

Risk and Capital Management for Insurers

Potential Lessons from Japan



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“Insurance markets around Asia are considering adopting the forthcoming International Association of Insurance Supervisors’ Insurance Capital Standard”



Executive summary

Regulatory convergence is shaping the global insurance industry.

Insurance markets around Asia are considering adopting the forthcoming International Association of Insurance Supervisors' (IAIS) Insurance Capital Standard (ICS), or a local version of those regulations.

ICS follows the principles established in Europe by Solvency II. These principles require insurers to adopt new and improved ways to manage their risk and capital, which affect how they invest to meet liabilities.

Japan's insurance regulator, the Financial Services Agency, has assessed the country's insurers against ICS-style criteria. The results, which have been made public, provide a glimpse into the key risks affecting these insurers. They also show the challenges facing insurers tasked with complying with new requirements, whilst meeting the needs of their customers.

Part I of this paper looks at the field tests undertaken by the FSA and considers the headline results.

Part II of the paper looks in more detail at the specific risks that life- and non-life insurers in Japan face.

Part III suggests a number of ways in which insurers can mitigate some of the risks related to investing.

While the focus of this paper is on the Japanese market, the observations and potential lessons also have implications for insurance markets elsewhere in Asia.



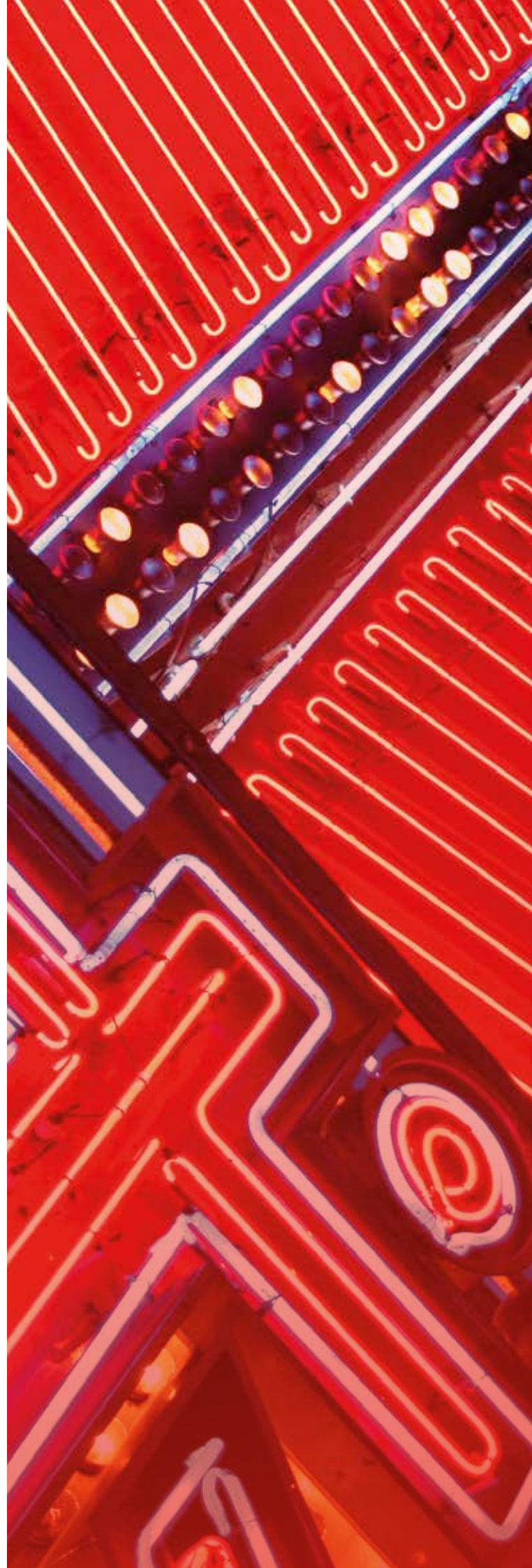
Introduction

Asia's insurance markets are considering adopting the forthcoming International Association of Insurance Supervisors' (IAIS) Insurance Capital Standard (ICS), or a local version of those regulations.

ICS is similar in principle to Europe's Solvency II rules, and is in the final phase of development. Many Asian markets are field testing ICS, or a variant of it. These rules are expected to be implemented globally by 2025.

This paper focuses on the Japanese insurance market, as ICS-style field test data are publically available. While Japan's insurance firms have been considering economic risk and solvency on a voluntary basis for some time, these results provide a rare insight into the industry, and the likely implications of a modern ICS-style regime.

However, investment and asset allocation implications of ICS-style rules can also provide useful lessons for neighbouring insurance markets. In fact, most of our conclusions apply to other Asian insurance markets with modern, but nascent, risk-based capital regimes.





“If Japan’s regulators were to adopt an ICS-style regulatory regime, the country’s life insurers in particular might struggle to comply with its requirements”

Part I

Japan's economic value-based insurance field tests

What were they?

The Financial Services Agency (FSA), Japan's insurance regulator, asked 92 life and non-life insurance companies to complete a survey designed to assess how they are managing risk, measured against requirements set by ICS.

They were asked to calculate: assets and liabilities; qualifying capital resource; margin over the current estimate; and capital requirement for individual risks. Calculations were to be based on market consistent economic value, and on solo and consolidated bases.

Insurers were also asked to answer a questionnaire designed to disclose practical issues encountered when reporting these calculations. The test period was from June to December 2016.

Full technical details of the field test assumptions and results can be found on the FSA's website¹.

However, the key points for the purposes of this paper are:

- All Japan's life and non-life insurance companies were included in the tests;
- The calculations were carried out as at March 31 2016, and also March 31 2015, as a comparator;
- The tests were based on the June 2016 version of the ICS technical specifications

What did they find out?

The field test results are shown in Chart 1.

Chart 1: Japan insurers' ESR, 2016 vs 2015		
	ESR (March 31 2016)	ESR (March 31 2015)
Life insurers	104%	150%
Non-life insurers	194%	201%

The economic solvency ratio (ESR) is the ratio of each insurer's capital base to their corresponding risk-based capital requirement.

An ESR ratio of 100% means that the insurer has exactly enough capital to cover its risk-based capital requirements. Insurers generally target ratios in excess of 100% to give their customers confidence that they are financially sound. For example, European life insurers typically target ratios of between 150% and 200%.

At the time of the field tests, Japan's non-life insurance industry had around twice as much capital as it needed to cover the risks on its balance sheet.

Unfortunately, this wasn't the case for the country's life insurers. Their ESR position deteriorated during the 12 months to 2016, mainly as a consequence of falling bond yields.

Life insurers had just enough capital to cover the risks on their balance sheet, as of end-March 2016. This is considered to be below the levels of capital cover that a prudent life insurer might be expected to hold.

Given that investment markets have continued to prove challenging for Japanese insurers since the field test was conducted, it seems entirely possible that ESRs may have fallen even further since 2016.

Clearly, if Japan's regulators were to adopt an ICS-style regulatory regime, the country's life insurers in particular might struggle to comply with its requirements.

¹<https://www.fsa.go.jp/en/news/2017/20170328-1/01.pdf>

“Risk averse institutions and pensioners have piled into Japanese government bonds to the extent that yields are negligible, and often negative”



Part II

Window into Japan's insurance industry

The results were also useful because they provided a detailed breakdown of the life and non-life industries' risk-based capital requirements, essentially giving a rare insight into the risks on each industry's balance sheet.

Life insurers

Chart 2 shows that market risk accounts for some 74% of the risks that the life industry is exposed to. Within market risk, the biggest issues are:

- 'Interest-rate down' which shows an asset-liability duration mismatch in which the tenor of life insurers' assets is shorter than the tenor of liabilities;
- 'Interest-rate flattening' which shows that life insurers are exposed if long-term interest rates fall to the level of shorter-term interest rates;

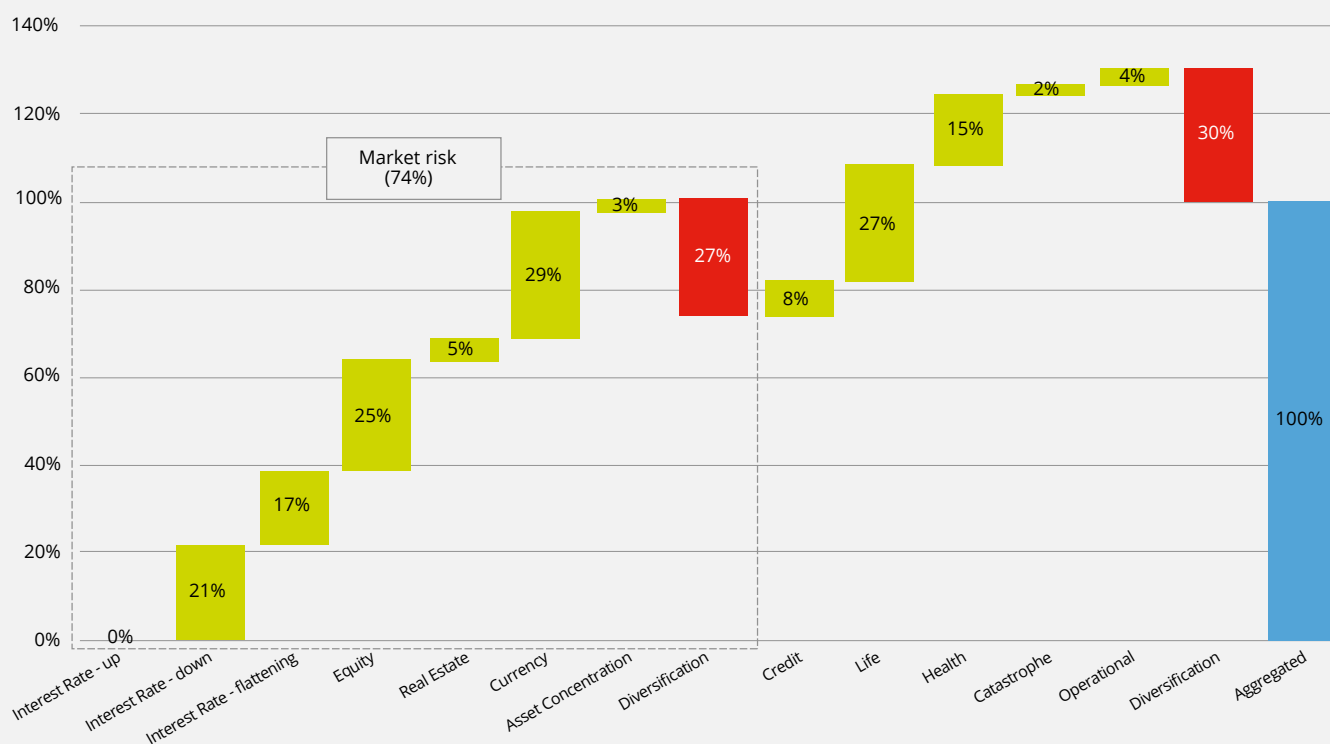
- 'Equity' which shows that life insurers have large exposures to equities
- 'Currency' which shows life insurers have large un-hedged, or only partially hedged, currency exposures from overseas assets.

Non-life insurers

Chart 3 shows the corresponding risk-based capital requirement breakdowns for the non-life industry. Market risk only accounts for some 64% of risks for non-life insurers (compared with 74% for life insurers), with equity exposure accounting for the lion's share of that market risk.

Furthermore, while 'interest rate down' and 'interest rate flattening' risks are no longer important within this context, due to the short tenor of non-life insurance liabilities, un-hedged, or only partially hedged, currency exposures to overseas assets remain significant.

Chart 2: Breakdown of life insurers' risk-based capital requirements



Source: Field Tests of Economic Value-Based Evaluation and Supervisory Method, FSA, March 28 2017

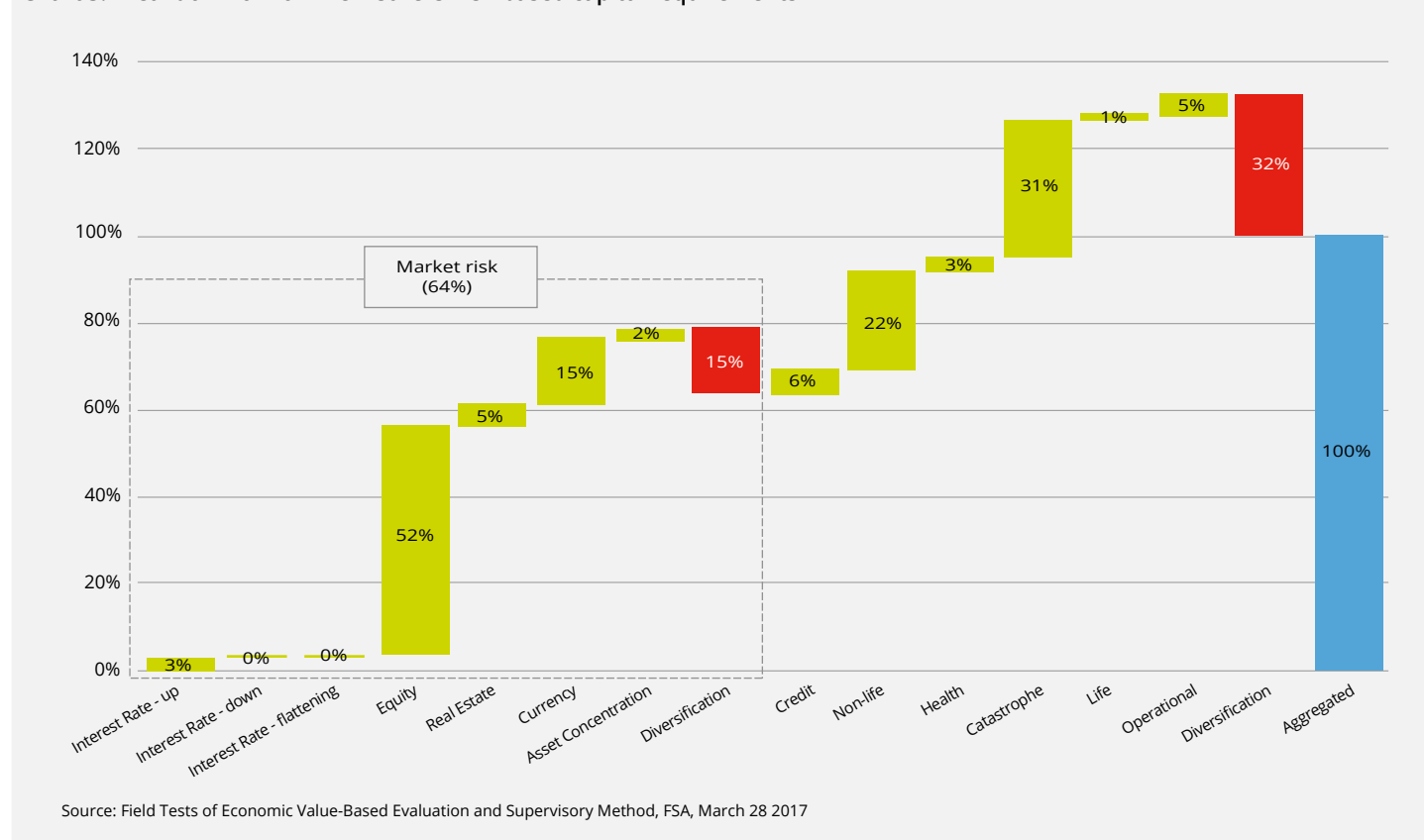
Economic backdrop

Japan's economy has struggled since a huge asset bubble burst in the early 1990s. Aging demographics is the biggest problem. The population is falling by some 400,000 a year, while the proportion of people aged 65 or over stands at 28% and rising – the highest on the planet².

Domestic markets have been shrinking, as has the workforce; elderly people tend to save and not spend; deflation, rather than inflation, keep policymakers awake at night.

This also creates problems when investing. Risk averse institutions and pensioners have piled into Japanese government bonds to the extent that yields are negligible, and often negative. Equity markets were boosted by central bank stimulus policies but there are few domestic drivers of long-term growth.

Chart 3: Breakdown of non-life insurers' risk-based capital requirements



²<https://www.aberdeenstandard.com/en/hong-kong/investor/insights-thinking-aloud/article-page/a-new-era-of-hope>

Part III

Investment implications

Japan's insurers, and life insurers in particular, may have to increase their capital base, while aligning their asset portfolios more closely with the risk-return regime mandated by the ICS framework.

This will mean engaging in more pro-active asset-liability management. Indeed, many insurers may already have started doing this.

Here are some thoughts on managing market risk:

Asset-Liability Duration Mismatch

European insurers have been gradually lengthening assets to reduce duration mismatches against their liabilities, since Solvency II came into force in 2016. However, a shortage of longer-duration assets has hampered progress. That said, the use of alternative types of debt, such as long-duration infrastructure debt, offers a potential solution.

Unfortunately, there is a global shortage of 'insurer-friendly' infrastructure debt. Competition from global insurers and pension funds has compressed yields for this asset class, although it does remain attractive to insurers for diversification and duration purposes.

Where suitable assets don't exist, or are difficult to access, an alternative approach may be suitable. By combining shorter-dated investments with derivative strategies designed to mitigate, or even remove, asset-liability duration mismatches, an appropriate level of duration-matched return may be possible³.

Long-Term Interest Rates

Very long-term savings products with investment guarantees are still the staple product of Japanese life insurers. The extended duration of the liabilities associated with these products, sometimes up to 30 years, helps explain why Japanese insurers have found it difficult to source assets long enough to match their liabilities.

As Japanese government bond yields have fallen with Japan's slowing economy – yields are often negative for durations up to 10 years – Japan's insurers are finding it increasingly difficult to honour investment guarantees. If the long end of the yield curve was to fall even further, additional capital would be needed to help pay for the guarantees already sold. Alternatively, hedging strategies involving the use of interest rate and equity options might be used to help manage guarantee costs in a declining interest rate environment.

As growth in developed economies continues to slow, and the investment returns needed to pay for Japan's life insurance guarantees have become increasingly out of reach, the only real solution may be to develop alternative products – those without explicit investment guarantees. These are more akin to wealth management products and represent an emerging trend throughout much of the rest of Asia.

Equities

Both life and non-life insurers favour investing in equity-type assets. This is because they often generate the highest long-term returns in investment markets. Life insurers invest in equities to help pay for long-term investment guarantees, while non-life insurers invest to supplement the underwriting profits on their core insurance protection business.

However, equities are volatile and can require much more risk-capital in modern ICS-style regimes than they do within less risk-sensitive regimes. Japan's insurers have relatively large exposures to equity risk and may not have enough capital to cover these risks once an ICS-style regime is implemented. They may have to sell out of this favoured asset class, reducing expected long-term returns, or they may need to hedge these equity risks.

One approach that has found favour in Japanese and European insurance markets is the use of sophisticated, systematic strategies to hedge equity risk. Implementation varies from firm to firm, but in a typical strategy, long-term put options are purchased to provide protection against share price declines, while shorter-dated call options are sold to help pay for the cost of buying puts. This so-called 'collar' strategy is designed to reduce economic risks, and hence risk-based capital requirements, while minimising expected hedging costs.

However, insurance regulators can be sceptical about the effectiveness of such collars, especially those that depend on asset manager discretion during times of market stress. They may not recognise the reduced risk-based capital requirements collar strategies are designed to achieve. One solution may be the use of more sophisticated rolling collar strategies that are implemented using frequent derivative trades that follow systematic rules, without asset manager discretion. These strategies are often more acceptable to regulators because they are less susceptible to human emotion and error⁴.

³https://funds.standardlifeinvestments.com/Asia_Pacific_Insurance_Survey.pdf

⁴<https://www.aberdeenstandard.com/en/insights-thinking-aloud/article-page/technology-revisited-another-look-at-its-role-in-investing>

⁵https://funds.standardlifeinvestments.com/Asia_Pacific_Insurance_Survey.pdf


Overseas Investment

Japan's insurers, and especially life insurers, have been investing overseas in search of higher returns. Overseas investing is often tactical and driven by the returns available, net of the cost of three-month duration currency hedges. At the end of each three-month period, if the hedged overseas returns are no longer attractive on re-hedging, the insurer will usually divest and search for another overseas asset where the hedged returns are more worthwhile. Or the insurer may simply consider investing without hedging.

However, under ICS-style risk-based regimes, in order for the currency hedge to be fully recognised as a true risk mitigant, the hedge needs to have an outstanding duration of at least one year, or be implemented in such a way that the firm and regulators are confident that the strategy can be reliably renewed and maintained throughout the year. Otherwise, the effectiveness of the hedge is reduced in proportion to its outstanding duration. For example, a hedge with outstanding duration of three months would be considered to hedge only 25% of the associated currency risk.

Japan's insurers are exposed to relatively large amounts of currency risk as a consequence of only partial, or possibly no, hedging of the currency risks associated with their overseas assets. Once an ICS-style regime is introduced, insurers will have to consider not only the risk and expected return of the overseas asset, but the cost of capital required to support it. It seems likely that in order to maintain overseas exposures at current levels without holding increased levels of risk capital, Japanese insurers will have to implement more sophisticated, and potentially longer duration, currency hedging strategies. As a consequence, overseas investing will become even more challenging for Japan's insurers⁵.





“Once an ICS-style regime is introduced, insurers will have to consider not only the risk and expected return of the overseas asset, but the cost of capital required to support it”



Conclusion

Risk-based solvency and market consistent valuation of assets and liabilities were introduced across the European Union on January 1 2016 with the implementation of Solvency II.

Despite some teething problems, Solvency II has generally been welcomed by markets and is considered to have been a big success, fostering a step change in European insurers' risk and capital management capabilities.

The IAIS' Insurance Capital Standard (ICS) is expected to introduce Solvency II-style rules to insurance markets elsewhere in the world, marking the next steps in regulatory convergence within the industry.

Although Japan's insurance regulator, the FSA, has given no firm timeline for when it expects to introduce an ICS-style risk-based regime, it seems likely that this is a matter of 'when', not 'if'.

The global trend is towards more transparent risk and market-based solvency regimes, often requiring more capital, and it does not seem likely that Japan could, or should, resist this.

As the FSA moves closer to implementing an ICS-style regime, it seems likely that Japan's insurers, and their asset managers, will need to become much more dynamic and proactive in understanding the market risks on their balance sheet and in managing these risks.

This may lead to the adoption of more sophisticated and advanced investment solutions, as well as core business model transformations.

While the focus of this article has been on the Japanese market, many of the issues raised in this paper are equally relevant to other Asian jurisdictions including Taiwan, South Korea, Hong Kong and Singapore.

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