



## Japan's new insurance solvency regime

A blueprint of the new regime for  
insurance supervision

August 2020



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# Abstract

Japan has been working on modernising its solvency regime for the supervision of insurers for more than a decade. In May 2019, the Financial Services Agency, Japan (Japan FSA) created a study group to discuss future directions towards the development of a new, 'economic value-based' solvency regime. In June 2020, the study group published a report entitled 'The Study Group Report on the Economic Value-based Solvency Regime', recommending implementation of the new regime in April 2025.

This paper first reviews recent initiatives for modernising solvency regimes at a global, regional, and jurisdictional level, respectively, and then summarises the report focusing on key items. The summary is followed by discussion of three critical areas: (i) 'smoothing' measures; (ii) internal models; and (iii) supervisory intervention. The subject of how insurers should be supervised under the new solvency regime is also briefly discussed. This paper then concludes that the introduction of the new solvency regime can strengthen policyholder protection and, at the same time, pose new challenges for supervisors.

While it is not the objective of this paper to discuss any other specific solvency regimes, such as the IAIS's Insurance Capital Standard (ICS) and Solvency II, the discussion in this paper may inform the finalisation of the ICS and possible further updates of Solvency II.



# 1. Introduction

In the insurance sector, no global capital standard exists for the purpose of the prudential supervision of insurers. This is not the case in the banking sector, where a capital measurement system, the Basel Capital Accord, was developed in 1998; since then updated several times, the Accord has been playing a key role as the global capital standard for banking supervision.

With that being said, there have been initiatives towards 'modernising' solvency regimes for insurance supervision at a global, regional, and jurisdictional level, respectively. At a global level, the Insurance Capital Standard (ICS) has been being developed at the International Association of Insurance Supervisors (IAIS), an international supervisory standard-setting body in the insurance sector, with the participation of a number of jurisdictions, including not only developed but also emerging ones. At a regional level, the European Union is currently reviewing its solvency regime that became effective in 2016 as Solvency II.

At a jurisdictional level, several jurisdictions, such as Singapore and Hong Kong, have been updating their own solvency regimes. Japan is no exception. In May 2019, the Financial Services Agency, Japan (Japan FSA) established a study group (the 'Group' or the 'Study Group') to discuss future directions towards the development of a new, economic value-based solvency regime. In June 2020, the Group came up with a report (the 'Report' or the 'Study

Group Report') recommending implementation of the new regime in April 2025.

All these initiatives at their respective levels have been, to varying degrees, influencing each other. Given the global nature of the insurance business and the global harmonisation of regulations, it is important to be aware of such interactions and to see these initiatives in their broader context. In order to illustrate the context of Japan's publication of the Report, this paper starts by reviewing initiatives for modernising solvency regimes undertaken by the IAIS, the European Union (EU), and Japan, respectively, in Section 2.

The rest of this paper is structured as follows. Section 3 summarises the Report, focusing on key items, and Section 4 then attempts to discuss three critical areas, i.e. (i) 'smoothing' measures, (ii) internal models, and (iii) supervisory intervention, as well as the subject of how insurers should be supervised under the new regime. While it is not the objective of this paper to discuss any other specific solvency regimes, such as the ICS and Solvency II, discussion in Section 4 may inform the finalisation of the ICS and possible further updates of Solvency II. Any opinions expressed in this paper are the author's own, and should not be regarded as the official opinions of the organisations to which the author is or was affiliated.

# 2. Initiatives for modernising solvency regimes

## Global level: IAIS

One of the initial steps taken towards developing a solvency regime for the supervision of insurers at a global level is the publication of two IAIS policy papers in 2005, i.e. the Framework Paper and the Cornerstones Paper. The Framework Paper introduced an overarching framework for insurance supervision, including a 'three pillar'-type supervisory approach, and the Cornerstones Paper highlighted key elements for the development of a regulatory capital standard, such as a so-called 'total balance sheet approach' (IAIS, 2005a; IAIS, 2005b).

The two papers were followed by several other IAIS papers. One was the Roadmap Paper of 2006, where a road map for a solvency regime modernisation project was set out (IAIS, 2006). Also, the key elements (or 'cornerstones') presented in the 2005 Cornerstones Paper were further elaborated upon in the Structure Paper published in 2007. For example, the Structure Paper (i) provided a high-level definition of market-consistent valuations of insurance liabilities, (ii) stated that risk margins should be included in the insurance liabilities, and (iii) visualised a comprehensive framework that covered governance, disclosure, and market conduct (IAIS, 2007).

These 'preparatory' works resulted in three policy papers in 2008, i.e. Standards and Guidance on (i) the structure of regulatory capital requirements, (ii) enterprise risk management for capital adequacy and solvency purposes, and (iii) the use of internal models for regulatory purposes (IAIS, 2008). After several updates and revisions, these standards and guidance materials were eventually compiled as 'the Insurance Core Principles' (ICPs) together with other IAIS supervisory policies in 2011.

The financial crisis of 2008 and 2009 accelerated the development of a more sophisticated global solvency regime. This was partly because of the insurance sector's relevance to the crisis. In October 2013, in response to a request from the Financial Stability Board (FSB), the IAIS announced its plan to develop a risk-based global capital standard by 2016 (IAIS, 2013). The first product was the Basic Capital Requirements (BCR) for global systemically important insurers (G-SIIs) published in October 2014. The BCR was intended to serve as the foundation for 'add-on' capital (i.e. Higher Loss Absorbency) for G-SIIs, and was expected to be replaced with the ICS once finalised (IAIS, 2014).

The ICS is intended to serve as a consolidated group-wide capital standard for G-SIIs and

Internationally Active Insurance Groups (IAIGs) that meet some pre-defined criteria, such as (i) premiums written in three or more jurisdictions and (ii) total assets of at least USD 50 billion (IAIS, 2019a). A draft of the ICS was published for consultation for the first time in December 2014. A series of quantitative field tests has since been conducted, and different versions of the draft of the ICS have been published for consultation.

The latest version of the ICS was released in November 2019 as 'The ICS Version 2.0 for the monitoring period' (Level 1 document), which was supplemented by the 'Level 2 document' published in March 2020. As the title implies, the ICS Version 2.0 is used for the purpose of confidential reporting to group-wide supervisors for the five-year monitoring period from 2020 to 2024 (IAIS, 2019b). During that period, only clarifications, refinements, and corrections of major flaws and/or unintended consequences identified can be made. The IAIS has announced that ICS will be adopted as the PCR (Prescribed Capital Requirement) in Q4 2024 (IAIS, 2019c), but no information on implementation has been provided to the public yet.

## Regional: European Union

The modernisation of the solvency regime in Europe began with a fundamental review of insurance regulation in 2001. The objectives of the review were (i) to identify the problems that led to the failure or near-failure of insurers and (ii) to propose a new supervisory framework capable of dealing with those problems in a more effective manner. Based on findings from

fact-finding surveys, the report recommended establishing a risk-sensitive solvency regime allowing supervisors to intervene early on. The fundamental review is considered as the launch of the Solvency II project (Conference of the Insurance Supervisory Services of the Member States of the European Union, 2002).

A series of Quantitative Impact Studies (QIS or QISs) was conducted from 2005 to 2011. In November 2009, a directive that set out new solvency rules for insurers (Solvency II Directive) was adopted by the Council of the European Union, setting the target date for the implementation of the new regime to 31 October 2012. The Solvency II Directive was 'completed' by the 'Omnibus II' Directive (European Commission, 2014a) adopted by the European Parliament in March 2014. The Omnibus II Directive postponed the implementation date of Solvency II to 1 January 2016.

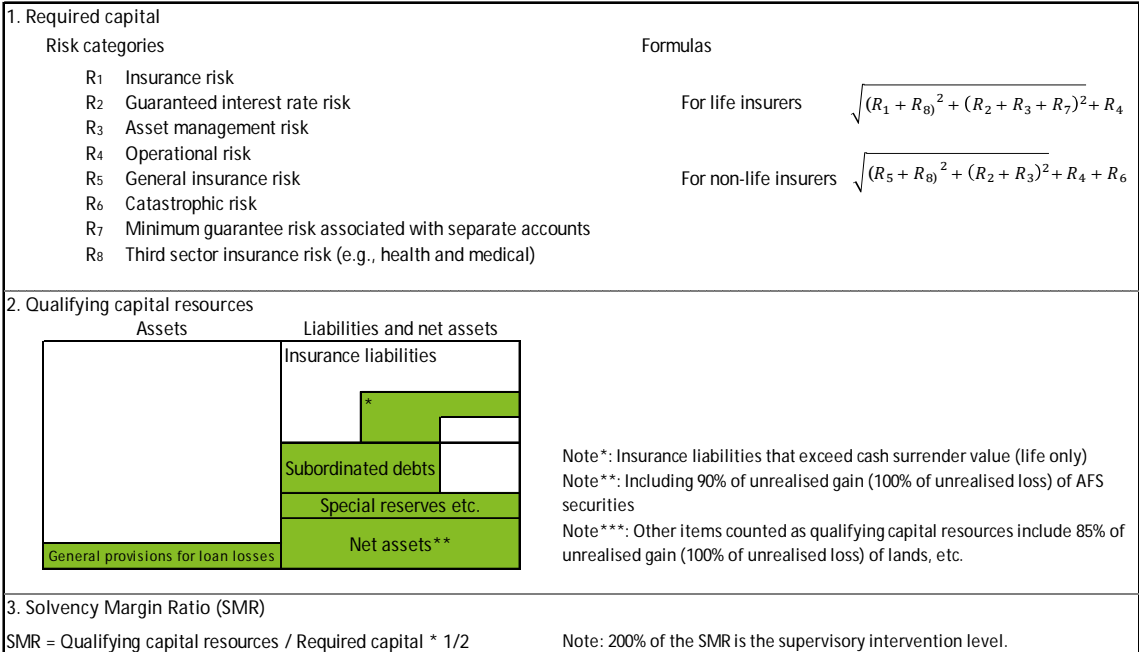
The Omnibus II Directive also offers a package of measures to provide clarity on the treatment of insurance products with long-term guarantees to mitigate the effects of 'artificial' volatility. These measures include the matching adjustment, the volatility adjustment, and extrapolation of the risk-free interest rates (European Commission, 2014b). These 'long-term guarantee' measures, together with some other items, such as the analysis of the sensitivity of risk margins to interest rate changes, are in the scope of the Solvency II 2020 review (European Commission, 2019). Review is expected to be concluded by the end of 2020.

## Jurisdictional: Japan

In Japan, the (basic framework of the) current solvency regime was introduced in 1996. Under the regime, in principle insurance liabilities (or technical provisions) are measured using the assumptions and the discount rates stipulated in the legislation. This is known as the Standard Reserving System. The assumptions and the discount rate used are those in effect at the

time of contract, and in general are not subsequently updated. This is the reason the valuation method is referred to as a 'locked-in' method. Required capital is calibrated using pre-defined risk factors. Diagram 1 shows an outline of the Risk-Based Capital (RBC) framework.

Diagram 1. Outline of Japan's RBC framework



An initial step for transforming the current regime into an economic value-based one was taken in 2007. An expert group created by Japan FSA published a report, stating that insurers' solvency position should be assessed on an economic-value basis. The report also recommended further accelerating discussion of the establishment of an economic solvency regime.

In 2010 Japan FSA conducted its first field testing exercise with the aim of introducing an economic value-based solvency regime (FSA, 2010). All insurers were requested to participate. Field testing was then undertaken in 2014, 2016, and 2018, respectively. The methodology used for field testing in 2018 was basically the same as the one used for the IAIS ICS field testing of 2018. Japan FSA has

announced that field testing will be conducted every year from 2019 onwards.

In parallel with the launch of field testing, in 2011 Japan FSA started to place greater focus on the monitoring of insurers' Enterprise Risk Management (ERM) in order to understand insurers' risk management frameworks and practices. In 2014 Japan FSA updated its Supervisory Guidelines for Insurance Supervision and added guidelines relating to ERM and Own Risk and Solvency Assessment (ORSA). An ORSA pilot study was conducted for the first time in 2014, and all insurers have been requested to submit their ORSA reports to Japan FSA on an annual basis since 2015.

There were two other external factors that created strong pressure for Japan to modernise the current solvency regime. These were the Financial Sector Assessment Program (FSAP) by the International Monetary Fund (IMF) and the Solvency II Equivalence Assessment Programme by the European Commission.

In 2012 the IMF recommended that solvency assessments of insurers in Japan be based on an economic valuation of assets and liabilities (IMF, 2012). In the next round of Japan FSAP, which was conducted in 2017, the IMF again called for the development of policies for the insurance solvency regime, explicitly stating

that economic-value-based solvency regulation should be implemented as soon as practicable (IMF, 2017).

The European Commission, with the assistance of the European Insurance and Occupational Pensions Authority (EIOPA), may decide whether non-EU member countries' solvency and prudential supervisory regime is equivalent to the regime in the European Union in accordance with the Solvency II Directive<sup>1</sup>. Equivalence is assessed with respect to the following three areas: (i) reinsurance (Article 172 of the Directive); (ii) solvency calculation (Article 227); and (iii) group supervision (Article 260)<sup>2</sup>. As a result of the assessment, one of the three types of equivalence status in Table 1 is granted to non-EU member countries assessed.

Japan is one of the countries covered by the first wave of the Equivalence Assessment (EIOPA, 2011). As of July 2020, Temporary Equivalence, which will end on 31 December 2020, has been granted to the reinsurance area, and Provisional Equivalence, which lasts for a period of 10 years from 1 January 2016, has been granted to the solvency calculation area. The main reason that Full Equivalence has not been granted to these two areas (and also equivalence of the group supervision area has not been assessed) would be that Japan's solvency regime is not necessarily an economic

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<sup>1</sup> Fairness of such a unilateral assessment might be debatable, though.

<sup>2</sup> If a solvency regime of a third country is deemed equivalent under Article 172, reinsurance contracts concluded with insurers having their head office in that jurisdiction shall to be treated in the same manner as reinsurance contracts concluded with insurers authorised in accordance with the Solvency II Directive. If a solvency regime of a third country is deemed equivalent under

Article 227, EU insurance groups can carry out their EU prudential reporting for a subsidiary in that third country under local rules instead of Solvency II, if they are authorised to use deduction and aggregation as the method of consolidation of group accounts. If a prudential regime of a third country is deemed equivalent under Article 260, its insurance groups which are active in the EU are exempted from some aspects of group supervision in the EU (European Commission, 2015).



one (European Union, 2016; EIOPA, 2011b; EIOPA, 2015).

Table 2 presents a timeline of these initiatives at their respective levels. It is fair to say that these initiatives are closely interrelated and exert mutual influence.

Table 1. Types of equivalence status

Type	Period	Areas
Full	Unlimited	Can be determined for all the three areas, i.e. reinsurance, solvency calculation, and group supervision
Temporary	Limited (until 31 December 2020 with the possibility to extend by 1 year)	Can be determined (if progress is being made towards full equivalence) for reinsurance and group supervision
Provisional	Limited (10 years, renewable for further 10-year periods)	Can be determined (if progress is being made towards full equivalence) for solvency calculation

Source: EIOPA

Table 2. Chronological summary of key initiatives at their respective levels

Year	IAIS	EU	Japan
2001		Fundamental review of insurance regulation	
2005	Framework Paper Cornerstones Paper	1st Solvency II QIS	
2006	Roadmap Paper	2nd Solvency II QIS	
2007	Structure Paper	3rd Solvency II QIS	Expert Group Report
2008	Standards and Guidance on solvency	4th Solvency II QIS	
2009		Solvency II Directive	
2010			1st QIS
2011	Consolidated ICPs	5th Solvency II QIS	ERM dialogue
2012			Japan FSAP by IMF
2013	Announcement of the development of a risk-based global capital standard		
2014	Basic Capital Requirements 1st ICS consultation	Omnibus II Directive	2nd QIS Supervisory Guidelines on ERM/ORSA ORSA pilot study ORSA reporting
2015	2015 QIS		
			EIOPA's final advice on Solvency II Equivalence (reinsurance)
			EC's decision on Solvency II Equivalence (reinsurance and solvency calculation)
2016	2016 QIS 2016 ICS consultation	Solvency II implementation	3rd QIS
2017	ICS Version 1.0 for Extended Field Testing 2017 QIS		Japan FSAP by IMF
2018	2018 QIS ICS Version 2.0 consultation		4th QIS
2019	2019 QIS ICS Version 2.0 for the monitoring period		
2020	2020 ICS data collection	2020 Solvency II review	Study Group Report

# 3. The Study Group Report

A study group was formed by the lead of Japan FSA in May 2019 to discuss how Japan's new solvency regime for the supervision of insurers should be designed (FSA, 2019). The Study Group met ten times and, on that basis, published a report entitled 'The Study Group Report on the Economic Value-based Solvency Regime' in June 2020.

The Report presented three key, high-level guiding principles. Firstly, the new solvency regime will be constituted of three pillars, i.e. quantitative requirements (Pillar I), risk management and supervisory review (Pillar II), and public disclosure (Pillar III). Secondly, the standard formula will be broadly consistent with that in the ICS being developed by the IAIS, while allowing some adjustments to account for the unique features of the domestic market. Thirdly, the new regime will be implemented in April 2025. The rest of this section summarises the Report, focusing on key items.<sup>3</sup>

## Objectives of introducing the new solvency regime

There are three benefits of introducing the new regime. Firstly, the supervisor will be able to take the necessary supervisory action to insurers in a timelier fashion, thereby ensuring policyholder protection. Secondly, the new regime will give insurers a strong incentive to have economic value-based internal risk management systems in place, and/or to

sophisticate such risk management systems. Thirdly, the new regime will enhance communication between insurers and their stakeholders, leading to the disclosure of more economic information and in turn strengthening market discipline.

With regard to the second point, one challenge that insurers are likely to face under the current regime is that a certain action that can have a positive impact on their solvency position on an economic basis could work adversely under the current 'locked-in' regime, and vice versa. For example, insurers might not want to match the duration of assets and that of liabilities by purchasing longer-term bonds in a low interest rate environment. This is because their solvency ratio under the current regime can increase while the gap in duration remains as it is.

On public disclosure insurers have been providing the public with 'economic' information, such as economic solvency ratios and embedded values calculated for their internal risk management and/or external communication purposes, on a voluntary basis. A challenge here is the comparability of this information. Methodologies used by individual insurers to produce such economic information can vary, and therefore information disclosed voluntarily might not necessarily be comparable.

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<sup>3</sup> No author's opinion is expressed in this section.

## Possible challenges

Neither insurers nor consumers, including policyholders, will be able to benefit from the new regime unless the regime is designed properly. Also, some of the benefits mentioned above could be offset to some extent. If, for example, insurers are too concerned about breaching the supervisory intervention threshold, they might take extreme actions to avoid the breach. Some insurers might rush to sell their assets; while others might suppress and/or cease to sell certain types of insurance products, such as those that offer long-term protection. Consequently, consumers may not be able to find products that meet their needs.

These challenges would not materialise if the supervisor supervises insurers in a multifaceted, holistic manner utilising all three pillars effectively. The Report therefore discusses the new regime from the respective standpoints of the three pillars, making reference to Solvency II.

## Standard formula

Most components can be shared between the standard formula to be employed under the new regime and that used in the ICS. This makes sense as the ICS Version 2.0, which was referenced in past domestic field testing, is considered well-balanced in that it provides a framework under which assets and liabilities are measured on an economic basis, and most quantifiable risks are captured by Pillar I.

Nevertheless, some adjustments or refinements would need to be made. The ICS is being developed for IAIGs, and is intended to be

applied on a consolidated basis. On the other hand, the new regime in Japan is intended to be applied to not only IAIGs but also other insurers, including small- and medium-sized ones. Also, given the continued importance of supervising insurers on a legal entity basis, the new regime is expected to be applied on a legal entity basis as well as on a consolidated basis.

The risk profile of IAIGs can be different from that of non-IAIGs. If the difference is material, it is sensible to, for example, make some adjustments to some of the risk factors and/or refine their risk categories. One risk requiring further consideration is insurance risk. Insurance risk can be (sub-)categorised at more granular level, and/or risk factors that are in line with the domestic insurers' risk profile can be assigned.

## Discount rates

On the one hand, it is considered practical for the standard formula to be equipped with certain mechanisms, such as the extrapolation of risk-free interest rates using an ultimate forward rate (UFR or Long-term Forward Rate in the ICS) and a 'three-bucket approach' like the one used in the ICS Version 2.0 with regard to discount rates. These two mechanisms can work in a way that mitigates extreme fluctuations of the solvency ratio. Moreover, the three-bucket approach may accommodate insurers' asset management practices in the valuation of insurance liabilities.

On the other hand, there are some disadvantages to using these mechanisms. For example, insurance liabilities with longer durations could be undervalued, in particular, in

a low interest rate environment, if the discount rate jumps after the last liquid point. Also, the use of extrapolation could make the regulation less aligned with insurers' practices in, for example, internal risk management and product pricing.

## MOCE (Margin Over Current Estimate)

Whereas the Study Group reached a consensus on calibrating MOCE in addition to the current estimate of insurance liabilities to address non-hedgeable risks, contrasting views were voiced, for instance, on the treatment and calibration of MOCE. For example, the majority considered it appropriate not to deduct MOCE from the required capital, while some were of the opinion that MOCE should be treated as qualifying capital resources or deducted from the required capital.

For the calibration of MOCE, one option is to use the percentile method (Percentile MOCE) as in the ICS Version 2.0. Nevertheless, further consideration is needed as, for example, (i) the gap between the Percentile MOCE and the CoC (Cost-of-Capital) MOCE, i.e. MOCE to be calibrated using the cost-of-capital method provided by Solvency II, is not negligible, particularly in the case of life insurance and (ii) what is calibrated by the percentile method (in other words, what the Percentile MOCE represents) is unclear. The method used by insurers for the purpose of internal risk management can also be an issue.

## Internal models

Possible challenges associated with the use of internal models in Pillar I are comparability and the potential burden placed on the supervisor and on the insurers. Given these challenges, the Report proposes a phased approach with regard to internal models, while at the same time recognising the risk of cherry-picking. Internal models can be first applied to natural disaster risk. The scope can then be expanded to other insurance risks, which can vary from insurer to insurer, and also asset management-related risks. It would nevertheless be ideal to first consider whether and how other insurance risks can be captured in designing the standard formula.

In cases where the use of internal models in Pillar I is permitted, a framework for supervisory review for approval needs to be in place. A draft set of criteria for supervisory review can be developed by around 2022, and then a preliminary review of internal models can be performed by the supervisor. The review criteria are expected to be finalised in parallel with the preliminary review.

At the same time, it is critically important for insurers to establish and maintain processes to validate their internal models effectively, efficiently, and independently. Third party experts can be utilised for the purpose of such validation. Moreover, insurers need to have in place strong internal model governance and ensure that internal models are used for their decision-making. These responsibilities rest with the Board of Directors.

## Validation framework

Methodologies for the valuation of insurance liabilities can be developed on a principles basis, thereby incentivising insurers to enhance their risk management on their own initiative. At the same time, guidance on validation of the valuation would need to be developed to assure the validity of the valuation.

Roles and responsibilities of the actuarial function, which is partly performed by Corporate Actuary under the current regime, will need to be clarified. Validation of the valuation of insurance liabilities is one of the critical roles to be performed by the actuarial function. Given the importance of the role, it is necessary (i) for the validation function to be embedded in corporate governance properly, (ii) for necessary authorities, responsibilities, and resources to be granted/allocated to that function, and (iii) for independence of the function to be ensured.

## Supervisory intervention

A 'ladder of supervisory intervention' framework is embedded in the current solvency regime, under which the supervisor may take action in accordance with the respective levels of the solvency ratio of insurers. This framework will remain in place under the new regime, and an initial supervisory action is expected to be taken when the solvency ratio breaches the Prescribed Capital Requirement (PCR) level, the level at which the amount of the qualifying capital resources is equal to that of the required capital.

One issue to be discussed in this context is the recovery period. In principle, one year is granted to an insurer to recover its solvency position up to the level beyond the PCR. Under certain circumstances, however, some flexibility may be applied to determining the recovery period. For example, a longer recovery period, such as two or three years, may be granted if the risk is not expected to materialise over the short term. On the other hand, the recovery period should be much shorter if an immediate impact on insurer's solvency position is anticipated.

Moreover, in a situation of severe stress where a large number of insurers are adversely impacted simultaneously, a longer period might need to be granted as in Solvency II, which allows granting a recovery period of up to seven years. Furthermore, it is important for the supervisor to interact with insurers proactively even before the breach of the PCR, thereby inducing them to take necessary actions at much earlier stages.

## MCR

There seems to be no global consensus on the Minimum Capital Requirement (MCR) in terms of, for example, calculation methods and levels of the MCR. One way to calculate the MCR is to use a simplified, standardised methodology as in Solvency II. Another way is to adjust the methodology for the calculation of the SCR as necessary. The former can help ensure the calculation's objectivity and robustness; the latter can ensure (i) consistency between the regulation and insurers' internal risk management and (ii) consecutiveness in

supervisory actions to be taken in accordance with the respective levels of the insurer's solvency position.

Given these complexities, further analysis is needed, for example, as to (i) whether the same methodology can/should be used for the calculation of both the PCR and the MCR and, if not, (ii) what adjustments need to be made to the methodology for the PCR calculation.

Where deemed necessary, a separate methodology for the calculation of MCR will be developed after 2022. Moreover, the relationship between the solvency level (MCR) and resolution (or re-organisation) will need to be clarified.

## Pillar II

Although the 'economic' approach has already been adopted to some extent in, for example, ERM and ORSA, which fall within the scope of Pillar II, work on Pillar II should be started earlier than 2025 to ensure a smooth transition from the current regime to the new, economic value-based regime. The supervisor is expected to collect more economic financial and risk information from insurers, and to use this information to understand insurers' solvency position in a more forward-looking manner. This information can also be used for macro-prudential supervision purposes.

In parallel, insurers need to strengthen their own internal risk management, and to go beyond simply meeting the minimum requirements of Pillar I by, for instance, developing their own internal models. They need to be able to address risks that are not captured by the standard formula, such as

climate-related risk and cyber security risk, through their ORSA process in Pillar II.

## Pillar III

The quality of information on risk, return, and capital disclosed by insurers is expected to improve, which will then facilitate communications between insurers and their stakeholders and strengthen market discipline over insurers.



# 4. Discussion

This section discusses three critical areas requiring in-depth analysis. These three areas are: (i) 'smoothing' measures; (ii) internal models; and (iii) supervisory intervention. Although some of the discussion in this paper may inform on-going work on other regimes, it is nevertheless not intended to directly address policy issues associated with any other specific regimes, such as the ICS and Solvency II.

## Smoothing measures

'Smoothing' measures in this paper refers to those that can be used to mitigate 'artificial' volatility of the solvency ratio, such as the long-term guarantees (LTG) measures in Solvency II. One such smoothing measure mentioned in the Study Group Report is extrapolation of the risk-free interest rates. The Report discusses a few potential pros and cons associated with extrapolation, referring to the extrapolation methodology provided by the ICS Version 2.0. However, the Report does not provide any concrete ideas about extrapolation, such as the last liquid point and the ultimate forward rate.

Other smoothing measures include something similar to the matching adjustment and the volatility adjustment, both of which may be used under Solvency II. The matching adjustment allows insurers to adjust the relevant risk-free interest rate term structure for the calculation of a best estimate of a portfolio of eligible insurance obligations (PRA, 2018a), and the volatility adjustment is expected to mitigate the effect of exaggerations

of bond spreads in order to prevent pro-cyclical behaviour (PRA, 2018b). While the Report does not necessarily discuss these two measures explicitly, it implies potential use of some measures, referring to the three-bucket approach proposed in the ICS Version 2.0 and the matching adjustment in Solvency II.

Volatility of the risk margin has also been a controversial issue in some jurisdictions, and some alternative methods to the cost-of-capital method, which is used in Solvency II, seem to have been discussed (Pelkiewicz, et al., 2020). These alternative methods include (i) allowing for an automatic change in the assumed cost-of-capital rate when risk-free rates change and (ii) replacing the Cost-of-Capital MOCE with the Percentile MOCE which is being considered in the ICS. These alternative methods can serve the objective of mitigating excessive fluctuations of insurance liabilities. (At the same time, these alternatives would need to be analysed from other perspectives, such as the desired level of security and period of time.)

These (long-term guarantees) measures can mitigate artificial volatility stemming from, for instance, short-term asset price movements by partially reflecting such movements in the market-consistent valuation of the liabilities (European Commission, 2014). Insurers can benefit from these measures in that their solvency position is likely to be less impacted by, for example, unprecedented, short-term events in the economy. Policyholders might also



be able to benefit from these measures as they may wish to see stability in the solvency ratios of insurers.

On the other hand, it can be counter-argued that application of these smoothing measures could to some extent hinder the supervisor's timely intervention with (troubled) insurers, which contradicts one of the objectives of introducing an economic solvency regime: namely, to enable the supervisor to take necessary actions for the protection of policyholders in a timely manner. It would therefore be worthwhile considering or re-assessing, for example, whether introducing these smoothing measures is in line with the aim of policyholder protection, and/or what these measures can ultimately achieve. Or the 'early intervention' objective itself may need to be re-defined or clarified, as necessary.

Smoothing measures are linked with public disclosures. For example, several European insurers have disclosed two different solvency ratios: the ratio with these adjustments and without. The gap between the solvency ratio with and without the matching adjustment in the two countries where the matching adjustment is used by insurers is 94 points (in the U.K.) and 68 points (in Spain), respectively (EIOPA, 2019). In the case of the volatility adjustment, the gap between with and without is 19 points in the whole EEA market (EIOPA, 2019). More information on these gaps would need to be provided to the public, including policyholders. Otherwise, policyholders may be confused and be unable to understand these two different figures appropriately.

## Internal models

The use of internal models in Pillar I needs to be further discussed, in particular, from the standpoint of comparability. The Report recognises this, stating that the appropriateness of the use of internal models for investment-related risks, in which higher commonality can be observed than in other risks, would need to be considered carefully. Once the use of internal models is allowed in Pillar I, comparability can be diminished.

Ensuring the comparability of the solvency ratio among insurers is important not only for policyholders but also for the supervisor. For the purpose of policyholder protection, it would be ideal and probably necessary for policyholders to be able to compare one insurer's financial soundness with that of others. From the supervisory standpoint, comparison with peers might not always be necessary. Insurers tend to have (slightly) different risk profiles even within groups of peers. It is therefore important for the supervisor to keep such differences in mind when supervising individual insurers. That being said, comparing an insurer with its peers from certain standpoints remains a highly effective supervisory approach.

Another internal model-related challenge is the potential burden on the supervisor. Internal models are reviewed by the supervisor before and, as necessary, after approval when models are used in Pillar I. Ex-post review will be conducted as part of on-going supervision to check, for example, the continued appropriateness of the approved models. The



frequency of the review would be dependent on insurers' risk profile, among other factors. In any case, the supervisor needs to deploy sufficient resources for these ex-ante and ex-post reviews, unless some of these review processes are outsourced to external experts.

Even if the use of internal models is not permitted in Pillar I, insurers may still have an incentive to improve their internal risk management. For instance, insurers calculate the solvency ratio twice — once with the standard formula and once with their own internal models. Then, they can report the solvency ratios calculated using the standard formula and internal models to the supervisor and disclose both of them to the public, along with supplemental information regarding, for example, the gap between the two ratios and material information on the internal models used.

### Supervisory intervention

Last but not least, it is vital to have in-depth discussion on supervisory actions to be taken in accordance with the level of the solvency ratio. One particular point for discussion is what the trigger for resolution, including rehabilitation and liquidation, should be (Kobayashi, 2017). Should that be the MCR, the point at which liabilities exceed assets on a GAAP basis (GAAP insolvency), or something else? It is essential to clarify, in particular, the relationship between the MCR and the GAAP insolvency. Otherwise, the basis on which the supervisor should/can judge whether an insurer is no longer viable will remain unclear: would that be audited financial statements or supervisor's expert judgment?

It would also be worthwhile re-considering how the PCR level should be defined. The Report assumes that the PCR level is set at the point where the amount of the required capital is equal to that of the qualifying capital resources. In light of the early intervention objective discussed above, the PCR level or the intervention threshold could be set at a higher level, such as at the point where the solvency ratio is equal to 110% or 120%. This would allow the solvency ratio to serve as an early warning indicator, and interactions between the supervisor and insurers to take place much earlier.

### Insurance supervision under the new solvency regime

One of the primary objectives of insurance supervision is to protect policyholders (with another being to ensure financial stability). To that end, it would be ideal for the supervisor to be able to intervene earlier on with an insurer whose solvency position is expected to deteriorate at some point in the near future, so that the insurer can take the necessary action for recovery or find other solutions. From that perspective, it might not be appropriate to try to avoid or mitigate fluctuations of insurers' solvency ratio using smoothing measures, although it is undeniable that there are advantages to using them for other purposes.

Suppose no smoothing measures are permitted when measuring insurance liabilities. An insurer's solvency ratio is likely to be more volatile in the short-term. One of the advantages of this approach is obvious: it is likely to allow early intervention. Comparability

of the solvency position among insurers may also increase. Disadvantages are that, for example, insurers are more likely to breach the supervisory intervention threshold, and that it might be difficult for policyholders to understand fluctuating solvency ratios.

The supervisor could nevertheless address these disadvantages utilising tools available in Pillars II and III. For example, the supervisor would (and should) be able to identify the reason(s) for drops and/or sudden increases of the solvency ratio by analysing the risk information collected. Bottom-up stress testing, the scenarios used, and the results of such testing provided in ORSA reports may complement the analysis. With this information, the supervisor can interact with insurers and come up with action items, as necessary. The supervisor could also utilise top-down stress testing. Public disclosure can be further improved to better inform policyholders.

The point is that the supervisor should not rely solely on the solvency ratio in its supervision. Rather, it should be able to supervise insurers using a wide range of tools and information. To that end, it is necessary for the supervisor to enhance its supervisory skills and to strengthen its resources. In any case, further debate on the supervisory approach under the new solvency regime is inevitable.



# 5. Conclusion

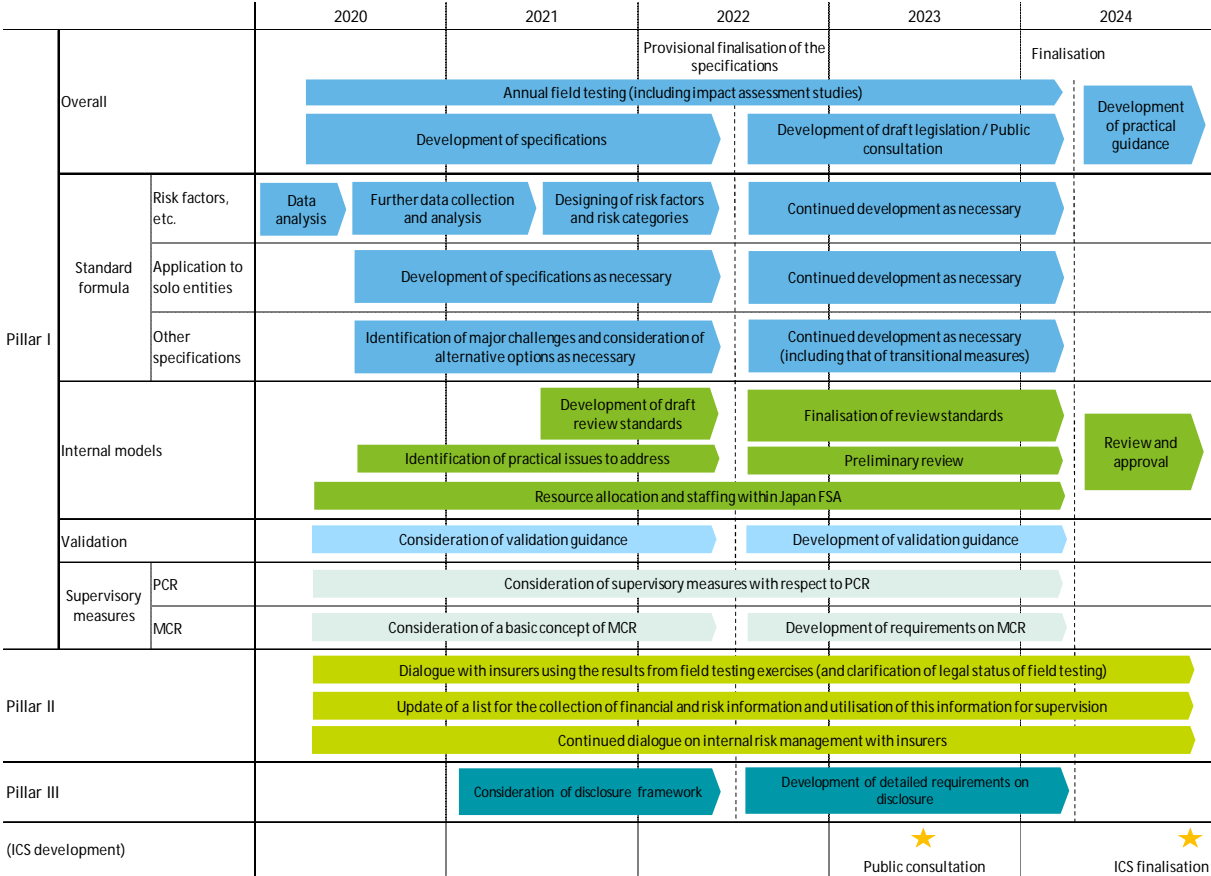
This paper first reviewed initiatives for modernising solvency regimes at a global, regional, and jurisdictional level, respectively, and explained their mutual influence. The paper then attempted to summarise the report entitled 'The Study Group Report on the Economic Value-based Solvency Regime' published in June 2020, focusing on critical items. The summary was followed by discussion of three critical areas: (i) smoothing measures; (ii) internal models; and (iii) supervisory

intervention. The subject of how insurers should be supervised under the new solvency regime was also briefly discussed.

Introducing an economic value-based solvency regime can strengthen policyholder protection. At the same time, it may pose new challenges for supervisors. Supervisors will need to address these challenges by working with insurers and other external experts.

# Appendix

Possible timeline towards the introduction of the new solvency regime



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