OF SCENARIOS ANALYSED**




Sixty percent of responding life insurers, but only 30% of responding general insurers, analyse six or more stress scenarios, other than those prescribed by the IA. Around three-quarters of responding life insurers test industry-standard stress tests such as parallel interest rate shocks, credit spread widening, mass lapse, inflation risk and reverse stress tests. A very small number of life insurers investigate specific scenarios such as yield curve twist or de-pegging of the Hong Kong dollar to the US dollar. There is less consensus amongst general insurers about the stress scenarios to analyse, other than the Reverse Stress Test, which is performed by 70% of respondents. Few general insurers investigate the risks of inflation or increased reinsurance premium rates. Given that they are current hot topics for general insurers, we anticipate that these concerns may be reflected in the 2023 ORSA reports. Despite the increasing focus by regulators, only 20% of responding general insurers and no life insurers are performing climate risk stress tests as at early 2023.

### BUSINESS FAILURE RISKS AND RECOVERY MANAGEMENT ACTIONS

Life insurers typically identify falling interest rates and falling equities as key risks of business failure. For general insurers a major insurance event is overwhelmingly seen as the key risk. For both life and general insurers, capital injections from parent entities and reinsurance are the key recovery actions. Additionally, for life insurers, de-risking asset allocation and capping new business sales are identified by around half of respondents as important recovery actions.

Given that RBC is a new metric for Hong Kong, it is important for every insurer to develop a comprehensive understanding of its RBC results and how they will respond to changes in the external or internal environment. Insurers may consider whether the quantity and nature of stress tests is sufficient to achieve this understanding. With capital markets recently experiencing high volatility, it is likely that there will be increasing regulatory focus on business failure analysis, and insurers will need to be able to demonstrate that they have a range of effective recovery actions.

## RBC production

### FULL-YEAR RBC RESULTS PRODUCTION

RBC is a significantly more complex and calculation-intensive metric compared to the Hong Kong Insurance Ordinance solvency basis, with numerous model runs required and, often, for life insurers, involving stochastic calculations. It is perhaps unsurprising that 80% of respondents take over one month to produce full-year RBC results. Over 60% of insurers surveyed have targeted shortening production timescales by 10 days or more once RBC is part of business-as-usual (BAU) reporting.

### INTERIM RBC RESULTS PRODUCTION

Once it is fully adopted, insurers will need to regularly calculate RBC for internal monitoring and regulatory reporting purposes. Ninety percent of responding life insurers, and 40% of general insurers, are already producing interim RBC results on at least a quarterly basis. However, the production timeline is a challenge, with two-thirds of responding life and general insurers taking at least 14 days to produce interim results. Over 40% use the full calculation method for interim reporting. We understand the IA currently requests many insurers to submit solvency ratios on a monthly basis. With actuarial resources tight, this may be challenging for some companies under RBC unless insurers can make significant savings in production timelines.

### RBC PROJECTION METHODOLOGY

Projecting RBC results can be a complex and time-consuming exercise. Consequently, over 40% of responding life insurers and 90% of general insurers are using a proxy approach to project RBC. For calculation of the projected time value of options and guarantees (TVOG), around one-fifth of responding life insurers are using a calculation-intensive stochastic-on-stochastic approach.

### MODELLED MANAGEMENT ACTIONS

For life insurers, the most commonly modelled management actions are dynamic bonus rates or crediting rates, with over 50% of respondents modelling them across each of the base balance sheet, required capital, and RBC projections and stress calculations. For general insurers, optimisation of reinsurance and in-force repricing are the most commonly modelled actions, according to the survey. General insurers more commonly apply the management actions in projections and stress scenarios, rather than in the calculation of base balance sheet and required capital.

### KEY CHALLENGES FOR RBC PRODUCTION

**FIGURE 2: KEY CHALLENGES FOR RBC PRODUCTION, LIFE INSURERS**

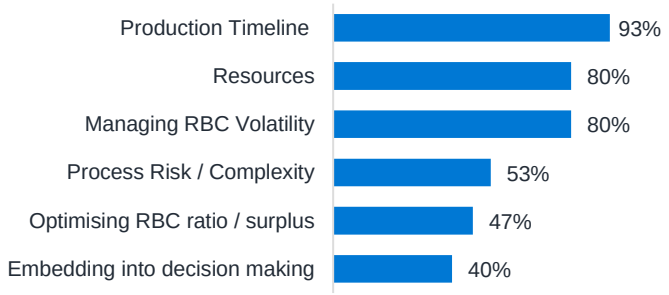
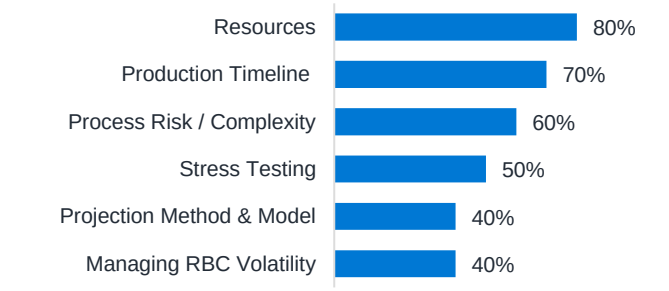



**FIGURE 3: KEY CHALLENGES FOR RBC PRODUCTION, GENERAL INSURERS**




Most responding life and general insurers agree that the key challenges for RBC production are the production timeline, process complexity and scarcity of resources. Additionally, managing RBC volatility is identified as a challenge by 80% of responding life insurers, and nearly 50% consider optimisation of RBC surplus problematic. Meanwhile, half of responding general insurers identify stress testing as a key challenge.

### RBC MODEL REVIEW

GL21 sets an expectation that models used as part of an insurers' risk and capital management processes should be subject to regular review, and independent review is encouraged. Seventy percent of life insurers and 40% of general insurers that responded have already performed some form of model review, although few have sufficient internal resources to perform an independent review.

## Embedding RBC

The implementation of RBC is likely to drive change in business processes. Life and general insurers that responded to the survey are at varying stages of embedding RBC into their business processes, although life insurers are typically more advanced in their preparations than general insurers. Across the industry, capital management and business planning are the processes that have seen the most comprehensive embedding of RBC, whereas many firms still have outstanding work to do to embed RBC into their business key performance indicators (KPIs).

Most life insurers anticipate that RBC will drive a number of business changes, according to the survey. Two-thirds of respondents plan to have, or already have, optimised asset allocation and reinsurance arrangements, enhanced pricing metrics and business KPIs. Nearly 60% of such actions have already been implemented. General insurers typically foresee fewer business changes than life insurers, with optimisation of asset allocation and reinsurance expected by over two-thirds of respondents. Nearly half of such actions have already been implemented by responding general insurers.

## Embedding ERM

GL21 was published by the IA in 2019, and 2023 sees the third year of ORSA production for most insurers. Enterprise risk management (ERM) is still relatively novel and, therefore, we anticipate different levels of ERM embeddedness across the Hong Kong insurance market.

### RISK FUNCTION ACTIVITIES

The risk functions of over 70% of responding life and general insurers are engaged in core risk activities such as reviewing risk appetite, monitoring against risk limits, coordinating the risk identification process and performing in-depth risk reviews. The risk functions are slightly less likely to be involved in other business processes such as pricing, business planning and risk transfers.

### RISK DASHBOARDS

Around three-quarters of all respondents have risk dashboards already in operation, with most being produced on a quarterly basis. Over 75% of dashboards capture metrics on capital, insurance risk, market risk and liquidity risk. Fewer than 60% of respondents' dashboards capture technology risk, conduct risk and emerging risk and only a quarter include environmental, social and corporate governance (ESG) risks.

## KEY CHALLENGES FOR EMBEDDING ERM

**FIGURE 5: KEY CHALLENGES FOR EMBEDDING ERM, LIFE INSURERS**


**FIGURE 6: KEY CHALLENGES FOR EMBEDDING ERM, GENERAL INSURERS**


Responding insurers did not identify any single common issue relating to the embedding of ERM, indicating that insurers may be at different levels of ERM maturity. However, around half of responding life insurers noted challenges in embedding risk within decision making and enabling the risk function to add value. Two-thirds of responding general insurers indicated concerns relating to embedding a strong risk culture.

## Conclusion

Ahead of the anticipated 2024 implementation of RBC,[1] Hong Kong's life and general insurers are observed to be at different levels of maturity in terms of implementation of Target Capital, stress testing, RBC production and embedding RBC and ERM.

In terms of development priorities, life insurers may consider the efficiency of the RBC production processes and look for solutions to optimise their RBC ratios and manage RBC volatility. In addition to streamlining the RBC production process, general insurers may look to focus on embedding risk culture, risk-based decision making and enhancing the emerging risk identification process. From a risk perspective, general insurers may consider emerging risks, including inflation, increases in reinsurance cost and climate risk.

Resourcing challenges are likely to be significant for many insurers, particularly given the competing requirements of International Financial Reporting Standard (IFRS) 17 implementation. Nonetheless, it is important that each insurer in Hong Kong quickly builds a comprehensive understanding of its RBC position, risk exposures and recovery actions.

[1] Several life insurers have been early adopters of the RBC framework for regulatory solvency purposes.

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