

MILLIMAN RESEARCH REPORT

Life insurance capital regimes in Asia

Comparative analysis and implications of change

4th edition

Summary report

July 2022

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Introduction

Capital regulations for life insurance companies in Asia are complex and varied. They are also subject to change, with such changes often affecting how insurers manage their business. In many markets in the region, regulators are introducing new risk-based capital (RBC) regimes or 'upgrading' existing RBC frameworks, with increasing consideration being given to consistency with the new International Financial Reporting Standard 17 (IFRS 17), International Capital Standards (ICS), and other capital regimes worldwide.

In view of the pace of change and the increasing focus on regulatory capital across the region, we felt it was timely to produce an update to the third edition of the report we published in 2021. This '4th edition' report covers the existing or upcoming capital regimes in 13 markets in Asia plus 'ICS Version 2.0 for the monitoring period.' The report also makes reference to Solvency II, Bermuda Solvency Capital Requirements (BSCR), Canada's Life Insurance Capital Adequacy Test (LICAT), and the United States' RBC regime (US RBC).

Our report aims to:

- i) Compare and contrast life insurance RBC regimes across selected Asian markets
- ii) Highlight some of the potential implications for life insurers arising from the future development of capital regulations
- iii) Contribute to the wider discussion on the potential impact of changes in regulation on the life insurance industry in Asia

In line with reports from previous years, the report seeks to provide a comparison of key quantitative and qualitative aspects of life insurance capital regimes in Asia and to show analysis of key capital results (e.g., capital ratio, risk charges, factors affecting capital) based on information publicly available and from other market sources. It does not attempt to provide all the applicable details behind the capital regulations governing life insurance companies in the various markets analysed. It is important to recognise that the regulatory environment in Asia is changing fast and, consequently, the information contained in this report is time sensitive. The various capital regimes covered in this report are based on the applicable regulatory environment as at 31 May 2022. Some of these regulations may have changed since this date.

We have produced an executive summary of the full report, which we are sharing here.

If you would like to request a copy of the full report or discuss the RBC frameworks in any of the markets covered in this report in more detail, please contact one of the Milliman consultants listed at the end of the report.

Executive Summary

Comparison of Technical Specifications of Capital Regimes

OVERVIEW

Most insurance markets in Asia follow some form of RBC regime, although some of them, including Hong Kong, India, and Brunei, are still currently using an EU Solvency I type of approach. In some markets, insurance regulators are reviewing the existing capital regulations, with the new rules being effective in 2023, 2024, and 2026 for South Korea, Hong Kong, and Taiwan, respectively. Malaysia is also looking to 'upgrade' its existing RBC requirements while some updates have also currently been discussed in Thailand. In China, on 30 December 2021, the CBIRC unveiled the new rules of C-ROSS Phase II. Figure 1.1 provides an overview of the current status of capital regimes for the markets covered in this report.

FIGURE 1.1: STATUS OF THE CAPITAL REGIMES

MARKET	INSURANCE REGULATORY/ GOVERNING BODY	EXISTING CAPITAL REGIME / APPROACH	DEVELOPMENTS
BRUNEI RBCS	Brunei Darussalam Central Bank (BDCB)	EU Solvency I Not risk-based	RBC framework is to be incorporated in the near future. Parallel runs have been conducted in 2020 and 2021.
CHINA C-ROSS PHASE II	China Banking and Insurance Regulatory Commission (CBIRC)	C-ROSS Phase II Risk-based	On 30 December 2021, the CBIRC unveiled the new rules of C-ROSS Phase II. Insurers are required to prepare their 1Q22 solvency reports based on the C-ROSS Phase II regime. The CBIRC will determine a transition period for insurers that will allow them to comply with some of the rules in stages and fully implement the new regime by 2025 at the latest.
HONG KONG RBC (EARLY ADOPTION)	Hong Kong Insurance Authority (IA)	EU Solvency I Not risk-based	Hong Kong is introducing an RBC framework, targeted for tabling to the Legislative Council in 2022 and to be effective in 2024 (depending on time spent on legislative process). There have been three rounds of industry quantitative impact studies (QIS) to date plus more voluntary studies on different refined approaches. The regulator released the latest set of technical specification (referred to as the 'Early Adoption Spec') by the end of 2021, which forms the basis for RBC reporting if insurance companies decide to apply for an early adoption of the HKRBC regime, as well as for companies to perform stress and scenario testing (SST) as part of the ORSA requirements.
JAPAN (REGULATORY)	Financial Services Agency (FSA)	Risk-based (US risk-based)	The FSA issued a paper on June 30, 2022 about its provisional decision to introduce an economic value-based solvency regime from the end of FY 2025. The new regime is expected to be largely in line with the Insurance Capital Standard (ICS), but some elements are expected to be modified to reflect local market characteristics, including MOCE reverting back to the cost-of-capital approach and use of risk factors different from ICS. In order to facilitate timely IT system developments, the FSA clarified in the paper that they do not plan to suggest any major changes affecting the fundamental IT system design, while the recent field test specification such as exact risk factor levels should not be interpreted as a final decision.
INDIA SOLVENCY I	Insurance Regulatory and Development Authority of India (IRDAI)	EU Solvency I Not risk-based	The IRDAI is contemplating the introduction of an RBC regime. However, the exact framework to be adopted has yet to be defined and the timing of implementation remains uncertain.
INDONESIA RBC	Otoritas Jasa Keuangan (OJK)	Risk-based	We understand there are no material planned developments to the current RBC framework expected in the near-term.
MALAYSIA RBC	Bank Negara Malaysia (BNM)	Risk-based	BNM has initiated a review of its current RBC framework. An exposure draft for the updated RBC is expected to be released in 2022, followed by a parallel run of the new draft framework in 2023 and subsequently the potential implementation of the new RBC framework in 2024 at the earliest (subject to the results of the parallel run). QIS on the proposed new framework have been on-going since 2021.
PHILIPPINES RBC 2	Insurance Commission (IC)	Risk-based	We understand there are no material planned developments to the current RBC framework expected in the near term.

MARKET	INSURANCE REGULATORY/ GOVERNING BODY	EXISTING CAPITAL REGIME / APPROACH	DEVELOPMENTS
SINGAPORE RBC 2	Monetary Authority of Singapore (MAS)	Risk-based	MAS is considering the allowance for countercyclical buffers within the existing RBC2 framework.
SOUTH KOREA RBC	Financial Supervisory Service (FSS)	Risk-based (US risk-based)	The FSS has announced its plan to adopt K-ICS, an economic value-based capital framework, which is similar to ICS. The target effective date is January 2023. There have been four rounds of QIS to date, and there could be further refinements before the framework is put forward to the legislative council.
SRI LANKA RBC	Insurance Regulatory Commission of Sri Lanka (IRCSL)	Risk-based	There may be some tightening of the capital requirements in the near future, potentially leading to higher capital charges. However, in light of the current and ongoing economic uncertainty in the country the IRCSL has allowed certain relaxations in the determination of the solvency position.
TAIWAN CURRENT RBC	Financial Supervisory Commission (FSC)	Risk-based (US risk-based)	The current RBC approach is based on prescribed risk factors multiplied by risk exposures. Going forward, Taiwan is set to move to an ICS-based regime, with the industry currently undergoing QIS. Taiwan ICS (T-ICS) is scheduled to come into effect on 1 January 2026.
THAILAND RBC 2 (95TH PERCENTILE)	Office of Insurance Commission (OIC)	Risk-based	The current Thailand RBC 2 framework is based on a 95 th percentile confidence level. It is understood that the OIC may plan to introduce a 99.5 th percentile confidence level framework two years after IFRS 17 applies in Thailand. It also understood that the OIC is currently reviewing some of the parameters of the current RBC regime (e.g., ALM capital requirement).

A move towards an economic balance sheet framework across the region, but material differences exist

The assessment of the available capital and capital requirement using an economic balance sheet approach has underpinned most of the recent changes in Asian capital regulations. A fundamental premise of the economic balance sheet framework is the endorsement of the concept that assets and liabilities should be valued on a consistent economic basis, leading to a reduction or elimination, where possible, of accounting mismatches. This economic balance sheet approach is also consistent with that used under Solvency II, Insurance Capital Standard (ICS), and IFRS 17 principles. In particular, for solvency purposes, an increasing number of Asian capital regimes require companies to:

- Assess their assets on a market-value basis (e.g., Hong Kong's proposed RBC framework, Indonesia, Singapore, Thailand, Malaysia), although some are still measuring their assets using different accounting bases (e.g., for China's C-ROSS, Japan's regulatory capital)
- Value their liabilities using a gross premium valuation (GPV) approach allowing for an additional risk margin (RM) and, potentially, a time value of options and guarantees (TVOG), using a fair value approach based on 'relatively market consistent' discount factors

Although there is a trend towards the use of an economic balance sheet framework, markets are moving at different paces, and many regulators in Asia seem to have taken a more practical approach that reflects market specifics, while ensuring a reasonable degree of conservatism (e.g., the flooring of reserves in some markets). This leads to inconsistencies between RBC regimes across the region. Figure 1.2 gives an overview of some of these differences when assessing liabilities.

FIGURE 1.2: APPROACH OF EVALUATING DETERMINISTIC INSURANCE LIABILITIES

CAPITAL REGIME	GENERAL		RISK MARGIN		TVOG	
	APPROACH	LIABILITY FLOOR	ALLOWED?	APPROACH	ALLOWED?	APPROACH
BRUNEI RBCS	GPV	Reserves floored to zero at policy level	✓	PAD	✗	None
CHINA C-ROSS (PHASE I AND II)	GPV	CSV less capital requirement	✓	MOCE	✓	Deterministic only ^(b)

CAPITAL REGIME	GENERAL		RISK MARGIN		TVOG	
	APPROACH	LIABILITY FLOOR	ALLOWED?	APPROACH	ALLOWED?	APPROACH
HONG KONG RBC (EARLY ADOPTION)	GPV	None	✓	MOCE	✓	Stochastic/ Deterministic
JAPAN (REGULATORY)	NPV	Reserves floored to zero at policy level	X	Considered implicitly	✓	Stochastic/ Deterministic
JAPAN (ICS VERSION 2.0 FOR THE MONITORING PERIOD)	GPV	None	✓	MOCE	✓	Stochastic/ Deterministic
INDIA SOLVENCY I	GPV	CSV (if there is a surrender value) or reserves floored to zero at policy level	✓	PAD	✓	Not explicitly specified
INDONESIA RBC	GPV	Reserves floored to zero at policy level	✓	PAD	X	N/A
MALAYSIA RBC	GPV	Reserves floored to zero at fund level	✓	PAD	✓	Stochastic/ Deterministic
PHILIPPINES RBC 2	GPV	None	✓	PAD	X	N/A
SINGAPORE RBC 2	GPV	Reserves floored to zero at policy level ^(a)	✓	PAD	X	N/A
SOUTH KOREA RBC	NPV	Reserves floored to zero at policy level	X	Considered implicitly	✓	Stochastic
SOUTH KOREA K-ICS	GPV	None	✓	MOCE	✓	Stochastic
SRI LANKA RBC	GPV	No floor for the liability. However, the sum of reserves and required capital should not be less than the total surrender value of policies	✓	PAD	✓	Stochastic/ Deterministic
TAIWAN CURRENT RBC	NPV	Reserves floored to zero at product level	X	Considered implicitly	X	N/A
TAIWAN ICS	GPV	None	✓	MOCE	✓	Stochastic/ Deterministic
THAILAND RBC 2 (95TH PERCENTILE)	GPV	Reserves floored to zero at product group level	✓	PAD	X	N/A
SOLVENCY II	GPV	None	✓	CoC	✓	Stochastic
BERMUDA BSCR	GPV	None	✓	CoC	✓	Stochastic
CANADA LICAT	GPV	Cap on credit taken for negative reserves and if CSV greater than reserves	✓	PAD	X	N/A
US RBC	NPV	Reserves floored to zero at policy level	X	Considered implicitly	X	N/A

Notes:

GPV = Gross Premium Valuation, NPV = Net Premium Valuation, CSV = Cash Surrender Value, PAD = Provision for Adverse Deviation, CoC = Cost of Capital, MOCE = margin over current estimate

(a) Singapore RBC 2 regime continues to floor policy reserves to zero but recognises negative reserves as an increase to financial resources.

(b) Although C-ROSS Phase II uses deterministic factor approach to TVOG calculation, the factors only depend on the guaranteed interest rate while both remaining liability duration and guaranteed interest rate are considered in C-ROSS Phase I.

N/A: not appropriate

TVOG is a good example of such discrepancies. Universal life products offering guarantees are prevalent in many markets in Asia including China, Hong Kong, and Singapore, but TVOG is only included in the newly proposed Hong Kong RBC (early adoption) and China C-ROSS regimes (Phase I and Phase II). Moreover, under C-ROSS I and II, TVOG is assessed using a prescribed deterministic formula that applies to the whole industry, whereas the Hong Kong regulator is encouraging companies to assess TVOG using stochastic asset liability management (ALM) models to better reflect their own cost of financial options and guarantees. The same discrepancies in TVOG methodology apply to participating business, which is material in many markets in Asia (e.g., Hong Kong, Singapore, Malaysia, China, India, and Sri Lanka).

The RM is another example of discrepancies across RBC regimes in Asia. While a provision for adverse deviation (PAD) approach or a margin over current estimate (MOCE) approach (consistent with Insurance Capital Standard) are adopted in most of the capital regimes in the region, the approach to derive the PADs, (and in particular the underlying risk charges used to calculate the PADs) differs from one market to another. In addition, the PAD and MOCE approaches are not consistent with the cost of capital (CoC) approach used for Solvency II and Bermuda BSCR. It may also not be in line with the approach adopted by some Asian life insurance companies under IFRS 17 (although some companies may also decide to use a PAD or MOCE approach) or for economic capital purposes.

Discount rate: Market consistency and illiquidity premium/smoothing

Under RBC regimes, the yield curves used to assess the best estimate liability (BEL) are typically defined using a 'bottom-up' approach, whereby the discount rate reflects a market consistent risk-free rate plus an adjustment for illiquidity and smoothing prescribed by regulators. However, the valuation of liabilities requires the use of a yield curve that extends to very long durations, reflecting both market conditions and long-term economic views. This poses a challenge in Asia (and elsewhere) where available market data is often covering a much shorter duration than the projected cash flows. The reference yield curve is typically extrapolated from the last liquid market point (LLP) to some long-term equilibrium rate (ultimate forward rate or UFR). Figure 1.3 compares the parameters used by the various regimes considered in this report.

FIGURE 1.3: DETERMINATION OF THE DISCOUNT CURVE

CAPITAL REGIME	BASIC YIELD	ILLIQUIDITY PREMIUM/ SMOOTHING	LLP	UFR	INTERPOLATION/ EXTRAPOLATION
BRUNEI RBCS	Government bond yield curve (Singapore is used as a proxy)	N/A	20 years	3.8%	Smith-Wilson method
CHINA C-ROSS (PHASE II)	Government bond yield	30 / 45 / 75 bps depending on product and issue date Use of 750-day moving average of government bond yield curve	20 years	4.5%	Quadratic
HONG KONG RBC (EARLY ADOPTION)	Government bond yield for US Dollar (USD), swap for HKD	Matching adjustment (MA) with additional Long-term Adjustment (LTA) to equity and property under segregated participating/universal life portfolios	HKD: 15 years USD: 30 years	HKD: 3.8% USD: 3.8%	Smith-Wilson method
JAPAN (REGULATORY)	Stipulated interest rate for policies issued after March 1996, with some exceptions. Otherwise, the (guaranteed) interest rates filed with FSA upon product launch.				
JAPAN (ICS VERSION 2.0 FOR THE MONITORING PERIOD)	Swap rate or government bond yield	Prescribed illiquidity premium (three-bucket approach)	JPY: 30 years USD: 30 years	JPY: 3.8% USD: 3.8%	Smith-Wilson method
INDIA SOLVENCY I	Best estimate investment return (net of PAD)	N/A, although risk-adjusted corporate bond spreads may be included in the best estimate investment return	N/A	N/A	N/A
INDONESIA RBC	Government bond yield	Past 12-month averaging of government bond yield plus a discretionary adjustment of up to 50 bps	N/A	N/A	N/A

CAPITAL REGIME	BASIC YIELD	ILLIQUIDITY PREMIUM/ SMOOTHING	LLP	UFR	INTERPOLATION/ EXTRAPOLATION
MALAYSIA RBC	Government bond yield	N/A, yet volatility adjustment and MA are introduced in the latest draft exposure for liability valuation, which may be a change of direction	15 years	Same level as at LLP	Based on forward rate
PHILIPPINES RBC 2	Bloomberg PHP BVAL reference rate for PHP Bloomberg international yield curve for USD	N/A	N/A	N/A	N/A
SINGAPORE RBC 2	Government bond yield	Allowance for illiquidity premium or MA	SGD: 20 years USD: 30 years	SGD: 3.8% USD: 3.8%	Smith-Wilson method
SOUTH KOREA RBC	Assumed (guaranteed) interest rates filed with FSS at a product launch	N/A	N/A	N/A	N/A
SOUTH KOREA K-ICS	Government bond yield	Prescribed illiquidity premium	20 years	4.95%	Smith-Wilson method
SRI LANKA RBC	Government bond yield curve as specified by IRC SL	N/A	10 years	Same as the spot rate at the LLP	N/A
TAIWAN CURRENT RBC	US government bond yield	N/A	N/A	N/A	N/A
TAIWAN ICS	Swap rate or government bond yield	Prescribed illiquidity premium (three-bucket approach)	TWD: 10 years USD: 30 years	TWD: 4.4% USD: 3.8%	Smith-Wilson method
THAILAND RBC 2 (95TH PERCENTILE)	Government bond yield	Averaging of government bond yield	50 years	Same level as at LLP	N/A
SOLVENCY II	Swap rate or government bond yield	Volatility adjustment or MA	Euro: 20 years USD: 50 years	Euro and USD: 3.60% (2021), 3.45% (2022)	Smith-Wilson method

Given the long-term nature of many life insurance contracts, life insurers typically require long-term assets to match their liabilities. Where those liabilities are 'illiquid,' such that they have relatively predictable cash flow profiles, insurers can invest in such a manner that recognises that a forced sale of assets, in most cases, would not be required. The insurers can then potentially benefit from the risk premium that can be available to long-term investors, typically called an illiquidity premium. Furthermore, insurers are typically not exposed to short-term fluctuations in the price of assets, albeit the insurer is exposed to changes in the fundamental value of the cash flows on the assets, for example an increased probability of defaults. Illiquidity premium adjustments, and smoothing adjustments (e.g., volatility adjustment, UFR, averaging of spot yield curve) are, therefore, applied in the discount rate to reduce the short-term economic balance sheet volatility, stabilise the net asset value (i.e., difference between assets and liabilities) and better reflect the long-term nature of insurance businesses, in particular the illiquid nature of liabilities. RBC capital adequacy ratios (CAR) and the different blocks of the economic balance sheet are usually sensitive to the discount rate, which is often a key driver explaining the results in different phases of quantitative impact studies and testing from regulators.

With IFRS 17, this topic has also become increasingly important as insurance companies need to reflect the characteristics of the liability cash flows when setting the IFRS 17 discount rate, and in particular the level of liquidity.

Capital requirement modules and submodules are broadly consistent across RBC regimes in Asia, but underlying parameters differ

The exhaustive list of risks considered in determining life risk capital requirements varies across different capital regimes. However, key material risks considered are typically similar, and include insurance risk, market risk, counterparty default risk, and operational risk.

- Life insurance risks include mortality or longevity risk, morbidity risk, lapse risk (long-term and mass lapse), and expense risk. Mortality catastrophe risk is also sometimes explicitly considered.
- Market risks typically consist of equity risk, interest rate risk or ALM risk, credit spread risk, property risk, and foreign exchange risk. (Note that equity volatility and interest rate volatility risk are typically not considered within RBC regimes in Asia.)
- Operational risk is normally quantified by applying risk factors to risk drivers, with premiums being one of the most common risk drivers.

As there are natural hedges between different risks, correlation matrices are usually considered to reflect diversification benefits across various risk modules and sub-modules. Most of the RBC regimes in Asia (and in particular all of the RBC regimes revised recently) consider diversification benefits when aggregating the sub-modules under the insurance and market risk modules. Some RBC regimes consider diversification between all risk components other than operational risk, while some others only consider diversification between asset risk and insurance risk.

There is generally a trend towards making risk charge parameters and stress factors more consistent from one regime to another, to the extent possible. However, material discrepancies remain, as illustrated by the comparison of interest rate stress factors for selected markets in Asia in Figure 1.4.

FIGURE 1.4: KEY PARAMETERS COMPARISON FOR INTEREST RATE FOR SELECTED TERM TO MATURITY, SHOCK DOWN

CAPITAL REGIME	INTEREST RATE/ALM, STRESS-BASED						
	APPLIES TO INTEREST RATE OR OTHERWISE AS STATED						
TERM TO MATURITY (YEAR)	1	3	5	7	10	15	20
BRUNEI RBCS	-60%	-55%	-55%	-50%	-40%	-30%	-20%
CHINA C-ROSS (PHASE II) ^(A)	-71%	-61%	-48%	-42%	-34%	-25%	-23%
HONG KONG RBC (EARLY ADOPTION)	-75%	-64%	-61%	-57%	-53%	-49%	-43%
MALAYSIA RBC ^(B)	-15%	-15%	-15%	-15%	-15%	-15%	-15%
PHILIPPINES RBC 2	-100%	-59%	-54%	-54%	-54%	-51%	-51%
SINGAPORE RBC 2	-70%	-65%	-60%	-50%	-40%	-30%	-25%
SRI LANKA RBC	-75%	-56%	-46%	-39%	-31%	-27%	-29%
THAILAND RBC 2 (95TH PERCENTILE)	-40%	-38%	-36%	-34%	-31%	-26%	-21%
SOLVENCY II	-75%	-56%	-46%	-39%	-31%	-27%	-29%

Notes:

(a) China has different shocks for assets and liabilities. The asset shocks are shown in the figure. The liability shocks are generally lower.

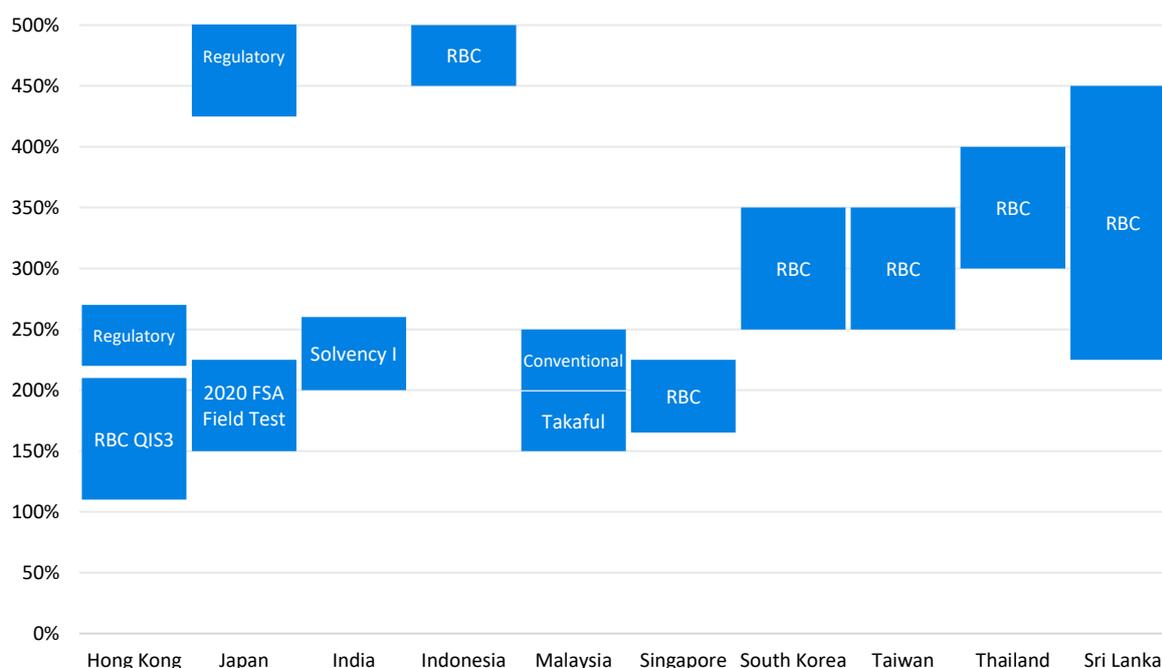
(b) For Malaysia, the stress is formula based and depends on the MGS yield. The stress shown above for comparison purposes is applicable as at end of 2021.

Comparative analysis of key capital results across Asia and impact of new RBC regimes on life insurance companies

Comparative analysis of CARs across Asia

Figure 1.5 shows the industry average CARs for each market covered in this report, except for China, Brunei, and the Philippines, where there are data limitations. Most of the markets have an average regulatory solvency ratio within the range of 180% to 400%, except for Japan and Indonesia, which have relatively higher average solvency ratios above 450%.

FIGURE 1.5: TYPICAL INDUSTRY SOLVENCY RATIO LEVEL



Source: Estimates based on public information and Milliman internal data. Some companies may experience higher or lower solvency ratios than the industry average shown above.

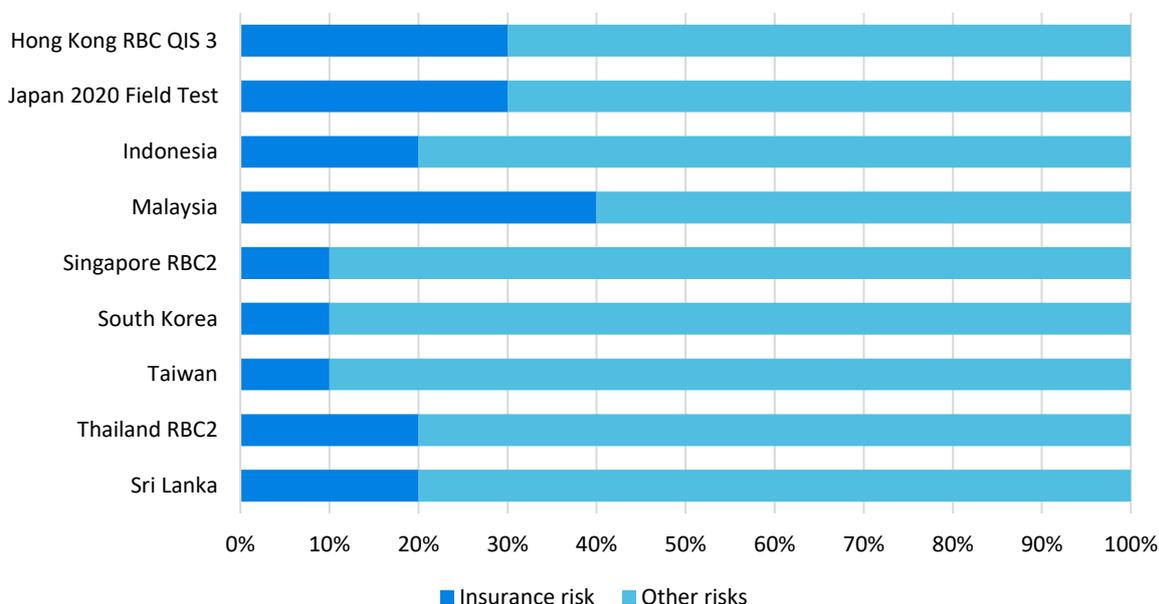
Note 1: The solvency ratios shown above are as at 31 December 2021 using prevailing capital regimes for each market except: a) Japan regulatory solvency ratio and India Solvency I solvency ratio are as at 31 March 2021, b) Japan 2020 FSA field test result is as at 31 March 2020, c) Sri Lanka is as at 31 December 2020, and d) Hong Kong RBC QIS 3 is as at 31 December 2018.

Note 2: The IA carried out QIS 3 for the developing RBC regime in 2019, and the resulting average industry solvency ratios are expected to fall in the range of 100% to 200% based on Milliman information gathered from the industry. There has been no further industry-wide assessment for Hong Kong since then. Similarly, Japan's FSA carried out an economic balance sheet RBC field test in 2019, and the resulting average solvency ratios fell in the range of 150% to 200%. However, both QIS were conducted using parameters and approaches that are currently going through review and further consultation. The average industry solvency ratios under the final implemented RBC requirements are likely to differ (potentially significantly) from those shown.

In general, industry-level solvency ratios in Asia have been relatively stable over the past few years, with small changes driven primarily by changes in the interest rate environment (with government bond yields typically used to determine the discount rate, as discussed above) and updates in Solvency regimes (e.g., Singapore RBC2, Thailand RBC2). In early 2020, the outbreak of the COVID-19 pandemic hit the global economy, with many Asian governments cutting interest rates in order to stimulate economic activity, with government bond yields falling. The downward pressure on fixed-income yields has affected both assets and liabilities of life insurance companies, leading to a decrease of solvency ratios under an economic balance sheet framework in most markets across Asia, especially in the first half of 2020. Since then, solvency ratios in a few markets have recovered as a result of the implementation of de-risking strategies by some companies and the more recent increase in interest rates.

As shown in Figure 1.6, for markets with RBC regimes, the total capital requirement (TCR) tends to be mainly driven by market risks (i.e., interest rate, equity, and credit spread), although lapse risk and morbidity risks are also key contributors, especially for markets with a more material proportion of unit-linked business (e.g., Malaysia or Indonesia). In some markets such as Japan, currency risk can also be material.

FIGURE 1.6: RISK CHARGE BREAKDOWN – INSURANCE RISK VERSUS OTHER RISKS



Source: Estimates based on public information and Milliman internal data.

Note 1: The figures above are as at 31 December 2021 based on prevailing RBC regimes of each country except: a) Japan 2020 FSA field test result is as at 31 March 2021, b) Sri Lanka is as at 31 December 2020; and c) The IA carried out QIS 3 for the developing RBC regime in 2019.

The industry-level CARs and the breakdown of risk charges can be explained largely by the nature of assets, the nature of liabilities, and the matching (or lack of matching) of assets and liabilities.

More than half of the life insurance assets across these markets are invested in bonds, with insurers in some markets investing a high proportion in government bonds (e.g., Thailand), while others are investing higher proportions in corporate bonds (e.g., Hong Kong) and alternative credit (although this remains small). The proportion of equities varies by jurisdiction, with markets having a material proportion of participating business (e.g., Singapore, Malaysia, Hong Kong) typically investing more in equities with an increasing focus on illiquid asset classes (e.g., private equity, private debt, equity/property funds).

Liabilities also differ significantly from one market to another due to product mix differences. The proportion of unit-linked business is significant in some markets (e.g., Indonesia, India, and Malaysia), while universal life business has been popular in Hong Kong, Singapore, and South Korea. Non-participating traditional business (e.g., endowments, whole life, credit life, term life) remains a material product category for all the markets studied. Participating business (e.g., endowments, whole life) is also a popular line of business for some markets across the region, including Japan, Hong Kong, Singapore, India, and Sri Lanka. Unit-linked business and insurance products with lower investment guarantees and more protection benefits typically look more attractive under an economic balance sheet framework, whereas savings products with higher investment guarantees (implicit or explicit) generally look less attractive (the degree of attractiveness being typically measured in terms of new business margin). As a part of the liability in the economic balance sheet framework, TVOG measures the in-the-moneyness of the investment guarantees embedded in the products. Figure 1.7 provides a high-level overview of the materiality of TVOG for selected markets.

FIGURE 1.7: OBSERVATIONS ON TVOG IN SELECTED MARKETS

MARKET	CAPITAL REGIME	TVOG CONSIDERED?	MATERIALITY OF TVOG
HONG KONG	Solvency I (moving to RBC)	✓ (under RBC)	TVOG could be relatively material for participating and universal life products, two of the main product categories sold in Hong Kong.
INDIA	Solvency I	✓	Generally not material as: <ul style="list-style-type: none"> ▪ The level of guarantees for participating products are typically low and interest rates are still relatively high. Hence, participating product guarantees are typically out-of-the-money. ▪ Capital guarantees are not widespread for unit-linked business. However, for non-linked group funds management business, guarantee costs may be significant depending on the level of asset/liability duration mismatch.
INDONESIA	RBC	✗	Generally not material for multinationals as a high proportion of products sold by these players are unit-linked without investment guarantees. The traditional savings products sold by domestic players may have a significant TVOG.
MALAYSIA	RBC	✓	Generally not material as: <ul style="list-style-type: none"> ▪ TVOG for participating products are currently out-of-the-money. ▪ Other products typically do not have material TVOG.
SINGAPORE	RBC	✗	TVOG is not assessed as part of the RBC framework, hence no formal quantification of TVOG is publicly available. While TVOG is not expected to be material for most products (as investment guarantees are generally low and out-of-the-money), it is expected to be material for some products such as universal life, single premium participating products.
TAIWAN	RBC	✗ (might be considered under T-ICS)	TVOG is not assessed as part of the current RBC framework, hence no formal quantification of TVOG is publicly available. When moving to T-ICS, TVOG is expected to be material given the nature of products sold in the market. However, as the industry is currently undergoing QIS, the exact impact is not known at present.
THAILAND	RBC	✗	Generally not material as: <ul style="list-style-type: none"> ▪ Most products are non-participating in nature. ▪ The participating component is typically not material and does not lead to a material TVOG. ▪ Unit-linked (without investment guarantee) are also becoming more material for some companies.

Source: Estimates based on public information and Milliman market intelligence.

The comments regarding the materiality of TVOG in the figure above are general comments related to the relevant market in question, based on our observations. The situation for individual companies within the market may vary.

Potential impact of changes in capital regimes for life insurance business in Asia

A move to a more 'economic' RBC regime tends to incentivise life insurers to optimise and potentially de-risk their balance sheets by shifting more risks to policyholders and third-party asset managers, reducing the level and cost of guarantees, tailoring existing insurance product features to be more RBC friendly, improving ALM, and optimising investment and hedging strategies. In particular, the management of RBC balance sheet volatility becomes increasingly important as a result of:

- (i) The typical fair value approach used to value assets and liabilities
- (ii) The current more volatile and unpredictable economic environment

These new capital regimes necessitate insurers to use more sophisticated and value-risk-based techniques to set and validate strategic decisions and manage their business.

- **Strategic planning and risk management.** In line with shareholder expectations, many insurers currently conduct their strategic planning with a key focus on traditional top-line revenue and bottom-line profitability growth metrics, e.g., annualised premium equivalent (APE) growth, (traditional) embedded value (EV) growth, value of one year's new business (VONB) margin, or growth using deterministic investment return assumptions. Under the new RBC regimes (and IFRS 17), these measures would need to be accompanied by additional risk-based metrics that clearly identify the trade-off between shareholder value (e.g., measured in terms of EV or VONB) and risk (e.g., measured in terms of RBC requirements and return on capital). Strategic planning will not only be a matter of finding the appropriate business strategy to grow revenue and profitability, but also a matter of optimising the allocation of capital and controlling and reducing risk, via potentially the definition of a 'return on capital' type of metric. For new business in particular, life insurers will need to find the right balance between maximising top line (by selling products with attractive returns to customers but with potentially expensive financial options and guarantees) and optimising capital (by selling products that are more capital-efficient but which may not be so attractive to customers). Ultimately, more emphasis is likely to be placed on recognising diversification benefits (both product and risk) for a given line of business.
- **Capital management, strategic asset allocation, and hedging strategy.** Changes in capital regulations will likely prompt insurers to revisit their existing capital management, strategic asset allocation and hedging programs. In particular,
 - Optimising capital requirement and return on capital will become an increasingly key priority. Management actions will need to be tailored to better reflect management decisions under stress scenarios that affect the risks faced by the company, and ultimately to make allowance for this within the assessment of RBC capital. Reinsurance strategies could be also further optimised.
 - Strategic asset allocations will need to be revised, with potentially less focus on levels of asset returns and more emphasis on risk-based metrics. More dynamic hedging programs may become increasingly relevant, targeting a certain level of volatility whilst keeping a material exposure to achieving upside.



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