

MILLIMAN RESEARCH REPORT

Life insurance capital regimes in Asia

Comparative analysis and implications of change

2nd edition

Summary report

July 2020



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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 impacting 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), the International Capital Standard (ICS) and other capital regimes in Asia and worldwide.

In view of the pace of change and the increasing focus on regulatory capital across the region, we have updated the first edition of this report produced in 2019. This “2nd edition” report covers the capital regimes in 13 markets in Asia (three additional markets have been added since 2019—namely Brunei, the Philippines and Sri Lanka) plus the 2019 ICS field test and ICS Version 2.0 for the monitoring period¹ (which may be a reasonable proxy for the future RBC regime in Japan). It 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).

This report aims to:

- i) Compare and contrast life insurance RBC regimes across selected Asian markets.
- ii) Highlight some of the potential implications for businesses 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.

The report seeks to provide a comparison of key quantitative and qualitative aspects of life insurance capital regimes in Asia and 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 of 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 30 June 2020. Some of these regulations may have changed since this date. In addition, some markets have seen temporary changes to capital regimes due to COVID-19 in recent months and further changes may be expected in the near future. All changes may not be fully captured for all markets in this report.

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

Please contact one of the Milliman consultants listed at the end of the report to request a copy of the full report or to discuss the RBC frameworks in any of the markets in more detail.

¹ The report does not cover all changes made to ICS Version 2.0 for the monitoring period when compared to the ICS Field Test 2019, but highlights the key ones.

Executive summary

Comparison of technical specifications of capital regimes

Overview

Most of the markets in Asia follow some form of RBC regime, although some of them, including Hong Kong SAR (referred to as “Hong Kong” in the report), India and Brunei, are still following an EU Solvency I type of approach. In many of the markets, insurance regulators are reviewing the existing capital regulations. Hong Kong is in the process of developing a new RBC regime, while China and Malaysia are currently in the process of “upgrading” their existing RBC requirements. Table 1.1 provides an overview of the current status of capital regimes for the markets covered in this report.

TABLE 1.1: STATUS OF THE CAPITAL REGIMES

MARKET	INSURANCE REGULATORY/ GOVERNING BODY	EXISTING CAPITAL REGIME / APPROACH	DEVELOPMENTS
BRUNEI RBCS	Autoriti Monetari Brunei Darussalam (AMBD)	EU Solvency I Not risk-based	RBC framework is to be incorporated in the near future (tentatively for financial year-end 2020).
CHINA C-ROSS	China Banking and Insurance Regulatory Commission (CBIRC)	C-ROSS Risk-based	The CBIRC is currently reviewing C-ROSS formulae and parameters, and field testing is currently ongoing. The exact timing of C-ROSS Phase II remains uncertain, but most of the updated quantitative requirements are expected to be released later this year.
HONG KONG RBC (QIS 3)	Insurance Authority (IA)	EU Solvency I Not risk-based	Hong Kong is introducing a RBC framework, targeted to be introduced by 2024 (previously estimated to be in 2021). There have been three rounds of quantitative impact studies (QIS) to date, and further refinements are possible before the framework is put forward to the legislative council.
JAPAN (REGULATORY)	Financial Services Agency (FSA)	Risk-based (US risk-based)	The FSA is contemplating the introduction of an economic value-based solvency regime. A recent field test was based on the ICS field test, although the FSA reminded the industry that this should not be interpreted as a final direction. The exact timing of the introduction of this new regime remains uncertain.
INDIA SOLVENCY I	Insurance Regulatory and Development Authority of India (IRDAI)	EU Solvency I Not risk-based	The IRDAI is contemplating the introduction of a RBC regime. However, the exact framework to be adopted has yet to be defined and the timing remains uncertain.
INDONESIA RBC	Otoritas Jasa Keuangan (OJK)	Risk-based	<p>In April 2020, the OJK released POJK No. 28/POJK. 05/2020 to replace POJK No. 10/POJK. 05/2014, requiring non-bank financial institutions to self-assess and rank their business ranging from “Healthy” to “Unhealthy” by examining the following:</p> <ul style="list-style-type: none"> ○ Good cooperate governance ○ Risk profile ○ Profitability ○ Capital <p>The ranking of the risk profile covers a qualitative assessment of the five risks quantified in the minimum required risk-based capital with four additional risks. The nine risks are: insurance risk, credit risk, market risk, liquidity risk, operational risk, legal risk, compliance risk, reputational risk and strategic risk.</p> <p>Aligned with this new regulation, there is a draft regulation that will specifically address the financial health scoring for insurers and reinsurers using a risk-based insurance rating that assesses the same four factors as POJK No. 28. This draft regulation intends to complement POJK No. 71/POJK. 05/2016 and POJK No. 72/POJK. 05/2016.</p> <p>The OJK also issued draft regulation amending POJK No. 67/POJK. 05/2016. Standalone Syariah insurers created from Syariah business units separating from conventional insurers will be required to hold minimum paid-up capital and equity of IDR 50 billion and IDR 25 billion, respectively, at the time of establishment, with these amounts increasing to the full requirement of IDR 100 billion and IDR 50 billion over two years. In the case of reinsurers, the minimum paid-up capital and equity on establishment are IDR 100 billion and IDR 50 billion respectively, with these amounts also increasing to the full requirement of IDR 175 billion and IDR 100 billion over two years.</p>

MARKET	INSURANCE REGULATORY/ GOVERNING BODY	EXISTING CAPITAL REGIME / APPROACH	DEVELOPMENTS
MALAYSIA RBC	Bank Negara Malaysia (BNM)	Risk-based	BNM has initiated a review of its current RBC framework, conducted in phases since 2018. The first phase will focus on reviewing the prudential limits on assets and counterparty exposures, followed by a review of the standards for the valuation of liabilities and capital adequacy components. In December 2019, BNM issued an updated exposure draft of the life insurance liabilities valuation guideline. An exposure draft for updated RBC may be released later following the release of the valuation guideline. The exact timing of updated rules remains uncertain.
PHILIPPINES RBC 2	Insurance Commission (IC)	Risk-based	No material future development expected in the near term.
SINGAPORE RBC 2	Monetary Authority of Singapore (MAS)	Risk-based	No future development expected in the near term given RBC 2 has just been finalised.
SOUTH KOREA RBC	Financial Supervisory Service (FSS)	Risk-based (US risk-based)	The FSS has announced its plan to adopt K-ICS, a principle-based RBC framework, which is similar to ICS. The target effective date is expected to be the same as the effective date of IFRS 17.
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.
TAIWAN 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 expected to move to an ICS-based regime but the timing remains uncertain.
THAILAND RBC 2 (95TH PERCENTILE)	Office of Insurance Commission (OIC)	Risk-based	The OIC plans to spend 2020 and 2021 working with the industry on the impact study of IFRS 9 and IFRS 17 on RBC 2. The 99.5% confidence interval RBC 2 draft will take into consideration these results and the industry feedback. It is understood that the OIC plans to commence the 99.5% RBC 2 implementation two years after IFRS 17 applies.

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

The assessment of required and available capital 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 the approach used under Solvency II, 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, Indonesia, Singapore, Thailand, Malaysia), although some are still measuring their assets using different accounting bases (e.g. China C-ROSS, Japan regulatory capital)
- Value their liabilities using a gross premium valuation (GPV) approach allowing for an additional risk margin 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, different markets are moving at different paces and many regulators in Asia also 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. Table 1.2 gives an overview of some of these differences when assessing liabilities.

TABLE 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	X	None
CHINA C-ROSS	GPV	CSV less capital requirement	✓	PAD	✓	Deterministic only
HONG KONG RBC (QIS 3)	GPV	None	✓	PAD	✓	Stochastic / Deterministic
JAPAN (REGULATORY)	NPV	Reserves floored to zero at policy level	X	Considered implicitly	✓	Stochastic / Deterministic
ICS FIELD TEST 2019	GPV	None	✓	PAD /Percentile method	✓	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
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 RBC	NPV	Reserves floored to zero at product level	X	Considered implicitly	X	N/A
THAILAND RBC 2 (95 TH PERCENTILE)	GPV	Reserves floored to zero at product 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

(a) Singapore RBC 2 regime continues to floor policy reserves to zero but recognises negative reserves as an increase to financial resources
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 (QIS 3) and China C-ROSS regimes. Moreover, under C-ROSS, TVOG is assessed using a prescribed deterministic formula that applies to the whole industry, whilst the Hong Kong regulator is encouraging companies to assess TVOG using stochastic asset liability management (ALM) models to better reflect their own costs 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 risk margin is another example of discrepancies across RBC regimes in Asia. Whilst provisions for adverse deviation (PADs) 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 approach (which is determined by recalculating liabilities by including an additional prudent margin on top of the best estimate assumptions) is not consistent with the cost of capital (CoC) approach used by 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 approach) or for economic capital purposes.

Discount rate: Market consistency and smoothing

Under RBC regimes, the yield curves used to assess the best estimate of liabilities (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 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). Table 1.3 compares the parameters used by the various regimes.

TABLE 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
CHINA C-ROSS	Government bond yield	30 / 45 / 70 bps depending on product and issue date	20 years	4.5%	Quadratic
HONG KONG RBC (QIS 3)	Government bond yield for USD, swap for HKD	Matching adjustment with additional Long-term Adjustment (LTA) to equity and property under segregated funds.	HKD: 15 years USD: 30 years	HKD: 4.4% 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.				
ICS FIELD TEST 2019	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	Averaging of government bond yield plus a discretionary adjustment of up to 50bps	N/A	N/A	N/A
MALAYSIA RBC	Government bond yield	N/A, yet volatility adjustment and matching adjustment are introduced in the latest drat exposure for liability valuation, which may be a change of direction	15 years	Same level as at LLP	Based on forward rate

CAPITAL REGIME	BASIC YIELD	ILLIQUIDITY PREMIUM /SMOOTHING	LLP	UFR	INTERPOLATION/ EXTRAPOLATION
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 matching adjustment	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
SRI LANKA RBC	Government bond yield curve as specified by IRCSL	N/A	10 years	Same as the spot rate at the LLP	N/A
TAIWAN RBC	US government bond yield	N/A	N/A	N/A	N/A
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 matching adjustment	Euro: 20 years USD: 50 years	3.9% (since 2018, it is revaluated yearly and it cannot decrease by more than 15bps p.a.)	Smith-Wilson method

Using the spot yield curve to set discount rates introduces an asset liability gap in the economic balance sheet of insurance companies, whereby the market price of assets captures the illiquid nature of the assets but this is not recognised within the liability calculations. Illiquidity premium adjustments and smoothing adjustments (e.g. volatility adjustment, UFR, averaging of spot yield curve) are, therefore, applied to narrow this gap, 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 and the different blocks of the economic balance sheet are usually sensitive to this parameter, which is often a key component in different phases of quantitative impact studies and testing from regulators. Some RBC regimes are currently reviewing this parameter in order to more appropriately reflect the asset and liability management position of insurance companies and dampen the impact of the prevailing low (and potentially volatile) interest rate environment.

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 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 by RBC regimes in Asia.)
- Operational risk is typically quantified by applying risk factors to risk drivers, with premium 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 submodules. In particular, most of the RBC regimes in Asia (and in particular all the RBC regimes revised recently) consider diversification benefits when aggregating

the submodules 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 Table 1.4.

TABLE 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 ^(a)	-73%	-68%	-58%	-50%	-37%	-28%	-24%
HONG KONG RBC (QIS 3)	-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 asset and liability. The asset shocks are presented here and the liability shocks are generally lower.

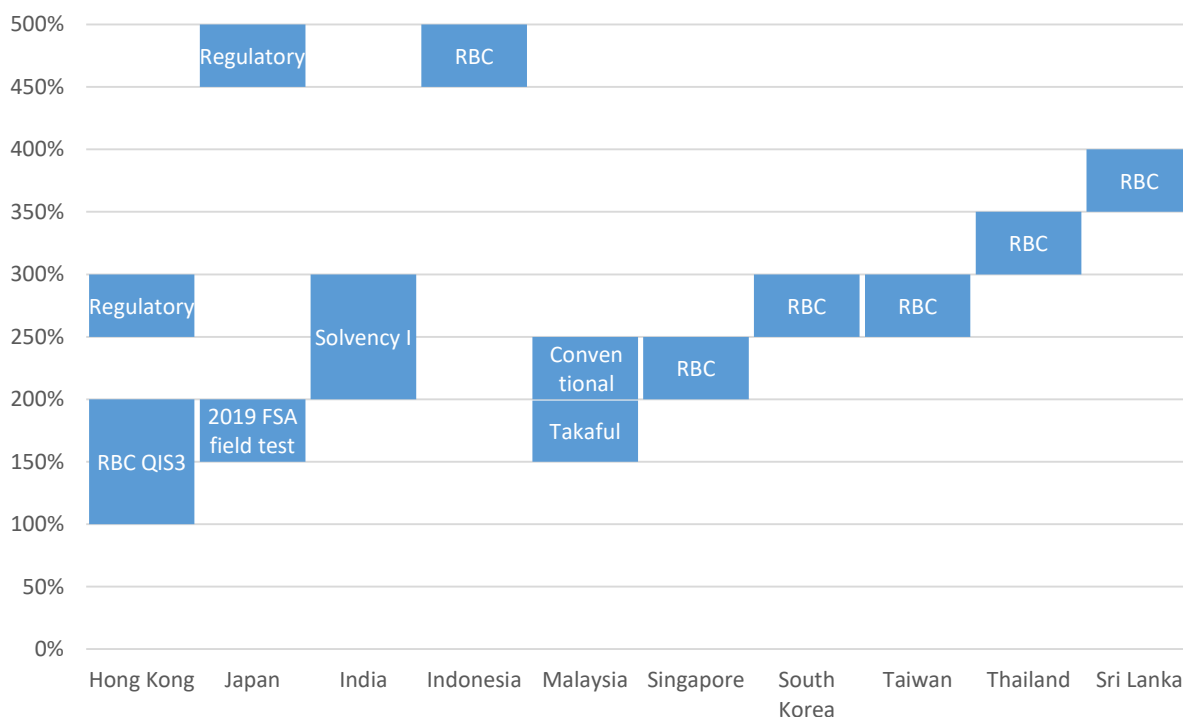
(b) For Malaysia, the stress is formula-based and depends on the MGS yield. The stress shown above for comparison purposes is applicable as at end of 2019.

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

Comparative analysis of capital adequacy ratios across Asia

Figure 1.5 shows the industry average capital adequacy ratios for each market covered in this report, except for China and the Philippines, where there are data limitations. Most of the markets have an average regulatory solvency ratio within the range of 200% 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 typical industry solvency ratio level shown above.

Note 1: The solvency ratios shown above are as at 31 December 2018 except: a) Japan regulatory solvency ratio and India Solvency I solvency ratio are as at 31 March 2019; b) Japan 2019 FSA field test result is as at 31 March 2019, and c) Taiwan is as at 31 December 2019.

Note 2: The Hong Kong IA carried out QIS 3 for the new 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. 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 quantitative impact studies were conducted using parameters and approaches that are currently going through review and further consultation. The typical industry solvency ratios under the final implemented RBC requirements are likely to differ (potentially significantly) from those shown.

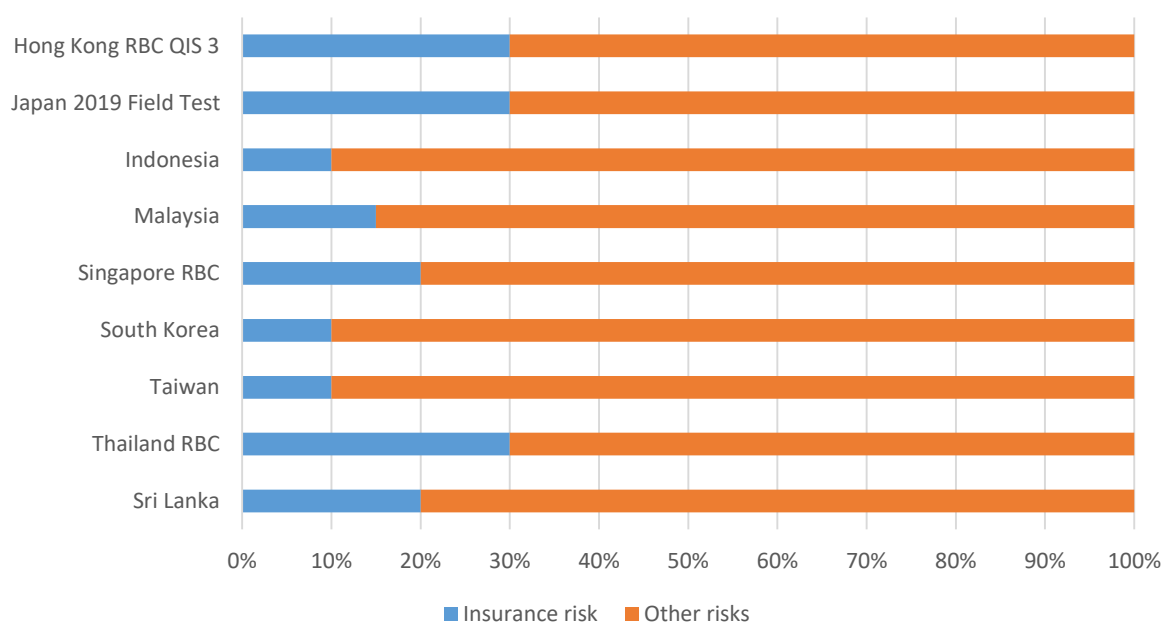
Note 3: For Malaysia, the conventional business only includes life conventional business, and Takaful business includes only family Takaful business.

Note 4: For Thailand and Singapore, the ratios are based on old RBC 1 regimes, as statistics under the new RBC 2 regimes are not publicly available.

In general, industry-level capital ratios in Asia have been relatively stable over the past few years, with small changes driven primarily by changes in the interest rate environment (government bond yields being typically used to set up the discount rate as discussed above). However, in 2020, the COVID-19 pandemic is affecting both assets and liabilities of insurance companies, and should lead to a decrease (potentially material for some companies) of solvency ratios under an economic balance sheet framework in most markets across Asia. Public solvency data should hopefully be available in the coming months and should allow us to better assess the magnitude of the impact by market. In many markets, however, it is worth noticing that regulators have introduced transitional measures to offset the negative impact of the COVID-19 pandemic (e.g. MAS in Singapore has introduced a transitional measure that will come into effect from 31 March 2020 and will be gradually phased out by the end of 2021, the OJK in Indonesia has introduced a new regulation entitled “Counter-cyclical Policies against the Impact of the Coronavirus Disease 2019 for Non-banking Financial Services” effective from April 2020).

For markets subject to RBC regimes, as shown in Figure 1.2, the total capital requirement 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. 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 2018 except: a) Japan regulatory solvency ratio and India Solvency I solvency ratio are as at 31 March 2019; b) Japan 2019 FSA field test result is as at 31 March 2019, and c) Taiwan is as at 31 December 2019.

Note 2: For Thailand and Singapore, the above breakdown is based on Thailand RBC 1 and Singapore RBC 1 parameters, respectively.

Industry level capital adequacy ratios and the breakdown of risk charges can be explained 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), whilst others are investing higher proportions in corporate bonds (e.g. Hong Kong). The proportion of equities varies, with markets having a material proportion of participating business (e.g. Singapore, Malaysia, Hong Kong) typically investing more in equities and less liquid asset classes (e.g. private equity, debt/equity funds).

Liabilities differ significantly from one market to another. The proportion of unit-linked business is significant in some markets (e.g. Indonesia, India and Malaysia), whilst 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) 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 guarantees and protection products will typically look more attractive under an economic balance sheet framework, whilst savings products with guarantees (implicit or explicit) will generally be less attractive (the degree of attractiveness being typically measured in terms of new business margin). Table 1.7 provides a high-level overview of the materiality of TVOG should this be assessed as part of the RBC framework (which is currently not the case in all markets).

TABLE 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 QIS)	TVOG could be relatively material for par products and universal life products, which are two main product categories sold in Hong Kong.
INDIA	Solvency I	✓	Generally not material as we observe: <ul style="list-style-type: none"> The level of guarantees for par 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	X	Generally not material for multinationals as we observe most products sold by these players are unit-linked without guarantee. The traditional savings products sold by domestic players may have significant TVOG.
MALAYSIA	RBC	✓	Generally not material as we observe: <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	X	TVOG is not assessed as part of the RBC framework, hence no formal quantification of TVOG is publicly available. Whilst TVOG is not expected to be material for most products (as 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 and recent tranches of new participating products where guarantees can be high.
TAIWAN	RBC	X	TVOG is not assessed as part of the RBC framework, hence no formal quantification of TVOG is publicly available. However, TVOG is expected to be material given the nature of products sold in the market.
THAILAND	RBC	X	Generally not material as we observe: <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 any material TVOG. Unit-linked (without 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 table 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

Similar to what has been observed in Europe with Solvency II, a move to introduce more “economic” RBC regimes tends to incentivise life insurers to shift more risks to policyholders and third-party asset managers. It also encourages life insurers to optimise their balance sheets by reducing the level and cost of guarantees, to improve ALM (e.g. refining management actions to better capture impact of stress scenarios, embedding ALM as part of the product launch process), and to optimise investment strategies (e.g. risk-adjusted investment strategy, hedging).

Under a more economic RBC regime, various elements of the value chain of a life insurance company may need to be revisited, for example:

- When developing products, life insurers need to systematically capture the RBC impact covering both assets and liabilities. Reinsurance, hedging and diversification benefits across products and risks also need to be considered more explicitly.
- Adjustments in sales and distribution models may also be critical to supporting more fundamental changes in product development, asset management and risk management. Some insurers will need to re-evaluate the suitability of their current distribution processes in the context of new and more economic RBC regimes. Customers may not be keen to purchase insurance products with lower or no guarantees. Well-trained intermediaries with the right tools will be required to educate customers on the benefits of more “RBC-friendly” products.

Overall, together with the need to better manage the balance sheet under the current volatile and unpredictable economic environment, these new capital regimes will require insurers to use more advanced techniques to set and validate strategic decisions and manage their business, for example:

- **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 and bottom line 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 one deterministic base case investment return assumption. 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 potentially expensive financial options and guarantees) and optimising capital (by selling products which may not have been so attractive historically 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, reinsurance and hedging strategy.** Changes in capital regulations will likely prompt insurers to revisit their existing capital management, reinsurance and hedging programs. Two main factors will drive this change:
 - o Optimising capital requirement will become an increasingly key priority. Management actions will need to be tailored to better reflect factors, impacting risks faced by insurance companies and ultimately making allowance for it in the assessment of RBC capital.
 - o The financing strategy of insurance companies may also be impacted as a result of the introduction of new definitions of eligible capital, typically grouped into tiers.



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