

Hong Kong RBC – Third Quantitative Impact Study (QIS 3)

Introduction

Following the Second Quantitative Impact Study (QIS 2) conducted by the Insurance Authority (IA) in August 2018 for the development of the Hong Kong risk-based capital (HKRBC) regime, the IA launched the Quantitative Impact Study 2.5 (QIS 2.5) pilot test in May 2019. QIS 2.5 was on a voluntary basis to test the IA’s preliminary proposals around the calibration of the risk-free yield curve and the (dynamic) matching adjustment, in particular. Following these changes, the average solvency position of the voluntary participants improved considerably.

On 9 August 2019, the IA released the technical specification for the third, and reportedly final, Quantitative Impact Study (QIS 3). Authorised insurers have been requested to submit QIS 3 results by 29 November 2019, using a valuation date of 31 December 2018. Along with the QIS 3 technical specifications, the IA has also asked insurers to respond to a “Key Insurance Risks and Trends (KIRT) Survey.” This is an initiative from the International Association of Insurance Supervisors (IAIS) as part of its development of a holistic systemic risk framework for the global insurance sector.

In this e-Alert, we give an overview of the latest QIS 3 specifications and highlight some of the key differences with QIS 2. We also discuss how companies can best prepare for this round of QIS and potentially the final Pillar 1 requirements.

Key points of focus:

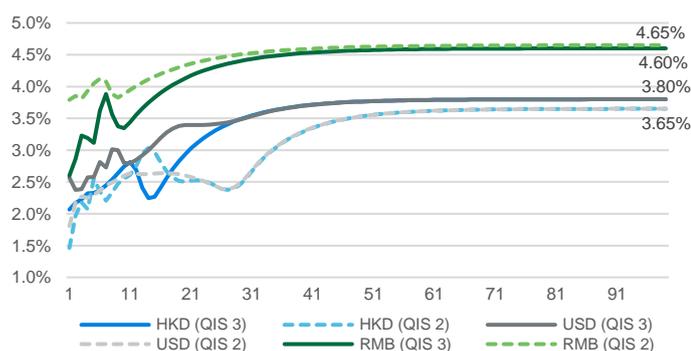
- Matching adjustment
- Homogeneous risk group
- Minimum capital requirement
- KIRT Survey
- Economic balance sheet optimisation

Discount rates and adjustments

PRESCRIBED RISK-FREE YIELD CURVES

The IA reviewed the key parameters used to construct the prescribed risk-free yield curves and revisited the calibration of certain parameters to align closer with Insurance Capital Standard (ICS) methodology. Although a few gaps with ICS requirements remain (e.g., consideration of currency peg between HK dollar (HKD) and US dollar (USD) when setting the Ultimate Forward Rates (UFR), and the UFR for Renminbi (RMB)), the prescribed yield curves used in QIS 3 were higher than those used in QIS 2 for HKD and USD:

FIGURE 1: PRESCRIBED RISK-FREE YIELD CURVES COMPARISON



ADJUSTMENTS TO RISK-FREE YIELD CURVES

After the matching adjustment (MA) approach was tested in QIS 2.5 and included as a sensitivity scenario in QIS 2, this MA has become the base case approach under QIS 3 for further analysis and is used to determine the illiquidity premium to be applied on top of the prescribed risk-free yield curves when discounting liabilities. The volatility adjustment (VA) approach is not considered under QIS 3 anymore.

The key changes of the MA approach in QIS 3 versus the VA / MA approach in QIS 2 include:

- QIS 3 MA is derived based on actual assets held by insurers rather than an industry asset portfolio. The aim is to prevent artificial volatility on net assets caused by basis risk.
- A portfolio-specific application ratio can be used, rather than the prescribed application ratio of 90% in QIS 2. Insurers facing practicality issues in MA calculations can use a prescribed factor as a proxy.
- An additional uplift is allowed to the MA using a long-term adjustment (LTA), reflecting equity and property held by insurers for the long term and managed separately. The inclusion of LTA was tested in QIS 2.5 and resulted in a moderate improvement in the average solvency position of the participants.

The QIS 3 MA-related rules are set out in a separate technical specification released in mid-August 2019.

Prescribed capital requirement (PCR) – market risk

DYNAMIC MA FOR MARKET RISK MODULES

In QIS 2, credit spread risk was significant (around 26% of the industry undiversified PCR) since the increase in illiquidity premium was not allowed for when determining the discount rate under that stress scenario (i.e., use of dynamic VA / MA). Common feedback from the industry was that dynamic MA should be allowed to ensure assets and liabilities are treated consistently under such stressed conditions.

Under QIS 3, dynamic MA is allowed when assessing credit spread risk (as well as other risks under the broader market risk module), provided that insurers can calculate their own portfolio-specific MA application ratios. Additional data for further analyses will also be collected assuming there is no change in base MA or base application ratio. The determination of MA used for the different market risk charge calculations is summarised in Figure 2.

FIGURE 2: SUMMARY OF MA DETERMINATION UNDER DIFFERENT MARKET RISK SCENARIOS

Stress scenario	Asset Spread	Application Ratio
Interest rate risk up	Base spread	Stressed application ratio
Interest rate risk down	Base spread	Stressed application ratio
Credit spread risk	Stressed spread	Stressed application ratio
Equity risk	Base spread	Stressed application ratio
Property risk	Assume no impact on MA	
Currency risk	Assume no impact on MA	

Compared to the QIS 2 dynamic MA sensitivity scenario, the IA has also revisited the dynamic MA approach and set out the prescribed reduction factors to be applied to the credit spread shocks. This will mitigate the issue of having zero credit spread risk charges for some insurers, as observed in QIS 2.

It is expected that the inclusion of dynamic MA will improve the overall industry solvency position according to the QIS 2.5 results.

PCR – life insurance risks

HOMOGENEOUS RISK GROUP (HRG)

HRG is another new concept introduced under QIS 3, and is adopted from more advanced RBC frameworks such as ICS and Solvency II. HRG is the prescribed level of granularity at which participants should determine the “biting” scenario (i.e., the direction of stress resulting in a worse solvency position) for life insurance risks (except for life catastrophe risk, which is assessed at an entity level). In QIS 2, biting scenarios for life insurance risks were determined at a product level.

HRG is defined using a principle-based approach requiring grouping of policies with “similar risk characteristics.” HRG is then used for applying zero flooring or determining whether an upward or a downward stress should be applied for the calculation of life insurance risk charges.

Factors that should be taken into account in assessing the homogeneity of risk characteristics include:

- Underwriting policy
- Risk profile of policyholders
- Product features, in particular level of guarantees to policyholders or premium paying term
- Future management actions

Significant offsets among policies within the same HRG may require a more granular split.

Further data will be collected in QIS 3 on the HRGs identified for the IA to assess the interpretation of HRG among insurers.

Funds on deposits (FOD) mass withdrawal risk

Participating products account for more than half of the in-force reserves in Hong Kong at an industry level based on QIS 2 results. For this particular line of business, a number of insurers typically allow policyholders to leave distributed annual dividends on a fund on deposit that earn discretionary interest income.

Similar to QIS 2, FOD is required to be unbundled from the base contract and valued based on its account balance as at valuation date under the base scenario. In addition, QIS 3 requires companies to produce an additional sensitivity whereby FOD-related cash flows (using the same contract boundary as the base contract) are produced under the base case and key stress scenarios, and the subsequent impacts on net asset value and PCR are assessed. Based on QIS 2 results, from voluntary submissions, the projection of FOD-related cash flows approach gave a larger increase in net asset value than the corresponding increase in PCR.

In addition, there were concerns that the withdrawal risk related to the mass withdrawal of FOD was not sufficiently captured under the previous QIS. It has therefore been decided to add two mass withdrawal stress scenarios for FOD only, which are 100% mass lapse on FOD and 30% mass lapse on FOD.

Capital resources

The only change in respect of capital resources compared to QIS 2 is that unrealised fair value gains from properties are now classified as Tier 1 capital instead of Tier 2, which is consistent with ICS. The treatment of other capital items remains the same as in QIS 2.

Minimum capital requirement (MCR)

MCR aims to provide the ultimate safety net for the protection of policyholders. Breach of MCR would trigger regulatory intervention and require recovery actions by the insurer.

For QIS 3, the MCR is assumed to be 50% of total diversified PCR for simplicity. As the PCR is calibrated with reference to a value-at-risk at a 99.5th percentile over a one-year period, while MCR aims to reflect the same metric at a 90th percentile, 50% is the ratio between 90th percentile and 99.5th percentile of a standard normal distribution.

KIRT Survey

The KIRT Survey should be submitted together with QIS 3 results. The survey collects systemic risk-related data for the IAIS to develop a holistic framework for systemic risk in the global insurance sector.

Some of the quantitative data to be collected include:

- Interest rate risk, sovereign risk, credit risk, and equity and property risk related information
- Interconnectedness with financial industry (e.g., exposure to banks)
- Assets, liabilities, revenues, premiums, and technical provisions
- Policyholder behaviour metrics (e.g., lapse experience over the past 12 months)

Not too much additional effort should be required to complete the KIRT Survey given most information should have been readily available within insurance companies or collected during the QIS 3 template filing process. This data will continue to be collected annually going forward.

Conclusion and next steps

This set of technical specifications should hopefully be close to final; given the final HKRBC framework is expected to be in effect after 2021. Therefore, QIS 3 can be seen as a prime opportunity for insurance companies to have a final review of their methodology and calculations to ensure that their submission is in line with regulatory requirements and their capital position is optimised. While the concept of balance sheet optimisation may differ from one company to another, a few common themes have been observed among companies:



Product strategy

- Unlike the existing regulatory basis in Hong Kong, some products look better than others under an economic balance sheet.
- These products are typically more protection oriented and with less guarantees. This may have impact on sales and distribution as well.
- Key metrics under HKRBC basis should be considered when developing new products.



Risk mitigation tools

- Reinsurance arrangements, as well as other financial risk mitigation tools, can be considered to reduce the exposure to different risks.



Financing strategy

- Eligible capital is grouped into tiers, with certain restrictions on the amount of lower tier capital.
- Management may need to reconsider the source of capital, in order to maximise the eligible capital.



Investment strategy / ALM

- Assets backing liabilities come with different risk charges under the HKRBC and optimisation of investment portfolio can be performed based on an efficient frontier approach to minimise risk charges.
- ALM should also be an area of focus to reduce interest rate risk charge.



Actuarial model / approach

- Models and approaches should be reviewed and enhanced to avoid using overly prudent proxies.
- The same applies to the approach used to quantify time value of options and guarantees (TVOG); the factor approach (20% of PCR) is often seen as a more prudent approach than the stochastic approach.



Management action plan

- Management action plan should be tailored to reflect the risks faced by the company.
- It needs to be explicitly designed to lessen the impact under stressed scenarios as well.

When investigating or carrying out the above actions, companies should ensure methodologies are sufficiently documented, and in line with industry standards, as they will need to be audited once HKRBC becomes a statutory requirement in Hong Kong.

In addition, in July 2019 the IA released the “Guideline on Enterprise Risk Management (GL21)” ([link](#)) as the key document setting out the Pillar 2 requirements under HKRBC Framework, which will be effective from 1 January 2020. In accordance with GL21, companies are required to conduct the first Own Risk and Solvency Assessment (ORSA) for the financial year ending on or after 31 December 2020. As part of the ORSA results submission, companies need to perform a Stress and Scenario Testing (SST) exercise to assess their risk profiles and capital requirements covering their business plan period under different stress scenarios, and this will be based on the latest HKRBC Pillar 1 technical specifications. Therefore, companies should also be prepared to project the economic balance sheet based on HKRBC basis for at least three years in order to carry out the SST, which may pose technical challenges for some companies.

If you would like to discuss any aspects of this e-Alert or would like to discuss this further, please contact one of our consultants below.



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