MILLIMAN RESEARCH REPORT

Life insurance capital regimes in Asia

Comparative analysis and implications of change

7th Edition - Summary report

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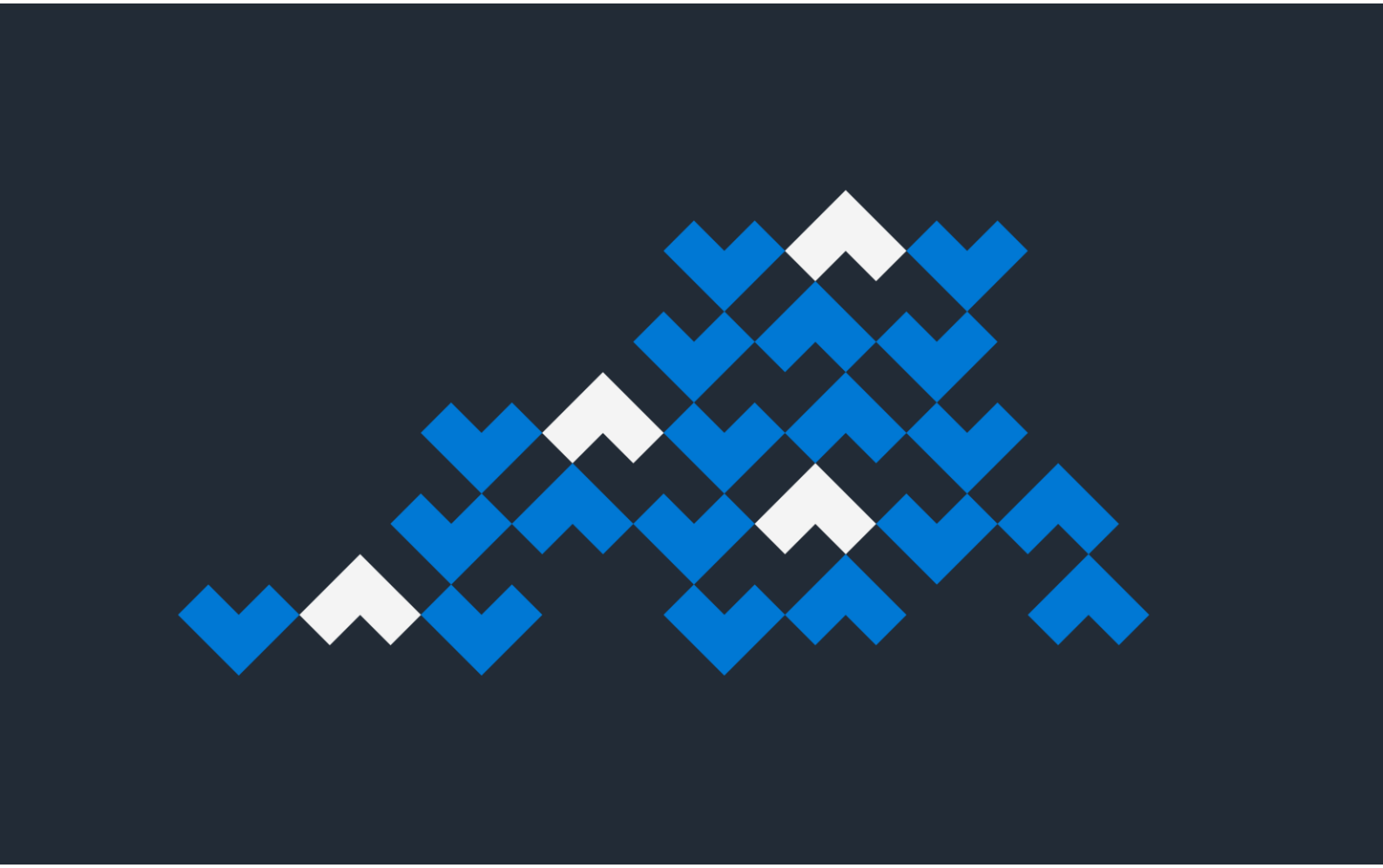

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Introduction

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 "upgrading" existing risk-based capital (RBC) frameworks or introducing RBC regimes for the first time, with increasing consideration being given to consistency with the Insurance Capital Standard (ICS), the new International Financial Reporting Standard 17 (IFRS 17), and other capital regimes worldwide.

This is the seventh edition of the Milliman Capital Regimes report, which covers the existing or upcoming capital regimes in 15 markets in Asia plus ICS, the Bermuda Solvency Capital Requirement (BSCR) and the Cayman Islands RBC which impact the balance sheets of some Asian life insurers. The report also makes reference to Solvency II, Solvency UK, Canada's Life Insurance Capital Adequacy Test (LICAT), the United States' RBC regime (US RBC) and Australia RBC, as well as the typical approaches used by large companies in Asia under IFRS 17.

Our report aims to:

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

In line with our reports from previous years, this 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 publicly available information 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 July 2025. 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 capital 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

OVERVIEW

Most insurance markets in Asia now follow some form of RBC regime although some, including India, Vietnam, and Brunei, still use an EU Solvency I type of approach. In some markets, insurance regulators have reviewed, or are reviewing, the capital regulations, with new rules being implemented in Hong Kong and Japan in 2024 and 2025 respectively, and new rules expected for Taiwan in 2026 and Macao in 2027 [1]. Malaysia is also looking to upgrade its existing RBC requirements, while updates to the capital rules in Thailand are still under discussion. India is also going through the process of moving from the existing Solvency I capital regime to India RBC, but the exact timeline has not yet been communicated. 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 ACROSS ASIA

MARKET	INSURANCE REGULATORY/ GOVERNING BODY	EXISTING CAPITAL REGIME / APPROACH	DEVELOPMENTS
BRUNEI	Brunei Darussalam Central Bank (BDCB)	RBCS EU Solvency I Not risk-based	RBC framework is to be incorporated in the near future.
MAINLAND CHINA (referred to as China in this report)	National Financial Regulatory Administration (NFRA), formerly known as China Banking and Insurance Regulatory Commission (CBIRC)	C-ROSS Phase II Risk-based	In September 2023, the NFRA announced a set of changes to the C-ROSS II rules, with the aim to further enhance the solvency monitoring standard for insurance companies in China. Key changes include implementation of differentiated capital requirements for companies of different size, better recognition of long-term products in the calculation of capital resources to encourage protection focused business, and the optimisation of risk factors for certain investment categories to support the real economy and technology innovation. The regulator has indicated that it might want to make some additional changes, but at this stage there is no clear direction of future changes to the rules.
HONG KONG	Hong Kong Insurance Authority (IA)	RBC Risk-based	Hong Kong RBC (Cap 41R) became effective for all insurers from July 2024, after three rounds of industry quantitative impact studies (QIS) and early-adoption of Hong Kong RBC (HKRBC) by some insurers.
JAPAN	Financial Services Agency (FSA)	Risk-based (US risk-based)	The FSA introduces an economic value-based solvency (ESR) regime, with the finalised version published in July 2025 and effective from 31 March 2026. The new regime is expected to be largely in line with ICS, but some elements are expected to be modified to reflect local market characteristics, including Margin Over Current Estimate (MOCE) following a cost of capital (CoC) approach and using risk factors that are different from ICS. The FSA has been analysing the results of field tests and consulting with insurers on technical aspects of the proposed rules. Note that the capital results of this report are based on 2024 field test specifications published on September 2024.
INDIA	Insurance Regulatory and Development Authority of India (IRDAI)	EU Solvency I Not risk-based	In 2023 the IRDA released the first quantitative impact study (QIS) on RBC, with all insurers and reinsurance branches participating. While it is clear that the RBC framework is still under development, and feedback from this first exercise will likely lead to further clarifications and changes before a final regime is defined, some broad themes emerged: ▪ The regime appears to be based on the ICS with the capital calibrated to be sufficient to meet a 1-in-200 year event over a one-year time horizon (99.5% confidence interval) ▪ Standard list of risk modules ▪ Market consistent approach, with assets and liabilities measured at fair value

1. For Japan ESR, Taiwan ICS and ICS the final rules may differ from the methodologies that are currently undergoing field testing (Japan ESR, Taiwan ICS and ICS). Broadly, this report summarises the draft methodologies based on information available as at 31 July 2025, but some later updates are also included for T-ICS and ICS.

MARKET	INSURANCE REGULATORY/ GOVERNING BODY	EXISTING CAPITAL REGIME / APPROACH	DEVELOPMENTS
			▪ While exact details of the QIS template are not in the public domain, we understand a wide variety of data has been collected to support the refinement of the technical specifications. We would expect there to be further QIS exercises (potentially up to three QISs) before a final standard is released
INDONESIA	Otoritas Jasa Keuangan (OJK)	RBC Risk-based	While no official announcement has been made, there has been an ongoing speculation that the regulator might be considering the development of a revised RBC framework in response to the implementation of IFRS 17.
MALAYSIA	Bank Negara Malaysia (BNM)	RBC Risk-based	BNM released an exposure draft for the updated RBC framework in June 2024. Companies were required to provide responses to the questions raised in this exposure draft and complete the second Quantitative Impact Study (QIS2) by 31 December 2024. Parallel reporting for the proposed RBC framework is tentatively set to begin as early as 1 January 2026, with full implementation from 1 January 2027.
PHILIPPINES	Insurance Commission (IC)	RBC2 Risk-based	If and when the Omnibus Guidelines (issued by the IC on 16 April 2024) come into effect, there will be an increase to the minimum solvency capital ratio and trend test requirement by 5%. We understand that the IC is looking at making other developments to the RBC2 framework following the implementation of PFRS17 in 2025. The regulator is currently in talks with the Philippines Life Insurance Association (PLIA) regarding some potential changes to the RBC2 framework.
SINGAPORE	Monetary Authority of Singapore (MAS)	RBC2 Risk-based	MAS issued a consultation paper on proposed capital treatment for structured products and infrastructure investments for insurers in October 2024 and insurers and other interested parties were invited to provide their feedback by 22 November 2024. The proposal includes the introduction of a differentiated capital treatment for infrastructure investments and revision to the capital treatment of structured products, including those which are infrastructure in nature. Furthermore, we also understand that that there is currently some focus around the treatment of non-guaranteed benefits of participating policies, possible enhancements to the marching adjustment, and allowance for the time value of options and guarantees (TVOG).
SOUTH KOREA	Financial Supervisory Service (FSS)	K-ICS Risk-based	Since the introduction of K-ICS in 2023, the FSS has been continuously reinforcing the requirements to enhance financial soundness and strengthening risk management capabilities of the insurance companies.
SRI LANKA	Insurance Regulatory Commission of Sri Lanka (IRCSL)	RBC Risk-based	During 2025 the RBC taskforce consulted with the industry to develop recommendations for updates to RBC. Some of the areas that are being considered include: ▪ Replacement of the Surrender Value Capital Charge (which operates as floor of the overall reserves and capital at the total surrender value of contracts) with a mass lapse risk charge; ▪ Introduction of a catastrophe risk charge for long-term insurance; ▪ Re-assessment of the risk margins and liability risk capital charges; ▪ Improvements to the assessment of interest rate risk changes for asset-backed business (e.g. universal life); ▪ Inclusion of projected bonus rates in the risk-neutral valuation of participating business liabilities (and removal of the 50% capital credit for the value of future bonuses); ▪ Zeroisation of negative long-term insurance liabilities (with an allowance for zeroisation in capital) ▪ Extrapolation of the risk-free interest rate yield curve past the last liquid point to an ultimate forward rate. If accepted by the IRCSL, a revised RBC framework could be introduced during 2026.

MARKET	INSURANCE REGULATORY/ GOVERNING BODY	EXISTING CAPITAL REGIME / APPROACH	DEVELOPMENTS
TAIWAN	Financial Supervisory Commission (FSC)	RBC 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 doing final preparation for its imminent implementation. Taiwan ICS (TW-ICS) is scheduled to come into effect on 1 January 2026.
THAILAND	Office of Insurance Commission (OIC)	RBC2 Risk-based (95th percentile)	The current Thailand RBC 2 framework is based on a 95th percentile confidence level. We understand the OIC is currently reviewing some of the parameters of the current RBC regime (e.g., ALM capital requirement). We also understand the OIC might review the confidence level of the RBC regime once IFRS 17 is well implemented by companies.
VIETNAM	Ministry of Finance (MOF)	EU Solvency I Not risk-based	The insurance regulator is contemplating the introduction of an RBC regime. A draft proposal of the Vietnam RBC framework was first released in H2 2022 followed by two quantitative impact studies (QIS1 & QIS2). QIS2 provided the industry with the opportunity to provide feedback on QIS1, but the exact framework to be adopted has yet to be defined, and the exact timeline is still unclear at this stage.
ICS	International Association of Insurance Supervisors (IAIS)	Risk-based	ICS was adopted as a global minimum standard for Internationally Active Insurance Groups (IAIGs) in December 2024. The 2024 ICS Technical Specification was adopted after reflecting feedback from the 2023 ICS public consultation and analysis of results from the five-year ICS monitoring period. Insurance group regulators need to ensure their insurance group capital requirements meet the minimum standards of ICS, although ICS implementation is not compulsory. Impacted Asian insurance group regulators include the IA, the MAS and the FSA. The US approach to ICS implementation, known as the Aggregation Method, offers comparable outcomes to ICS, although some enhancements will be made to improve convergence to ICS.

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

Most of the solvency regimes across Asia have moved to an economic balance sheet framework with an objective to assess assets and liabilities on a fair-value basis while the capital requirement typically follows a modular approach based on a company-specific assessment that is sensitive to each insurer's risk profile. A fundamental premise of the economic balance sheet framework is the concept that assets and liabilities should be valued on a consistent economic basis, leading to a reduction or elimination of accounting mismatches where possible. This economic balance sheet approach is typically consistent with the principles of Solvency II, ICS, and IFRS 17, although differences exist at a detailed level. 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, Indonesia, Singapore, Thailand, and Malaysia), although some markets are still measuring their assets using different accounting bases (e.g., China's C-ROSS 2, Solvency I-like regimes such as Vietnam or India)
- 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, the lack of loss absorbing capacity of reserves in others). 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 FOR EVALUATION OF DETERMINISTIC INSURANCE LIABILITIES

CAPITAL REGIME	GENERAL		RISK MARGIN		TVOG	
	APPROACH	LIABILITY FLOOR	REQUIRED?	APPROACH	REQUIRED?	APPROACH
BRUNEI RBCS	GPV	Reserves floored to zero at policy level	✓	PAD	X	N/A
CHINA C-ROSS (PHASE II)	GPV	CSV less capital requirement	✓	MOCE	✓	Deterministic only[a]
HONG KONG RBC	GPV	None	✓	MOCE	✓	Stochastic/ Deterministic
JAPAN (CURRENT)	NPV	Reserves floored to zero at policy level	X	Considered implicitly	✓	Stochastic/ Deterministic
JAPAN ESR (FUTURE)	GPV	None	✓	MOCE [b]	✓	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[c]	✓	PAD	X	N/A
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 policy level	X	Considered implicitly	×	N/A
TAIWAN ICS (FUTURE)	GPV	None	✓	MOCE	✓	Stochastic/ Deterministic
THAILAND RBC 2 (95TH PERCENTILE)	GPV	Reserves floored to zero at product group level	✓	PAD	X	N/A
VIETNAM SOLVENCY I	NPV	None	X	Considered implicitly	X	N/A
SOLVENCY II/ UK	GPV	None	✓	CoC [d]	✓	Stochastic
BERMUDA BSCR	GPV	None	✓	CoC	✓	Nine deterministic scenarios
CANADA LICAT	GPV	Cap on credit taken for negative reserves and if CSV greater than reserves	✓	Typically PAD but approach can vary	✓	Stochastic/ Deterministic

CAPITAL REGIME	GENERAL		RISK MARGIN		TVOG	
	APPROACH	LIABILITY FLOOR	REQUIRED?	APPROACH	REQUIRED?	APPROACH
ICS	GPV	None	✓	MOCE	✓	Stochastic/ Deterministic
US RBC	NPV	Reserves floored to zero at policy level	X	Considered implicitly	X	N/A
AUSTRALIA RBC	NPV	CSV	×	Considered implicitly	×	Considered implicitly

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, CL. = Confidence Level, BE = Best Estimate, N/A = Not applicable

(a) 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.

(b) Japan ESR regime's MOCE is based on a CoC approach which aims at reflecting the uncertainty of liability cash flows related to non-hedgeable risks.

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

(d) For Solvency UK, starting from year-end 2023, a modified CoC approach with the use of a risk-tapering factor as the "runoff" factor is adopted in the calculation of the risk margin.

TVOG is a good example of such discrepancies. Universal life products offering guarantees are prevalent in many markets in Asia including Hong Kong, Singapore, China, and Vietnam, but TVOG is only included under Hong Kong RBC and China C-ROSS Phase II regimes. Under C ROSS 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 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 risk margin is another example of discrepancies across RBC regimes in Asia. A provision for adverse deviation (PAD) approach or a MOCE approach (consistent with ICS) is adopted in most of the capital regimes in the region. However, the approaches to derive the PADs differ between markets, for example in determining the underlying risk charges used to calculate the PADs, or selecting the percentile for the determination of the MOCE (e.g., 75th percentile under HK RBC, 85th percentile under South Korea ICS and China C-ROSS II). In addition, the PAD and MOCE approaches are not consistent with the CoC approach used for Solvency II and Bermuda BSCR. We understand that Japan ESR is expected to adopt a CoC approach. Moreover, the risk margin methodologies may not be in line with the approaches 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 discount rates 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 often covers a much shorter duration than the projected cash flows. Therefore, the reference yield curve is typically extrapolated from the last liquid market point (LLP) to some long-term equilibrium rate, referred to as the ultimate forward rate (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	Government bond yield for US dollar (USD), swap for Hong Kong dollar (HKD)	Matching adjustment (MA) Additional long-term adjustment (LTA) for equity and property held in a segregated participating or universal life portfolio	HKD: 15 years USD: 30 years	HKD: 3.8% USD: 3.8%	Smith-Wilson method
JAPAN (CURRENT)	Stipulated interest rate for policies issued after March 1996, with some exceptions, otherwise, the (guaranteed) interest rates filed with FSA upon product launch.				
JAPAN ESR (FUTURE)	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
MALAYSIA RBC	Government bond yield	N/A. Regulator is consulting on future changes, including volatility adjustment and MA	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 K-ICS	Government bond yield	Prescribed illiquidity premium	20 years (gradually increased to 30 years from 2025 by 2027)	4.55%	Smith-Wilson method
SRI LANKA RBC	Government bond yield curve as specified by regulator	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 (FUTURE)	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

CAPITAL REGIME	BASIC YIELD	ILLIQUIDITY PREMIUM/ SMOOTHING	LLP	UFR	INTERPOLATION/ EXTRAPOLATION
VIETNAM SOLVENCY I	Government bond yield	Averaging of government bond yield but cannot exceed the average investment return rate of the last four consecutive quarters and the pricing interest rate of each insurance product	N/A	N/A	N/A
SOLVENCY II/UK	Swap rate or government bond yield	Volatility adjustment or MA	Euro: 20 years USD: 30 years	Euro and USD: 3.45% (2023) 3.30% (2024)	Smith-Wilson method [(a)]
ICS	Swap rate or government bond yield	Prescribed illiquidity premium (three-bucket approach)	CNY: 10 years EUR: 20 years JPY: 30 years KRW: 20 years TWD: 10 years USD: 30 years	CNY: 6.0% EUR: 3.8% JPY: 3.8% KRW: 4.4% TWD: 4.4% USD: 3.8%	Smith-Wilson method
AUSTRALIA	Government bond yield	Prescribed illiquidity premium for annuity products, fixed term/rate business and funeral bond business: For 1-10 years: 33% of the spread between an A-rated corporate bond yield and the CGS bond yield of equivalent maturity, capped at 150 bps (min 0 bps). 20+years: 0.20% p.a.	Not prescribed	Not prescribed	Not prescribed

Note:

(a) One of the provisional updates to the EU Solvency II Directive, with early 2026 being the soonest implementation date, is the adoption of a new Alternative Extrapolation Method (AM) in extrapolating the risk-free interest rates. Under this method, the extrapolated forward rates shall be equal to a maturity-dependent weighted average of the UFR and a liquid forward rate, which takes into account information on longer-term interest rates from multiple financial instruments other than bonds that can be observed in a deep, liquid and transparent market. The recalibration of SCR interest rates will be implemented gradually over a five-year transitional period.

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 though they are 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 derivation of the discount rate to reduce the short-term economic balance sheet volatility, stabilise the net asset value (i.e. difference between fair value of assets and liabilities) and better reflect the long-term nature of insurance businesses, in particular the illiquid nature of liabilities. Illiquidity premiums/smoothing adjustments are common under RBC frameworks and typically act as countercyclical measures in order to reduce the sensitivity of the economic balance sheet to the discount rate. The prescribed approach and complexity vary across regimes, from a historical averaging of risk-free yield/other prescribed spread (e.g., China CROSS II, Thailand RBC 2, Indonesia RBC) to a more complex matching adjustment mechanism (e.g., Singapore RBC 2 or Hong Kong RBC).

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 risks considered in determining life risk capital requirements vary across different capital regimes. However, key risks considered are typically similar, and include insurance risk, market risk, counterparty default risk, and operational risk.

- Insurance risk includes mortality risk, longevity risk, morbidity risk, lapse risk (long-term and mass lapse), and expense risk. Mortality catastrophe risk is also sometimes explicitly considered while a separate surrender risk charge is sometimes explicitly captured if mass lapse is not included.
- Market risk typically consists 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, differences remain, as illustrated by the comparison of interest rate stress factors for selected markets in Asia in Figure 1.4.

FIGURE 1.4: COMPARISON OF KEY PARAMETERS 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 ([b])	(75)%	(64)%	(61)%	(57)%	(53)%	(49)%	(43)%
Malaysia RBC ([c])	(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/UK	(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 Hong Kong, the absolute change in yield curve relative to the base scenario is limited to 200 bps, and this was triggered as at the end of 2022.

(c) For Malaysia, the stress is formula based and depends on the Malaysia Government Securities (MGS) yield. The stress shown above for comparison purposes is still relevant at date of this report.

For ICS, the interest rate risk charge is based on a combination of three stresses: mean reversion, level up and level down scenarios. In addition to these three stresses, the calculations of interest rate risk charge for K-ICS also take the risk of twist into consideration.

Pillar 2: Enhancement and alignment of qualitative requirements

From a Pillar 1 perspective, there is a general trend towards using an economic balance sheet to measure quantitative capital requirements. In addition, from a Pillar 2 perspective there is also increased alignment amongst Asian regulators in terms of qualitative requirements. Typically, this includes a requirement for insurers to develop an enterprise risk management (ERM) framework and to perform an assessment of the insurer's own capital needs based on the risk exposures of the insurer. This latter exercise is often captured in the form of an Own Risk and Solvency Assessment (ORSA).

Asian regulators continue to enhance qualitative requirements. In particular, larger insurers in the Philippines were required to submit their first ORSA report by Q4 2024, in response to the Philippines Insurance Commission's circular letter 2022-41 issued in August 2022.

The alignment of qualitative requirements is partially driven by the requirements of the International Association of Insurance Supervisors (IAIS) which sets out standards and guidance for Insurance Supervisors in the Insurance Core Principles (ICPs). Specifically, ICP8 covers Risk Management and Controls and ICP16 covers Enterprise Risk Management. The standards and some of the additional guidance are typically adopted by Asian regulators.

The standards from ICP16 are adapted and summarised below:

- Insurers should develop an ERM framework that enables identification of all foreseeable, material risks and dependencies for risk and capital management.
- Insurers should quantify risks and perform stress testing.
- An insurer's ERM framework should reflect the linkages between risk appetite, risk limits, regulatory capital requirements, economic capital and risk monitoring.
- Insurers should have a risk appetite that is operationalised through more granular risk limits.
- Insurers should have a policy on asset-liability management (ALM).
- Insurers should have a policy on investment risk.
- Insurers should have a policy on underwriting risk.
- Insurers should have a policy on liquidity risk.
- Insurers should ensure they perform liquidity stress testing, have sufficient highly liquid assets, have a liquidity contingency funding plan and submit a liquidity risk management report to the supervisor.
- Insurers should regularly perform an ORSA to assess the adequacy of risk management and current, and likely future, solvency position.
- The insurer's board and senior management should be responsible for the ORSA.
- The ORSA should cover all foreseeable and material risks including at least insurance, credit, market, concentration, operational, liquidity, and group risks. It should assess the insurer's resilience to shocks and assess counterparty exposures.
- The ORSA should determine the overall financial resources needed to manage the business given the risk appetite and business plans. The insurer should base its risk management actions on consideration of available and required economic and regulatory capital, and the ORSA.
- The ORSA should analyse the ability of the insurer to continue in business over the medium to longer term.
- The insurer should analyse the risks to solvency and consider the options for recovery.
- The supervisor undertakes reviews of the ERM framework including ORSA and requires strengthening of the ERM framework where appropriate.

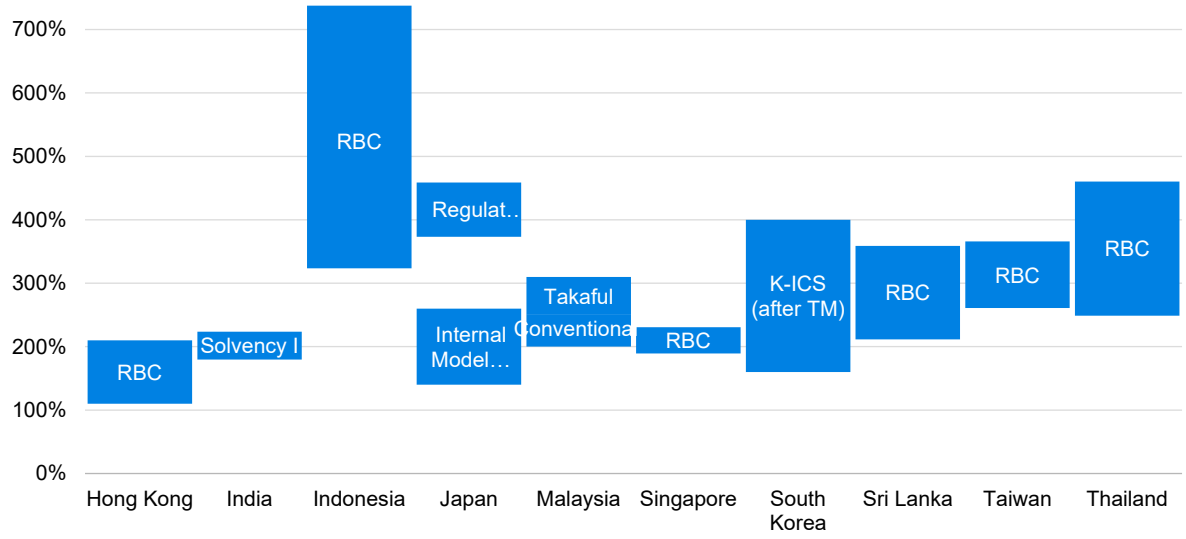
Insurance supervisors are subject to assessment of how well they have implemented the standards laid down in the ICPs, as part of the Financial Sector Assessment Program (FSAP), which is a joint assessment by the International Monetary Fund (IMF) and the World Bank. Given this, it is to be expected that all jurisdictions will look to enhance their frameworks to ultimately converge to the standards laid down in the ICPs.

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

Comparative analysis of capital adequacy ratios (CAR) across Asia

Figure 1.5 shows the industry average CARs for each market covered in this report, except for China, Brunei, the Philippines and Vietnam, where there are data limitations. Most of the markets have an average regulatory solvency ratio within the range of 180% to 410%, except for Japan, which have relatively higher average solvency ratios above 400%.

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.

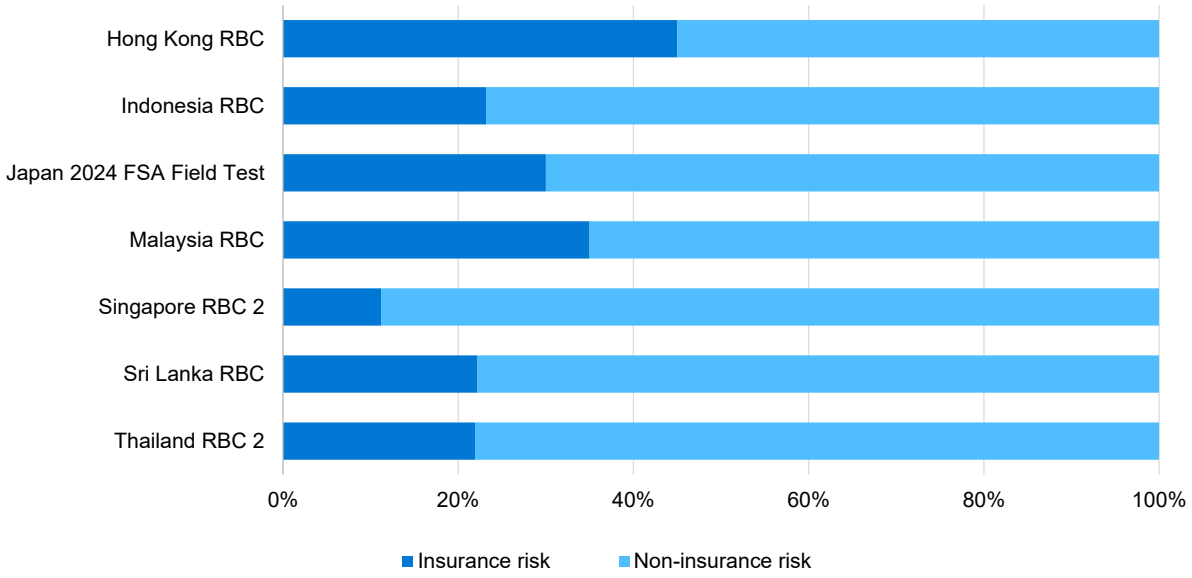
Notes:

1. The solvency ratios shown are as at 31 December 2024, using prevailing capital regimes for each market except: a) At the time this report was prepared, Hong Kong RBC results were not publicly available and are instead derived from recent private data collected by Milliman, b) India Solvency I solvency ratio is as at 31 March 2024, c) Japan regulatory and economic solvency ratio are as at 31 March 2025, d) Sri Lanka RBC is as at 31 December 2023, and e) Taiwan RBC is as at 30 June 2024.
2. Japan's FSA carried out an economic balance sheet RBC field test, and the resulting average economic solvency ratio for life insurers was 219% as of March 2024. While the internal model approach is not eligible, several companies disclose the internal model economic solvency ratios which fell in the range of 140% to 260% as of March 2024.
3. Malaysia's solvency ratios are 200% - 250% for conventional and 210%-270% for Takaful respectively.

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 RBC 2, Thailand RBC 2). 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, while government bond yields fell. In 2020, the downward pressure on fixed-income yields affected both assets and liabilities of life insurance companies and led to a decrease of solvency ratios across most Asian regimes that had an economic balance sheet framework. Since 2021, solvency ratios in several markets have recovered as a result of an increase in fixed-income yields.

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 protection business (e.g., Malaysia). In some markets such as Japan, currency risk can also be material.

FIGURE 1.6: RISK CHARGE BREAKDOWN – INSURANCE CAPITAL REQUIREMENT VERSUS OTHERS



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

Note: The figures are as at 31 December 2024 except: a) At the time this report was prepared, Hong Kong RBC results were not publicly available and are instead derived from recent private data collected by Milliman, b) Japan 2024 FSA field test result is as at 31 March 2024, and c) Sri Lanka is as at 31 December 2023.

The industry-level CARs and the breakdown of risk charges can be explained largely by the nature of assets and 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 that have a material proportion of participating business (e.g., Singapore, Malaysia, and Hong Kong) typically investing more in equities with an increasing focus on less liquid 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., 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, Malaysia, 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	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: ▪ 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	X	While there is a shift in trend from multinationals selling unit-linked products to traditional products, the level of guarantee of most of the traditional products sold are typically low. The traditional savings products sold by domestic players may have a significant TVOG.
Malaysia	RBC	✓	Generally, not material as: ▪ 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. 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	X (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	X	Generally, not material as: ▪ 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.

Note: The comments regarding the materiality of TVOG in the figure 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 (e.g., by selling more unit-linked products) and third-party asset managers or reinsurers (e.g., through the use of more traditional mortality/morbidity/lapse reinsurance or through the use of block reinsurance transactions);
- Improving ALM, optimising investment strategies (including dynamic strategic asset allocation) and hedging strategies in order increase the company-specific illiquidity premium (when appropriate), thus reducing the interest rate risk capital requirement, and ultimately the volatility of the capital balance sheet;
- Reducing the level and cost of guarantees through the review of the product offerings (e.g. participating product, indexed universal life product) or the review and enhancement of dynamic management actions implemented within the actuarial model
- Tailoring existing insurance product features to be more RBC friendly or shifting the product mix to less capital-intensive products.

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). Under the new RBC regimes (and IFRS 17), these measures would need to be updated and supplemented 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 under the base case scenario, but also a matter of optimising capital and controlling/reducing risk under stress scenarios.
- **Setting target capital requirement and embedding into business processes**. A key parameter of strategic planning is the target solvency ratio. With the change in the underlying capital regime, life insurance companies need to review and enhance their target capital methodology and target solvency ratio. This then needs to be embedded in all business processes of a life insurance company, including business and capital planning, pricing, business KPIs, mergers and acquisitions, embedded value, and other reporting.
- **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 while keeping a material exposure to achieving upside.

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