

Loss absorbency in risk-based capital frameworks

Introduction

Participating (par) insurance products represent a significant portion of the life insurance business in many Asian markets, including Malaysia, Hong Kong, China and Singapore. Under the risk-based capital regimes of these markets, the loss-absorbing capacity attributed to the non-guaranteed benefits of par products is a key element in the overall assessment of the solvency position. Regulators in Asia have adopted different approaches in relation to the allowance for the loss-absorbing capacity within par funds, which can have a significant impact on the measures of solvency calculated in each market. This e-Alert provides an overview of how the different approaches to recognising loss absorbency affect headline solvency ratio measures.

Risk-based capital basics

Regulatory capital frameworks vary between different markets. Historically, regulatory capital requirements were based on simple solvency margin concepts (e.g., x% of reserves; y% of sum at risk etc.) but the growing trend is for regulators to move towards what are referred to as “risk-based capital” (RBC) frameworks. As the name suggests, these frameworks attempt to quantify each insurer’s exposure to different risks and the aggregate level of capital they would require as a margin against these risks (the “required capital”). An insurer’s solvency position can then be measured by comparing its “available capital” with its required capital, usually via the capital adequacy ratio (CAR), which is the ratio of the available capital to the required capital. Regulators will typically set minimum solvency requirements in terms of minimum levels of CAR.

The CAR is an important indicator of an insurer’s financial strength and will also be an important measure in insurers’ decision-making policies, for example for dividend management and investment strategy. It is important, therefore, for market observers to understand the differences in the underlying RBC frameworks that apply in different territories before making comparisons.

The required capital under RBC frameworks typically consists of various risk elements aggregated together, usually with some form of allowance for diversification benefits. The various risk elements are grouped into broader categories, which differ by regime, but can typically be considered as:

- Insurance/underwriting risks, possibly split by different insurance lines (e.g. life, non-life, health etc.)
- Market risks
- Counterparty risks
- Operational risk

The standard approach for calculating the capital requirement for each risk element is typically to apply a prescribed shock to the appropriate assets and/or liabilities and measure the balance sheet impact, which then becomes the capital requirement for each risk element. The capital requirements for each risk element are then aggregated to give the total company-level capital requirement. In the more recent RBC frameworks, the aggregation will make allowances for diversification benefits between the different risk elements. Most regulators in Asia do not allow companies to use internal models and will provide prescribed risk charges for each risk element and diversification factors for risk aggregation based on their own calibrations.

Available capital will typically be based on the surplus assets of the insurer in excess of its liabilities. Various adjustments will be made to the surplus, for example to allow for any differences between the balance sheet basis for the surplus and the basis used for the solvency calculation and to allow for any adjustments based on the quality of the capital such as removal of goodwill or intangibles.

Loss absorbency

Par products consist of a combination of guaranteed and non-guaranteed benefits. The non-guaranteed benefits, also referred to as discretionary benefits, will depend on the performance of the par business, such that the policyholders participate in the experience of the business. If the experience is better than expected, for example higher investment returns, lower expenses or reduced claims, then non-guaranteed

benefits are increased. Conversely, if experience is worse than expected then the non-guaranteed benefits are reduced. In the context of risk capital assessments, this ability to reduce benefits in the event of poor experience acts as a risk mitigant, reducing the direct effects of the risk stresses and consequently leading to lower capital requirements. This is referred to as “loss absorbency,” as reduction to non-guaranteed benefits can absorb (some of) the loss that the insurer would face from the risk stress.

The amount of cushioning that adjusting future non-guaranteed benefits can provide in stress scenarios is referred to as the loss-absorbing capacity. The loss-absorbing capacity will depend not only on the value of the future non-guaranteed benefits, but also on how the insurer manages the par business. Policyholders’ reasonable expectations (PRE) and local regulations on par business will affect how quickly, and how far, the insurer can actually reduce the non-guaranteed benefits in practice, and the loss-absorbing capacity *should* reflect it, although, as we will see later, it depends on how each RBC regime allows for the loss-absorbing capacity.

Approaches in different markets

We observe that there are two fundamentally different approaches for the allowance of loss absorbency for par business in Asian markets adopting RBC solvency regimes. In Singapore and Malaysia, which were two earlier adopters of RBC approaches to solvency, the allowance is made via an adjustment to the available capital, whereas under the Hong Kong RBC and China Risk-Oriented Solvency System (C-ROSS) frameworks the allowance is via a reduction to the required capital. We also note that the approach used in Hong Kong and China is closer to that used under the European Solvency II regime, which also allows for loss absorbency via the required capital.

Perhaps less surprisingly, there are also differences in how the allowance for loss absorbency is calculated in each regime. Under China C-ROSS Phase II, Singapore RBC2 and Malaysia RBC, the loss absorbency calculation follows a prescribed formula provided by the regulator. Meanwhile, for Hong Kong RBC the loss absorbency calculation varies by company depending on the extent of management actions being included in the actuarial models under the risk stresses.

The loss absorbency allowance under Singapore RBC2 is calculated based on the difference between the total assets of the par fund and the risk-free value of the guaranteed liabilities. This essentially assumes that under a risk-free stressed solvency scenario, all future non-guaranteed benefits could be removed to help meet the solvency needs. For Malaysia RBC, however, the allowance is 50% of the difference between the value of the liabilities including future non-guaranteed benefits, discounted using a best-estimate fund-based yield, and a risk-

free value of the guaranteed liabilities only. For C-ROSS the allowance for loss absorbency allows the required capital to be reduced by the difference between the liabilities assuming current best-estimate future non-guaranteed benefits and the value of the liabilities assuming a minimum level of assumed future non-guaranteed benefits, subject to certain limits determined based on the market and credit risk requirements of the par fund.

Comparing like with like?

It is to be expected that solvency ratios for the same business would differ under different prescribed RBC bases, as each regime’s view of different risks will vary. We might then expect those differences to be a reflection of the severity of the assumed risks under each basis, and that one basis would therefore always be more onerous than the other. However, due to the fundamental difference in whether the loss absorbency is reflected in the required capital or in the available capital, we find that this is not the case.

Let us consider a very simplified example to highlight this difference, comparing the approach under the Hong Kong RBC (HK RBC) basis against the Singapore RBC2 (SG RBC2) basis. In this example, we assume a par fund has assets of 1,000 and the risk-free value of the guaranteed liabilities (G’teed Liabs) is 700 under both bases and for the HK RBC basis the best-estimate liability (BEL) is 900. For simplicity, we assume that the effect of the risk requirement stresses only affects asset values and not the value of guaranteed liabilities, and is the same for both bases, reducing the value of the assets to 800. For the HK RBC example, we assume that the BEL in the stress (Stressed BEL) reduces to 750 as a result of reduced non-guaranteed benefits in the stress. Figure 1 shows the resulting CAR for the fund under these two different example bases.

FIGURE 1: SIMPLIFIED EXAMPLE TO ILLUSTRATE EFFECTS OF DIFFERENT TREATMENT OF LOSS ABSORBENCY ON SOLVENCY RATIO

	HK RBC	SG RBC2
Assets (1)	1,000	1,000
G’teed Liabs (2)	700	700
BEL (3)	900	n/a
Stressed Assets (4)	800	800
Stressed BEL (5)	750	n/a
Available Capital (6)	(1) – (3) = 100	(1) – (2) = 300
Required Capital (7)	((1) – (3)) – ((4) – (5)) = 50	(1) – (4) = 200
CAR = (6) / (7)	200%	150%

From Figure 1 we can see that, despite the assumed impact of the stresses applied in both bases, the differences in allowance for loss absorbency in the two bases results in significantly different CARs. In the example shown it appears that the HK RBC basis gives a higher CAR, but this is just a result of the example scenario that we have used. To demonstrate this, Figure 2 shows how the CAR under the two bases would change if the value of assets were increased or decreased by 50. No change to the effect of the stress is assumed.

FIGURE 2: CAR FROM THE PREVIOUS SIMPLIFIED EXAMPLE WITH DIFFERENT VALUES OF ASSETS

ASSETS	HK RBC	SG RBC2
Base less 50	100%	125%
Base (Figure 1)	200%	150%
Base Plus 50	300%	175%

The results shown in Figure 2 highlight some key points. The first is the point already mentioned above, that although the HK RBC basis gave a higher CAR in the base example we used, by simply adjusting the assumed figures (reducing assets by 50 in this case) the SG RBC2 can give a higher CAR. The example is not trying to show that one approach in the allowance for loss absorbency gives a lower or higher CAR than the other, but simply that the results can vary greatly as a result of the approach. This, in turn, means that we cannot easily compare the solvency of two companies that are applying solvency bases with this fundamental difference in the allowance for loss absorbency, even if we could adjust for the differences in the severity of the risk stresses or the liability discount rates.

The other key point to note from Figure 2 is the significant difference in sensitivity to adding and removing assets (or available capital). The sensitivity is much greater under the HK RBC basis than the SG RBC2 basis, as the denominator (required capital) is lower in the Hong Kong basis due to the allowance of loss absorbency within the computation of required capital. This would mean that the same capital injection would have a bigger positive impact under the HK RBC basis than under the SG RBC2 basis, for the simplified example we have shown. This is an important point when considering target capital levels. Say, for example, an insurer sets its target capital level based on meeting its minimum regulatory requirements under a 1-in-10 stress. The dollar

amount of additional capital required to cover a 1-in-10 event would likely be similar under different regimes, but, as we have seen in Figure 2, the impact of that additional available capital on the CAR is much bigger under the HK RBC basis than the SG RBC2 basis. This means we would likely see a larger add-on to the minimum CAR to get to the target CAR under the HK RBC basis than under the SG RBC2 basis.

Other considerations

Under the Hong Kong RBC regime (based on early adopted technical specifications published by Insurance Authority), the loss absorbency allowance will depend on the effect of the management actions assumed within actuarial models. This encourages insurance companies to consider how they will actually employ their discretion in the management of the par business under different stressed scenarios. Documentation of the management actions assumed in the model can then help guide the insurer in making actual decisions in the future, or, better still, the insurer will maintain sufficiently detailed documentation for how it intends to manage the par business, which would then support the assumed management actions in the actuarial model. This can help to promote clearer, more objective management of the par business.

Comparing RBC under different regimes on a like-for-like basis is not a straightforward exercise. Even if the SG RBC2 and HK RBC bases share the same discount rates, risk stresses and diversification factors, it would not be possible, however, to simply move the existing loss absorbency allowance under the SG RBC2 regime from the available capital to a reduction in the required capital, because the current allowance is effectively the maximum possible loss absorbency available, which for many par funds would exceed the total required capital and lead to zero required capital for the par business, which itself is unrealistic. Instead, it would be necessary to use liabilities with a best-estimate allowance for future non-guaranteed benefits and then recalculate those liabilities allowing for management actions based on each risk stress. This would be a significant change from the current process and likely require model enhancements to allow for the management actions in the risk capital calculations. There may also need to be consideration of whether any of the assets of the par fund (excluding the Surplus Account) could be considered as being maintained as capital buffer, rather than specifically for meeting expected policyholder benefits, as is the current approach in Singapore.

Conclusions

Differences in RBC regimes in different markets are not simply about the severity of the prescribed risk requirements, variations in diversification factors or differences in liability discount rate assumptions. Allowances for loss absorbency from non-guaranteed benefits varies significantly between different Asian markets, in particular in terms of whether the loss absorbency is allowed for via a reduction to the capital requirements or an increase in the available capital. As we have demonstrated, this difference can lead to significant differences in headline CAR figures, and also the sensitivity of the CAR.

Market observers should bear these differences in mind when comparing business that is subject to different RBC regimes. In particular, target capital buffers are likely to be quite different for insurers with significant participating blocks of business under the different regimes, even for insurers with similar business profiles.



Milliman is among the world's largest providers of actuarial and related products and services. The firm has consulting practices in life insurance and financial services, property & casualty insurance, healthcare, and employee benefits. Founded in 1947, Milliman is an independent firm with offices in major cities around the globe.

milliman.com

CONTACT

Alex Bryant
alex.bryant@milliman.com

Erica Chan
erica.chan@milliman.com